CITY OF OREGON CITY
PLANNING COMMISSION
AGENDA

Hanlon Commission Chambers, Libke Public Safety Facility, 1234 Linn Ave, Oregon City
Monday, April 27, 2026 at 7:00 PM

Ways to participate in this public meeting:

- *Attend in person, location listed above. Please see the public comment guidelines below.*
- *Attend the livestream of the meeting on the City's YouTube Channel: https://www.youtube.com/user/CityofOregonCity*
- *Register to provide electronic testimony (email ocplanning@orcity.org or call 503-722-3789 by 3:00 PM on the day of the meeting to register)*
- *Email ocplanning@orcity.org (deadline to submit written testimony via email is 3:00 PM on the day of the meeting)*
- *Mail to City of Oregon City, Attn: City Recorder, P.O. Box 3040, Oregon City, OR 97045*

1. CONVENE MEETING AND ROLL CALL

2. PUBLIC COMMENTS

Please see the public comment guidelines below.

3. PUBLIC HEARINGS

a. GLUA-25-057 / CU-25-02 / SP-25-0145 / PI-25-08 / PARK-25-02 - PGE Line Center Expansion

b. GLUA-26-002 / SP-26-003 / VAR-26-001 / VAR-26-002 / VAR-26-003: John McLoughlin Elementary School Modular Structures

4. COMMUNICATIONS

5. ADJOURNMENT

PUBLIC COMMENT GUIDELINES

Complete a Comment Card prior to the meeting and submit it to the clerk. When the Chair calls your name, proceed to the speaker table, and state your name and city of residence. Each speaker is given 3 minutes to speak. As a general practice, the committee does not engage in discussion with those making comments. Complaints shall be addressed at the department level prior to addressing the committee.

ADA NOTICE

The location is ADA accessible. Hearing devices may be requested from the City Recorder prior to the meeting. Individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-657-0891.

Agenda Posted at City Hall, Pioneer Community Center, Library, City Website.

Video Streaming & Broadcasts: The meeting is streamed live on the Oregon City's website and available on demand following the meeting. The meeting can be viewed on Willamette Falls Television channel 28 for Oregon City area residents as a rebroadcast. Please contact WFMC at 503-650-0275 for a programming schedule.

625 Center Street
Oregon City, OR 97045
503-657-0891

CITY OF OREGON CITY

Staff Report

To:	Planning Commission	**Agenda Date:**	April 27, 2026
From:	Pete Walter, Planning Manager		

SUBJECT:
GLUA-25-057 / CU-25-02 / SP-25-0145 / PI-25-08 / PARK-25-02 - PGE Line Center Expansion

STAFF RECOMMENDATION:
Approval of GLUA-25-057, CU-25-02, SP-25-0145, PI-25-08, PARK-25-02 with revised conditions.

EXECUTIVE SUMMARY:
PGE is proposing to re-construct its Operations Center to modernize the building, increase storage and staging areas, and increase resiliency for regional response to major events. This facility serves as a center for staging and dispatch for line crews that repair electricity infrastructure around the area. The main building and storeroom on the south side of the site will be demolished and replaced with a new building. An existing garage at the north side of the property will be modified but retained. Parking for employee and fleet vehicles will be relocated to the east side of the property. Because of the sensitive nature of power infrastructure, the site will be fenced and gated at its entrances to maintain security.

Table 1. Buildings Proposed

Building	Size
Office and Storeroom	36,220
Covered Storage	8,026
Garage (existing, to remain)	8,230

New buildings under this proposal constitute 44,246 square feet, plus retention of the existing garage (8,230 s.f.) on the north side of the site. All other existing structures on the site will be demolished. The two new buildings proposed are along the Warner Milne Road frontage: an office and storeroom building and an accessory covered storage building. The main pedestrian entrance to the property at the southeast corner of the new main building, close to the street. Additionally, an open canopy structure for covered vehicle parking is at the center of the site. Three vehicular entrances are proposed along the 1,500 linear foot Warner Milne Road street frontage. This represents a significant reduction in curb cuts from the existing condition. The site is secured by a perimeter fence, or by the walls of the new buildings. The only inventoried natural resource area on the site is a small pocket of an intermittent stream at an open culvert passing under the road.

BACKGROUND:

This application was continued from the April 13 Planning Commission meeting. See attached Type III Planning Commission recommendation report which includes revised findings for compliance with applicable standards of the Oregon City Municipal Code. Staff supports revisions to the following conditions of approval requested by the applicant and has revised the Staff report and recommendation accordingly.

24. "The walls of the auxiliary support structure shall be finished with brick, stone, or stucco. The Community Development Director may approve an alternate screening material if it is compatible with adjacent development and is architecturally significant. No exposed CMU is allowed on the exterior of the wall of the auxiliary support structure. (P) "	Delete. [This condition comes from OCMC 17.80.110.E.1.b, which is not applicable. This standard only applies if the shed is not identified in OCMC 17.80.110.E.1.a. But because it is within the MUC-1 district, smaller than 340 s.f., and shorter than 15 feet high, the regulation does not apply and no condition is necessary.]
27. "If Trimet or another transit agency, upon review of this application recommends ..."	Delete. [This appears to be an inadvertent duplication of Condition 23.]
28. Prior to issuance of building permits for the communications tower, the applicant shall provide a report by an appropriate professional that demonstrates compliance with OCMC 17.80.110.G.(2), to assure that the new communications tower equipment will not generate noise greater than the maximum 40 dB measured at the nearest residential property line and there will be no significant noise associated with the communications tower at all. (P) "	Prior to issuance of building permits for the communications tower, the applicant shall provide a report by a qualified professional showing compliance with OCMC 17.80.110.G.(2), to assure that the new communications tower equipment will not generate noise greater than the maximum 40 dB measured at the property line of the nearest residential parcel, which is State ID 32E05CB00400. [Revision specifies location of nearest residential parcel, language parallels relevant standard, eliminates "significant...at all" contradiction.]

29. The walls of the auxiliary support structure shall be finished with brick, stone, or stucco…. “	Delete. [Appears to be an inadvertent duplication of Condition 24. It should be deleted for the same reason as described above.]

NEXT STEPS:

OPTIONS:

1. Approve the proposed application with recommended conditions of approval.
2. Approve the proposed application with conditions of approval revised by the Planning Commission.
3. Do not approve the proposed application and provide direction to Staff.

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789

Application: January 6, 2026
Complete: February 5, 2026
120-Day Deadline: June 5, 2026

TYPE III STAFF RECOMMENDATION

APRIL 24TH, 2026

PUBLIC HEARING: **PLANNING COMMISSION**

7:00 p.m., April 27, 2026 (Continued from April 13)
Hanlon Commission Chambers
Robert Libke Public Safety Building
1234 Linn Avenue, Oregon City, OR 97045

FILE NUMBERS: GLUA-25-057, CU-25-02, SP-25-0145, PI-25-08, PARK-25-02

OWNER / APPLICANT: Portland General Electric (PGE), 121 Salmon St, Portland, OR 97204

REPRESENTATIVE: Winterbrook Planning, 610 SE Alder St, Portland, OR 97205

APPLICATIONS: Conditional Use Approval Public Utility Use and Communications Tower in the (MUC-1) Zone
Site Plan and Design Review with Type II Design Standard Modifications
Public Improvement Modifications for Warner Milne Road
Adjustment to Maximum Parking Requirement
Adjustment to maximum height limit for a communications tower

PROPOSAL: Reconstruct and expand the PGE Operations Center on Warner Milne Road, to modernize the building, increase storage and staging areas, renovate the existing garage, and provide fleet and employee vehicle parking. Includes new communications tower to replace existing ones. Includes Conditional Use for Public Utility, Site Plan and Design Review, Adjustment to Max. Parking, Public Improvement Modification.

PROJECT WEBPAGE: **https://www.orcity.org/3515/PGE-Line-Center-Expansion-CU-25-02-SP-25**

LOCATIONS: 209 WARNER MILNE RD, APN 3-2E-06DA-00100;
NO SITUS ADDRESS, 3-2E-06DA-00201;
NO SITUS ADDRESS, 3-2E-05CB-01100;
NO SITUS ADDRESS, 3-2E-05CB-01200;
NO SITUS ADDRESS, 3-2E-05CB-01300;
NO SITUS ADDRESS, 3-2E-05CB-01400;
279 WARNER MILNE RD, APN 3-2E-05CB-01402;
289 WARNER MILNE RD, APN 3-2E-05CB-01500;
301 WARNER MILNE RD, APN 3-2E-05CB-01500
OREGON CITY, OR 97045

REVIEWERS: Pete Walter, Planning Manager, Oregon City Community Development Dept.
Erik Nichols, Project Engineer, Oregon City Public Works Dept.

ZONING: Mixed Use Corridor (MUC-1)

RECOMMENDATION: Approval with Conditions

PROCESS: Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. Applications evaluated through this process include conditional use permits. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission hearing is published and mailed to the applicant, recognized neighborhood association and property owners within three hundred feet of the subject property. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission, all issues are addressed. The decision is final unless appealed and description of the requirements for perfecting an appeal. The decision of the planning commission is appealable to the city commission within fourteen days of the issuance of the final decision. The city commission hearing on appeal is on the record and no new evidence shall be allowed. Only those persons or a city-recognized neighborhood association who have participated either orally or in writing have standing to appeal the decision of the planning commission. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. The city commission decision on appeal from the planning commission is the city's final decision and is appealable to the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

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RECOMMENDED CONDITIONS OF APPROVAL
GLUA-25-057, CU-25-02, SP-25-0145, PI-25-08, PARK-25-02

(P) = Verify that condition of approval has been met with the Planning Division.
(DS) = Verify that condition of approval has been met with the Development Services Division.
(B) = Verify that condition of approval has been met with the Building Division.
(F) = Verify that condition of approval has been met with Clackamas Fire Department.

The applicant shall fulfill the following conditions prior to issuance of a public improvement and/or Building permit associated with the proposed application.

1. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City. (DS)
2. The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction. (DS)
3. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum prior to receiving a permit and beginning construction. (DS)
4. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards. (DS)
5. The developer shall obtain a 1200-C (NPDES) permit from Oregon Department of Environmental Quality (DEQ) for construction activities one acre or greater prior to receiving a permit and beginning construction. (DS)
6. The developer shall provide finalized engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer addressing all items from Section 9.3 & 9.4 of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction (DS)
7. The development shall address any additional stormwater management requirements for the vehicle and storage area (and associated uses) per the City's Stormwater and Grading Design Standards. (DS)
8. The frontage improvement on the developments half of Warner Milne Road shall be expanded to have a total of 50 ft of public right of way, with 18 ft of pavement, a 12 ft travel lane, a 6 ft bicycle lane, and a 10 foot wide sidewalk area containing either tree wells or stormwater planters. (DS)
9. All traffic control devices, such as signage, flashing lights/beacons, and traffic signals shall be designed using the MUTCD and Clackamas County Standards. The applicant shall submit a traffic signal modification and pedestrian crossing plan to Clackamas County for review and approval. (DS)
10. The proposed shared use path shall be 10-feet wide and paved with asphalt following the Trails Master Plan and public accessway standards and shall be placed in a record public access and private maintenance easement to be maintained by the property owner. (DS)
11. The applicant shall coordinate with PGE and provide any needed street lights along their frontage of Warner Milne Road in conformance with all City standards, specifications, codes, and policies and as approved by Portland General Electric (PGE). The applicant shall submit a photometric plan meeting City standards. (DS)

12. The existing overhead line which serves a private light pole needs either removed or relocated underground. (DS)
13. All accessways, proposed and existing, that intersect with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. (DS)
14. f the project desires to reuse the existing sewer service, they may only do so if the City Sewer Division determines it is in a condition where it can be reused. If the existing service is desired to not be reused, the existing service must be abandoned at the main per the Sewer Standards. (DS)
15. The site's domestic water service and fire services shall have separate connections to the City's water main on Warner Milne. If other water services exist for the new property they will be abandoned at the main per Oregon City Public Works Standards. (DS)
16. An approved Access and Water Supply Plan is required prior to issuance of building permits for the development. (DS)
17. The applicant shall coordinate with TriMet on their design and confirm in writing it meets TriMet standards. (DS)
18. All replacement trees shall comply with OCMC 17.41.060.D. Replacement tree planting standards.
    a) All replacement trees shall be either two-inch caliper deciduous or six-foot high conifer.
    b) Replacement tree species shall be approved by a landscape architect or certified arborist or shall be found on the City's Native Plant or Street Tree lists.
    c) Due to their diminishing range in the region, Oregon white oak (*Quercus garryana*) trees, if removed, shall be replaced by the same species. (P)
19. Since there may be design changes to the site that require revisions to tree removal and mitigation plans prior to a building permit issuance, the applicant shall provide an updated tree removal and mitigation plan for review by the Community Development Director prior to issuance of any demolition, grading, construction plans for public and private improvements that comply with OCMC 17.41. Approval of off-site planting locations of any mitigation trees on city owned land or other government owned or privately owned land shall be approved by the Community Development Director prior to approval of prior to issuance of any demolition, grading, construction plans for public and private improvements. (P)
20. The proposal includes installation of street trees along approximately 1,461 feet of frontage, requiring 42 street trees (1461/35= 41.7 rounded to 42). The location of the street trees are subject to change with the placement of street lights, utility meters, etc. Prior to issuance of construction plans of the right-of-way improvements, the applicant shall submit a street tree plan which includes as many of the 42 street trees that can be planted based on spacing requirements. Street trees shall be evenly distributed throughout the total development frontage to the extent permitted in accordance with OCMC 12.08 or the City may accept fee-in-lieu of planting pursuant to OCMC 12.08 if site or other constraints prevent meeting the required total number of tree plantings. Tree plantings within the NROD shall conform to OCMC 17.49. Tree protection plans shall be updated and revised to comply with this section of OCMC 17.41 prior to issuance of any demolition, grading, construction plans for public and private improvements. The language of OCMC code subsection 17.41.130 - *Regulated tree protection procedures during construction.*, shall be placed verbatim on all applicable approved tree protection, demolition and grading plans prior to issuance. (P)
21. Prior to permit issuance the applicant shall provide revised landscaping plans that fully comply with the development standards of OCMC 17.52.060.B. including the 40% canopy requirement.

The applicant has the option of complying with the requirement through 17.52.060.B.3.(a) or 3.(b). The applicant shall make minor changes to the parking lot landscaping plan in accordance with the standard. (P)

22. Prior to permit issuance the applicant shall confirm that the proposed perimeter trees adjacent to the parking lot drive aisles can meet a minimum of 30% canopy at maturity per OCMC 17.52.060.C.1.(c). The applicant shall make minor changes to the parking lot landscaping plan in accordance with the standard. (P)
23. If Trimet or another transit agency recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be modified or constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the applicant shall accommodate such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the city's transportation system plan. (P)
24. Prior to issuance the applicant shall provide electrical service capacity to a minimum of 20 percent of all off-street vehicle parking spaces in the east parking lot. Prior to issuance of permits for construction of the parking lot, the applicant shall provide plans that conform with this standard. (P)
25. The applicant shall submit a separate Type I Site Plan and Design Review application for the construction staging area prior to scheduling a pre-construction conference. The Type I application shall specify the temporary uses and locations of any temporary structures on the site and a date certain deadline for restoration of the site to pre-existing conditions following completion of the project. (P)
26. Prior to issuance of building permits for the communications tower, the applicant shall provide a report by an appropriate professional that demonstrates compliance with OCMC 17.80.110.G.(2), to assure that the new communications tower equipment will not generate noise greater than the maximum 40 dB measured at the nearest residential property line and there will be no significant noise associated with the communications tower at all. (P)
27. Per OCMC 17.52.070, the applicant shall provide electrical service capacity to a minimum of 20 percent of all off-street vehicle parking spaces on site. The placement of electrical service equipment shall not conflict with, or block access required under the Americans with Disabilities Act. Electrical service equipment shall not displace required pedestrian paths, sidewalks, landscaping, bicycle paths and parking spaces. Parking mandates shall be reduced by two off street parking spaces for every electric vehicle charging station provided. (P)

<u>The following conditions of approval shall be met to the satisfaction of the City during construction.</u>

28. Pavement cuts are proposed within a public street due to proposed utility service installations and required frontage improvements. Pavement cuts or other improvements made in a City street shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards. (DS)
29. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City. (DS)

30. The applicant shall comply with permitted hours of construction as set forth by the City Engineer for any public improvements (in existing public right-of-way or easements or which will be dedicated in public right-of-way or easements) that will not follow OCMC 9.12.023.D. as stated and written in the pre-construction meeting notes. (DS)
31. Every effort should be made to keep two-way travel available to the public at all times using proper traffic control standards. If 2-way traffic cannot be maintained, hours of construction in Warner Milne Road may be limited or be required at night. (DS)
32. Minimum AASHTO sight distance requirements shall be met at all site intersections and driveways. All sight distances shall be approved by the City Engineer prior to final site plan approval. (DS)
33. A design exception shall be submitted to justify the substandard access spacing at the proposed eastern site access. (DS)
34. Improvements to Warner Mine Road and the shared use path shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements. (DS)
35. Sidewalks shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements. (DS)
36. Traffic signals shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements. (DS)
37. Street lights shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements. (DS)
38. All driveways shall be built and operational prior to occupancy; however, phasing of access for construction may be allowed through coordination with the Public Works Department. (DS)
39. Construct a 10-foot wide pedestrian pathway along the east side the new north-south emergency vehicle access between Warner Milne Road and Hughes Street.
40. The following modifications shall be provided at the Beavercreek Road/Warner Milne Road intersection (DS)
41. Construct new north leg serving as a private access to PGE property, provide southbound left turn lane and shared through/right lane
42. Construct new eastbound left turn lane with at least 150 feet of storage
43. Restripe northbound approach to provide left turn lane and shared through/right lane
44. Install protected/permissive left turn signal heads on all approaches
45. Implement optimized signal timing and phasing changes
46. All driveways, new and existing, shall meet the minimum driveway spacing standards identified in Table 16.12.035.A. Approved driveway locations will need included on engineering plans prior to receiving a permit and beginning construction. (DS)
47. All driveways (curb cuts), new and existing, shall meet the minimum driveway width standards identified in Table 16.12.035.D. Approved driveway widths will need included on engineering plans prior to receiving a permit and beginning construction. (DS)
48. New franchise utilities shall be placed underground and all existing overhead utilities adjacent to the property frontage shall be relocated underground unless deemed infeasible by the City and franchise utility provider(s) prior to occupancy. (DS)
49. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections

for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property. (DS)

50. The developer's project engineer shall inspect construction of public improvements and stormwater management facilities at the cost of the applicant. The City will perform inspections in accordance with city policies and standards. See section 16.12.014 of this report regarding inspection fees. (DS)
51. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to receiving a permit and beginning construction. The estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the City. (DS)

<u>The following conditions of approval shall be met to the satisfaction of the City prior to recording of the plat associated with the proposed development [final occupancy] or as noted.</u>

52. The property owner(s) shall execute an agreement providing maintenance of, and giving Oregon City access to, privately-owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The agreement shall be reviewed and accepted by the City prior to occupancy. (DS)
53. The property owner(s) shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property and all fees associated with processing and recording the Non-Remonstrance Agreement shall be paid prior to occupancy. (DS)
54. The shared use path shall also have a private maintenance easement or covenant over the path to be maintained by the property owner. (DS)
55. The development shall provide a 10-foot-wide public utility easement (PUE) along all property lines fronting existing or proposed public right-of-way. In cases where the PUE may not be contiguous, specify PUE location or size. Zero setback sites may not require a PUE but may have dry utilities between the property line and curb the developer shall make all necessary arrangements with utility companies to ensure underground lines are not placed within the roadway. Approved PUE will need included on the final plat prior to recording the plat and prior to occupancy of the East and West Campus buildings but not before the Garage Renovation or Communications Tower improvements. (DS)
56. Public improvements and all items from the city provided punch list shall be completed and accepted by the City prior to occupancy. (DS)
57. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to occupancy. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. (DS)

58. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements. (DS)

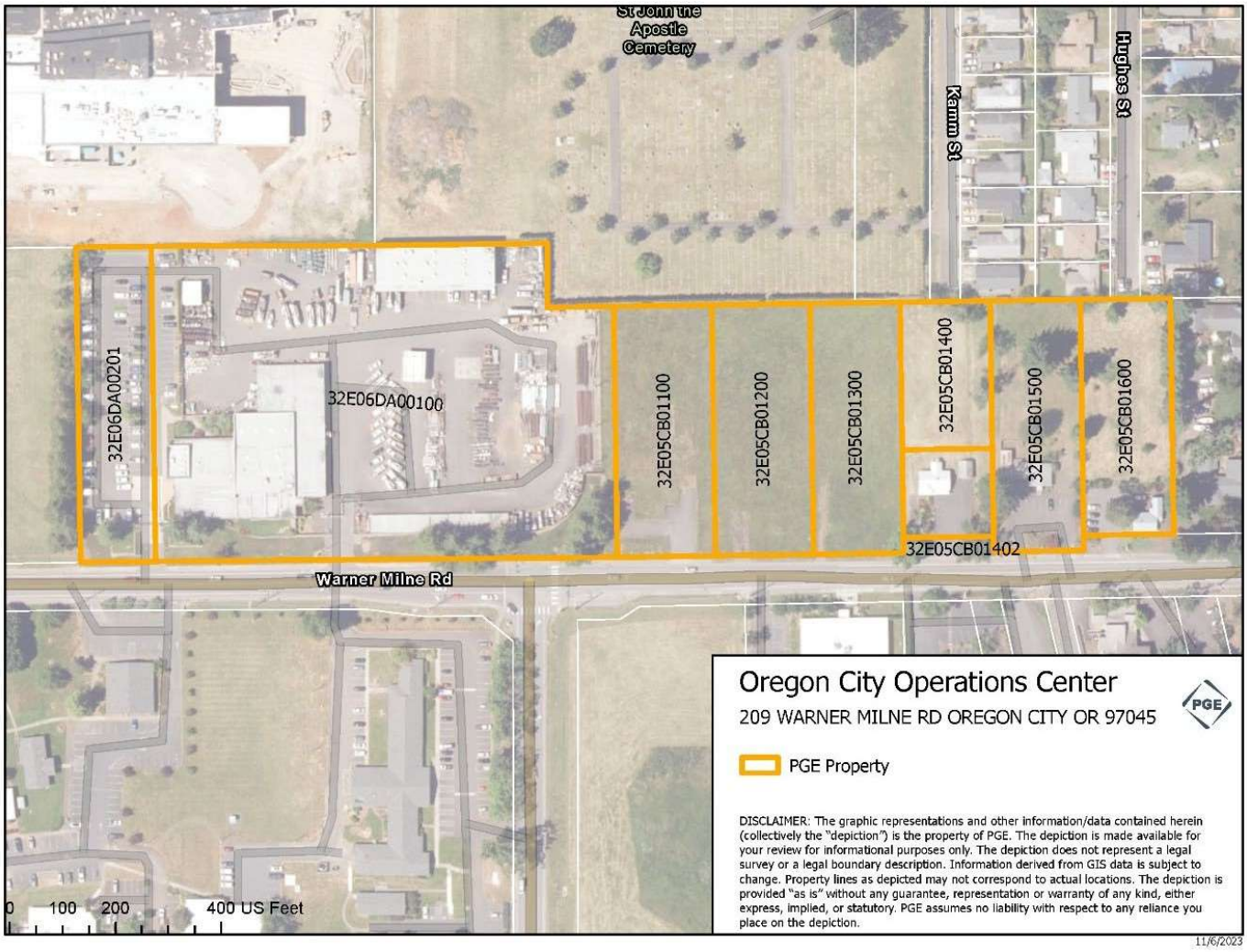
I. BACKGROUND:

1. Existing Conditions

From Applicant Narrative:
PGE operates an existing Operations Center at 209 Warner Milne Road in Oregon City, a property that is composed of approximately 12.2 acres on nine tax lots. The current facility incorporates an operations building with office and conference room facilities, an accessory garage, parking, and outdoor storage. Total building square footage on site is 27,470 square feet. This site serves as one of PGE's major regional operations and maintenance centers. The primary structure is on the west side of site (on tax lot 100) and was built in the 1950s. Outside the existing security fence, PGE land is open and vacant. Three nonconforming residential structures were removed from the east side of the site in 2024 after PGE purchased the land for expansion. Site topography slopes gradually down to the east (approximately a 20 foot drop in elevation across the full Warner Milne Road frontage). A drainage ditch runs north-south through the site, roughly aligned with Kamm Street.

Several large trees are at the edges of the site and within the eastern lots. Otherwise, the site is either developed with PGE active uses or open area.

Figure 1. Vicinity Map



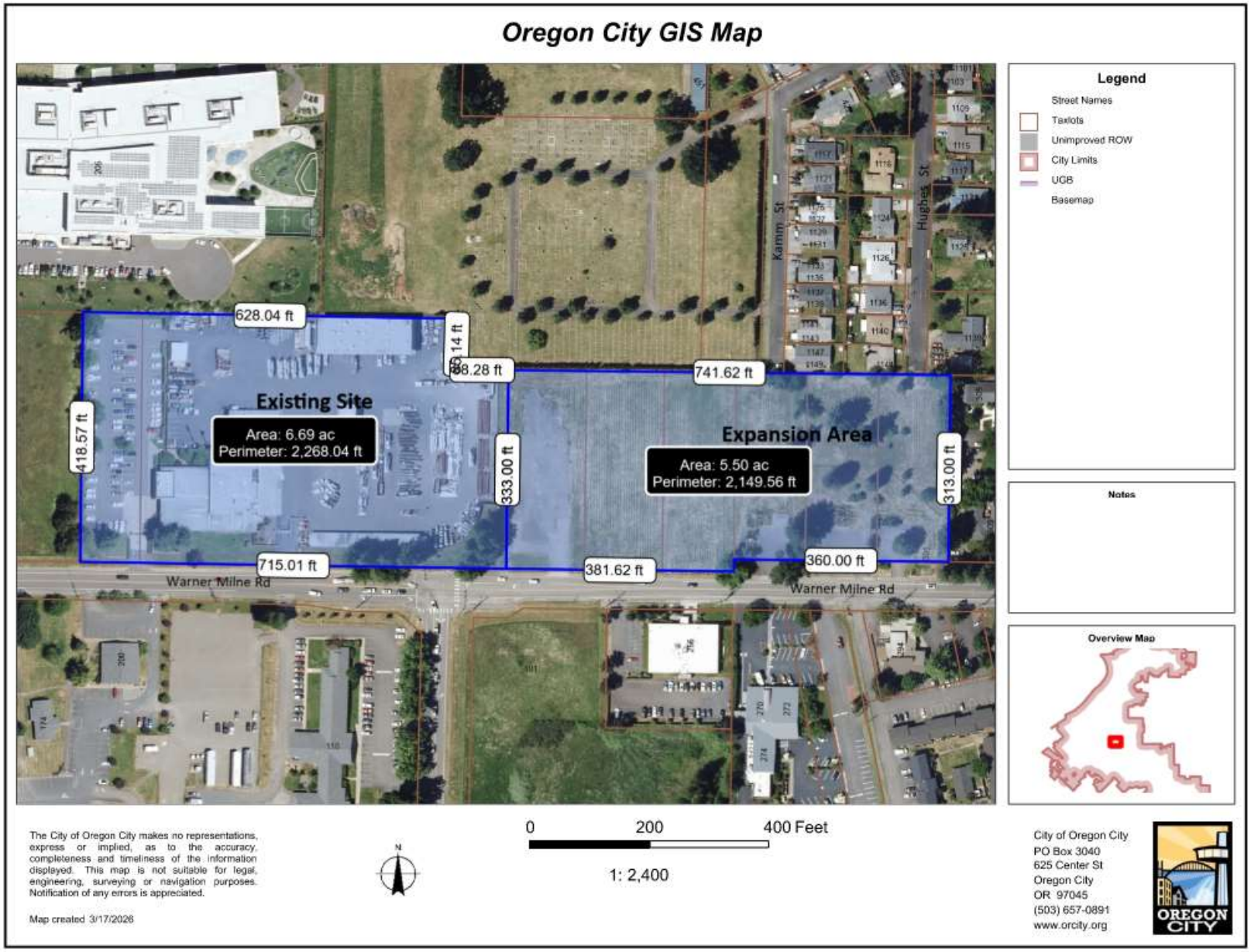
The area surrounding the site is likewise mostly developed. The site is bordered to the west by vacant land that is owned by First Evangelical Presbyterian Church. North of the site is Gardiner Middle School, St. John the Apostle Cemetery, and detached single-dwelling houses. East of the site are single-dwelling houses, and to the south is Warner Milne Road. Across Warner Milne Road from the PGE property is Clackamas County's Red Soils Campus, with a variety of government buildings on a large site. Immediately across from the PGE site is the OSU Extension Service and a County health clinic.

On a wider scale, the site is within the Elyville Neighborhood. Downtown Oregon City is approximately a mile and a half to the northwest, and Highway 213 is approximately a mile to the southeast. Nearby land uses include government/civic (Red Soils), education (middle school), cemetery, low-density residential, and commercial.

This area is well-connected to public transit. One TriMet stop is on the project's side of Warner Milne just west of the development area, and another is located on the southern side of the street near the intersection with Beavercreek Road. Two additional stops are located within a quarter- mile feet of the project site. These stops currently service TriMet's lines #32 and #33.

(End of applicant narrative describing existing conditions)

Figure 2: Existing Conditions – Aerial Image (2025)



2. Project Description

From application narrative:

Proposed Development

PGE is proposing to re-construct its Operations Center to modernize the building, increase storage and staging areas, and increase resiliency for regional response to major events. This facility serves as a center for staging and dispatch for line crews that repair electricity infrastructure around the area. The main building and storeroom on the south side of the site will be demolished and replaced with a new building. An existing garage at the north side of the property will be modified but retained. Parking for employee and fleet vehicles will be relocated to the east side of the property. Because of the sensitive nature of power infrastructure, the site will be fenced and gated at its entrances to maintain security.

Table 1. Buildings Proposed

Building	Size
Office and Storeroom	36,220
Covered Storage	8,026
Garage (existing, to remain)	8,230

New buildings under this proposal constitute 44,246 square feet, plus retention of the existing garage (8,230 s.f.) on the north side of the site. All other existing structures on the site will be demolished. The two new buildings proposed are along the Warner Milne Road frontage: an office and storeroom building and an accessory covered storage building. The main pedestrian entrance to the property at the southeast corner of the new main building, close to the street. Additionally, an open canopy structure for covered vehicle parking is at the center of the site. Three vehicular entrances are proposed along the 1,500 linear foot Warner Milne Road street frontage. This represents a significant reduction in curb cuts from the existing condition. The site is secured by a perimeter fence, or by the walls of the new buildings. The only inventoried natural resource area on the site is a small pocket of an intermittent stream at an open culvert passing under the road.

The site plan protects this area largely by leaving it alone. This NROD area was delineated and inventoried in previous city land use actions. The proposal includes new perimeter landscaping and pedestrian circulation around the site.
The western area of the site will contain a paved area for lay-down and storage of equipment, the existing garage, and new covered storage. A new communication tower is proposed in a corner of the site between the garage and the cemetery. The proposed new communications tower is 95 feet tall, with an additional 7-foot antenna. It replaces two existing towers that are now adjacent to the main building.

Figure 3. PGE Line Center work area

The central area of the site will be occupied by an open-sided vehicle canopy, a stormwater management facility, and the new Office/Storeroom building for Operations Center purposes which fronts on the public street. This new building will have offices, conference spaces, locker rooms for workers to change clothes, a fitness room, etc. for PGE employees. The west side of the building will be occupied by storage areas for materials that cannot be left outdoors elsewhere on site. The open vehicle canopy will shelter a variety of trucks and heavy equipment.

The eastern third of the site will include a 151-space parking area for employee and fleet vehicles, stormwater management facilities, and an entry driveway to the parking area. The driveway also serves as emergency vehicle access to the residential neighborhoods north of the site. A shared-use pathway for bicycles and pedestrians is proposed along the east edge of the PGE property, to connect Warner Milne Road to Hughes Street, Kamm Street, and neighborhoods to the north of the site. The need for PGE-owned fleet vehicles used by employees to travel throughout the region to support and maintain utility infrastructure is the reason for a large quantity of parking spaces.

As noted on the plans, vehicular access to the site is from Warner Milne Road at three locations, spaced far apart along the street frontage of the property. Nine existing access points on the street will be closed. The main vehicular access for staff and visitors will be at the east edge of the site, via a driveway that leads to the secured and gated parking area. Heavy trucks and service vehicles will enter and exit the site at a reconfigured and signalized intersection with Beavercreek Road, which is currently a “T” intersection at Warner Milne. Finally, a third, gated and secured entrance to the site will be located at the west edge of the property, in approximately the same location as an existing entry.

No new public streets cutting through the site are proposed. The main driveway access to the employee lot will double as an emergency through access from Warner Milne Road to neighborhoods north of the PGE property, along a Hughes Street alignment. Full access will be restricted by removable bollards. A shared-use pathway along the east side of the site will be a public access easement open to pedestrians and

cyclists. Connecting to Hughes Street and Kamm Street, it offers a new neighborhood connection between areas north of the PGE property and the existing pedestrian and bicycle network on Warner Milne.
The new PGE building and public utility facility will maintain existing connections to municipal utilities such as water, sanitary sewer, and stormwater drainage that already exists and serves the current site. Connections to the fully-developed city systems for utilities will be addressed as part of construction, but they are adequate to serve the proposed development.
Finally, PGE proposes to use the grassy, undeveloped area to the west of its current site for temporary parking of PGE employee vehicles and storage of materials and equipment during the construction period. This land is on immediately-abutting property owned by First Evangelical Presbyterian Church. Use of this vacant area will allow the existing PGE facility to continue operations during construction. The land will be restored to its previous condition after construction is complete, following an agreement with the church. PGE's understanding is that land was used for a similar purpose during the construction of Gardiner Middle School in 2021.

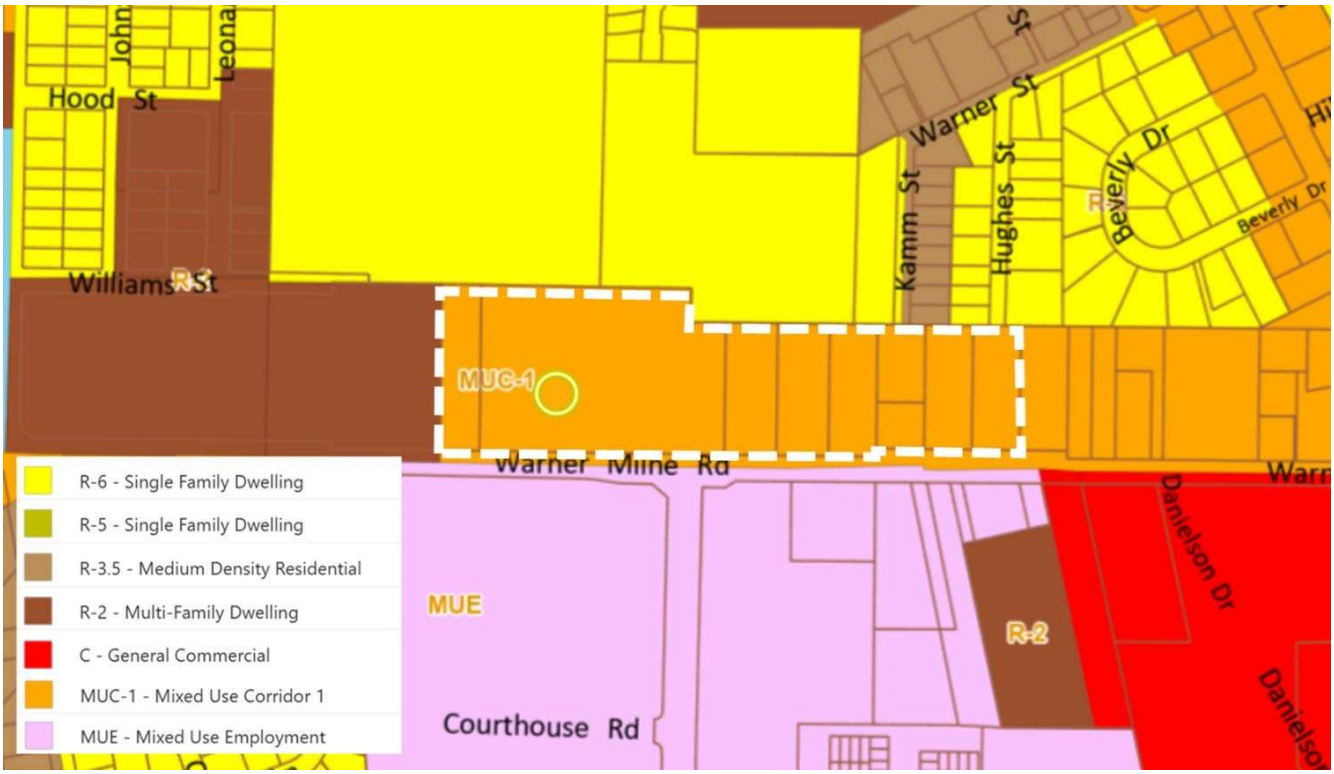


Figure 4. Oregon City zoning

As shown in **Figure 4,** the project site is located within the Mixed-Use Corridor 1 (MUC-1) zoning district. Development on the site must adhere to standards in the MUC-1 district, as outlined in Chapter 17.29 of the Oregon City Municipal Code (OCMC). The land north of Warner Milne Road is residential, while the land south of the road is designated for commercial and mixed-use employment. The Comprehensive Plan designates the site and the neighboring properties along the north side of Warner Milne Road as Mixed-Use Corridor.

The proposal requires several land use reviews, which may occur concurrently.

Conditional Use

PGE's existing facility and the proposed expansion are classified as a "utility facility" (OCMC 17.04.1450). Within the MUC-1 district, utility facilities are allowed through a conditional use review (17.29.030.E). That review is therefore the primary land use action needed for permitting the new development. Utility facilities may include "outdoor storage associated with the conditional use."

Site Plan and Design Review

Site plan and design review applies to all conditional uses (OCMC 17.62.030). These address site and building design, landscaping, parking, and waste/recycling areas. These include both general site design and specific standards for new buildings. The general standards required by 17.62.050 apply to landscaping, vehicle access and connectivity, on-site pedestrian circulation, public water and sanitary sewer facilities, building materials, and screening of mechanical equipment.

In addition to the general standards applicable to the site, the office portion of the new building is subject to "institutional, office, multi-family, retail, and commercial buildings" standards (17.62.060). Though a public utility operations center building does not fit neatly into any of these categories, Oregon City staff determined that these standards apply to the proposed office building, but not broadly to utilitarian storage structures like the garage or other accessory buildings.

The proposed development deviates from one code standard that requires a modification (17.62.015). While the main building is situated close to the property line, it does not occupy at least 60 percent of the site's very long frontage on Warner Milne Road. This modification will be addressed in Site Plan and Design review section.

Adjustments

Likewise, several standards are not met by the proposed design and require adjustments to be approved. The communications tower is ninety-five feet tall, twenty feet taller than is allowed outright by the code. As a critical safety element of a public utility facility, allowing collocation from "additional providers" is not permissible. Both of these things require adjustment (17.80.120). This adjustment is addressed in the Communication Facilities section.

The application requests an adjustment to exceed maximum parking. Because there is no directly applicable use category in the parking chapter, the closest land use category for the new utility building is "office," which when applied, results in a maximum parking allowance of fewer spaces than is needed to support the proposed use. PGE has direct experience at numerous other line centers that dictates its anticipated need for parking.

Therefore, a parking adjustment from the maximum is required, which is addressed in the Parking and Loading section (17.52.015).

The parking lot is also designed to accommodate the presence of some oversized fleet vehicles. These areas of paving need the flexibility for parking larger vehicles and so cannot be obstructed with interior parking lot landscaping islands. A parking adjustment is requested to landscaping in certain areas of the parking lot, which is addressed in the Parking and Loading section (17.52.015).

Natural Resources Overlay District (NROD)

At the south edge of the site, near an open culvert that passes under Warner Milne Road, the city has applied the NROD to a small area of PGE property. The mapping for this overlay comes from the environmental assessment done for a prior approved permit on the site, for the Kamm Street Apartments.

That analysis received concurrence from Oregon City and was approved by the City Commission. Though never acted upon, PGE has adopted the boundary of the NROD as determined by the city in that case. As shown on the site plans, PGE will construct its new facility around this NROD, curving the perimeter fence along the site frontage to avoid the vegetative buffer mapped on the site. In doing so, the design of this project will meet the exemption in OCMC 17.49.080(H): "where all new construction is located outside of the NROD boundary." Avoidance of the NROD area exempts PGE development.

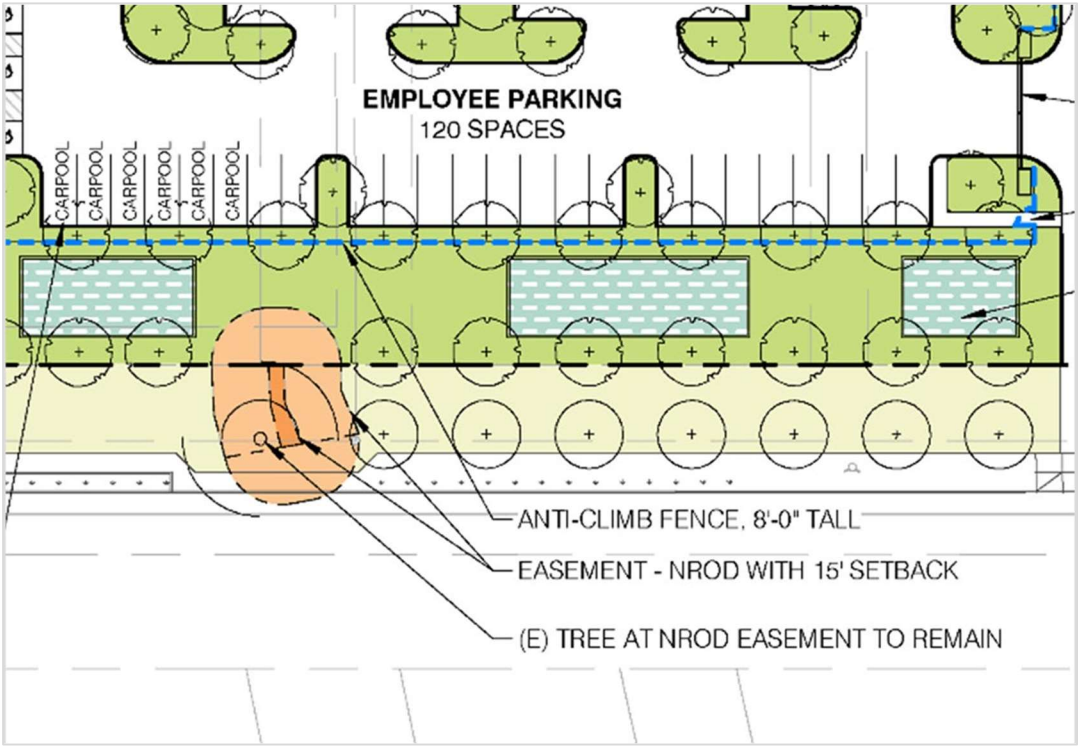


Figure 5. Site Plan, Showing NROD Area

South of PGE's property line, some land that is within the NROD vegetative buffer and in public right of way, including paved sidewalk and street that is on top of the culvert. PGE, in coordination

with Oregon City engineering staff, has narrowed the sidewalk at this location to keep the existing condition and minimize impacts to the resource. In that sense, replacement of the sidewalk at this location is exempt from NROD review because it is "replacement, addition, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased." (17.49.080.J) In short, PGE has avoided the NROD in the small area where it touches the site.

The findings in the following sections address all applicable and relevant OCMC standards. These include standards in the following chapters:

- OCMC 12.04 – Street Sidewalks and Public Spaces
- OCMC 13.12 - Stormwater Management
- OCMC 15.48 – Grading, Filling, and Excavating
- OCMC 16.12 – Minimum Public Improvements and Design Standards for Development
- OCMC 17.29 - MUC Mixed-Use Corridor District
- OCMC 17.41 - Tree Protection, Preservation, Removal And Replanting Standards
- OCMC 17.47 - Erosion And Sediment Control
- OCMC 17.49 - Natural Resource Overlay District
- OCMC 17.52 - Off-Street Parking And Loading
- OCMC 17.54 - Supplemental Zoning Regulations And Exceptions
- OCMC 17.56 - Conditional Uses
- OCMC 17.58 – Lawful Nonconforming Uses, Structures, And Lots
- OCMC 17.62 - Site Plan And Design Review
- OCMC 17.80 - Communication Facilities

Neighborhood Engagement

The development area is located within the Elyville Neighborhood Association. On September 9, 2025, PGE attended one of the neighborhood association meetings, where members of the project team presented plans for the Operations Center and answered questions. Neighbors expressed support for the proposal. PGE heard concerns about the design and the desire to preserve existing trees and to use native plantings wherever possible.

Meeting materials in compliance with OCMC 17.50.055 are included in Exhibit I.

(End of applicant narrative describing proposed development)

Figure 3: Proposed Site Plan – not to scale (please submittal for full plans)

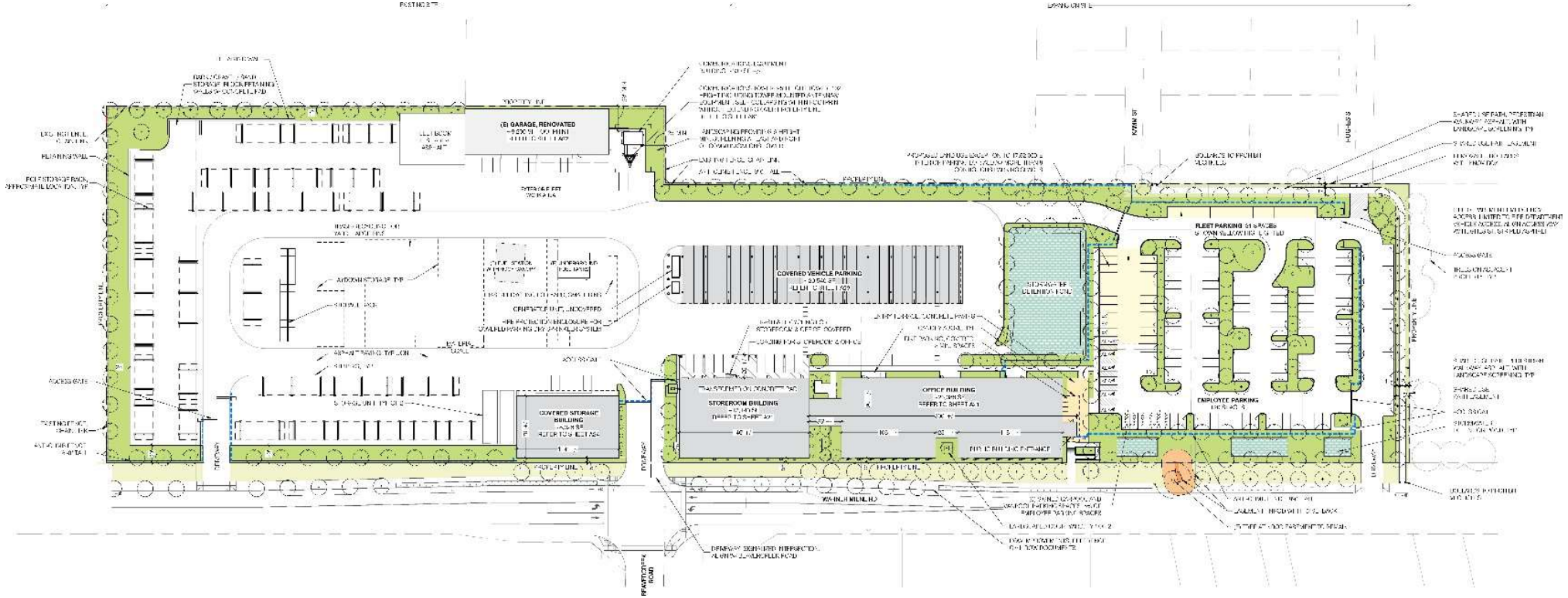


Figure 4a: Proposed Building Elevations - not to scale (please submittal for full plans)

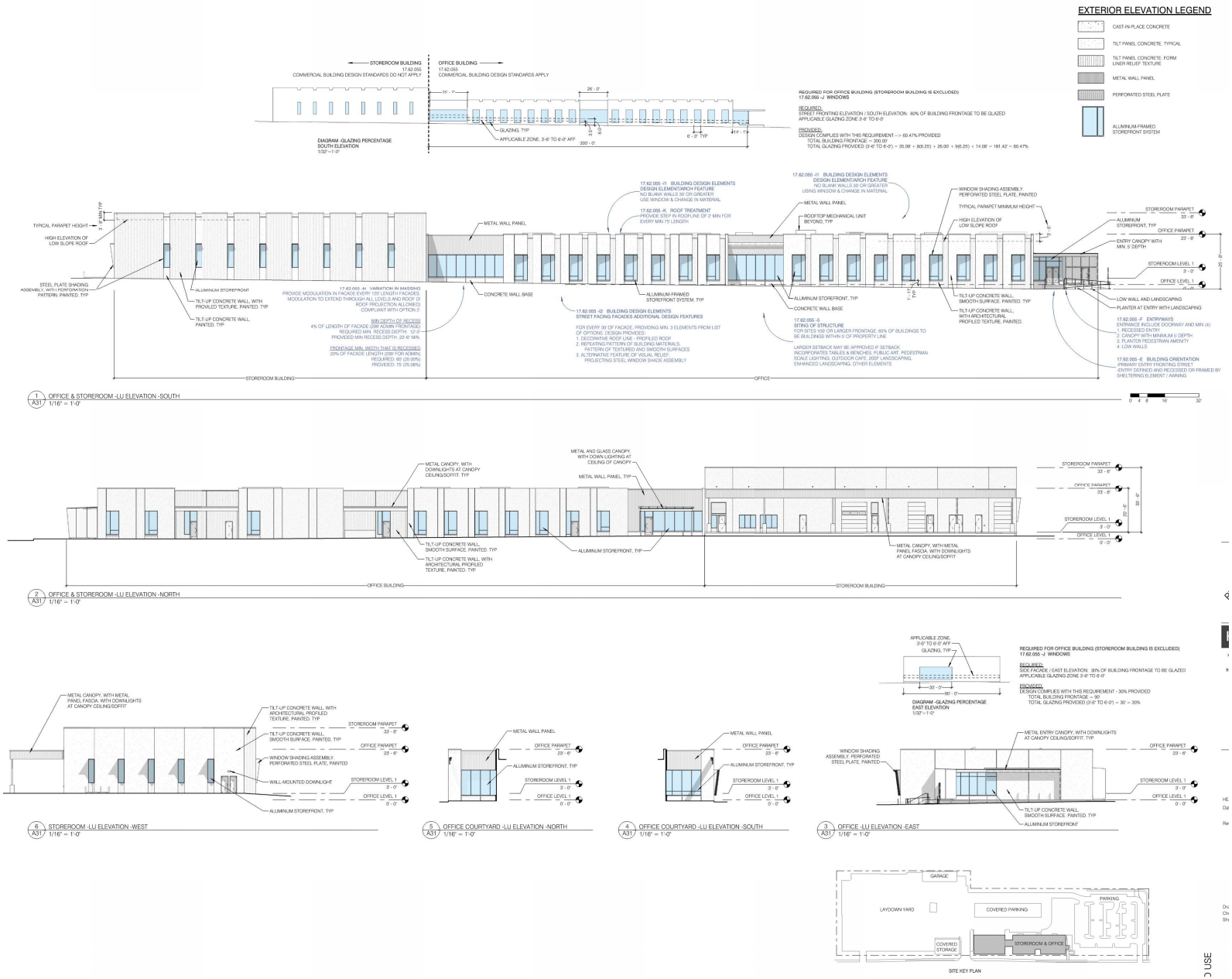


Figure 4b: Proposed Building Elevations - not to scale (please submittal for full plans)

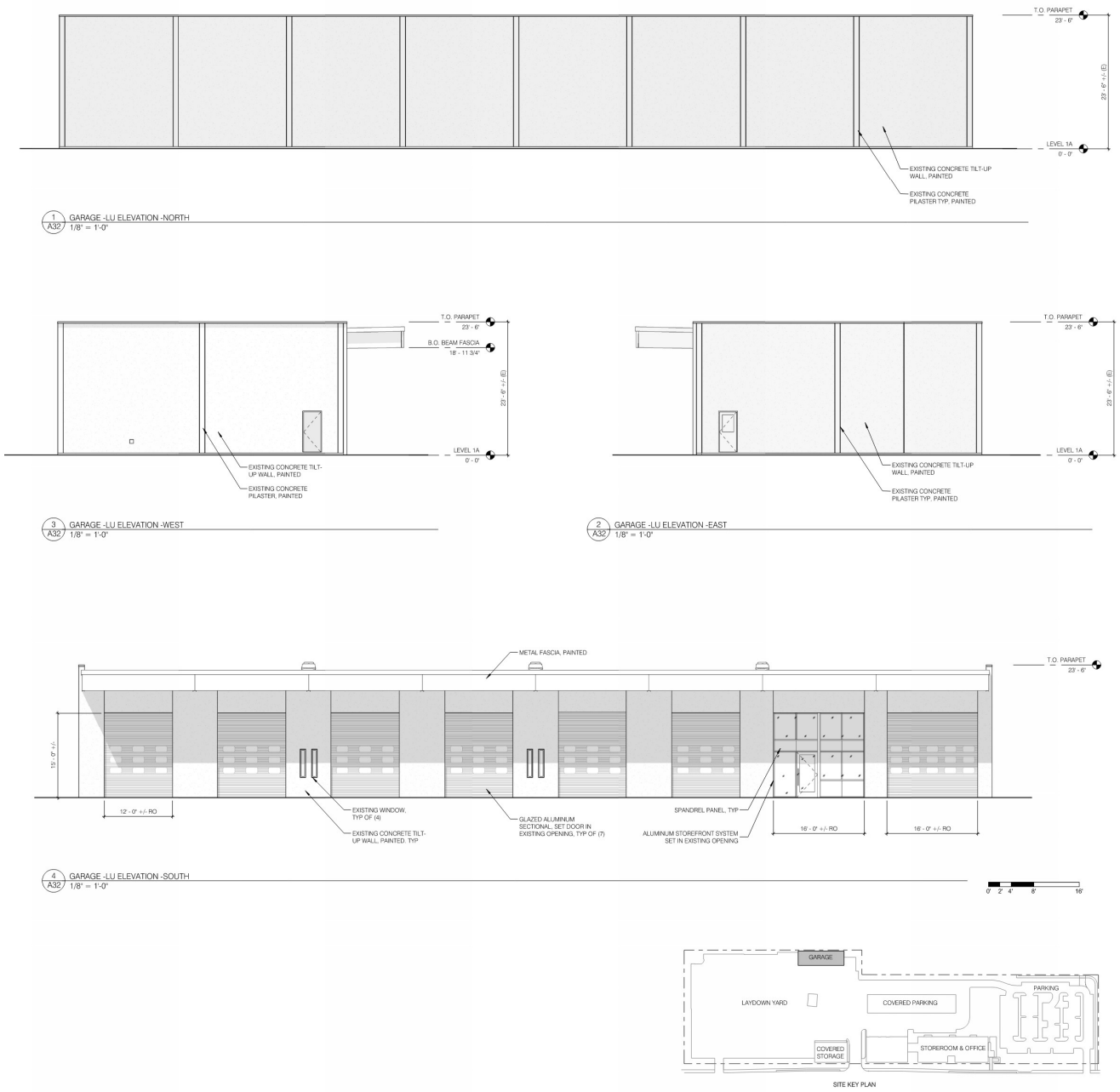
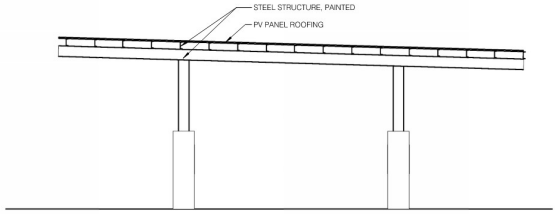
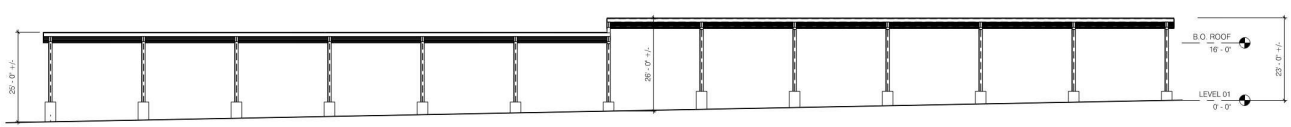


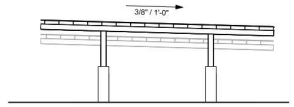
Figure 4c: Proposed Building Elevations - not to scale (please submittal for full plans)



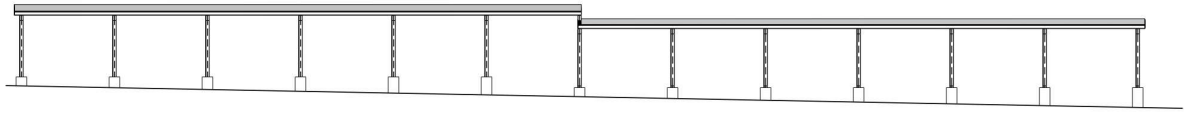
5 A33 COVERED PARKING -SECTION
1/8" = 1'-0"



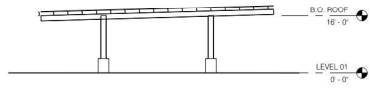
2 A33 COVERED PARKING -NORTH ELEVATION
1/16" = 1'-0"



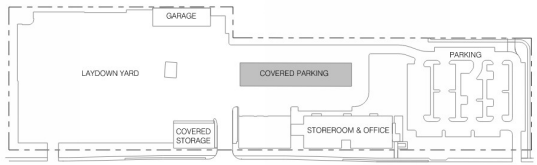
4 A33 COVERED PARKING -WEST ELEVATION
1/16" = 1'-0"



3 A33 COVERED PARKING -SOUTH ELEVATION
1/16" = 1'-0"

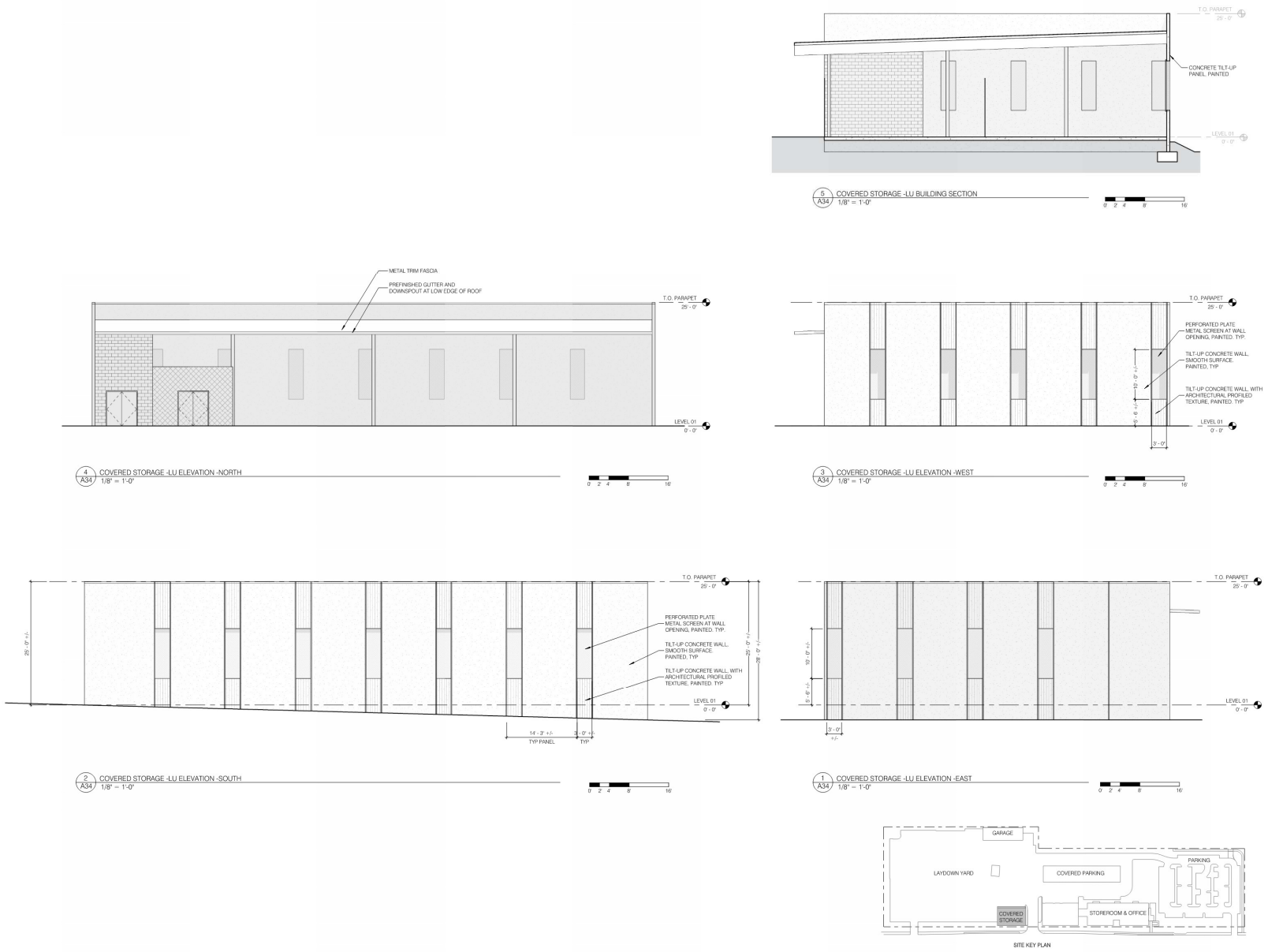


1 A33 COVERED PARKING -EAST ELEVATION
1/16" = 1'-0"



SITE KEY PLAN

Figure 4d: Proposed Building Elevations - not to scale (please submittal for full plans)



3. **Permits and Approvals:** The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

4. **Public Comment**

Public comments submitted include (Exhibit 3):

ENTER

None of the comments provided indicate that an approval criterion has not been met or cannot be met through the Conditions of Approval attached to this Staff Report.

II. ANALYSIS AND FINDINGS:

Municipal Code Standards and Requirements: The following sections of the Oregon City Municipal Code are applicable to this land use approval:

CHAPTER 12.04 – STREETS SIDEWALKS AND PUBLIC SPACES

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the City are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.

C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.

Finding: applicable. The City of Oregon City has jurisdiction over Warner Milne Road.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

Finding: applicable. See 16.12.035 for more information.

12.04.030 - Maintenance and repair.

The owner of land abutting the street where a sidewalk has been constructed shall be responsible for maintaining said sidewalk and abutting curb, if any, in good repair.

Finding: applicable. The applicant acknowledges this requirement and will repair all sidewalks in disrepair along their frontages.

12.04.031 - Liability for sidewalk injuries.

A. The owner or occupant of real property responsible for maintaining the adjacent sidewalk shall be liable to any person injured because of negligence of such owner or occupant in failing to maintain the sidewalk in good condition.

B. If the City is required to pay damages for an injury to persons or property caused by the failure of an owner or occupant to perform the duty that this chapter imposes, the owner or occupant shall compensate the City for the amount of the damages paid. The City may maintain an action in a court of competent jurisdiction to enforce this section.

Finding: applicable. This is the standard across the entire City.

12.04.032 - Required sidewalk repair.

A. When the public works director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk.

B. The notice shall require the owner of the property adjacent to the defective sidewalk to complete the repair of the sidewalk within ninety days after the service of notice. The notice shall also state that if the repair is not made by the owner, the City may do the work and the cost of the work shall be assessed against the property adjacent to the sidewalk.

1. All sidewalks hereafter constructed in the City on improved streets shall be constructed to city standards and widths required in the Oregon City Transportation System Plan and OCMC 16.12. Sidewalks and curbs are to be constructed according to plans and specifications approved by the City Engineer.

2. Sidewalks constructed on unimproved streets shall be constructed of concrete according to lines and grades approved by the City Engineer. On unimproved streets, curbs do not have to be constructed.

C. The public works director shall cause a copy of the notice to be served personally upon the owner of the property adjacent to the defective sidewalk, or the notice may be served by registered or certified mail, return receipt requested. If after diligent search the owner is not discovered, the public works director shall cause a copy of the notice to be posted in a conspicuous place on the property, and such posting shall have the same effect as service of notice by mail or by personal service upon the owner of the property.

D. The person serving the notice shall file with the City Recorder a statement stating the time, place and manner of service or notice.

Finding: applicable. The applicant acknowledges this requirement and will repair all sidewalks in disrepair along their frontages.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

Finding: not applicable. No retaining walls exist or are proposed on this project adjacent to the public sidewalk.

12.04.100 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the City Engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: complies with condition. Pavement cuts are proposed within a public street due to proposed utility service installations and required frontage improvements. Pavement cuts or other improvements made in a City street shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards**. See conditions of approval.**

12.04.120 - Obstructions—Permit required.

A. Permanent Obstructions. It is unlawful for any person to place, put or maintain any obstruction, other than a temporary obstruction, as defined in subsection B of this section, in any public street or alley in the City, without obtaining approval for a right-of-way permit from the City Commission by passage of a resolution.

1. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.

2. The applicant shall submit at least the following information in the permitting process in order to allow the City Commission to adequately consider whether to allow the placement of an obstruction and whether any conditions may be attached:

a. Site plan showing right-of-way, utilities, driveways as directed by staff;

b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;

c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);

d. Alternative routes if necessary;

e. Minimizing obstruction area; and

f. Hold harmless/maintenance agreement.

3. If the City Commission adopts a resolution allowing the placement of a permanent obstruction in the right-of-way, the City Engineer shall issue a right-of-way permit with any conditions deemed necessary by the City Commission.

4. Signage that acts as an obstruction is approved through OCMC 15.28.

B. Temporary Obstructions.

1. A "temporary obstruction" is defined as an object placed in a public street, sidewalk, road, or alley which is not permanently anchored to another surface such as the pavement, sidewalk, or a building. A "temporary obstruction" includes, but is not limited to, moving containers, debris dumpsters, and seating.

a. Planters and benches are exempt from permitting unless the City Engineer finds by inspection that the planter or bench is impeding use of the right-of-way. If deemed an impeding use, a planter or bench will comply with the requirements for temporary obstructions.

2. The City Engineer, or designee, is authorized to grant a permit for a temporary obstruction.

3. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.

4. The applicant shall submit, and the City Engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the City Engineer:

a. Site plan showing right-of-way, utilities, driveways as directed by staff;

b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;

c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);

d. Handicap accessible route complying with Americans with Disability Act (ADA) standards;

e. Alternative routes if necessary;

f. Minimizing obstruction area; and

g. Hold harmless/maintenance agreement.

5. In determining whether to issue a right-of-way permit to allow a temporary obstruction, the City Engineer may issue such a permit only after finding that the following criteria have been satisfied:
a. The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;
b. The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;
c. No alternative locations are available that would not require use of the public right-of-way; and
d. Any other factor that the City Engineer deems relevant.
6. The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.
7. Types
a. A short-term temporary obstruction is allowed for a period of not more than sixty consecutive calendar days. It is permitted with a temporary obstruction in the right-of-way permit.
b. A long-term temporary obstruction is allowed for a period of not more than one year, and it is permitted with a renewable right-of-way permit.
8. Signage that acts as an obstruction is approved through OCMC 15.28
C. Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the City Commission.

Finding: not applicable. No obstructions are proposed within the right of way. If during the course of technical design review an obstruction is identified, this code is applicable.

12.04.150 - Street and alley vacations—Cost.
At the time of filing a petition for vacation of a street, alley, or any part thereof, a fee as established by City Commission resolution shall be paid to the City. The City Commission, upon hearing such petition, may grant the same in whole or in part, or may deny the same in whole or in part, or may grant the same with such reservations as would appear to be for the public interest, including reservations pertaining to the maintenance and use of underground public utilities in the portion vacated.

Finding: not applicable. No vacations are proposed as part of this application.

12.04.170 - Street design—Purpose and general provisions.
All development shall be in conformance with the City's public facility master plans, public works policies, standard drawings, and engineering specifications. All streets shall be reviewed and approved by the City Engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: complies with condition. See findings from chapter 16.12 of this report.

12.04.270 - Standard construction specifications.
The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. The exception to this requirement is where this chapter and the public works street standard drawings provide other design details, in which case the requirements of this chapter and the public works street standard drawings shall control. In the case of work within ODOT or Clackamas County rights-of-way, work shall be in conformance with their respective construction standards.

Finding: complies with condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of

Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City. See conditions of approval.

CHAPTER 13.12 – STORMWATER MANAGEMENT

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.
A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:
1. The conveyance facilities are located entirely on one privately owned parcel;
2. The conveyance facilities are privately maintained; and
3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.
Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the building official.

Finding: applicable. Connection to a public stormwater conveyance system is required to serve this development.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:
1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or
2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.

Finding: applicable. The proposed development will create or replace more than 5000 square feet of impervious area.

C. Exemptions. The following exemptions to subsection B of this section apply:
1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met:
a. The project site is drained by a conveyance system that is comprised entirely of man-made elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and
b. The conveyance system between the project site and the exempt receiving water has sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.
2. Projects in the following categories are generally exempt from the water quality and flow control requirements:
a. Stream enhancement or restoration projects approved by the city.
b. Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.
c. Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.
d. Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the preservation/maintenance

activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.
e. Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.
f. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.
g. Maintenance or repair of existing utilities.

Finding: not applicable. The proposed development does not meet the criteria for exemption to the flow control requirements of this chapter.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the public works stormwater and grading design standards:
1. Bulk petroleum storage facilities;
2. Above ground storage of liquid materials;
3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;
4. Exterior storage of bulk construction materials;
5. Material transfer areas and loading docks;
6. Equipment and/or vehicle washing facilities;
7. Development on land with suspected or known contamination;
8. Covered vehicle parking for commercial or industrial uses;
9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and
10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.

Finding: complies with condition. The proposed development includes vehicle and equipment storage consistent with uses noted above. The development shall address any additional stormwater management requirements for the vehicle and storage area (and associated uses) per the City's Stormwater and Grading Design Standards**. See conditions of approval.**

13.12.080 - Submittal requirements.
A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the public works stormwater and grading design standards.
B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid City approved plan and report before proceeding with construction.

Finding: complies with condition. See findings from section 13.12.090 of this report.

13.12.090 - Approval criteria for engineered drainage plans and drainage report.
An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:
A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.
B. The plan and report meet the requirements of the public works stormwater and grading design standards adopted by resolution under OCMC 13.12.020.
C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.
D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.
E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.

Finding: complies with condition. The developer shall provide finalized engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer addressing all items from Section 9.3 & 9.4 of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction**. See conditions of approval.**

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the public works stormwater and grading design standards, provided any alternate has been approved and its use authorized by the City Engineer. The City Engineer may approve any such alternate, provided that the City Engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The City Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the City files.

Finding: not applicable. The applicant has not proposed alternative design methods requiring special approval by the City Engineer. However, should the applicant propose such methods with the public facilities construction plan submittal, the proposal will be reviewed and approved by the City Engineer as required.

13.12.110 - Transfer of engineering responsibility.

Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the City shall be notified in writing and the work shall be stopped until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the City within seventy-two hours of accepting the position as project engineer.

Finding: See section 16.12.014 regarding requirement to execute a "Developer/Engineer Agreement for Public Works Improvements".

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.

Finding: complies with condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city**. See conditions of approval.**

13.12.140 - Maintenance of public stormwater facilities.

A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the City through the granting of a stormwater easement or other means acceptable to the City.

Finding: not applicable. No public facilities are proposed.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the City a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the City accepts the stormwater conveyance system.

Finding: not applicable. No public facilities are proposed.

13.12.145 - Maintenance of private stormwater facilities.

A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the Public Works Stormwater and Grading Design Standards. The information in the operation and maintenance plan shall satisfy the requirements of the Public Works Stormwater and Grading Design Standards.
B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to City inspection staff upon request.
C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.

Finding: complies with condition. The property owner(s) shall execute an agreement providing maintenance of, and giving Oregon City access to, privately-owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The agreement shall be reviewed and accepted by the City prior to occupancy**. See conditions of approval.**

13.12.170 - Permits from other jurisdictions.

A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DEQ representatives.

Finding: complies with condition. The development exceeds 1.0 acre in disturbed area. The developer shall obtain a 1200-C (NPDES) permit from Oregon Department of Environmental Quality (DEQ) for construction activities one acre or greater prior to receiving a permit and beginning construction. **See conditions of approval.**

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the City or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DSL/USACE representatives.

Finding: not applicable. A permit from DSL or USACOE is not required of this project.

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate ODFW representatives.

Finding: not applicable. A permit from ODFW is not required of this project.

CHAPTER 15.48 – GRADING, FILLING AND EXCAVATING

15.48.030 Applicability—Grading permit required.

A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:
1. Grading activities in excess of ten cubic yards of earth;
2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;
3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;
4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or
5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.
B. Those fill and grading activities proposed to be undertaken in conjunction with a land use application, including but not limited to subdivisions, planned unit developments, partitions and site plan reviews, are subject to the standards of this chapter. However, a separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

Finding: applicable. Fill and grading activities are proposed to be undertaken in conjunction with a land use application. A separate grading permit is not required. Construction plans are required to be submitted after the land use application has been processed and associated construction permit issued shall constitute the grading permit required under this chapter.

15.48.040 - Grading permit exemptions.

The following filling and grading activities shall not require the issuance of a grading permit:
A. Excavation for utilities, or for wells or tunnels allowed under separate permit by other governmental agencies;
B. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. The placement of any fill material removed from such an excavation requires a grading permit if:
1. It exceeds fifty cubic yards,
2. More than ten cubic yards are removed from the site, or
3. The fill is placed on the site to a depth greater than one foot;
C. Farming practices as defined in ORS 30.930 and farm uses as defined in ORS 215.203, except that buildings associated with farm practices and farm uses are subject to the requirements of this chapter;
D. Excavation for cemetery graves;
E. Sandbagging, diking, ditching, filling or similar work when done to protect life or property during an emergency;
F. Repaving of existing paved surfaces that does not alter existing drainage patterns;
G. Maintenance work on public roads performed under the direction of the city, Clackamas County or Oregon State Department of Transportation personnel.

Finding: not applicable. The application does not qualify for an exemption.

15.48.090 Submittal requirements.

An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.

A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:
1. No portion of the proposed site is within the flood management area overlay district pursuant to Chapter 17.42, the unstable soils and hillside constraints overlay district pursuant to Chapter 17.44, or a water quality resource area pursuant to Chapter 17.49; and
2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.
B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.
C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:
1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;
2. When an embankment for a stormwater pond is created by the placement of fill;
3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.
D. Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.

Finding: complies with conditions. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards. **See conditions of approval.**

CHAPTER 12.08 – PUBLIC AND STREET TREES

12.08.015 - Street tree selection, planting and maintenance requirements.
All development shall provide street trees adjacent to all street frontages. Species and locations of trees shall be selected based upon vision clearance requirements but shall in all cases be selected from the Oregon City Street Tree List, an approved street tree list for a jurisdiction in the Metropolitan region or be approved by a certified arborist unless otherwise approved pursuant to this section. If a setback sidewalk has already been constructed or the public works department determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip or within tree-wells. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed according to OCMC 12.08.035.C.
A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage to meet the clearance distances required in subsection B below. The Community Development Director may approve an alternative street tree plan or accept fee-in-lieu of planting pursuant to OCMC 12.08.035, if site or other constraints prevent meeting the required total number of tree plantings.
B. The following clearance distances shall be maintained when planting trees:
1. Fifteen feet from street lights;
2. Five feet from fire hydrants;
3. Twenty feet from intersections;
4. Five feet from all public utilities (i.e. sewer, storm and water lines, utility meters, etc.).
C. All street trees planted in conjunction with development shall be a minimum of two inches in caliper at six inches above the root crown and installed to City specifications. Larger caliper size trees may be approved if recommended by a certified arborist or registered landscape architect.
D. All established trees shall be pruned tight to the trunk to a height that provides adequate clearance for street cleaning equipment and ensures ADA complaint clearance for pedestrians.

E. All trees planted within the right-of-way shall be planted with root barriers at least eighteen inches in depth adjacent to the sidewalk and curb to ensure proper root growth and reduce potential damage to sidewalks, curbs and gutters.
F. All trees planted beneath powerlines shall be selected based on what is appropriate for the location. In addition, the tree species shall be approved by the associated franchise powerline utility company.
G. Tree species, spacing and selection for stormwater facilities in the public right-of-way and in storm water facilities shall conform to requirements of OCMC 13.12 and the adopted stormwater and grading design standards and be approved by the City engineer.
H. Any public or street trees planted within the natural resource overlay district shall conform to the applicable requirements of OCMC 17.49, Natural Resources Overlay District (NROD).

Finding: complies with condition. The proposal includes installation of street trees along approximately 1,461 feet of frontage, requiring 42 street trees (1461/35= 41.7 rounded to 42). The location of the street trees are subject to change with the placement of street lights, utility meters, etc. Prior to issuance of construction plans of the right-of-way improvements, the applicant shall submit a street tree plan which includes as many of the 42 street trees that can be planted based on spacing requirements. Street trees shall be evenly distributed throughout the total development frontage to the extent permitted in accordance with OCMC 12.08 or the City may accept fee-in-lieu of planting pursuant to OCMC 12.08 if site or other constraints prevent meeting the required total number of tree plantings. Tree plantings within the NROD shall conform to OCMC 17.49**. See conditions of approval.**

12.08.035 - Tree removal and replacement.

Existing street trees, trees in the right-of-way, and trees on public property shall be retained and protected during development unless removal is specified as part of a land use approval or in conjunction with a public capital improvement project, in accordance with OCMC 17.41. Tree removal shall be mitigated by the following:
A. A dead, diseased, or hazardous street tree, as determined by a registered arborist and approved by the City Manager or designee, may be removed if replaced with one (1) new tree for each dead, diseased or hazardous tree that is removed.
1. Hazardous trees which have raised the adjacent sidewalk in a manner which does not comply with the Americans with Disabilities Act may be removed and replaced without a report from a Certified arborist, as defined in OCMC 17.04.082.
2. All replacement trees under this section shall have a minimum one and one half (1.5) inch caliper trunk measured six (6) inches about the root crown.
B. Removed trees that were not determined to be dead, diseased, or hazardous shall be replaced in accordance with Table 12.08.035. All replaced street trees shall have a minimum one and one-half-inch (1.5 inch) caliper trunk measured six (6) inches above the root crown.

Table 12.08.035

Replacement Schedule for Trees Determined to be Dead, Diseased or Hazardous by a Certified Arborist		*Replacement Schedule for Trees Not Determined to be Dead, Diseased or Hazardous by a Certified Arborist*	
Diameter of tree to be Removed (Inches of diameter at 4-ft. height)	*Number of Replacement Trees to be Planted*	*Diameter of tree to be Removed (Inches of diameter at 4-ft. height)*	*Number of Replacement Trees to be Planted*
Any Diameter	*1 Tree*	*Less than 6"*	*1 Tree*

Replacement Schedule for Trees Determined to be Dead, Diseased or Hazardous by a Certified Arborist		*Replacement Schedule for Trees Not Determined to be Dead, Diseased or Hazardous by a Certified Arborist*	
Diameter of tree to be Removed (Inches of diameter at 4-ft. height)	*Number of Replacement Trees to be Planted*	*Diameter of tree to be Removed (Inches of diameter at 4-ft. height)*	*Number of Replacement Trees to be Planted*
		6" to 12"	*2 Trees*
		13" to 18"	*3 Trees*
		19" to 24"	*4 Trees*
		25" to 30"	*5 Trees*
		31" and over	*8 Trees*

C. Removed trees shall be replaced by approved species:
1. Within the right-of-way abutting the same frontage; and
2. Subject to the requirements under OCMC 12.08.015.
D. If an applicant can demonstrate to the satisfaction of the City Manager or designee that a sufficient location to replant tree(s) according to section C is not available, the City Manager or designee may allow:
1. Installation of replacement tree(s) in one of the following alternative locations
a. Within the right-of-way abutting another property, with abutting property owner approval, or
b. On public property, with City Manager or designee approval, or
c. Within 10 feet of the right of way in the abutting private yard; or
2. As a last resort, a fee in lieu of replacing the tree(s), subject to the following:
a. The applicant must demonstrate to the satisfaction of the City Manager or designee that none of the alternative replanting option in section D.1 is sufficient for replanting.
b. Is to be placed into a City fund dedicated to obtaining trees, planting trees and/or tree education in Oregon City.
E. Exceptions:
1. Trees that are listed as invasive non-native, nuisance, prohibited, or noxious vegetation species, as defined in OCMC 17.04.605, may be removed without replacement or fee in lieu of replacement.
2. Trees in planter strips three (3) feet or less in width may be removed without replacement or fee in lieu of replacement.

Finding: complies as proposed. Any existing street tree removal shall be reviewed in accordance with OCMC 17.41. **See findings under OCMC 17.41.**

CHAPTER 16.12 – MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT

16.12.008 Definitions.

Whenever the words or terms and their derivatives are used in this chapter, they shall have the meaning herein ascribed to them as described in OCMC 17.04 unless the context dictates application of a different meaning.

16.12.010 - Purpose and general provisions.

The purpose of this chapter is to identify the standards for development in and adjacent to spaces which benefit the public including right-of-way, access to the right-of-way, public off-street pedestrian and bicycle accessways, and easements. All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and city design standards and specifications. In reviewing applications for development, the City Engineer shall take into consideration any approved development and the remaining development potential of adjacent properties. All street, water, sanitary sewer, storm drainage and utility plans associated with any development shall be reviewed and approved by the City Engineer prior to construction. All streets, driveways or storm drainage connections to another jurisdiction's facility or right-of-way shall be reviewed by the appropriate jurisdiction as a condition of the preliminary plat and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: complies with condition. Compliance with the "purpose and general provisions" of chapter 16.12 can be met by adhering to the following: The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction. **See conditions of approval.**

16.12.011 - Applicability.

A. Compliance with this chapter is required for all development including land divisions, site plan and design review, master plan, detailed development plan and conditional use applications and all public improvements that are required in conjunction with a land use decision.

B. Compliance with this chapter is also required for new construction or additions which exceed fifty percent of the existing square footage of all single-family detached residential and middle housing units' living space. Garages, carports, sheds, and porches may not be included in the calculation if these spaces are not living spaces. Accessory dwelling units are not subject to compliance with this chapter. All single-family detached residential and middle housing units shall provide any necessary dedications, easements or agreements as identified in the transportation system plan and this chapter, subject to constitutional limitations. In addition, the street frontage shall be improved to include the following priorities for improvements:

1. Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and

2. Plant street trees.

The cost of compliance with the standards identified in subsections 16.12.011.B.1 and 16.12.011.B.2 is calculated based on the square footage valuation from the state of Oregon Building Codes Division and limited to ten percent of the total construction costs. The value of the alterations and improvements is based on the total construction costs for a complete project rather than costs of various project component parts subject to individual building permits. The entire proposed construction project cost includes engineering and consulting fees and construction costs. It does not include permit fees, recording fees, or any work associated with drafting or recording dedications or easements.

C. Exemptions. The following are exempt from review by this chapter unless public improvements, driveways, PUEs, or other items regulated by this chapter are proposed:

1. Minor Site Plan and Design Review applications.

2. Work within the right-of-way.

3. Lot Line Adjustments and Abandonments.

4. Public capital improvement projects.

Finding: applicable. The application is a Site Plan and Design Review; therefore, the development shall follow the standards set forth in OCMC 16.12.

16.12.012 - Jurisdiction and management of the public rights-of-way.

The City has jurisdiction and exercises regulatory management over all public rights-of-way as defined and outlined within 12.04 of the Oregon City Municipal Code.

Finding: applicable. The City has jurisdiction over Warner Milne Road, Beavercreek Road, Kamm Street, and Hughes Street. The City has exercised its regulatory management authority by providing findings within this staff report with conditions to be met by the applicant prior to working within all public rights-of-way.

16.12.013 - Modifications.

The applicant may request and the review body may consider modification of the standards in this chapter resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications, except for adjustments approved by the City Engineer for tree preservation purposes pursuant to Section 16.12.013.A, shall be processed through a Type II land use application and may require additional evidence from a transportation engineer or others to verify compliance. Compliance with the following criteria is required:

A. Compliance with the following criteria is required:

1. The modification meets the intent of the standard;

Finding: complies as proposed. The applicant has requested a modification to the City Block standard and to the standard cross section for a minor arterial road. The applicant has noted that the intent of the block length standard is to provide vehicular or pedestrian/bicycle connectivity. The applicant has provided access through their site on the eastern portion of the property where Hughes Street abuts their property. The applicant has provided a shared use path through the proposed parking lot connecting Hughes Street with Warner Milne. The applicant has also provided an emergency vehicle connection to Hughes Street. The applicant has also extended the proposed shared use path to provide pedestrian and bicycle access to Kamm Street.

The applicant is providing access through their site but requests a modification on the spacing standards. The proposed property is used as a regional yard space for PGE equipment and vehicles. By spacing the access through the property per the typical standard lengths, pedestrian and bicycle access would be placed within the yard where PGE equipment and vehicles are stored, loaded and unloaded as part of their operations. The applicant also notes that directly behind the yard is the Cemetery owned by the Archdiocese of Portland. No roadway or future development of that property is expected to occur. By providing the access through the property to the east, the applicant provides connectivity to both Kamm Street and Hughes Street without placing a pedestrian and bicycle path within a high traffic area to a property that will likely not redevelop in the future. The City takes no exception to this approach.

The second modification request is to reduce the public improvement dimensions along Warner Milne Road. Warner Milne is an existing minor arterial road that currently does not match the standard dimensions noted in Table 16.12.016 below and is adjacent to properties which are mostly fully developed. The applicant has provided the table below showing the dimensions of the standard cross section (for the full roadway) plus the existing and proposed (for their required portion of the road):

The proposed street section noted above, meets the intent of the code by providing safe travel for vehicles, pedestrians with expanded sidewalks, bicyclists with a bicycle lane, as well as meet the standards for street trees and stormwater management. The reduced cross section is also consistent with the rest of Warner Milne (existing and future) as the existing roadway will not be expanded to the standard cross section due to limitations in spacing along its entire corridor. The applicant's TIA and the City's transportation consultant also supports this reduced cross section.

2. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;

Finding: complies as proposed. The proposed modification requests provide safe pedestrian movements. The proposed block length modification shifts pedestrian and bicycle access to the

east where connectivity to Hughes Street and Kamm Street is provided instead of the cemetery located behind the property. Expanded sidewalks and a bike lane is proposed along Warner Milne that is consistent with the standard cross section. The development proposes emergency vehicle access provided to Hughes Street for additional connectivity.

3. The modification is consistent with an adopted transportation or utility plan;
Finding: complies as proposed. The modification is consistent with TSP project S41 which will eventually connect Warner Milne with Laurel Lane and Warner Street.

4. The modification is complementary with a surrounding street design; or, in the alternative;
Finding: complies as proposed. As noted above Warner Milne does not meet the standard dimensions for a minor arterial road. Based on the surrounding existing development and potential future development, it is highly unlikely that it will ever have the standard cross section noted in 16.12.016. The proposed modification expands the cross section of the street to provide safe vehicle, pedestrian, and bicycle access and is consistent with existing and future buildout of the street.

5. If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.
Finding: not applicable. No modification has been requested.

B. The following modifications shall be processed as a Type I modification by the City Engineer using the criteria in 16.12.13.A.
1. Modifications to driveway location, size, and sharing standards in 16.12.035;
2. Modifications to sidewalk and planter strips widths and location in 16.12.016 that preserve existing street trees or trees on private property to ensure compliance with ADA standards.
Finding: complies with condition. The proposed driveways do not meet the driveway spacing standard of 16.12.035 of 175 ft spacing along an arterial. The proposed spacing is supported by City staff. The applicant shall apply for a Type I Modification for the driveway spacing standards**.**
See conditions of approval.

16.12.014 - Administrative provisions.
An applicant shall submit the following items to the City and complete the following tasks prior to proceeding with construction of proposed development plans. These items include the following:
Pre-Design Meeting;
Final Engineering Plans, Stamped and Signed by an Oregon Licensed Professional Engineer;
Stormwater Report, Stamped and Signed by an Oregon Licensed Professional Engineer;
D. Geotechnical Report, Stamped and Signed by an Oregon Licensed Professional Engineer (if applicable);
E. Engineer's Preliminary and Final Cost Estimates (also may be known as engineer's opinion of probable construction cost);
F. Plan Check and Inspection Fees (as set by City resolution);
G. Certificate of Liability Insurance for City funded public projects contracted by the City (not less than one million dollars single incident and two million dollars aggregate);
H. Preconstruction Meeting;
I. Financial Guarantee(s) per OCMC 17.50.140;
J. Applicable Approvals/Permits from other agencies or entities;
K. Developer/Engineer Agreement for public works improvements.

An applicant shall submit the following additional items to the City and complete the following tasks prior to completing construction of proposed development plans. These items include the following:
L. Project Engineer's Certificate of Completion;
M. Stormwater Operation and Maintenance Easement (if applicable);
N. Deed of Dedication (Bargain and Sale Deed);
O. Recorded Plat and/or Easements (if applicable);
P. Recorded Non-Remonstrance Covenant Agreement;
Q. Land Division Compliance Agreement (if applicable);
R. Permanent Stabilization and/or Restoration of the impact from the development;
S. Fulfillment of all Conditions of Approval;
T. Payment of all Outstanding Fees;
U. Maintenance Guarantee(s). per OCMC 17.50.141;
V. Indemnity Agreement (if applicable);
W. Completed Punchlist;
X. As-Built Drawings;
Details on individual items required by this subsection can be obtained by contacting public works. Many items, such as the engineer's cost estimate and plan check and inspection fee, maybe be submitted in conjunction with documentation for other infrastructure improvements that are done with the development (such as street, sanitary sewer, and water).

Finding: complies with condition. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City.
See conditions of approval.

16.12.015 - Street design—Generally.

Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Development shall provide any necessary dedications, easements or agreements as identified in the transportation system plan, trails master plan, and/or parks and recreation master plan and this chapter, subject to constitutional limitations. The location, width and grade of street shall be considered in relation to: Existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. The arrangement of streets shall either:
A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;
B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the City Engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with OCMC 16.12.017 shall be required to preserve the objectives of street extensions.
C. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the City's transportation system plan. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation.

Finding: complies with condition. The location, widths, and grades of the proposed street widening to Warner Milne Road and emergency access to Hughes Street provides for the continuation or appropriate projection of existing principal streets in the surrounding area and gives access for future development of adjoining land. The development has provided a convenient street system for the safety of all modes of travel, including pedestrian and bicycle to, from, and through the subject site. As noted above the applicant has requested a modification from the City's standard cross section for a minor arterial road. The modification is consistent with the surrounding street cross section and provides a safe means of travel for vehicles, pedestrians and bicyclists. The frontage improvement on the developments half of Warner Milne Road shall be expanded to have a total of 50 ft of public right of way, with 18 ft of pavement, a 12 ft travel lane, a 6 ft bicycle lane, and a 10 foot wide sidewalk area containing either tree wells or stormwater planters. Improvements to Warner Mine Road and the shared use path shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements**. See conditions of approval.**

16.12.016 - Street design.

All development regulated by this chapter shall provide street improvements in compliance with the standards in Table 16.12.016 depending on the street classification set forth in the transportation system plan and the comprehensive plan designation of the adjacent property, unless an alternative plan has been adopted. The table implements the adopted transportation system plan and illustrates the maximum design standards. These standards may be reduced with an alternative street design which may be approved based on the modification criteria in OCMC 16.12.013. The steps for reducing the street design are found in the transportation system plan.

Table 16.12.016 Street Design

To read the table select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation for lands on either side of the street differs, the wider right-of-way standard shall apply.

Road Classi-fication	*Compre-hensive Plan Designation*	*Right-of-Way Width*	*Pave-ment Width*	*Public Access*	*Sidewal k*	*Landscape Strip*	*Bike Lane*	*Street Parking*	*Travel Lanes*	*Median*
Major Arterial	*Mixed Use, Commercial or Public/ Quasi Public*	*116 ft.*	*94 ft.*	*0.5 ft.*	*10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells*		*6 ft.*	*8 ft.*	*(5) 12 ft. Lanes*	*6 ft.*
	Industrial	*120 ft.*	*88 ft.*	*0.5 ft.*	*5 ft.*	*10.5 ft.*	*6 ft.*	*N/A*	*(5) 14 ft. Lanes*	*6 ft.*
	Residential	*126 ft.*	*94 ft.*	*0.5 ft.*	*5 ft.*	*10.5 ft.*	*6 ft.*	*8 ft.*	*(5) 12 ft. Lanes*	*6 ft.*

Road Classi-fication	*Compre-hensive Plan Designation*	*Right-of-Way Width*	*Pave-ment Width*	*Public Access*	*Sidewalk*	*Landscape Strip*	*Bike Lane*	*Street Parking*	*Travel Lanes*	*Median*
Minor Arterial	*Mixed Use, Commercial or Public/Quasi Public*	*116 ft.*	*94 ft.*	*0.5 ft.*	*10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells*		*6 ft.*	*8 ft.*	*(5) 12 ft. Lanes*	*6 ft.*
	Industrial	*118 ft.*	*86 ft.*	*0.5 ft.*	*5 ft.*	*10.5 ft.*	*6 ft.*	*7 ft.*	*(5) 12 ft. Lanes*	*N/A*
	Residential	*100 ft.*	*68 ft.*	*0.5 ft.*	*5 ft.*	*10.5 ft.*	*6 ft.*	*7 ft.*	*(3) 12 ft. Lanes*	*6 ft.*
Collector	*Mixed Use, Commercial or Public/Quasi Public*	*86 ft.*	*64 ft.*	*0.5 ft.*	*10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells*		*6 ft.*	*8 ft.*	*(3) 12 ft. Lanes*	*N/A*
	Industrial	*88 ft.*	*62 ft.*	*0.5 ft.*	*5 ft.*	*7.5 ft.*	*6 ft.*	*7 ft.*	*(3) 12 ft. Lanes*	*N/A*
	Residential	*85 ft.*	*59 ft.*	*0.5 ft.*	*5 ft.*	*7.5 ft.*	*6 ft.*	*7 ft.*	*(3) 11 ft. Lanes*	*N/A*
Local	*Mixed Use, Commercial or Public/ Quasi Public*	*62 ft.*	*40 ft.*	*0.5 ft.*	*10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells*		*N/A*	*8 ft.*	*(2) 12 ft. Lanes*	*N/A*
	Industrial	*60 ft.*	*38 ft.*	*0.5 ft.*	*5 ft.*	*5.5 ft.*	*(2) 19 ft. Shared Space*			*N/A*
	Residential	*54 ft.*	*32 ft.*	*0.5 ft.*	*5 ft.*	*5.5 ft.*	*(2) 16 ft. Shared Space*			*N/A*

1. Pavement width includes bike lane, street parking, travel lanes and median.

2. Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.

3. A 0.5 foot curb is included in landscape strip or sidewalk width.

4. Travel lanes may be through lanes or turn lanes.

5. The 0.5 foot public access provides access to adjacent public improvements.

6. Alleys shall have a minimum right-of-way width of twenty feet and a minimum pavement width of sixteen feet. If alleys are provided, garage access shall be provided from the alley.
7. A raised concrete median or landscape median shall be utilized for roads identified to have access restrictions.
8. A public utility easement (PUE) shall be provided on both sides of the right-of-way or public access easement on private property as identified in 16.12.085.
Finding: complies as proposed. The submitted plans identify a modified cross section that is consistent with the rest of Warner Milne Road and provides a safe mode of transportation for vehicles, pedestrians, and bicyclists. See OCMC 16.12.015 for specific cross-section requirements. Improvements to Warner Milne Road shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements.

A. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the development. Both sidewalks and curbs are to be constructed to city standards and at widths set forth above, and according to plans and specifications provided by the City Engineer. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a development without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the development application. Applicants for partitions may be allowed to meet this requirement by providing the City with a financial guarantee per OCMC 16.12.110.
Finding: complies as proposed. The applicant has proposed sidewalks along Warner Milne Road fronting the development. The applicant has also proposed pedestrian and bicycle access to both Kamm Street and Hughes Street through their development which is consistent with the City's TSP S41. Sidewalks shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements.

B. Pedestrian and Bicycle Accessways Routes. If deemed appropriate to extend pedestrian and bicycle routes, existing or planned, the decision-maker may require the installation of separate pedestrian and bicycle facilities.
Finding: complies as proposed. The applicant has proposed pedestrian and bicycle lanes along their frontage of Warner Milne. They have also provided TSP S41 through their site connecting Kamm Street and Hughes Street to Warner Milne for pedestrian and bicycle access.

C. Street Name Signs and Traffic Control Devices. The applicant shall install street signs and traffic control devices as directed by the City Engineer. Street name signs and traffic control devices shall be in conformance with all applicable city regulations and standards.
Finding: complies with condition. All traffic control devices, such as signage, flashing lights/beacons, and traffic signals shall be designed using the MUTCD. The City of Oregon City uses Clackamas County to review and approve any additions or modifications to traffic signals on City roadways. The development is creating a 4th leg of the Warner Milne/Beavercreek intersection. This requires modification of the existing traffic signal and pedestrian crossings. The applicant shall submit a traffic signal modification and pedestrian crossing plan to Clackamas County for review and approval. The applicant shall provide a Traffic Signal Plan conforming to Clackamas County Standards. Traffic signals shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements**. See conditions of approval.**

D. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all City regulations.

Finding: complies with condition. The applicant shall coordinate with PGE and provide any needed street lights along their frontage of Warner Milne Road in conformance with all City standards, specifications, codes, and policies and as approved by Portland General Electric (PGE). The applicant shall submit a photometric plan which meets the lighting standards. Street lights shall be installed and operational prior to occupancy of the East Campus Buildings or West Campus Buildings but not before the Garage Renovation or Communications Tower improvements**. See conditions of approval.**

E. Any new street proposed with a pavement width of less than thirty-two feet shall be processed through OCMC 16.12.013 and meet minimum life safety requirements, which may include fire suppression devices as determined by the Fire Marshall to assure an adequate level of fire and life safety. The modified street shall have no less than a twenty-foot wide unobstructed travel lane.

Finding: not applicable. A new street with a pavement width of less than thirty-two feet has not been proposed.

F. All development shall include vegetated planter strips that are five feet in width or larger and located between the sidewalk and curb unless otherwise approved pursuant to this chapter. All development shall utilize the vegetated planter strip for the placement of street trees or place street trees in other acceptable locations, as prescribed by OCMC 12.08. Development proposed along a collector, minor arterial, or major arterial roads may place street trees within tree wells within a wider sidewalk in lieu of a planter strip. In addition to street trees per OCMC 12.08, vegetated planter strips shall include ground cover and/or shrubs spaced four feet apart and appropriate for the location. No invasive or nuisance plant species shall be permitted.

Finding: complies with condition. See section 16.12.016 regarding requirements for vegetated planter strips located between the sidewalk and curb for the placement of street trees. See section 12.08 regarding placement of street trees**. See conditions of approval.**

G. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker and only where dedication of a street is deemed impracticable.

Finding: complies with condition. The applicant has proposed a public access easement over the shared use path and for emergency connection to Hughes Street. The shared use path shall also have a private maintenance easement or covenant over the path to be maintained by the property owner**. See conditions of approval.**

H. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.

Finding: complies with condition. The applicant has proposed a public access easement over the shared use path and for emergency connection to Hughes Street. The shared use path shall also have a private maintenance easement or covenant over the path to be maintained by the property owner**. See conditions of approval.**

16.12.017 - Street design—Access control.

A. A street which is dedicated to end at the boundary of the development or in the case of half-streets dedicated along a boundary shall have an access control granted to the City as a City controlled plat restriction for the purposes of controlling ingress and egress to the property adjacent to the end of the dedicated street. The access control restriction shall exist until such time as a public street is created, by dedication and accepted, extending the street to the adjacent property.

Finding: not applicable. No new streets with access control are required.

B. The City may grant a permit for the adjoining owner to access through the access control.
Finding: not applicable. No new streets with an access control are required.

C. The plat shall contain the following access control language or similar on the face of the map at the end of each street for which access control is required: "Access Control (See plat restrictions)."
Finding: not applicable. No new streets with access control are required.

D. Said plats shall also contain the following plat restriction note(s): "Access to (name of street or tract) from adjoining tracts (name of deed document number[s]) shall be controlled by the City of Oregon City by the recording of this plat, as shown. These access controls shall be automatically terminated upon the acceptance of a public road dedication or the recording of a plat extending the street to adjacent property that would access through those Access Controls."
Finding: not applicable. No new streets with access control are required.

16.12.018 - Street design—Alignment.
The centerline of streets shall be:
A. Aligned with existing streets by continuation of the centerlines; or
B. Offset from the centerline by no more than five feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.
C. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.
Finding: complies as proposed. The proposed street alignments meet the City requirements. This standard is met.

16.12.019 - Traffic sight obstructions.
All new streets shall comply with the Traffic Sight Obstructions in Chapter 10.32.
Finding: not applicable. No new streets are proposed or required.

16.12.020 - Street design—Intersection angles.
Except where topography requires a lesser angle, streets shall be laid out to intersect at angles as near as possible to right angles. In no case shall the acute angles be less than eighty degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least one hundred feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least fifty feet of tangent adjacent to the intersection unless topography requires a lesser distance. All street intersections shall be provided with a minimum curb return radius of twenty-five feet for local streets. Larger radii shall be required for higher street classifications as determined by the City Engineer. Additional right-of-way shall be required to accommodate curb returns and sidewalks at intersections. Ordinarily, intersections should not have more than two streets at any one point.
Finding: complies as proposed. The proposed intersection of Beavercreek and Warner Milne Road meets the City requirements. This standard is met. If a redesign occurs which is not consistent with this standard, City staff will require revision of the design to meet the standard.

16.12.021 - Street design—Grades and curves.
Grades and center line radii shall conform to standards approved by the City Engineer.
Finding: complies as proposed. No new streets are proposed.

16.12.022 - Street design—Development abutting arterial or collector street.
Where development abuts or contains an existing or proposed arterial or collector street, the decision maker may require: Access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line; or such other treatment it

deems necessary to adequately protect residential properties or afford separation of through and local traffic. Reverse frontage lots with suitable depth may also be considered an option for residential property that has arterial frontage. Where access for development abuts and connects for vehicular access to another jurisdiction's facility then authorization by that jurisdiction may be required.

Finding: complies as proposed. The applicant notes that it will coordinate with Planning and Engineering staff to meet frontage standards.

16.12.023 - Street design—Pedestrian and bicycle safety.

Where deemed necessary to ensure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, the decision maker may require that local streets be so designed as to discourage their use by nonlocal automobile traffic.

The City Engineer may require that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities. These curb extensions can increase the visibility of pedestrians and provide a shorter crosswalk distance as well as encourage motorists to drive slower. The City Engineer may approve an alternative design that achieves the same standard for constrained sites.

Finding: not applicable. The development does not require a street design that discourages use by non-local traffic. The City Engineer has not required that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities.

16.12.024 - Street design—Half street.

Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard. When approving half streets, the decision maker shall first determine that it will be practical to require the dedication of the other half of the street when the adjoining property is divided or developed. Where the decision maker approves a half street, the applicant shall construct a half street with at least twenty feet of pavement width and provide signage prohibiting street parking so as to make the half street safe until such time as the other half is constructed. Whenever a half street is adjacent to property capable of being divided or developed, the other half of the street shall be provided and improved when that adjacent property divides or develops. Access control may be required to preserve the objectives of half streets.

When the remainder of an existing half-street improvement is completed it shall include the following items: Dedication of required right-of-way, construction of the remaining portion of the street including pavement, curb and gutter, landscape strip, sidewalk, street trees, lighting and other improvements as required for that particular street. It shall also include at a minimum the pavement replacement to the centerline of the street. Any damage to the existing street shall be repaired in accordance with the City's "Pavement Cut Standards" or as approved by the City Engineer.

Finding: not applicable. This application has not proposed any half streets.

16.12.025 - Street design—Cul-de-sacs and dead-end streets.

The City discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as geologic hazards, wetland, natural or historic resource areas, pre-existing dedicated open space, pre-existing development patterns, arterial access restrictions or similar situation as determined by the decision maker. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed.

A. When permitted, access from new cul-de-sacs and permanent dead-end streets shall be limited to a maximum of twenty-five dwelling units.

Finding: not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

B. Cul-de-sacs and permanent dead-end streets shall include pedestrian/bicycle accessways to meet minimum block width standards as prescribed in OCMC 16.12.030.
Finding: not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

C. Cul-de-sacs shall have sufficient radius to provide adequate turn-around for emergency vehicles in accordance with fire district and City adopted street standards.
Finding: not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

D. Permanent dead-end streets shall provide public street right-of-way/easements sufficient to provide a sufficient amount of turn-around space complete with appropriate no-parking signs or markings to accommodate waste disposal, sweepers, emergency and other long vehicles in the form of a hammerhead or other design to be approved by the decision maker.
Finding: not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

E. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. A dead-end street shall include signage or barricade meeting Manual on Uniform Traffic Control Devices (MUTCD).
Finding: not applicable. No dead-end stub streets are proposed or required for this development.

16.12.026 - Street design—Alleys.
Alleys with public access easements on private property shall be provided in the Park Place and South End concept plan areas for the following districts R-5, R-3.5, R-2, MUC-1, MUC-2 and NC zones unless other permanent provisions for private access to off-street parking and loading facilities are approved by the decision maker. All alleys intended to provide access for emergency vehicles shall be a minimum width of twenty feet. The corners of alley intersections shall have a radius of not less than ten feet and shall conform to standards approved by the City Engineer. Access easements and maintenance agreements shall be recorded on affected properties.
Finding: not applicable. Alleys are not proposed or required for this development.

16.12.027 - Street design—Off-site street improvements.
During consideration of the preliminary plan for a development, the decision maker shall determine whether existing streets impacted by, adjacent to, or abutting the development meet the applicable design or dimensional requirements. Where such streets fail to meet these requirements, the decision-maker shall require the applicant to make proportional improvements sufficient to achieve conformance with minimum applicable design standards required to serve the proposed development.
Finding: not applicable. Off-site street improvements are not proposed or required for this development.

16.12.028 - Street design—Transit.
Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with transit agencies where the application impacts transit streets as identified in OCMC 17.04.1310. Pedestrian/bicycle access ways shall be provided as necessary to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.
Finding: complies with condition. No new streets are required or proposed and the existing streets adjacent to the development are laid out in a manner that promotes pedestrian and bicycle

circulation. While no new streets are proposed, improvements and access points to Warner Milne Road may impact existing bus routes and bus stops associated with the TriMet related bus system. The applicant shall coordinate with TriMet on their design and confirm in writing it meets TriMet standards**. See conditions of approval.**

16.12.029 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standards in effect at the time the permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: complies with condition. Pavement cuts are proposed within Warner Milne due to proposed utility service installations and required frontage improvements. Pavement cuts or other improvements made in a City street shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards**. See conditions of approval.**

16.12.030 - Blocks—Width.

The width of blocks shall ordinarily be sufficient to allow for two tiers of lots with depths consistent with the type of land use proposed. The length, width and shape of blocks shall take into account the need for adequate building site size, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation, and limitations imposed by topography and other natural features.

All new streets shall be designed as local streets unless otherwise designated as arterials and collectors in the current adopted transportation system plan. The maximum block spacing between streets is five hundred thirty feet and the minimum block spacing between streets is one hundred fifty feet as measured between the right-of-way centerlines except in zones GI, CI, MUE, I, and WFDD where determining the appropriate street spacing will be determined by the City Engineer. If the maximum block size is exceeded, pedestrian accessways shall be provided every three hundred thirty feet. The spacing standards within this section do not apply to alleys.

Finding: complies as proposed. No new streets proposed. The applicant has proposed a block modification under 16.12.013. The proposed development spans multiple tax lots along Warner Milne Road with a total frontage of approximately 1,450 feet. The proposed use for a majority of this property is for equipment yard storage. As a storage yard with vehicles moving equipment and materials through the site, a pathway or accessway through the yard area would not be an appropriate or safe facility for public access. Furthermore, The properties located directly behind this development are comprised of Gardner Middle School and a cemetery for the Archdiocese of Portland. The PGE development's rear frontage with those two large properties is approximately 1,230 feet. Continuation of streets are not likely to occur connecting them to Warner Milne. The applicant has provided an emergency vehicle and pedestrian/bicycle access to Hughes Street and a pedestrian/bicycle access to Kamm Street. This provides block connectivity and is consistent with TSP projects S41 and S40.

16.12.031 - Street design—Street names.

Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names shall conform to the established standards in the City and shall be subject to the approval of the City.

Finding: not applicable. No new street is required or proposed.

16.12.032 – Public off-street pedestrian and bicycle accessways.

Pedestrian/bicycle accessways are intended to provide direct, safe and convenient connections between

residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable. Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding three hundred thirty feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.

Finding: complies as proposed. The layout of the proposed development shows pedestrian and bicycle accessways which connects Kamm Street and Hughes Street to Warner Milne.

A. Entry points shall align with pedestrian crossing points along adjacent streets and with adjacent street intersections.

Finding: complies as proposed. The layout of the proposed development shows entry points for accessways aligning with pedestrian crossing points along adjacent streets and with adjacent intersections.

B. Accessways shall be free of horizontal obstructions and have a nine foot six inch high vertical clearance to accommodate bicyclists. To safely accommodate both pedestrians and bicycles, accessway right-of-way widths shall be as follows:
1. Accessways shall have a fifteen foot wide right-of-way with a seven foot wide paved surface with a minimum four foot planter strip on either side.
2. If an accessway also provides secondary fire access, the right-of-way width shall be at least twenty- four feet wide with a sixteen foot paved surface between four foot planter strips on either side.

Finding: complies with condition. The layout of the proposed development shows accessways free of horizontal obstructions with geometry meeting the applicable code. The proposed accessway through the parking lot is a shared use path identified in the City's TSP. Shared Use paths shall be 10-feet wide and paved. **See conditions of approval.**

C. Accessways shall be direct with at least one end point of the accessway always visible from any point along the accessway. On-street parking shall be prohibited within fifteen feet of the intersection of the accessway with public streets to preserve safe sight distance and promote safety.

Finding: complies as proposed. The layout of the proposed development shows accessways with proper visibility.

D. To enhance pedestrian and bicycle safety, accessways shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.

Finding: complies as proposed. The layout of the proposed development shows accessways with proper lighting.

E. Accessways shall comply with Americans with Disabilities Act (ADA).

Finding: complies with condition. The shared use path through the proposed parking lot, connecting Kamm/Hughes Streets with Warner Milne is an accessway. All accessways, proposed and existing, that intersect with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. See conditions of approval.

F. The planter strips on either side of the accessway shall be landscaped along adjacent property by installation of the following:
1. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average; and
2. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and
3. A two-inch minimum caliper tree for every thirty-five feet along the accessway. Trees may be planted on either side of the accessway, provided they are spaced no more than thirty-five feet apart; and
4. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.
Finding: complies as proposed. The layout of the proposed development shows accessways with proper planter strips and plantings.

G. Accessways shall be designed to prohibit unauthorized motorized traffic. Curbs and removable, lockable bollards are suggested mechanisms to achieve this.
Finding: complies as proposed. The applicant has proposed bollards at the end of Hughes street that can be removed for emergency vehicle access. The layout of the proposed development shows pedestrian and bicycle accessways with bollards preventing unauthorized motorized traffic.

H. Accessway surfaces shall be paved with all-weather materials as approved by the City. Pervious materials are encouraged. Accessway surfaces shall be designed to drain stormwater runoff to the side or sides of the accessway. Minimum cross slope shall be two percent.
Finding: complies as proposed. The layout of the proposed development shows pedestrian and bicycle accessways with proper materials.

I. In parks, greenways or other natural resource areas, accessways may be approved with a five-foot wide gravel path with wooden, brick or concrete edgings.
Finding: not applicable. The layout of the proposed development shows pedestrian and bicycle accessways with no impact to parks, greenways, or natural resource areas.

J. The decision maker may approve an alternative accessway design due to existing site constraints through the modification process set forth in OCMC 16.12.013.
Finding: not applicable. No alternative design has been proposed for pedestrian and bicycle accessways.

K. Ownership, liability and maintenance of accessways. To ensure that all pedestrian/bicycle accessways will be adequately maintained over time, the City Engineer shall require one of the following:
1. Dedicate the accessways to the public as public right-of-way prior to the final approval of the development; or
2. The developer incorporates the accessway into a recorded easement or tract that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway.
Finding: complies with condition. The shared use path shall also have a private maintenance easement or covenant over the path to be maintained by the property owner**. See conditions of approval.**

16.12.033 - Mobility standards.
Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection E below, to be maintained at or below the following mobility standards during the two-hour peak operating conditions. The first hour has the highest weekday traffic volumes and the second hour is the next

highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the transportation system plan (TSP) or as otherwise identified by the City Engineer.
A. For intersections within the regional center, the following mobility standards apply:
1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
3. Intersections located on the regional center boundary shall be considered within the regional center.
B. For intersections outside of the regional center but designated on the arterial and throughway network, as defined in the regional transportation plan, the following mobility standards apply:
1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
C. For intersections outside the boundaries of the regional center and not designated on the arterial and throughway network, as defined in the regional transportation plan, the following mobility standards apply:
1. For signalized intersections:
a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
2. For unsignalized intersections outside of the boundaries of the regional center:
a. For unsignalized intersections, during the peak hour, all movements serving more than twenty vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than twenty vehicles during the peak hour.
D. For the intersection of OR 213 and Beavercreek Road, the following mobility standards apply:
1. During the first, second and third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.
E. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:
I-205/OR 99E Interchange.
State intersections located within or on the regional center boundaries.
1. In the case of conceptual development approval for a master plan that impacts the above references intersections:
a. The form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the code in place at the time the detailed development plan is submitted; and
b. Only those trips approved by a detailed development plan review are vested.
2. Development which does not comply with the mobility standards for the intersections identified in OCMC 16.12.033 shall provide for the improvements identified in the transportation system plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the code.

Finding: complies with condition. The City traffic consultant has reviewed the applicant's Traffic Impact Analysis (TIA) for this development. They have provided the following findings:

- The proposed site accesses on Warner Milne Road were evaluated for compliance with City access spacing standards. According to the site plan, two of the three new connections (western emergency access and center access) will meet the 175-foot minimum standard. However, the proposed eastern access is 57 feet short of standard to the east due to an existing residential access.
    - The TIS states that the proposed location is recommended to align with an existing access on the south side of Warner Milne Road, which creates a north-south emergency vehicle connection to Hughes Street.
    - The TIS states that an exception to the standard for this access is not expected to create a significant safety or operational concern.
- The proposed site accesses on Warner Milne Road were evaluated for compliance with City access width standards. The TIS states that all site accesses meet standards.
- The TIS states that intersection sight distance will be documented on the civil engineering plans provided through the site plan application process. The TIS recommends that on-site landscaping, signage, and utilities are appropriately located and maintained to provide adequate intersection sight distance.

The following conditions of approval will be required:

- Minimum AASHTO sight distance requirements shall be met at all site intersections and driveways. All sight distances shall be approved by the City Engineer prior to final site plan approval.
- A design exception shall be submitted to justify the substandard access spacing at the proposed eastern site access.
- Construct a 10-foot wide pedestrian pathway along the east side the new north-south emergency vehicle access between Warner Milne Road and Hughes Street.
- The following modifications shall be provided at the Beavercreek Road/Warner Milne Road intersection:
    - Construct new north leg serving as a private access to PGE property, provide southbound left turn lane and shared through/right lane
    - Construct new eastbound left turn lane with at least 150 feet of storage
    - Restripe northbound approach to provide left turn lane and shared through/right lane
    - Install protected/permissive left turn signal heads on all approaches
    - Implement optimized signal timing and phasing changes

See conditions of approval.

16.12.035 - Driveways.

A. All new development, redevelopment, and capital improvement projects shall meet the minimum driveway spacing standards identified in Table 16.12.035.A. Minor Site Plan and Design Review do not follow these standards unless a request is made to modify the driveway.

Table 16.12.035.A Minimum Driveway Spacing Standards		
Street Functional Classification	*Minimum Driveway Spacing Standards*	*Distance*
Major Arterial Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single-family dwellings, duplexes, triplexes, quadplexes and townhouses*	*175 ft.*
Minor Arterial Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single-family dwellings, duplexes, triplexes, quadplexes and townhouses*	*175 ft.*
Collector Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single-family dwellings, duplexes, triplexes, quadplexes and townhouses*	*100 ft.*
Local Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single-family dwellings, duplexes, triplexes, quadplexes and townhouses*	*25 ft.*

1. When driveways are shared (combined), the minimum driveway spacing shall be 20 feet.
2. All driveways, except for shared driveways, shall be placed a minimum of 5 feet from the property line.
3. The distance from a street corner to a driveway is measured along the right-of-way from the edge of the intersection (on the same side of the road) right-of-way to the nearest portion of the driveway and the distance between driveways is measured at the nearest portions of the driveway at the right-of-way.

Finding: complies with condition. All driveways, new and existing, shall meet the minimum driveway spacing standards identified in Table 16.12.035.A. Approved driveway locations will need included on engineering plans prior to receiving a permit and beginning construction. All driveways shall be built and operational prior to occupancy; however, phasing of access for construction may be allowed through coordination with the Public Works Department**. See conditions of approval.**

B. All detached single-family dwellings, duplexes, triplexes, quadplexes and townhouses shall have driveways which meet the minimum distance from a street corner standards except when the lot size is smaller than the minimum distance required. When minimum distance cannot be met due to lot size or due to the location of an overlay district, the driveway shall be located as far away from the intersection as possible, but no more than 5 feet to the neighboring property line, as approved by the City Engineer.

Finding: not applicable. The development is not a residential development.

C. Nonresidential or multi-family residential use driveways that generate high traffic volumes as determined by a traffic analysis shall be treated as intersections and shall adhere to requirements of OCMC 16.12.020.

Finding: complies as proposed. The applicant has provided a traffic analysis for this development. The findings for the analysis are under 16.12.033. The applicant will be modifying the intersection of Beavercreek Road and Warner Milne to accommodate the large vehicle (freight) traffic into and out of their yard while staff and visitor vehicles will enter the eastern driveway for parking.

D. For any detached single-family dwellings, duplexes, triplexes, quadplexes, and townhouses or property developed with an ADU with multiple frontages, only one driveway is allowed per street frontage classified as a local street and in no case shall more than two driveways (one per frontage), unless otherwise approved by the City Engineer.

Two driveways shall never be granted for any property with only one frontage on a local road for any single-family detached residential property or property that contains an ADU unless required by Clackamas Fire District No. 1.

E. Cluster housing properties may be granted more than one driveway per property and per frontage meeting the spacing standards. Driveways should be combined whenever possible to limit the number of driveways per property.

Middle housing properties with only one building may be allowed one driveway for every two units, provided that spacing standards and/or driveway width requirements are met.

Middle housing properties with more than one structure shall meet the cluster housing standards.

F. Townhouses shall have one driveway approach for every two dwelling units (round up for townhouse structures with an odd number of dwellings).

G. Driveways on collectors or arterials shall be provided in such a way that no backing of a vehicle will occur from the driveway to the collector or arterial.

H. When a property fronts multiple roads, access shall be provided from and limited to the road with the lowest classification in the transportation system plan to minimize points of access to arterials and collectors. Access shall not be provided on arterial or collector roads unless there is no other alternative. At the discretion of the City Engineer, properties fronting a collector or arterial road may be allowed a second driveway, for the creation of a circulation pattern that eliminates reverse maneuvers for vehicles exiting a property if applied for and granted through procedures in OCMC 16.12.013. All lots proposed with a driveway and lot orientation on a collector or minor arterial shall combine driveways into one joint access per two or more lots unless the City Engineer determines that:

1. No driveway access may be allowed since the driveway(s) would cause a significant traffic safety hazard; or

2. Allowing a single driveway access per lot will not cause a significant traffic safety hazard.

I. All driveway approaches shall be limited to the dimensions identified in Table 16.12.035.D.

Table 16.12.035.D Driveway Approach Size Standards

Property Use	*Minimum Driveway Approach Width*		*Maximum Driveway Approach Width*
Single-Family Detached and Duplexes	*10 feet*		*24 feet*
Townhouses	*10 feet*		*24 feet*
Triplexes, Quadplex and Cottage Clusters	*10 feet*		*36 feet*
Multi-Family	*18 feet*		*30 feet*
Commercial, Industrial, Office, Institutional, Mixed Use, and/or Nonresidential	*One-Way 12 feet*	*Two-Way 20 feet*	*40 feet*

1. Shared driveways for middle housing structures shall be minimum 18 feet and maximum 36 feet except when section J.4.a applies.

2. Driveway widths shall match the width of the driveway approach where the driveway meets sidewalk or property line but may be widened onsite (for example between the property line and the entrance to a garage). Groups of more than four parking spaces shall be so located and served by driveways so that their use will not require backing movements or other maneuvering within a street right-of-way other than an alley.

Finding: complies with condition. All driveways (curb cuts), new and existing, shall meet the minimum driveway width standards identified in Table 16.12.035.D. Approved driveway widths will need included on engineering plans prior to receiving a permit and beginning construction. All driveways shall be built and operational prior to occupancy; however, phasing of access for

construction may be allowed through coordination with the Public Works Department. See conditions of approval.

J. The City Engineer reserves the right to require a reduction in the number and size of driveway approaches as far as practicable for any of the following purposes:
1. To provide adequate space for on-street parking;
2. To facilitate street tree planting requirements;
3. To assure pedestrian and vehicular safety by limiting vehicular access points; and
4. To assure that adequate sight distance requirements are met.
a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line.
Finding: not applicable. No restrictions are proposed by the City Engineer.

K. For all driveways, the following standards apply.
1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet back into the property as measured from the current edge of sidewalk or street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the City Engineer.
2. Any driveway approach built within public right-of-way shall be built and permitted per city requirements as approved by the City Engineer.
3. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the City Engineer.
Finding: complies as proposed. Driveway designs will be reviewed as part of the technical design review.

L. Exceptions. The City Engineer reserves the right to waive these standards or not allow driveway access, if the driveway(s) would cause a significant traffic safety hazard. Narrower or wider driveway widths may be considered where field conditions preclude use of recommended widths. When larger vehicles and trucks will be the predominant users of a particular driveway, turning templates may be utilized to develop a driveway width that can safely and expeditiously accommodate the prevalent type of ingress and egress traffic.
Finding: not applicable. No exemptions are proposed.

16.12.065 - Building site—Grading.
Grading of building sites shall conform to the state of Oregon Structural Specialty Code, Title 18, any approved grading plan and any approved residential lot grading plan in accordance with the requirements of OCMC 13.12, 15.48, 16.12 and the public works stormwater and grading design standards, and the erosion control requirements of OCMC 17.47.
Finding: applicable. Please refer to the findings within sections 13.12,15.48, 16.12 & 17.47 of this report.

16.12.085 - Easements.
The following shall govern the location, improvement and layout of easements:
A. Utilities. Utility easements shall be required where necessary as determined by the City Engineer. Insofar as practicable, easements shall be continuous and aligned from block-to-block within the development and with adjoining subdivisions or partitions.
1. Specific public utility easements for water, sanitary or storm drainage shall be provided based on approved final engineering plans conforming to the requirements found within the applicable design standards.
2. Conveyance of public utility easements for gas, electric, telecommunication, and fiberoptic shall be required where necessary as determined by the City Engineer. The City Engineer will require the easement unless it is found that the utility can be placed in a different location or can be placed in a smaller easement than what is required.

The easement shall be located adjacent to all public rights-of-way or public access easements within private property. In the event that the provision of a public utility easement would create a conflict with achieving compliance with another part of the code, the location and width may be adjusted by the City Engineer.
a. The easement shall be 10 feet in the R-10, R-8, R-6, R-5, R-3.5, R-2, GI, and CI zones
b. The easement shall be a minimum of 5 feet in the NC, HC, I, C, MUC-1, MUC-2, MUE, MUD, and WFDD zones.
i. The applicant shall obtain a written determination from all utilities that the minimum 5 foot PUE coupled with use of a minimum of a five-foot area under the public sidewalk or parkway area is sufficient to serve the development. Where the minimum width is deemed inadequate, a modification shall be required.
c. An applicant may seek a modification to the public utility easement dedication requirement using 16.12.013.
Finding: complies with condition. The development shall provide a 10-foot-wide public utility easement (PUE) along all property lines fronting existing or proposed public right-of-way. In cases where the PUE may not be contiguous, the applicant shall specify PUE location and/or size. Zero setback sites may not require a PUE but may have dry utilities between the property line and curb if room exists. The developer shall make all necessary arrangements with utility companies to ensure underground lines are not placed within the roadway. Approved PUE will need included on the final plat prior to recording the plat and prior to occupancy of the East and West Campus buildings but not before the Garage Renovation or Communications Tower improvements. **See conditions of approval.**

B. Unusual Facilities. Easements for unusual facilities such as high voltage electric transmission lines, drainage channels and stormwater detention facilities shall be adequately sized for their intended purpose, including any necessary maintenance roads. These easements shall be shown to scale on the preliminary and final plats or maps. If the easement is for drainage channels, stormwater detention facilities or related purposes, the easement shall comply with the requirements of the public works stormwater and grading design standards.
Finding: not applicable. No easements for unusual facilities are required for this development.

C. Watercourses. Where a development is traversed or bounded by a watercourse, drainageway, channel or stream, a stormwater easement or drainage right-of-way shall be provided which conforms substantially to the line of such watercourse, drainageway, channel or stream and is of a sufficient width to allow construction, maintenance and control for the purpose as required by the responsible agency. For those subdivisions or partitions which are bounded by a stream of established recreational value, setbacks or easements may be required to prevent impacts to the water resource or to accommodate pedestrian or bicycle paths.
Finding: complies as proposed. Impacts to the NROD area for storm drainage is covered under 17.49.

D. Access. When easements are used to provide vehicular access to lots within a development, the construction standards, but not necessarily width standards, for the easement shall meet City specifications. The minimum width of the easement shall be 20 feet. The easements shall be improved and recorded by the applicant and inspected by the City Engineer. Access easements may also provide for utility placement.
Finding: complies with condition. The applicant has proposed a shared use path for public use to connect Warner Milne with Hughes and Kamm Street. A public access easement shall be provided for the proposed shared us path through the site and for emergency vehicle access to Hughes Street**. See conditions of approval.**

E. Resource Protection. Easements or other protective measures may also be required as the Community Development Director deems necessary to ensure compliance with applicable review criteria protecting any unusual significant natural feature or features of historic significance.
Finding: See findings under 17.49.

16.12.090 - Minimum improvements—Procedures.

In addition to other requirements, improvements installed by the applicant either as a requirement of these or other regulations, or at the applicant's option, shall conform to the requirements of this title and be designed to City specifications and standards as set out in the City's facility master plan and Public Works Stormwater and Grading Design Standards. The improvements shall be installed in accordance with the following procedure:
A. Improvement work shall not commence until construction plans have been reviewed and approved by the City Engineer and to the extent that improvements are located in county or state right-of-way, they shall be approved by the responsible authority. To the extent necessary for evaluation of the proposal, the plans may be required before approval of the preliminary plat of a subdivision or partition. Expenses incurred thereby shall be borne by the applicant and paid for prior to final plan review.

Finding: complies with condition. The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction**. See conditions of approval.**

B. Improvements shall be constructed under the inspection and approval of the City Engineer. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. Where required by the City Engineer or other City decision-maker, the applicant's project engineer also shall inspect construction.

Finding: complies with condition. The developer's project engineer shall inspect construction of public improvements and stormwater management facilities at the cost of the applicant. The City will perform inspections in accordance with city policies and standards. See section 16.12.014 of this report regarding inspection fees**. See conditions of approval.**

C. Erosion control or resource protection facilities or measures are required to be installed in accordance with the requirements of OCMC 17.47, 17.49 and the Public Works Erosion and Sediment Control Standards.

Finding: see findings from section 17.47, 17.49 of this report.

D. Underground utilities, waterlines, sanitary sewers and storm drains installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot-wide public utility easement within private property as defined in OCMC 16.12.85.A.2.

Finding: complies with condition. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed, tested, inspected, and approved for use prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property**. See conditions of approval.**

E. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer upon completion of the improvements.

Finding: complies with condition. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements**. See conditions of approval.**

F. The City Engineer may regulate the hours of construction and access routes for construction equipment to minimize impacts on adjoining residences or neighborhoods.

Finding: complies with condition. Warner Milne Road is a minor arterial with traffic counts of approximately 4,000-8,000 ADT. Every effort should be made to keep two-way travel available to the public at all times using proper traffic control standards. If 2-way traffic cannot be maintained, hours of construction in Warner Milne Road may be limited or be required at night. The applicant shall comply with permitted hours of construction as set forth by the City Engineer for any public improvements (in existing public right-of-way or easements or which will be dedicated in public

right-of-way or easements) that will not follow OCMC 9.12.023.D. as stated and written in the pre-construction meeting notes**. See conditions of approval.**

16.12.095 - Minimum improvements—Public facilities and services.

The following minimum improvements shall be required of all applicants for a development, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:

A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the City's planned level of service on all public streets, including alleys within the development and those portions of public streets adjacent to but only partially within development. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points or curvature and points of tangency of their center line, and at such other points as directed by the City Engineer.

Finding: complies as proposed. The proposed transportation systems of this development are consistent with the City's standards. The applicant has proposed to construct public improvements along Warner Milne (see OCMC 16.12.013 and 16.12.015) as part of their development. These improvements include pavement widening, sidewalks, bike lane and street trees. The applicant will also provide a shared use path through the eastern portion of their property to allow pedestrian and bicycle access to Kamm Street and Hughes Street. An emergency vehicle access is proposed through there parking lot to Hughes Street as well.

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within a development and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with city drainage master plan requirements, OCMC 13.12 and the public works stormwater and grading design standards.

Finding: complies with condition. The applicant has proposed private stormwater facilities on the property to treat the expanded and impacted impervious areas. The applicant has proposed public stormwater planters along Warner Milne. See findings from section 13.12 for the design of stormwater management facilities to serve the development**. See conditions of approval.**

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a development in accordance with the City's sanitary sewer design standards, and shall connect those lots or parcels to the City's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. Applicants are responsible for extending the City's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development. The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the City Engineer before construction begins.

Finding: complies with condition. The applicant has proposed a private sewer main onsite with a private manhole at the project's entrance at the intersection of Beavercreek Road and Warner Milne. The sewer system is proposed to connect to the City's main within the intersection of Warner Milne and Beavercreek Road. If the project desires to reuse the existing sewer service, they may only do so if the City Sewer Division determines it is in a condition where it can be reused. If the existing service is desired to not be reused, the existing service must be abandoned at the main

per the Sewer Standards. Onsite private sewer facilities will require permitting from Oregon City's Building Department while the connection to the City's Main within Warner Milne will be permitted through Oregon City Public Works. The development shall provide a sanitary sewer design for their connection to the City's sewer main on Warner Milne Road**. See conditions of approval.**

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a development in accordance with the City public works water system design standards, and shall connect those lots or parcels to the City's water system. Applicants are responsible for extending the City's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

Finding: complies with condition. The applicant has proposed a new water connection for the property that will serve the site. The current proposed water system is a single connection to the City's water main that will service both the site's fire line and domestic water line. The site's domestic water service and fire services shall have separate connections to the City's water main on Warner Milne. If other water services exist for the new property they will be abandoned at the main per Oregon City Public Works Standards.

An approved Access and Water Supply Plan is required prior to issuance of building permits for the development. **See conditions of approval.**

E. Street Trees. Refer to OCMC 12.08, Street Trees.

Finding: see findings from section 12.08.

F. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane specified by the City Engineer.

Finding: complies with condition. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum prior to receiving a permit and beginning construction**. See conditions of approval.**

G. Other Utilities. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities. All new utilities shall be placed underground unless the respective franchise agreements allow otherwise or unless it is physically or technically impossible to comply with applicable standards. Existing electrical lines and other wires, including but not limited to telecommunication, street lighting and fiberoptic, shall be relocated underground.

1. Exemptions to relocation of existing overhead utilities to underground for property development as follows (Only one exemption criteria is required to be exempt from this requirement):

a. No transmission or feeder lines shall be relocated underground unless approved by the City Engineer.

b. Properties with less than one acre of land area shall not be required to relocate existing overhead utilities unless required by the franchise utility.

c. Properties with less than two hundred feet of frontage on any individual roadway shall not be required to relocate existing overhead utilities unless required by the franchise utility.

d. Land divisions with five or fewer subdivided lots shall not be required to relocate existing overhead utilities unless required by the franchise utility.

2. The exemptions in G.1. do not apply if properties within the same block were required to relocate the overhead utilities within the past ten years. In those cases, the existing overhead utilities shall be relocated underground.

3. When any franchise utility (electric, gas, telecommunication, fiberoptic, street lighting or similar utility) is installed along an existing or new roadway, the utility shall be installed within the existing or proposed public utility easement unless it is physically or technically impossible.

4. These requirements do not apply to work by a franchise utility for improvement, repair, alteration or addition to their existing systems.

Finding: complies with condition. The existing overhead line which serves a private light pole needs either removed or relocated underground. New franchise utilities shall be placed underground and all existing overhead utilities adjacent to the property frontage shall be relocated underground unless deemed infeasible by the City and franchise utility provider(s) prior to occupancy**. See conditions of approval.**

H. Oversizing of Facilities. All facilities and improvements shall be designed to city standards as set out in the City's facility master plan, public works design standards, or other city ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the City for oversizing based on the City's reimbursement policy and funds available or provide for recovery of costs from intervening properties as they develop.

Finding: not applicable. No facilities are required to be oversized as part of this application.

I. Erosion Control Plan—Mitigation. The applicant shall be responsible for complying with all applicable provisions of OCMC 17.47 with regard to erosion control.

Finding: see findings from section 17.47 of this report

16.12.100 - Same—Road standards and requirements.

A. The creation of a public street and the resultant separate land parcels shall be in conformance with requirements for subdivisions or partitions and the applicable street design standards of this Chapter. However, the decision-maker may approve the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions where any of the following conditions exist:

1. The establishment of the public street is initiated by the City Commission and is declared essential for the purpose of general traffic circulation and the partitioning of land is an incidental effect rather than the primary objective of the street;

2. The tract in which the street is to be dedicated is within an isolated ownership either not over one acre or of such size and characteristics as to make it impossible to develop building sites for more than three dwelling units.

Finding: not applicable. The creation of a new public street is not proposed or required.

B. For any public street created pursuant to subsection A of this section, a copy of a preliminary plan and the proposed deed shall be submitted to the Community Development Director and City Engineer at least ten days prior to any public hearing scheduled for the matter. The plan, deed and any additional information the applicant may submit shall be reviewed by the decision-maker and, if not in conflict with the standards of Title 16 and Title 17, may be approved with appropriate conditions.

Finding: not applicable. The applicant has not proposed the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions.

C. The design and construction of public streets shall be per the standards found in this chapter and the most recent version of any City Design and Construction Standards.

Finding: complies with condition. The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction**. See conditions of approval.**

16.12.105 - Same—Timing requirements.

A. Prior to applying for final plat approval, the applicant shall either complete construction of all public improvements required as part of the preliminary plat approval or guarantee the construction of those improvements. Whichever option the applicant elects shall be in accordance with OCMC 17.50.140.
Finding: see findings from OCMC 17.50.140 regarding timing of construction of improvements and guarantee for construction of improvements.

B. Construction. The applicant shall construct the public improvements according to approved final engineering plans and all applicable requirements of this Code, and under the supervision of the City Engineer. Under this option, the improvement shall be complete and accepted by the City Engineer prior to final plat approval.
Finding: complies with condition. Public improvements and all items from the city provided punch list shall be completed and accepted by the City prior to occupancy**. See conditions of approval.**

16.12.110 -Public improvements—Financial guarantees.
A. To ensure construction of required public improvements, the applicant shall provide the City with a performance guarantee in accordance with OCMC 17.50.140.
Finding: please see findings from Section17.50.140 of this report.

B. After satisfactory completion of required public improvements and facilities, all public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period as prescribed in OCMC 17.50.141.
Finding: please see findings from Section 17.50.141 of this report.

16.12.120 Waiver of Remonstrance
The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development. To ensure compliance with this chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the City Attorney.

Finding: complies with condition. The property owner(s) shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property and all fees associated with processing and recording the Non-Remonstrance Agreement shall be paid prior to occupancy**. See conditions of approval.**

16.12.125 Violation—Penalty.
Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

17.50.140 – Financial guarantees.
When conditions of permit approval require a permitee to construct certain public improvements, the City shall require the permitee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.
A. Form of Guarantee. Guarantees shall be in a form approved by the City attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending

institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.
B. Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.
1. After Final Approved Design by the City. The City may request the permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
2. Before Complete Design Approval and Established Engineered Cost Estimate. The City may request a permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
C. Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.
D. Fee-in-lieu. When conditions of approval or the City engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City attorney.

Finding: complies with condition. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to receiving a permit and beginning construction. The estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the City**. See conditions of approval.**

17.50.141 – Public improvements – Warranty

All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.
A. Duration of Warranty. Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.
B. Financial Guarantee. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations

of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.
C. Amount of Warranty. The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two-year maintenance period), and shall be supported by a verified engineering estimate and approved by the City engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.
D. Transfer of Maintenance. The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public improvements shall occur when the City accepts the improvements at the end of the two-year warranty period.

Finding: complies with condition. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to occupancy. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship**. See conditions of approval.**

CHAPTER 17.29 MUC MIXED USE CORRIDOR DISTRICT

17.29.010 Designated.

The mixed-use corridor (MUC) district is designed to apply along selected sections of transportation corridors such as Molalla Avenue, 7th Street, Beavercreek Road, and along Warner-Milne Road. Land uses are characterized by high-volume establishments such as retail, service, office, multi-family residential, lodging, recreation and meeting facilities, or a similar use as defined by the Community Development Director. A mix of high-density residential, office, and small-scale retail uses are encouraged in this district. Moderate density (MUC-1) and high density (MUC-2) options are available within the MUC zoning district. The area along 7th Street is an example of MUC-1, and the area along Warner-Milne Road is an example of MUC-2.

17.29.020 - Permitted uses—MUC-1 and MUC-2.

H. Offices, including finance, insurance, real estate and government.

Finding: complies. The applicant has proposed a public utility conditional use per section 17.29.030 as discussed below. Office use is also proposed and is permitted in the MUC-1 zone per (H) of this section.

17.29.030 - Conditional uses—MUC-1 and MUC-2 zones.

The following uses are permitted in this district when authorized and in accordance with the process and standards contained in OCMC 17.56:
E. Public utilities and services, and utility facilities, including sub-stations (such as buildings, plants and other structures) and outdoor storage associated with the conditional use;

Finding: applicable. The existing line center and proposed operations center is a public utility use (17.04.985). The use is permitted with conditional use approval in the MUC-1 zone.

Per OCMC 17.04.985, "Public utilities and services" means facilities for providing electric power, communication, water, sewers and transportation. In addition, outdoor storage and maintenance activities associated with the public utility are also permitted as a conditional use.

Additionally, pursuant to OCMC 17.80, a new public safety Communications Tower is proposed as part of the facility, that will replace two existing towers. The applicable conditional use standards of OCMC 17.56 apply to the new tower as well. See also findings under 17.56 and OCMC 17.80.

The proposal must comply with the OCMC 17.56 Conditional Use standards, which are addressed in the corresponding section of this report.

17.29.040 - Prohibited uses in the MUC-1 and MUC-2 zones.

The following uses are prohibited in the MUC district:

B. Outdoor storage unless permitted under OCMC 17.29.030.E;

Finding: complies as proposed. Outdoor storage is allowed when associated with a public utility use.

17.29.050 - Dimensional standards—MUC-1.

Finding: complies as proposed. The applicant provided a table indicating compliance with this section as follows:

Standard	Requirement	Proposed
Minimum lot area	None	11.7 acres
Maximum building height	Forty feet or three stories, whichever is less	30.6 feet
Minimum required setbacks if **not** abutting a residential zone	None	N/A
Minimum required interior and rear yard setbacks if abutting a residential zone:	Twenty feet, plus one foot additional yard setback for every one foot of building height over thirty five feet	Rear: 3 feet (see response) Interior side: 25 feet (see response)
Maximum allowed setbacks.		
Front yard:	Five feet	Five feet
Interior side yard:	None	460 feet
Corner side setback abutting street:	Thirty feet	N/A
Rear yard:	None	217 feet
Maximum lot coverage of the building and parking lot:	80 percent	+/- 30 percent

Minimum required landscaping (including landscaping within a parking lot):	20 percent	21 percent
Residential minimum net density	17.4 units per acre	N/A, no residential development proposed

Applicant's response:

Revised Table 17.29.050 above quotes the applicable dimensional requirements next to the proposed changes. As demonstrated in the submitted Site Plan (Sheet A11) and Elevation Drawings (Sheets A31 – A34), the Operations Center will meet all applicable base zone dimensional standards, with one exception, which is an existing condition.

The existing garage at the north side of the property is three feet from the north property line. This structure will be repaired, but its footprint will not change and the longstanding permitted building will be retained at its current location. Though this structure encroaches on the 20-foot minimum rear setback, it is an existing nonconforming structure, and proposed renovations do not increase the degree of nonconformity. Building changes do not change the building footprint.

Also notable with setbacks is that both the communications tower and its auxiliary equipment shelter east of the garage building are located farther than 25 feet from all abutting property lines. That 25-foot minimum setback requirement is in the Communication Facilities chapter, OCMC 17.80.110(D), and supersedes the minimum side setback of the MUC-1 zone. The tower infrastructure complies with setbacks. The tower itself is a structure but not a building, and is therefore subject to a different height standard than the one listed above. Those standards are addressed in the responses to Section 17.80.
In short, all new development complies with applicable standards of the MUC-1 zone.

Staff concurs that all dimensional standards of the MUC-1 zone are met. The applicant has not proposed expansion of any non-conforming setbacks. See also findings under OCMC 17.80 of this report regarding the proposed communication tower, and additional findings regarding setbacks and siting of buildings under the design standards in OCMC 17.62.055.

CHAPTER 17.41 – TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS

17.41.010 - Protection of trees—Intent.

The intent of this chapter is to ensure that new development is designed in a manner that preserves trees to the maximum extent practicable. As a requirement of any Type II land use application, the siting of structures, roadways and utility easements, shall provide for the protection of tree resources to the maximum extent practicable. This chapter applies to all land division and site plan and design review applications.

17.41.020 - Tree protection—Applicability.

A. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those

developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.
B. For public capital improvement projects, the City engineer shall demonstrate compliance with these standards pursuant to a Type I process.
C. Tree canopy removal greater than twenty-five percent on areas with greater than twenty-five percent slope, unless exempted under OCMC 17.41.040, shall be subject to these standards.
D. A heritage tree or grove which has been designated pursuant to the procedures of OCMC 12.32 shall be subject to the standards of this section.
E. A tree that has been planted pursuant to this section shall remain or shall be replaced with a new tree if removed.

Finding: applicable. The proposed Operations Center requires Site Plan and Design Review, and none of the above-stated exemptions are relevant to the proposal. Therefore, the provisions of this chapter apply.

17.41.030 - Tree protection—Conflicting code provisions.

Except as otherwise specified in this section, where these standards conflict with adopted city development codes or policies, the provision which provides the greater protection for regulated trees or groves, as defined in OCMC 17.04, shall govern.

Finding: complies as proposed. A small portion of the site includes a protected NROD resource with a required vegetated corridor which will remain protected from development. The regulations protecting native trees and vegetation within the NROD are stricter than OCMC 17.41 for that area of the site. See findings under OCMC 17.49 in this report.

17.41.040 - Exemptions.

These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the natural resource overlay district (NROD) of OCMC 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930, for farm or forestlands. These regulations to not apply to the removal of trees that are considered invasive species. An applicant for development may claim exemption from compliance with these standards if the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The Community Development Director has the authority to modify or waive compliance in this case.

Finding: not applicable. The proposed Operations Center requires Site Plan and Design Review, and none of the above-stated exemptions are relevant to the proposal. Therefore, the provisions of this chapter apply.

17.41.050 - Compliance options.

Applicants for review shall comply with these requirements through one or a combination of the following procedures:
A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to OCMC 17.41.060.
B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to OCMC 17.41.080; or
C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to OCMC 17.41.110; or
D. Option 4—Cash-in-lieu of planting pursuant to OCMC 17.41.120.

Finding: complies as proposed. PGE has proposed mitigation for trees that will be removed as part of the new development, and for trees that were removed for the Kamm Street Apartments project. That tree removal, violation, and mitigation obligation stated in the land use decision

predates PGE's ownership of that land. This mitigation was never fulfilled and is presumed to run with the land.

Proposed mitigation is 203 trees for those removed from the site for the Operations Center project and 72 trees for the previous Kamm Street Apartments project, for a total of 275 trees. The applicant has elected to mitigate by a combination of on-site plantings (Option 1) and planting on public land in the area. Both these options are allowed under Option 1.

17.41.060 - Tree removal and replanting—Mitigation (Option 1).

A. Applicants for development who select this option shall ensure that all healthy trees shall be preserved outside the construction area as defined in OCMC 17.04 to the extent practicable. Preserved trees are subject to Option 3 of this chapter. Compliance with these standards shall be demonstrated in a tree mitigation plan report prepared by a certified arborist, horticulturalist or forester or other environmental professional with experience and academic credentials in forestry or arboriculture. Tree inventories for the purposes of mitigation calculations may be prepared by a licensed surveyor. At the applicant's expense, the City may require the report to be reviewed by a consulting arborist. The number of replacement trees required on a development site shall be calculated separately from, and in addition to, any public or street trees in the public right-of-way required under OCMC 12.08, Public and Street Trees, any required tree planting in parking lots, and any trees planted in pedestrian and bicycle accessways.

B. The applicant shall determine the number of trees to be mitigated on the site by counting all of the trees six-inch DBH (minimum four and one-half feet from the ground) or larger on the entire site and either:
1. Trees that are removed outside of the construction area shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2; or
2. Dying, diseased or hazardous trees, when the condition is verified by a certified arborist to be consistent with the definitions in OCMC 17.04, may be removed from the tree replacement calculation. Dead trees may also be removed from the calculation, with the condition of the tree verified either by the Community Development Director or by a certified arborist at the applicant's expense, when the Community Development Director cannot make a determination. To the extent that the Community Development Director determines that the dead, dying, hazardous or diseased condition of the tree is the result of intentional action, the removal of that tree shall require mitigation pursuant to Column 2 of Table 17.41.060-1.

Table 17.41.060-1
Tree Replacement Requirements

Size of tree removed (DBH)	*Number of trees to be planted. (If removed Outside of construction area)*	*Number of trees to be planted. (If removed Within the construction area)*
6 to 12"	*3*	*1*
13 to 18"	*6*	*2*
19 to 24"	*9*	*3*
25 to 30"	*12*	*4*
31 and over"	*15*	*5*

Steps for calculating the number of replacement trees:
1. Count all trees measuring six inches DBH (minimum four and one-half feet from the ground) or larger on the entire development site.
2. Designate the size (DBH) of all trees pursuant to accepted industry standards.
3. Document in a certified arborist report any trees that are currently dead, dying, diseased or hazardous.

4. Subtract the number of dead, dying, diseased or hazardous trees in step 3 from the total number of trees on the development site in step 1. The remaining number is the number of healthy trees on the site. Use this number to determine the number of replacement trees in steps 5 through 8.
5. Identify the construction area (as defined in OCMC 17.04.230).
6. Determine the number and diameter of trees to be removed within the construction area. Based on the size of each tree, use Column 2 to determine the number of replacement trees required.
7. Determine the number and diameter of trees to be removed outside of the construction area. Based on the size of each tree, use Column 1 to determine the number of replacement trees required.
8. Determine the total number of replacement trees from steps 6 and 7.
Finding: complies with conditions. Applicant responded to Mitigation Option 1. A tree mitigation plan report has been prepared by a licensed landscape architect and an arborist, closely following the requirements of this section. A table outlining all the tree protection and removal on site, and corresponding mitigation requirements, is included with the plans. As noted, 275 mitigation trees will be planted for the project. This combines obligations from the PGE development project and from the Kamm Street Apartments decision.

Of those trees, 193 will be planted on-site under subsection C.1 above, and 82 will be planted on public land off site, under subsection C.2. The 193 trees proposed on the site are shown on the tree planting plan included with the landscape drawings. This is the maximum number of trees that the landscape architect found to be practicable to plant on site. The off-site tree planting location is more suitable overall for satisfying the objectives of this section.

Since there may be design changes to the site that require revisions to tree removal and mitigation plans prior to a building permit issuance, the applicant shall provide an updated tree removal and mitigation plan for review by the Community Development Director prior to issuance of any demolition, grading, construction plans for public and private improvements that comply with OCMC 17.41. Approval of off-site planting locations of any mitigation trees on city owned land or other government owned or privately owned land shall be approved by the Community Development Director prior to approval of prior to issuance of any demolition, grading, construction plans for public and private improvements**. See conditions of approval.**

C. Planting Area Priority for Mitigation. Development applications which opt for removal of trees with subsequent replanting pursuant to OCMC 17.41.050.A shall be required to mitigate for tree cutting by complying with the following priority for replanting standards below:
1. First Priority. Replanting on the development site.
2. Second Priority. Off-site replacement tree planting locations. If the Community Development Director determines that it is not practicable to plant the total number of replacement trees on-site, a suitable off-site planting location for the remainder of the trees may be approved that will reasonably satisfy the objectives of this section. Such locations may include either publicly owned or private land and shall be approved by the Community Development Director.
Finding: complies with condition. A tree mitigation plan report has been prepared by a licensed landscape architect and an arborist, closely following the requirements of this section. A table outlining all the tree protection and removal on site, and corresponding mitigation requirements, is included with the plans. As noted, 275 mitigation trees will be planted for the project. This combines obligations from the PGE development project and from the Kamm Street Apartments decision.

Of those trees, 193 will be planted on-site under subsection C.1 above, and 82 will be planted on public land off site, under subsection C.2. The 193 trees proposed on the site are shown on the tree

planting plan included with the landscape drawings. This is the maximum number of trees that the landscape architect found to be practicable to plant on site. The off-site tree planting location is more suitable overall for satisfying the objectives of this section.

Since there may be design changes to the site that require revisions to tree removal and mitigation plans prior to a building permit issuance, the applicant shall provide an updated tree removal and mitigation plan for review by the Community Development Director prior to issuance of any demolition, grading, construction plans for public and private improvements that comply with OCMC 17.41. Approval of off-site planting locations of any mitigation trees on city owned land or other government owned or privately owned land shall be approved by the Community Development Director prior to approval of prior to issuance of any demolition, grading, construction plans for public and private improvements**. See conditions of approval.**

D. Replacement tree planting standards.
1. All replacement trees shall be either two-inch caliper deciduous or six-foot high conifer.
2. Replacement tree species shall be approved by a landscape architect or certified arborist or shall be found on the City's Native Plant or Street Tree lists.
3. Due to their diminishing range in the region, Oregon white oak (Quercus garryana) trees, if removed, shall be replaced by the same species.
E. All existing tree(s) in the tract shall be protected by a permanent restrictive covenant or easement approved in form by the City.
F. Alternative Mitigation Plan. The Community Development Director may, subject to a Type II procedure, approve an alternative mitigation plan that adequately protects habitat pursuant to the standards for the natural resource overlay district alternative mitigation plan in OCMC 17.49.190.
Finding: complies with condition. All replacement trees shall comply with this section 17.41.060.D**. See conditions of approval.**

17.41.130 - Regulated tree protection procedures during construction.
A. No permit for any grading or construction of public or private improvements may be released prior to verification by the Community Development Director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the Community Development Director.
B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:
1. Except as otherwise determined by the Community Development Director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including, but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.
2. Approved construction fencing, a minimum of four feet tall with steel posts placed no farther than ten feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative may be used with the approval of the Community Development Director.
3. Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the Community Development Director.
4. No construction activity shall occur within the tree protection zone, including, but not limited to; dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.
5. The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.
6. No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on site and approved by the Community Development Director.

7. No machinery repair or cleaning shall be performed within ten feet of the dripline of any trees identified for protection.
8. Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the Community Development Director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.
9. The Community Development Director may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.
10. The Community Development Director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.
C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection.

Finding: complies with conditions. Numerous trees on the site will remain and are protected. These trees are shown in a tree protection and removal plan included with the land use drawings (Sheet L01 and L02). The measures depicted on this plan and described in notes follow the recommendations of a qualified arborist. Tree protection plans shall be updated and revised to comply with this section of OCMC 17.41 prior to issuance of any demolition, grading, construction plans for public and private improvements. The language of this code section shall be placed verbatim on all applicable approved tree protection, demolition and grading plans prior to issuance**. See conditions of approval.**

CHAPTER 17.49 NATURAL RESOURCES OVERLAY DISTRICT

From the applicant's narrative:

> The extent of the Natural Resources Overlay District (NROD) on the site is approximately 410 square feet, encompassing an area north of a culvert that conveys storm drainage under Warner Milne Road (Figure 6). Stormwater currently drains across the PGE property in an open ditch, directing water that was collected from properties north of the site, before passing under Warner Milne Road. South of Warner Milne Road, the drainage continues to the southeast and eventually leads into Newell Creek.

Figure 6. Culvert on north side of Warner Milne Road

17.49.040 - NROD permit and review process.

An NROD permit is required for those uses regulated under OCMC 17.49.090, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure unless an adjustment of standards pursuant to OCMC 17.49.200 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.

Finding: complies as proposed. The proposed application requires a Type III development permit of which this is a part. An NROD permit is not required because the project is for a "use allowed outright (exempted)" due to the measures taken by the site plan. That approach is described in the findings for OCMC 17.49.080.

17.49.060 - Consistency and relationship to other regulations.

A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the OCMC, other City requirements, regional, state or federal law, the provisions that provides the greater protection of the resource shall govern.

B. Compliance with Federal and State Requirements.

1. If the proposed development requires the approval of any other governmental agency, such as the Division of State Lands or the U.S. Army Corps of Engineers, the applicant shall make an application for such approval prior to or simultaneously with the submittal of its development application to the City. The planning division shall coordinate City approvals with those of other agencies to the extent necessary and feasible. Any permit issued by the City pursuant to this chapter shall not become valid until other agency approvals have been obtained or those agencies indicate that such approvals are not required.

Finding: complies as proposed. The proposed plan for the site provides the greatest level of protection for the resource because it entirely avoids construction within the NROD on-site. In that way it is consistent with city regulations and any state or federal requirements.

17.49.070 - Prohibited uses.

The following development and activities are not allowed within the NROD:

A. Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.

Finding: complies as proposed. Project plans show that the existing culvert opening and the area around it that is on the project site will be protected. No new gardens, lawns, structures, or development is proposed by the applicant. Uses that are exempted are described in subsection.

B. New lots that would have their buildable areas for new development within the NROD are prohibited.
C. The dumping of materials of any kind is prohibited except for placement of fill as provided in subsection D. below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.
D. Grading, the placement of fill in amounts greater than ten cubic yards, or any other activity that results in the removal of more than ten percent of the existing native vegetation on any lot within the NROD is prohibited, unless part of an approved development activity.

Finding: complies as proposed. No new lots are proposed. No dumping or placement of fill within the NROD regulated area is proposed. No grading or placement of fill in the amount listed inside the boundary of the NROD is proposed.

17.49.080 - Uses allowed outright (exempted).

The following uses are allowed within the NROD and do not require the issuance of an NROD permit:
H. Site plan and design review applications where all new construction is located outside of the NROD boundary shown on the City's adopted NROD map, and the NROD area is protected by a conservation easement approved in form by the City.
I. Routine repair and maintenance of existing structures, roadways, driveways and utilities.
J. Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased.
M. Planting of native vegetation and the removal of non-native, invasive vegetation (as identified on the Oregon City Native Plant List or other locally adopted plant list (e.g. Metro or Portland), or as recommended by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, arboriculture, horticulture, wildlife biology, botany, hydrology or forestry), and removal of refuse and fill, provided that:
1. All work is done using hand-held equipment;
2. No existing native vegetation is disturbed or removed; and
3. All work occurs outside of wetlands and the top-of-bank of streams.

Finding: complies as proposed. Of the activities proposed by the applicant that are applicable to the NROD area, Subsections (H), (J), and (M) are relevant. First, the site design has carefully avoided the resource by modifying the shape of nearby stormwater facilities and routing its perimeter security fence around the outside edge of the mapped NROD. This qualifies as “all new construction…outside of the NROD boundary” under Subsection (H).

In accordance with sub-section (M), removal of non-native invasive vegetation and new native planting is proposed for this area, per PGE’s landscape architect. All work in this area will be done in accordance with sub-standards (1), (2,) and (3).

Outside the property limits, redevelopment of the Warner Milne sidewalk will occur in public right of way. This sidewalk has been narrowed to preserve existing conditions and keeps the same level of impact as the current infrastructure. Consequently, it is a “replacement…of existing structures, roadways, utilities, etc.” that does not increase impervious surface. That part of the development

is therefore exempt under subsection (J). Overall, all the activities that will result in development in the NROD area are exempt under these three sections.

17.49.090 - Uses allowed under prescribed conditions.

The following uses within the NROD are subject to the applicable standards listed in OCMC 17.49.100 through 17.49.190 pursuant to a Type II process:[…]

Response: None of the proposed uses are listed in this section as allowed under prescribed conditions. As accounted for in the findings for 17.49.080, only exempt uses are proposed.

17.49.100 - General development standards.

The following standards apply to all uses allowed under prescribed conditions within the NROD with the exception of rights-of-way (subject to OCMC 17.49.150), trails (subject to OCMC 17.49.170), utility lines (subject to OCMC 17.49.140), land divisions (subject to OCMC 17.49.160), and mitigation projects (subject to OCMC 17.49.180 or 17.49.190):

[…]

Finding: complies as proposed. Because the applicant does not proposed any uses allowed under prescribed conditions within the NROD, none of the general development standards are applicable.

17.49.110 - Width of vegetated corridor.

A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Finding: complies as proposed. The width of the vegetated corridor was determined as part of the previous land use case for the Kamm Street Apartments, which established the limits of the NROD. PGE has adopted this mapped area, which was reviewed by city staff and adopted by the City Council in a final land use decision.

17.49.120 - Maximum disturbance allowance for highly constrained lots of record.

In addition to the general development standards of OCMC 17.49.100, the following standards apply to a vacant lot of record that is highly constrained by the NROD, per OCMC 17.49.090.B and 17.49.090.F: […]

Finding: not applicable. No disturbance is proposed and the site is not a highly constrained lot of record. This standard is not applicable.

17.49.130 - Existing development standards.

In addition to the General Development Standards of OCMC 17.49.100, the following standards apply to alterations and additions to existing development within the NROD, except for trails, rights-of-way, utility lines, land divisions and mitigation projects. As of June 1, 2010, applicants for alterations and additions to existing development that are not exempt pursuant to OCMC 17.49.080.J shall submit a Type II or Type III application pursuant to this section. Mitigation is required, subject to OCMC 17.49.180 or 17.49.190.

Finding: not applicable. The proposed development on the site does not proposed any non-exempt development within the NROD. Consequently, the existing development standards do not apply.

17.49.140 - Standards for utility lines.

The following standards apply to new utilities, private connections to existing or new utility lines, and upgrades of existing utility lines within the NROD: […]

17.49.150 - Standards for vehicular or pedestrian paths and roads.

The following standards apply to public rights-of-way and private roads within the NROD, including roads, bridges/stream crossings, driveways and pedestrian paths with impervious surfaces: […]

Finding: complies as proposed. The proposed development that affects the NROD is to completely avoid it where it is on PGE property, and to reconstruct an existing sidewalk over the top of the culvert, with no change to impervious surface. Both of these actions are exempt from NROD review as noted above in the finding for 17.49.080. As such, the standards listed above for NROD review of utility lines and rights of way are not directly applicable.

17.49.155 - Standards for stormwater facilities.

Approved facilities that infiltrate stormwater on-site in accordance with public works low- impact development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards: […]

Finding: not applicable. The existing culvert under Warner Milne Road is part of a stormwater facility. The stormwater management plan for the site includes outfall toward the culvert but does not place new infrastructure within it. For that reason, the standards in this section do not apply.

17.49.250 - Verification of NROD boundary.

The NROD boundary may have to be verified occasionally to determine the true location of a resource and its functional values on a site. This may be through a site specific environmental survey or a simple site visit in those cases where existing information demonstrates that the NROD significance rating does not apply to a site-specific area. Applications for development on a site located in the NROD area may request a determination that the subject site is not in an NROD area and therefore is not subject to the standards of OCMC 17.49.100. Verifications shall be processed as either a Type I or Type II process.

Finding: not applicable. Verification of the NROD boundary was determined with a prior application for apartments as described under the existing conditions section of this report. No changes to that verified NROD determination are proposed.

CHAPTER 17.50 – ADMINISTRATION AND PROCEDURES

17.50.010 Purpose.

This chapter provides the procedures by which Oregon City reviews and decides upon applications for all permits relating to the use of land authorized by ORS 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City Comprehensive Plan and Titles 16 and 17 of this code. Pursuant to ORS 227.175, any applicant may elect to consolidate applications for two or more related permits needed for a single development project. Any grading activity associated with development shall be subject to preliminary review as part of the review process for the underlying development. It is the express policy of the City of Oregon City that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

17.50.030 Summary of the City's decision-making processes.

The following decision-making processes chart shall control the City's review of the indicated permits:
Table 17.50.030 – Permit Approval Process

Permit Type	*I*	*II*	*III*	*IV*	*Expedited Land Division*

Compatibility review for communication facilities	*X*				
Conditional use (excluding shelters)			*X*		
Natural resource overlay district exemption	*X*				
Natural resource overlay district review		*X*	*X*		
Nonconforming use, structure and lots review	*X*	*X*			
Site plan and design review	*X*	*X*			

**If any provision or element of the master plan/planned unit development requires a deferred Type III procedure, the detailed development plan shall be processed through a Type III procedure.*

C. Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the City Commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the Planning Commission or the Historic Review Board hearing is published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice shall be issued at least twenty days pre-hearing, and the staff report shall be available at least seven days pre-hearing. At the evidentiary hearing held before the Planning Commission or the Historic Review Board, all issues are addressed. The decision of the Planning Commission or Historic Review Board is appealable to the City Commission, on the record pursuant to OCMC 17.50.190. The City Commission decision on appeal from is the City's final decision and is subject to review by LUBA within twenty-one days of when it becomes final, unless otherwise provided by state law.

Finding: this application requires a type III decision as it is a public utility which is a listed conditional use in the MUC-1 zone district per OCMC 17.29.020.

17.50.040 Development review in overlay districts and for erosion control.

For any development subject to regulation of geologic hazards overlay district under OCMC 17.44; natural resource overlay district under OCMC 17.49; Willamette River Greenway Overlay District under OCMC 17.48; historic overlay district under OCMC 17.40, and erosion and sediment control under OCMC 17.47, compliance with the requirements of these chapters shall be reviewed as part of the review process required for the underlying development for the site.

Finding: complies as proposed. A portion of the site has an existing protected stream that will remain protected and has been designed into the plans. Construction site run-off control is addressed under OCMC 17.47 as discussed in this report. See findings under OCMC 17.49 regarding the NROD area of the site.

17.50.050 – Pre-application conference.

Finding: complies. The applicant attended a pre-application conference PA-25-031 prior to the application. Notes from the pre-application were provided.

17.50.055 - Neighborhood association meeting.

Neighborhood Association Meeting. The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.

A. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.

B. The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the citizen involvement committee.
C. A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, citizen involvement committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a city facility.
D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the citizen involvement committee.
E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.

Finding: complies. On September 9, 2025, PGE attended one of the Elyville neighborhood association meetings, where members of the project team presented plans for the Operations Center and answered questions. Neighbors expressed support for the proposal. PGE heard concerns about the design and the desire to preserve existing trees and to use native plantings wherever possible. Meeting materials in compliance with OCMC 17.50.055 are included in Exhibit I.

17.50.060 Application requirements.

A permit application may only be initiated by the record property owner or contract purchaser, the City Commission or Planning Commission. If there is more than one record owner, then the City will not complete a Type II—IV application without signed authorization from all record owners. All permit applications shall be submitted on the form provided by the City, along with the appropriate fee and all necessary supporting documentation and information, sufficient to demonstrate compliance with all applicable approval criteria. The applicant has the burden of demonstrating, with evidence, that all applicable approval criteria are, or can be, met.

Finding: complies. The property owner of record is PGE, a public utility company. Authorization to submit the application is provided in the application.

17.50.070 Completeness review and one hundred twenty-day rule.

Finding: complies. The application was deemed complete on February 5, 2026, and the 120-day deadline for this decision is June 5, 2026.

17.50.080 Complete application—Required information.

Finding: complies. The applicant submitted all required information for the city to deem the application complete for processing.

17.50.090 - Public notices.

Finding: complies. Public notice was provided in accordance with this section.

17.50.100 - Notice posting requirements.

Finding: complies. The applicant posted the affected properties with the required notices on 3/24/2026.

17.50.110 Assignment of decision-makers.

The following City entity or official shall decide the following types of applications:

C. Type III Decisions. The Planning Commission or Historic Review Board, as applicable, shall render all Type III decisions. Such decision is appealable to the City Commission, on the record. The City Commission 's decision is the city's final decision and is subject to review by LUBA within twenty-one days of when it becomes final.
Finding: complies. The Planning Commission is the decision-maker for this Type III application. Such decision is appealable to the City Commission, on the record. The City Commission 's decision is the city's final decision and is subject to review by LUBA within twenty-one days of when it becomes final.

17.50.120 Quasi-judicial hearing process.
Finding: complies. The applicant acknowledged the quasi-judicial hearing procedure that applies to this application.

17.50.130 Conditions of approval and notice of decision.
Finding: complies. Staff has recommended reasonable conditions of approval designed to ensure that all applicable approval standards, including standards set out in city overlay districts, the City's master plans, and City public works design standards, are, or can be met. A notice of decision will be sent in accordance with this section following the Planning Commission decision.

17.50.140 – Financial guarantees.
When conditions of permit approval require a permitee to construct certain public improvements, the City shall require the permitee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.
A. Form of Guarantee. Guarantees shall be in a form approved by the City attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.
B. Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.
1. After Final Approved Design by the City. The City may request the permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
2. Before Complete Design Approval and Established Engineered Cost Estimate. The City may request a permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
C. Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required

improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.
D. Fee-in-lieu. When conditions of approval or the City engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City attorney.

Finding: complies with condition. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to receiving a permit and beginning construction. The estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the City. The City engineer has not allowed the permittee to provide a fee-in-lieu of actual construction of public improvements. Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

17.50.141 – Public improvements – Warranty
All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.
A. Duration of Warranty. Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.
B. Financial Guarantee. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.
C. Amount of Warranty. The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two-year maintenance period), and shall be supported by a verified engineering estimate and approved by the City engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.
D. Transfer of Maintenance. The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public improvements shall occur when the City accepts the improvements at the end of the two-year warranty period.

Finding: complies with condition. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in City approved construction plans shall be provided prior to platting occupancy (PICK ONE). The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. Staff has

determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.005 Purpose

The purpose of this chapter is…
A. To ensure that off-street parking is well-designed, efficiently used and compatible with adjacent land uses and the transportation system, and provides safe internal circulation for temporary parking of vehicles, pedestrians, bicycles, small scale mobility devices and transit needs;
C. To regulate the number of spaces, access, dimensions, tree canopy, landscaping, surfacing and drainage of parking areas;
D. To provide incentives for repurposing, reusing and reducing underused and unneeded parking areas and impervious areas used for parking.

17.52.010 Applicability.

The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. This chapter does not apply to residential developments including single-family detached residential dwellings, duplexes, townhouses, tri- or 3-plexes, quad- or 4-plexes, and cottage clusters.
Finding: applicable. The application includes new structures and parking lots.

17.52.015 Planning commission adjustment of parking standards.

Finding: applicable. The application requests an adjustment to exceed maximum parking. Because there is no directly applicable use category in the parking chapter, the closest land use category for the new utility building is “office,” which when applied, results in a maximum parking allowance of fewer spaces than is needed to support the proposed use. PGE has direct experience at numerous other line centers that dictates its anticipated need for parking.

Therefore, a parking adjustment from the maximum is required, which is addressed in the Parking and Loading section (17.52.015).

The parking lot is also designed to accommodate the presence of some oversized fleet vehicles. These areas of paving need the flexibility for parking larger vehicles and so cannot be obstructed with interior parking lot landscaping islands. A parking adjustment is requested to landscaping in certain areas of the parking lot, which is addressed in the Parking and Loading section (17.52.015).

A. Purpose. The purpose of permitting a planning commission adjustment to parking standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. Adjustments provide flexibility to those uses which may be extraordinary, unique, or provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum parking standard may be approved based on a determination by the planning commission that the adjustment is consistent with the purpose of this code, and the approval criteria can be met.

B. Procedure. A request for a planning commission parking adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

Finding: complies with conditions. The applicant requests two adjustments from the planning commission from the parking standards.

First, the site exceeds the maximum allowed parking. That maximum is 120 spaces, based on the nearest use category in the parking ratios table, Table 17.52.020, which is "office." This use category is not exactly a direct parallel, but since most of the building is used as office, it comes closest. In addition, the need for a larger lot is partly driven by the need to accommodate fleet vehicles used by PGE employees. These areas for fleet vehicles are required to be included toward the maximum, even though that is not true of many zoning codes. PGE has determined from its experience at other facilities that 151 spaces are needed for a facility of this size and with the range of activities that will occur there. That figure exceeds the maximum and therefore requires an adjustment.

Second, the west side of the proposed parking lot will serve double duty as passenger vehicle parking but also as a fleet storage area for longer vehicles. These vehicles, due to their length and maneuverability limitations, will park perpendicular to the regular pattern of striped spaces. This orientation allows for long vehicle parking and for the drive aisles to remain unobstructed. That being the case, this layout makes is impossible to meet the standard for interior parking lot landscaping in 17.52.060(E), which includes provisions for planting trees, shrubs, and landscape strips throughout the paved area. Because the landscaping requirement is a "parking standard" contained in 17.52, and the applicant needs "flexibility in modifying" it, a planning commission adjustment per this section is requested here. It is notable that the request to waive the landscaping requirements only applies to the 31 spaces at the west side of the employee parking lot. The other 120 spaces in this lot are in full compliance.

C. Approval criteria for the adjustment are as follows:
1. Documentation. The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.
2. Parking Analysis for Surrounding Uses and On-Street Parking Availability. The applicant shall show that there is a continued fifteen percent parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the community development director.
a. For the purposes of demonstrating the availability of on street parking as defined in OCMC 17.52.020.B.3, the applicant shall undertake a parking study during time periods specified by the community development director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the community development director.
b. The on-site parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in on-site parking shall be calculated as follows:
i. Vacant on-street parking spaces within three hundred feet of the site will reduce on-site parking requirements by 0.5 parking spaces; and
ii. Vacant on-street parking spaces between three hundred and six hundred feet of the site will reduce on-site parking requirements by 0.2 parking spaces.

Finding: complies as proposed. PGE has determined that the effective functioning of the new development requires more parking than the maximum allowed under the ratio in the code that most closely approximates the proposed use. A minimum for the site if it were an "office" use is 120 spaces; 151 spaces are proposed for the public utility use. This determination is based on decades of PGE experience with these kinds of facilities, both at the current Oregon City location

and at other site around the region. Because this is a request to exceed the maximum # of spaces, "all applicable reductions" have not been taken and that phrase is not relevant.

Likewise, a parking analysis for surrounding uses and on-street parking availability is not relevant to this adjustment because it is not for a reduction from a minimum, it is to exceed the maximum. By constructing a parking lot that is larger than would otherwise be required, PGE would presumably ease curbside parking congestion. In addition, there is no on-street parking permitted along Warner Milne Road in front of the PGE site, so it is presumed that all demand generated by the new Operations Center must be accommodated on-site, which is part of the rationale for such a large lot.

With regard to the adjustment request to waive parking lot landscaping required on a sub-area of the parking lot on the west side of it, this does not relate to the amount of parking. Rather, it relates the design requirements for it. Changing the minimum requirements for landscaping on 31 of the lots 151 spaces will not have any effect on surrounding uses or on-street parking availability. For that reason the requirements of subsection 2 above are not applicable.

3. Function and Use of Site. The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites.

Finding: complies as proposed. Modifying the amount of required parking by allowing 151 spaces, 31 more than the maximum, does not significantly impact the use or function of the site. Accommodating all the anticipated employee and visitor vehicles in a secured, on-site parking area is a core element of the property and enables the public utility use to occur. Because many PGE employees come to the site and then use PGE-branded vehicles for going out into the community for maintenance and repair, this requires a larger number of dedicated spaces than would otherwise be the case. Likewise, since public utility facilities need to be secured to protect the integrity of critical infrastructure, all the spaces are within a fence line, and the use cannot depend on employees parking in the neighborhood in publicly shared spaces that might reduce the demand for on-site spaces.

Likewise, the larger parking lot does not impact the use or function of adjacent sites. If anything, a larger parking lot will insure that there is no spillover parking that occurs on adjacent streets or parking areas, which could potentially impact the use or function of those sites. Managing its own demand fully on the PGE property has the effect of insulating adjacent sites from any parking impacts.

4. Compatibility. The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood.

Finding: complies as proposed. The subject site is a very large, 12-acre property, part of which is already occupied by the PGE line center. Large-scale uses currently occupy the surrounding neighborhood in a way that is entirely compatible with a slightly larger parking lot than what would otherwise be allowed.

Other large-site, large-format uses currently surround the PGE site: a middle school, a church, the Red Soils campus, a cemetery, and the Hilltop Mall. Many of these sites also have very large parking lots. This proposal is also considered in context with the existing line center, which has been at the same location for many decades and is currently compatible with the surrounding

neighborhood. Because the increment of change from the baseline requirement is small, and the surrounding neighborhood has many comparably-scaled uses, the proposal is compatible.

With regard to the landscape elements that the applicant requests waiving for a portion of the parking lot, this change is also compatible with the surrounding area. Overall, the PGE parking lot will have generous landscaping along its perimeter and at the interior of the rest of the parking lot. The area where fleet vehicles will park and landscaping not provided is located to the interior of the site and not noticeable to adjacent property owners or passersby on Warner Milne Road. Forgoing several landscape islands in a parking lot that otherwise has many of them does not have any significant effect on the proposal's compatibility with the area. It also appears from aerial photography that many of the parking lots in the surrounding area were constructed prior to the adoption of this requirement and are significantly less landscaped overall than is proposed by PGE. In this sense, the proposed parking lot design is compatible with the parking lots of surrounding uses.

5. Safety. The proposal does not significantly impact the safety of adjacent properties and rights-of-way.
Finding: complies as proposed. The proposed adjustment to the number of parking spaces allowed brings all the anticipated demand for motor vehicle parking on to the subject site via an approved access point along Warner Milne Road. A too-small lot that is less than the maximum permitted spaces, in PGE's experience, would result in some spillover parking and pedestrian activity farther away from the site. This could increase the opportunity for pedestrian-vehicle conflicts. In that respect, adjacent property and right of way are safer with the lot being sized appropriately to the proposed use. The parking lot will also be highly secure and protected by a gate that prevents unauthorized users from accessing the facility, which also insures safety for adjacent property owners. The Warner Milne Road right of way will not be affected by 31 additional parking spaces inside the property boundary, accessed through an internal driveway that is entirely on private property.

Likewise, the adjustment to waive landscaping requirements within a portion of the parking area has no effect on safety for adjacent properties and/or rights of way. The area where the fleet vehicles will park and which necessitates the adjustment to landscaping is well away from the street and from adjacent property. The amount of landscaping on a property generally does not have a significant impact on safety for adjacent property, regardless of whether it is more or less.

6. Services. The proposal will not create a significant impact to public services, including fire and emergency services.
Finding: complies as proposed. The proposed adjustment to the maximum number of parking spaces allowed on the site from 120 to 151 has no effect on public services, including fire and emergency services. The facility at 120 spaces in size, which would be allowed outright, requires the same degree of water, sewer, stormwater, transportation and other services as does one slightly larger. The city has indicated that it can provide these services to the site, and an incremental change to the size of the parking lot has no appreciable or significant impact on the ability to do so.

Likewise, the adjustment request to waive landscaping on 31 spaces within this lot does not have an impact to public services. Forgoing several landscape islands at the interior of a large parking area does not affect the city's ability to provide utility services or to serve the site with emergency

responders. Insofar as any impact at all could be detected from the minor difference, it is certainly not significant.

17.52.020 Number of automobile spaces

A. Exemptions. The City shall not require a minimum number of parking spaces in the following situations.
1. Residential developments with more than one unit on a single Lot of Record as defined by 17.04.695.
2. Developments on a lot or parcel that includes lands within one-half (1/2) mile of a frequent transit corridor.
3. Per OAR 660-012-0435, no off-street parking is required within the Oregon City Regional Center, and within one-quarter mile of the Oregon City Regional Center.
4. Facilities and homes designed to serve people with psychosocial, physical, intellectual or developmental disabilities, including but not limited to a: residential care facility, residential training facility, residential treatment facility, residential training home, residential treatment home, and conversion facility as defined in ORS 443.400;
5. Child care facility as defined in ORS 329A.250;
6. Residential units smaller than 750 square feet;
7. Affordable housing as defined in OAR 660-039-0010;
8. Publicly supported housing as defined in ORS 456.250;
9. Emergency and transitional shelters for people experiencing homelessness; and
10. Domestic violence shelters.
11. Change of use of, or redevelopment of, buildings vacant for more than two years, provided the applicant provides evidence that the building was vacant prior to the effective date of this ordinance.
12. Change of use or redevelopment where at least 50 percent of the building floor area is retained.
13. Expansion of existing businesses provided that the cumulative expansion within one calendar year does not exceed 30 percent of the existing building footprint.
14. Designated historic buildings and landmarks pursuant to OCMC 17.40.030 – Historic Overlay District.
15. Commercial properties with fewer than ten (10) on-site employees or 3,000 square feet of floor space.
16. Developments built under the Oregon Residential Reach Code.
17. Developments seeking certification under any Leadership in Energy and Environmental Design (LEED) rating system.
18. Schools as defined in OCMC 17.04
19. Bars and taverns
20. Mixed-use development.
21. A change in use within an existing habitable building located in the MUD design district or the Willamette Falls Downtown District is exempt from additional parking requirements.
22. Additions to an existing building and new construction that do not constitute cumulative expansion more than 30% within one calendar year are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.

Finding: not applicable. The applicant has not requested an exemption per this section and rather than not meeting the minimum required spaces, wishes to exceed the maximum number of required spaces. No minimum parking is required as the site is within one-half mile of a frequent transit corridor.

B. Where new parking is proposed the number of parking spaces shall comply with the minimum and maximum ratio listed in Table 17.52.020. The maximum parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020

Land Use	*Minimum and Maximum Parking*	
	Minimum	*Maximum*
Office	*2.70*	*3.33*

1. Mixed Uses. Unless exempt under (A), in the event several land uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.
2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the community development director, based upon the requirements of comparable uses listed.
3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.
4. Fleet vehicle parking shall be accommodated within the maximum parking ratio, except that in GI, CI, and MUE zones, fleet vehicle parking may be included in a parking lot in addition to the maximum number of permitted parking spaces.
5. For land uses with more than 65,000 square feet of floor area, surface parking may not consist of more area than the floor area of the building.

Finding: complies as proposed. The proposed use of the site is "public utility," as was discussed earlier in the findings. That use category is not listed in the parking requirements table. Because of that, subsection 2 requires an interpretation that the site should apply "comparable uses listed" to assess its parking needs. "Office" is the closest land use category to the Operations Center, for the purposes of parking ratios. This has numerical requirements listed in OCMC Table 17.52.020. Minimum parking does not apply to the proposed Operations Center because the site is located within a half-mile of a frequent transit line (#33).

Maximum permitted parking is calculated using "net leasable area". The definition does not neatly apply to the proposed Operations Center, since the property is not leased to any user. However, the new office and storeroom building contains 36,000 square feet of floor area, as shown on submitted plans. The applicant has included the entire structure in the calculation because although the two sides of the building have different functions, they operate in tandem and are connected. This building is both the primary site structure and the largest building on site, so it is an acceptable proxy for what drives parking demand. Furthermore, the office use on the site does not exceed 65,000 square feet, therefore the requirement under note (5) of Table 17.52.020 is met.

At the rate of 3.33 spaces maximum per 1,000 square feet of floor area, up to 120 parking spaces are permitted. The applicant has proposed 151, which requires an adjustment. That adjustment was addressed in a previous section of the findings.

The proposed Operations Center is a unique public utility use and requires more parking than allowed under the standard allocation for office uses alone. In part, this is due to the presence of fleet vehicles in the parking area, which is unique to the public utility use. As noted in sub-standard (4), the city requires incorporating this fleet vehicle parking, which makes up 31 stalls in this case, in the total parking count. PGE requests an adjustment to the maximum spaces to allow the 151 proposed stalls (120 employee spaces, 31 fleet spaces). With approval of the requested adjustment, these standards are satisfied.

C. Unless exempt under Section (A), parking requirements can be met either on-site, or off-site by meeting one or multiple of the following conditions:
1. Parking may be located on the same site as the associated use which it is supporting.
2. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the community development director.

Finding: complies as proposed. All of the proposed parking is on site. This is not a mixed-use proposal.

3. Shared Parking. Parking facilities for two or more uses, structures, or parcels of land may be shared provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.

Finding: not applicable. The application does not propose shared parking.

4. On-Street Parking. On-street parking may be counted toward on-site parking when it is on the street face abutting the subject land use. An on-street parking space shall not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses requesting this shall conform to the following standards:
a. Dimensions. The following constitutes one on-street parking space:
i. Parallel parking: Twenty-two feet of uninterrupted and available curb;
ii. Forty-five and/or sixty-degree diagonal parking: Fifteen feet of curb;
iii. Ninety-degree (perpendicular) parking: Twelve feet of curb.
iv. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use shall not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.

Finding: not applicable. The application does not propose on street parking. Warner Milne Road is a very busy minor arterial roadway and on-street parking is not appropriate abutting the site due to traffic volume and existing roadway width.

5. Garage parking spaces and driveways at least 20 feet deep shall count towards off-street parking.

Finding: not applicable. The application includes covered parking spaces for fleet vehicles which are part of the parking calculations.

6. Off-site parking. Required parking spaces may be provided offsite, within 2,000 feet pedestrian travel of a site. If any non-loading parking is provided on site, all required parking for people with disabilities shall be on site. If all parking is offsite, parking for people with disabilities must be located within the shortest possible distance of an accessible entrance via an accessible path and no greater than 200 feet from that entrance.

Finding: not applicable. The application does not propose off-site parking.

C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted. The reductions may be cumulative and not capped.
1. Tree Preservation. The community development director may grant an adjustment to any standard of this requirement provided that the adjustment preserves any tree greater than 20 inches in diameter so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition.
2. Transportation Demand Management. The community development director shall reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.
A transportation demand management (TDM) program shall be developed to include strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the city determines the plan is not successful, the plan may be revised. If the city determines that no good-faith effort has been made to implement the plan, the city may take enforcement actions.

3. Parking stalls may be reduced by up to ten percent when the subject property is adjacent to an existing or planned fixed public transit route or within one thousand feet of an existing or planned transit stop.
4. Parking shall be reduced by one off-street parking space for each three kilowatts of capacity in solar panels or wind power that will be provided in a development.
5. Parking shall be reduced by one off-street parking space for each dedicated car sharing parking space in a development. These spaces shall be clearly signed or marked appropriately.
6. Parking mandates shall be reduced by two off-street parking spaces for every electric vehicle charging station provided in a development.
7. Parking mandates shall be reduced by one off-street parking space for every two residential units in a development that are fully accessible to people with mobility disabilities.
Finding: not applicable. This application does not propose a reduction in the number of automobile spaces required.

17.52.025 Reuse and redevelopment of underused parking allowed
A. Purpose. The purpose of this section is to encourage other beneficial uses within parking areas, especially in situations where parking is underused as defined in OCMC 17.04.
B. Property owners may redevelop, remove, reuse and repurpose parking spaces for bicycle-oriented, pedestrian-oriented or transit supportive facilities including but not limited to bicycle parking, bus stops and pull-outs, transit shelters, and park and ride stations. These requests may be approved through the Type I Site Plan and Design Review application process in OCMC 17.62.030.
Finding: not applicable. This application does not propose reuse and redevelopment of underused parking.

17.52.030 Standards for automobile parking.
A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.
Finding: complies as proposed. There are three proposed ingress and egress locations on Warner Milne Road. This is a reduction from the nine that currently exist across the project site. PGE's consultants coordinated with the City Engineer to design the Operations Center in a manner that complies with all applicable traffic and public works requirements. Special attention was given to the signalized intersection with Beavercreek Road and the major truck driveway that aligns with that road.

Integrating the driveway with a traffic signal offers significant safety benefits both for PGE and for the general public including anticipated new signalized pedestrian crosswalks. In addition, all three driveways are designed to prevent backing or maneuvering within the public right-of-way.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce stormwater runoff and improve water quality pursuant to the city's stormwater and low impact development design standards are encouraged.
C. Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the city public works stormwater and grading design standards.
Finding: complies as proposed. All on-site parking spaces and access aisles are paved, as shown on the plans. PGE will adequately maintain these areas in compliance with sub-standard (B). The Stormwater Report (Exhibit E) and PGE's responses to OCMC 13.12 Stormwater Management show that all applicable standards are met.

D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the parking shall be compact, while the remaining required parking stalls may be designed to standard dimensions. The community development director may approve alternative dimensions for parking stalls which comply with the intent of this chapter.

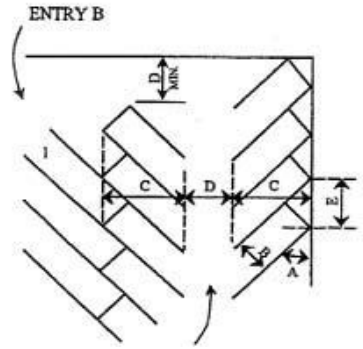
2. Alternative Parking/Plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the community development director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping of the quantity and quality found within standard parking lot landscaping requirements.

Parking Standard

Parking Angle Space Dimensions

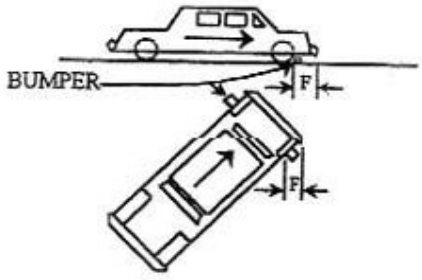
A Parking Angle		*B Stall Width*	*C Stall to Curb*	*D Aisle Width*	*E Curb Length*	*F Overhang*
0 degrees		*8.5*	*9.0*	*12*	*20*	*0*
30 degrees	*Standard* *Compact*	*9'* *8'*	*17.3'* *14.9'*	*11'* *11'*	*18'* *16'*	
45 degrees	*Standard* *Compact*	*8.5* *8.5*	*19.8'* *17.0'*	*13'* *13'*	*12.7'* *11.3'*	*1.4*
60 degrees	*Standard* *Compact*	*9'* *8'*	*21'* *17.9'*	*18'* *16'*	*10.4'* *9.2'*	*1.7*
90 degrees	*Standard* *Compact*	*9'* *8'*	*19.0'* *16.0'*	*24'* *22'*	*9'* *8'*	*1.5*

All dimensions are to the nearest tenth of a foot.



TYPICAL PARKING LAYOUT

ENTRY A



NOTE: SPACE 1 CONTINGENT UPON ENTRY B
OVERHANG
NOTE: Overhang dimensions are intended to indicate possible location from parking area edge for location of bumpers.

Finding: complies as proposed. All proposed parking spaces will be standard size, except for the larger ADA accessible spaces. Because there is no minimum parking requirement for the project site, the sub-standard (1) limitation on number of compact spaces does not apply.
The Site Plan shows all proposed spaces have been designed at standard 90-degree or zero-degree angles, and the stall dimensions comply with the dimensional requirements established in the Parking Angle Space Dimensions table within sub-standard (2).

E. Carpool and Vanpool Parking.
1. New non-residential developments with fifty (50) or more parking spaces shall designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved — Carpool/Vanpool Only." This section shall apply to the following listed uses:
(a) Hospitals.
(b) Government offices.
(c) Group homes.
(d) Nursing and retirement homes.
(e) Schools.
(f) Designated employee parking areas.
(g) Transit park-and-ride facilities.
2. The standards in E(1) shall not apply to projects where seventy-five percent or more of the floor area is residential.

Finding: complies as proposed. With approval of PGE's requested adjustment to the maximum parking total, 151 spaces are proposed, 31 of which are designated for fleet vehicles. Because of that, 120 of these are "available for employees." Five percent of that number is six carpool/vanpool spaces that are required. None of the listed exclusions applies to the proposed Operations Center.

Six spaces have been designated for carpool/vanpool parking. These spaces are near the main entrance to the office building and are shown on the site plan. In compliance with the above standard, these spaces will be clearly marked with the required signage and located closest to the main entrance than all other parking, with the exception of ADA accessible parking spaces.

17.52.040 Bicycle parking standards.
A. Purpose—Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than exclusively residential use with less than five dwellings on-site (excluding cottage clusters).
B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the community development director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.
*Table A Required Bicycle Parking Spaces**
Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

Use	*Minimum Bicycle Parking*	*Minimum Bicycle Parking — Covered —*
Bank, office	*1 per 20 auto spaces (minimum of 2)*	*50% (minimum of 1)*

** Covered bicycle parking is not required for developments with two or fewer parking stalls.*

Finding: complies as proposed. As with vehicle parking space requirements, there is no corresponding use category for public utility. To determine the number of required bike parking spaces, PGE assumes the same land use category. Ultimately, the requirements are based on the vehicle parking counts. At a count of 151 vehicle spaces, 8 bike parking spaces are required. 10 bicycle parking spaces are proposed, as shown on the plans (See Floor Plan, Sheet A21). This quantity exceeds the minimum ratio. Though not required, the proposed bike parking is covered.

C. [Bicycle Parking] Design Standards.
1. Bicycle parking facilities shall be in the form of a lockable enclosure on-site, secure room in a building on-site, a covered or uncovered rack on-site, or within the adjacent right-of-way.
2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.
3. Bicycle parking areas shall be illuminated pursuant to OCMC 17.62.065 – Outdoor Lighting.
4. All bicycle racks shall be designed so that:
a. The bicycle frame is supported horizontally at two or more places.
b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.
c. The user is not required to lift the bicycle onto the bicycle rack.
d. Each bicycle parking space is accessible without moving another bicycle.
e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.
f. Provides an area of at least six feet by two feet per standard bicycle.
g. Provides an area of at least six feet by three feet for cargo bicycles and large bicycles. Where only one bicycle space is required per Table A, it shall meet the larger space requirement of is standard.
g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.

Finding: complies as proposed. Proposed bicycle parking is located near the east façade of the new office and storeroom building, just north of the building's main entrance. At this location, bicycle parking will be plainly visible from the building entrance. All 10 secure spaces will be located beneath a canopy, designed and spaced to comply with the requirements of sub-standards (1) and (3).

17.52.060 Parking lot landscaping.

Purpose. The purpose of this code section includes the following:
1. To enhance and soften the appearance of parking lots;
2. To limit the visual impact of parking lots from sidewalks, streets and particularly from residential areas;
3. To shade and cool parking areas;
4. To reduce air and water pollution;
5. To reduce stormwater impacts and improve water quality; and
6. To establish parking lots that are more inviting to pedestrians and bicyclists.

A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.

Finding: applicable. The proposed Operations Center includes construction of a new parking lot on the east side of the site. As discussed previously, the paved west side of the site is work area. This includes a canopy for covering heavy vehicles. This is not a parking garage or parking structure as described in the code. The standards of this section are applicable to the new parking lot at the east side of the site.

B. Development Standards.
1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.
2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.
3. Developments adding off-street parking areas of one-half acre (21,780 square feet) or more shall comply with (a)or (b) below:
(a) Provide tree canopy that will cover at least 40 percent of the new parking lot at maturity but no later than 15 years after planting.
(b) Where an applicant can demonstrate that it is infeasible to meet the 40% canopy requirement in (a) the Community Development Director may approve installation of solar panels with a generation capacity of at least 0.5 kilowatts per parking space. Panels may be located anywhere on the property subject to applicable standards of the OCMC.
4. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.
5. Required landscaping trees shall be of a minimum two-inch minimum caliper size for deciduous species or a minimum 8 foot height for evergreen species at the time of planting and selected from the Oregon City Street Tree List, Parking Lot Tree list or other approved species recommended by a certified arborist or registered landscape architect.
6. At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.
7. Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the community development director, that can demonstrate adequate maintenance.
8. All landscaping shall be installed according to accepted planting procedures, according to American Standards for Nursery Stock (ANSI Z60.1).

Finding: complies with condition. The application includes a new parking lot of approximately 2 acres in size. The Landscape Plan shows proposed tree sizes and planting plans, including compliance with the requirements of sub-standards B.(1), (2), (4), (5), and (8). Irrigation will be provided as noted on this landscape plan and the area will be adequately maintained, in compliance with subsection B.(7). The landscaping plan for the parking lot does not indicate compliance with the mature 40% tree canopy requirement in subsection 3.(a) and does not propose the use of solar panels per subsection 3.(b). The applicant has the option of complying with the requirement through 3.(a) or 3.(b).

The applicant was notified of this standard and responses that they can make minor changes to the parking lot landscaping that will comply with the 40% canopy requirements, but it will take a little time to dial in those drawings, so the applicant supports a condition of approval to demonstrate compliance.

Prior to permit issuance the applicant shall provide revised landscaping plans that fully comply with the development standards of OCMC 17.52.060.B. including the 40% canopy requirement**.**
See conditions of approval.

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening for New Parking Lots and new parking lots over ½ acre. Shall include associated drive aisles with five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the community development director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.

1. The perimeter parking lot are[a] shall include:

a. Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;

b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.

c. A minimum of 30% tree canopy at maturity is required along the parking lot perimeter adjacent to drive aisles.

Finding: complies with condition. The proposed parking lot is largely interior to the site and does not abut (directly share a property line with) the right of way or adjoining properties. The Warner Milne right of way is buffered by a thirty-six-foot deep landscaped area that has stormwater detention facilities that are landscaped. The north side of the parking lot is buffered by landscaping, a row of trees, the security fence, and a shared use path to Kamm Street. The east side of the site is buffered by two landscape strips sandwiched around the north-south shared use path that aligns with Hughes Street. In all these cases, the Landscape Plan shows at least five feet of landscaping as a buffer to the parking area, which trees at least every thirty feet.

Since the proposed Operations Center and its parking area is a fenced and secure site, new perimeter plantings do not need to permit pedestrian site access from the sidewalk as provided in subsection (b). However, openings in the landscaping as shown allow access for maintenance and visual breaks.

Prior to issuance of approval for construction plans, the applicant shall confirm that the proposed perimeter trees adjacent to the drive aisles can meet a minimum of 30% canopy at maturity per standard 1.(c)**. See conditions of approval.**

D. Parking Area/Building Buffer. Except for parking lots with fewer than five parking stalls, parking areas (excluding drive aisles with no adjacent parking) shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:

1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or:

2. Minimum seven-foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.

Finding: complies as proposed. The site plan shows that all vehicle parking located near structures will be separated by pedestrian entranceways or loading areas and, therefore, do not necessitate additional buffers. The east side of the office building is occupied by the entry plaza to the main entrance which is a “pedestrian entranceway.” This separates the exterior wall of the structure from the parking area and serves as an adequate buffer with additional landscaping.

E. Interior Parking Lot Landscaping. Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce stormwater runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped

areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:
a. A minimum of one tree per four parking spaces.
b. A minimum of 1.5 shrubs per parking space.
c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

Finding: complies with condition. The landscape plan shows interior parking lot landscaping incorporated into the design of all proposed parking areas with more than five parking stalls. The Plan shows the following, designed in conformance with the above standards. There is one exception to the landscaping described above. At the northwest side of the proposed parking lot, PGE proposes an adjustment to accommodate fleet parking. The adjustment allows fifteen contiguous stalls in one bay, and seventeen contiguous stalls in another, without landscape strips. The reason for this is the need to park longer fleet vehicles. Compliance with the adjustment criteria is shown under PGE's responses to OCMC 17.52.015. The landscaping plan does not indicate compliance with the mature 40% tree canopy requirement in subsection B.3.(a) and does not propose the use of solar panels per subsection B.3.(b). The applicant has the option of complying with the requirement through 3.(a) or 3.(b)**. See conditions of approval.**

F. Alternative landscaping plan.
Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the community development director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with subsection 1 and/or 2 below.
1. General Review Standard. The alternative shall meet the standards in OCMC 17.62.015, Modifications that will better meet design review requirements.
2. Credit for Pervious/Low Impact Development. The community development director may count up to fifty percent of the square footage of any pervious hardscaped landscape material within a parking lot that is designed and approved pursuant to the city's adopted stormwater and low impact development design standards toward minimum landscaping requirements for the site. (This includes porous pavement detention, open celled block pavers, porous asphalt, porous concrete pavement, porous turf, porous gravel, etc.).

Finding: not applicable. No alternative landscape plan is proposed. The site is not physically constrained or small. An adjustment to waive the landscape strips and planting requirements in one sub-area of the parking lot is requested per OCMC 17.52.015.

17.52.070 Electrical Vehicle Charging

A. New private multi-family residential or mixed-use developments with five or more residential units shall install electrical service capacity, as defined in OCMC 17.04, to new off-street parking spaces subject to the following standards.
1. Non-residential development and residential or mixed-use developments with less than five dwelling units shall provide electrical service capacity to a minimum of 20 percent of all off-street vehicle parking spaces on the site.
2. Residential or mixed-use development with five or more dwelling units shall provide electrical service capacity to a minimum of 40 percent of all off-street vehicle parking spaces on site.
3. The placement of electrical service equipment shall not conflict with, or block access required under the Americans with Disabilities Act. Electrical service equipment shall not displace required pedestrian paths, sidewalks, landscaping, bicycle paths and parking spaces.
4. Parking mandates shall be reduced by two off street parking spaces for every electric vehicle charging station provided in a development.

Finding: complies with condition. The application is a non-residential development and must provide electrical service capacity to a minimum of 20 percent of all off-street vehicle parking

spaces on the site. Prior to issuance of permits for construction of the parking lot, the applicant shall provide plans that conform with this standard**. See conditions of approval.**

17.52.080 Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

A. It will not interfere with the maintenance or repair of any public utility;

B. It will not restrict pedestrian or vehicular access; and

C. It will not constitute a traffic hazard due to reduced visibility.

Finding: complies as proposed. PGE acknowledges and accepts the requirements of this section.

17.52.090 Loading areas.

A. Purpose. The purpose of this section is to provide adequate loading areas for commercial, office, retail and industrial uses that do not interfere with the operation of adjacent streets.

B. Applicability. OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The city engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.

C. Standards.

1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the city engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.

2. Where parking areas are prohibited between a building and the street, loading areas or drive isles are also prohibited.

3. The city engineer and decision maker, through site plan and design review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

a. Short in duration (i.e., less than one hour);

b. Infrequent (less than three operations daily between five a.m. and twelve a.m. or all operations between twelve a.m. and five a.m. at a location that is not adjacent to a residential zone);

c. Does not obstruct traffic during peak traffic hours;

d. Does not interfere with emergency response services; and

e. Is acceptable to the applicable roadway authority.

Finding: complies as proposed. As a location for maintenance and repair vehicles, the PGE Operations Center will have different circulation and loading needs for its large trucks, somewhat separate from what the new office building will require for "service or delivery truck visits" which is the focus of the standards in this section. The Transportation Impact Study (TIS, Exhibit D) predominantly addresses circulation of large trucks, but also discusses service and delivery to the office building. To accommodate such uses, PGE proposes a loading area north of the storeroom portion of the new building. The City Engineer shall review the proposal and refine the loading area requirements, subject to the above standards.

Operations-Center circulation for large truck vehicles that provide utility repair and installation is critical to the basic operations of the site and was central to the site layout. The TIS conclusions demonstrate the operational efficiency and the safety of the Circulation Plan (Exhibit C, Sheet A12).

No use of the public right-of-way is proposed for loading. Based on the proposed loading area layout and circulation plan, the loading area is large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways.

CHAPTER 17.54 SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS

17.54.010 - Accessory structures and uses.

Accessory structures and uses shall comply with all requirements for the principal use except where specifically modified by this title and shall comply with the following standards:
A. Signs. Signs shall be permitted as provided in Chapter 15.28.
B. Residential Accessory Structures, Not Including Accessory Dwellings Units. The section applies to all accessory structures within the R-10, R-8, R-6, R-5 and R-3.5 zoning districts and accessory structures on properties with a residential use with less than five units within a zoning designation not listed above.
1. Accessory Structures with a Footprint Less than Two Hundred Square Feet:
a. Shall be located behind the front line of the primary structure;
b. Shall comply with the dimensional standards of the zoning designation including height, lot coverage and setbacks unless modified pursuant to subsection c herein; and
c. Side and rear setbacks may be reduced to not less than three feet for the accessory structure and its projections if the height does not exceed seventeen feet as defined in OCMC 17.04.550.
2. Accessory Structures with a Footprint from Two Hundred to Six Hundred Square Feet:
a. Shall be located behind the front line of the primary structure;
b. Shall comply with the dimensional standards of the zoning designation, including height, setbacks, and lot coverage unless modified pursuant to subsection c; and
c. Side and rear setbacks may be reduced to not less than three feet for one accessory structure and its projections if the height does not exceed seventeen feet as defined in OCMC 17.04.550.
3. Accessory Structures with a Footprint Over Six Hundred Square Feet:
a. Shall not exceed more than one accessory structure with a footprint in excess of six hundred square feet per parcel;
b. The parcel shall be in excess of twenty thousand square feet;
c. The footprint shall not exceed the footprint of the primary structure;
d. Shall not exceed eight hundred square feet;
e. Shall not exceed the height of the primary structure;
f. Shall be located behind the front line of the primary structure; and
g. Shall comply with the dimensional standards of the zoning designation including height, setbacks, and lot coverage.

Finding: not applicable. The application does not propose any signs or residential accessory structures.

4. Prohibited:
a. Cargo containers.
b. Membrane and fabric covered storage areas visible from the adjacent right-of-way.
c. Metal structures within a historic district, or on an individually designated historic property, unless otherwise authorized by OCMC Chapter 17.40.

Finding: not applicable. The application does not propose cargo containers, membrane or fabric covered storage areas. The site is not a designated historic property.

5. An accessory structure housing a hooved animal shall be located a minimum of twenty-five feet from any property line.

6. Accessory structures constructed prior to January 1, 2017 which are located behind the front building line of the primary structure are exempt from the setback and height requirements in this chapter, except as otherwise limited through an applicable overlay district.
7. Swimming Pools. In-ground and above-ground swimming pools shall be constructed not less than three feet from the side or rear yard lines. Swimming pools shall comply with the front yard setback requirements for the principal structure. A pool shall be surrounded by a fence no less than four feet in height or a suitable alternative such as a locked or electric cover, approved by the building official.

Finding: complies as proposed. The application does not propose structures for hooved animals or swimming pools. The proposal includes an existing garage at the north edge of the site, adjacent to the cemetery. This garage building is being repaired and updated for continued use. It is one of the few elements of the site that is being retained with the construction of the new Operations Center. This structure, which is 8,230 square feet is approximately three feet from the north property line, which makes it nonconforming as to its building setback, which would otherwise be twenty feet for new structures. The height of the existing garage is 23.5 feet to the parapet which complies with the MUC-1 building height limit of 40 feet. It is only the setback which is non-conforming. See also findings under OCMC 17.58.

C. Temporary Structures in the Right-of-Way. This section applies to temporary structures associated with permitted events in the right-of-way. Temporary structures:

Finding: not applicable. The application does not propose temporary structures in the right-of-way.

17.54.020 - Projections from buildings.

Residential building projections that are cantilevered so that they do not touch the ground (such as cornices, eaves, bay windows, fireplaces, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features) may project into the required setbacks up to twenty-four inches. The projection may be limited by easement restrictions, etc.

Finding: not applicable. This is not a residential development.

17.54.030 - Setback exceptions.

A. Through lots having a frontage on two streets shall provide the required front yard on each street. The required rear yard setback shall not apply.
B. Structures within the right-of-way are exempt from setback standards.
C. Uncovered decks or porches with a height of less than thirty inches from grade are exempt from setback standards.

Finding: not applicable. No setback exceptions are proposed.

17.54.100 Fences, Hedges, Walls, and Retaining Walls.

A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:
1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5-feet in total height as measured from the finished grade at any point on the fence.
2. A fence, hedge, wall, located next to, or behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:
a. Six feet in total height for residential properties with less than five units as measured from the finished grade at any point on the fence; or
b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.
3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.

4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.

Finding: complies as proposed. The pre-existing chain link fence will remain along some portions of the property, with new anti-climb eight-foot-tall security fencing proposed around the site perimeter and outside of the right-of-way. The new fencing will be inside the easternmost driveway because it is an emergency access route between Warner Milne Road and Hughes Street. Likewise, the publicly accessible shared use path is outside the fence line and open to use by non-PGE users.

The main building, the proposed office and storeroom, has a main façade on Warner Milne Road. No fencing is required between this frontage and the building, but fencing does extend to the side of the building and along the side and rear property lines. No fencing is proposed in front of the forward-most buildings, meeting sub-standard (1). The proposed fencing next to the new office and storeroom and within 40 feet of the Warner Milne Road right-of-way will be eight feet tall, in compliance with sub-standard (2)(b).

The retaining wall proposed at the northwest corner of the project site is approximately 180 feet from the right-of-way, rendering sub-standard (3) non-applicable. The wall is no less than sixteen feet from nearby fencing, rendering sub-standard (4) non-applicable.

5. Property owners shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.

Finding: complies as proposed. The Site Plan (Sheet A11) shows that the requirements of OCMC 10.32 will be met.

6. Retaining walls completely below the elevation of the right-of-way may be up to six feet in height.
7. Minimum fall protection required by the Building Official, such as railings, is not included in the height of a retaining wall but must comply with the fence height requirements.

Finding: complies as proposed. The proposed retaining wall is discussed in response to sub-standard (A)(3) and (4). The Grading Plan (Sheet C01) demonstrates that the retaining wall elevation will not be completely below the right-of-way, rendering sub-standard (6) non-applicable. Requirements for any minimum fall protection for the retaining walls that is needed will be determined at the time of building permit review.

B. When no other practicable alternative exists, the City Engineer may permit a fence, hedge, wall, retaining wall, or combination thereof to be located within the right-of-way subject to all of the following:
1. A Revocable Permanent Obstruction in the Right of Way permit is granted per OCMC 12.04.120;
2. Retaining walls, fences, or hedges comply with OCMC 17.54.100.A, unless determined to be impracticable by the City Engineer.
3. The abutting property owner shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.

Finding: not applicable. No existing or proposed fencing is proposed within the right-of-way.

C. It is unlawful for any person to erect any electric fence or any fence constructed in whole or in part of barbed wire or to use barbed wire, except as erected in connection with security installations at a minimum height of six feet, providing further that prior written approval has been granted by the City Manager.

Finding: complies as proposed. No new fencing will be electric fencing or barbed wire. Where new security fencing is installed, it will be metal, mesh, anti-climb fencing. This product, "WireWorks Anti-Climb" fencing has anti-scale and anti-cut welded wire mesh.

CHAPTER 17.56 CONDITIONAL USES

17.56.010 - Permit—Authorization—Standards—Conditions.

A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the Planning Commission in accordance with the standards and procedures of this title. A conditional use permit listed in this section may be permitted, enlarged or altered upon authorization of the Planning Commission or City Commission in accordance with the standards and procedures of this section. Any expansion to, alteration of, or accessory use to a conditional use shall require Planning Commission or City Commission approval of a modification to the original conditional use permit unless authorized in this chapter.

Finding: complies with conditions. The existing PGE line center and the proposed expansion is a Public Utility use. "Public utilities and services" is defined in OCMC 17.04.985 as, "[...] facilities for providing electric power, communication, water, sewers, and transportation."

The project site is located in the Mixed-Use Corridor MUC-1 zone, where a Public Utility use is permitted with conditional use approval. (OCMC 17.29.030.E).

OCMC 17.29.030.E

E. Public utilities and services, and utility facilities, including sub-stations (such as buildings, plants and other structures) and outdoor storage associated with the conditional use;

A. Conditional uses, because of their public convenience and necessity and their effect upon the neighborhood shall be permitted only upon the approval of the Planning Commission or City Commission after due notice and public hearing, according to procedure as provided in OCMC 17.50. The applicant shall provide evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrate that the proposed use also satisfies the following criteria:

1. The use is listed as a conditional use in the underlying district;

Finding: complies. The proposed communications tower is an integral part of the public utility and will replace two existing towers. Regardless of whether it is accessory to the primary public utility use or if it were a development on its own, the tower would require conditional use approval. "Construction or modification of a support tower" is a conditional use per OCMC 17.80.070 – Communication Facilities.

Finally, the applicant wishes to use R-2 zoned land to the west of its current property owned by the neighboring church for a temporary construction and parking area.

Planning division policy is to review temporary construction areas as a Type I Minor Site Plan and Design review application for changes to landscaping contingent on the stipulation that the applicant provide a deadline by which the construction staging areas will be removed and the site restored to original conditions. Currently, the site is an open, grassy field. Formal conditional use review for temporary construction areas is not required. The landowners of the R-2 zoned church property will be required to sign the Type I Site Plan and Design Review application. Additional standards for the construction staging area include compliance with applicable building codes for temporary construction trailers, utility hook ups, construction site run-off control, and permits from the Public Works department for site access and ROW permits, etc.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;

Finding: complies as proposed. The existing 6.7-acre site containing the PGE line center has been in operation for many decades and is suitable for the public utility use. The proposed Operations Center will expand by 5.5 acres onto currently vacant land to the east. The land in this area is mostly flat, with a few residual paved areas, and without any existing structures. There are some mature trees, some of which the applicant proposes to preserve and incorporate into the proposed parking lot landscaping. A small, unnamed drainage is indicated on the property which enters a culvert under Warner Milne Road, becomes an open ditch again and flows into the stormwater system further to the south of the Hilltop Shopping Center. This stream was the subject of a previously approved NROD verification.

The site location is appropriate for PGE given its frontage on Warner Milne Road, a minor arterial road with connections to Warner Parrott Road, Beavercreek Road, Leland Road, Linn Avenue, and Central Point Road, and provides a centralized location in the city outside of any areas of geologic instability or sensitive natural resources. Its characteristics will meet the Operations Center needs while continuing to be a compatible land use.

The applicant provided the following additional narrative describing in detail the suitability of the characteristics listed in this criterion:

> **Size and shape**
> The existing line center is on approximately six and a half acres, which is a significant constraint on the facility. The proposed Operation Center modernizes the buildings and accessory development on the property, necessitating a larger site of 11.7 acres.
>
> The site size will sufficiently accommodate the sizable outdoor storage needs. The Site Plan (Sheet A11) depicts the storage areas for critical elements such as utility poles and material like spools of wire. The site size and design also permits covered fleet vehicle storage and a garage which will be critical for maintaining PGE fleet vehicles.
>
> The rectangular shape is made up of approximately 1,500 linear feet of frontage on Warner Milne Rd, the two side lot lines (412 feet and 310 feet, respectively), and the rear lot lines which total approximately 1,550 linear feet. The long frontage allows sufficient spacing to allow three proposed vehicle access points well away from each other. Multiple accesses and sufficient driveway spacing is a necessity for the efficient and safe on-site circulation of Operations Center employees and fleet vehicles, as well as controlling interaction with traffic on Warner Milne Rd.
>
> **Location**
> The proposed Operations Center is well positioned along Warner Milne Road, where a long site frontage provides strong connectivity to the surrounding transportation network. Warner Milne Road, classified as a Minor Arterial, together with the nearby north-south Beavercreek Road (Minor Arterial), offers roadway capacity and circulation patterns that readily accommodate multiple ways for trucks and other vehicles to reach out into the surrounding area and maintain the electrical power infrastructure in the area. The presence of a signalized intersection at Warner Milne and Beavercreek is particularly advantageous, as it can reliably support the primary fleet-vehicle movements as well as safe, efficient ingress and egress for daily operations.

Transit accessibility further strengthens the site's suitability: nearby bus stops and regular transit service provides convenient travel options for employees who may use public transportation. Additionally, existing sidewalks and bike lanes along most of the Warner Milne frontage create safe and comfortable conditions for pedestrians and cyclists, reducing the need for extensive off-site improvements and supporting sustainable transportation choices.

Surrounding land uses—including educational, civic, medical, and cemetery uses—are compatible with the anticipated activity levels and operating hours of the Operations Center, minimizing potential land-use conflicts. The current site has operated with no notable conflicts for many years with its abutting neighbors. The expansion onto properties to the west is anticipated to keep the same degree of compatibility with neighboring uses. The site also offers strategic operational benefits: its location in the heart of Oregon City enables a communications tower to reach PGE fleet and customer areas, enhancing service reliability and response capabilities.

Related to location, the proposed temporary use of the abutting church property for construction laydown and parking is a conditional use immediately west of the site. This land has been vacant for many years and is appropriate for such a short-duration. It will be returned to its original condition after a 12 to 18 month construction period.

Finally, because the project site is already developed, essential public utilities are readily available, reducing cost, complexity, and construction impacts.

Topography and Natural features
As stated previously, the project site is highly developed, relatively flat and ideal for redevelopment and infill. In part, the site and surrounding area are highly developed due to the existence of the current line center and a relative lack of natural resources.

A small area along the Warner Milne Road frontage is within the city's Natural Resources Overlay District (NROD). The overlay protects a drainage that flows south through the site and then under the road in a culvert. This area of inventoried natural resources was defined and mapped by a previous land use decision and is depicted on the Site Plan. This natural feature and the NROD overlay has been incorporated into the design of the project, largely by avoiding it. The small size of the vegetated buffer on the property and the abutting right of way allows the proposed use to operate efficiently, and protects the resource. requirements in the corresponding section of this narrative. Landscape buffering and sidewalk design are specifically oriented to accommodate the drainage and overlay protecting it.

The site contains no other topographic (steep slopes) or natural (floodplains, geologic hazards) constraints to development. For these reasons the topography and natural features of the site are suitable for the proposed use.

Existing improvements
The project site is also well suited for development because much of it is already developed with the same use. The existing line center has operated on the west side of the property for many decades, coexisting with its neighbors. The property is immediately adjacent to the full suite of

public utilities, reducing needs for infrastructure development and enabling efficient construction.

In addition, the existing site transportation facilities—including the signalized intersection at Warner Milne Road and Beavercreek Road, as well as sidewalks and bike lanes along the frontage— provide a strong baseline network for the benefit of Operations Center users and the surrounding community. Proposed development includes enhancements to public transportation infrastructure.

The site's current access to the street network further contributes to its suitability. The site has numerous vehicular access points along its long frontage, some of which are being removed with new development. Proposed changes call for a new emergency through access point aligned with Hughes Street, creating a valuable opportunity for emergency response planning. This expands the city's network of access for emergency response purposes.

Together, these existing improvements demonstrate that the site can readily and efficiently accommodate the proposed Operations Center, making it an ideal and highly suitable location for the project.

Staff concurs with the applicant's assessment of this criterion. This criterion is met.

3. Development shall demonstrate compliance with OCMC 16.12;
Finding: please refer to the findings under OCMC Chapter 16.12 of this report.

The proposed Operations Center will be able to comply with all applicable requirements of OCMC 16.12 - Minimum Public Improvements and Design Standards for Development. This includes two modifications, for provision of streets through the property and the width of the abutting minor arterial. Separate findings for this chapter of the code were provided above in the corresponding section.

The Oregon City Public Works department has reviewed the applicant's submittal and provided recommended conditions of approval, where necessary, to assure compliance with OCMC 16.12.

Staff concurs with the applicant's assessment of this criterion. This criterion is met.

4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;
Finding: complies as proposed. The applicant provided a detailed discussion of the surrounding area and the proposed conditional use impacts on pages 70-75 of the application narrative. The narrative is not copied here for brevity, but provides a detailed description of the existing area and it's characteristics, as well as the potential impacts for visual, noise, and traffic impacts on the primary uses on surrounding properties, and whether the allowable uses permitted in the underlying zone district would be impaired or precluded.

The applicant reviewed not only the underlying MUC zone but also the various zone districts that abut the subject properties. Those zones are the High Density Residential (R-2), Low Density Residential (R-6), Medium Density Residential (R-3.5), and Mixed-Use Employment (MUE) districts. The MUE zone has nine lots, the R-6 zone has five lots, the R-2 zone has one lot, and the R-3.5 zone

has one lot. Primary uses for each zone are listed in its corresponding chapter of the code: OCMC 17.12, OCMC 17.10, OCMC 17.08, or OCMC 17.31.

Staff concurs with the applicant's assessment of this criterion. This criterion is met.

5. The proposal satisfies the goals and policies of the City comprehensive plan which apply to the proposed use.
Finding: complies as proposed. The proposed Operations Center satisfies the goals and policies of the Oregon City Comprehensive Plan that apply to the use. As detailed throughout this narrative, the project complies with the applicable standards of the Oregon City Municipal Code (OCMC), with adjustments and modifications where allowed.

With respect to natural resources, the proposal is consistent with the Comprehensive Plan's Natural Resources objectives. Under Chapter 4 (Protected Environment), Goal 2, Policy 2.2 encourages site development and design that minimizes impacts on natural resources. The policy is implemented through the City's Natural Resources Overlay District (NROD). The NROD applies to a portion of the project site, and the applicant demonstrates full compliance with the findings for OCMC 17.49. The Landscape Plan, stormwater design, and related site enhancements further advance these goals by improving on-site conditions for the water feature and integrating natural features into the redevelopment.

The proposal also advances the Comprehensive Plan's economic development objectives. Under Chapter 2 (Diverse Economy), Goal 3, Policy 3.1 encourages efficient land use, infill, and redevelopment of properties with access to existing infrastructure. The proposed Operations Center accomplishes this by redeveloping an existing line center and utilizing adjacent under-utilized lands, all within an area already served by public roads, utilities, and essential infrastructure. Policy 3.2, which promotes walkable neighborhoods and multimodal connectivity, is likewise met: the proposed shared-use path will create a new link between Warner Milne Road—a minor arterial—and nearby neighborhoods to the north, enhancing transportation options and local accessibility.

The project further complies with Chapter 3 (Connected Infrastructure), meeting several key policies that guide sustainable and coordinated development. The project aligns with Goal 3, Policy 3.4, which calls for coordination with service providers to ensure high levels of public utility and infrastructure service. As a public utility project, the Operations Center is inherently coordinated with the city and regional service providers, and its design, circulation, communications facilities, and utility improvements are planned to maintain and enhance reliable service throughout the area. In addition, in compliance with Goal 4, Policy 4.1.A, the proposal places a public facility on underdeveloped and vacant buildable land where public services are readily available, consistent with the Comprehensive Plan's strategy for efficient and compatible growth. Policy 4.2 is also satisfied by the project's green, low-impact stormwater design, which consolidates and manages runoff without adding strain to public infrastructure.

Collectively, these elements demonstrate that the proposed Operations Center is aligned with, and meaningfully advances, the Comprehensive Plan goals and policies applicable to the site and the proposed use.

Staff concurs with the applicant's assessment of this criterion. This criterion is met.

B. Permits for conditional uses shall stipulate restrictions or conditions which may include, but are not limited to, a definite time limit to meet such conditions, provisions for a front, side or rear yard greater than the minimum dimensional standards of the zoning ordinance, suitable landscaping, off-street parking, and any other reasonable restriction, condition or safeguard that would uphold the spirit and intent of the zoning ordinance, and mitigate adverse effect upon the neighborhood properties by reason of the use, extension, construction or alteration allowed as set forth in the findings of the Planning Commission.

Finding: The applicant acknowledges that conditions of approval may be applied to this proposal and staff has recommended conditions of approval for the decision.

C. Any conditional use shall meet the dimensional standards of the zone in which it is to be located pursuant to subsection B. of this section unless otherwise indicated, as well as the minimum conditions listed below.

D. In the case of a use existing prior to the effective date of the ordinance codified in this title and classified in this title as a conditional use, any change of use expansion of lot area or expansion of structure shall conform with the requirements for conditional use.

Finding: complies with conditions. The proposed Operations Center meets the dimensional standards of the MUC-1 zone. The applicant responded in detail to those standards in the OCMC 17.29 section of this narrative. As demonstrated in those findings and in the responses to the minimum conditions below, sub-standard (C) is met.

In this application, PGE requests conditional use approval for multiple elements of this project. The proposed Operations Center expands the existing PGE line center with new building area and lot area. Additionally, the proposed communications tower replaces two existing towers, which is new construction and a conditional use (OCMC 17.80.070(B)).

Finally, the applicant indicates that a temporary construction area is proposed on land to the west of the PGE site that is owned by the neighboring church. A public utility is also a conditional use on this property, which will be returned to its original condition after construction. The city processes temporary construction areas in non-residential and high-density residential zone districts through the Type I Minor Site Plan and Design Review process prior to construction. The applicant shall submit a separate Type I application for the construction staging area. As demonstrated in the responses to the standards in this section, sub-standard (D) is met.

E. The Planning Commission may specifically permit, upon approval of a conditional use, further expansion to a specified maximum designated by the Planning Commission without the need to return for additional review.

Finding: not applicable. The applicant has not requested further expansion beyond the current proposal.

17.56.020 - Permit—Application.

A. A property owner or authorized agent shall initiate a request for a conditional use by filing an application with the City Recorder. The applicant shall submit a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. The application shall be accompanied by the filing fee listed in OCMC 17.50.080 to defray the costs of publication, investigation and processing.

Finding: complies as proposed. The applicant filed the application with the planning division and included all items required for a complete application including the applicable filing fees.

B. Before the Planning Commission or City Commission may act on a conditional use application, it shall hold a public hearing thereon, following procedure as established in OCMC 17.50.

Finding: complies as proposed. This application requires a Type III decision involving a public hearing.

17.56.025 - Minor modifications to legal conditional uses.

Minor modifications to an approved conditional use permit may be permitted. If permitted, the modification shall be reviewed as a minor site plan and design review. A minor modification to an approved conditional use permit is considered one of the following:

A. Modification to a structure for the purpose of enhancing the aesthetics of the building and there is no increase in the interior usable space;

B. Except for shelters, a maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage; or

C. Revisions to parking alignment and/or related vehicle circulation patterns.

Finding: not applicable. The applicant has not proposed a minor modification. The additions exceed one thousand square feet. The proposal is for an entirely redeveloped site with new parking and vehicle circulation.

17.56.040 Criteria and standards for conditional uses.

In addition to the standards listed herein in OCMC 17.56.010, which are to be considered in the approval of all conditional uses and the standards of the zone in which the conditional use is located, the following additional standards shall be applicable:

A. Building Openings. The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the planning commission.

Finding: not applicable. There are only three adjacent residential properties in residential zones are adjacent to the project site, located at its northeast corner. These are within the R-3.5 and R-6 zones. None of the proposed new building entrances will be located within fifty feet of these properties.

B. Additional Street Right-of-Way. The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is inadequate for its use; or where the nature of the proposed development warrants increased street width.

Finding: See findings under OCMC 16.12. The project site has frontage on Warner Milne Road, classified as a Minor Arterial roadway. Accordingly, the existing street section on the project's side of the road centerline necessitates additional right-of-way to comply with the required minor arterial dimensions, which are also modified as discussed in the response to Section 16.12. To comply with criterion (B) above and the public improvement standards (OCMC 16.12), PGE will dedicate sufficient of right-of-way to meet requirements. The Site Plan shows that, with the requested modification, the proposed frontage improvements meet all applicable standards and requirements of the City Engineer.

C. Public Utility or Communication Facility. Such facilities as a utility substation, water storage tank, radio or television transmitter, tower, tank, power transformer, pumping station and similar structures shall be located, designed and installed with suitable regard for aesthetic values. The base of these facilities shall not be located closer to the property line than a distance equal to the height of the structure. Hydroelectric generation facilities shall not exceed ninety megawatts of generation capacity.

Finding: complies as proposed. The proposed Operations Center, including the new communications tower, is subject to Conditional Use criterion (C) because it constitutes a public utility use with an associated communication facility. As demonstrated throughout this narrative,

the site has been designed with careful consideration for aesthetic values and, with approval of the requested adjustments and modifications, the project meets all applicable development and design standards of the Oregon City Municipal Code. The proposed communications tower (Sheet A61) is 102 feet tall including its antenna, is an essential operational component of the facility, and replaces two existing towers on the site, currently 70 feet and 88 feet in height. Although the increased height requires an adjustment to OCMC 17.80.110(B), the proposed tower is sited in a location that places it significantly farther from the public street frontage—approximately 334 feet and 192 feet, respectively—than the existing structures it replaces.

The criterion's requirement that the tower be located, designed, and installed with "suitable regard for aesthetic values" is necessarily subjective. PGE acknowledges that the new tower will be visible, and it would not be accurate to suggest that its appearance will be indistinguishable from current conditions. However, whether the aesthetic change is perceived as positive, negative, or neutral depends largely on viewer location, context, and individual preference. Throughout project planning, PGE's architects, landscape architects, and engineers intentionally evaluated the visual environment, selecting non-reflective material and refining the tower's profile to minimize massing, reduce visual clutter, and keep the structure as short as technically feasible while meeting functional requirements. The concept images (Sheets A41, A42) illustrate how the tower has been integrated into the overall campus design with particular sensitivity to nearby residential areas and the property's street-facing character.

The second half of criterion (C) requires that the base of the facility not be located closer to the property line than a distance equal to its height. The proposed tower, due to its essential role in system operations, is a uniquely integral component of the public utility use. While the tower height exceeds the standard threshold and therefore necessitates an adjustment under OCMC 17.80.110, approval of that adjustment allows the facility to meet all other applicable siting, setback, and design requirements. With the adjustment in place, the proposal satisfies both the intent and the functional objectives of criterion (C) by ensuring that the tower is placed thoughtfully, designed with aesthetic consideration, and incorporated into the broader public utility campus in a manner compatible with its surroundings.

CHAPTER 17.58 LAWFUL NONCONFORMING USES, LOTS, STRUCTURES, AND SITES

17.58.010 Purpose.

Nonconforming situations are created when the application of zoning district to a site changes or the zoning regulations change. As part of the change, existing uses, density, or development might no longer be allowed or are further restricted. Nonconforming uses, structures and lots are those uses, structures and lots that were lawfully established but do not conform to the provisions of this title or the provisions of the zoning district in which the use, structure or lot is located. The intent of these provisions is not to force all nonconforming situations immediately to be brought into conformance. Instead, the intent is to guide nonconforming situations in a new direction consistent with city policy, and, eventually, bring them into conformance.

17.58.015 Applicability.

The regulations of this chapter apply only to those nonconforming situations that were lawfully established or that were approved through a land use decision. All nonconforming structures, uses or lots shall have been maintained over time. These situations have lawful nonconforming status. Nonconforming situations that were not allowed when established or have not been maintained over time have no lawful right to continue.

17.58.040 - Lawful nonconforming structure or site.

A structure or site that was lawfully established but no longer conforms to all development standards of this land use code (such as setbacks) shall be considered lawfully nonconforming. Notwithstanding development standard requirements in this code, minor repairs and routine maintenance of a lawful nonconforming structure are permitted. The continuation of a lawful nonconforming structure or site is subject to the following:

A. Accidental Destruction. When a nonconforming structure is damaged by fire or other causes, the structure may be rebuilt using the same structure footprint.

Finding: complies as proposed. The only nonconforming situation that is relevant to this development proposal is the presence of an existing garage at the north edge of the site, adjacent to the cemetery. This garage building is being repaired and updated for continued use. It is one of the few elements of the site that is being retained with the construction of the new Operations Center. This structure, which is 8,000 square feet is approximately three feet from the north property line, which makes it nonconforming as to its building setback, which would otherwise be twenty feet for new structures.

17.58.060 - Process to confirm the legality of a nonconforming use, lot, structure, or site.

Any person may request a Type I or a Type II review to confirm the legality of a nonconforming use, lot, structure or site. In order to confirm that the nonconforming use, lot, structure or site is legal, sufficient evidence shall be submitted to the City determining the following:

A. The nonconforming use, lot, structure or site was established lawfully; and

B. The nonconforming use, lot, structure or site has not become more nonconforming within the past twenty years from the date of application.

The applicant shall provide sufficient evidence to allow the Community Development Director to review and confirm the legality of a nonconforming use, lot, structure or site. An applicant may request a Type I procedure, provided the applicant can provide sufficient evidence to confirm OCMC 17.58.060.A and B without discretion. If the applicant cannot provide sufficient evidence to determine OCMC 17.58.060.A and B without discretion, the applicant may apply for a Type II procedure. Applications for a Type II procedures shall be noticed to the public in a public comment period to gather additional information. If the applicant cannot show that the nonconforming use, lot, structure or site was lawfully established or has not been expanded pursuant to OCMC 17.58.060.A and B above, the use, lot, structure or site shall be determined to be illegal.

Finding: complies as proposed. As noted, the existing garage will be repaired and updated as part of the site's redevelopment. A formal determination of the nonconforming status of this building is unnecessary.

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW

17.62.010 Purpose.

The purposes of site plan and design review are to: Encourage site planning in advance of construction; protect lives and property from potential adverse impacts of development; consider natural or man-made hazards which may impose limitations on development; conserve the city's natural beauty and visual character and minimize adverse impacts of development on the natural environment as much as is reasonably practicable; assure that development is supported with necessary public facilities and services; ensure that structures and other improvements are properly related to their sites and to surrounding sites and structure; and implement the city's comprehensive plan and land use regulations with respect to development standards and policies.

17.62.015 Modifications that will better meet design review requirements.

The review body shall consider modification of certain site related development standards of this chapter specified below. These modifications may be approved as part of a Type II design review process.

A. Applicability.

1. This process shall apply to modifications to:
a. Landscaping in OCMC 17.62.050.A;
b. Vehicular connections to adjoining properties in OCMC 17.62.050.B.2;
c. On-site pedestrian circulation in OCMC 17.62.050.C;
d. Onsite utility location OCMC 17.62.050.G;
e. Building location in OCMC 17.62.055.D;
f. Building details in OCMC 17.62.055.I;
g. Windows in OCMC 17.62.055.J;
h. Parking lot landscaping in OCMC 17.52.060.
2. Modifications that are denied through Type II design review may be requested as a variance through the variance process pursuant to OCMC 17.60.020 or master plan adjustment pursuant to OCMC 17.65.070 as applicable.
3. Rather than a modification, applicants may choose to apply for a variance through the variance process pursuant to OCMC 17.60.020 or master plan adjustment pursuant to OCMC 17.65.070 as applicable.

Finding: complies as proposed. The proposed Operations Center will comply with most standards within this chapter without modification. However, PGE requests one modification to OCMC 17.62.055(D) *Siting Standards* and, therefore, the requirements of this section are applicable.

The standard for parking lot landscaping may be addressed under this modification section, as listed above. However, as a "parking standard" it is also expressly allowed to be addressed by an adjustment to Section 17.52. A request to waive interior landscaping on a subarea of the parking lot was part of the findings for that section.

The full standard of *OCMC 17.62.055(D)* for which PGE requests a modification is:
"*Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.*"

The standards within OCMC 17.62 apply to specific building-use types. Oregon City planning staff advised PGE that on a large site with multiple buildings, many of which are utilitarian uses for public utility infrastructure, building design requirements apply only to the office building which is the east part of the new building with frontage on Warner Milne Road. The standard quoted above cannot be met for a site with a very long street frontage, either by just the office component or all proposed buildings with street frontage.

The project site has 1,500 linear feet of frontage on Warner Milne Road. The office portion of the main building is situated five feet from the property line, and occupies 299-feet of that frontage. In addition, the storeroom portion of the building and the covered storage building west of the main truck driveway are also within five feet of the property line, further defining the street edge. These building frontages provide an additional 260 feet of building at the edge of the property. The office portion that is subject to this regulation occupies 20 percent of the total linear frontage of the site, well short of the 60 percent minimum. Even adding in the other two buildings, storeroom and covered storage, this takes up only 37 percent of the linear frontage of the site. In either situation, an adjustment is needed.

Hypothetically, to meet this standard, PGE would be required to construct a very long, very shallow building along the street frontage. Holding constant the proposed total area of the office building and storeroom, this would result in an impractical and bizarre building shape of 900 feet long and only 40 feet in depth. A building shape like this is not practical or responsive to the needs of the proposed Operations Center.

As demonstrated in response below, the modification will better meet design guidelines, and be consistent with the intent of the standard.

B. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:
1. The modification will result in a development that better meets the applicable design guidelines; and
Finding: complies as proposed. Sub-criterion (1) asks about the modification's overall design outcome and performance relative to the standard being modified. While a 900-foot building frontage would technically satisfy the standard, it would do so at the expense of good design. A structure stretching this length would either be bizarrely shallow in its north-south dimension, or at a normal depth would be vastly oversized for PGE's needs.

Instead, the Site Plan and Elevation Drawings show a proposed 299-foot façade, in addition to the attached storeroom (146 feet) and nearby covered storage building (115 feet), will result in a far more appropriate design given the scale of the site. Along with stormwater detention ponds and street trees occupying the remainder of the Warner Milne Frontage, the resulting effect will improve the overall experience from the street of this long frontage.

2. The modification meets the intent of the standard. On balance, the proposal will be consistent with the purpose of the standard for which a modification is requested.
Finding: complies as proposed. The intent of the standard is stated in OCMC 17.62.055.A. *Purpose*[1] and is to enhance the quality of the streetscape, and to avoid long, inactive stretches of frontage and building designs that detract from the public realm. Sub-criterion (2) asks whether the specific code standard being modified is still consistent with that purpose, even if not followed literally. This standard is aimed at institutional, office, multi-family, retail, and commercial buildings. The public utility use is quasi-industrial in some ways, but still subject to these streetscape requirements that are better suited to commercial buildings.

The proposed design fully respects the principles of a pleasant and activated streetscape. As shown on the Site Plan, the overall presence of buildings at the edge of the street is strengthened by the placement of the storeroom, covered storage building, and vegetated stormwater facilities—all positioned within five feet of the property line. Together, these elements create visual interest, reinforce the human scale, and eliminate the potential for wide, empty gaps along the frontage. In

[1] OCMC 17.72.055.A. "*Purpose. The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety though informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement*."

doing so, the project upholds the spirit of the standard while achieving a more functional and context-sensitive design.

17.62.030 When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-family uses, manufactured home parks, and nonresidential uses in all zones. Site plan and design review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80. Site plan and design review is required for a change in use between the uses in Table 17.62.030:

Table 17.62.030

Existing Use	*Proposed Use*
Residential	*Nonresidential use, including but not limited to: commercial, office, industrial, retail, or institutional*
Single-family or duplex	*3 or more dwellings*

Site plan and design review shall not alter the type and category of uses permitted in the underlying zoning districts.

Only the standards of OCMC 17.62.035 apply to duplex, triplex, quadplex, cottage cluster, townhouse, single-family detached residential unit, live/work dwelling and accessory dwelling unit Type I applications.

Finding: applicable. The proposed Operations Center expansion is a public utility use, which is permitted with conditional use approval in the MUC-1 zone. Therefore, the standards of this chapter are applicable.

17.62.035 Minor site plan and design review.

Finding: not applicable. The proposal require conditional use approval and full site plan and design review, which is a Type III review process as the applicant has elected to consolidate applications.

17.62.040 Items required.

A complete application for site plan and design review shall be submitted. Except as otherwise in subsection I of this section, the application shall include the following:

A. A site plan or plans […].

B. A landscaping plan, […].

C. Architectural drawings […].

D. An electronic materials board […].

E. An erosion/sedimentation control plan, […].

F. An exterior lighting plan, drawn to scale, showing type, height, and area of illumination. […].

G. Archeological Monitoring Recommendation […].

H. Such special studies or reports as the community development director may require […].

Finding: complete. The applicant submitted all of the required application items A-G and in addition submitted a Traffic Impact Study, Geotechnical Report, NROD report and all of the items required in OCMC 17.50.80 for a complete application.

I. The community development director may waive the submission of information for specific requirements of this section or may require information in addition to that required by a specific provision of this section, as follows:

1. The community development director may waive the submission of information for a specific requirement upon determination either that specific information is not necessary to evaluate the application properly, or that a specific approval standard is not applicable to the application. If submission of information is waived, the community development director shall, in the decision, identify the waived requirements, explain the reasons for the waiver, and state that the waiver may be challenged on appeal and may be denied by a subsequent review

authority. If the matter is forwarded to the planning commission for initial review, the information required by this paragraph shall be included in the staff report;
2. The community development director may require information in addition to that required by a specific provision of this section upon determination that the information is needed to evaluate the application properly and that the need can be justified on the basis of a special or unforeseen circumstance as necessary to comply with the applicable standards. If additional information is required, the community development director shall, in the decision, explain the reasons for requiring the additional information.
Finding: not applicable. The Community Development Director has not waived any submittal information needed for review of this application.

J. All new utilities shall be placed underground.
1. Service poles may be allowed on private property when undergrounding service is technically or physically infeasible.
Finding: See findings under section 16.12.095.

17.62.050 General standards.
All development shall comply with the following standards:
A. Landscaping.
1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.
Finding: complies as proposed. The Landscape Plan (Sheets L01 through L03) includes the proposed planting plan. No existing plant material will be preserved, with the exception of existing trees as indicated on the tree protection and removal plan. Plant preservation will not be possible since virtually the entire site will be regraded to accommodate new construction. In areas where trees will be preserved, most of the existing plant material is grass or invasive plants, all of which will need to be removed for planting upgrades. The applicant has proposed to avoid disturbance to the existing NROD area and plant new native vegetation and remove non-native vegetation from the NROD area per OCMC 17.49.

2. The amount of landscaping required is found in the standards for each underlying zone. Where the underlying zone does not contain and minimum landscaping standard, the minimum site landscaping shall be fifteen percent of the total site area. Except as allowed elsewhere in Title 16 or 17 of this code, all areas to be credited towards landscaping shall be installed with growing plant materials.

3. Pursuant to OCMC 17.49, landscaping requirements within the natural resource overlay district, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.
Finding: complies as proposed. The underlying zone, MUC-1, requires a minimum twenty percent landscaped area on the project site. The Landscape Plan shows proposed landscaping and has calculated that twenty- one percent of site area is landscape, exceeding the minimum requirement. All such landscaped areas are to be planted with growing plant materials. Therefore, the requirements of standard (2) are met.

Non-native plants within the NROD will be removed and new native plants will be planted. PGE's responses to the requirements of OCMC 17.49 demonstrate compliance with the chapter's applicable landscaping standards.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are

chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.

Finding: complies as proposed. The proposed landscaping and parking lots were designed by the applicant's registered landscape architect, Lango Hansen. The Landscape Plan Land Use Notes affirm compliance with the above standard.

See the Tree Inventory and Notes (Sheet L01), Tree Protection and Removal Plan (Sheet L02), and PGE's responses to OCMC 17.41 Tree Protection, Preservation, Removal, and Replanting Standards demonstrating compliance with tree-related standards.

5. Landscaping shall be visible from public thoroughfares to the extent practicable.
6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.

Finding: complies as proposed. Proposed landscaping includes plantings in the setbacks along the site's Warner Milne Road frontage and the new shared-use path. These will be readily visible. Landscaping elements not immediately adjacent to public thoroughfares, such as internal parking lot plantings, and landscaped setbacks around the side and rear property lines, will be visible at a distance, though at certain angles obscured by the new structures.

The Site Plan (Sheet A11) includes sightlines at the site access points, noting and demonstrating that the plantings will comply with the visibility requirements of OCMC 10.32.

B. Vehicular Access and Connectivity.
1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.

Finding: complies as proposed. The southern façade of the proposed office and storeroom building is closest to Warner Milne Road. The Site Plan shows the proposed employee and fleet parking lot located east of the new building, along with covered fleet-vehicle parking behind it. All proposed parking areas are situated behind or to the side of the buildings.

2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.

Finding: complies as proposed. There are no existing vehicle or pedestrian access easements through the project site that connect the right-of-way and adjoining properties. In accordance with OCMC 16.12.032, the applicant proposes a shared-use pedestrian and cyclist path that will connect the Warner Milne Road right-of-way on the south to the Hughes Street and Kamm Street rights-of-way to the north. The Site Plan shows the path and the accompanying easement.

3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.

Finding: complies as proposed. The project site is approximately 12 acres. Therefore, this standard applies, as do the requirements of OCMC 16.12. PGE responds in detail to those requirements in the corresponding earlier section of this report. In lieu of a full street, PGE will provide an emergency vehicle easement and pedestrian/bicycle path on the east boundary of the site. As discussed in the findings for Section 16.12, PGE requests a modification to this requirement for a street through the site as a public works modification. That section explicitly

permits public access easements in lieu of streets, per 16.12.016(G) and (H). This approach to the exception was determined in collaboration with city planning and engineering staff.

4. Parking garage entries shall not be more than half of the streetscape.
Finding: not applicable. No parking garages are proposed.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:
1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be as direct as possible and shall not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.
Finding: complies as proposed. The standards of this section apply solely to the office building, and not the existing garage or covered storage building on the site. Therefore, this is applicable to pedestrian routes between Warner Milne Road and the entrances to the proposed office/storeroom building. Due to the security requirements of the proposed Operations Center, much of the site is contained within gated fencing (see more detailed findings for fencing standards in response to 17.54 Supplemental Zoning Regulations). Consequently, pedestrian access from the sidewalk on Warner Milne Road is limited to the main entrance on the east side of the office part of the building location (see Site Plan, Sheet A11). The pathway from the sidewalk to the office building's main entrance on the eastern façade is direct and will not cross a drive aisle. In compliance with the above standard, a contiguous pedestrian path wraps around the north side of the building and connects to the other office/storeroom building entrances on that side of the structure.

2. The pedestrian circulation system shall connect all main entrances, transit stops, ADA spaces, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.
Finding: complies as proposed. The Site Plan demonstrates compliances with the above standard, showing the pedestrian pathways connecting the main entrance to the building and the site to Warner Milne Road. Within the site, there are internal pedestrian pathways to:

- Employee and fleet-parking lot on the site's east side
- Covered fleet-vehicle parking north of the office and storeroom building
- Bicycle parking near the office building's main entrance
- Shared courtyards on the office and storeroom building's northern façade

Since the proposed work yard and laydown area will need to be designed for public utility safety requirements outside the scope of the zoning code, full internal pedestrian circulation requirements may require modification to meet applicable safety standards.

3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.
Finding: complies as proposed. The main building entrance is connected to site uses, including the sidewalk, the parking lot, and other building entries. In addition, a new shared use path connects the Warner Milne Road sidewalk to adjacent sites north of the PGE property. As a secure property inside an access controlled fence, there is not a need to connect with pedestrian infrastructure the main PGE office building entrance to buildings on adjacent sites. Since the proposed work yard and laydown area will need to be designed for public utility safety requirements outside the scope of the zoning code, full internal pedestrian circulation requirements may require modification to meet applicable safety standards.

4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.
Finding: not applicable. No external stairways or walkways are proposed.

5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel.

6. Pedestrian crossings at intersections with drive aisles or other vehicular circulation areas shall be demarcated by a raised surface that slows vehicular travel, or other change in textural material or height to alert the driver of the pedestrian crossing area.
7. Pedestrian facilities within parking lots shall be illuminated to at least the same level as the on-site driveways pursuant to section 17.62.065.
Finding: complies as proposed. Proposed on site pedestrian walkways consist of:
a shared use path on the east side of the site that connects the Warner Milne Road sidewalk to Hughes Street and Kamm Street;

- a pathway to the main office building entry from the Warner Milne Road sidewalk,
- a walkway at the edge of the parking lot west of the last bay of parking spaces, leading to main entry, and
- a walkway around the north side of the office building.

The Site Plan and Drainage Plan show all proposed pedestrian walkways designed in compliance with the above standard. The Plans show the walkways are constructed with either asphalt (shared use path) or concrete (other paths), and visually contrast with adjoining surfaces. The pathways are all at least five feet wide. The shared use path at the east end of the site is seven feet wide, consistent with city standards for such a facility.

D. All development shall maintain continuous compliance with applicable federal, state, and city standards.
Finding: complies as proposed. PGE acknowledges the ongoing requirements set forth in the above standard. Any non-compliance, should it occur, will be subject to enforcement from the appropriate jurisdiction.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to city standards as set out in the city's facility master plans and public works design standards. A development may be required to modify or replace existing off-site systems if necessary to provide adequate public facilities. The city may require over sizing of facilities where necessary to meet standards in the city's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the city for over sizing based on the city's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.
Finding: See findings in OCMC 16.12. The submitted civil plans and PGE's responses to the applicable requirements of OCMC 16.12 demonstrate that the proposed Operations Center will

comply with the above standard. Appropriate conditions of approval have been recommended by Public Works Development Services staff to assure compliance with this standard.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the city's transportation system plan.

Finding: complies with conditions. The transit agency, TriMet, has thus far not commented on the proposal. Nevertheless, PGE acknowledges the authority given by the above standard. If Trimet or another transit agency, upon review of this application recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be modified or constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the applicant shall provide accommodations for such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the city's transportation system plan**. See conditions of approval.**

G. Screening of Mechanical Equipment. Commercial, mixed-use, institutional, and multi-family buildings shall include the following measures to screen or block views of mechanical equipment from adjacent streets according to the following requirements:

1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street on all new buildings or building additions. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened from adjacent streets, as viewed from the sidewalk or future sidewalk location on the adjacent street at pedestrian level. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening. Screening requirements do not apply to new or replacement equipment on existing buildings. New or replacement rooftop mechanical equipment on existing buildings shall be painted or powder-coated.

2. Wall-mounted mechanical HVAC and air conditioning equipment, and groups of multiple utility meters shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including-air conditioning and groups of multiple utility meters, that extend six inches or more from the outer building wall shall be screened from view from adjacent streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall [be] exempt from this standard if painted.

3. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view from the public right-of-way.

4. This section shall not apply to the installation of solar energy panels, photovoltaic equipment, wind power generating equipment, dishes/antennas, pipes, vents, and chimneys.

Finding: complies as proposed. This standard is applicable to the office portion of the proposed office and storeroom buildings and any proposed mechanical units visible from the Warner Milne Road. Subsequently, much of the site will be screened from view by buildings in close proximity to the public street.

Figure 8 shows the location of rooftop mechanical equipment on the office and storeroom building roof and that all such equipment will comply with the above requirements. The building roof plan (Sheet A21) and Elevation Drawings (Sheet A31) show additional detail.

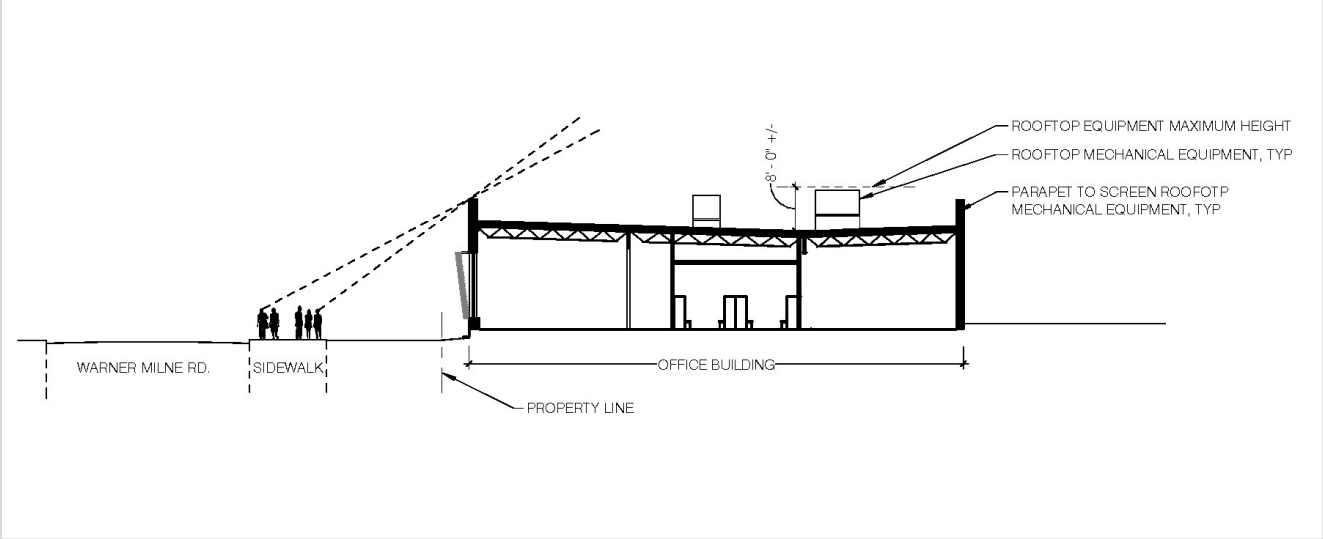


Figure 8. Rooftop equipment section drawing

The Site Plan shows the location of a ground-mounted transformer south of the new fencing, near the site access at the intersection of Wartner Milne Road and Beavercreek Road. The Landscape Plan demonstrates compliance with sub-standard (3).

H. Building Materials.
1. Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure:
a. Vinyl or plywood siding (including T-111 or similar plywood).
b. Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.
c. Corrugated fiberglass.
d. Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, when excepted by 17.62.050.H.2.g, or when located on properties within the general industrial district).
e. Crushed colored rock/crushed tumbled glass.
f. Non-corrugated and highly reflective sheet metal.
g. Tarps, except for the protection of outside storage.
2. Special Material Standards. The following materials are allowed if they comply with the requirements found below:
a. Concrete Block. When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used

as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
b. Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.
c. Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
d. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.
e. Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.
f. Vinyl or powder coated chain link fencing is permitted for city-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the general industrial district.
g. Chain link fencing is permitted in the following circumstances:
1. Within city-owned parks and recreational facilities.
2. On any property when used for a baseball or softball backstop or dugout, track and field facility, or sports court.
Finding: complies as proposed. The Elevation Drawings and Materials Board (Sheet A51) show that, in compliance with sub-standard (1), no new prohibited building materials are proposed. Furthermore, use of metal siding (a special material), will comply with sub-standard (2).

In general, no new chain link fencing is proposed. As permitted under (1)(d), some will be installed around the temporary construction lay down and parking area that will be established west of the site on church property. This fencing will be removed after construction is complete.
Similarly, the site has existing longstanding perimeter fencing on the west and north sides of the property that will remain. Approximately 1,030 linear feet of the existing chain link, perimeter fencing will stay in its current location. PGE further responds to related fencing standards in the narrative section corresponding to OCMC 17.54 Supplemental Zoning Regulations.

I. Temporary Structures. Temporary structures are permitted pursuant to the following standards: […]
Finding: not applicable. No temporary structures are proposed for the development site. Temporary construction trailers, porta potties, etc. will be located on the adjacent church site during construction. A separate Type I Site Plan and Design Review application will be required for the temporary construction laydown and parking area.

17.62.055 Institutional, office, multi-family, retail, and commercial building standards.
A. Purpose. The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety though informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.
B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures.
C. Conflicts. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

Finding: applicable. The proposed Operations Center is a public utility use, however it also meets the definition of an Institutional Development in OCMC 17.04.595 - *Institutional developmen*t, which applies very broadly to all public, semi-public and private uses:

> *"Institutional development" includes all public, semi-public and private community facilities and uses, including government office and maintenance facilities, educational facilities, research institutions, correctional institutions, museums, libraries, stadiums, hospitals, residential care facilities, auditoriums and convention or meeting halls, churches, parks and public recreational facilities, automobile parking structures, and other similar facilities and uses.*

Buildings on the site are a mix of office and quasi-industrial uses. The utilitarian buildings such as the covered storage and garage buildings do not need to comply with these commercial building standards, only the office portion of the proposed new main structure. The section of the building that contains office uses is a 23,000 foot structure with 299 feet of frontage on Warner Milne Road.

The Elevation Drawings and Figure 9 below depict the relevant office portion, to which the requirements of this section apply.

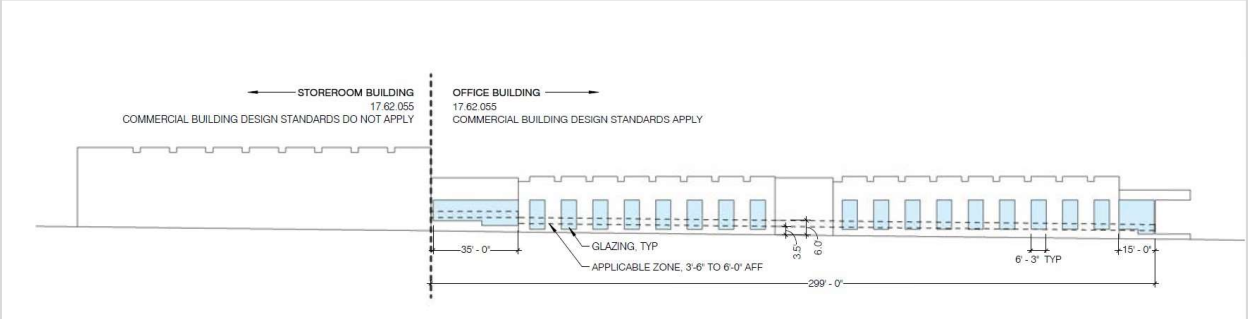


Figure 9. Office portion of the new building

D. Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.
A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:
1. Tables, benches or other approved seating area.
2. Cobbled, patterned or paved stone or enhanced concrete.
3. Pedestrian scale lighting.
4. Sculpture/public art.
5. Fountains/water feature.
6. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.
7. Outdoor café.
8. Enhanced landscaping or additional landscaping.
9. Other elements, as approved by the community development director, that can meet the intent of this section.
Finding: complies as proposed. The project site frontage is approximately 1,500 linear feet. Therefore, the above standard is applicable. Given the long site frontage and limited need for office space, meeting the 60 percent façade requirement is practicable for the Operations Center.

PGE requests a modification to the standard to allow the 299-foot frontage of the office portion of the new building. Responses to the OCMC 17.62.015 Modifications requirements were addressed at the beginning of this section. The requested modification meets the intent of the requirement and will result in an outcome that better suits the site.

Because the proposed building sits at the five-foot setback required by this provision, the remaining standards are met, and the modification is only needed for the length of the building along the Warner Milne Road frontage. The other buildings that are not technically required to meet this standard have also been proposed within five feet from the property line, offering more definition to the street edge.

Landscaping and vegetated stormwater facilities provide additional visual interest.

E. Building Orientation. All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Finding: complies as proposed. The Elevation Drawings (Sheet A31) show the office's most architecturally significant façade and the building's main entrance, face Warner Milne Road. The main building entrance, a vestibule, will be recessed, and a canopy will provide weather shelter.

F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:
1. Display windows; recesses or projections; peaked roof or raised parapet over the door; canopy of at least five feet in depth; porch; distinct materials; architectural details such as tile work and moldings; pedestrian amenities such as benches, planters or planter boxes; landscape treatments integrating arbors, low walls, trellis work; or similar elements. Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.

Finding: complies as proposed. The main entrance to the office building includes many of the elements listed above. As detailed in elevation drawings, the entry has:

- A canopy at least five feet in depth
- Benches and planters
- Landscape arbors
- Low walls
- Distinct materials defining the building entry

In combination, the main entry has architectural features that satisfy the requirement.

G. Corner Lots. For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required: […]

Finding: not applicable. The project site is not on a corner lot.

H. Variation in Massing. For street facing facades greater than one hundred twenty feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:
1. A minimum depth of two percent of the length of the façade and a minimum width of thirty percent of the length of the façade; or

2. A minimum depth of four percent of the length of the façade and a minimum width of twenty percent of the length of the façade.

Finding: complies as proposed. The façade of the new office is approximately 299 feet in length, therefore this standard is applicable along the street facing façade. The Elevation Drawings show modulation along this façade and has calculations demonstrating compliance with the above standard. Those details shown include:

- Modulation extending through the full height of the façade
- A three-foot roof overhang
- A 22.5-foot recess depth across 75 feet of the façade length

I. Building Design Elements.
1. All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include:
a. Change in building material or texture;
b. Window or door;
c. Balcony; or
d. Pillar or post.
2. Street facing facades shall include additional design features. For every thirty feet of façade length, three of the following elements are required:
a. Decorative materials on more than ten percent of the total wall area (e.g., brick or stonework, shingles, wainscoting, ornamentation, and similar features);
b. Decorative cornice and/or roof line (e.g., for flat roofs);
c. Roof gable;
d. Recessed entry;
e. Covered canopy entry;
f. Cupola or tower;
g. Dormer;
h. Balcony;
i. Pillars or posts;
j. Repeating pattern of building materials;
k. A change in plane of at least two feet in width and six inches in depth;
l. Bay or oriel window; or
m. An alternative feature providing visual relief and detail as approved by the community development director.
3. Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.

Finding: complies as proposed. Because these standards apply only to the office building, this particular one applies to the Warner Milne Road (south) and parking lot facing (east) façades of the new main building. The office portion of the building does not have a west façade, since that part of it is covered by the storeroom portion of the structure. Other buildings on the site - garage, covered storage, storeroom - are not subject to the commercial building standards.
These two façades have design elements that satisfy the above standards. Elevation drawings included with the submittal also have notes with measurements and calculations that demonstrate compliance.

- Each of these facades has regular windows or other changes in the façade so that there are no blank walls longer than 30 feet
- On these frontages, there are at least three of the following features for every 30 feet in length:
    - Repeating pattern of building materials

- Alternative feature of visual relief
- Decorative profiled roof line
- Repeating pattern of window shade

The detail shown in the drawings provides more information about the particular patterns of architectural features, and specific callouts about what and where these elements are located.

J. Windows.
1. The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred-foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.

Table 17.62.055.J
Minimum Windows

Use	*Ground Floor: Front and Street Facing Facades*	*Upper Floor(s): Front and Street Facing Facades*	*Ground Floor: Side(s) Facades*	*Upper Floor(s): Side(s) Facades*
Non-Multi-Family (or Portions of Buildings Thereof)	*60%*	*10%*	*30%*	*10%*
Multi-Family (or Portions of Buildings Thereof)	*15%*	*15%*	*10%*	*10%*

2. Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.
3. Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.

Finding: complies as proposed. Applicant provided the following table to indicate compliance.

[Modified to show relevant information]

Use	*Ground Floor: Front and Street Facing Facades*	*Upper Floor(s): Front and Street Facing Facades*	*Ground Floor: Side(s) Facades*
Non-Multi-Family (or Portions of Buildings Thereof)	*60%*	*10%*	*30%*

Proposed: Public Utility (Office-portion of building)	180.25 ft. / 299 ft. = 60.03%	N/A	30 ft. / 90 ft. = 30%

The modified Table 17.62.055.J above summarizes compliance with the minimum window requirements of sub-standard (1). In short, the street facing façade has 60.03 percent windows which exceeds the 60% minimum, and the east side façade has 30% windows, which satisfies the minimum for side walls. The building is only one story, so the upper story requirements are not relevant. Additional detail is provided on the Elevation Plans, showing the overall façade design and including detailed calculations that demonstrate compliance.
Because this is an office building, standard, clear, commercial glass is proposed at the window locations indicated. No reflective, glazed, mirrored, or tinted glass is proposed. These windows will meet the reflectivity requirements of sub-standard (2).

Likewise, the windows on the side wall façade facing the entry plaza and parking area will be standard commercial glass. A view out and natural daylight in is a desirable condition at this location. No false windows are proposed anywhere on the office portion of the new building, in compliance with sub-standard (3).

K. Roof Treatments. The maximum length of any continuous roofline on a street-facing façade shall be seventy-five feet without a cross gable or change in height of at least two feet.
Finding: complies as proposed. The Elevation Drawings show regular indentations in the office building's roofline, which match the metal panel assembly on the front of the building. These indentations along the roofline are greater than two feet in height, and repeat about every 20 feet, far more frequently that the minimum 75 linear feet required by the above standard.

L. Drive-through facilities shall:
1. Be located at the side or rear of the building.
2. Be designed to maximize queue storage on-site.
Finding: not applicable. No drive-through facilities are proposed.

M. Special development standards along transit streets.
1. Purpose. This section is intended to provide direct and convenient pedestrian access to retail, office and institutional buildings from public sidewalks and transit facilities and to promote pedestrian and transit travel to commercial and institutional facilities.
2. Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.
Finding: applicable. The office portion of the new building will have frontage on Warner Milne Road (a transit street). Therefore, these sub-standards are applicable.

3. Development Standards.
a. All buildings shall have at least one main building entrance oriented towards the transit street. A main building entrance is oriented toward a transit street if it is directly located on the transit street, or if it is linked to the transit street by an on-site pedestrian walkway that does not cross off-street parking or maneuvering areas.
i. If the site has frontage on more than one transit street, or on a transit street and a street intersecting a transit street, the building shall provide one main building entrance oriented to the transit street or to the corner where the two streets intersect.
ii. For building facades over three hundred feet in length on a transit street, two or more main building entrances shall be provided as appropriate and oriented towards the transit street.

b. In the event a requirement of this section conflicts with other requirements in Title 17, the requirements of this section shall control.

Finding: complies as proposed. The main entrance on the east side of the office building is a prominent vestibule that faces Warner Milne Road. A pedestrian walkway will directly connect the main entrance to the Warner Milne sidewalk.

4. Exemptions. The following permitted uses are exempted from meeting the requirements of subsection 3 of this section:
a. Heavy equipment sales;
b. Motor vehicle service stations, including convenience stores associated therewith; or
c. Solid waste transfer stations.

Finding: not applicable. The proposal does not include these uses and is not exempt.

17.62.056 Additional standards for large retail establishments.

Retail building(s) occupying more than ten thousand gross square feet of floor area shall […]

Finding: not applicable. The proposal does not include retail buildings.

17.62.065 Outdoor lighting.

A. Purpose. The general purpose of this section is to require outdoor lighting that is adequate for safety and convenience; in scale with the activity to be illuminated and its surroundings; directed to the surface or activity to be illuminated; and designed to clearly render people and objects and contribute to a pleasant nighttime environment. Additional specific purposes are to:
1. Provide safety and personal security as well as convenience and utility in areas of public use or traverse, for uses where there is outdoor public activity during hours of darkness;
2. Control glare and excessive brightness to improve visual performance, allow better visibility with relatively less light, and protect residents from nuisance and discomfort;
3. Control trespass light onto neighboring properties to protect inhabitants from the consequences of stray light shining in inhabitants' eyes or onto neighboring properties;
4. Result in cost and energy savings to establishments by carefully directing light at the surface area or activity to be illuminated, using only the amount of light necessary; and
5. Control light pollution to minimize the negative effects of misdirected light and recapture views to the night sky.
6. Encourage energy efficient lighting with new technologies such as light emitting diodes (LED) or similar to reduce ongoing electrical demand and operating costs.

B. Applicability.
1. General.
a. All exterior lighting for any type of commercial, mixed-use, industrial, institutional, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.
b. The city engineer or public works director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.
2. Lighting Plan Requirement. All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.
3. Excepted Lighting. The following types of lighting are excepted from the requirements of this section:
[…]
b. Public street and right-of-way lighting.
[…]
d. Temporary lighting for emergency or nighttime work and construction.
[…]

[…]

Finding: complies as proposed. The proposed Operations Center is a public utility use. This use category does not neatly fit within the types of development listed in sub-standard (1)(a). The use is both an office headquarters for PGE in Oregon City and a quasi-industrial use for storage, heavy vehicle dispatch, and equipment maintenance and repair. The office standards apply to the parking lot and office building elements of the proposal. The submitted Building Elevations (Sheets A31 – A34) and Photometric Plans (Sheets E01 – E08) therefore must demonstrate conformance with the requirements of this section. Therefore, the Plans demonstrates compliance of all proposed exterior lighting (except for exempt public street and right-of-way lighting (b), and temporary construction lighting (d)).

C. Design and Illumination Standards.

1. Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 footcandles of light as measured at the property line.

2. Lighting shall be provided in parking lots, bicycle parking areas, and vehicular circulation areas.

3. Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.

4. Lighting shall be provided at all building entrances.

Finding: complies as proposed. In compliance with sub-standard (1) and consequent requirements of this section, the Lighting Plan demonstrates the effectiveness of the proposed external lighting. Accordingly:

- Lighting will provide security and support navigability for Operations Center users on site and pedestrians on the sidewalks and shared use path
- Light fixtures will prevent glare or illumination on adjacent properties past the permitted levels In compliance with sub-standards (2), (3), and (4), exterior lighting will be located:
- In the employee/fleet vehicle parking lot and circulation areas throughout the project site
- Along on-site pedestrian walkways and gathering spaces (such as the courtyard along the office building's north façade)
- On the east side of the site for the off-street shared-use path, also in accordance with OCMC 16.12.032(D)
- At all entrances to the office and storeroom building and garage

5. With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.

Finding: complies as proposed. PGE acknowledges this requirement. All non-pedestrian-scale lighting on the project site will be concealed with a full cut-off style fixture in compliance with the above standard.

6. The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.

Finding: complies as proposed. The site is not a multi-family residential use. Proposed light poles in the parking lot are limited to 25 feet tall. The Lighting Plans indicate proposed parking lot pole-height is 18 feet, in compliance with this standard.

The paved work area on the west side of the site is, for the purposes of area lighting, the same as a parking lot larger than five acres. No part of this area is within 100 feet of any residential use. To

efficiently illuminate this large work area, PGE has proposed light poles that are 33 feet tall. These are within the 35 foot limit in the standard listed above. All poles and their respective heights are indicated on the plans.

7. Floodlights shall not be utilized to light all or any portion of a building facade between ten p.m. and six a.m.
Finding: not applicable. No floodlights are proposed. This standard is not applicable.

8. Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.
9. All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.
Finding: complies as proposed. Lighting on outdoor canopies is shown on the lighting plans and will comply with sub- standard (8). In compliance with sub-standard (9), motion sensors shift the lighting between "low output" mode and "high output". These electrical plan details will be provided with the building permit set.

10. Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.
Finding: not applicable. No such lighting is proposed.

11. For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.
Finding: not applicable. No such lighting is proposed.

12. No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.
13. Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.
Finding: not applicable. No such lighting is proposed.

14. Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.
Finding: complies as proposed. The Elevation Drawings show lighting for the office building's main entrance. In compliance with the above standard, the main entrance will be well lit for safety and aesthetic reasons and will meet the above standard.

17.62.085 Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.
The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions, or exterior alterations to uses, other than single-family detached residential units, duplexes, triplexes, quadplexes, townhouses, cottage clusters or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:
A. Fully enclosed and visually screened;
B. Located in a manner easily and safely accessible by collection vehicles;
C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;
D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;
E. Maintained by the property owner;
F. Used only for purposes of storing solid waste and recyclable materials;
G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20, Solid Waste Collection and Disposal) and city adopted policies.

Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).
Finding: complies as proposed. The proposed Operations Center is a public utility use and does not neatly fit within the types of development listed in sub-standard (1)(a). Nevertheless, as a redevelopment of an existing use and an infill development, PGE acknowledges the necessity for the project to meet the above standards.

A refuse and recycling area that serves the office building is near the storeroom loading area. Separately, line operations has a refuse and recycling area for the paved work areas of the site near laydown storage and the fuel station.

The office building waste will by collected by the approved hauler for the area. Separately, line operations waste is for recycling materials coming from work sites around the region. This will be fully managed by PGE. The Circulation Plan and conclusions from the TIS demonstrate that this area complies with sub-standards (B) through (G).

Both the office building and the line operations waste areas will be effectively screened from the right-of-way in one of two ways.

- The office waste area is located abutting the north façade of the storeroom building and therefore completely obscured from view by the public.
- The line operations waste area is behind the covered storage building, approximately 160 feet back from the Warner Milne Road sidewalk. This area is likewise obscured from public view.

17.62.090 Implementation.
A. Applications for site plan and design review shall be reviewed in the manner provided in OCMC 16.12 and 17.50. The building official may issue a certificate of occupancy only after the improvements required by site plan and design review approval have been completed, or a schedule for completion and a bond or other financial guarantee have been accepted by the city.
B. In performing site plan and design review, the review authority shall consider the effect of additional financial burdens imposed by such review on the cost and availability of needed housing types. Consideration of such factors shall not prevent the imposition of conditions of approval found necessary to meet the requirements of this section. The cost of such conditions of approval shall not unduly increase the cost of housing beyond the minimum necessary to achieve the provisions of this title, nor shall such cost prevent the construction of needed housing types.
C. The site plan and design review provisions of this chapter shall not be applied to reduce the density or height of an application for a development project that reserves at least seventy-five percent of the gross floor area for housing where the proposed density or height is at or below what is allowed in the base zone, except in the following situations:
1. Where the reduction in density is required for development subject to historic overlay provision in OCMC 17.40; or
2. Where the reduction in density is necessary to resolve a health, safety or habitability issue, or to comply with the natural resource overlay district regulations of OCMC 17.49, the geologic hazard overlay district regulations of OCMC 17.44, or the floodplain management overlay district regulations of OCMC 17.42 or steep slope regulations.
Finding: This application is subject to conditions of approval prior to building permit occupancy. This is not a residential development.

CHAPTER 17.80 COMMUNICATION FACILITIES
17.80.010 - Purpose.

The provisions of this chapter are designed to protect the visual, aesthetic, and historical features of Oregon City, ensure that wireless communications services are located, designed, installed, maintained, and removed in an appropriate manner for the safety, health, and welfare of the citizens of Oregon City, and to provide for development consistent with the Oregon City Comprehensive Plan by:
A. Promoting maximum utilization and encourage collocation of new and existing wireless communication antennas to minimize the total number of support structures and towers throughout the City;
B. Encouraging careful consideration of topography, greenways, and historical significance of potential telecommunication sites and the use of camouflaging and screening to ensure development has minimal impacts on the community, views, and historical areas;
C. Encouraging the use of existing buildings, light or utility poles, or water towers as opposed to construction of new telecommunication towers; and
D. Encourage the location of monopole telecommunication towers and antenna arrays in nonresidential areas.
Finding: the applicant acknowledges the purpose of the provisions of this chapter.

17.80.030 - Applicability and exemptions.
A. Applicability. All wireless communication facilities that are not exempt pursuant to this section shall conform to the standards specified in this chapter.
B. Exemptions. The following are exempt from the provisions of this chapter and shall be allowed: […]
8. Wireless communication facilities for public safety are exempt from the following sections: Section 17.80.090.C.17, Section 17.80.090.D.2, Section 17.80.090.D.5, and Section 17.80.100; and
[…]
Finding: applicable. PGE proposes a new, 102-foot communications tower (Exhibit C, Sheet A61) to replace two existing towers on the site. The tower has a 95 foot support structure and a 7 foot antenna attached to the top. Therefore, elements of this chapter are applicable.

The proposed communication tower is a facility "for public safety" due to its essential function in communicating with workers who maintain and repair critical power line infrastructure. A letter from a PGE engineer documents the public safety need for this facility (Exhibit J), and this issue was discussed in an email with Planning Staff. As a public safety facility, the sections referenced are Permit Application Requirements in subsection 17.80.030(B)(8) do not apply, especially the collocation requirements of 17.80.100.

17.80.035 - Modifications to existing facilities.
Finding: not applicable. This is not a modification to an existing facility, but a new tower.

17.80.040 - Collocation of additional antenna(s) on existing support towers.
Finding: not applicable. This is not a collocation of additional antenna(s) on existing support towers.

17.80.050 - Collocation of additional antenna(s) on support structures.
Finding: not applicable. This is not a collocation of additional antenna(s) on support structures.

17.80.060 - Collocation of additional antenna(s) on existing utility poles, light standards, and light poles.
Finding: not applicable. This is not a collocation of additional antenna(s) on existing utility poles, light standards, and light poles.

17.80.070 - Construction or modification of a support tower.
Except for "eligible modifications" authorized in OCMC 17.80.035:
A. Site Plan and Design Review. Required if the following exists:

1. Property is zoned GI, CI, I, C, MUC-2 or MUE; and
2. No adjacent parcel is zoned for residential use.
B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.070.A.
C. Prohibited Zoning Districts and Locations. […]

Finding: applicable. The proposed tower qualifies as "construction or modification of a support tower" because it is an entirely new tower in a new location on the site. This tower will replace two existing towers.

Figure 10. Existing towers on PGE site

17.80.080 - Site review process.

No wireless communications facilities, as defined in Section 17.80.020, may be constructed, collocated, modified to increase height, installed, or otherwise located within the City except as provided in this section or unless otherwise authorized by Section 17.80.035. Depending on the type and location of the wireless communication facility, the facility shall be subject to the following review unless collocation or an increase in height was granted through a prior land use process. A conditional use review shall require site plan and design review to occur concurrently with the conditional use review process.
[…]
B. Site Plan and Design Review. A wireless communication facility that, pursuant to Sections 17.80.040—17.80.070, is subject to site plan and design review shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.62, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.62 shall govern approval or denial of the site plan and design review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the site plan and design review process, including any local appeal.

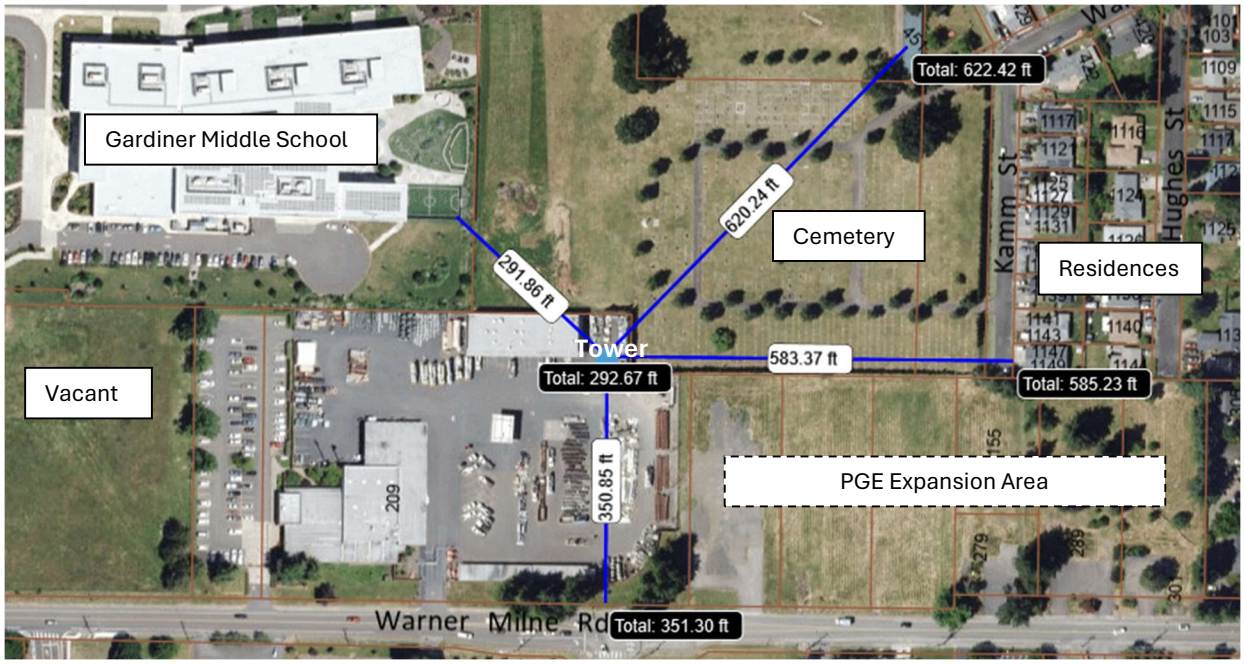
C. Conditional Use Review. A wireless communication facility that, pursuant to Sections 17.80.050—17.80.070, is subject to conditional use review, shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.56, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.56 shall govern approval or denial of the conditional use review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the conditional use review process, including any local appeal.

Finding: applicable. The above standards elaborate on the approval requirements established under OCMC 17.80.070 above.

In this application, PGE concurrently proposes the communications tower and the Operations Center public utility use (conditionally permitted in the MUC-1 zone). The proposed communications tower is a conditional use and, therefore, must comply with the criteria of OCMC 17.56 Conditional Uses and the communication facilities' design standards of OCMC 17.80.110.

PGE's detailed responses to the standards and criteria of both of the above-referenced sections demonstrate the proposed tower's compliance with applicable standards.

The figure below from the City's GIS system OCWebMap indicates approximate distances of the proposed tower location to nearby features; 580 feet to nearest residential structures, 300 feet to Gardiner Middle School, 350 feet to Warner Milne Road.



Proposed Tower Location

17.80.100 - Support tower location requirements.
No new support tower shall be permitted under the provisions of Section 17.80.070 unless the applicant demonstrates to the satisfaction of the Community Development Director, and the results are verified by a State of Oregon certified professional engineer, that no existing collocation or modification possibility can accommodate the service needs of the applicant's proposed support tower. […]

Finding: complies as proposed. Staff agrees that the proposed communications tower is "communication facilities for public safety" (OCMC 17.80.030(B)) and is, therefore, exempt from the collocation standards within this section. A letter from PGE's engineer (Exhibit J) explains why collocation of this facility is not feasible.

17.80.110 - Design standards.

Installation, collocation, construction, or modification of all support towers, structures, and antennas shall comply with the following standards, unless it qualifies as an "eligible modification" under Section 17.80.035 or an adjustment is obtained pursuant to the provisions of Section 17.80.120:

A. Support Tower. The support tower shall be self-supporting.

Finding: complies as proposed. The proposed communications tower will be self-supporting.

B. Height Limitation. Support tower and antenna heights shall not exceed the maximum heights provided below.

1. If the property is zoned GI, CI or I; […]

2. If the property is zoned: a. GI, CI or I, […]

3. If the property is zoned MUC-1, MUD or NC; the maximum height of a support tower, including antennas, is seventy-five feet.

Finding: adjustment requested. The project site is located in the MUC-1 zoning district. Therefore, sub-standard (3) applies and the maximum height is 75 feet. The proposed height of the new tower is 95 feet to the top of the tower structure, plus seven additional feet of an antenna, as shown on the included drawings. Typically, the standards within this chapter regulate cell towers, for which the 75-foot height maximum is sufficient. However, the proposed PGE Operations Center and communications tower offer unique circumstances. The site is secure and the tower is intended for vehicle dispatch and public safety uses that necessitate a height greater than the standard maximum.

The tower drawing (Sheet A61) shows that the proposed tower height, including antennas, will be 102 feet.

PGE requests an adjustment to this standard and, as demonstrated in PGE's responses to OCMC 17.80.120, all adjustment criteria are met. With approval of the requested adjustment, this standard is satisfied.

C. Collocation. New support towers shall be designed to accommodate collocation of additional providers.

1. New support towers of a height greater than seventy-five feet shall be designed to accommodate collocation of a minimum of two additional providers either outright or through future modification of the tower.

2. New support towers of a height between sixty feet and seventy-five feet shall be designed to accommodate collocation of a minimum of one additional provider either outright or through future modification of the tower.

Finding: not applicable. Staff agrees that the communications tower is a public safety facility and therefore exempt from collocation requirements. PGE has submitted a letter from a qualified engineer in support of this exemption (Exhibit J).

PGE is held to certain reliability and security standards by state law. These security standards dictate that PGE's assets, both physical and cyber, must remain inaccessible to unauthorized persons or entities that could physically damage or access its cyber network. Only authorized PGE personnel are allowed at the communications site, and no non-PGE communications equipment will be permitted on the tower. Allowing such access would violate FERC security standards and potentially expose PGE's communications network to harmful actions.

D. Setbacks. The following setbacks shall be required from property lines, not the lease area, for support towers, auxiliary support equipment, and perimeter fencing.
1. Support towers not designed to collapse within themselves shall be setback from all property lines a distance equal to the proposed height of the support tower.
2. Support towers designed to collapse within themselves shall be setback from the property line a distance equal to the following:
[…]
b. If the property is zoned:
i. GI, CI, I, C, MUC-2 or MUE […]
ii. MUC-1, MUD or NC; the setback shall be a minimum of twenty-five feet from all adjacent residentially zoned property lines and the underlying zoning setback for all other adjacent property lines; or
[….]

Finding: complies as proposed. The Site Plan shows the proposed tower located at the north side of the subject property a minimum of 25 feet. In compliance with sub-standard (2)(b)(ii), the support tower is designed to collapse within itself. A description of the construction materials and structural integrity of the tower is part of Exhibit J. In addition, the auxiliary support equipment will be at least 25 feet from the nearby property lines, which is shown on the site plan.

E. Auxiliary Support Equipment. The following standards shall be required.
1. If the property is zoned:
a. For GI, CI, I, MUC-1, MUC-2, C, MUD, MUE or NC, the auxiliary support equipment footprint shall not exceed an area of three hundred forty square feet and fifteen feet in height at the peak;
b. For all cases other than those identified in Section 17.80.110.E.1.a. above, the auxiliary support equipment shall be:
i. Located underground or completely screened by landscaping or an architecturally significant masonry wall. The wall shall be finished with brick, stone, or stucco. The Community Development Director may approve an alternate screening material if it is compatible with adjacent development and is architecturally significant. No exposed CMU is allowed on the exterior of the wall.
2. Only one auxiliary accessory cabinet shall be allowed per service provider located on a support structure.

Finding: complies as proposed. The proposed auxiliary support equipment complies with the above standards and will consist of a 330 square-foot, 11-foot-tall structure to contain communications equipment related to the tower. As the site is within the MUC-1 zone district subsection b does not apply.

F. Landscaping. In all zoning districts, existing vegetation shall be preserved to the maximum extent practicable. Screening of a site is mandatory.
1. If the property is zoned:
[…]
b. For all cases other than those identified in Section 17.80.110.F.1.a. above, landscaping shall be placed completely around the perimeter of the wireless communication facility, except as required to gain access. The minimum planting height shall be a minimum of six feet at the time of planting, densely placed so as to screen the facility. The landscaping shall be compatible with vegetation in the surrounding area and shall be kept healthy and well maintained as long as the facility is in operation. Failure to maintain the site will be grounds to revoke the ability to operate the facility.
c. The Community Development Director may approve an alternative landscaping plan that visually screens the facility and is consistent with the intent of this standard.

Finding: complies as proposed. In compliance with sub-standard (1)(b), landscaping surrounds the communications tower and its auxiliary equipment to the north and east. The east façade of the existing garage screens the tower to the west, and the tower will remain accessible to the south for maintenance.

The Landscape Plan demonstrates proposed plantings that will meet the above requirements. PGE acknowledges the requirements to maintain these plantings, in addition to all others on the project site.

G. Noise Reduction. Noise generating equipment shall be baffled to reduce sound level measured at the property line to the following levels except during short durations for testing and operation of generators in emergency situations:
1. For any property where no adjacent parcel is zoned residential, the sound level at the property line shall not be greater than fifty dB;
2. For all other cases, the sound level shall not be greater than forty dB when measured at the nearest residential parcel's property line.
Finding: complies with conditions. The applicant stated that, in compliance with sub-standard (2), the new communications tower equipment will not generate noise greater than the maximum 40 dB measured at the nearest residential property line and there will be no significant noise associated with the communications tower at all.

As a receiving sound source, the abutting cemetery property is in a residential zone but is not in residential use. The nearest "residential parcel," according to the language in subsection (2), that is, a parcel that is actually being in use for residential purposes, is tax lot 32E05CB00400, 582 feet east of the new tower. At that distance, any sound emitted by the tower equipment will undoubtedly be quieter than 40 dB.

The applicant did not provide any evidence in their submittal to support this claim. The applicant shall provide a report signed by an appropriate professional that demonstrates that any noise emitted from the tower and/or it's auxiliary support equipment complies with standards 1 or 2 of this section**. See conditions of approval.**

H. Lighting.
1. Unless required by the Federal Aviation Administration or the Oregon Aeronautics Division, artificial lighting of wireless communication towers and antennas shall be prohibited.
2. Strobe lighting is prohibited unless required by the Federal Aviation Administration.
3. Security lighting for equipment shelters or cabinets and other on-the-ground auxiliary equipment shall be initiated by motion detecting lighting. The lighting shall be the minimal necessary to secure the site, shall not cause illumination on adjacent properties in excess of a measurement of 0.5 footcandles at the property line, and shall be shielded to keep direct light within the site boundaries.
Finding: complies as proposed. No artificial lighting or strobe lighting is proposed for the new communications tower. Therefore, sub-standards (1) and (2) are met. The Photometric Plan (Sheets E01 – E08) shows that proposed pole-mounted work area lighting adequately lights this area of the site, including the base of the tower and equipment shelter. In addition, the Plan shows that proposed lighting does not cause illumination on surrounding properties in excess of 0.5 footcandles.

I. Color. Unless otherwise required by the Federal Aviation Administration, all support towers and antennas shall have a non-glare finish and blend with the natural background.
Finding: complies as proposed. The proposed tower material (galvanized steel) will have a non-glare finish and color (gray and white with a matte finish), complying with standard (I).

J. Signage. Support towers and antenna(s) shall not be used for signage, symbols, flags, banners, or other devices or objects attached to or painted on any portion of a wireless communication facility.

Finding: complies as proposed. The applicant confirmed that the proposed communications tower will not be used for any of the prohibited activities listed above in sub-standard (J).

K. Access Drives.
1. On a site with an existing use, access shall be achieved through use of the existing drives to the greatest extent practicable. If adequate intersection sight distance is unavailable at the existing access intersection with a city street, an analysis of alternate access sites shall be required.
2. Site shall be serviced by an access adequate to ensure fire protection of the site.
3. New access drives shall be paved a minimum of twenty feet deep from the edge of the right-of-way (though the use of pervious paving materials such as F-mix asphalt, pavers, or geotech webbing is encouraged) and designed with material to be as pervious as practicable to minimize stormwater runoff.
4. New access drives shall be reviewed for adequate intersection sight distances.

Finding: complies as proposed. The tower is one element of the larger PGE Operations Center redevelopment and infill project. The tower, located on a portion of the subject property that is currently used as the PGE line center, will be accessible through the use of improved existing drives, and has been incorporated into the overall circulation plan of development. The Transportation Impact Study and Circulation Plan demonstrate that tower access complies with the above standards.

L. Informing the City. All service providers with facilities within the City of Oregon City shall be required to report in writing to the Community Development Director any changes in the status of their operation.
1. An annual written statement shall be filed with the planning manager verifying continued use of each of their facilities in the City's jurisdiction as well as continued compliance with all state and federal agency regulations.
2. The report shall include any of the following changes:
a. Changes in or loss of Federal Communication Commission license from the Federal Communication Commission to operate;
b. Receipt of notice of failure to comply with the regulations of any other authority over the business or facility;
c. Change in ownership of the company that owns wireless communication facility or provides telecommunications services; or
d. Loss or termination of lease with the telecommunications facility for a period of six months or longer.

Finding: not applicable. PGE's proposed tower is not for a wireless service provider. No changes in use are expected for the communications tower or public facility use of the site. The existing site has been in operation for more than 50 years. PGE will notify the community development director in the extremely unlikely event there are any changes to the status of the operation.

17.80.120 - Adjustments.
Adjustments to the standards of this chapter may be approved by the Planning Commission at a duly noticed public hearing. The Planning Commission may grant an adjustment under either of the following circumstances:

1. The Planning Commission may grant an adjustment when a gap in the applicant's service exists and the gap can only be alleviated through the adjustment of one of more of the standards in this section. If an adjustment is to be approved, the applicant must demonstrate each of the following: […]
Finding: not applicable. There is no "gap in service" that necessitates an adjustment. The adjustment is for a tower height that is appropriate for the communication needs of a critical public service facility, but taller than the local code allows. The height limit in this section is 75 feet, whereas the proposed height is for a tower that is 95 feet to the top of the tower plus a 7 foot antenna. The adjustment is discussed further below under subsection (2).

2. The Planning Commission may grant an adjustment to a standard when the proposed adjustment would utilize existing site characteristics to minimize demonstrated or potential impacts on the use of surrounding properties. For the purposes of this subsection, site characteristics shall include, but need not be limited to, the suitability of the proposed use considering size, shape, location, topography, existence of improvements, and natural features. Applicants for an adjustment under this provision must demonstrate that the adjustment will result in a lower level of impact on surrounding properties than would be generated if the standard were not adjusted.

Finding: The proposed adjustment for height is to exceed the 75 foot height limit for communication towers and allow one that is 102 feet tall, the top 7 feet of which is an antenna. This proposed tower is tucked into a corner of the site along its rear property line, adjacent to a garage building and closest to a cemetery. It also replaces two existing towers that are much closer to the street and that are approximately 70 feet and 88 feet tall.

The characteristics of the site are used to minimize potential impacts on the use of surrounding properties. The large size of the site helps minimize the additional height because it allows the tower to be placed at a far distance from areas of the property that are more frequently visited. The tower is 400 feet from Warner Milne Road, 600 feet from the nearest residence on Kamm Street to the east, and 400 feet from Gardiner Middle School. With a typical person only looking at the tower from a substantial distance, its height becomes less apparent.

Existing improvements are also a factor, since the location of the new tower will be close to a longstanding garage building. Placing the tower relatively close to a building that has been in place for decades minimizes the visual appearance of the tower, including its height, and obscures the lower 20 or so feet of the structure from many vantage points. There are no natural features in the vicinity of the tower, but landscaping will be installed along the nearby property lines which are 25 or more feet away.

The adjustment for a taller tower will result in a lower level of impact on surrounding properties than if the standard were not adjusted because without this communications infrastructure, surrounding properties would potentially be subject to greater risk in a storm or other event that damages electrical infrastructure. A tower of this height is critical to maintain that communications capability and provide effective connection with repair and maintenance crews. A shorter tower would potentially require a second tower elsewhere in the area, doubling the potential impacts of towers in the neighborhood.

In considering the requested adjustment, the Planning Commission may consider the following:
a. Visual impacts;

Finding: Staff concurs with the applicant that the overall visual impact of a single communications tower on the site is relatively minor, considering the size of the site, the proposed location for the tower at the extreme rear of the site and next to the garage, and the elimination of the two existing towers.

The photo below shows the two existing towers from the current PGE line center parking area. The third pole in the photograph is a light pole that will be removed. This gives a visual sense of the communication towers within the existing site. The proposed tower is about 15 feet taller than the taller communication tower on the right.

Figure 11. Communication towers viewed from parking area

Given a 12 acre site, its location at the back of the property, and the relatively narrow and low-profile nature of the metal structure, a taller tower will not generate a significant visual impact.

b. Impacts on views;

Finding: Staff concurs with the applicant that there are no city-inventoried views from the site that would be impeded by a tower taller than the 75 feet allowed.

As part of this application, the applicant provided a visual impacts assessment that includes vantage points toward the tower from five locations surrounding the PGE property (Exhibit C, Sheets A41 and A42). This is a submittal requirement for the Communication Facilities application listed in OCMC 17.80.090.E.4.

The vantage points are from the ground level, which is a more accurate way to assess impacts than an aerial or oblique angle, because viewers looking toward the site will be standing on the ground (rather than levitating in the air). Under this analysis, the tower blends in with its surroundings, on balance. The new tower is only one of many elements in the field of view of an urban location that includes many other buildings and trees. Given its location abutting a cemetery, almost no one will be in a position to regularly stand close to the tower and have any sort of view impaired, because no residential uses or rights of way are nearby. Any viewers, if they notice it at all, will look at the tower from a substantial distance. For that reason, there is no significant impact on views that result from an adjustment for a marginally taller tower at this location.

c. Impacts on property values; and

Finding: No evidence has been submitted that utility communications towers have negative impacts on property values.

The applicant states that the accurate comparison would be between a 75 foot tower that could be constructed by-right, and this proposed tower at 102 feet tall. This kind of analysis would be further

clouded by the consideration that there are already two towers on the site, one of which is taller than the 75 feet allowed. Moreover, the properties nearest to the proposed communication tower are those least likely to be affected by property value impacts. That is, the immediately abutting land is a cemetery owned by a church, which is a very long-term use of land and would be extremely difficult to appraise, especially with the hypothetical with and without a nearby communication facility. To the northwest is a middle school, which was recently completed and opened. The value of this property would also be difficult to evaluate because of its large and unique institutional use. The property to the west is a church that has been on that property for many years. The proposed tower is also farther away from the church than the two existing towers shown in the image above. For what it's worth, all three of the close-by properties listed in this paragraph are tax-exempt properties. These are presumably less likely to need to sell and more insulated from property value changes than taxable ones.

Staff concurs that this standard is almost impossible to quantify and difficult to objectively determine, either positively or negatively, given the variables cited by the applicant. Staff concurs that, in comparison to a 75 foot tower permitted by right, the proposed 102 foot tower has a negligible impact, and due to the fact that the proposed tower will replace two existing slightly smaller towers, then the impact will be mitigated further.

d. Other impacts that the Planning Commission finds can be mitigated by an adjustment so that the proposed use will have greater compliance in not altering the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary use listed in the underlying district.
Finding: the potential for the overall operations center use to impact the character of the surrounding area was discussed extensively in the conditional use findings under OCMC 17.56. Those findings include an analysis of impacts on surrounding properties, including the proposed 102-foot-tall tower, and so are equally applicable to this adjustment request. The proposed use, which is categorized as a public utility, will infill a currently vacant and underutilized area along Warner Milne Road. The nearest residential developments to the tower location are almost 600 feet away and will be buffered by adjacent site elements including the St. John's Cemetery. The communications tower will support ordinary maintenance and emergency repair of the local and regional electrical grid, creating an asset to the area and to PGE's regional network. Any potential impacts from the tower height will be minor, highly localized, and incremental, relative to existing conditions. They will not reach a degree that would negatively affect the character of the surrounding area.

The "surrounding area" is non-specific, allowing for flexibility based on the intensity of the proposed use and the geographic extent of its potential impacts. PGE considers the "surrounding area" those properties that can see the new tower, though it should be noted that many of these properties would also be able to see a tower that is 75 feet tall, which would be allowed outright. PGE is not aware of neighboring property concerns regarding the existing tower, which is taller than 75 feet, and its impact on neighborhood character.

In the context of this criterion, the existing PGE line center – an approved conditional use itself – provides a base case from which to judge development impacts. The existing and proposed use includes two communication towers at the center of the site.

The potential change in impacts resulting from the Operations Center development would be minor compared to existing conditions. This also applies to the adjustment to the height of the

communications tower. Such a change would not reach a level of altering the character of the area, let alone to a degree that would "substantially limit, preclude, or impair" permitted uses on the properties.

Staff concurs with the applicant's response.

3. Requests for adjustments under this subsection shall only be considered concurrently with the applicable site review process as required by Section 17.80.080. If the site review process required by Section 17.80.080 is a compatibility review or a site plan and design review, the inclusion of an adjustment will require that the application be subject to a conditional use review under Section 17.80.090.C.

Finding: complies as proposed. The application is subject to concurrent Conditional Use and Site Plan and Design Review processes that include the communications tower as one of the elements. This adjustment to the height of the tower is within the communications facilities section and part of a consolidated review with the conditional use review and site plans for the proposed facility.

III. CONCLUSION AND RECOMMENDATION TO THE PLANNING COMMISSION

Based on the analysis and findings as described above, Staff concludes that the proposed development located at 209 WARNER MILNE RD, APN 3-2E-06DA-00100; NO SITUS ADDRESS, 3-2E-06DA-00201; NO SITUS ADDRESS, 3-2E-05CB-01100; NO SITUS ADDRESS, 3-2E-05CB-01200; NO SITUS ADDRESS, 3-2E-05CB-01300; NO SITUS ADDRESS, 3-2E-05CB-01400; 279 WARNER MILNE RD, APN 3-2E-05CB-01402; 289 WARNER MILNE RD, APN 3-2E-05CB-01500; 301 WARNER MILNE RD, APN 3-2E-05CB-01500, OREGON CITY, OR 97045, can meet the requirements as described in the Oregon City Municipal Code by complying with the Conditions of Approval provided in this report. Therefore, the Community Development Director recommends approval of files GLUA-25-057, CU-25-02, SP-25-0145, PI-25-08, and PARK-25-02 with conditions, based upon the findings and exhibits contained in this staff report.

IV. EXHIBITS:

- Application Materials
- Land Use Application Form
- Narrative with Code Responses
- Public Improvement Modification Narrative
- Combined Plans
- Communications Tower Correspondence
- Traffic Impact Study
- Construction Costs
- Elyville NA meeting
- Geotech Report
- Stormwater Report
- NROD report 2021
- PA_25-031 Pre-App Notes
- PGEOwnerAuth
- Public Notice of Planning Commission Public Hearing

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045

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NOTICE OF PUBLIC HEARING – TYPE III LAND USE APPLICATION

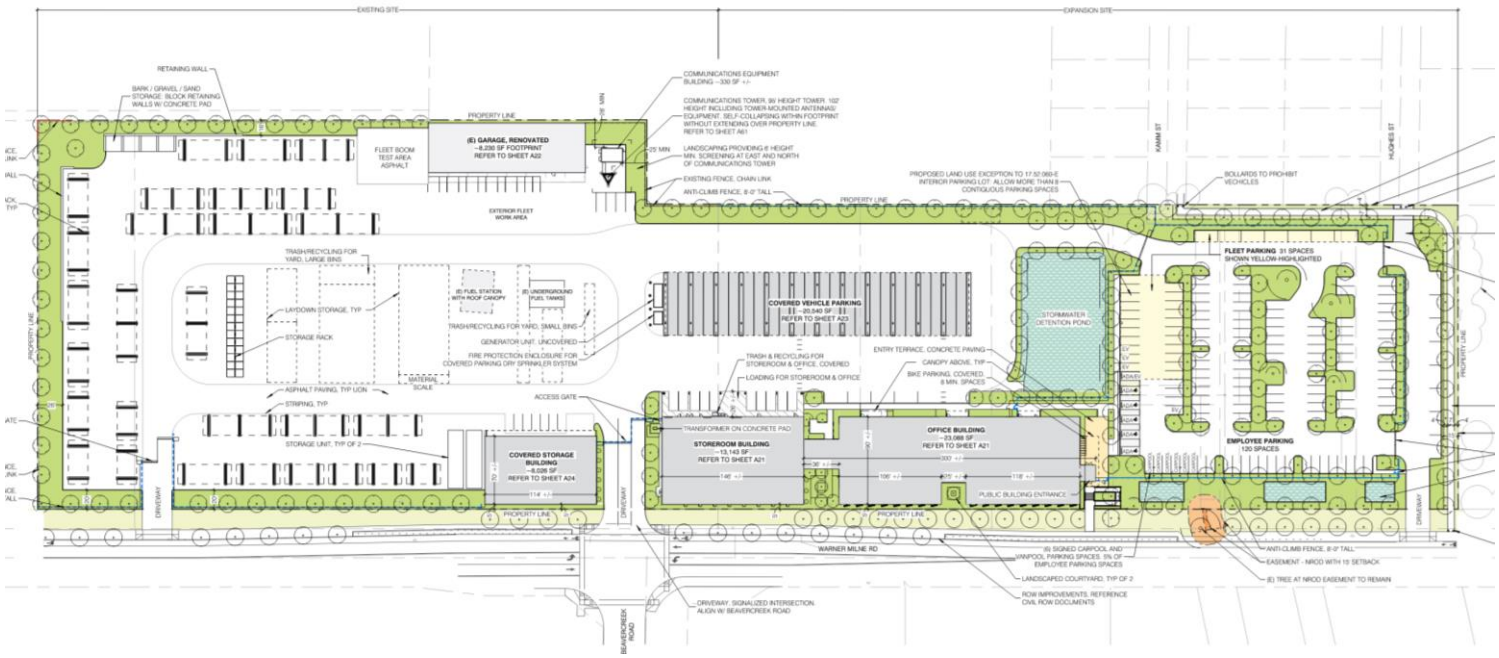
FILE NUMBERS:	GLUA-25-00057, CU-25-00002, SP-25-00145, PI-25-00008, PARK-25-00002	
HEARING DATE & COMMENT DEADLINE:	On **Monday, April 13, 2026, the City of Oregon City Planning Commission** will conduct a public hearing at 7:00 p.m. in the Commission Chambers at the Robert Libke Public Safety Building, 1234 Linn Avenue, Oregon City 97045, and virtually on Zoom regarding the following Type III Application. Any interested party may testify at the public hearings or submit written testimony at or prior to the close of the Planning Commission hearing. Please contact **ocplanning@orcity.org** to provide virtual testimony. The meeting may be viewed live at **www.youtube.com/user/CityofOregonCity**. **To be included in the staff report, written comments must be received by the Planning Division by 4pm 2 weeks before the first scheduled hearing.** Written comments received after that date will be provided to the Commission but may not be included in the staff report. The agenda and associated report will be posted at **www.orcity.org/meetings** one week prior to the meeting.	
LOCATIONS (MULTIPLE):	209 WARNER MILNE RD, APN 3-2E-06DA-00100; NO SITUS ADDRESS, 3-2E-06DA-00201; NO SITUS ADDRESS, 3-2E-05CB-01100; NO SITUS ADDRESS, 3-2E-05CB-01200; NO SITUS ADDRESS, 3-2E-05CB-01300; NO SITUS ADDRESS, 3-2E-05CB-01400; 279 WARNER MILNE RD, APN 3-2E-05CB-01402; 289 WARNER MILNE RD, APN 3-2E-05CB-01500; 301 WARNER MILNE RD, APN 3-2E-05CB-01500 OREGON CITY, OR 97045	
PROPOSAL:	Reconstruct and expand the PGE Operations Center on Warner Milne Road, to modernize the building, increase storage and staging areas, renovate the existing garage, and provide fleet and employee vehicle parking. Includes new communications tower to replace existing ones. Includes Conditional Use for Public Utility, Site Plan and Design Review, Adjustment to Max. Parking, Public Improvement Modification.	
OWNER:	PGE, 121 Salmon St, Portland, OR 97204	
REPRESENTATIVE:	Winterbrook Planning, Attn: Ben Schonberger, 610 SE Alder St, Portland, OR 97205	
PROJECT LINK:	**https://www.orcity.org/3515/PGE-Line-Center-Expansion-CU-25-02-SP-25**	
STAFF CONTACT:	Pete Walter, Planning Manager, (503) 722-3789, **pwalter@orcity.org**	
NEIGHBORHOOD ASSOCIATION:	Elyville Neighborhood Association	Date of Meeting: 09/09/2025
REVIEW CRITERIA:	The following Code Chapters of the OCMC apply: 12.04 - Streets, Sidewalks and Public Places; 13.12 - Stormwater Management; 15.48- Grading, Filling and Excavating; 16.12- Minimum Public Improvements and Design Standards for Development; 17.29 - MUC-1 Mixed Use Corridor District; 17.41 - Tree Protection Standards; 17.47 - Construction Site Runoff Controls; 17.49 - Natural Resources Overlay District; 17.50 - Administrative Processes; 17.52 - Off Street Parking and Loading; 17.54 - Supplemental Zoning Regulations and Exceptions; 17.62 - Site Plan and Design Review; 17.56 – Conditional Uses; 17.80 – Communications Facilities	

For helpful tips on submitting public comments, please visit the "How Do I...?" section of our website: **https://www.orcity.org/1101/How-Do-I** then click on "*How do I Make the Most Effective Comments on Development Applications?"* Thank you!

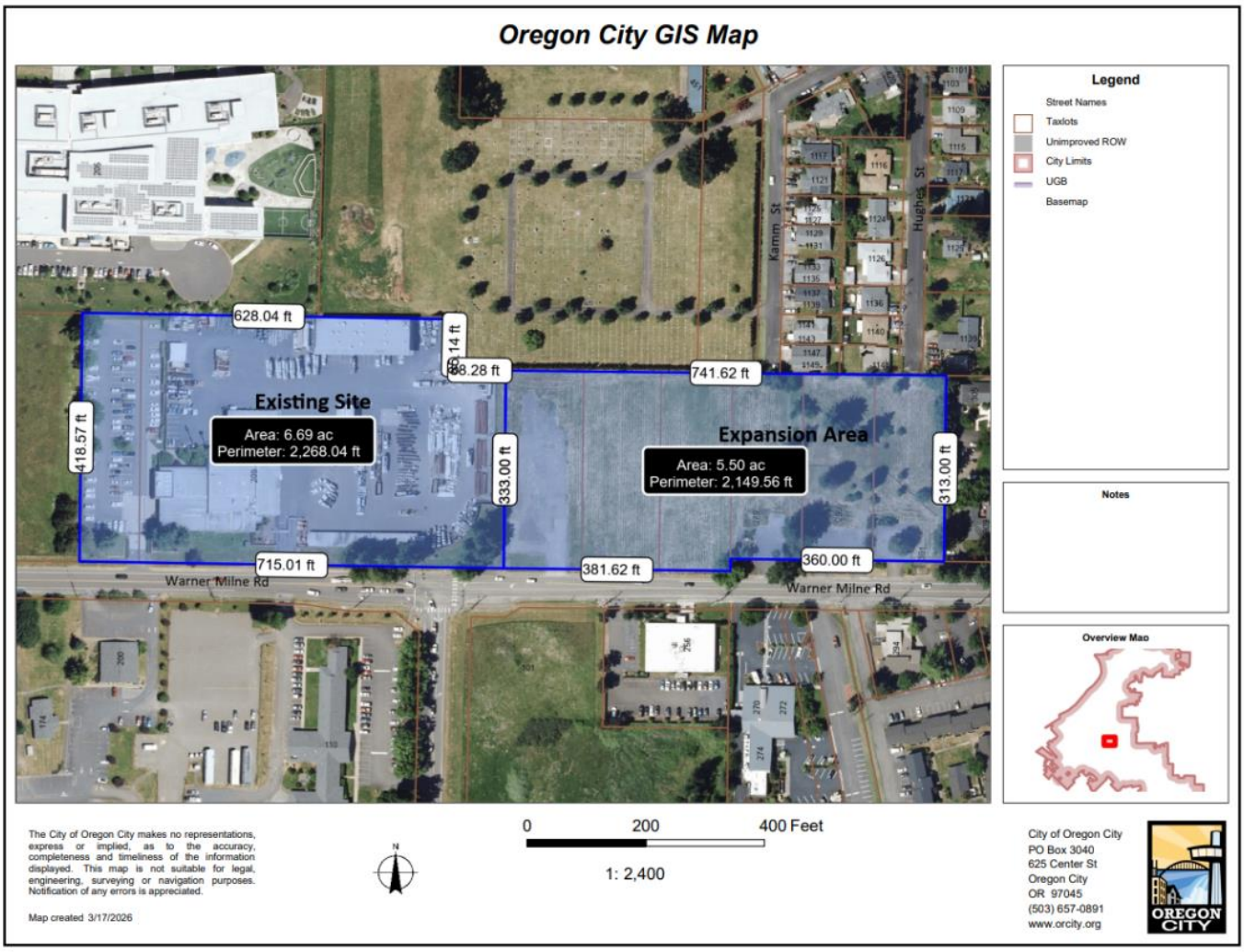
This application is subject to the Administration and Procedures section of the Oregon City Code set forth in Chapter 17.50. The application is available at the link provided above or can be viewed in person at the OC Planning Division, 695 Warner Parrott Road, 9am- 4pm Monday through Thursday. The staff report, with all the applicable approval criteria, will also be available to view seven days prior to the hearing. Copies of these materials may be obtained for a reasonable cost in advance.

Any interested party may testify at the public hearing and/or submit written testimony at or prior to the close of the record by the Planning Commission or City Commission. Notice of the decision shall be sent to the applicant and to those persons submitting comments and providing a return address. Any issue that is intended to provide a basis for appeal must be raised before the close of the proceeding, in person or by letter, with sufficient specificity to afford the City and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any review of that issue. Parties with standing may appeal the decision of the City Commission to the Land Use Board of Appeals. The procedures that govern the hearing will be posted at the hearing and are found in OCMC Chapter 17.50 and ORS 197.763. **A city-recognized neighborhood association requesting an appeal fee waiver pursuant to 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting before filing an appeal.**

Proposed Site Plan

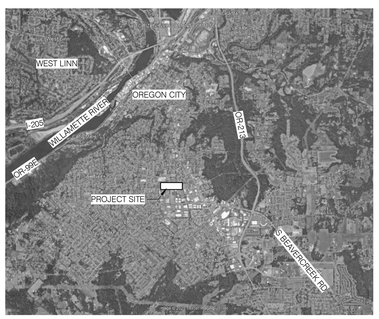


Vicinity

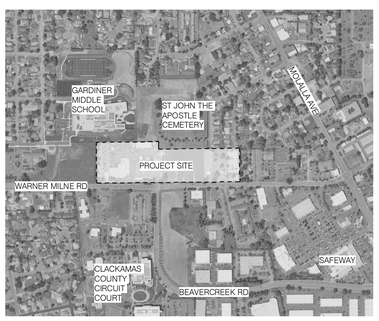


PGE OREGON CITY OPERATIONS CENTER - LAND USE

REPRESENTATIONAL IMAGE
IMAGE SHOWN IS NOT AN EXACT REPRESENTATION
OF ACTUAL DESIGN AND CONSTRUCTION.



VICINITY MAP
NOT TO SCALE



CAMPUS MAP
NOT TO SCALE

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CONTACT: BEN PERRY

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COVER SHEET

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TEMPORARY CONSTRUCTION PHASE
T01 SITE DIAGRAM -TEMPORARY CONSTRUCTION PHASE

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PGE

PGE Oregon City
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209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

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Checked by: KW
Sheet:

COVER

LAND USE
COVER

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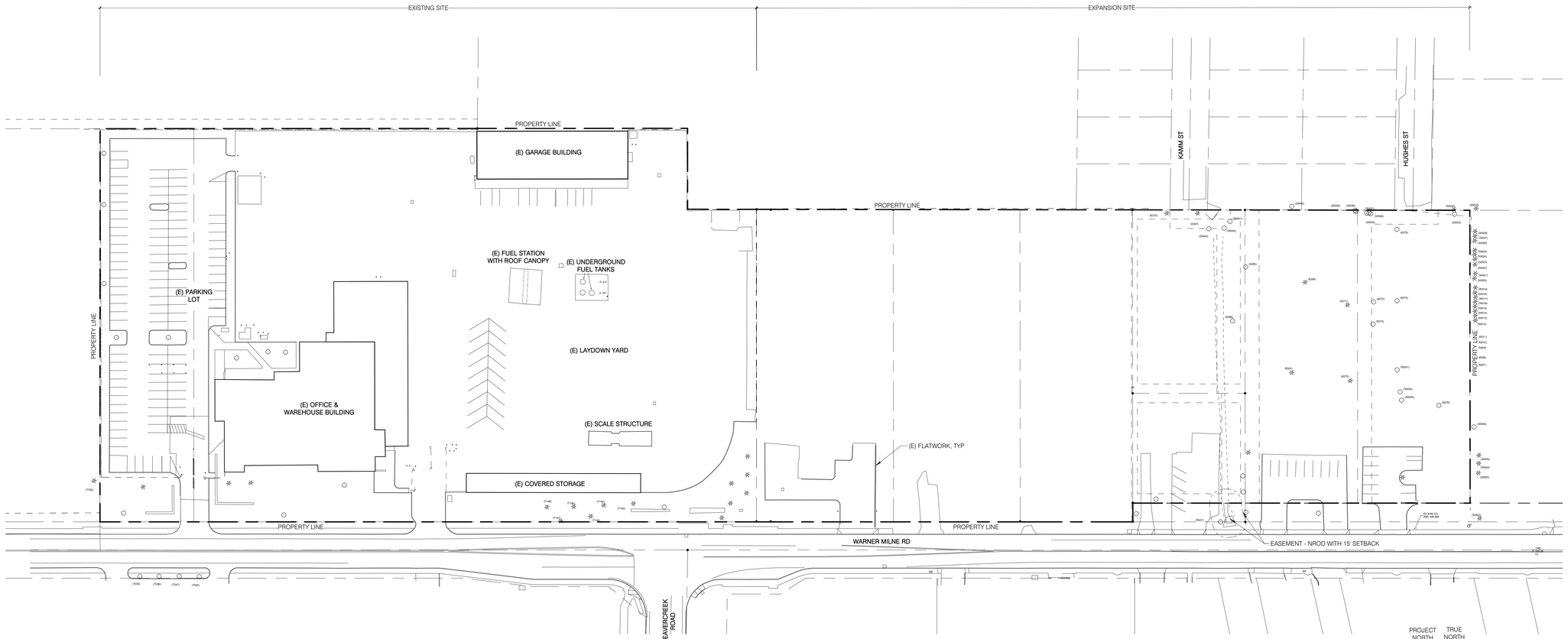

1 / A10 SITE PLAN -EXISTING CONDITIONS
1" = 50'-0"

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LU SITE PLAN -EXISTING CONDITIONS

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A10

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SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE LOTS ARE VISIBLE.
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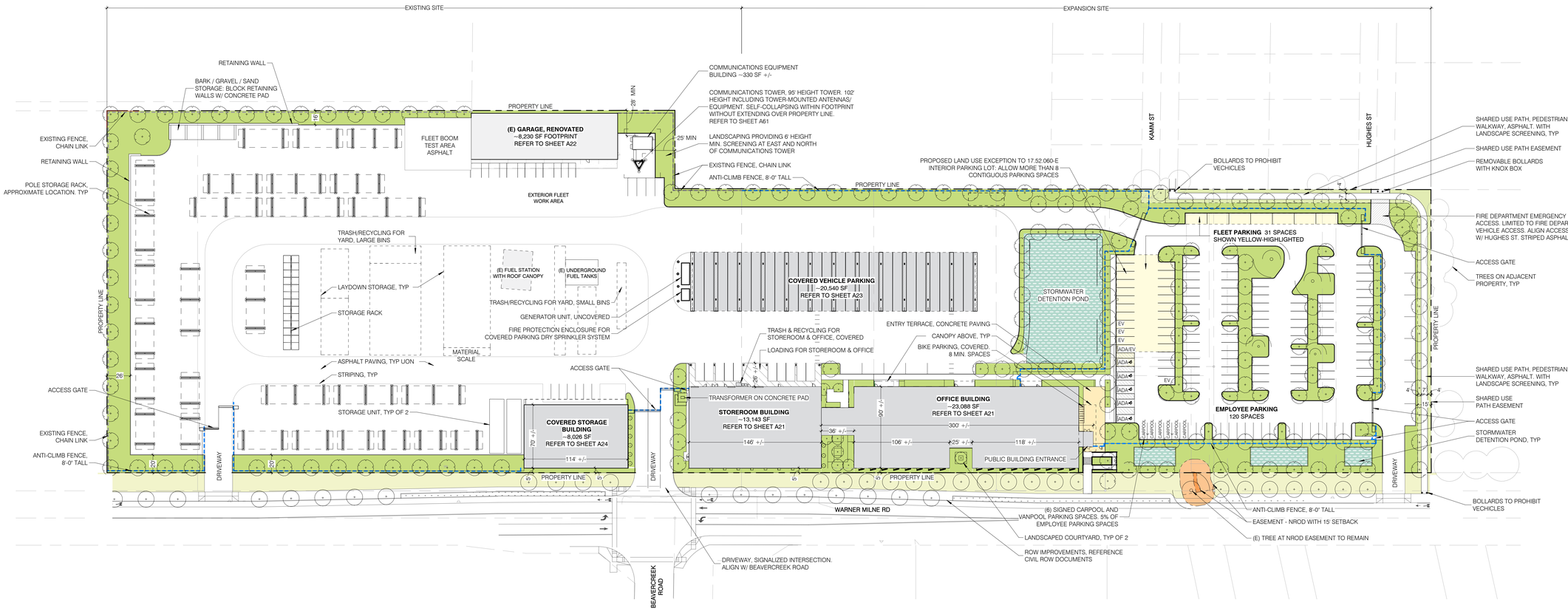
LAND USE NOTES

PROPERTY AREA:
EXCLUDING WARNER MILNE ROW DEDICATION, INCLUDING SHARED USE PATH

EXISTING LOT:	~6.3 ACRES
MIDDLE LOTS:	~2.9 ACRES
EAST LOTS:	~2.6 ACRES
TOTAL:	~11.7 ACRES

SITE LANDSCAPING - *INCLUDING SHARED USE PATH*
EXCLUDING WARNER MILNE ROW DEDICATION; LANDSCAPE AREA INCLUDES PUBLIC SHARED USE PATH WALKWAY AND STORMWATER

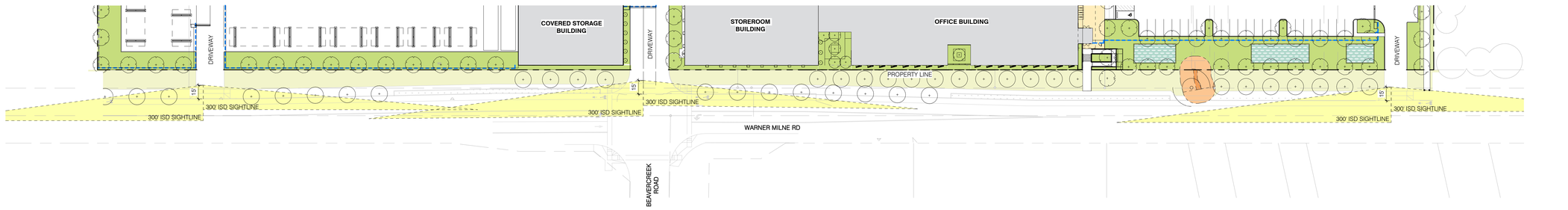
SITE AREA:	~511,425 SF
MIN LANDSCAPE REQUIRED:	20% = 102,285 SF
PROVIDED:	20.74% = 106,068 SF



1 A11 LU -ARCHITECTURAL SITE PLAN
1" = 50'-0"

0 12.5'25' 50' 100'

PROJECT NORTH TRUE NORTH



2 A11 LU -SITE DIAGRAM -SIGHT LINES
1" = 50'-0"

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTRAST AND BRIGHTNESS TO SHOW ALL THREE LEVELS ARE CRITICAL.
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LAND USE

A11

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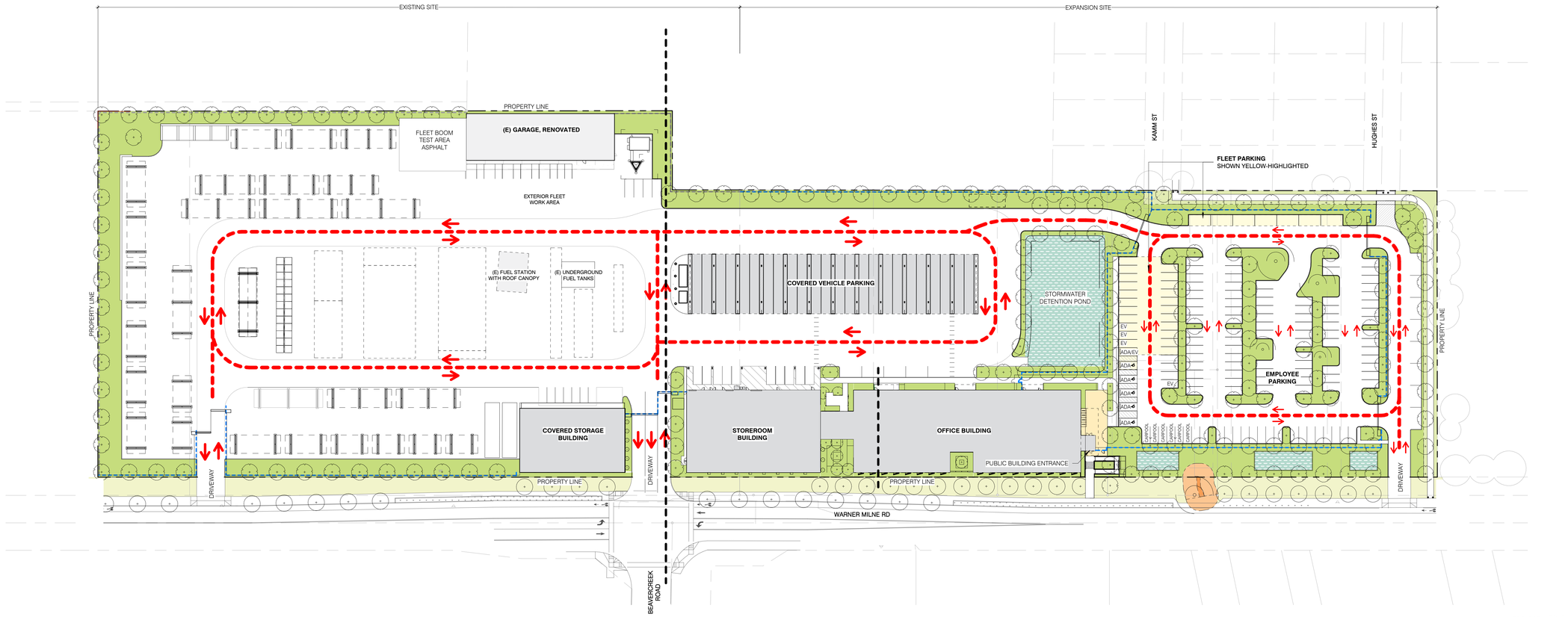

2 A12 LU -DIAGRAM -SITE CIRCULATION
1" = 50'-0"

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LU SITE DIAGRAM -CIRCULATION

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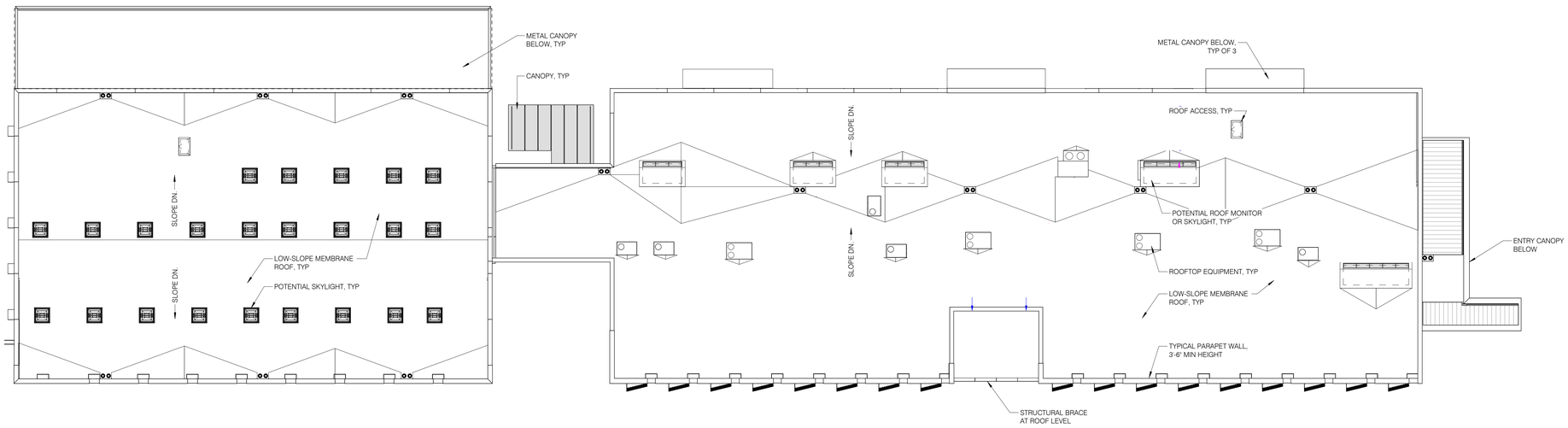


ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

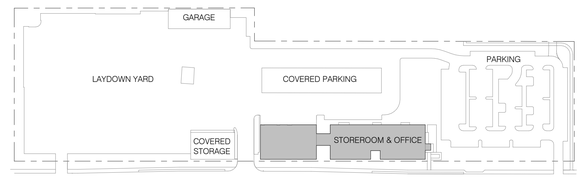
2 / A21 LU -ROOF PLAN -OFFICE & WAREHOUSE BUILDING
1/16" = 1'-0"

FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 / A21 LU -FLOOR PLAN -OFFICE & WAREHOUSE BUILDING
1/16" = 1'-0"

PROJECT NORTH

0' 4' 8' 16' 32'



SITE KEY PLAN

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HEA Project no. 25005-01T
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FLOOR PLAN -OFFICE & STOREROOM

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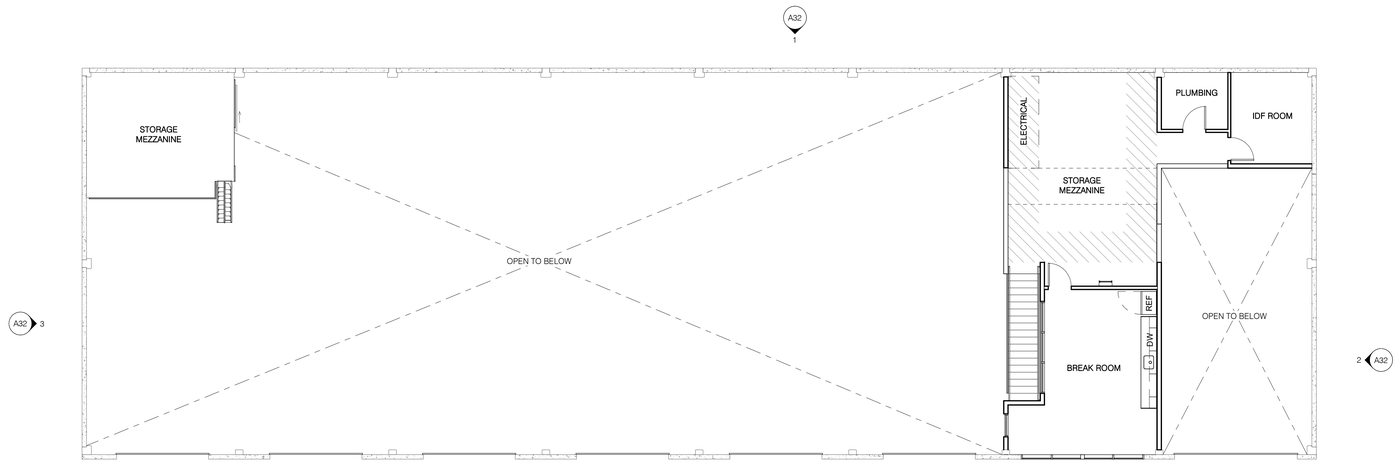
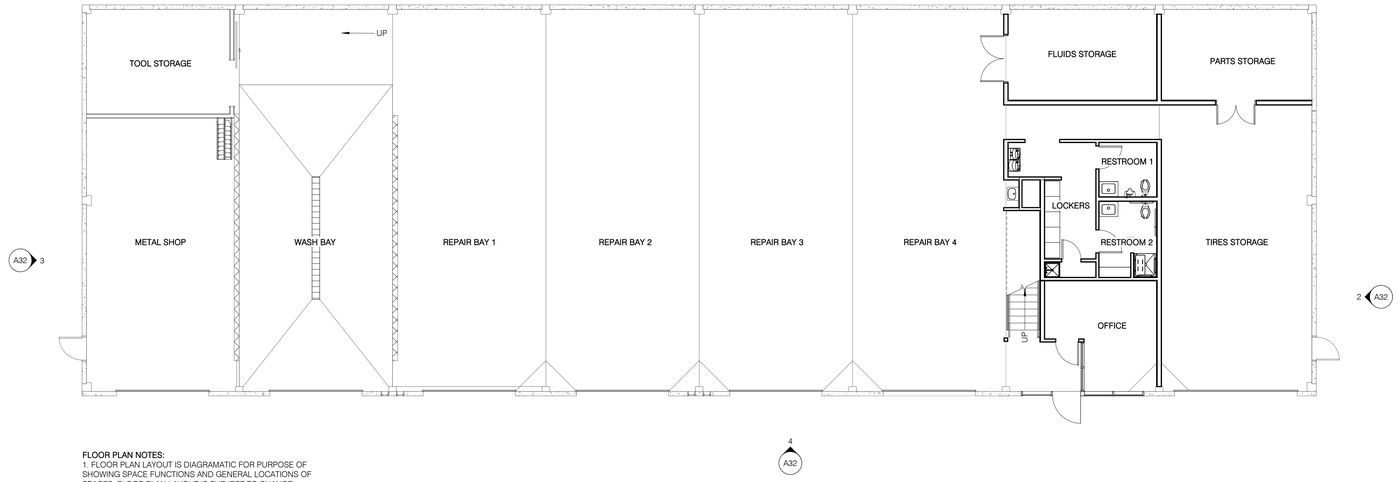


FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

2 A22 LU FLOOR PLAN - GARAGE LEVEL 2
1/8" = 1'-0"

0' 2' 4' 8' 16'

TRUE NORTH

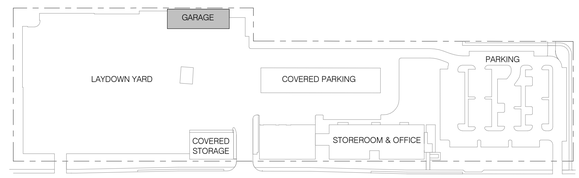


FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 A22 LU FLOOR PLAN - GARAGE LEVEL 1
1/8" = 1'-0"

0' 2' 4' 8' 16'

TRUE NORTH



SITE KEY PLAN

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
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BLACK
DARK GREY
LIGHT GREY

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PGE

OCOC - GARAGE

209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 24 OCTOBER 2025
LAND USE
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LU FLOOR PLAN - GARAGE

LAND USE

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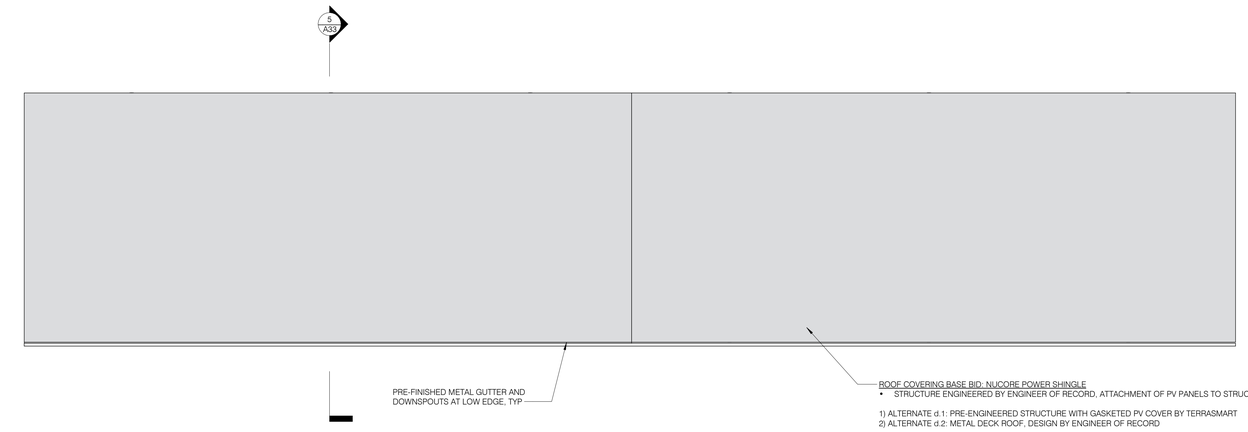
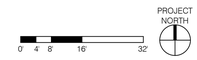
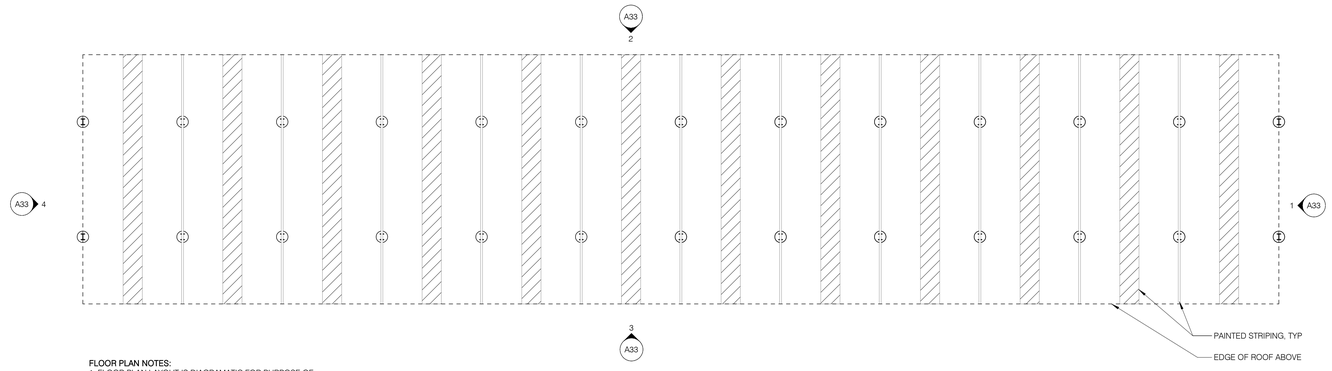


ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

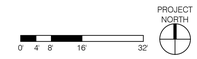
2 COVERED PARKING -ROOF PLAN
1/16" = 1'-0"

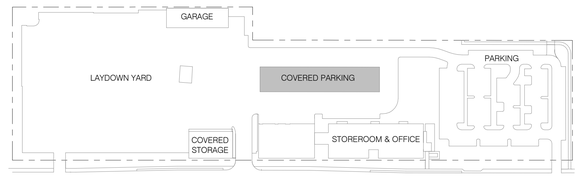




FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 COVERED PARKING -FLOOR PLAN
1/16" = 1'-0"





SITE KEY PLAN

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Hennebery Eddy

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HEA Project no. 25005-01T
Date: 12/18/2025
LAND USE
Revisions:

Drawn by: GW/TW
Checked by: KW
Sheet:
LU FLOOR PLAN -GARAGE

LAND USE

A23

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
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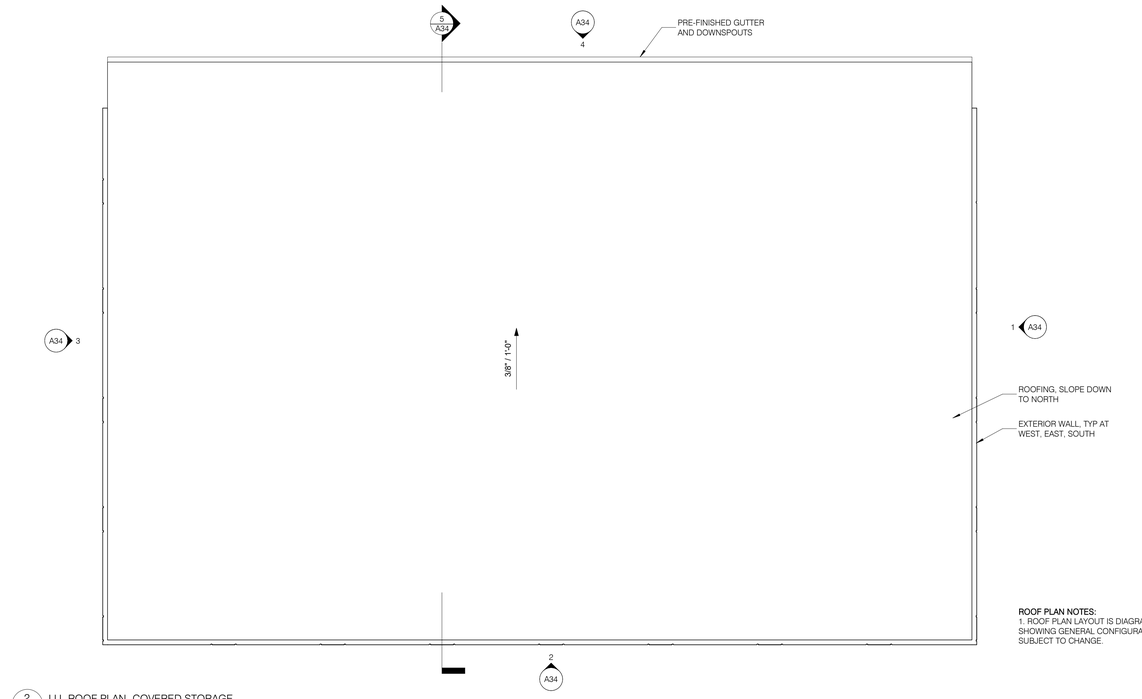
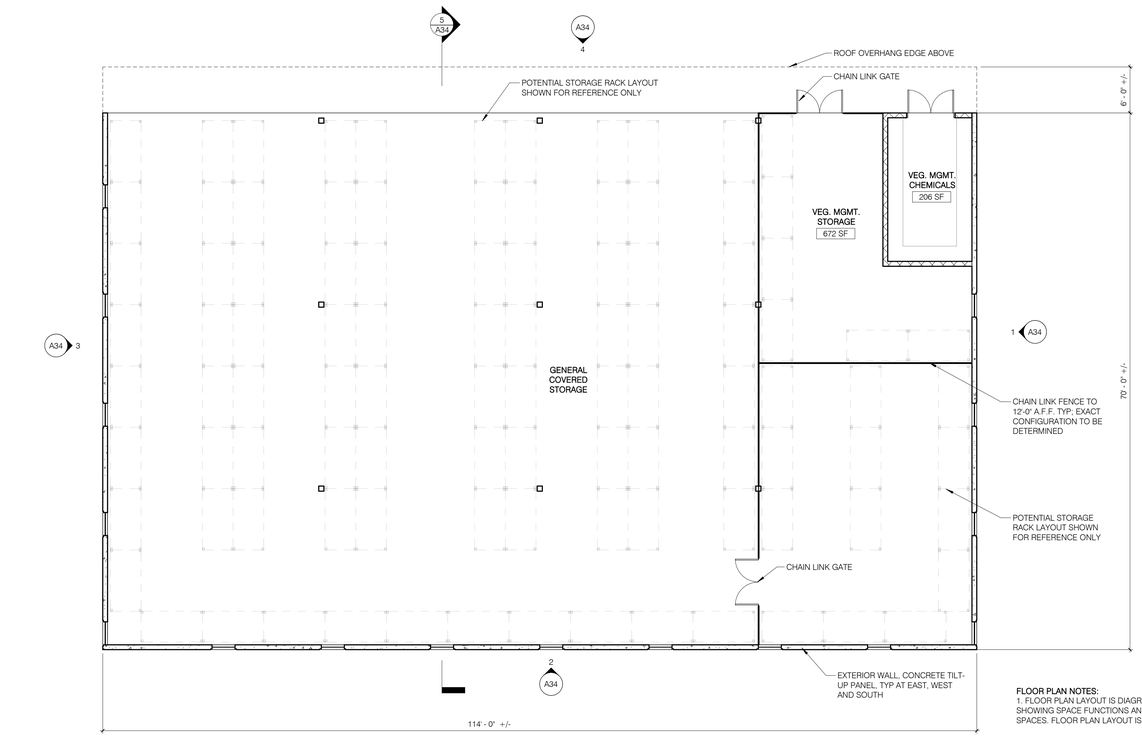


2 / A24 LU -ROOF PLAN -COVERED STORAGE
1/8" = 1'-0"

ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

PROJECT NORTH

0' 2' 4' 8' 16'

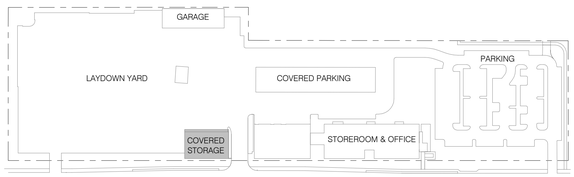


1 / A24 LU -FLOOR PLAN -COVERED STORAGE
1/8" = 1'-0"

FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

PROJECT NORTH

0' 2' 4' 8' 16'



SITE KEY PLAN

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FLOOR PLAN
-COVERED
STORAGE

LAND USE

A24

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DEPENDING ON YOUR PRINTER, ONE OR MORE MAY NOT BE VISIBLE.
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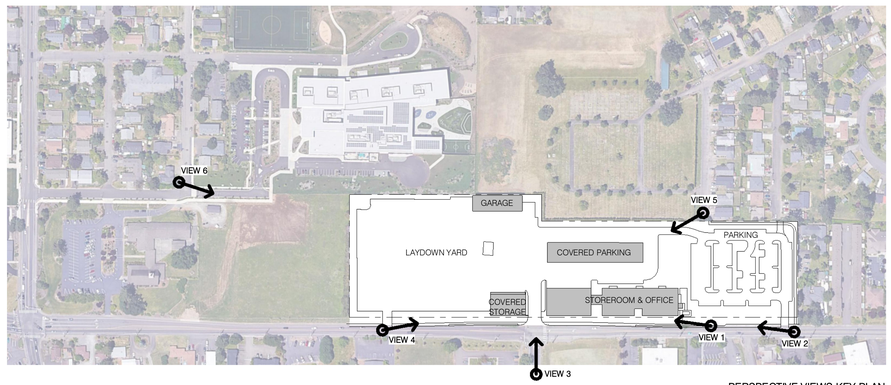
12/18/2025 10:40:32 AM

VIEW 2

VIEW FROM WARNER MILNE
AT PARKING LOT DRIVEWAY
LOOKING WEST

VIEW 1

VIEW FROM WARNER MILNE
NEAR OFFICE BUILDING ENTRY
LOOKING WEST



PERSPECTIVE VIEWS KEY PLAN

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CONCEPT IMAGES

LAND USE

A41

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PLOTTING HALFTONES AT THESE LEVELS MAY NOT BE ADVISABLE.
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SETTINGS FOR VIEWING AND PRINTING (CMYK VALUES)

BLACK 100%
GRAY 50%
GRAY 25%

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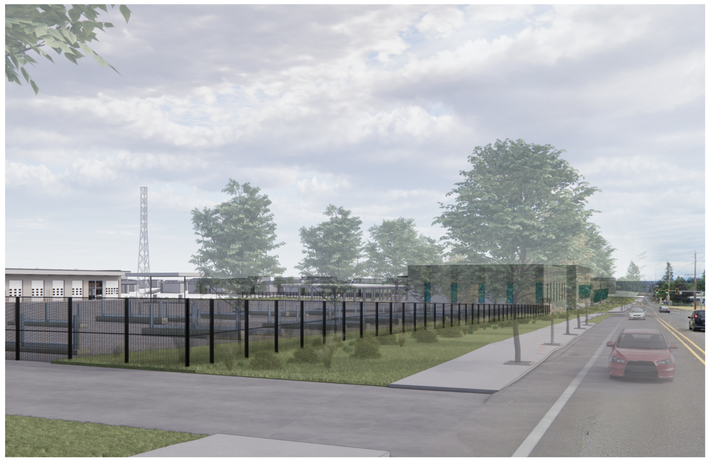
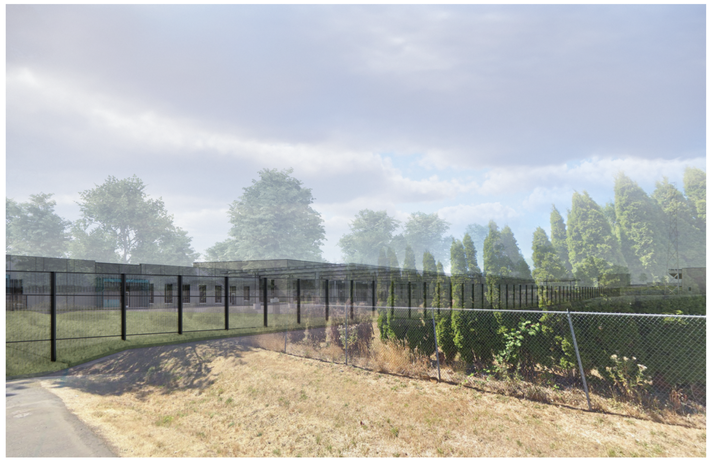


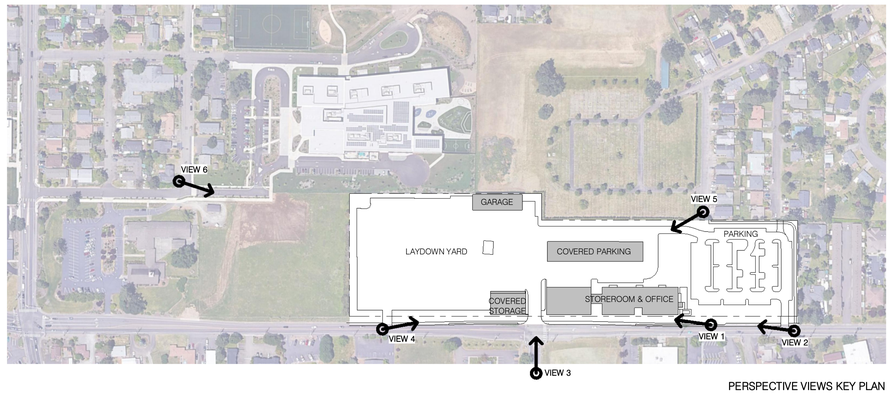
VIEW 4
VIEW FROM WARNER MILNE NEAR YARD DRIVEWAY
LOOKING EAST



VIEW 5
VIEW FROM KAMM ST.
LOOKING SW

VIEW 6
VIEW FROM WILLIAMS ST. & LEAONARD ST. INTERSECTION
LOOKING SE

VIEW 3
VIEW FROM BEAVERCREEK RD
LOOKING NORTH



PERSPECTIVE VIEWS KEY PLAN

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CONCEPT IMAGES

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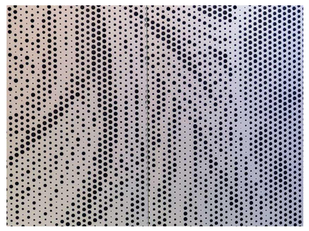
ANTI-CLIMB FENCE
WIREWORKS ANTI-CLIMB FENCE BY AMERISTAR OR SIMILAR
COLOR: BLACK PREFINISHED

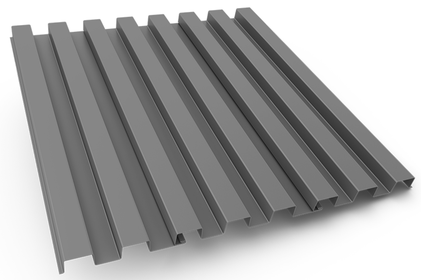


STEEL PLATE SHADING ELEMENT
STEEL PLATE OR FLAT STEEL PLATE, PERFORATED AT SOME LOCATIONS
PAINTED FINISH
ACCENT COLOR TO BE DETERMINED

CONCRETE, TEXTURED
CONCRETE SURFACE WITH PATTERNED LINER, PAINTED
NEUTRAL/GREY COLOR TO BE DETERMINED

ALUMINUM STOREFRONT
GLAZED ALUMINUM STOREFRONT

CONCRETE, PAINTED
CONCRETE SURFACE, PAINTED
NEUTRAL/GREY COLOR TO BE DETERMINED



RIBBED METAL WALL PANEL
PAINTED FINISH
COLOR TO BE DETERMINED

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MATERIALS BOARD

LAND USE

A51

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EXTERIOR ELEVATION LEGEND

- CAST-IN-PLACE CONCRETE
- TILT PANEL CONCRETE, TYPICAL
- TILT PANEL CONCRETE, FORM LINER RELIEF TEXTURE
- METAL WALL PANEL
- PERFORATED STEEL PLATE
- ALUMINUM-FRAMED STOREFRONT SYSTEM

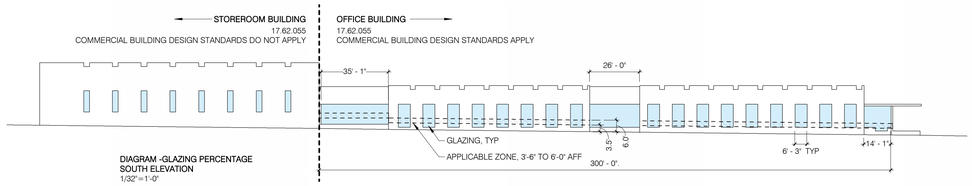
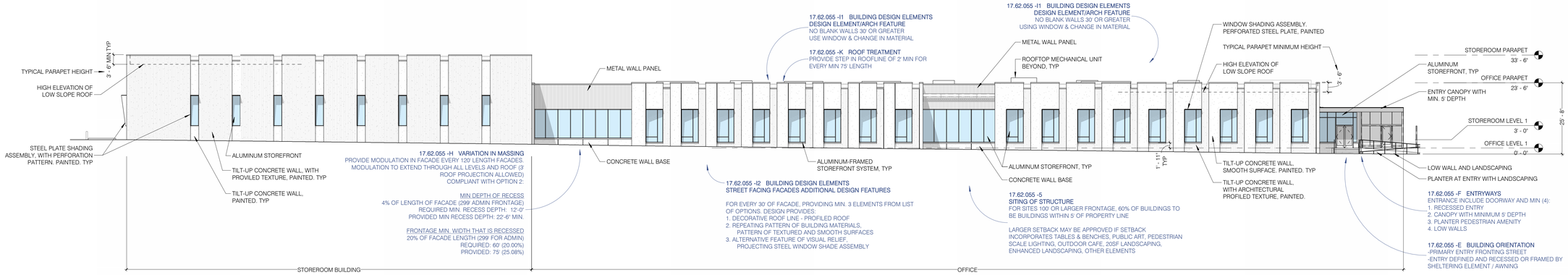


DIAGRAM -GLAZING PERCENTAGE
SOUTH ELEVATION
1/32"=1'-0"

REQUIRED FOR OFFICE BUILDING (STOREROOM BUILDING IS EXCLUDED)
17.62.055 -J WINDOWS

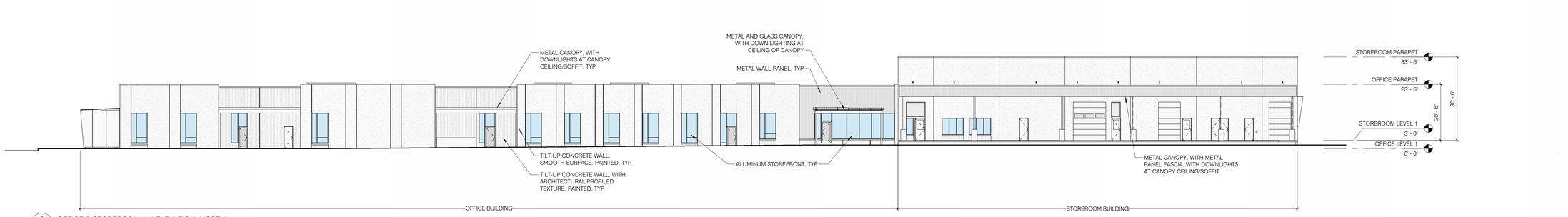
REQUIRED:
STREET FRONTING ELEVATION / SOUTH ELEVATION: 60% OF BUILDING FRONTAGE TO BE GLAZED
APPLICABLE GLAZING ZONE 3'-6" TO 6'-0"

PROVIDED:
DESIGN COMPLIES WITH THIS REQUIREMENT --> 60.47% PROVIDED
TOTAL BUILDING FRONTAGE = 300.00'
TOTAL GLAZING PROVIDED (3'-6" TO 6'-0") = 35.08' + 8(6.25) + 26.00' + 9(6.25') + 14.08' = 181.42' = 60.47%



1 / A31 OFFICE & STOREROOM -LU ELEVATION -SOUTH
1/16" = 1'-0"

0' 4' 8' 16' 32'



2 / A31 OFFICE & STOREROOM -LU ELEVATION -NORTH
1/16" = 1'-0"

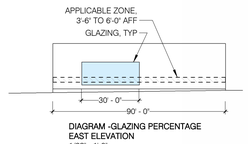
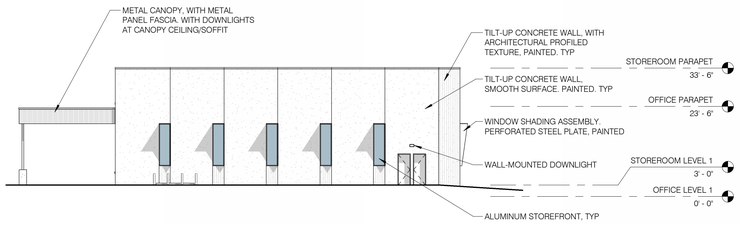


DIAGRAM -GLAZING PERCENTAGE
EAST ELEVATION
1/32"=1'-0"

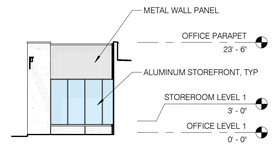
REQUIRED FOR OFFICE BUILDING (STOREROOM BUILDING IS EXCLUDED)
17.62.055 -J WINDOWS

REQUIRED:
SIDE FACADE / EAST ELEVATION: 30% OF BUILDING FRONTAGE TO BE GLAZED
APPLICABLE GLAZING ZONE 3'-6" TO 6'-0"

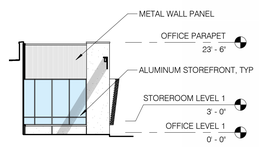
PROVIDED:
DESIGN COMPLIES WITH THIS REQUIREMENT - 30% PROVIDED
TOTAL BUILDING FRONTAGE = 90'
TOTAL GLAZING PROVIDED (3'-6" TO 6'-0") = 30' = 30%



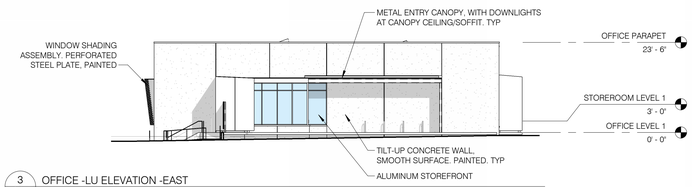
6 / A31 STOREROOM -LU ELEVATION -WEST
1/16" = 1'-0"



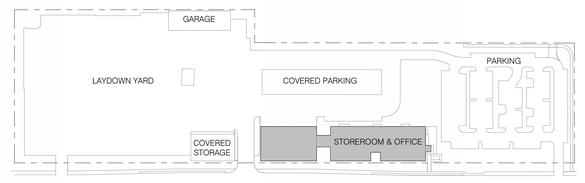
5 / A31 OFFICE COURTYARD -LU ELEVATION -NORTH
1/16" = 1'-0"



4 / A31 OFFICE COURTYARD -LU ELEVATION -SOUTH
1/16" = 1'-0"



3 / A31 OFFICE -LU ELEVATION -EAST
1/16" = 1'-0"



SITE KEY PLAN

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LU EXTERIOR ELEVATIONS -OFFICE & STOREROOM

A31

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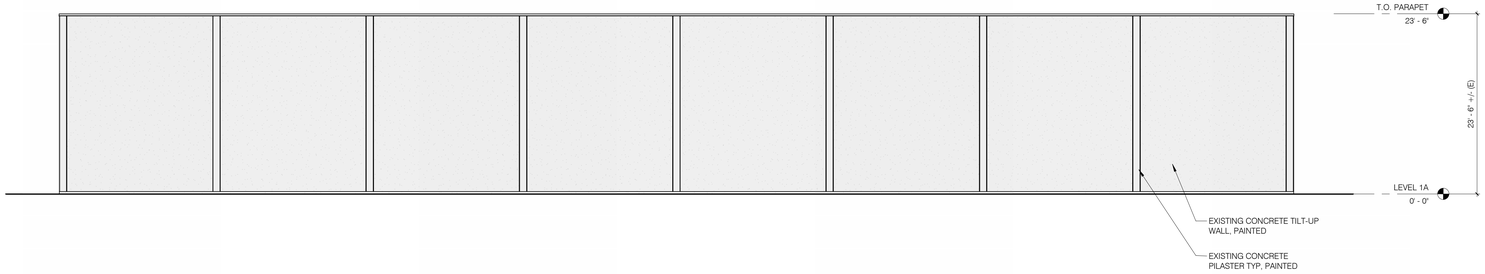
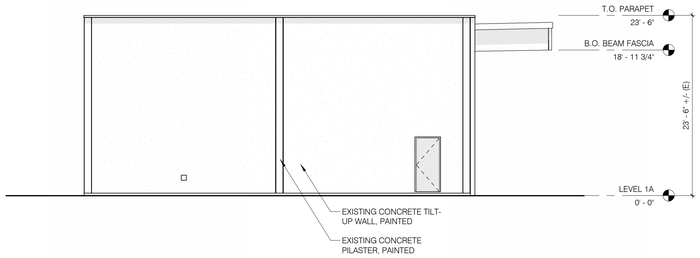
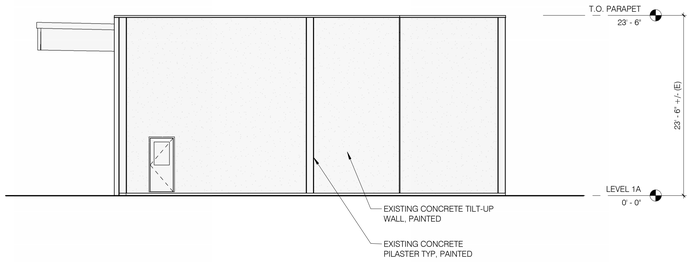


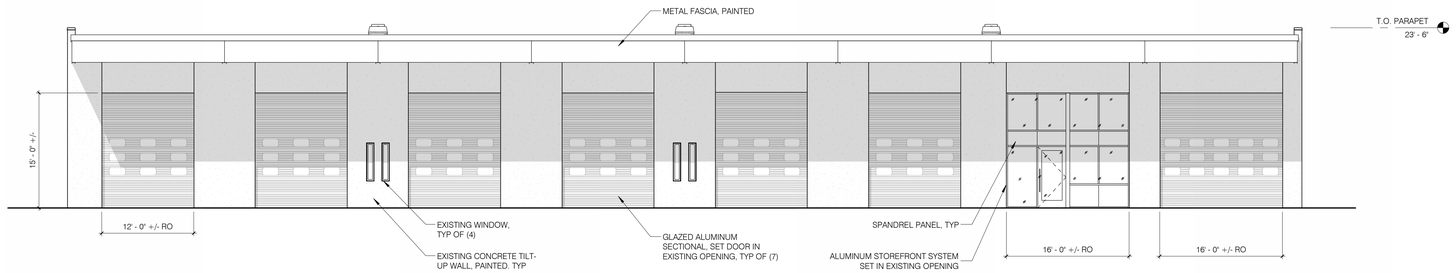
1 A32 GARAGE -LU ELEVATION -NORTH
1/8" = 1'-0"



3 A32 GARAGE -LU ELEVATION -WEST
1/8" = 1'-0"

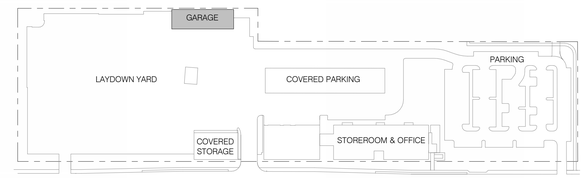


2 A32 GARAGE -LU ELEVATION -EAST
1/8" = 1'-0"



4 A32 GARAGE -LU ELEVATION -SOUTH
1/8" = 1'-0"

0' 2' 4' 8' 16'



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Sheet:
LU ELEVATIONS -GARAGE

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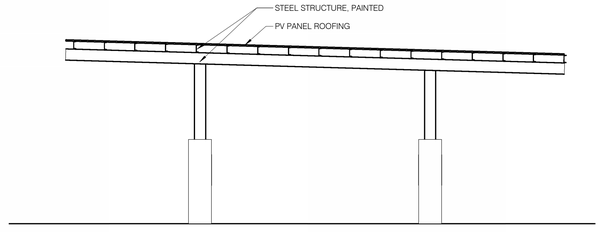
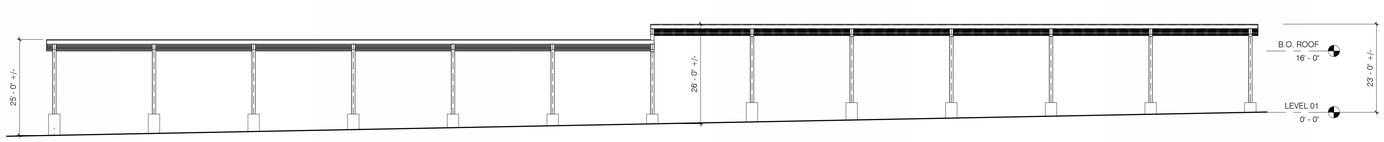
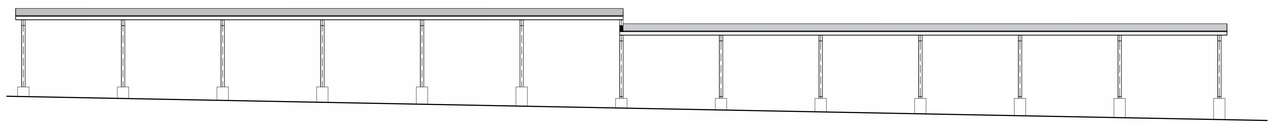


5 A33 COVERED PARKING -SECTION
1/8" = 1'-0"

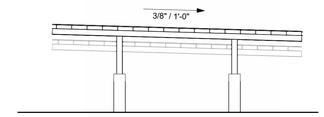
0' 2' 4' 8' 16'



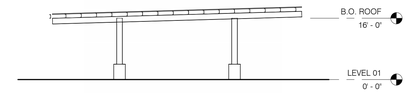
2 A33 COVERED PARKING -NORTH ELEVATION
1/16" = 1'-0"



3 A33 COVERED PARKING -SOUTH ELEVATION
1/16" = 1'-0"

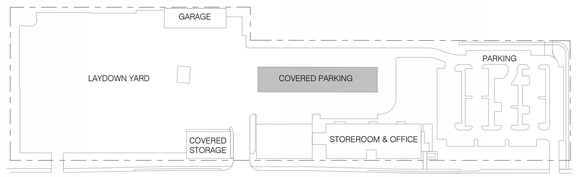


4 A33 COVERED PARKING -WEST ELEVATION
1/16" = 1'-0"



1 A33 COVERED PARKING -EAST ELEVATION
1/16" = 1'-0"

0' 4' 8' 16' 32'



SITE KEY PLAN

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HEA Project no. 25005-01T
Date: 12/18/2025
LAND USE
Revisions:

Drawn by: GW
Checked by: KW
Sheet:

LU ELEVATIONS
-COVERED
PARKING

LAND USE

A33

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
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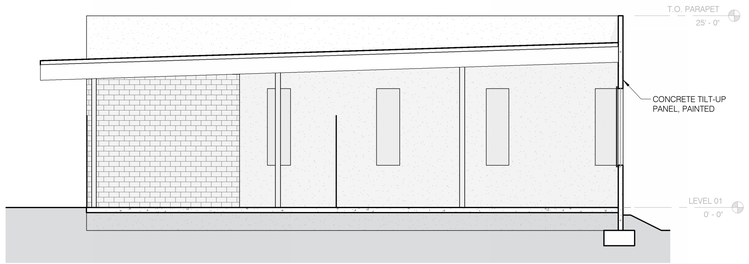
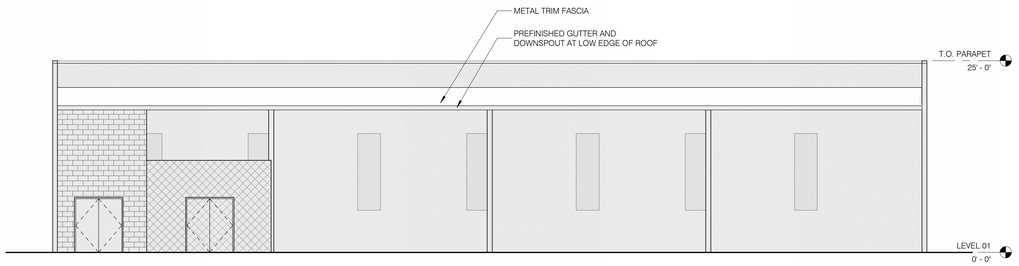


5 A34 COVERED STORAGE -LU BUILDING SECTION
1/8" = 1'-0"

0' 2' 4' 8' 16'



4 A34 COVERED STORAGE -LU ELEVATION -NORTH
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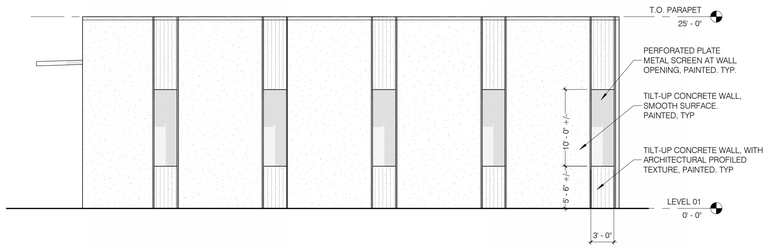
0' 2' 4' 8' 16'



3 A34 COVERED STORAGE -LU ELEVATION -WEST
1/8" = 1'-0"

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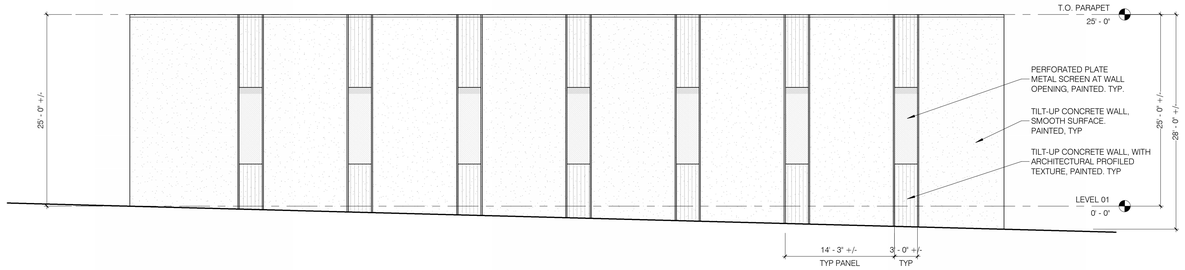

2 A34 COVERED STORAGE -LU ELEVATION -SOUTH
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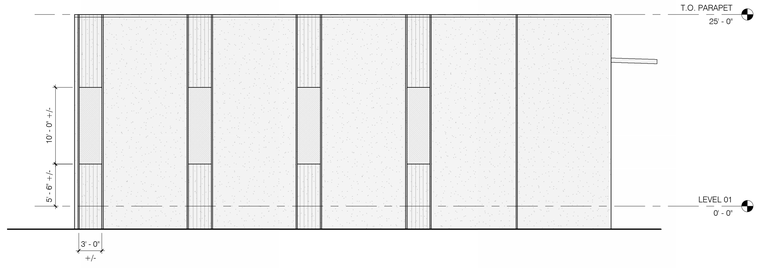
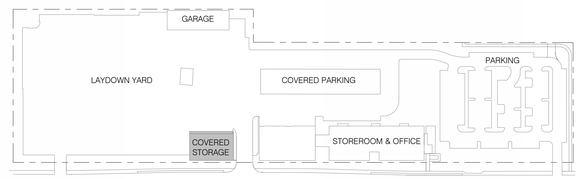


1 A34 COVERED STORAGE -LU ELEVATION -EAST
1/8" = 1'-0"

0' 2' 4' 8' 16'



SITE KEY PLAN

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LU EXTERIOR ELEVATIONS -COVERED STORAGE

LAND USE

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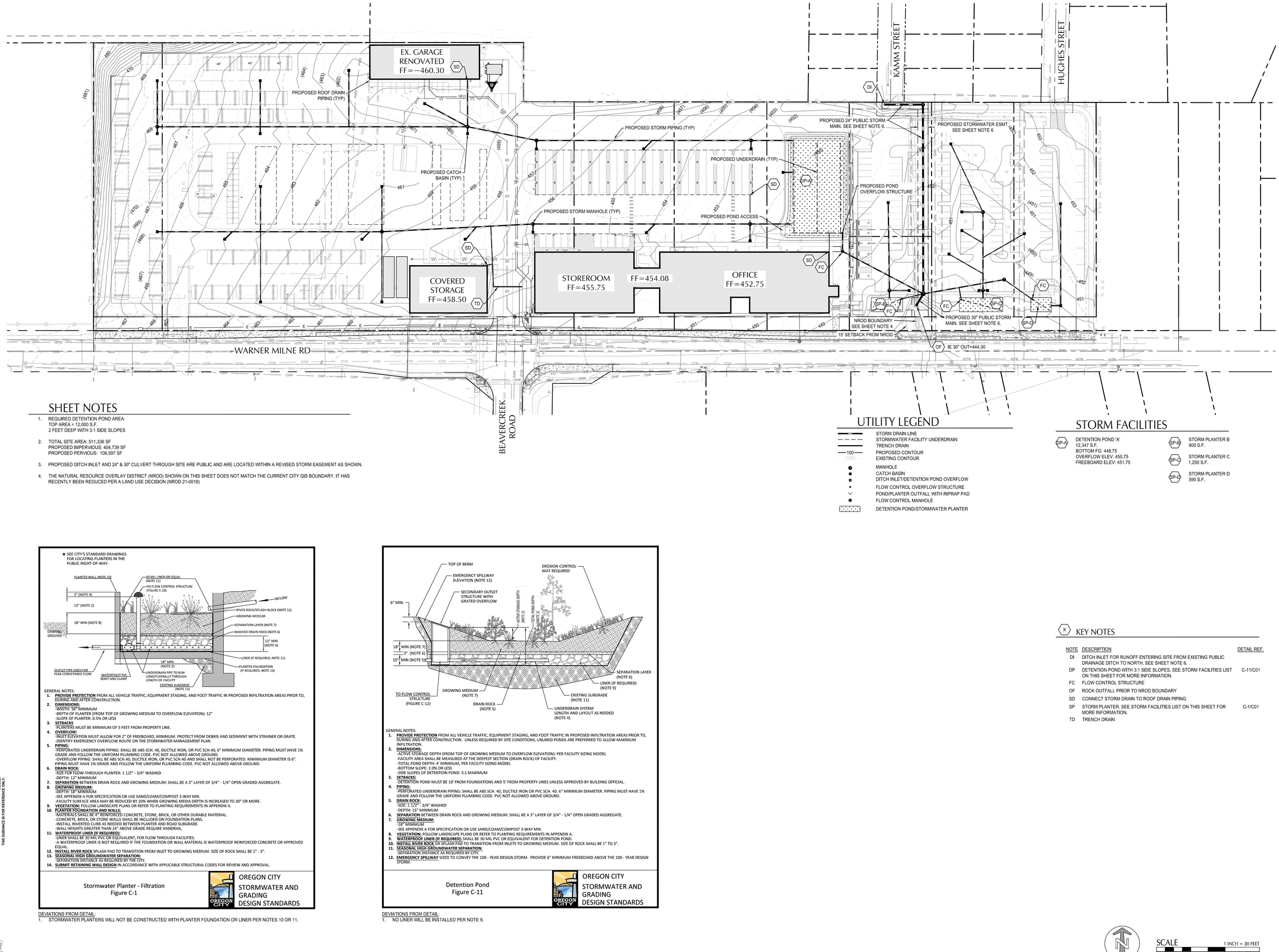

SHEET NOTES

1. REQUIRED DETENTION POND AREA:
   TOP AREA = 12,000 S.F.
   2 FEET DEEP WITH 3:1 SIDE SLOPES
2. TOTAL SITE AREA: 511,336 SF
   PROPOSED IMPERVIOUS: 404,739 SF
   PROPOSED PERVIOUS: 106,597 SF
3. PROPOSED DITCH INLET AND 24" & 30" CULVERT THROUGH SITE ARE PUBLIC AND ARE LOCATED WITHIN A REVISED STORM EASEMENT AS SHOWN.
4. THE NATURAL RESOURCE OVERLAY DISTRICT (NROD) SHOWN ON THIS SHEET DOES NOT MATCH THE CURRENT CITY GIS BOUNDARY. IT HAS RECENTLY BEEN REDUCED PER A LAND USE DECISION (NROD 21-0018)

UTILITY LEGEND

- STORM DRAIN LINE
- STORMWATER FACILITY UNDERDRAIN
- TRENCH DRAIN
- 100 PROPOSED CONTOUR
- (100) EXISTING CONTOUR
- MANHOLE
- CATCH BASIN
- DITCH INLET/DETENTION POND OVERFLOW
- FLOW CONTROL OVERFLOW STRUCTURE
- POND/PLANTER OUTFALL WITH RIPRAP PAD
- FLOW CONTROL MANHOLE
- DETENTION POND/STORMWATER PLANTER

STORM FACILITIES

- DP-A DETENTION POND 'A'
  12,347 S.F.
  BOTTOM FG: 448.75
  OVERFLOW ELEV: 450.75
  FREEBOARD ELEV: 451.75
- SP-B STORM PLANTER B
  900 S.F.
- SP-C STORM PLANTER C
  1,250 S.F.
- SP-D STORM PLANTER D
  590 S.F.

GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION.
2. **DIMENSIONS:**
   -WIDTH: 18" MINIMUM
   -DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION): 12"
   -SLOPE OF PLANTER: 0.5% OR LESS
3. **SETBACKS**
   -PLANTERS MUST BE MINIMUM OF 5 FEET FROM PROPERTY LINE.
4. **OVERFLOW:**
   -INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE.
   -IDENTIFY EMERGENCY OVERFLOW ROUTE ON THE STORMWATER MANAGEMENT PLAN.
5. **PIPING:**
   -PERFORATED UNDERDRAIN PIPING: SHALL BE ABS SCH. 40, DUCTILE IRON, OR PVC SCH.40, 6" MINIMUM DIAMETER. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
   -OVERFLOW PIPING: SHALL BE ABS SCH.40, DUCTILE IRON, OR PVC SCH.40 AND SHALL NOT BE PERFORATED. MIMIMUM DIAMETER IS 6". PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
6. **DRAIN ROCK:**
   -SIZE FOR FLOW-THROUGH PLANTER: 1 1/2" - 3/4" WASHED
   -DEPTH: 12" MINIMUM
7. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
8. **GROWING MEDIUM:**
   -DEPTH: 18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 20% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
9. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
10. **PLANTER FOUNDATION AND WALLS:**
    -MATERIALS SHALL BE 4" REINFORCED CONCRETE, STONE, BRICK, OR OTHER DURABLE MATERIAL.
    -CONCRETE, BRICK, OR STONE WALLS SHALL BE INCLUDED ON FOUNDATION PLANS.
    -INSTALL INVERTED CURB AS NEEDED BETWEEN PLANTER AND ROAD SUBGRADE.
    -WALL HEIGHTS GREATER THAN 24" ABOVE GRADE REQUIRE HANDRAIL.
11. **WATERPROOF LINER (IF REQUIRED):**
    -LINER SHALL BE 30 MIL PVC OR EQUIVALENT, FOR FLOW THROUGH FACILITIES.
    -A WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION OR WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL.
12. **INSTALL RIVER ROCK** SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3".
13. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY THE CITY.
14. **SUBMIT RETAINING WALL DESIGN** IN ACCORDANCE WITH APPLICABLE STRUCTURAL CODES FOR REVIEW AND APPROVAL.

Stormwater Planter - Filtration
Figure C-1

OREGON CITY
STORMWATER AND
GRADING
DESIGN STANDARDS

DEVIATIONS FROM DETAIL:
1. STORMWATER PLANTERS WILL NOT BE CONSTRUCTED WITH PLANTER FOUNDATION OR LINER PER NOTES 10 OR 11.

GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION. UNLESS REQUIRED BY SITE CONDITIONS, UNLINED PONDS ARE PREFERRED TO ALLOW MAXIMUM INFILTRATION.
2. **DIMENSIONS:**
   -ACTIVE STORAGE DEPTH (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION): PER FACILITY SIZING MODEL
   -FACILITY AREA SHALL BE MEASURED AT THE DEEPEST SECTION (DRAIN ROCK) OF FACILITY.
   -TOTAL POND DEPTH: 4' MINIMUM, PER FACILITY SIZING MODEL
   -BOTTOM SLOPE: 2.0% OR LESS
   -SIDE SLOPES OF DETENTION POND: 3:1 MAXIMUM
3. **SETBACKS:**
   -DETENTION POND MUST BE 10' FROM FOUNDATIONS AND 5' FROM PROPERTY LINES UNLESS APPROVED BY BUILDING OFFICIAL.
4. **PIPING:**
   -PERFORATED UNDERDRAIN PIPING: SHALL BE ABS SCH. 40, DUCTILE IRON OR PVC SCH. 40, 6" MINIMUM DIAMETER. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
5. **DRAIN ROCK:**
   -SIZE: 1 1/2" - 3/4" WASHED
   -DEPTH: 15" MINIMUM
6. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
7. **GROWING MEDIUM:**
   -18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
8. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
9. **WATERPROOF LINER (IF REQUIRED):** SHALL BE 30 MIL PVC OR EQUIVALENT FOR DETENTION POND.
10. **INSTALL RIVER ROCK** OR SPLASH PAD TO TRANSITION FROM INLETS TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" TO 3".
11. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY CITY.
12. **EMERGENCY SPILLWAY** SIZED TO CONVEY THE 100 - YEAR DESIGN STORM. PROVIDE 6" MINIMUM FREEBOARD ABOVE THE 100 - YEAR DESIGN STORM.

Detention Pond
Figure C-11

OREGON CITY
STORMWATER AND
GRADING
DESIGN STANDARDS

DEVIATIONS FROM DETAIL:
1. NO LINER WILL BE INSTALLED PER NOTE 9.

KEY NOTES

NOTE	DESCRIPTION	DETAIL REF.
DI	DITCH INLET FOR RUNOFF ENTERING SITE FROM EXISTING PUBLIC DRAINAGE DITCH TO NORTH. SEE SHEET NOTE 6.	
DP	DETENTION POND WITH 3:1 SIDE SLOPES. SEE STORM FACILITIES LIST ON THIS SHEET FOR MORE INFORMATION.	C-11/C01
FC	FLOW CONTROL STRUCTURE	
OF	ROCK OUTFALL PRIOR TO NROD BOUNDARY	
SD	CONNECT STORM DRAIN TO ROOF DRAIN PIPING	
SP	STORM PLANTER. SEE STORM FACILITIES LIST ON THIS SHEET FOR MORE INFORMATION.	C-1/C01
TD	TRENCH DRAIN	

SCALE 1 INCH = 30 FEET
30 0 30 100

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HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

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Checked by: MvB
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GRADING AND STORM DRAINAGE PLAN

LAND USE
C01

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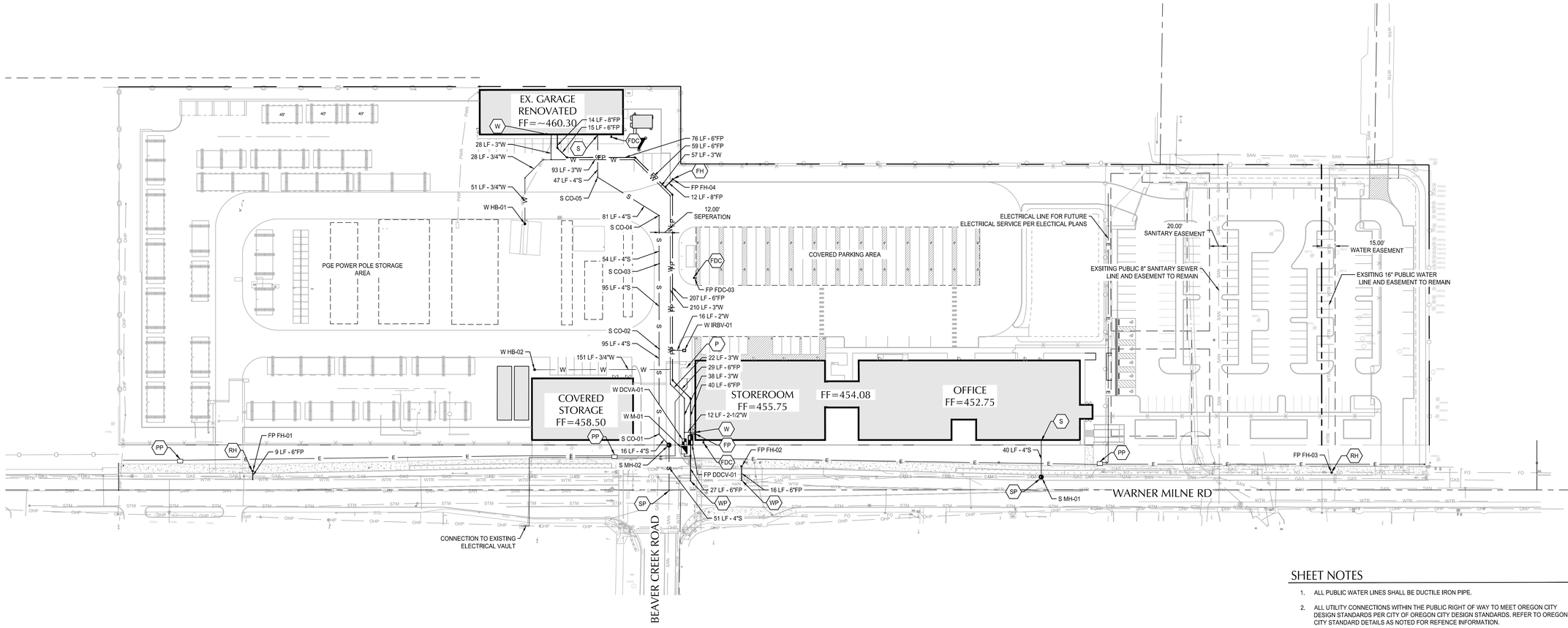

SHEET NOTES

1. ALL PUBLIC WATER LINES SHALL BE DUCTILE IRON PIPE.
2. ALL UTILITY CONNECTIONS WITHIN THE PUBLIC RIGHT OF WAY TO MEET OREGON CITY DESIGN STANDARDS PER CITY OF OREGON CITY DESIGN STANDARDS. REFER TO OREGON CITY STANDARD DETAILS AS NOTED FOR REFENCE INFORMATION.
3. ALL ELECTRICAL UTILITY DESIGN IS PRELIMINARY AND IS SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.
4. COVERED PARKING AREA TO HAVE DRY FIRE SUPPRESSION SYSTEM.

STRUCTURE TYPE

CALLOUT		DESCRIPTION	CALLOUT		DESCRIPTION
FDC	▪	FIRE DEPARTMENT CONNECTION	CO	▪	CLEANOUT
FH	✦	FIRE HYDRANT ASSEMBLY	M	■	WATER METER
TEE	▪	TEE	DDCV	■	DOUBLE DETECTOR CHECK VAULT
DCVA	■	DOUBLE CHECK VALVE ASSEMBLY	HB	●	HOSEBIB
VALVE	▪	ISOLATION VALVE	IRBV	■	IRRIGATION BACKFLOW VAULT
MH	●	MANHOLE			

W	FP	FIRE PROTECTION WATER LINE
W	W	WATER LINE
S	S S	SANITARY SEWER LINE
E	E	ELECTRIC LINE

UTILITY KEY NOTES

NOTE	DESCRIPTION
FDC	PROPOSED FIRE DEPARTMENT CONNECTION (FDC).
FP	CONNECT TO BUILDING FIRE PROTECTION. SEE FIRE PROTECTION AND PLUMBING PLANS.
FH	PROPOSED FIRE HYDRANT.
P	CONNECT TO ON ABOVE GROUND POWER VAULT. SEE ELECTRIAL PLANS FOR DETIALED ELECTRICAL VAULT INFORMATION.
PP	PROPOSED PGE 577 POWER VAULT REFER TO ELECTRIAL PLANS FOR DETAILED ELECTRICAL DESIGN INFORMATION.
RH	RELOCATED EXISTING FIRE HYDRANT. REINSTALL PER OC401.
S	CONNECT TO BUILDING WASTE LINE. SEE PLUMBING PLANS.
SP	CONNECTION TO PUBIC SANITARY SEWER LINE. CONNECTION PER OREGON CITY STD. DWGS. OC301, OC310 AND OC311.
W	CONNECT TO BUILDING DOMESTIC WATER SYSTEM. SEE PLUMBING PLANS.
WP	CONNECTION TO PUBLIC WATER SYSTEM. CONNECTION PER OC STD. DWG. OC411.

SCALE 1 INCH = 30 FEET
90 0 80 100

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UTILITY PLAN

SCHEMATIC DESIGN

C02

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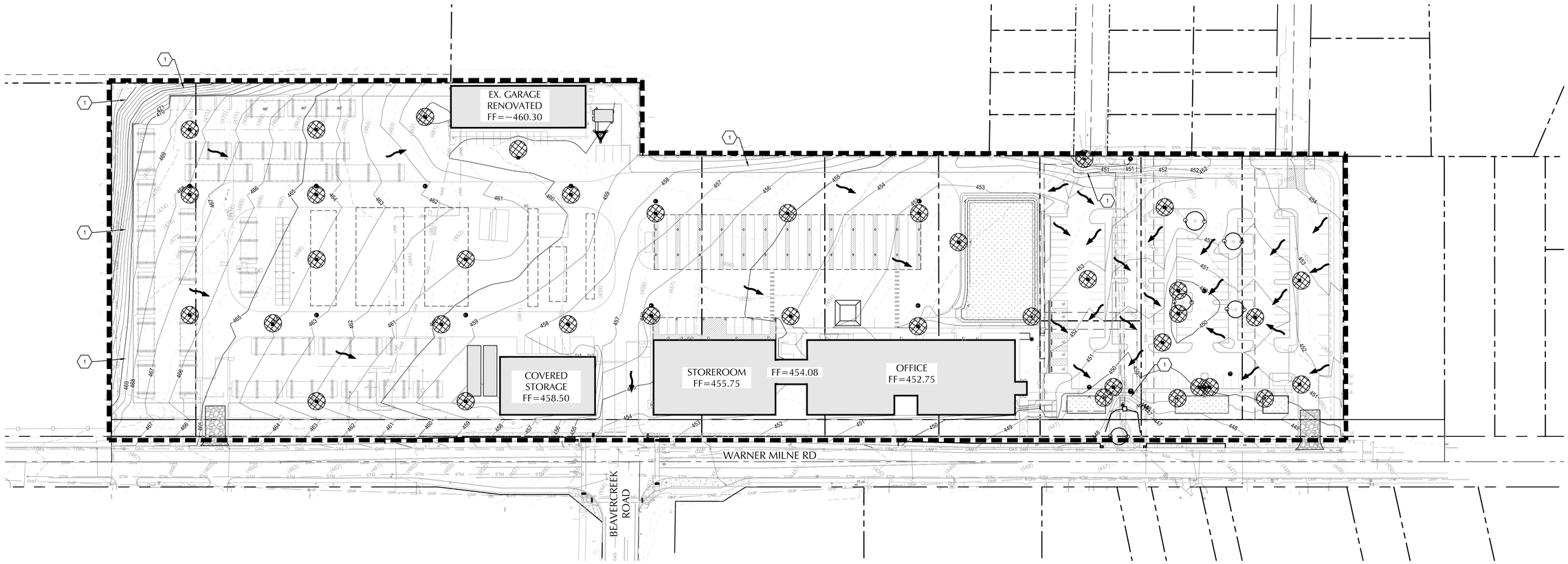

LEGEND

- PROPERTY LINE
- LIMITS OF DISTURBANCE - SEE SHEET NOTE 1 (SHOWN OFFSET FOR CLARITY)
- (450) / (451) — EXISTING CONTOUR
- PROPOSED FLOW ARROW
- 450 / 451 — PROPOSED CONTOUR (SEE GRADING PLAN)
- TREE PROTECTION FENCE
- SEDIMENT FENCE
- PERMANENT OUTFALL PROTECTION
- CATCH BASIN PROTECTION - INSTALL ON NEW AND EXISTING CATCH BASINS INCLUDING THOSE TO BE DEMOLISHED PRIOR TO DEMOLITION.
- WATER QUALITY FACILITY
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT

KEY NOTES

1. PROVIDE SLOPE PROTECTION ON 3:1 MAXIMUM SLOPES INCLUDING ONE OF THE FOLLOWING:
   1. TEMPORARY SEEDING AND JUTE MATTING PROVIDE SURFACE ROUGHENING ON SLOPES STEEPER THAN 3:1 AND 5' IN HEIGHT TO A DEPTH OF 2"-4" TO REDUCE RUN-OFF VELOCITY.
   2. PLASTIC SHEETING
   3. STRAW COVER
   4. PERMANENT SLOPE STABILIZATION
   5. STRAW WATTLES AT 10' O.C. MAXIMUM

WET WEATHER NOTES

1. DURING WET WEATHER CONSTRUCTION, THE FOLLOWING ADDITIONAL EROSION CONTROL MEASURES SHALL BE APPLIED (AT A MINIMUM):
   - PROTECT SOIL STOCKPILES WITH PLASTIC SHEETING AND INSTALL STRAW BALES AT BOTTOM SLOPE OF STOCKPILE TO PREVENT SEDIMENT TRANSPORT VIA RUN-OFF.
   - INSPECT THE EROSION CONTROL MEASURES ON A DAILY BASIS AND REPAIR AS NEEDED.
   - CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER.

SHEET NOTES

1. LIMITS OF DISTURBANCE SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY AND ADJUST ACCORDINGLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHOULD PROVIDE TEMPORARY SEEDING OVER DISTURBED AREAS USING LOCAL SEED MIX OR FINAL LANDSCAPING SEED MIX AS SPECIFIED IF AREA IS UNDEVELOPED.
3. CATCH BASIN PROTECTION TO BE INSTALLED ON EXISTING STRUCTURES TO REMAIN AND EXISTING STRUCTURES TO BE DEMOLISHED UNTIL REMOVED.
4. CONTRACTOR SHOULD ESTABLISH A CONCRETE TRUCK WASHOUT AT EACH CONSTRUCTION ENTRANCE FOR TRUCKS TO WASH OUT CONCRETE AFTER DELIVERY AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. TEMPORARY 6'x10'x4' PITS SHOULD BE LOCATED WITHIN 6' OF LOCATION FOR TRUCKS TO PARK OR CONCRETE EQUIPMENT LOCATIONS. ALL WASH WATER SHOULD BE ROUTED TO CONTRACTOR CONSTRUCTED PIT. CONTRACTOR SHOULD ENSURE THAT PIT IS NOT OVERFILLED AT ANY TIME. CONTRACTOR SHOULD REMOVE CONCRETE ON A REGULAR BASIS, TO PROVIDE A CLEAN AREA FOR WASHOUT, AND WHEN WORK IS COMPLETE. PIT SHOULD BE SURROUNDED BY ORANGE CONSTRUCTION FENCE.
5. THIS EROSION CONTROL PLAN SHOWS MINIMUM MEASURES REQUIRED. ADDITIONAL MEASURES MAY BE REQUIRED BASED ON FIELD CONDITIONS.
6. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION.
7. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING PERIMETER SEDIMENT CONTROL SHOULD BE IN PLACE BEFORE VEGETATION IS DISTURBED AND SHOULD REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDE PROTECTION FOR ACTIVE STORM DRAIN INLETS AND CATCH BASINS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS.
8. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES PER NPDES CONSTRUCTION BMP STANDARDS ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS.
9. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS PRIOR TO DEMOLITION ACTIVITIES.
10. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS SHOULD BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES.
11. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE.
12. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS, VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS.
13. USE WATER OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL.
14. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION SHOULD FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE.
15. AT THE END OF EACH WORKDAY SOIL STOCKPILES SHOULD BE STABILIZED OR COVERED, OR OTHER BMPS SHOULD BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS.
16. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL.
17. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT. AND BEFORE BMP REMOVAL.
18. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT.
19. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS SHOULD NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP SHOULD BE USED TO CLEANUP RELEASED SEDIMENTS.
20. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. HOWEVER, DO REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS.
21. DIRECT STORM WATER IN EXCAVATIONS TO RUNOFF COLLECTION PITS TO ALLOW SEDIMENT TO SETTLE PRIOR TO DEWATERING AND DISCHARGING TO PUBLIC RIGHT-OF-WAY.

SCALE 1 INCH = 50 FEET
50 0 50 100

kpff
111 SW Fifth Ave., Suite 2600
Portland, OR 97204
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F: 503.274.4681
www.kpff.com

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PGE

PGE Oregon City Operations Center
209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. **25005-01T**
Date: **12.18.25**
LAND USE
Revisions:

Drawn by: RC
Checked by: MvB
Sheet:

EROSION CONTROL PLAN

LAND USE
C03

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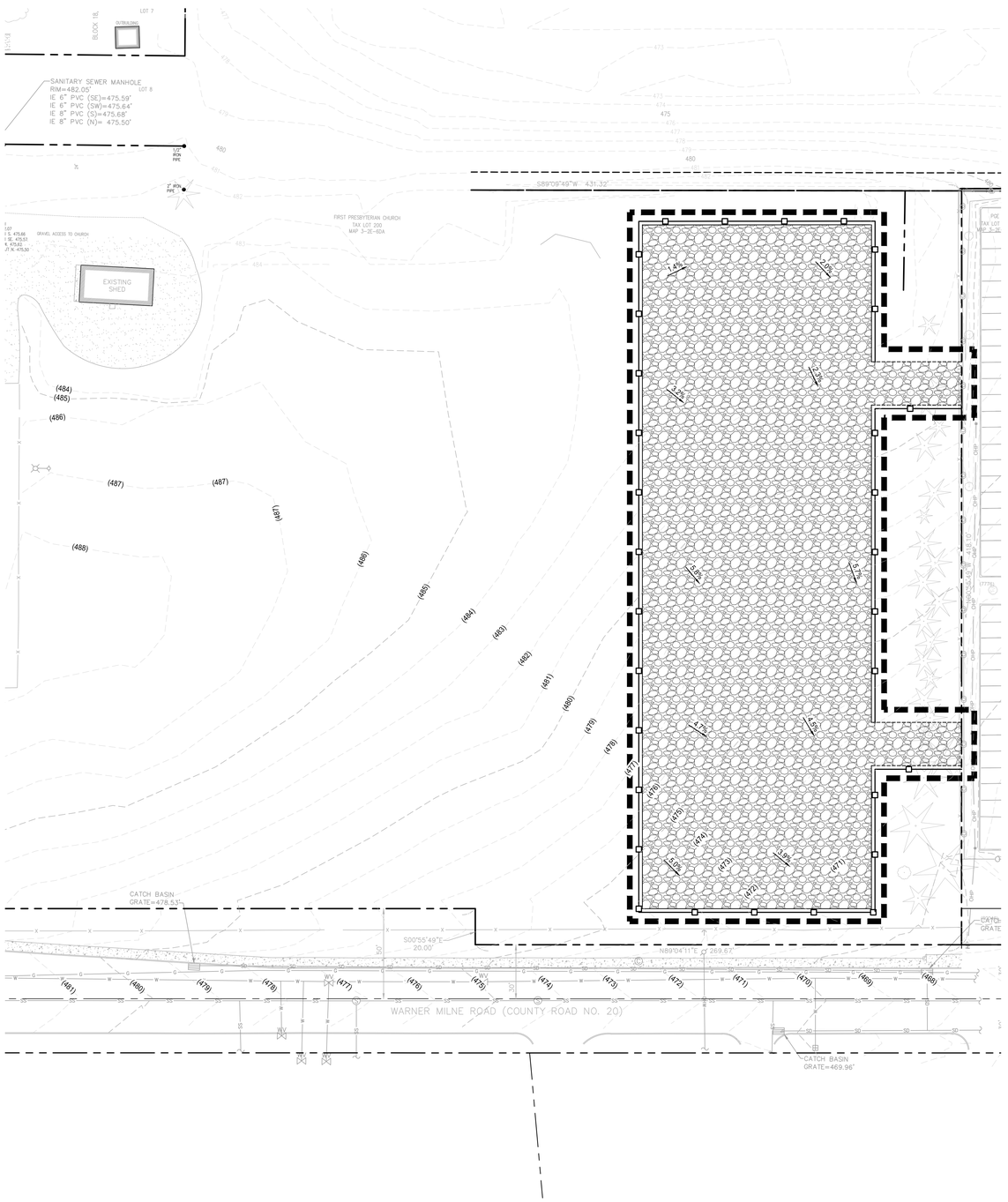
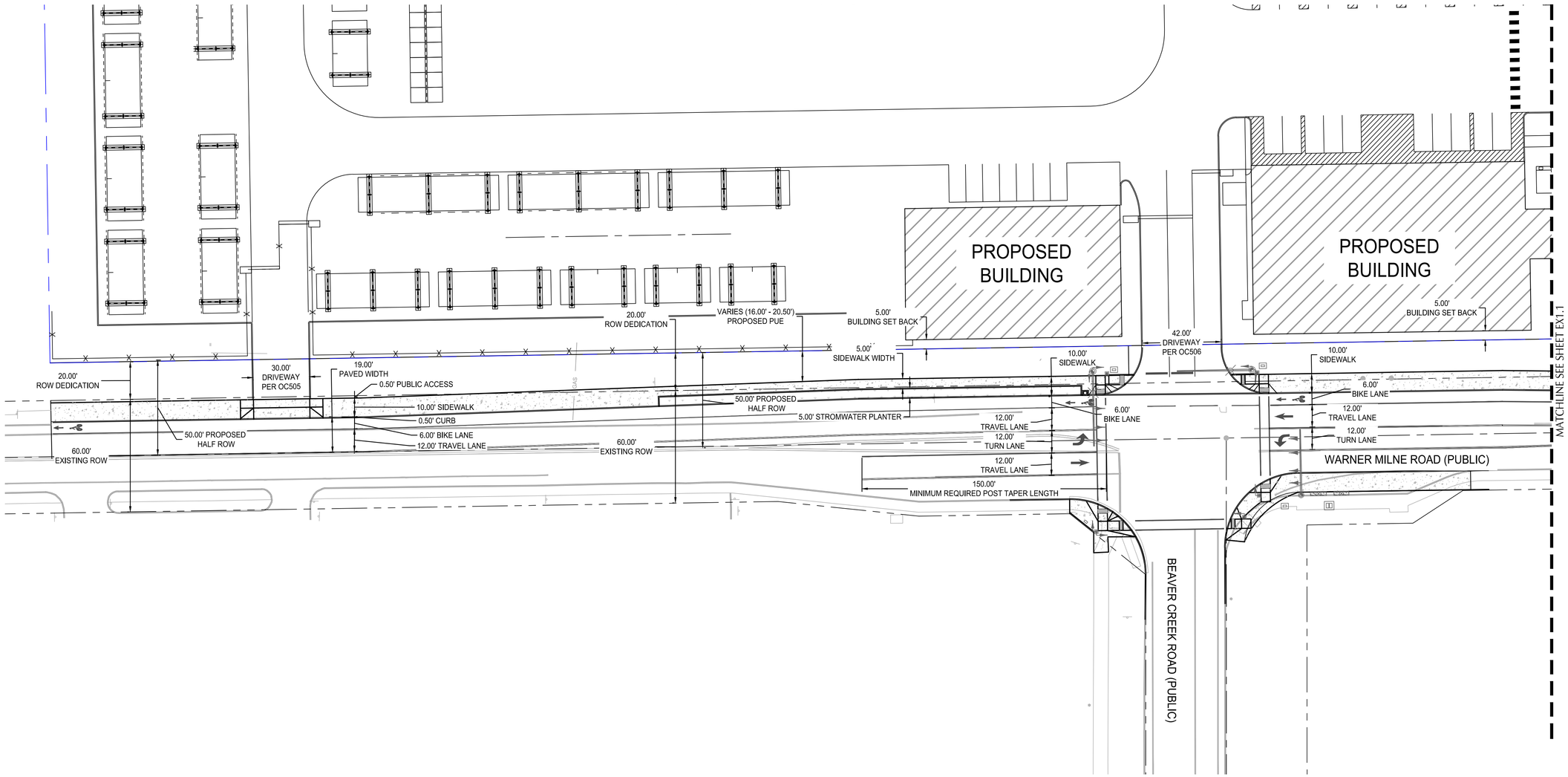
File: \\civilpdx1\civil-projects\cip\2025\2500905-pge-ctr-occ\CAD\PLOTLU\2500905-LU03-ESCP.dwg TAB:C03
Plotted: 12/18/25 at 10:53am By: RCabua

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTROL WHICH SHADING LEVELS ARE VISIBLE
THIS GUIDANCE IS FOR REFERENCE ONLY.

SAMPLE 100% SAMPLE 50% SAMPLE 25%


LOT 7
BLOCK 18
OUTBUILDING
SANITARY SEWER MANHOLE
RIM=482.05'
IE 6" PVC (SE)=475.59'
IE 6" PVC (SW)=475.64'
IE 8" PVC (S)=475.68'
IE 8" PVC (N)= 475.50'
LOT 8
1/2" IRON PIPE
2" IRON PIPE
GRAVEL ACCESS TO CHURCH
FIRST PRESBYTERIAN CHURCH
TAX LOT 200
MAP 3-2E-6DA
EXISTING SHED
S89°09'49"W 431.32'
PGE
TAX LOT
MAP 3-2E
17.4%
2.0%
2.0%
2.0%
2.0%
2.0%
4.5%
3.9%
3.9%
3.9



PROPOSED RIGHT OF WAY HALFSTREET IMPROVEMENTS

ROAD CLASSIFACTION	ROW WIDTH	ROAD WIDTH	PUBLIC ACCESS	SIDEWALK	LANDSCAPE STRIP AND CURB	BIKE LANE	STREET PARKING	TRAVEL LANES	MEDIAN
MINOR ARTERAL	50.0'	18'.0	0.5'	10'	0.5	6.0'	0.0'	(1) 12.0' FULL LANE	0.0'

FULL RIGHT OF WAY HALFSTREET IMPROVEMENTS

ROAD CLASSIFACTION	ROW WIDTH	ROAD WIDTH	PUBLIC ACCESS	SIDEWALK	LANDSCAPE STRIP AND CURB	BIKE LANE	STREET PARKING	TRAVEL LANES	MEDIAN
MINOR ARTERAL	58.0'	47'.0	0.5'	10.0'	0.5	6.0'	8.0'	(2) 12.0' FULL LANE (1) HALF LANE	0.0'

DESIGN NOTES

1. ROADWAY SECTION IS A MODIFED VERSION OF THE STANDARD ARTERIAL SECTION AS OUTLINED BY OREGON CITY STREET DESIGN STANDARDS MANUAL AND OREGON CITY STANDARD DRAWING OC502.
2. DRIVEWAYS DESIGNED PER OREGON CITY STANDARD DRAWINGS C505 AND OC506. COMMERICAL DRIVEWAY WITH CURBS AT THE INTERSECTION OF WARNER MILNE ROAD AND BEAVER CREEK ROAD WILL REQUIRE PREAPPROVAL BY CITY ENGINEER.
3. CURB RAMPS PER OC509 AND ODOT RD900 SERIES AS SPECIFIED BY THE OREGON CITY STREET DESIGN STANARDS MANUAL

WARNER MILNE ROAD ROW EXHIBIT

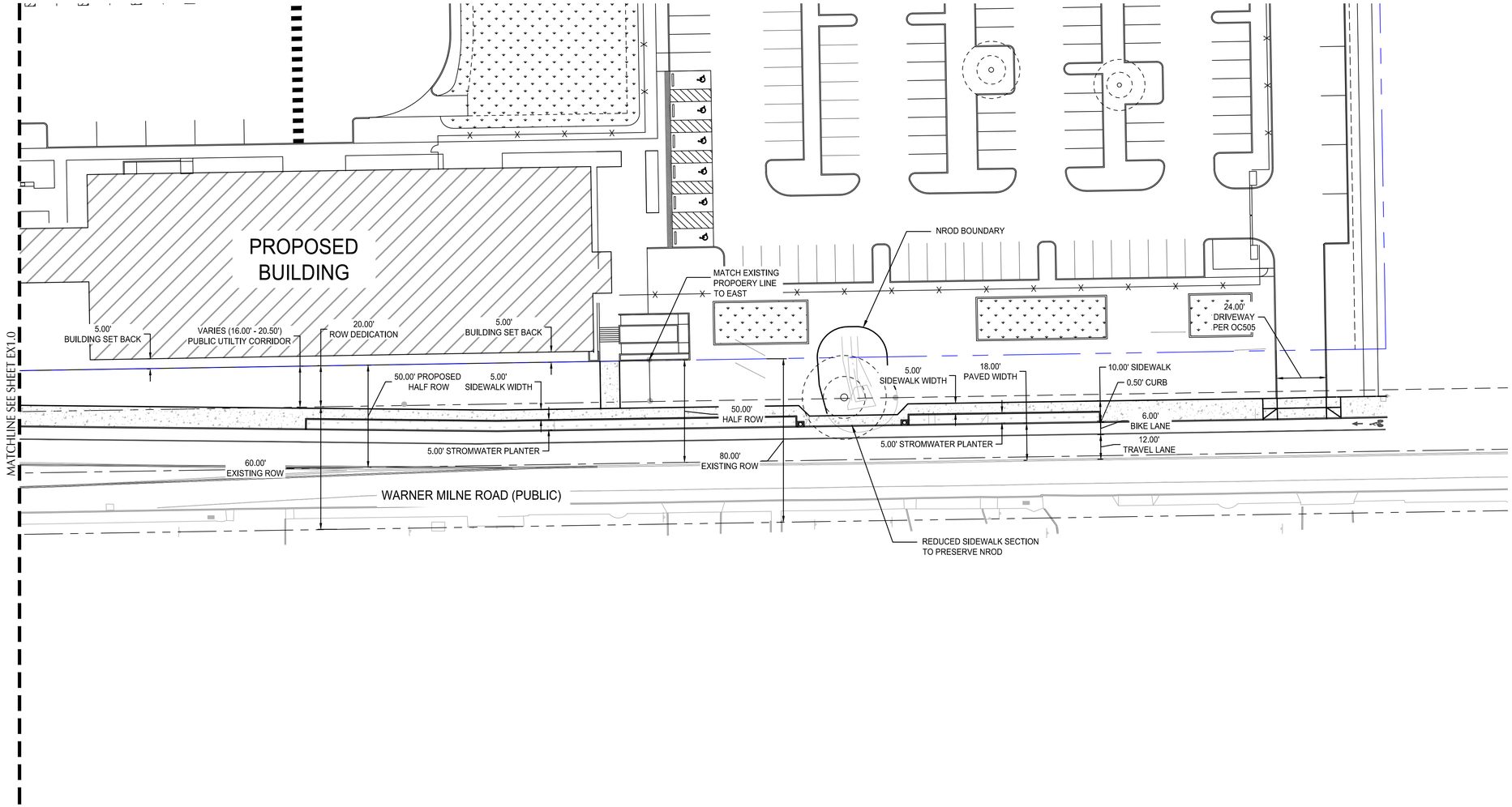
SCALE: 1"=30'

0 30' 60'

SHEET NO.:

EX1.0

File: N:\cp\2025\250065-PGE-Chr-OC\CAD\PRINTING\EXHIBITS\20250930-ROW-EXH\20251210-City Row\20251210-ROW-EXH-ROW.dwg TAB:EX1.0
Plotted: 12/19/25 at 10:30am By: RStroud
22x34



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WARNER MILNE ROAD ROW EXHIBIT

SCALE: 1"=30'

0 30' 60'

SHEET NO.:

EX1.1

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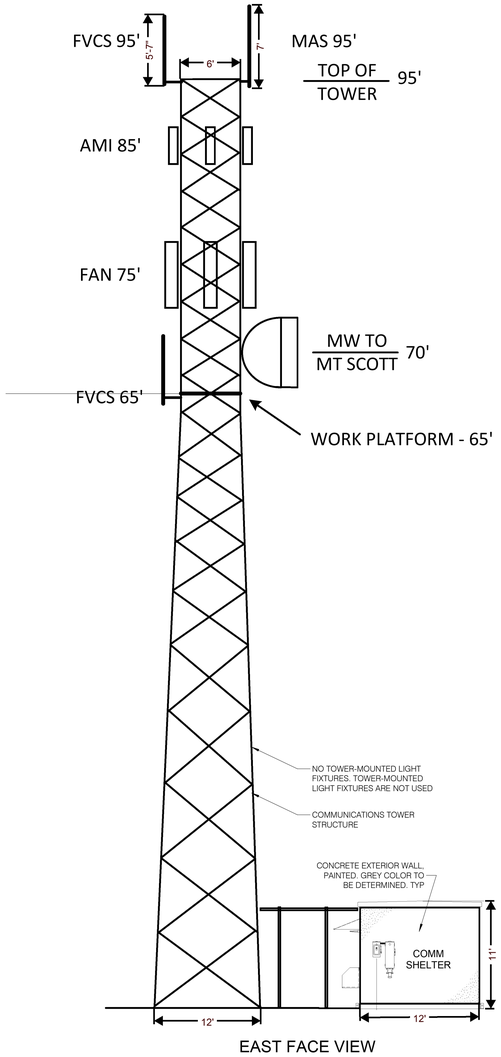
Plotted: 12/19/25 at 10:30am By: RStroud
22x34



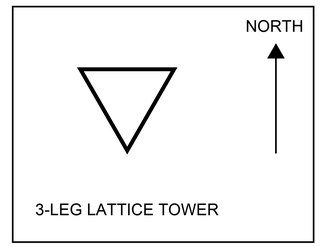
EAST FACE VIEW

TOWER ELEVATION

LOADING INFORMATION

(1)MAS = Antel BCD-8707
(3)AMI = WPA-70063-4CF-EDIN-8
(3)FAN = Amphenol CX063X24M00
(2)FVCS = dBSpectra DS2C03P36U-D
(1)M/W = HP6-107, AZ 17.9°

NOTE: Assume 7/8" coax to each antenna. Two runs each for the FAN antennas. The M/W will use EW90.



TOWER PLAN VIEW

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209 Warner Milne Road
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HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

Drawn by: DP
Checked by: KW
Sheet:
COMMUNICATIONS TOWER

LAND USE

A61

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12/18/2025 11:00:52 AM
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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
ALL PRINTING CONTRACTORS ARE CONSTRAINED TO USE ONE OF THESE.
SETTINGS FOR VIEWING AND PRINTING CONTROL HOW CLOSELY THIS GUIDANCE IS FOR REFERENCE ONLY.
100% BLACK
50%
30%

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789

Construction Costs for Site Plan & Design Review and Detailed Development Plans

The cost of the Planning Division review for Site Plan and Design Review and Detailed Development Plans is based on the construction cost of the project. Construction costs are defined as all costs to complete the project, including soft costs; however, it does exclude interior furniture and moving expenses.

Address: 209 Warner Milne Road

Project Description: Reconstruct and expand the existing Operations Center to modernize the building and increase storage and staging areas. Demolish existing main building and storeroom and replace with a new building. Modify and retain an existing garage. Relocate employee and fleet vehicle parking to the east side of the property. Construct one new communications tower to replace two existing towers. Construct a public shared-use path at the east side of the property and frontage improvements along Warner Milne Road.

Section I - Construction Costs	**Amount**
Design Work	$
Site Prep	$
Consultants	$
Excavation	$
Utilities	$
Foundation	$
Framing material/wall construction	$
Interior finish (walls, doors, floor, cabinety, light fixtures, etc.)	$
Supplemental information (file suppression, hvac, electrical, plumbing, etc.)	$
Roofing	$
Landscaping	$
Paving	$
Sign	$
Trash Enclosures	$
Other:	$
Total Section 1	**$**

Section II - Permits

Building	$
Electrical	$
Plumbing	$
Mechanical	$
Land Use	$
Total Section II	**$**

Section III - Totals

Section I Total	$
Section II Total	$
Grand Total	$ 52 million

Staff Only: Building Official Verification: _____ Date: _____

LEAVE BLANK FOR CITY APPROVAL STAMP

Electrical Abbreviations & Symbol Legend

Abbreviations

A	AMPERE
AC	ALTERNATING CURRENT, AIR CONDITIONING UNIT
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AVAILABLE INTERRUPTING CAPACITY
AF	AMPERE FRAME / AMPERE FUSED
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARMS	ARC FLASH REDUCTION MAINTENANCE SYSTEM
AT	AMPERE TRIP
AV	AUDIO / VIDEO
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CU	COPPER
dB	DECIBEL
DC	DIRECT CURRENT
DIM	DIMENSION
DIV	DIVISION
DTL	DETAIL
DWG	DRAWING
EL	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EOLR	END OF LINE RESISTOR
FACP	FIRE ALARM CONTROL PANEL
FF	FINISH FLOOR
FLA	FULL LOAD AMPERES
FT	FOOT, FEET
FBO	FURNISHED BY OTHERS
G, GND	GROUND FAULT CIRCUIT INTERRUPTER
GFCI	
HH	HAND HOLE
HP	HORSEPOWER
ID	IDENTIFICATION
IDC	INITIATING DEVICE CIRCUIT
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
KAIC	THOUSAND AMPS INTERRUPTING CURRENT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LED	LIGHT EMITTING DIODE
LS	LIMIT SWITCH
LSI	ELECTRONIC TRIP UNIT ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP
LSIG	ELECTRONIC TRIP UNIT WITH ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP, AND GROUND FAULT
LV	LOW VOLTAGE
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MHz	MEGAHERTZ
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
N	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUIT
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
ø	PHASE
PB	PULL BOX, PANIC BUTTON, PUSH BUTTON
PE	PHOTO EYE
PNL	PANEL
POE	POWER OVER ETHERNET
PTZ	PAN, TILT, ZOOM
RF	RADIO FREQUENCY
RFI	REQUEST FOR INFORMATION
SPD	SURE PROTECTION DEVICE
STD	STANDARD
SW	SWITCH
T/M	THERMAL MAGNETIC CIRCUIT BREAKER
TBD	TO BE DETERMINED
TV	TELEVISION/MONITOR OUTLET
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UH	UNIT HEATER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
USB	UNIVERSAL SERIAL BUS
V	VOLTS, VOLTAGE
VA	VOLT-AMP
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WI-FI	WIRELESS FIDELITY
W/	WITH
W/O	WITHOUT
XFMR	TRANSFORMER
Y	WYE
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
4P	FOUR POLE

General Electrical Notes

1. ALL LIGHTING BRANCH CIRCUITS SHALL BE 2#10, 1#10G IN 3/4" CONDUIT, UON.
2. ALL 20-AMP RECEPTACLE AND HARDWIRED BRANCH CIRCUITS SHALL BE 2#12, 1#12G IN 3/4" CONDUIT, UON.
3. ALL EXIT SIGNS SHALL BE WIRED TO THE LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING, UON.
4. PROVIDE 0-10V DIMMING CONDUCTORS TO ALL LUMINAIRES WHICH ARE CONTROLLED BY 0-10V DIMMERS SHOWN ON THE DRAWINGS.

Drawing Symbol Variables

3	THREE WAY SWITCH.
4	FOUR WAY SWITCH.
#J	QUANTITY OF JACKS AND HORIZONTAL CABLES. J = CAT6, JA = CAT6A, JE = CAT5E
+XX	MOUNTING UNITS EXPRESSED IN INCHES TO CENTERLINE ABOVE FINISHED FLOOR OR GRADE.
C	MOUNTED HORIZONTALLY AT 4" ABOVE COUNTERTOP.
CL	CLOCK.
DR	DUAL RELAY.
E	RED EMERGENCY SWITCH.
EL	ELEVATOR RECALL.
ETR	EXISTING DEVICE SHALL REMAIN.
G	GLASS BREAK SENSOR.
K	KEYED SWITCH.
LF	LOW FREQUENCY.
LV	LOW VOLTAGE SWITCH.
M	MOTOR RATED TOGGLE SWITCH.
NEX	REPLACE EXISTING WIRING DEVICE AND FACEPLATE WITH NEW. BACK BOX AND CONDUIT SHALL REMAIN.
O	INTEGRAL OCCUPANCY SENSOR.
P	ADA PHONE. VERIFY HEIGHT WITH ARCHITECT / OWNER.
REX	REMOVE EXISTING DEVICE / EQUIPMENT.
TK	MOUNTED IN TOE KICK OF CASEWORK.
TV	MOUNTED ADJACENT TO TV AT 60" AFF, UON.
V	VANDAL RESISTANT.
WG	WIREGUARD.
WP	WEATHERPROOF.

Annotation

(N)	INDICATES NEW EQUIPMENT.
(E)	INDICATES EXISTING EQUIPMENT TO REMAIN.
(D)	INDICATES EXISTING EQUIPMENT TO BE DEMOLISHED.
(RR)/(RD)	INDICATES EXISTING EQUIPMENT OR DEVICE TO BE REMOVED AND REINSTALLED.
PXXX	CONDUIT & CONDUCTOR CALLOUT. REFER TO CONDUIT & CONDUCTOR SCHEDULE.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX-XX	MECHANICAL EQUIPMENT CALLOUT. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
X / EX.XX	DETAIL CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
XX'-XX"	FIXTURE MOUNTING CALLOUT. HEIGHT ABOVE FINISHED FLOOR (A.F.F.)
XXXXX	EQUIPMENT CALLOUT. REFER TO NEMA CONNECTION SCHEDULE.
X / EX.XX	SECTION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
# EX.XX #	ELEVATION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.

Fire Alarm

15	FIRE ALARM AUDIO/VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM AUDIO/VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
FB	FIRE ALARM BELL.
S	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED.
S	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED.
H	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED.
H	FIRE ALARM HEAT DETECTOR - WALL MOUNTED.
S	FIRE ALARM DUCT SMOKE DETECTOR.
TS	FIRE ALARM DUCT SMOKE DETECTOR WITH REMOTE TEST STATION.
B	FIRE ALARM BEAM SMOKE DETECTOR - WALL MOUNTED.
F	FIRE ALARM MANUAL PULL STATION - WALL MOUNTED.
TS	FIRE ALARM MANUAL TAMPER SWITCH.
FS	FIRE ALARM MANUAL FLOW SWITCH.
PS	FIRE ALARM MANUAL PRESSURE SWITCH.
MM	FIRE ALARM MONITOR MODULE.
RI	FIRE ALARM RELAY INPUT.
RO	FIRE ALARM RELAY OUTPUT.
PIV	FIRE ALARM POST INDICATOR VALVE.
SA	FIRE ALARM SURGE ARRESTOR.
IM	FIRE ALARM ISOLATION MODULE.
FAA	FIRE ALARM ANNUNCIATOR.
	FIRE ALARM MAGNETIC DOOR HOLD.

Lighting

	TROFFER LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	DOWNLIGHT LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	UNDERCABINET LUMINAIRE.
	EMERGENCY BATTERY PACK LUMINAIRE, WALL OR CEILING MOUNTED.
	LINEAR PENDANT MOUNTED LUMINAIRE.
	LINEAR WALL MOUNTED LUMINAIRE.
	BOLLARD LUMINAIRE.
	SITE LUMINAIRE POLE MOUNTED. NUMBER OF HEADS AS SHOWN.
	TRACK LUMINAIRE.
	SPOT LUMINAIRE.
	WALL MOUNTED LUMINAIRE.
	RING PENDANT LUMINAIRE.
	WALL WASH LUMINAIRE POINTED IN DIRECTION AS SHOWN.
	EXIT SIGN, WALL OR CEILING MOUNTED, SINGLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	EXIT SIGN, WALL OR CEILING MOUNTED, DOUBLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	HALF HATCHED LUMINAIRE TO BE WIRED TO EMERGENCY CIRCUIT
	FULL HATCHED LUMINAIRE TO BE WIRED TO NIGHTLIGHT CIRCUIT.

Switches

$	SINGLE POLE SWITCH - MOUNTED AT 42" AFF, UON.
#	LOW VOLTAGE 0-10 VOLT DIMMING SWITCH - MOUNTED AT 42" AFF, UON.
M M	OCCUPANCY SENSOR - CEILING OR WALL MOUNTED.
PP	OCCUPANCY SENSOR POWER PACK.
PC PC	PHOTOCELL - CEILING OR WALL MOUNTED.
	ADA DOOR PUSHPLATE.
	EMERGENCY STOP SWITCH, MUSHROOM HEAD.
	PUSHBUTTON, SINGLE OR DOUBLE.

Low Voltage

	ETHERNET OUTLET MOUNTED AT 18" AFF, UON.
	COAXIAL OUTLET MOUNTED AT 18" AFF, UON.
	PHONE OUTLET MOUNTED AT 18" AFF, UON.
	LOW VOLTAGE OUTLET CEILING MOUNTED.
	WIRELESS ACCESS POINT CEILING MOUNTED.
	WIRELESS ACCESS POINT WALL MOUNTED.
	DIGITAL CLOCK.
	FLOORBOX DATA.
	POKETHRU DATA.
	IT RACK.
	VERTICAL WIRE MANAGEMENT.

Audio/Visual

	AV OUTLET - WALL MOUNTED AT 18" AFF, UON. SEE AUDIO VISUAL DETAILS FOR CONFIGURATIONS.
	AUDIO VIDEO OUTLET - CEILING MOUNTED.
S	AUDIO SPEAKER - WALL MOUNTED AT 96" AFF, UON.
S	AUDIO SPEAKER - CEILING MOUNTED.
P	PAGING SPEAKER - WALL MOUNTED AT 96" AFF, UON.
P	PAGING SPEAKER - CEILING MOUNTED.
	PAGING HORN - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - CEILING MOUNTED.
I	INTERCOM CALL BUTTON - MOUNTED AT 42", UON.
AE	ADMINISTRATION CONSOLE. PROVIDE ONE (1) CAT6 CABLE.
	AV PROJECTOR - CEILING MOUNTED.
AE	AUDIO ENHANCEMENT DEVICE.

Access Control & Security

	ACCESS CONTROL - DOOR CONTACT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - CARD READER. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - ELECTRIC STRIKE. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
K	ACCESS CONTROL - KEY PAD. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - MAGNETIC LOCK. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
RX	ACCESS CONTROL - REQUEST TO EXIT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
PB	ACCESS CONTROL - ELECTRIFIED PANIC BAR. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
S	ACCESS CONTROL - SECURITY JUNCTION BOX. SIZED AS RECOMMENDED BY SECURITY SYSTEM MANUFACTURER.
CI	ACCESS CONTROL - CAMERA / INTERCOM.
	ACCESS CONTROL - PANIC BUTTON.
	SECURITY CAMERA - CEILING MOUNTED.
	SECURITY CAMERA - WALL MOUNTED.
IS	INTRUSION SENSOR - CEILING MOUNTED.
IS	INTRUSION SENSOR - WALL MOUNTED.
IK	INTRUSION KEYPAD.

Power Distribution

	DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	SIMPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPERPROOF DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPERPROOF QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	NEMA SPECIAL RECEPTACLE, MOUNTED AT 18" AFF, UON. NEMA CONFIGURATION AS INDICATED.
	SIDE HATCHED RECEPTACLE, TO BE WIRED TO SWITCHED CIRCUIT.
	CENTER HATCHED RECEPTACLE TO BE WIRED TO EMERGENCY CIRCUIT.
	RECEPTACLE MOUNTED ON CEILING.
	RECEPTACLE MOUNTED IN-COUNTER.
	DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER.
	COMBINATION STARTER.
	FLOORBOX COMBINATION POWER & DATA.
	FLOORBOX POWER.
	POKETHRU COMBINATION POWER & DATA.
	POKETHRU POWER.
	POWER POLE.
	PANELBOARD SURFACE MOUNT.
	PANELBOARD FLUSH MOUNT.
	MAIN DISTRIBUTION PANEL.
	UTILITY CT METER.
	UTILITY TRANSFORMER.

Area Rescue Assistance

ARA	COMMAND UNIT.
AR	SPEAKER STROBE.
ARS	AREA OF RESCUE STATION.

Raceways

	CONDUIT AND/OR CONDUCTORS INSTALLED ABOVE GRADE, CONCEALED IN WALL OR CEILING SPACE.
	CONDUIT AND/OR CONDUCTORS INSTALLED ABOVE GRADE, BELOW SLAB.
	CONDUIT TURNED DOWN.
	CONDUIT TURNED UP.
	CONDUIT STUBBED AND CAPPED.
	CONDUIT DIRECT CONNECTION TO EQUIPMENT.
	FLEXIBLE CONNECTION TO EQUIPMENT.
	CONDUIT / WIRING CONTINUATION.
	HOMERUN TO PANELBOARD.
	CABLE TRAY. SIZE AND TYPE AS INDICATED ON DRAWINGS.

One-Line Diagram

	CIRCUIT BREAKER.
	DRAWOUT CIRCUIT BREAKER.
	ENCLOSED CIRCUIT BREAKER.
	MOTOR STARTER CONTACT.
	DISCONNECT SWITCH.
	ENCLOSED DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED FUSED DISCONNECT SWITCH.
	CURRENT TRANSFORMER METER.
	FUSE, RATING AS SHOWN ON DRAWINGS.
	GENERATOR, CONFIGURATION AS INDICATED ON DRAWING.
	GROUND ROD.
	EQUIPMENT GROUND.
	MOTOR, RATED AS INDICATED ON DRAWINGS.
	NEMA CONNECTION.
	PANEL.
	MINI POWER CENTER.
ST	SHUNT TRIP
HTR	HEATER.
RA	REMOTE ANNUNCIATOR.
BATT	BATTERY CHARGER.
	SURGE SUPPRESSION DEVICE
	DIGITAL METER
	VARIABLE FREQUENCY DRIVE
	SOFT STARTER
	TRANSFER SWITCH, WITH FUSES OR BREAKERS AS SHOWN ON DRAWINGS.
	TRANSFORMER

Miscellaneous

J	JUNCTION BOX (ROUND, SQUARE).
T	THERMOSTAT.
R	RELAY.
	CORD REEL.
	MOTOR / EXHAUST FAN.
	CEILING FAN.
	UTILITY POLE.
	WEATHERHEAD.
	GROUND ROD.
	GROUND ROD WITH TEST WELL.
	SURFACE RACEWAY / WIREMOLD.
	FIRE RATED BACKBOARD.
	GROUND BUS BAR.

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTROL HOW THEY ARE DISPLAYED.
THIS GUIDANCE IS FOR REFERENCE ONLY.
SETTINGS FOR VIEWING AND PRINTING CONTROL HOW THEY ARE DISPLAYED.
BLACK
DIM
LIGHT
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Revisions:

Drawn by: SR
Checked by: MH
Sheet: ELECTRICAL ABBREVIATIONS & SYMBOL LEGEND

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E01

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LUMINAIRE SCHEDULE

FIXTURE NO.	DESCRIPTION	LAMP TYPE	LUMENS (MINIMUM)	CRI	COLOR TEMP.	DRIVER	EMERGENCY DRIVER	INTEGRAL MOTION/PHOTO SENSOR	VOLTS	LOAD	MFR.	MODEL NUMBER
B	24" OVERALL HEIGHT WITH 4" X 7" SINGLE HEAD, ALUMINUM HOUSING, TYPE II DISTRIBUTION, WET LOCATION LISTED, AND FINISH AS SELECTED BY ARCHITECT.	LED	725 LM	90	3000K	STANDARD 0-10V	-	NA	UNV	11 WATTS	STRUCTURA OR APPROVED	LINEAL SERIES
HBW	HIGH BAY WET LOCATION LISTED, WITH PARTIAL UPLIGHT COMPONENT. PROVIDE NEMA TWIST LOCK RECEPTACLE AND CORD AND PLUG CONNECTION.	LED	6,100 LM	80	3000K	STANDARD 0-10V	-	NA	UNV	45 WATTS	LUX DYNAMICS OR APPROVED	PK10 E SERIES
SA2H	26"L x 14"W x 2.25"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. SINGLE HEAD, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 20' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 15' HEIGHT x 4" SQUARE 0.12" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	8,300 LM	80	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS	LITHONIA OR APPROVED	DSX0 SERIES
S2A2	SIMILAR TO TYPE SA2H EXCEPT TWIN HEADS AND NO HOUSE SIDE SHIELD.	LED	8,300 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS / HEAD	LITHONIA OR APPROVED	DSX0 SERIES
SA3	SIMILAR TO TYPE SA2H EXCEPT TYPE III DISTRIBUTION AND NO HOUSE SIDE SHIELD.	LED	8,400 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS	LITHONIA OR APPROVED	DSX0 SERIES
S2A3	SIMILAR TO TYPE SA2H EXCEPT TWIN HEADS, TYPE III DISTRIBUTION, AND NO HOUSE SIDE SHIELD.	LED	8,500 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS / HEAD	LITHONIA OR APPROVED	DSX0 SERIES
SB3	33"L x 14"W x 2.75"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. SINGLE HEAD, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 40' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 30' HEIGHT x 5" SQUARE 0.18" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	21,000 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	188 WATTS	LITHONIA OR APPROVED	DSX1 SERIES
SB3H	SIMILAR TO TYPE SB3 EXCEPT PROVIDED WITH HOUSE SIDE SHIELD.	LED	21,000 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	188 WATTS	LITHONIA OR APPROVED	DSX1 SERIES
S2C3	33"L x 14"W x 2.75"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. TWIN HEADS, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 40' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 30' HEIGHT x 5" SQUARE 0.18" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	32,600 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	279 WATTS / HEAD	LITHONIA OR APPROVED	DSX1 SERIES
W3	7"L x 11.5"W x 9"H WALL MOUNTED RECTILINEAR LUMINAIRE WITH SINGLE PIECE DIE-CAST ALUMINUM HOUSING. TYPE III DISTRIBUTION, WET LOCATION LISTED, AND IP66 RATED LUMINAIRE. FINISH SELECTED BY ARCHITECT.	LED	6,000 LM	90	3000K	STANDARD 0-10V		YES	UNV	50 WATTS	LITHONIA OR APPROVED	WDGE2 SERIES

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LUMINAIRE SCHEDULE

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E02

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THE ALIGNMENT SAMPLES SHOW THREE LEVELS OF SHADING.
ADJUST YOUR MONITOR SETTINGS SO ALL THREE LEVELS ARE VISIBLE.
SETTINGS FOR VIEWING AND PRINTING CONTENT AS STRETCHED HALFTONE SCREENS.
THIS GUIDANCE IS FOR REFERENCE ONLY.

GENERAL NOTES

1. 1 FC CONTOUR LINE.

ⓧ SHEET KEYNOTES

1. SITE CENTRAL WEST CALCULATION ZONE INSIDE THIS BOX. ALL CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE WEST CALCULATION ZONE.

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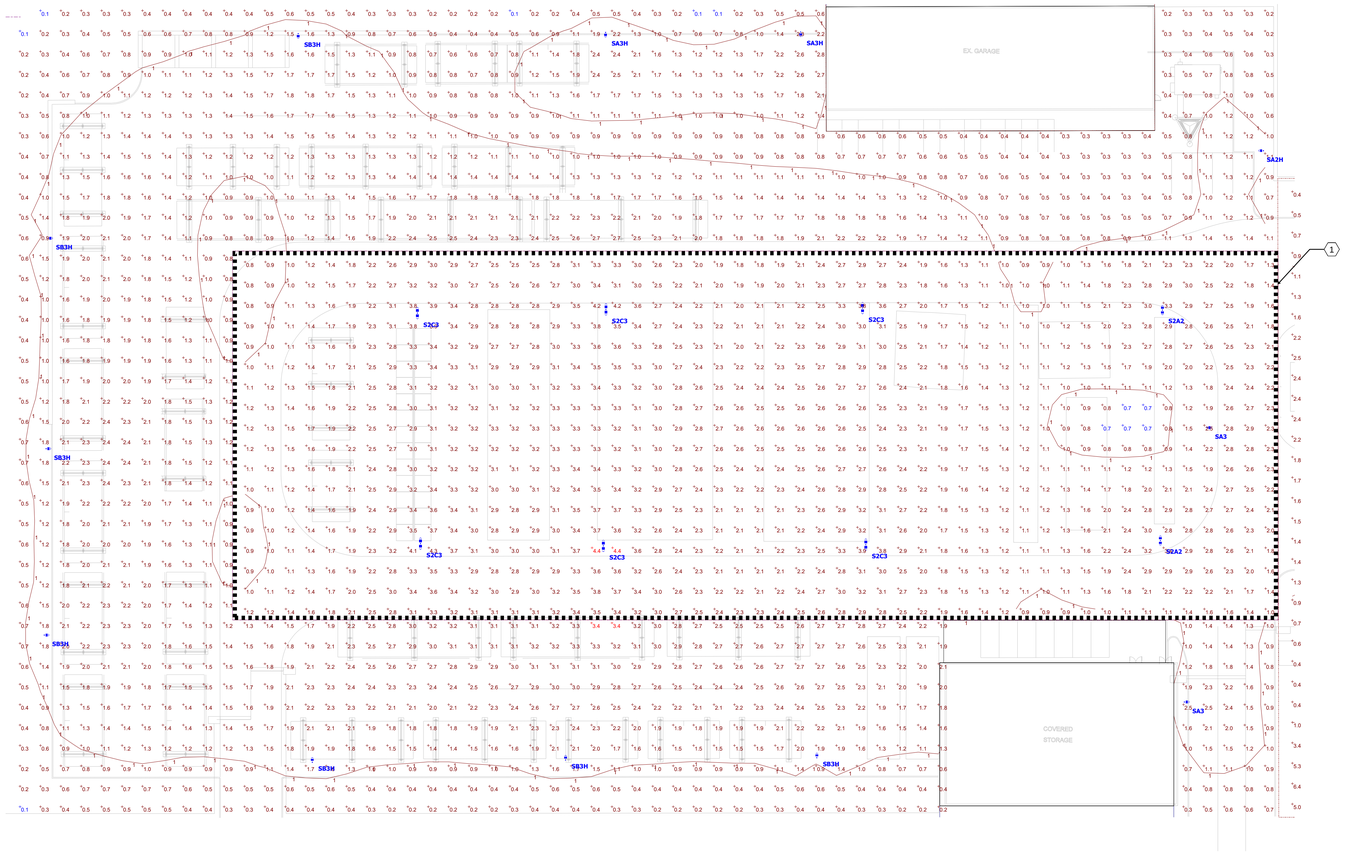
LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST HIGH OUTPUT	+	2.3 fc	4.4 fc	0.7 fc	6.3:1	3.3:1
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1



1 SITE LIGHTING CALCULATIONS - SITE WEST (HIGH OUTPUT)
1" = 30'-0"

0' 15' 30'

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SITE LIGHTING CALCULATIONS - SITE WEST (HIGH OUTPUT)

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THE ADJACENT SAMPLES SHOWN THREE LEVELS OF SHADING.
THE ACTUAL APPROVED PAINT SHADE WILL BE SELECTED FROM THESE SAMPLES.
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SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED FOR ANSI E (24" X 36") PAPER

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GENERAL NOTES

1. 1 FC CONTOUR LINE.

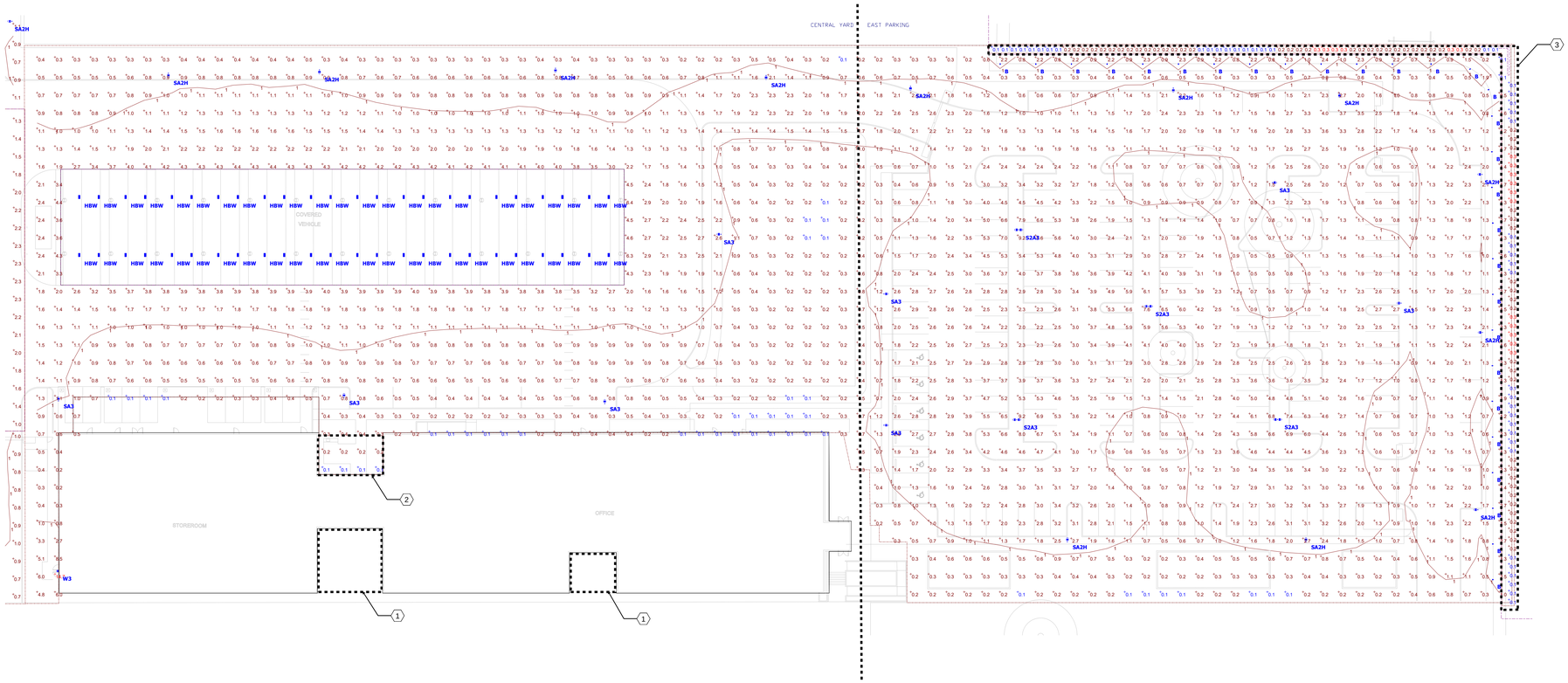
ⓧ SHEET KEYNOTES

1. 5 FC AVERAGE ALLOWANCE FOR LANDSCAPE LIGHTING. FIXTURES AND DESIGN TO BE SELECTED IN FUTURE AND ARE NOT SHOWN ON THIS DRAWING.
2. PROVIDE EXTERIOR SURFACE LINEAR LIGHTING BENEATH NEW SOLAR CANOPY. NO UPLIGHT COMPONENT, DOWNLIGHT ONLY. 5FC AVERAGE ALLOWANCE.
3. SHARED PATH CALCULATION ZONE INSIDE THIS BOX. ALL ILLUMINATION CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE EAST CALCULATION ZONE.

LEAVE BLANK FOR CITY APPROVAL STAMP

Statistics						
Description	**Symbol**	**Avg**	**Max**	**Min**	**Max/Min**	**Avg/Min**
SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST HIGH OUTPUT	+	2.3 fc	4.4 fc	0.7 fc	6.3:1	3.3:1
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1

LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'



1 SITE LIGHTING CALCULATIONS - SITE EAST (HIGH OUTPUT)
1' = 30'-0"

0' 15' 30'

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SITE LIGHTING CALCULATIONS - SITE EAST (HIGH OUTPUT)

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ONE OF THESE SHOULD BE SELECTED AS THE PREFERRED LEVEL.
THIS GUIDANCE IS FOR REFERENCE ONLY.
SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED FOR SRGB
BLACK
DIM GRAY
LIGHT GRAY

GENERAL NOTES

1. ALL ILLUMINATION CALCULATIONS SHOWN ON THIS SHEET ARE THE COVERED VEHICLE CALCULATION ZONE.
2. 1 FC CONTOUR LINE.

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LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
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SB3H	33'
S2C3	33'
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SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
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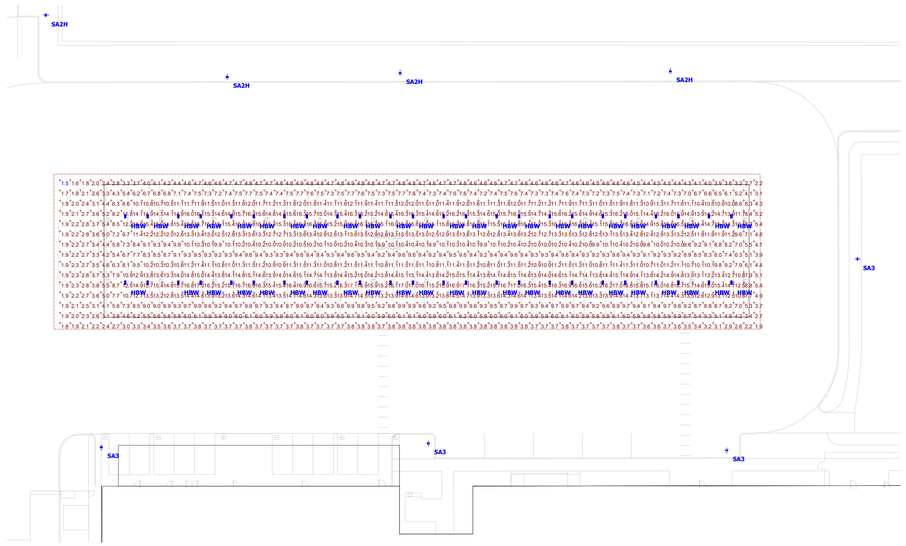
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1



1 SITE LIGHTING CALCULATIONS - COVERED VEHICLE (HIGH OUTPUT)
1' = 30'-0"

0' 15' 30'

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SITE LIGHTING CALCULATIONS - COVERED VEHICLE (HIGH OUTPUT)

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GENERAL NOTES

1. 1 FC CONTOUR LINE.

SHEET KEYNOTES

1. SITE CENTRAL WEST CALCULATION ZONE INSIDE THIS BOX. ALL CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE WEST CALCULATION ZONE.

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LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
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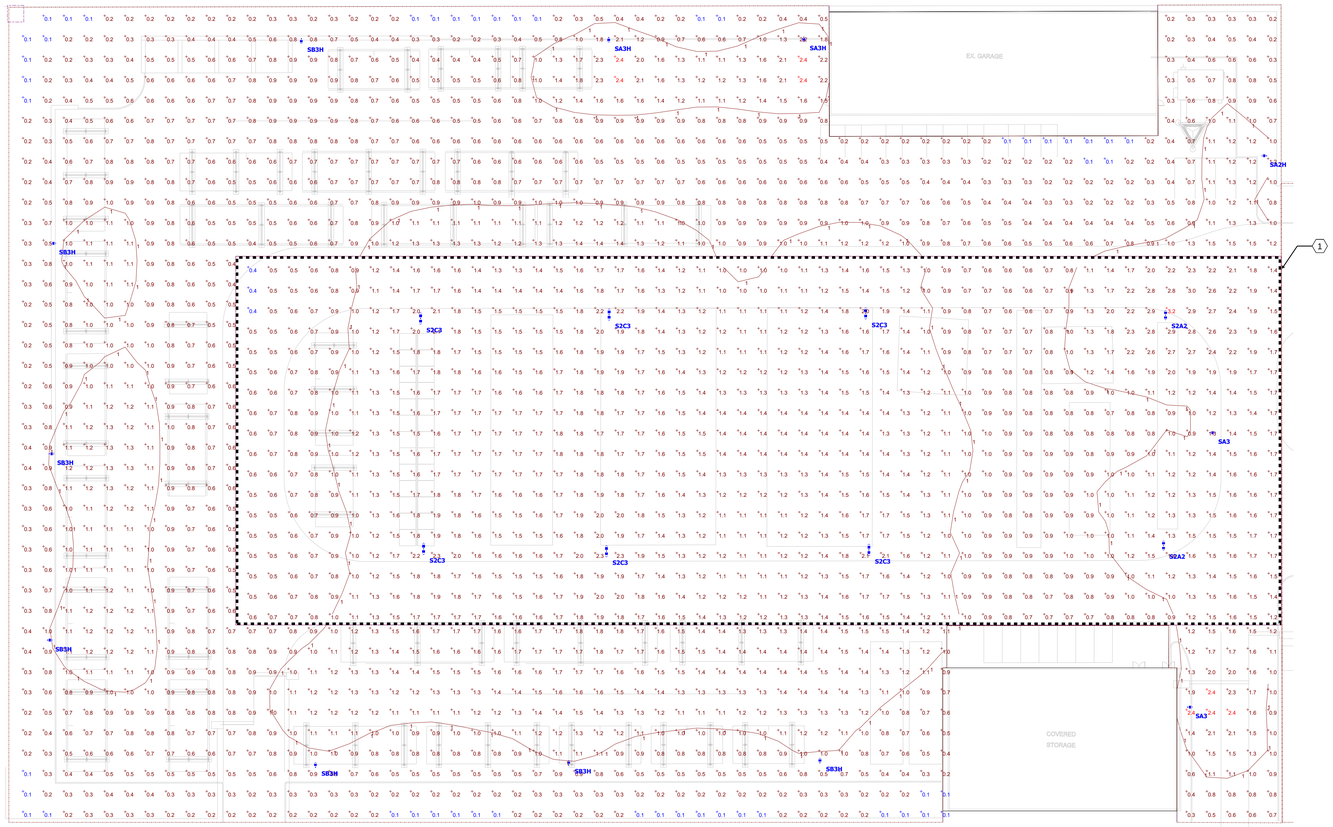
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
COVERED VEHICLE LOW OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1
SHARED PATH LOW OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST LOW OUTPUT	+	1.3 fc	3.2 fc	0.4 fc	8.0:1	3.3:1
SITE EAST LOW OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1



1 SITE LIGHTING CALCULATIONS - SITE WEST (LOW OUTPUT)
1' = 30'-0"

0' 15' 30'

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PGE Oregon City Operations Center
209 Warner Milne Road
Oregon City, OR 97041

HEA Project no. 25005-01T
Date: 12/17/2025
LAND USE
Revisions:

Drawn by: Author
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Sheet:
SITE LIGHTING CALCULATIONS - SITE WEST (LOW OUTPUT)

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GENERAL NOTES

1. 1 FC CONTOUR LINE.

SHEET KEYNOTES

1. 5 FC AVERAGE ALLOWANCE FOR LANDSCAPE LIGHTING. FIXTURES AND DESIGN TO BE SELECTED IN FUTURE AND ARE NOT SHOWN ON THIS DRAWING.
2. PROVIDE EXTERIOR SURFACE LINEAR LIGHTING BENEATH NEW SOLAR CANOPY. NO UPLIGHT COMPONENT, DOWNLIGHT ONLY. 5FC AVERAGE ALLOWANCE.
3. SHARED PATH CALCULATION ZONE INSIDE THIS BOX. ALL ILLUMINATION CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE EAST CALCULATION ZONE.

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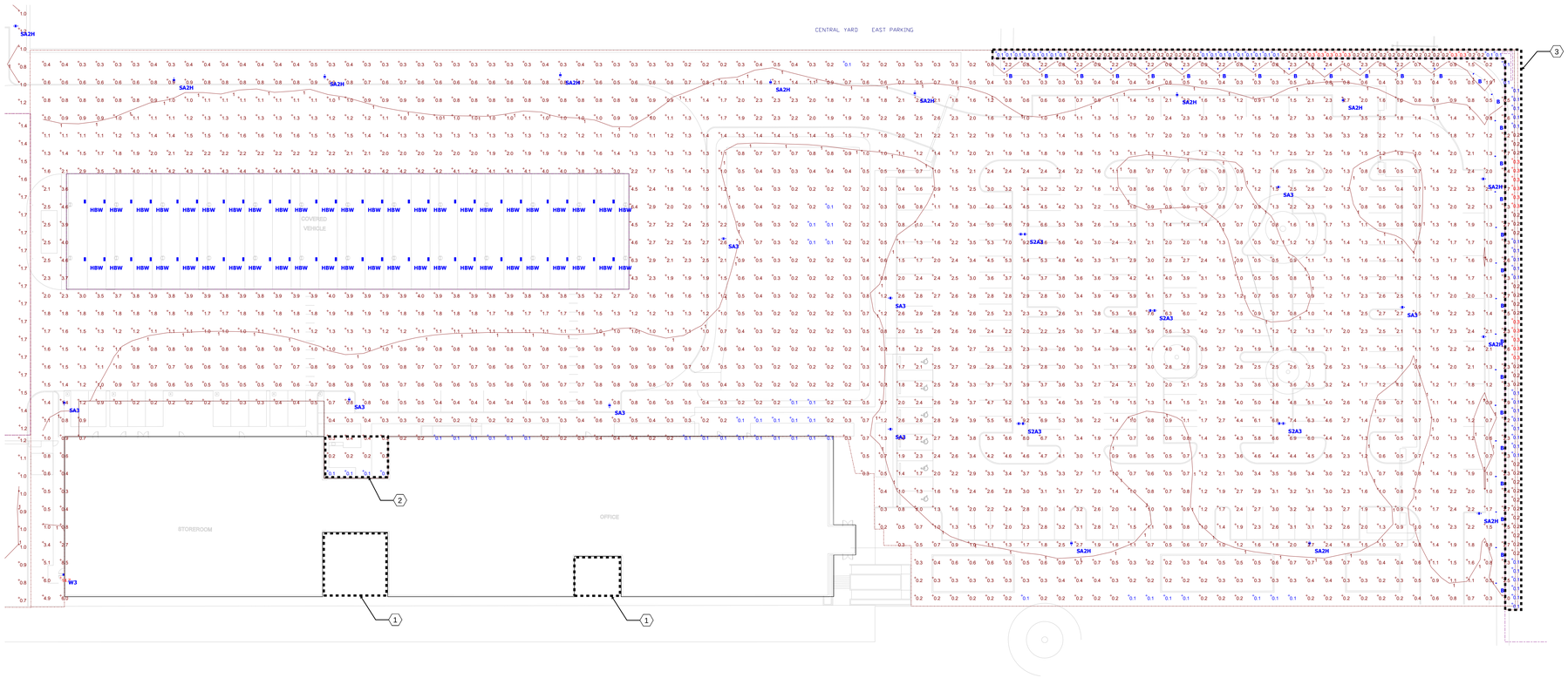
Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
COVERED VEHICLE LOW OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1
SHARED PATH LOW OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST LOW OUTPUT	+	1.3 fc	3.2 fc	0.4 fc	8.0:1	3.3:1
SITE EAST LOW OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1

LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'



1 SITE LIGHTING CALCULATIONS - SITE EAST (LOW OUTPUT)
1' = 30'-0"

0' 15' 30'

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2. 1 FC CONTOUR LINE.

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LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
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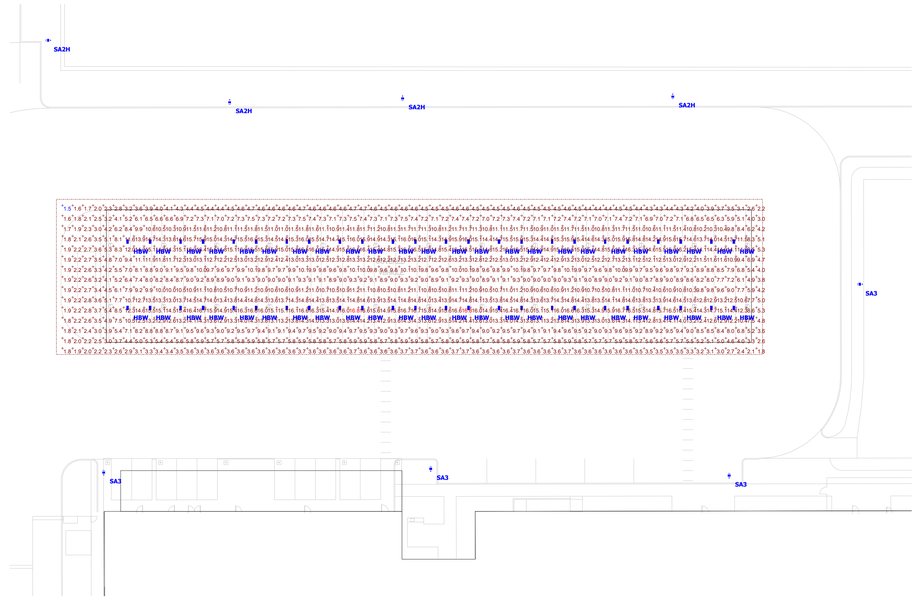
SHARED PATH LOW OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST LOW OUTPUT	+	1.3 fc	3.2 fc	0.4 fc	8.0:1	3.3:1
SITE EAST LOW OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1



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1' = 30'-0"

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Report of
Supplemental Geotechnical Investigation
Oregon City Operations Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426B

Prepared for

Josh Fromm
Portland General Electric (PGE)
209 Warner Milne Rd
Oregon City, Oregon 97045

October 27, 2025

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October 27, 2025

Josh Fromm
Portland General Electric (PGE)
209 Warner Milne Rd
Oregon City, Oregon 97045

Report of
Supplemental Geotechnical Investigation
Oregon City Operations Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426B

Dear Josh Fromm:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our supplemental geotechnical investigation for the proposed Oregon City Operations Center Expansion project. The site is located at 299 Warner Milne Road in Oregon City, Oregon. We performed our work in general accordance with CGT Proposal GP25-379, dated September 2, 2025. Our services were authorized via a Purchase Order #0000067087, received on September 10, 2025.

We appreciate the opportunity to work with you on this project. Please contact us at (503) 601-8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

REGISTERED OREGON ARIANA E. TENOLD G2738 GEOLOGIST
Exp 1/1/2026

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Project Geologist
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REGISTERED PROFESSIONAL ENGINEER
OREGON
Jan. 10, 2007
BRAD MICHAEL WILCOX
EXPIRES: 6/30/2026

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Doc ID: \\geosrv\public\GEOTECH\PROJECTS\2025 Projects\G2506426 - Oregon City Operations Center\G2506426B - Updated Geotechnical Report\008 - Deliverables\Report\G2506426B Limited Geotechnical Investigation.docx

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Site Plan ..... Figure 1
Results of Geophysical Surveys ..... Appendix A

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our supplemental geotechnical investigation for the proposed Oregon City Operations Center Expansion project. The site is located at 299 Warner Milne Road in Oregon City, Oregon.

1.1 Project Background

CGT previously performed a geotechnical investigation, a site-specific seismic hazards study, and infiltration testing for the project, the results of which were presented in the following reports:

- "Report of Geotechnical Investigation," dated February 18, 2022 (CGT Project Number G2105613)
- "Site-Specific Seismic Hazards Study," dated May 18, 2022 (CGT Project Number G2105613.B)
- "Report of Supplemental Geotechnical Investigation & Infiltration Testing," dated July 11, 2025 (CGT Project Number G2506426)

Based on information provided by the design team, we understand the proposed building(s) will be designed based on ASCE 7-22 and the 2025 version of the Oregon Structural Specialty Code (OSSC). The above referenced 2022 geotechnical reports were based on the assumption the building(s) would be designed based on ASCE 7-16 and the version of the OSSC that was in effect (2019 OSSC) at the time those reports were prepared. Updated recommendations for the seismic site classification and seismic ground motion values were requested.

Based on review of ASCE 7-22, that design manual does not allow determination of the seismic site classification based on subsurface data (SPT N-values) obtained from drilled borings (as ASCE 7-16 allows). Rather, the seismic site classification must be based on shear wave velocities (either measured or estimated) within the upper 100 feet of the site. Following discussion with PGE and the project team in early September 2025, the client preferred that shear wave velocities be measured in the field for the purposes of determining the seismic site classification. This report summarizes the results of our geophysical surveys completed at the site and updated recommendations for seismic design.

In addition, geotechnical recommendations for permanent cut and fill slopes were requested by the project civil engineer. Recommendations for permanent slopes are presented later in this report.

1.2 Scope of Services

Our scope of work included the following:

- Perform two refraction microtremor (ReMi) surveys at the site in general accordance with ASTM D5777 to measure the average shear wave velocity of the site subsurface to a depth of 100 feet bgs. Details of the surveys are presented in Appendix A.
- Provide updated geotechnical engineering recommendations for seismic site classification and seismic ground motion values, based on the results of the geophysical surveys and review of ASCE 7-22.
- Provide supplemental geotechnical recommendations for permanent cut and fill slopes.

2.0 SITE SURFACE CONDITIONS

Site surface conditions during the time of our supplemental work were relatively consistent to that observed during our previous investigations in 2022 and June 2025.

3.0 UPDATED GEOTECHNICAL RECOMMENDATIONS

Recommendations presented for seismic design in Section 3.0 of the referenced geotechnical report were based on the assumption the new building(s) would be designed based on the 2022 OSSC and ASCE 7-16. As indicated above, we understand the new building(s) will be designed based on the 2025 version of the OSSC and ASCE 7-22. The following recommendations supersede those presented in Section 3.2.1 of the above referenced February 2022 report.

3.1 Seismic Site Classification

Chapter 20 of ASCE 7-22 requires that the determination of the seismic site class be determined based on either the measured (or estimated) average shear wave velocity within the upper 100 feet of the site (V_{s100}). As indicated in Appendix B, we completed geophysical (Refraction Micro-Tremor or ReMi®) testing at the project site as means to measure shear wave velocities within that depth zone. The survey results indicated a weighted-average soil shear wave velocity within the upper 100 feet (V_{s100}) equal to 1,459 feet per second. Based on Table 20.2-1 of ASCE 7-22, this results in a designation of Seismic Site Class "C/D – Very Dense Soil or Soft Rock" for the project site.

3.2 Seismic Ground Motion Values

Earthquake ground motion parameters for the site were obtained in accordance with ASCE 7-22 using the ASCE Hazard Tool calculator on the ASCE website[1]. The site Latitude 45.336968° North and Longitude 122.595471° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table 1 Seismic Ground Motion Values (2025 OSSC/ASCE 7-22)

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_S)	0.870g
	Spectral Acceleration, 1.0 second (S_1)	0.330g
Adjusted MCE_R Spectral Response Parameters (Site Class C)	MCE Spectral Acceleration, 0.2 second (S_{MS})	0.980g
	MCE Spectral Acceleration, 1.0 second (S_{M1})	0.300g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 second (S_{DS})	0.650g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.430g
Seismic Design Category (Risk Category III)		D

4.0 SUPPLEMENTAL RECOMMENDATIONS

4.1 Permanent Slopes

Permanent cut or fill slopes constructed at the site should be graded at 2H:1V (horizontal:vertical) or flatter. Constructed slopes should be overbuilt by a few feet depending on their size and gradient so that they can be properly compacted prior to being cut to final grade. The surface of all slopes should be protected from erosion by seeding, sodding, or other acceptable means. Adjacent on-site and off-site structures should be located at least 5 feet from the top of slopes.

[1] American Society of Civil Engineers (ASCE), 2025. USGS seismic design parameters determined using "ASCE Hazard Tool," *accessed September 2025*, from the ASCE website https://ascehazardtool.org/.

5.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor’s methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

OREGON CITY OPERATIONS CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2506426B

FIGURE 1
Site Plan

LEGEND

- B-1 — Drilled borings advanced in late January 2022
- B-12 IT-1 — Drilled boring and infiltration test performed in late January 2022
- B-13 — Drilled borings advanced in mid-June 2025
- B-15 IT-2 — Drilled borings and infiltration tests performed in mid-June 2025
- Location of ReMi Lines

1 Inch = 125 Feet

0 125 250

NOTES: 2024 aerial photograph from City of Oregon City Mapping System http://maps.orcity.org/.

CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: MDL/MDI

Appendix A: Results of Geophysical Surveys

Oregon City Operations Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426B

October 27, 2025

Prepared For:

Josh Fromm
Portland General Electric (PGE)
209 Warner Milne Rd
Oregon City, Oregon 97045

Prepared by
Carlson Geotechnical

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A.1.0 INTRODUCTION

On October 9, 2025, CGT conducted a geophysical site evaluation that included two soil shear wave velocity profiles at the project site. Per our correspondence with the project design team, we understand that the proposed building(s) will be designed in accordance with ASCE 7-22. Accordingly, a seismic survey was performed to determine the seismic site class per ASCE 7-22 using the weighted-average soil shear wave velocity for the upper 100 feet (V_{s100}). This appendix presents the results of our survey.

A.2.0 REMI METHODOLOGY & BACKGROUND

Refraction Micro-Tremor or ReMi® is a technology initially developed by Louie (2001) as a non-invasive surface-performed geophysical survey technique, to rapidly and cost-effectively measure the average shear-wave velocity (Vs) to 100 ft (30 m) depth to meet building code requirements, but has since been further developed towards comprehensive engineering applications.

ReMi utilizes both ambient vibrations—primarily from human activities (e.g., pedestrians, vehicle traffic, trains, machinery, tree movement, and wave action)—and active-source hammer hits. A key advantage of ReMi is its ability to operate effectively in noisy environments, eliminating the need to halt construction activities during data collection. This differs from other seismic methods, such as seismic refraction and multichannel analysis of surface waves (MASW), which require background noise to be at a minimum.

The essence of the technique is that ambient vibrations contain usable signal that can be used to predict velocity structure underneath the measurement array (Louie, 2001; Louie et al., 2021). ReMi exploits the fact that random ambient ground vibrations generate surface Rayleigh waves that transfer significant information about the velocity structure of the subsurface materials. Rayleigh waves are a seismic surface wave that travels along the surface of the earth, causing the ground to shake in an elliptical motion. These recorded Rayleigh waves include high-frequency (short wavelengths, with frequencies >2 Hz) ***active*** ground motions that have physical characteristics governed by the elastic properties of the near-surface materials through which they propagate. Meanwhile, lower frequency ***passive*** motion (longer wavelengths, with frequencies ≤2 Hz) are influenced by material properties at depths generally greater than 100 ft. More importantly, Rayleigh waves are dispersive, meaning that wave velocity is dependent on frequency, with low frequencies normally propagating at higher velocity. This unique property of Rayleigh waves allows information regarding the shear-wave velocities of the subsurface materials to be determined.

ReMi analysis has been validated through comparisons with borehole profiles (Asten et al., 2005; Stephenson et al., 2005; Thelen et al., 2006), synthetic data (Heath et al, 2006), as well as MASW, and spectral analysis of surface waves (Liu et al., 2005; Stephenson et al., 2005).

A.3.0 DATA COLLECTION AND FIELDWORK

A.3.1 Data Collection

This survey was designed to determine the seismic site class and included two arrays that were 230 feet long, with 24 geophones placed at 10 foot intervals, respectively. Seismic signal was generated by hammer strikes during data acquisition while ambient noise was generated from traffic along the nearby roads. The seismic

data was acquired using a ReMiDAQ™ 5-24 channel seismograph. Data collection parameters are summarized below:

Table A1: Acquisition Parameters

Parameters	Setting (S-wave)
Number of arrays	1
Geophone Interval	10 feet
Number of Geophones	24
Geophone Frequency	4.5 hertz
Record Length	30 seconds
Sample Interval	2 milliseconds
Gain	1 dB
Low Cut Filter	0.12 Hz
File format	SEG-Y

A.3.2 Survey Layout

Field testing was performed by a two person team including CGT Registered Geologist, Ariana Tenold, R.G., and Carlson staff on October 9, 2025. Data collection began by locating the start point for the individual seismic arrays and laying out the cables and geophones. The latitude and longitude of the seismic arrays starting location (points A-A' and B-B' on Figure 1 of the main report) are shown in the below table:

Table A2: Survey Locations

Seismic Line Point	Latitude (North)	Longitude (West)
A	45.337598	122.599634
A'	45.337592	122.600540
B	45.336605	122.596559
B'	45.336594	122.597461

The geophones are arranged along the survey line at the set spacing (e.g. 10 feet) and securely placed on the ground. Initial passive seismic data collection is performed by recording ambient noise for 30-second intervals. The ambient noise sources may include traffic, industrial activity, and natural environmental vibrations. Hammer strikes are conducted at defined locations to supplement ambient noise and improve shallow resolution. Standard impact locations include off-end shots where hammer hits are performed approximately 15 to 30 ft (5 to 10 m) beyond both ends of the geophone array and midline strikes where additional hammer strikes at evenly spaced intervals along the array are taken to enhance wave propagation coverage. Each hammer hit is performed on a polycarbonate plate to ensure consistent energy generation and minimize energy loss. A minimum of five hammer strikes per location is recommended to ensure reproducibility and redundancy in data collection.

A.4.0 ESTIMATING SHEAR WAVE VELOCITY

The data collected in the field was processed using industry standard, commercially available Terēan VsSurf ReMi® seismic data processing software.

The vertical component of ambient noise, dominated by Rayleigh waves, is recorded by a linear array of geophones usually with equal spacing between each instrument. Active-source hammer strikes augment the high frequency content to ensure the near surface structure is well represented in the dispersion data. The data is then reduced and processed by trace-equalization, DC offset removal and computation of the velocity spectrum by slowness-frequency (p-f) transformation for data recorded across the entire array.

The fundamental-mode phase-velocity Rayleigh wave dispersion curve is picked along the minimum-velocity of the envelope of the energy within the slowness– frequency spectral image. The spectrum is normalized as the ratio of the power spectrum at a particular frequency and slowness (inverse velocity) over the average value for all slowness values at that frequency. This fundamental-mode Rayleigh-wave dispersion curve is then interactively modelled to obtain a shear-wave velocity versus depth profile that produces a dispersion curve that matches the observed picks (Louie, 2001). This is where the user can incorporate additional subsurface data such as local geology and boreholes to improve their model. Refraction microtremor is a volume-averaging surface-wave measurement, averaging velocities where geology is laterally variable, thus differing from the single-location-point data obtained from downhole logs. In essence the method averages the material properties beneath the length of the array.

The ability of a seismic array to image velocity structure at depth depends on the capability of the array to capture ground motion at wavelengths that sample the target depths. The frequency content of the recorded data is dependent on several factors. These include the array length, geophone spacing, geophone frequency, the time length of the data records, and the frequency content of the excited noise sources producing the recorded ground motions. Typically, the depth of penetration of a ReMi analysis is roughly half the array length.

Figure A illustrates the ReMi procedure. The noise recordings obtained along the deployed array (Figure A(a)) are transformed into a slowness–frequency (p-f) spectrum. The fundamental-mode phase-velocity Rayleigh-wave dispersion curve is picked along the minimum-velocity envelope of the energy in the slowness-frequency spectral image (Figure A(b)). The spectrum is normalized as the ratio of the power spectrum at a particular frequency and slowness (inverse velocity) over the average value for all slowness values at that frequency. This fundamental-mode Rayleigh-wave dispersion curve is then interactively modelled, using trial-and-error adjustments of the velocity model (Figure A(c)), to obtain a shear-wave velocity versus depth profile (Figure A(d)) that produces a dispersion curve that matches the observed picks.

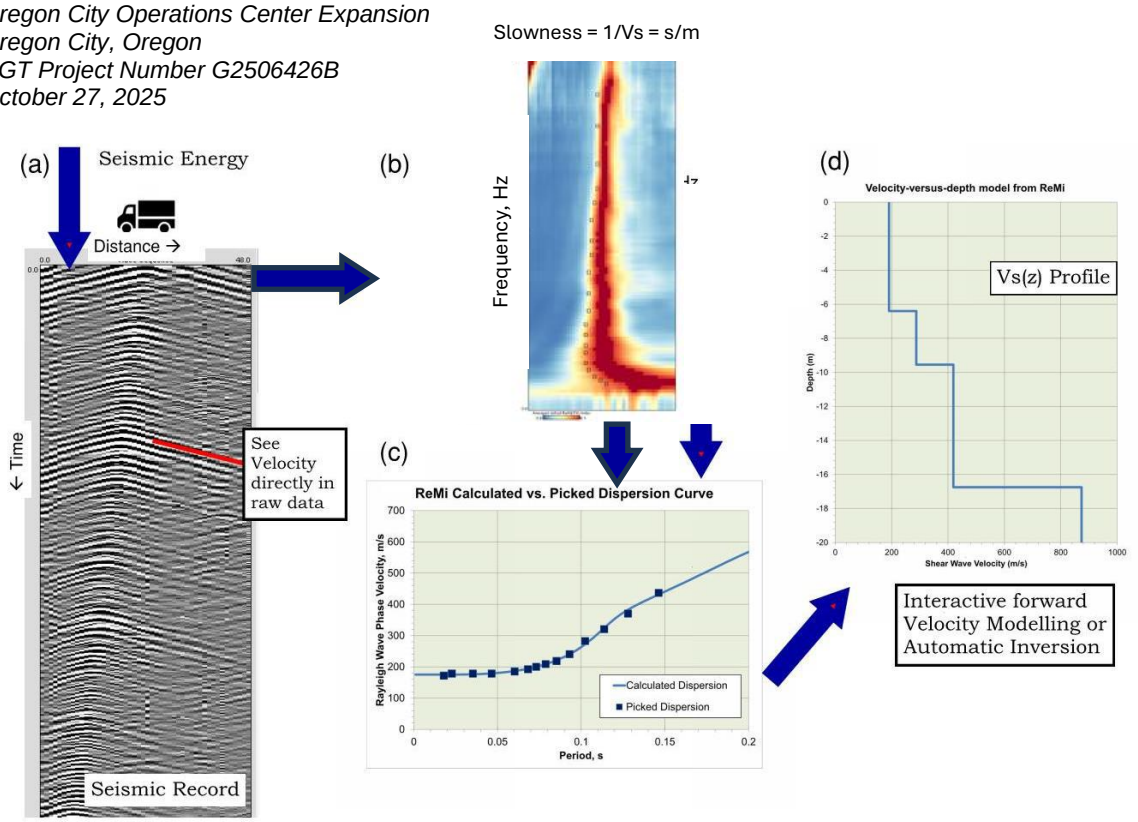
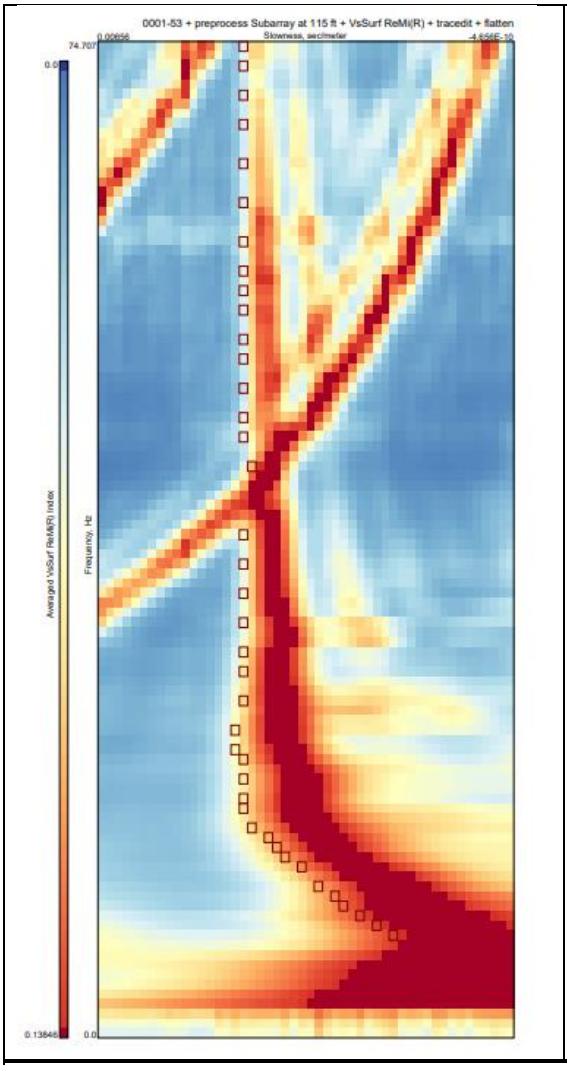
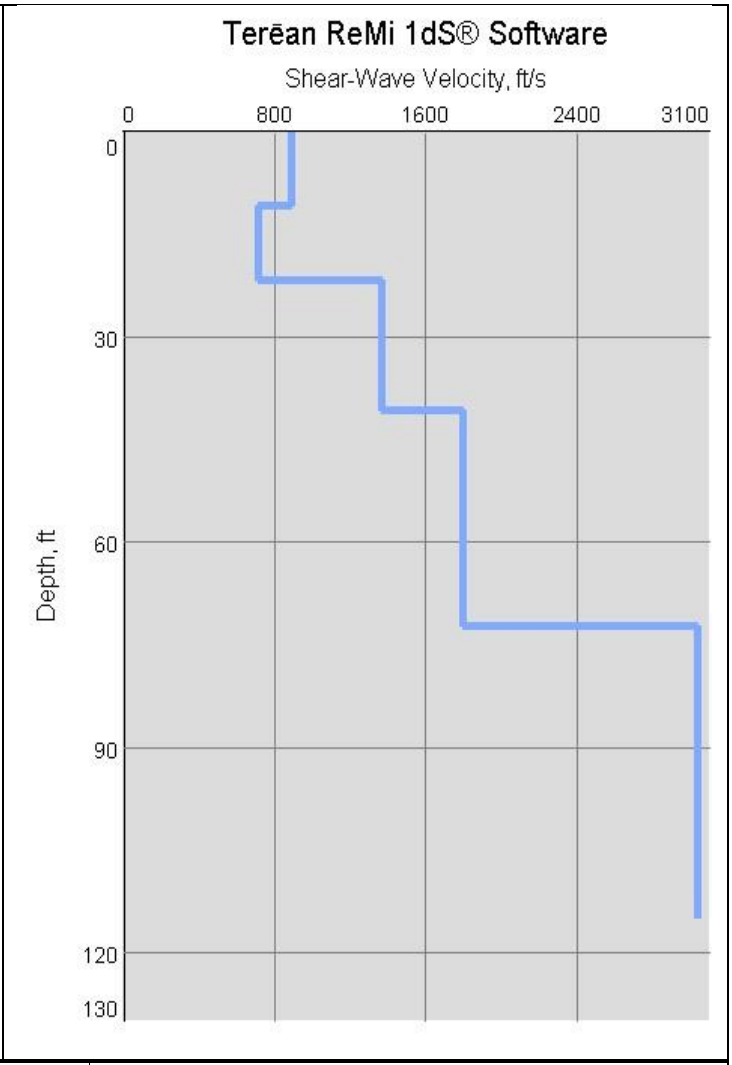


Figure A. Schematic of the ReMi technique. (a) Refraction Microtremor involved the deployment of a linear array of vertical geophones to record Rayleigh waves generated by ambient noise. The velocities of the Rayleigh waves can often be observed directly from the raw data. (b) The recorded data are transformed into the frequency-slowness (p-f) domain (see Louie, 2001 and Louie et al., 2021)). The fundamental-mode phase-velocity of the Rayleigh wave is "picked" along the minimum-velocity envelope (black squares). (c) Dispersion curves and associated picks from p-f plots and matching fits. Modelling of the dispersion curve produces a velocity-depth model that matches the data. (d) Modelled shear-wave velocity-depth profiles.

Energy propagating parallel to the array is associated with power-spectral energy along the minimum velocity envelope of the Rayleigh-wave dispersion curve. In comparison, oblique energy occurs at higher apparent velocities, causing the peak ratio along the dispersion curve. The off-end hammer shots performed are during the data collection ensure that the minimum phase velocity of the Rayleigh-wave is correctly identified. Thus, the refraction microtremor methodology necessitates that the fundamental-mode Rayleigh-wave dispersion curve observed in the slowness–frequency spectral image is picked along the minimum-velocity of the envelope of the energy.

Of the two arrays, the data collected for array A-A' was of a higher resolution and measured velocities to a depth of 115 feet bgs when compared to data collected along array B-B'. Upon review, the data collected along array A-A' was used to determine the seismic site classification for this site. The dispersion curve "picks" and the 1D profile (Vs 100 Model) for array A-A' are shown below.





Depth (ft)	Vs (ft/s)
0.0	892
10.6	892
10.6	712
21.6	712
21.6	1,365
40.5	1,365
40.5	1,796
72.1	1,796
115.0	3,035

A.5.0 SUBSURFACE PROFILE

The results of the previous drilled boring data were reviewed and compared to the model presented above. Based on the results of the borings, seismic refraction data, review of geologic mapping, well logs, and geologic observations of the site surface, a generalized subsurface profile is presented in the following tabulation:

Material Type	USCS Classification	Notes from Geotechnical Investigation
Fat Clay	CH	Relatively stiff, fat clay soils extended between the site surface and approximately 7½ feet bgs.
Clayey Sand (residual soils)	SC	Relatively medium dense to loose clayey sand encountered between approximately 7½ and 20 feet bgs.
Poorly Graded Sand (residual soils)	SP	Relatively dense sandy soils encountered at 20 feet bgs and extended to the full depths explored.

A.6.0 RESULTS – SEISMIC SITE CLASS DETERMINATION

Table 20.2-1 – Site Classification of ASCE 7-22 defines nine individual site classes based on the shear wave velocity of the soil to a depth of 100 feet (V_{s100}). The site classifications are as follows:

ASCE 7-22 Table 20.2-1 Site Classification

Site Class	Vs Calculated Using Measured or Estimated Shear Wave Velocity Profile (ft/s)
A – Hard Rock	> 5,000
B – Medium Hard Rock	> 3,000 to 5,000
BC – Soft Rock	> 2,100 to 3,000
C – Very Dense Sand or Hard Clay	> 1,450 to 2,100
CD – Dense Sand or Very Stiff Clay	> 1,000 to 1,450
D – Medium Dense Sand or Stiff Clay	> 700 to 1,000
DE – Loose Sand or Medium Stiff Clay	> 500 to 700
E – Very Loose Sand or Soft Clay	> 500
F – Site Response Analysis Required	-

Survey results indicate a weighted-average soil shear wave velocity of the upper 100 feet (V_{s100}) of **1,459 ft/s**. This results in a designation of a Seismic Site Class C according to ASCE 7-22.

A.7.0 LIMITATIONS & CLOSURE

The data is subjective to soil and rock conditions deeper than the physical subsurface drilled borings. Additionally, the models presented are comprised of processed data, and are therefore only a representation of actual site conditions. The conditions below the depth of borings and between the borings and the related results can only be generalized. We have prepared this report for use by our client and other members of the design and construction team for the proposed project. The data and discussion of test results contained within this report are not intended to be, nor should they be construed as, a warranty of subsurface conditions, but are forwarded to assist in the planning and design process. Information contained herein is not to be

reproduced, except in full, without prior authorization from this office. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made.

Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
1	7773	red oak	Quercus rubra	26	Good	Fair	25	Moderate	Growing on top of berm in corner of parking area, large heading cuts in canopy parking lot side, low foliage over truck parking		Non-CA	No	Remove	12	0
2	**7774**	**red oak**	**Quercus rubra**	**19**	**Fair**	**Fair**	**15**	**Moderate**	**Growing on top of berm along side of parking lot, heading cuts and minor thinning foliage**		**Non-CA**	**No**	**Remove**	**9**	**0**
3	7775	red oak	Quercus rubra	24	Good	Fair	20	Moderate	Growing on top of berm along parking lot, low foliage over lot, large leaders from lower trunk area		Non-CA	No	Remove	9	0
4	**7776**	**red oak**	**Quercus rubra**	**17**	**Good**	**Fair**	**15**	**Moderate**	**Growing in landscape cutout on side of parking area, heading cuts in canopy parking lot side, low foliage over parking**		**Non-CA**	**No**	**Remove**	**6**	**0**
5	7777	red oak	Quercus rubra	13	Poor	Poor	10	Moderate	Growing in landscape cutout in center of parking lot, dieback though crown with lower epicormic sprouting		Non-CA	No	Remove	6	0
6	**7778**	**cherry**	**Prunus serrulata**	**15**	**Fair**	**Good**	**10**	**Moderate**	**Growing in walled patio area, pruned for shape**		**Non-CA**	**No**	**Remove**	**6**	**0**
7	7779	cherry	Prunus serrulata	12	Fair	Good	10	Moderate	Growing in walled patio area, pruned for shape, large surface roots at base		Non-CA	No	Remove	3	0
8	**7780**	**cherry**	**Prunus serrulata**	**21**	**Good**	**Good**	**15**	**Moderate**	**Growing in walled patio area, pruned for shape, large surface roots at base**		**Non-CA**	**No**	**Remove**	**9**	**0**
9	7782	western-red-cedar	Thuja plicata	34	Fair	Fair	15	Poor	Codominate stems with included bark in lower canopy, growing from neighboring property with low foliage and surface roots encroaching pge property		Off-site	No	Protect	0	0
10	**7781**	**deodora-cedar**	**Cedrus deodara**	**25**	**Good**	**Good**	**20**	**Moderate**	**Stand alone treee with full crown, base on top of berm in landscape area**		**Non-CA**	**No**	**Remove**	**12**	**0**
11	30046	dogwood	Cornus sp.	2	Fair	Good	5	Poor	Young tree on border of right of way, still staked with gator bag at base, early fall color		CA	Yes	Remove	0	0
12	**7784**	**deodora-cedar**	**Cedrus deodara**	**33**	**Good**	**Poor**	**20**	**Moderate**	**Previously topped at 20' above grade, robust root flare, foliage encroaching building**		**Non-CA**	**No**	**Remove**	**15**	**0**
13	7785	deodora-cedar	Cedrus deodara	33	Good	Poor	20	Moderate	Previously topped at 20' above grade, heading cuts in canopy, robust root flare, low foliage encroaching building		Non-CA	No	Remove	15	0
14	**7786**	**Japanese-maple**	**Acer palmatum**	**14**	**Fair**	**Fair**	**10**	**Poor**	**3 stems from base, growing on edge of right of way**		**CA**	**No**	**Remove**	**2**	**0**
15	7148	deodora-cedar	Cedrus deodara	39	Good	Fair	20	Moderate	Many large leaders from lower trunk, growing at end of row on topside of slope		CA	No	Remove	5	0
16	**7147**	**deodora-cedar**	**Cedrus deodara**	**30**	**Fair**	**Fair**	**15**	**Moderate**	**Unbalanced crown to south growing mid grouping of cedars**		**CA**	**No**	**Remove**	**4**	**0**
17	7146	deodora-cedar	Cedrus deodara	31	Fair	Fair	15	Moderate	Growing mid grouping of cedars, multi leaders from trunk		CA	No	Remove	5	0
18	**7145**	**deodora-cedar**	**Cedrus deodara**	**37**	**Good**	**Fair**	**20**	**Moderate**	**Growing mid grouping of cedars near roadway, unbalanced crown to south**		**CA**	**No**	**Remove**	**5**	**0**
19	7144	deodora-cedar	Cedrus deodara	30	Good	Fair	20	Moderate	Growing in row of cedars, topped at 16' above grade, large reiterated trunks		CA	No	Remove	4	0

Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
20	**7143**	**deodora-cedar**	**Cedrus deodara**	**34**	**Good**	**Fair**	**20**	**Moderate**	**Growing at end of row of cedars, large reiterated trunks**		**CA**	**No**	**Remove**	**5**	**0**
21	30044	dogwood	Cornus sp.	2	Fair	Good	5	Poor	Young tree on border of right of way, early fall color		CA	Yes	Remove	0	0
22	**7142**	**deodora-cedar**	**Cedrus deodara**	**37**	**Good**	**Fair**	**20**	**Moderate**	**Growing at end of row of cedars, unbalanced crown to the south, base 2' from existing concrete**		**CA**	**No**	**Remove**	**5**	**0**
23	7141	deodora-cedar	Cedrus deodara	26	Good	Good	15	Moderate	Growing in row of cedars, single leader		CA	No	Remove	4	0
24	**7140**	**deodora-cedar**	**Cedrus deodara**	**30**	**Good**	**Poor**	**15**	**Moderate**	**Growing in row of cedars, previously topped with many leaders at 25' above grade, excess woodpecker damage on lower trunk**		**CA**	**No**	**Remove**	**4**	**0**
25	7139	deodora-cedar	Cedrus deodara	29	Good	Good	15	Moderate	Growing in row of cedars, single leader, unbalanced crown to SE		CA	No	Remove	4	0
26	**7138**	**deodora-cedar**	**Cedrus deodara**	**28**	**Good**	**Good**	**20**	**Moderate**	**Growing in row of cedars, leaning unbalanced crown to east**		**CA**	**No**	**Remove**	**4**	**0**
27	7137	deodora-cedar	Cedrus deodara	33	Good	Good	20	Moderate	Many leaders from trunk, growing from end of row of cedes		CA	No	Remove	5	0
28	**6310**	**western-red-cedar**	**Thuja plicata**	**16**	**Very Poor**	**Very Poor**	**10**	**Poor**	**Dying tree from top down, Lower stem wrapped in ivy, growing from fence line with small plum suckers at base**	**Yes**	**CA**	**Yes**	**Remove**	**0**	**0**
29	6307	ponderosa-pine	Pinus ponderosa	24	Fair	Poor	15	Moderate	Tree growing across existing fence line at end of adjacent street, three Codominate leaders, large scarring on lower trunk		CA	No	Remove	3	0
30	**30043**	**pear**	**Pyrus communis**	**14**	**Good**	**Fair**	**10**	**Moderate**	**3 stems, excessive fruiting**		**CA**	**No**	**Remove**	**2**	**0**
31	30042	sweet cherry	Prunus avium	6	Fair	Fair	10	Moderate	Leaning from base with many smaller suckers near base		CA	No	Remove	1	0
32	**30041**	**sweet cherry**	**Prunus avium**	**7**	**Good**	**Fair**	**10**	**Moderate**	**Leaning from base with many smaller suckers near base**		**CA**	**No**	**Remove**	**1**	**0**
33	6285	sweet cherry	Prunus avium	21	Poor	Poor	15	Moderate	Dead top, large deadwood and extended later growth	Yes	CA	Yes	Remove	0	0
34	**6288**	**black cottonwood**	**Populus trichocarpa**	**22**	**Good**	**Fair**	**10**	**Moderate**	**Stand alone, full crown, poor taper**		**CA**	**No**	**Remove**	**3**	**0**
35	30040	cherry	Prunus sp.	12	Good	Good	10	Moderate	Low canopy leaning over fence line, growing from neighbors backyard to the north		Off-site	No	Protect	0	0
36	**6264**	**Douglas-fir**	**Pseudotsuga menziesii**	**40**	**Good**	**Good**	**25**	**Moderate**	**Full crown, pronounced root flare with raised soil 3' surrounding base**		**Non-CA**	**No**	**Protect**	**0**	**0**
37	6271	Douglas-fir	Pseudotsuga menziesii	39	Good	Good	25	Moderate	Stand alone, full crown, raised soil with minor grade change at base, minor deadwood in crown		Non-CA	No	Protect	0	0
38	**6273**	**Pear**	**Pyrus communis**	**6**	**Fair**	**Poor**	**5**	**Poor**	**Orchard pear tree topped many times**		**Non-CA**	**No**	**Remove**	**3**	**0**
39	6272	apple	Malus sp.	9	Fair	Fair	10	Moderate	Orchard tree with much fruit		Non-CA	No	Remove	3	0
40	**6274**	**apple**	**Malus sp.**	**10**	**Poor**	**Very Poor**	**10**	**Moderate**	**Orchard tree with no fruit, rotten sect stems at base**	**Yes**	**Non-CA**	**Yes**	**Remove**	**0**	**0**
41	30039	sweet cherry	Prunus avium	13	Poor	Poor	10	Moderate	Declining crown, adjacent tree growing near base		Non-CA	No	Remove	6	0
42	**30038**	**sweet cherry**	**Prunus avium**	**10**	**Poor**	**Poor**	**10**	**Moderate**	**Declining crown, adjacent tree growing near base**		**Non-CA**	**No**	**Remove**	**3**	**0**

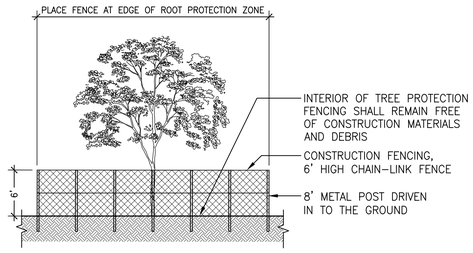
Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
43	30037	sweet cherry	Prunus avium	8	Poor	Poor	10	Moderate	Leaning from base, thinning foliage		CA	No	Remove	1	0
44	**30036**	**sweet cherry**	**Prunus avium**	**6**	**Fair**	**Poor**	**10**	**Moderate**	**Leaning from base, 2 stems at dbh**		**CA**	**No**	**Remove**	**1**	**0**
45	30035	sweet cherry	Prunus avium	15	Poor	Poor	10	Moderate	Dieback through canopy	Yes	CA	Yes	Remove	0	0
46	**6275**	**pear**	**Pyrus communis**	**12**	**Good**	**Fair**	**10**	**Moderate**	**Excessive fruit, Codominate leaders**		**CA**	**No**	**Remove**	**1**	**0**
47	30033	bigleaf maple	Acer macrophyllum	8	Fair	Fair	10	Poor	Supper vertical growth from adjacent fir		Non-CA	No	Remove	3	0
48	**30034**	**Douglas-fir**	**Pseudotsuga menziesii**	**36**	**Good**	**Good**	**20**	**Moderate**	**Large full crown, base is on opposite side of fence along property line**		**Off-site**	**No**	**Protect**	**0**	**0**
49	30032	Douglas-fir	Pseudotsuga menziesii	36	Good	Fair	25	Moderate	2 stems from base, growing from neighboring property		Off-site	No	Protect	0	0
50	**30028**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
51	30027	Norway-spruce	Picea abies	12	Fair	Fair	10	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
52	**30026**	**Norway-spruce**	**Picea abies**	**8**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
53	30025	Norway-spruce	Picea abies	18	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
54	**30024**	**Norway-spruce**	**Picea abies**	**14**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
55	30023	Norway-spruce	Picea abies	14	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
56	**30022**	**Norway-spruce**	**Picea abies**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
57	30021	Norway-spruce	Picea abies	22	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
58	**30020**	**Norway-spruce**	**Picea abies**	**12**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
59	30019	Norway-spruce	Picea abies	16	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
60	**30018**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
61	30017	Norway-spruce	Picea abies	16	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
62	**30016**	**Norway-spruce**	**Picea abies**	**8**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
63	30015	Norway-spruce	Picea abies	12	Fair	Fair	10	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
64	**30014**	**Norway-spruce**	**Picea abies**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
65	30013	Norway-spruce	Picea abies	14	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
66	**30012**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**

Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
67	30011	Norway-spruce	Picea abies	18	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
68	**30010**	**Norway-spruce**	**Picea abies**	**12**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
69	30009	Norway-spruce	Picea abies	12	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
70	**30008**	**Scots-pine**	**Pinus sylvestris**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
71	30007	Scots-pine	Pinus sylvestris	28	Fair	Fair	20	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
72	**30031**	**Plum**	**Prunus domestica**	**9**	**Poor**	**Poor**	**10**	**Moderate**	**2 stems from base, fruiting plum tree**		**Non-CA**	**No**	**Remove**	**3**	**0**
73	30030	Plum	Prunus domestica	6	Poor	Very Poor	5	Moderate	Much decay at base, fruiting plum tree	Yes	Non-CA	Yes	Remove	0	0
74	**30029**	**Plum**	**Prunus domestica**	**6**	**Poor**	**Very Poor**	**5**	**Moderate**	**Much decay at base, fruiting plum tree**	**Yes**	**Non-CA**	**Yes**	**Remove**	**0**	**0**
75	6276	apple	Malus sp.	17	Fair	Fair	15	Moderate	Fruit tree, leaning from base with thick crown		Non-CA	No	Remove	6	0
76	**30006**	**weeping-willow**	**Salix babylonica**	**8**	**Fair**	**Fair**	**10**	**Poor**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
77	30005	Douglas-fir	Pseudotsuga menziesii	24	Good	Fair	15	Moderate	Growing accross fence line from neighbors property, not tagged and dbh is aproximate		Off-site	No	Protect	0	0
78	**30004**	**Douglas-fir**	**Pseudotsuga menziesii**	**26**	**Good**	**Fair**	**15**	**Moderate**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
79	30003	Douglas-fir	Pseudotsuga menziesii	28	Good	Fair	15	Moderate	Growing accross fence line from neighbors property, not tagged and dbh is aproximate		Off-site	No	Protect	0	0
80	**30002**	**Douglas-fir**	**Pseudotsuga menziesii**	**26**	**Good**	**Fair**	**15**	**Moderate**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
81	6335	western-red-cedar	Thuja plicata	31	Poor	Fair	15	Poor	Dying from top down, base in planter cutout in old parking lot	Yes	Non-CA	Yes	Remove	0	0
82	**6270**	**Port-Orford-cedar**	**Chamaecyparis lawsoniana**	**25**	**Fair**	**Fair**	**15**	**Poor**	**Thinning foliage in upper crown, stand alone with full canopy**		**Non-CA**	**No**	**Protect**	**0**	**0**
83	6267	ponderosa-pine	Pinus ponderosa	28	Good	Good	15	Moderate	Full crown		Non-CA	No	Protect	0	0
84	**30001**	**Japanese-maple**	**Acer palmatum**	**11**	**Fair**	**Fair**	**10**	**Poor**	**Dbh measured at base, many stems**		**ROW**	**No**	**Remove**	**0**	**2**
85	30000	Douglas-fir	Pseudotsuga menziesii	45	Good	Fair	30	Moderate	Large Codominate stems at 6' above grade, pronounced root flare		CA	No	Remove	5	0
86	**6332**	**one-seed-hawthorn**	**Crataegus monogyna**	**18**	**Fair**	**Fair**	**15**	**Moderate**	**Leaning crown with 3 stems at 6' above grade**		**CA**	**Yes**	**Remove**	**0**	**0**
87	6331	one-seed-hawthorn	Crataegus monogyna	14	Good	Good	15	Moderate	Excessive fruiting, full crown		CA	Yes	Remove	0	0
88	**6328**	**one-seed-hawthorn**	**Crataegus monogyna**	**15**	**Fair**	**Fair**	**15**	**Moderate**	**3 stems at dbh, leaning crown**		**ROW**	**Yes**	**Remove**	**0**	**0**
89	6327	Oregon-white-oak	Quercus garryana	41	Fair	Fair	25	Moderate	Large deadwood in crown, base is at grade cut with stormwater creek and culvert near base, existing pavement near base 3 sides		CA	No	Protect	0	0
90	**6322**	**European-birch**	**Betula pendula**	**14**	**Poor**	**Poor**	**10**	**Poor**	**Dying from top down**	**Yes**	**CA**	**Yes**	**Remove**	**0**	**0**
91	6323	hickory	Carya glabra	23	Good	Good	20	Moderate	Large full canopy with existing pavement within 1' at base to east		ROW	No	Remove	0	4

* Location definitions:
"CA" indicates on-site trees within the Construction Area as defined in OCMC 17.04.230
"Non-CA" indicates on-site trees outside the Construction Area as defined in OCMC 17.04.230
"ROW" indicates trees within the construction area in the Right Of Way subject to OCMC 12.08.

	On-Site	ROW
Mitigation required for proposed construction:	**203**	**6**
Additional mitigation per previous Kamm Apartments COA:	**72**	**0**
(assumes 8 total 18"-24" trees in non-construction area)		
TOTAL MITIGATION TREES REQUIRED:	**275**	**6**

NOTES:
1. EXISTING SOIL CHEMISTRY SHALL NOT BE ALTERED BY CONSTRUCTION ACTIVITIES. CHEMICAL WASTES AT CONSTRUCTION SITE SHALL BE DISPOSED OF PROPERLY AND NOT DRAINED ONTO SOIL.
2. CONSTRUCTION FENCING SHALL BE PLACED BEFORE CONSTRUCTION STARTS AND REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED.



1 TREE PROTECTION FENCING — Section NTS

TREE PROTECTION AND REMOVAL NOTES

1. THIS PLAN IS BASED ON A SURVEY BY PGE DATED SEPTEMBER 2025. TREE INVENTORY AND ARBORIST REPORT PROVIDED BY TERAGAN & ASSOCIATES. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. SEE ARCHITECTURAL AND CIVIL FOR ALL SITE DEMOLITION INFORMATION.
3. TREE PROTECTION, REMOVAL, AND MITIGATION SHALL COMPLY WITH OCMC 17.41.
4. PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES. INSTALL PROTECTIVE FENCING WHERE INDICATED ON THE TREE PROTECTION PLAN. PROTECTIVE BARRIERS SHALL BE PLACED BEFORE PHYSICAL DEVELOPMENT STARTS AND SHALL STAY IN PLACE UNTIL AFTER PLANNING OFFICIAL AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.
5. TREE PROTECTION FENCING SHALL BE CHAIN LINK, MINIMUM OF 6' HEIGHT, SECURED WITH STEEL POSTS, INSTALLED 5' BEYOND THE EDGE OF THE ROOT ZONE OR AS INDICATED ON THE TREE REMOVAL AND PROTECTION PLAN.
6. EXCAVATION WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED USING ONLY NON-MOTORIZED HANDHELD TOOLS AND SHALL BE THE MINIMUM NECESSARY TO ACCOMPLISH THE PURPOSE FOR THE EXCAVATION AND TO ENSURE LONG-TERM SURVIVAL OF THE TREE.
7. TREE PROTECTION FENCING SHALL BE FLUSH WITH THE INITIAL UNDISTURBED GRADE.
8. APPROVED SIGNS SHALL BE ATTACHED TO PROTECTION FENCING, AND VISIBLY STATING THAT INSIDE THE FENCING IS A TREE PROTECTION ZONE, NOT TO BE DISTURBED UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE COUNTY MANAGER.
9. NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE, INCLUDING, BUT NOT LIMITED TO DUMPING OR STORAGE OF MATERIALS SUCH AS BUILDING SUPPLIES, SOIL, WASTE ITEMS, OR PARKED VEHICLES AND EQUIPMENT.
10. THE TREE PROTECTION ZONE SHALL REMAIN FREE OF CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS SUCH AS PAINTS, THINNERS, CLEANING SOLUTIONS, PETROLEUM PRODUCTS, AND CONCRETE OR DRY WALL EXCESS, CONSTRUCTION DEBRIS, OR RUNOFF.
11. NO EXCAVATION, TRENCHING, GRADING, ROOT PRUNING OR OTHER ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE UNLESS DIRECTED BY AN ARBORIST PRESENT ON SITE AND APPROVED BY THE CITY MANAGER.
12. NO FILL OR COMPACTION SHALL OCCUR WITHIN THE CRITICAL ROOT ZONES OF ANY OF THE TREES. IF COMPACTION IS UNAVOIDABLE, MEASURES SHALL BE TAKEN AS RECOMMENDED BY A CERTIFIED ARBORIST TO REDUCE OR MITIGATE THE IMPACT OF THE FILL OR COMPACTION.
13. CLEAR AND GRUB ALL EXISTING VEGETATION ON SITE. WITHIN TREE PROTECTION ZONES AND NROD BOUNDARY, NO MECHANICAL OR CHEMICAL REMOVAL IS AUTHORIZED, ONLY HAND REMOVAL IS ALLOWED.

ABBREVIATIONS

ARCH	ARCHITECTURAL
CAL	CALIPER
CONC	CONCRETE
DIA	DIAMETER
DBH	DIAMETER AT BREAST HEIGHT
DWG	DRAWINGS
EQ	EQUAL
HT	HEIGHT
N/A	NOT APPLICABLE
NO	NUMBER
NROD	NATURAL RESOURCE OVERLAY DISTRICT
OC	ON CENTER
OCMC	OREGON CITY MUNICIPAL CODE
PA	PLANTING AREA
SF	SQUARE FEET
SIM	SIMILAR

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PGE

PGE Oregon City Operations Center
209 Warner Milne Road
Oregon City, OR 97045

HEA Project No. 25005-01T
Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
Checked by: KL
Sheet:
TREE INVENTORY AND NOTES

LAND USE
L01

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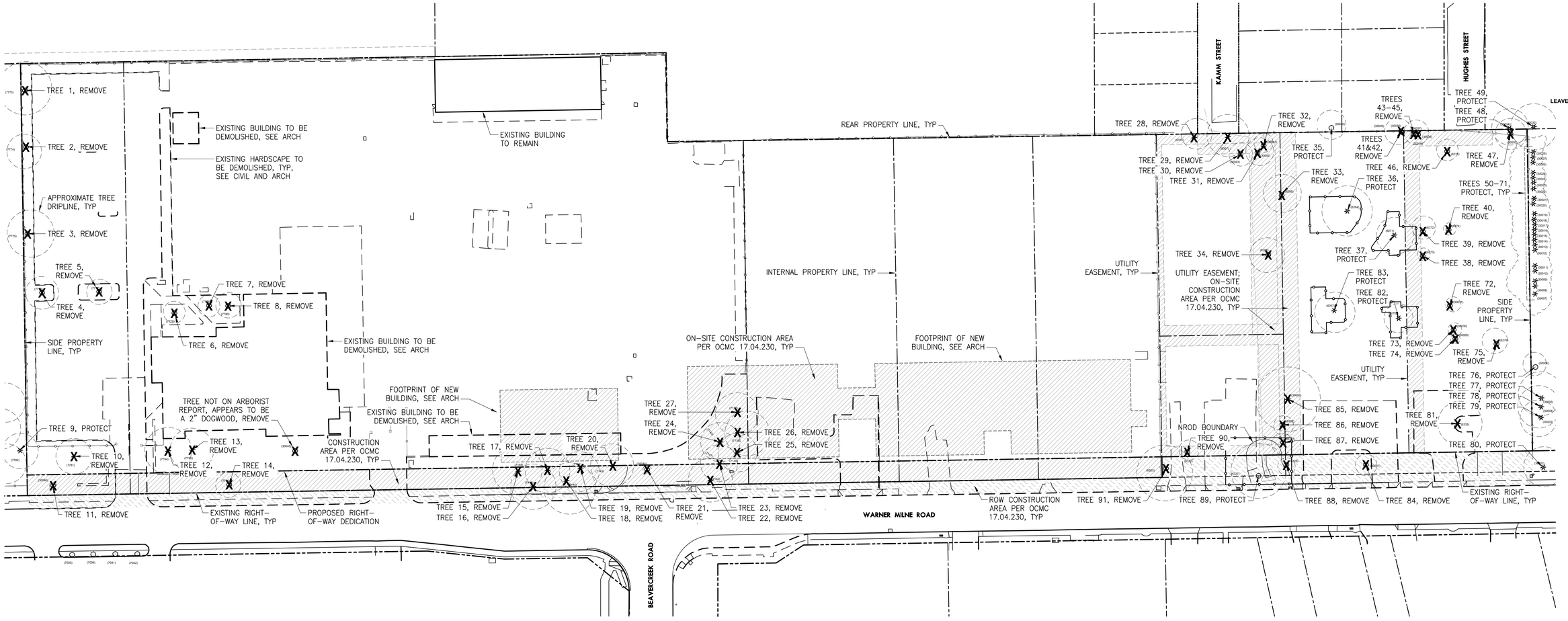
THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING QUALITY MAY VARY. THE VISIBLE SHADING ON THIS SHEET IS FOR REFERENCE ONLY.



1 TREE PROTECTION AND REMOVAL PLAN

SEE aL001 FOR TREE INVENTORY AND NOTES

SCALE: 1" = 40' 0 8' 20' 40' 80'

TREE PROTECTION LEGEND

- EXISTING DECIDUOUS TREE, TO BE REMOVED
- EXISTING CONIFEROUS TREE, TO BE REMOVED
- EXISTING DECIDUOUS TREE, TO BE PRESERVED
- EXISTING CONIFEROUS TREE, TO BE PRESERVED
- TREE PROTECTION FENCING, SEE NOTES
- ON-SITE CONSTRUCTION AREA PER OCMC 17.04.230, TYP
- ROW CONSTRUCTION AREA PER OCMC 12.08, TYP

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209 Warner Milne Road
Oregon City, OR 97045

HEA Project No. 25005-01T
Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
Checked by: KL
Sheet:
TREE PROTECTION & REMOVAL PLAN

LAND USE
L02

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THE ADJACENT SWATCHES SHOW THREE LEVELS OF DRAWING SETTINGS FOR VIEWING AND PRINTING ACCEPTABLE LINE WEIGHTS. THE MIDDLE WEIGHT IS THE MINIMUM VISIBLE LINE WEIGHT. THIS GUIDANCE IS FOR REFERENCE ONLY.

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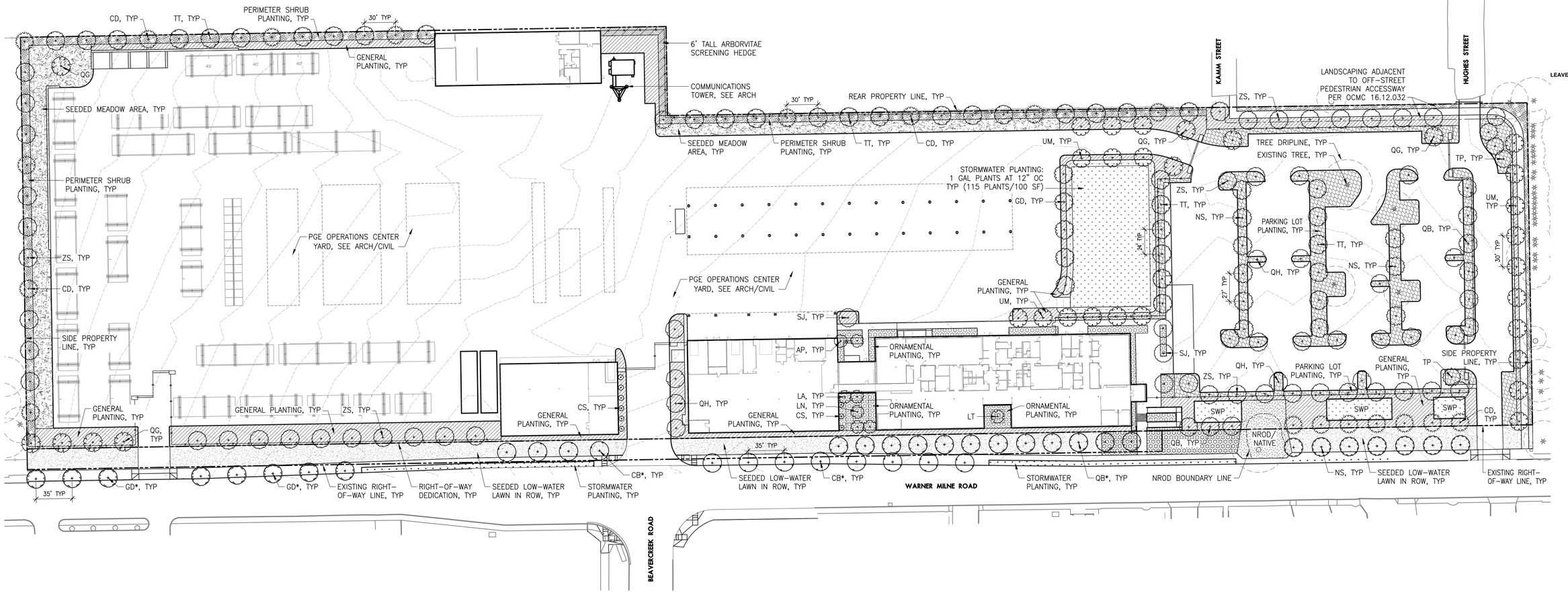

1 LANDSCAPE SITE PLAN

SCALE: 1" = 40' (0 8' 20' 40' 80')

LEGEND

- PROPERTY LINE/RIGHT-OF-WAY
- SEEDED LAWN AREA: LOW-WATER SEED MIX, 7 LBS/1000 SF TYP
- SEEDED NATIVE FLOWERING MEADOW SEED MIX: 7 LBS/1000 SF TYP

TREE MITIGATION CALCULATIONS

TOTAL NUMBER OF ON-SITE TREES TO BE MITIGATED:	275
NEW ON-SITE TREES PROPOSED:	193
NEW OFF-SITE MITIGATION TREES REQUIRED:	82
TOTAL NUMBER OF ROW TREES TO BE MITIGATED:	6
NEW ROW TREES PROPOSED:	39

LAND USE NOTES

1. ALL PROPOSED LANDSCAPING WILL CONFORM TO OCMC SECTION 17.62.050(A) – LANDSCAPING.
2. NONE OF THE PROPOSED PLANT SPECIES ARE LISTED ON THE OREGON CITY NUISANCE PLANT LIST.
3. ALL PROPOSED PLANTINGS WILL COVER ONE HUNDRED PERCENT OF THE LANDSCAPED AREA WITHIN THREE YEARS.
4. THE USE OF BARK, MULCH, ETC. AS GROUNDCOVER WILL BE LIMITED TO THE EXCEPTIONS MENTIONED IN THE ABOVE STANDARD.

ABBREVIATIONS

B&B	BALLED & BURLAPPED
CAL	CALIPER
CONT	CONTAINER
DIA	DIAMETER
DBH	DIAMETER AT BREAST HEIGHT
EQ	EQUAL
HT	HEIGHT
MIN	MINIMUM
MAX	MAXIMUM
MS	MULTISTEM
NO	NUMBER
O.C.	ON CENTER
SIM	SIMILAR
SL	SEEDED LAWN
TYP	TYPICAL
#	CONTAINER SIZE

LANDSCAPE NOTES

1. THIS PLAN IS BASED ON A SURVEY BY PGE DATED SEPTEMBER 2025. TREE INVENTORY AND ARBORIST REPORT PROVIDED BY TERAGAN & ASSOCIATES. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. PROTECT EXISTING TREES TO REMAIN; SEE SHEETS aL001 AND aL002 FOR FENCING AND OTHER REQUIREMENTS.
3. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR SITE DEMOLITION INFORMATION.
4. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ALL PEDESTRIAN PAVING IMPROVEMENTS AND VEHICULAR AREA IMPROVEMENTS, INCLUDING PAVING, CURBS, DRIVEWAY APRONS, STRIPING AND SIGNAGE, AS WELL AS ANY IMPROVEMENTS WITHIN THE RIGHT-OF-WAY.
5. SEE CIVIL DRAWINGS FOR STORMWATER AND UNDERGROUND UTILITY INFORMATION.
6. SEE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING SITE LIGHTING AND ELECTRIC UTILITIES.
7. ALL PLANTING AREAS SHALL BE PROVIDED WITH 18" DEPTH AMENDED NATIVE TOPSOIL, 36" DEPTH FOR TREE PLANTING. PROVIDE SOIL TESTING FOR EXISTING TOPSOIL TO DETERMINE SPECIFIC SOIL AMENDMENT REQUIREMENTS. PROVIDE IMPORT SOIL MEDIUM FOR STORMWATER FACILITIES. IF IMPORT TOPSOIL IS REQUIRED FOR GENERAL PLANTING AREAS, PROVIDE IMPORT TOPSOIL, PRO-GRO LANDSCAPE BLEND #2 OR APPROVED EQUAL.
8. ALL PLANTING AREAS SHALL BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WITH 100% HEAD-TO-HEAD COVERAGE WITH MP ROTATOR SPRINKLER HEADS AND/OR 100% SUBSURFACE DRIP IRRIGATION. ALL PLANTING AREAS SHALL BE HYDROZONED ACCORDING TO PLANT TYPE, SOLAR EXPOSURE, AND WATER USE.
9. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, WELL ROOTED, AND WELL BRANCHED. ALL TREES MUST BE FREE OF INSECTS, DISEASES, MECHANICAL INJURY, AND OTHER OBJECTIONABLE FEATURES WHEN PLANTED. ALL PLANT MATERIAL SHALL CONFORM TO "AMERICAN STOCK STANDARDS" LATEST EDITION.
10. ALL PARKING LOT AND STREET TREES MUST HAVE 6' CLEAR HEIGHT TO LOWEST BRANCHES.
11. ALL PLANT MATERIAL SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
12. STREET TREE LOCATIONS ARE PRELIMINARY, PENDING LAYOUT OF TREE WELLS, UTILITIES, AND STREET LIGHTS BY THE CIVIL ENGINEER.

PRELIMINARY TREE SCHEDULE

Sym/Abbr	Botanical Name	Common Name	Size
AP	Acer palmatum 'Sango Kaku'	Sango Kaku Japanese Maple	12' HT/MS
CD	Calocedrus decurrens	Incense Cedar (EG)	10' HT
CB	Carpinus betulifolius 'Frans Fontaine'	Frans Fontaine European Hornbeam	2½" CAL
CU	Cupressus sempervirens	Italian Cypress (EG)	10' HT
GD	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree*	2½" CAL
LA	Lagerstroemia x fauriei 'Apalachee'	Apalachee Crape Myrtle*	12' HT/MS
LS	Lagerstroemia x fauriei 'Sarah's Fav'	Sarah's Favorite Crape Myrtle*	12' HT/MS
NS	Nyssa sylvatica 'Afterburner'	Afterburner Black Tupelo*	2½" CAL
QG	Quercus garryana	Oregon White Oak*	2" CAL
QH	Quercus hypoleucoides	Silverleaf Oak (EG)	2½" CAL
QB	Quercus x bimundorum 'JFS-KW1QX'	Streetspire Oak	2½" CAL
SJ	Styrax japonicus	Japanese Snowbell*	2½" CAL
TP	Thuja plicata 'Hogan'	Hogan Western Red Cedar (EG)	10' HT
TT	Tilia tomentosa 'Sterling'	Sterling Linden	2½" CAL
UM	Ulmus 'Morton'	Accolade Elm*	2½" CAL
ZS	Zelkova serrata 'Green Vase'	Green Vase Zelkova*	2½" CAL

*approved OC street trees

PRELIMINARY PLANT SCHEDULE

Botanical Name	Common Name	ht/width
GENERAL PERIMETER PLANTING: 3 GAL SHRUBS, TYP		
Ceanothus cuneatus var. cuneatus	Buckbrush (Willamette Valley)	96x96
Ceanothus 'Victoria'	Victoria Ceanothus	96x96
Ceanothus 'Kurt Zadnick'	Kurt Zadnick Ceanothus	36x72
Cistus x obtusifolius	White-Flowering Rockrose	36x36
Escallonia x exoniensis 'Gold Brian'	Gold Brian Escallonia	48x48
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Vaccinium ovatum	Evergreen Huckleberry	36x36
COMMUNICATIONS FACILITY SCREENING (OCMC 17.80.110(F))		
Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6' HT MIN
PARKING LOT INTERIOR PLANTING: 3 GAL SHRUBS & 1 GAL GROUNDCOVER, TYP		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos uva-ursi 'Emerald Carpet'	Emerald Carpet Kinnickinnick	18x18
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Nassella tenuissima	Mexican Feather Grass	24x18
NROD PLANTING: 3 GAL SHRUBS AND 1 GAL GROUNDCOVERS		
Arctostaphylos uva-ursi 'Emerald Carpet'	Emerald Carpet Kinnickinnick	18x18
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Deschampsia cespitosa 'Goldtau'	Goldtau Tufted Hair Grass	24x24
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia nervosa	Cascade Mahonia	24x36
Mahonia repens	Creeping Mahonia	24x36
Polystichum munitum	Western Sword Fern	36x36
Spiraea betulifolia 'Tor'	Tor Birch Leaf Spirea	30x30
Vaccinium ovatum	Evergreen Huckleberry	36x36
STORMWATER FACILITIES: 1 GAL PLANTS AT 12" OC (115 PLANTS PER 100 SF)		
Camassia quamash	Camas	12x12
Carex stipata	Sawbeak Sedge	12x12
Iris douglasiana	Pacific Iris	12x12
Juncus patens	Slender Rush	12x12
Scirpus microcarpos	Small-fruited Bulrush	12x12

Botanical Name	Common Name	ht/width
GENERAL PLANTING: 3 GAL SHRUBS AND 1 GAL GROUNDCOVERS		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Buxus sinica 'Sunburst'	Sunburst Korean Boxwood	24x24
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Ceanothus 'Kurt Zadnick'	Kurt Zadnick Ceanothus	36x72
Cistus x dansereau 'Jenkyn Place'	Jenkyn Place Cistus (white)	60x60
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Escallonia x exoniensis 'Gold Brian'	Gold Brian Escallonia	48x48
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia nervosa	Cascade Mahonia	24x36
Mahonia repens	Creeping Mahonia	24x36
Nassella tenuissima	Mexican Feather Grass	24x18
Penstemon pinifolius	Pineleaf Penstemon	12x18
Polystichum munitum	Western Sword Fern	36x36
Rhaphiolepis umbellata var. minor	Dwarf Yedda Hawthorne	36x36
Spiraea betulifolia 'Tor'	Tor Birch Leaf Spirea	30x30
Taxus baccata standishii	Columnar English Yew	60x18
Vaccinium ovatum	Evergreen Huckleberry	36x36
ORNAMENTAL PLANTING AT BUILDING: 3 GAL SHRUBS & 1 GAL GROUNDCOVER, TYP		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos x densiflora 'Howard McMinn'	Howard McMinn Manzanita	72x72
Aucuba japonica 'Rozannie'	Rozannie Aucuba	48x48
Buxus sinica 'Sunburst'	Sunburst Korean Boxwood	24x24
Camellia x lutchuensis 'Cinnamon Cindy'	Cinnamon Cindy Camellia	72x36
Carex oshimensis 'Evergold'	Evergold Carex	18x18
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Choisya x 'Goldfingers'	Goldfingers Mexican Orange	48x60
Daphne x burkwoodii 'Carol Mackie'	Carol Mackie Variegated Daphne	48x48
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Geranium macrorrhizum 'Albus'	Albus Hardy Geranium	18x18
Helianthemum 'Henfield Brilliant'	Henfield Brilliant Sunrose	12x12
Helleborus x hybridus 'Fire and Ice'	Fire and Ice Lenten Rose	12x24
Heuchera 'Mars'	Mars Coral Bells	12x24
Kalmia latifolia 'Minuet'	Minuet Mountain Laurel	36x36
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia x media 'Winter Sun'	Winter Sun Hybrid Mahonia	60x96
Pachysandra terminalis	Japanese Spurge	12x12
Pittosporum tobira 'Wheeler's Dwarf'	Wheeler's Dwarf Mock Orange	18x36
Podocarpus lawrencei 'Blue Gem'	Blue Gem Mountain Plum-Pine	48x48
Sarcococca hookeriana var humilis	Dwarf Sarcococca	24x24
Sarcococca ruscifolia	Fragrant Sarcococca	36x36

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Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
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LANDSCAPE SITE PLAN

LAND USE

L03

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OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789

LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)	Type II (OCMC 17.50.030.B)	Type III / IV (OCMC 17.50.030.C & D.)
☐ Compatibility Review	☐ Master Plan / PUD / GDP or Amendment	☐ Annexation
☐ Willamette River Greenway	☐ Detailed Development Plan (DDP)	☐ Code Interpretation / Similar Use
☐ Communication Facility / Eligible Modification	☐ Floodplain Review	☐ Master Plan / PUD / GDP Amendment
☐ Lot Line Adjustment	☐ Geologic Hazard Overlay	☑ Conditional Use
☐ Non-Conforming Use Review	☐ Minor Partition (<4 lots)	☐ Comprehensive Plan/Legislative Amendment
☐ Natural Resource (NROD) Verification	☐ Minor Site Plan & Design Review	☐ Code ☐ Map
☐ Minor Site Plan & Design Review	☐ Non-Conforming Use Review	☐ Detailed Development Plan DDP
☐ Extension of Approval	☐ Proportional Upgrades	☐ Historic Review Board
☐ Historic Review – Remodel	☑ Site Plan and Design Review / DDP	☐ Demolition
☐ Detailed Dev. Plan (DDP)	☐ Manufactured Home Perk	☐ New Construction
☐ LUCS	☐ Compatibility Review	☐ Remodel
		☐ Municipal Code Amendment
Expedited Type II (OCMC 17.50.030.B & 16.24)	**Modifications / Adjustments**	☑ Parking Adjustment
☐ Middle Housing Land Division	☐ Residential Design	☐ Varience
	☑ Site Plan & Design Review	☐ Sign Variance
	☑ Public Improvement	☐ Natural Resource (NROD) Review
	☐ Tree Mitigation	☐ Zone Change (Text/Map)
	☐ Subdivision (4+ lots)	☐ Willamette River Greenway
	☐ Administrative (Minor) Variance	
	☐ Natural Resource (NROD) Review	**Legislative Action (OCMC 17.50.170)**
	☐ Willemette River Greenway	☐ Legislative
	☐ Phased Subdivision / Site Plan and Design Review Occupancy Plan	
	☐ Expedited Land Division	

File Number(s): PA 25-00031	**Application Date:** 12/19/2025
Project Name: PGE Oregon City - Operations Center	
Proposed Land Use or Activity: Public utility, accessory outdoor storage, communications tower	**# of Lots Proposed (If Applicable):** N/A
Physical Address(es) of Site: 209 Warner Milne Road	
Clackamas County Map and Tax Lot Number(s): 3-2E-06DA-00100 and 201; 3-2E-05CB-1100, 1200, 1300, 1400, 1402, 1500, 1600	

Applicant(s)

Applicant(s) Signature:	
Applicant(s) Name Printed: Josh Fromm	Date: 12/16/25
Mailing Address: 121 SW Salmon St., Portland, OR 97204	
Phone: 503-396-6753	Email: josh.fromm@pgn.com

Property Owner(s) – If more than 2 owners, add all information to back of page including signatures.

Property Owner #1	
Property Owner#1 Signature:	
Property Owner#1 Name Printed: Laura Bishop, PGE, Manager, Property Rights	Date: 12/17/25
Mailing Address: 121 SW Salmon St., Portland, OR 97204	
Ownership Address: 121 SW Salmon St., Portland, OR 97204	
Phone: 503-464-7672	Email: tina.tippin@pgn.com

Property Owner #2	
Property Owner#2 Signature:	
Property Owner#2 Name Printed:	Date:
Mailing Address:	
Ownership Address:	
Phone:	Email:

Revised 02/2025

Representative(s)

Representative(s) Signature: Benjamin Schonberger Digitally signed by Benjamin Schonberger Date: 2025.12.16 14:00:56 -08'00'	
Representative(s) Name Printed: Ben Schonberger, AICP	Date:
Mailing Address: 610 SW Alder St, Portland, OR 97205	
Phone: (503) 827-4422 ext. 105	Email: ben@winterbrookplanning.com

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the party's willingness to comply with all code requirements.

PGE Or Elyville Neighborhood Association – Meeting Materials

Oregon City Operations Center

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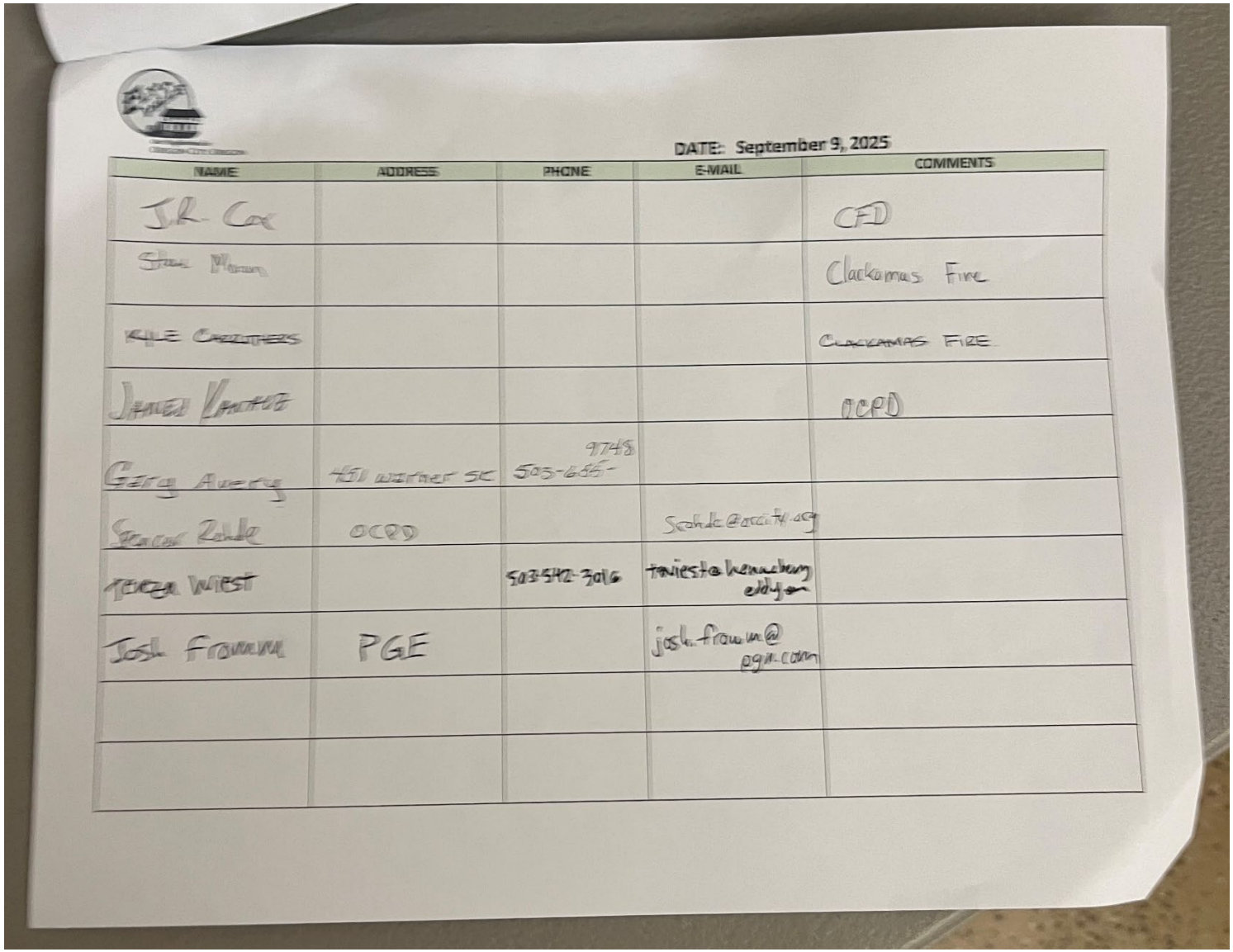
Meeting Summary Notes

- **Attendees: 19 total, 10 during our presentation**
    - (3) PGE – Josh, Tina, Alex Cousins (Community Engagement Manager)
    - (1) Hennebery Eddy - Tereza
    - (6) Elyville Community Members
        - Judy (New Chair)
        - Joy (Secretary, Citizens' Involvement Committee)
        - Didi (Treasurer, self-proclaimed tree hugger)
        - Gary(?) Cemetery caretaker
        - Two neighbors who live immediately to the east of the project site
    - (9) Fire, Police, EMS (did not stay for our presentation)

- **Notes re: OCOC**
    - Didi advocated for saving as many trees as possible (others were also supportive of this) and for registering Heritage Trees
        - She suggested "bending the sidewalk" around the mature trees along the ROW at Warner Milne. She mentioned talking to Pete Walters about sidewalk trees.
    - Didi advocated for permeable surfaces in the parking lot and questioned whether we could put "cement block" over the ditch instead of piping it and burying it under asphalt
    - The group advocated for native, low maintenance landscaping
    - The group was supportive of the pedestrian/bike path and felt that it will be well-used. They said that people often cut across the vacant lots between the cemetery and Warner Milne now. We should confirm that this pathway will indeed be a property dedication and will be maintained by the City and not PGE.
    - The group asked if there will be solar panels on the building and noted their support for including it. They suggested that PGE should be a leader in demonstrating planning for renewable energy.
    - The neighbors who live immediately to the east of the site were supportive of the project and happy to see that there would not be any huge buildings on the east side of the site, and that the noisy functions of the site would not be getting much closer to them. They were curious about the project's timeline.

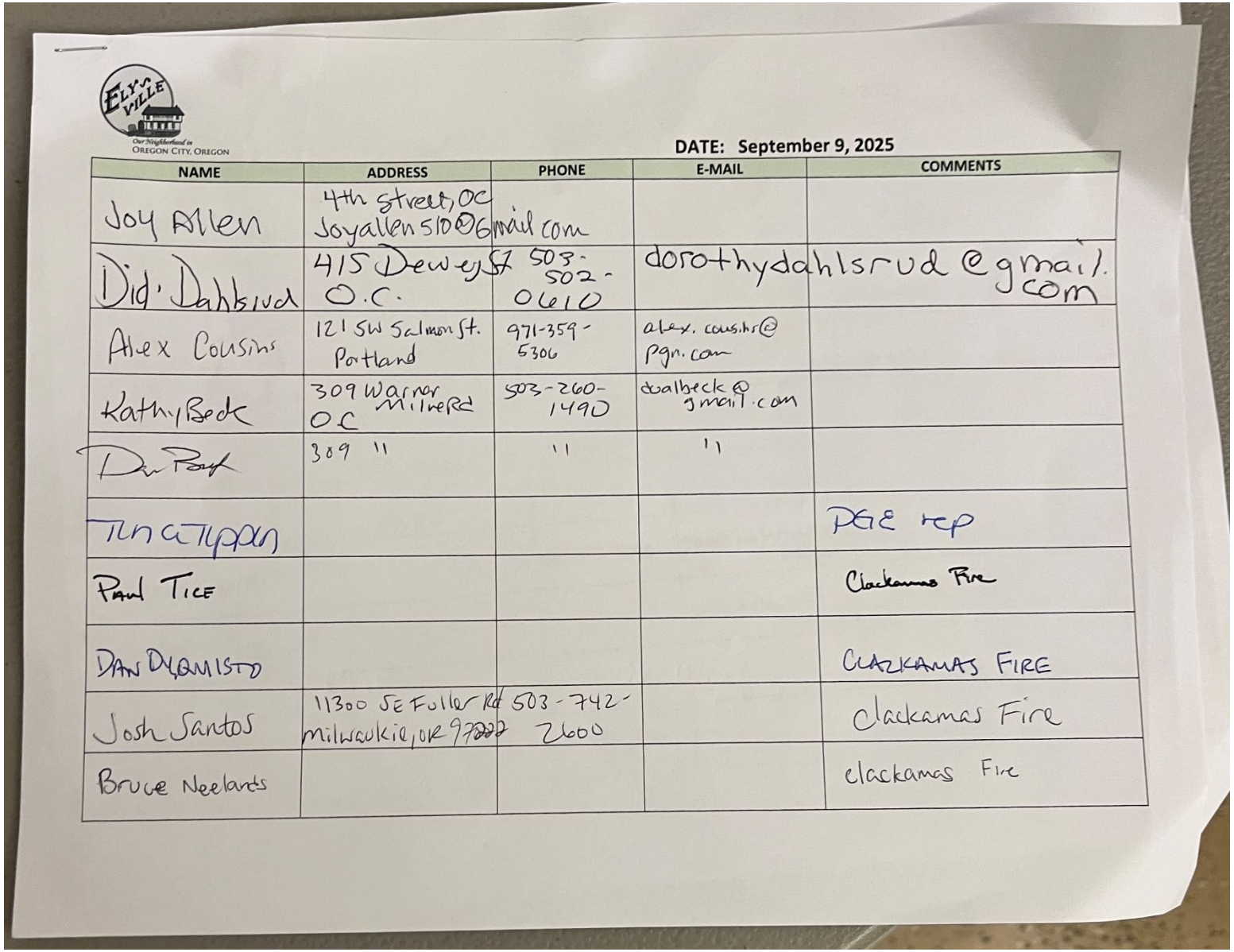
- **Other Notes of Interest**
    - Elyville is pronounced “EE-lyville”.
    - Carla (not present) was previous chair of Elyville NA but is now on the Planning Commission.
    - Notices for this meeting were supposedly stolen from the mail truck.
    - There will not be another meeting until March.
    - Joy noted that there is a pedestrian path (the JQ Adams path) that used to have an issue with people squatting and has been much better for the last nine months. Something we may want to look into as we consider the design of our path.
    - Didi asked about an osprey that has been living on a (power?) pole near the river since 1975. Tina gave Didi her card and asked her to follow up directly.
    - Several people noted appreciation for EV charging stations on lightpoles (?) – not sure if this is actually a PGE initiative, but they were happy!

Meeting Sign-in Sheets



DATE: September 9, 2025

NAME	ADDRESS	PHONE	E-MAIL	COMMENTS
J.R. Cox				CFD
Steve Moran				Clackamas Fire
KYLE CARRUTHERS				CLACKAMAS FIRE
JAMES KANAVE				OCPD
Gary Avery	451 warner st	503-655-9748		
Spencer Rohde	OCPD		Srohde@orcity.org	
Teresa Wiest		503-542-3016	teviest@henaeberry eddy.com	
Josh Fromm	PGE		josh.fromm@pgn.com	



ELY-VILLE
Our Neighborhood in Oregon City, Oregon

DATE: September 9, 2025

NAME	ADDRESS	PHONE	E-MAIL	COMMENTS
Joy Allen	4th street, OC Joyallen5106@gmail.com			
Did. Dahlsrud	415 Dewey St O.C.	503-502-0610	dorothydahlsrud@gmail.com	
Alex Cousins	121 SW Salmon St. Portland	971-359-5306	alex.cousins@pgn.com	
Kathy Beck	309 Warner Milne Rd OC	503-260-1490	dalbeck@gmail.com	
Dan Bay	309 "	"	"	
Tina Tippin				PGE rep
Paul Tice				Clackamas Fire
DAN DIAMISTO				CLACKAMAS FIRE
Josh Santos	11300 SE Fuller Rd Milwaukie, OR 97222	503-742-2600		clackamas Fire
Bruce Neelands				clackamas Fire

PGE Email Meeting Request

From: Tina Tippin <Tina.Tippin@pgn.com>
Sent: Thursday, August 14, 2025 10:44 AM
To: Judy Schaffer <cantewastewi@gmail.com>; Aaron Wolf <wolftune@gmail.com>
Cc: Joy <joyallen510@gmail.com>; Hannah Schmidt <hschmidt@orcity.org>; Ben Schonberger <ben@winterbrookplanning.com>
Subject: RE: FW: Ellyville Neighborhood Association - PGE PA 25-031

Hello Judy,

Thank you for letting us know about the November meeting. We completely understand that the timing is challenging with the holiday season approaching and appreciate your interest in having the presentation at the March meeting.

Given that we're preparing to submit our application by the end of the year, would it be possible to consider the September meeting as an alternative? We'd be happy to adjust the presentation to fit the agenda and ensure it aligns with your committee's availability.

Please let us know if September could work.

Kindest regards,

Tina Tippin
Property Rights Organization
Office 503-464-7672 | Cell 503-708-4386
portlandgeneral.com | Follow us on social @PortlandGeneral
An Oregon kind of energy.

From: Judy Schaffer <cantewastewi@gmail.com>

Sent: Wednesday, August 13, 2025 11:04 AM
To: Aaron Wolf <wolftune@gmail.com>; Tina Tippin <Tina.Tippin@pgn.com>
Cc: Joy <joyallen510@gmail.com>; Hannah Schmidt <hschmidt@orcity.org>
Subject: Re: FW: Ellyville Neighborhood Association - PGE PA 25-031

This email is from someone outside PGE.
Please take care when opening links, attachments or responding to this email.

We are unable to have a neighborhood meeting in November. We would be happy to have this presentation in the March meeting. I think everyone is very interested. Most of the Executive Commitee of the Elyville Neighborhood Association will be gone or preparing for the holiday season in November and unable to have a meeting.
I hope March can work.
Sincerely,
Judy Schaffer

From: Aaron Wolf <wolftune@gmail.com>
Sent: Thursday, August 7, 2025 11:58 AM
To: Tina Tippin <Tina.Tippin@pgn.com>
Cc: Judy Schaffer <cantewastewi@gmail.com>; Joy <joyallen510@gmail.com>; Hannah Schmidt <hschmidt@orcity.org>
Subject: Re: FW: Ellyville Neighborhood Association - PGE PA 25-031

There is no projector. You can bring handouts and/or use a poster or similar

--
Aaron Wolf
wolftune.com [wolftune.com]

El jue, 7 ago 2025 a la(s) 6:42 a.m., Tina Tippin (Tina.Tippin@pgn.com) escribió:

> Hi Aaron,
>
> Thank you—this seems appropriate currently. Listing it as a presentation about land-use plans for the PGE site on Warner Milne works well.
>
> We don't have anything more specific to include in the public meeting announcements at this point.
>
> Is there a projector or something we might present on, or should we just bring handouts?
>
> Thank you,
>
> **Tina Tippin**
> Property Rights Organization
> Office 503-464-7672 | Cell 503-708-4386
> portlandgeneral.com | Follow us on social @PortlandGeneral
> **An Oregon kind of energy.**

From: Aaron Wolf <wolftune@gmail.com>
Sent: Wednesday, August 6, 2025 2:20 PM
To: Tina Tippin <Tina.Tippin@pgn.com>
Cc: Judy Schaffer <cantewastewi@gmail.com>; Joy <joyallen510@gmail.com>; Hannah Schmidt <hschmidt@orcity.org>
Subject: Re: FW: Ellyville Neighborhood Association - PGE PA 25-031

This email is from someone outside PGE.
Please take care when opening links, attachments or responding to this email.

Tina, we will put you on the November schedule. I think we can just state that there will be a presentation about land-use plans for the PGE site on Warner Milne. Is there anything more specific you want to have listed in public meeting announcements about what the plan is?

--
Aaron Wolf
wolftune.com [wolftune.com]

El jue, 31 jul 2025 a la(s) 10:01 a.m., Tina Tippin (Tina.Tippin@pgn.com) escribió:

> Hi Aaron, I believe we would be better suited for the November meeting. We are still working through some details.
>
> Please let me know what additional materials you might need prior to the meeting.
>
> Thank you for your time and consideration.
>
> **Tina Tippin**
> Property Rights Organization
> Office 503-464-7672 | Cell 503-708-4386
> portlandgeneral.com | Follow us on social @PortlandGeneral
> **An Oregon kind of energy.**

From: Aaron Wolf <wolftune@gmail.com>
Sent: Wednesday, July 30, 2025 12:46 PM
To: Tina Tippin <Tina.Tippin@pgn.com>
Cc: Judy Schaffer <cantewastewi@gmail.com>; Joy <joyallen510@gmail.com>; Hannah Schmidt <hschmidt@orcity.org>
Subject: Re: FW: Ellyville Neighborhood Association - PGE PA 25-031

This email is from someone outside PGE.
Please take care when opening links, attachments or responding to this email.

Hi Tina,

We should be able to include you in the formal Elyville NA meeting in either September or November, we are planning on 6:30PM meetings on second Tuesdays. Which month would you prefer?

Aaron
vice-chair Elyville NA

--
Aaron Wolf
wolftune.com [wolftune.com]

El mar, 22 jul 2025 a la(s) 3:06 p.m., Hannah Schmidt (hschmidt@orcity.org) escribió:

> Good afternoon,
>
> I am forwarding on an inquiry email from Tina Tippin at PGE, who is requesting to be added to an Elyville NA agenda for a meeting in the late fall.
>
> Tina reached out to me by phone earlier today, and I informed her I would be happy to pass along her information to the Elyville NA for further communication.
>
> Please let me know if you have any further questions.
>
> Thank you,
>
> Hannah Schmidt
>
> ---
>
> **Hannah Schmidt** (she/her)
> **Community Engagement Specialist**
> **hschmidt@orcity.org**
> City of Oregon City
> PO Box 3040
> 625 Center Street
> Oregon City, Oregon 97045
> 503-496-1510 Direct phone
> 503-729-3917 Mobile
> www.orcity.org [..]
>
> *PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.*
>
> ---
>
> **From:** Tina Tippin <Tina.Tippin@pgn.com>
> **Sent:** Tuesday, July 22, 2025 2:36 PM
> **To:** Hannah Schmidt <hschmidt@orcity.org>

Cc: Tina Tippin <Tina.Tippin@pgn.com>
Subject: Ellyville Neighborhood Association - PGE PA 25-031

You don't often get email from tina.tippin@pgn.com. Learn why this is important [aka.ms]
CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Hannah,

Thanks again for taking my calls earlier today—it was a pleasure speaking with you.

I'm reaching out to see if Ellyville has any meetings scheduled toward the end of the year. We're considering possibly November for a discussion related to PGE's Oregon City Operations Center expansion.

Please let me know if there are any upcoming meetings and who might I need to coordinate a date and time.

Best
regards,

Tina Tippin
Property Rights Organization
Office 503-464-7672 | Cell 503-708-4386
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Elyville NA Meeting Graphic

PGE Oregon City-Operations Center Project

Oregon City Land Use Review

Owner:	Portland General Electric Company (PGE) 121 SW Salmon Street Portland, OR 97204 503-464-7672
Representative:	Winterbrook Planning (Ben Schonberger, AICP) 610 SW Alder Street, Suite 810 Portland, OR 97205 503-827-4422 ext. 105
Site Address:	209 Warner Milne Road; Tax lots 00201; 00100; 01100; 01200; 01300; 01400; 01402; 01500; 01600
Zoning:	Mixed Use Corridor 1 (MUC-1)
Case Type:	Site Plan and Design Review (OCMC 17.62) Conditional Use (OCMC 17.56)
Preapplication Conference:	July 1, 2025 (PA 25-031)
Project Proposal:	Reconstruct and expand the PGE Operations Center on Warner Milne Road, to modernize the building, increase storage and staging areas, renovate the existing garage, and provide fleet and employee vehicle parking.

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C. Plans and Drawings
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   (A10) Existing Conditions
   (A11) Site Plan
   (A12) Circulation
   (A21 – A24) Floor Plans
   (A31 – A34) Elevations
   (A41, A42) Concept Images

(A51) Materials Board/Palette
(A61) Communications Tower
(C01) Grading and Storm Drainage
(C02) Utility
(C03, C04) Erosion Control - project site and construction
(C05- EX1.0, EX1.1) Warner Milne Road ROW – west and east
(L01, L02) Tree Inventory, Protection, and Removal
(L03) Landscape
(E01-E08) Lighting Plan
(T01) Temporary Construction Phase

D. Transportation Impact Study (TIS)

E. Stormwater Report

F. NROD Materials associated with GLUA-21-00066: SP-21-00017, NROD 21-00018

G. Public Improvement Modification Engineering Memo

H. Property Information

I. Neighborhood Association Meeting Documentation

J. Communication Tower Materials
   - FAA review documentation
   - OAD review documentation
   - Statement on collocation from qualified engineer
   - Statement confirming self-collapsing tower

K. Adjacent Property Owner Permission for Temporary Use

L. Geotechnical Report

Figures

Figure 1. PGE project site

Figure 2. Site Plan (Exhibit C, Sheet A11)

Figure 3. PGE Line Center work area

Figure 4. Oregon City zoning

Figure 5. Site Plan, Showing NROD Area

Figure 6. Culvert on north side of Warner Milne Road

Figure 7. Perspective view from SE along Warner Milne

Figure 8. Rooftop equipment section drawing

Figure 9. Office portion of the new building

Figure 10. Existing towers on PGE site

Figure 11. Communication towers viewed from parking area

Section 1: Project Summary

Background

PGE operates an existing Operations Center at 209 Warner Milne Road in Oregon City, a property that is composed of approximately 12.2 acres on nine tax lots. The current facility incorporates an operations building with office and conference room facilities, an accessory garage, parking, and outdoor storage. Total building square footage on site is 27,470 square feet. This site serves as one of PGE's major regional operations and maintenance centers. The primary structure is on the west side of site (on tax lot 100) and was built in the 1950s. Outside the existing security fence, PGE land is open and vacant. Three nonconforming residential structures were removed from the east side of the site in 2024 after PGE purchased the land for expansion. Site topography slopes gradually down to the east (approximately a 20 foot drop in elevation across the full Warner Milne Road frontage). A drainage ditch runs north-south through the site, roughly aligned with Kamm Street. Several large trees are at the edges of the site and within the eastern lots. Otherwise, the site is either developed with PGE active uses or open area.

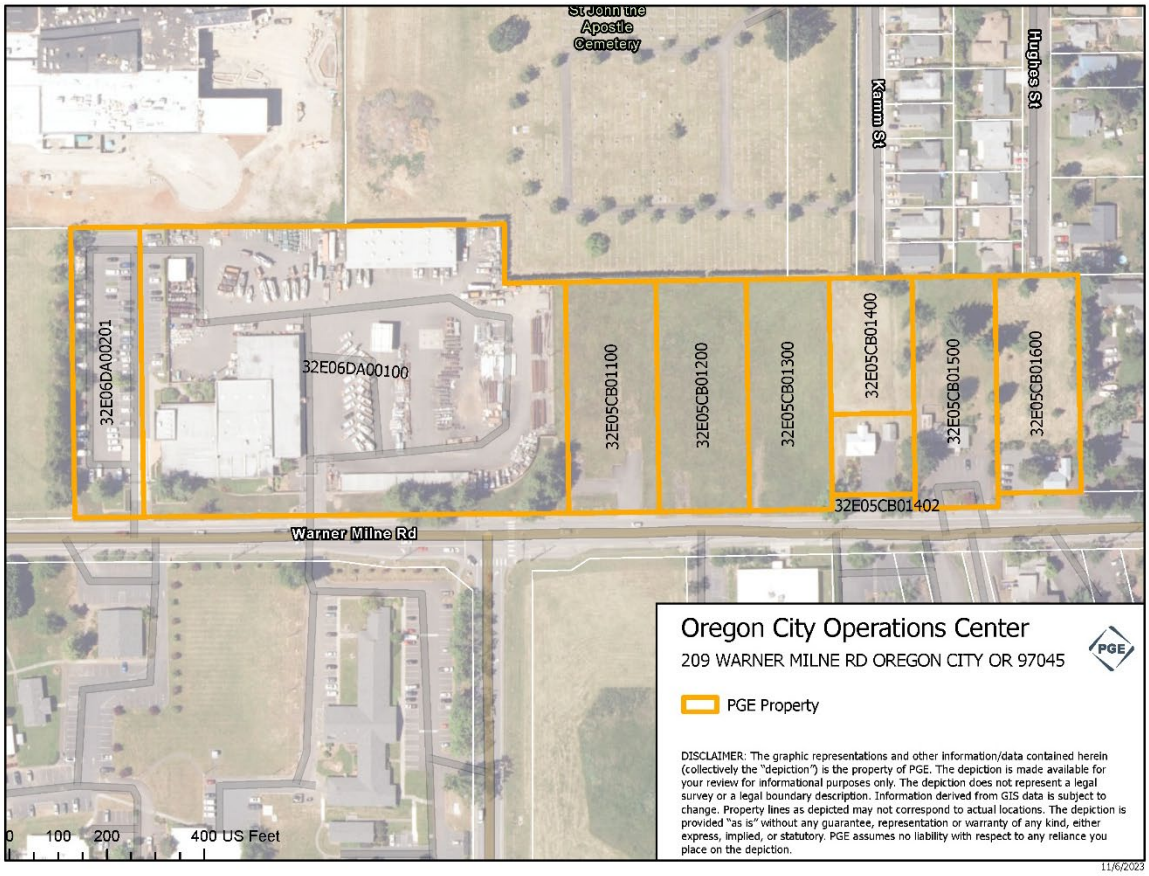

Figure 1. PGE project site

The area surrounding the site is likewise mostly developed. The site is bordered to the west by vacant land that is owned by First Evangelical Presbyterian Church. North of the site is Gardiner Middle School, St. John the Apostle Cemetery, and detached single-dwelling houses. East of the site are single-dwelling houses, and to the south is Warner Milne Road. Across Warner Milne Road from

the PGE property is Clackamas County's Red Soils Campus, with a variety of government buildings on a large site. Immediately across from the PGE site is the OSU Extension Service and a County health clinic.

On a wider scale, the site is within the Elyville Neighborhood. Downtown Oregon City is approximately a mile and a half to the northwest, and Highway 213 is approximately a mile to the southeast. Nearby land uses include government/civic (Red Soils), education (middle school), cemetery, low-density residential, and commercial.

This area is well-connected to public transit. One TriMet stop is on the project's side of Warner Milne just west of the development area, and another is located on the southern side of the street near the intersection with Beavercreek Road. Two additional stops are located within a quarter-mile feet of the project site. These stops currently service TriMet's lines #32 and #33.

Land Use History

Two recent Oregon City land use decisions that are relevant to this application.

In 2022, the city approved an application for a multi-family apartment complex, Kamm Street Apartments, on two of the lots that are now PGE property (City file no. GLUA-21-00066: SP-21-00017, NROD 21-00018). This proposal and approval came prior to PGE's acquisition of this land. Although the land use decision was appealed to City Council and ultimately approved, the applicant did not construct the development and allowed its land use approval to expire. Several elements of that process carry over into this application. First, the applicant obtained city concurrence about the extent of the Natural Resources Overlay District (NROD) on the site, which affects an area on the north side of a culvert that goes underneath Warner Milne Road. The NROD report associated with the 2022 approval is included in Exhibit F. The NROD area is mapped on the site plan and protected by the proposed development (Exhibit C, Sheet A11). The operations center will comply with applicable NROD requirements, as detailed in Section 2.

In 2023, the city adopted a text Amendment to Chapter 17.29 – Mixed Use Corridor, Section 17.29.030(E) to recognize PGE's existing uses. This amendment was initiated by PGE. Specifically, the text amendment expanded the allowance for public utilities as conditional uses in the MUC-1 District. Under current code, the conditional use includes substations and outdoor storage associated with a public utility use. Relevant to the Oregon City site, outdoor storage has been a longstanding element of the operations center use. This application includes a conditional use review for relocating and expanding the public utility facility and its associated outdoor storage on the same site. Requirements for conditional use approval are contained in this document's application findings.

Proposed Development

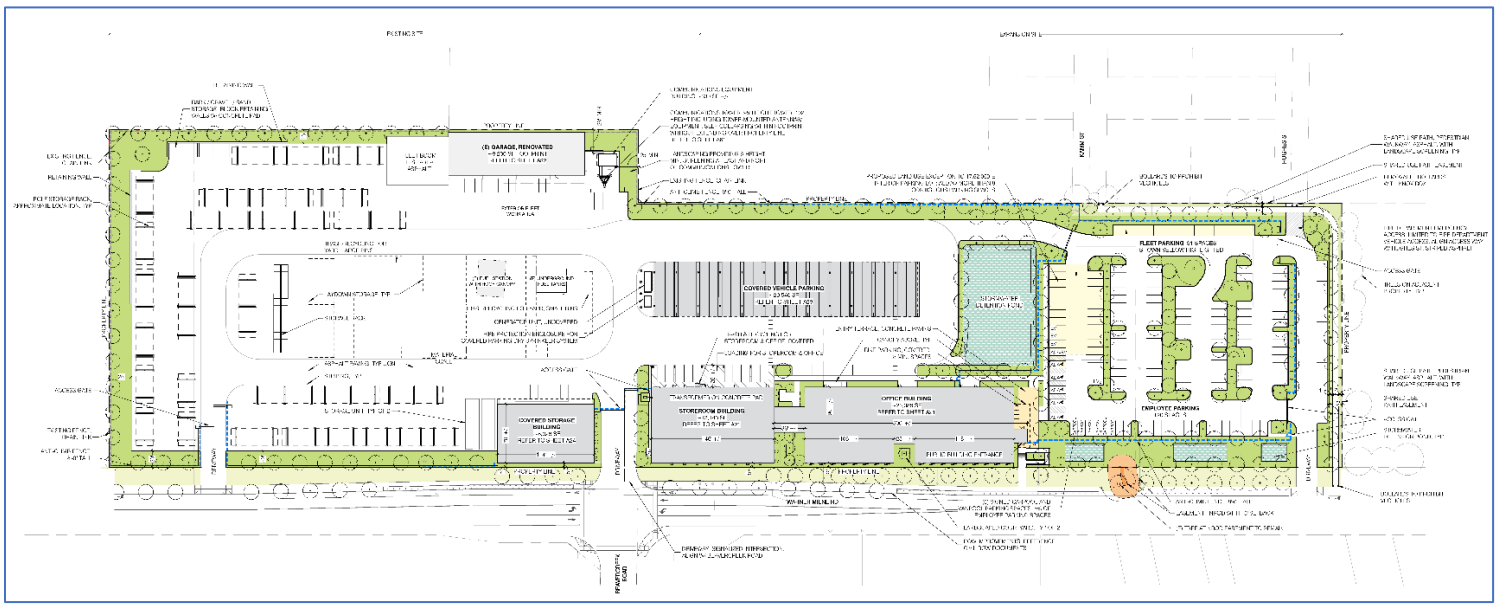

Figure 2. Site Plan (Exhibit C, Sheet A11)

PGE is proposing to re-construct its Operations Center to modernize the building, increase storage and staging areas, and increase resiliency for regional response to major events. This facility serves as a center for staging and dispatch for line crews that repair electricity infrastructure around the area. The main building and storeroom on the south side of the site will be demolished and replaced with a new building. An existing garage at the north side of the property will be modified but retained. Parking for employee and fleet vehicles will be relocated to the east side of the property. Because of the sensitive nature of power infrastructure, the site will be fenced and gated at its entrances to maintain security.

Table 1. Buildings Proposed

Building	Size
Office and Storeroom	36,220
Covered Storage	8,026
Garage (existing, to remain)	8,230

New buildings under this proposal constitute 44,246 square feet, plus retention of the existing garage (8,230 s.f.) on the north side of the site. All other existing structures on the site will be demolished. The two new buildings proposed are along the Warner Milne Road frontage: an office and storeroom building and an accessory covered storage building. The main pedestrian entrance to the property at the southeast corner of the new main building, close to the street. Additionally, an open canopy structure for covered vehicle parking is at the center of the site. Three vehicular entrances are proposed along the 1,500 linear foot Warner Milne Road street frontage. This represents a significant reduction in curb cuts from the existing condition. The site is secured by a perimeter fence, or by the walls of the new buildings. The only inventoried natural resource area on the site is a small pocket of an intermittent stream at an open culvert passing under the road.

The site plan protects this area largely by leaving it alone. This NROD area was delineated and inventoried in previous city land use actions. The proposal includes new perimeter landscaping and pedestrian circulation around the site.

The western area of the site will contain a paved area for lay-down and storage of equipment, the existing garage, and new covered storage. A new communication tower is proposed in a corner of the site between the garage and the cemetery. The proposed new communications tower is 95 feet tall, with an additional 7-foot antenna. It replaces two existing towers that are now adjacent to the main building.

Figure 3. PGE Line Center work area

The central area of the site will be occupied by an open-sided vehicle canopy, a stormwater management facility, and the new Office/Storeroom building for Operations Center purposes which fronts on the public street. This new building will have offices, conference spaces, locker rooms for workers to change clothes, a fitness room, etc. for PGE employees. The west side of the building will be occupied by storage areas for materials that cannot be left outdoors elsewhere on site. The open vehicle canopy will shelter a variety of trucks and heavy equipment.

The eastern third of the site will include a 151-space parking area for employee and fleet vehicles, stormwater management facilities, and an entry driveway to the parking area. The driveway also serves as emergency vehicle access to the residential neighborhoods north of the site. A shared-use pathway for bicycles and pedestrians is proposed along the east edge of the PGE property, to connect Warner Milne Road to Hughes Street, Kamm Street, and neighborhoods to the north of the site. The need for PGE-owned fleet vehicles used by employees to travel throughout the region to support and maintain utility infrastructure is the reason for a large quantity of parking spaces.

As noted on the plans, vehicular access to the site is from Warner Milne Road at three locations, spaced far apart along the street frontage of the property. Nine existing access points on the street will be closed. The main vehicular access for staff and visitors will be at the east edge of the site, via a driveway that leads to the secured and gated parking area. Heavy trucks and service vehicles will

enter and exit the site at a reconfigured and signalized intersection with Beavercreek Road, which is currently a "T" intersection at Warner Milne. Finally, a third, gated and secured entrance to the site will be located at the west edge of the property, in approximately the same location as an existing entry.

No new public streets cutting through the site are proposed. The main driveway access to the employee lot will double as an emergency through access from Warner Milne Road to neighborhoods north of the PGE property, along a Hughes Street alignment. Full access will be restricted by removable bollards. A shared-use pathway along the east side of the site will be a public access easement open to pedestrians and cyclists. Connecting to Hughes Street and Kamm Street, it offers a new neighborhood connection between areas north of the PGE property and the existing pedestrian and bicycle network on Warner Milne.

The new PGE building and public utility facility will maintain existing connections to municipal utilities such as water, sanitary sewer, and stormwater drainage that already exists and serves the current site. Connections to the fully-developed city systems for utilities will be addressed as part of construction, but they are adequate to serve the proposed development.

Finally, PGE proposes to use the grassy, undeveloped area to the west of its current site for temporary parking of PGE employee vehicles and storage of materials and equipment during the construction period. This land is on immediately-abutting property owned by First Evangelical Presbyterian Church. Use of this vacant area will allow the existing PGE facility to continue operations during construction. The land will be restored to its previous condition after construction is complete, following an agreement with the church. PGE's understanding is that land was used for a similar purpose during the construction of Gardiner Middle School in 2021.

Relevant Code Chapters

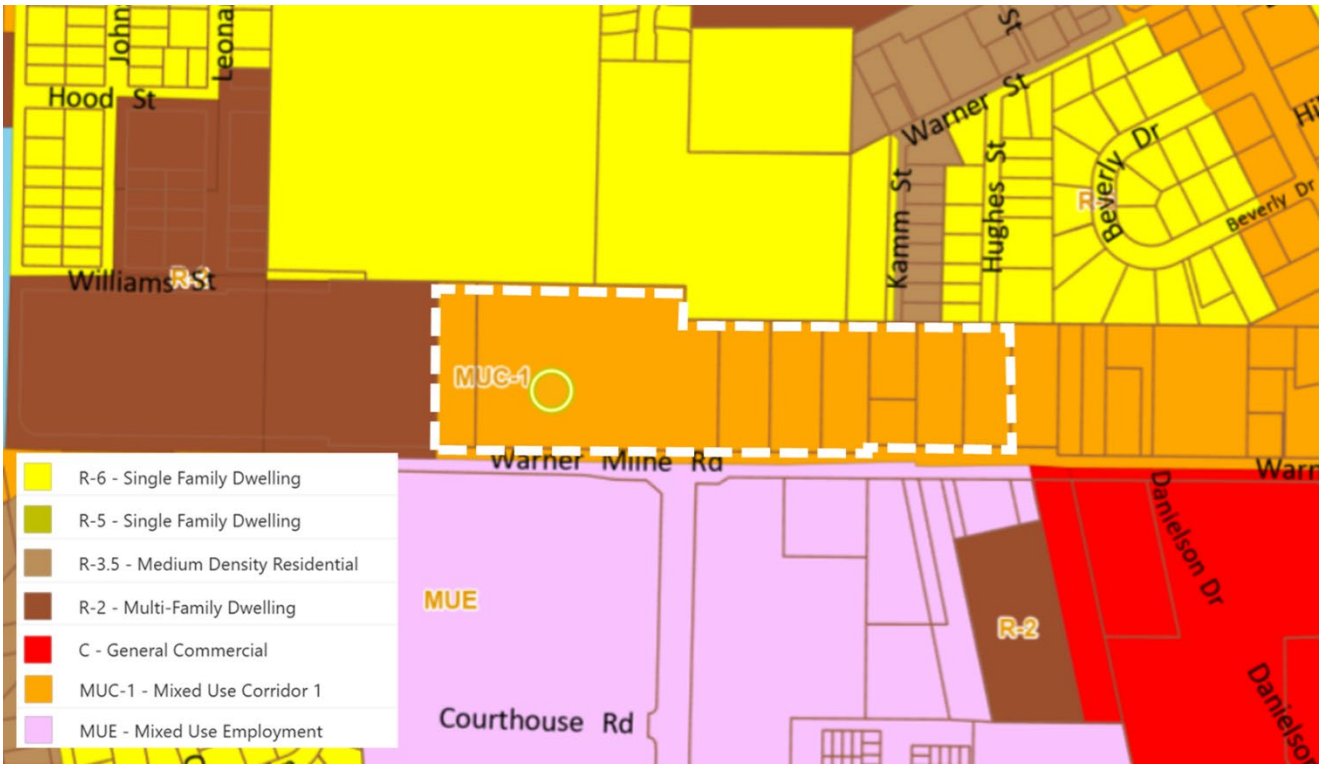

Figure 4. Oregon City zoning

As shown in Figure 4, the project site is located within the Mixed-Use Corridor 1 (MUC-1) zoning district. Development on the site must adhere to standards in the MUC-1 district, as outlined in Chapter 17.29 of the Oregon City Municipal Code (OCMC). The land north of Warner Milne Road is residential, while the land south of the road is designated for commercial and mixed-use employment. The Comprehensive Plan designates the site and the neighboring properties along the north side of Warner Milne Road as Mixed-Use Corridor.

The proposal requires several land use reviews, which may occur concurrently.

Conditional Use

In a pre-application meeting, Oregon City confirmed that PGE's existing facility and the proposed expansion are classified as a "utility facility" (OCMC 17.04.1450). Within the MUC-1 district, utility facilities are allowed through a conditional use review (17.29.030.E). That review is therefore the primary land use action needed for permitting the new development. Utility facilities may include "outdoor storage associated with the conditional use."

Site Plan and Design Review

Site plan and design review applies to all conditional uses (OCMC 17.62.030). These address site and building design, landscaping, parking, and waste/recycling areas. These include both general site design and specific standards for new buildings. The general standards required by 17.62.050 apply to landscaping, vehicle access and connectivity, on-site pedestrian circulation, public water and sanitary sewer facilities, building materials, and screening of mechanical equipment.

In addition to the general standards applicable to the site, the office portion of the new building is subject to "institutional, office, multi-family, retail, and commercial buildings" standards (17.62.060). Though a public utility operations center building does not fit neatly into any of these categories, Oregon City staff determined that these standards apply to the proposed office building, but not broadly to utilitarian storage structures like the garage or other accessory buildings.

The proposed development deviates from one code standard that requires a modification (17.62.015). While the main building is situated close to the property line, it does not occupy at least 60 percent of the site's very long frontage on Warner Milne Road. This modification will be addressed in Site Plan and Design review section.

Adjustments

Likewise, several standards are not met by the proposed design and require adjustments to be approved. The communications tower is ninety-five feet tall, twenty feet taller than is allowed outright by the code. As a critical safety element of a public utility facility, allowing collocation from "additional providers" is not permissible. Both of these things require adjustment (17.80.120). This adjustment is addressed in the Communication Facilities section.

The application requests an adjustment to exceed maximum parking. Because there is no directly applicable use category in the parking chapter, the closest land use category for the new utility building is "office," which when applied, results in a maximum parking allowance of fewer spaces than is needed to support the proposed use. PGE has direct experience at numerous other line centers that dictates its anticipated need for parking.

Therefore, a parking adjustment from the maximum is required, which is addressed in the Parking and Loading section (17.52.015).

The parking lot is also designed to accommodate the presence of some oversized fleet vehicles. These areas of paving need the flexibility for parking larger vehicles and so cannot be obstructed with interior parking lot landscaping islands. A parking adjustment is requested to landscaping in certain areas of the parking lot, which is addressed in the Parking and Loading section (17.52.015).

Natural Resources Overlay District (NROD)

At the south edge of the site, near an open culvert that passes under Warner Milne Road, the city has applied the NROD to a small area of PGE property. The mapping for this overlay comes from the environmental assessment done for a prior approved permit on the site, for the Kamm Street Apartments. That analysis received concurrence from Oregon City and was approved by the City Commission. Though never acted upon, PGE has adopted the boundary of the NROD as determined by the city in that case.

As shown on the site plans, PGE will construct its new facility around this NROD, curving the perimeter fence along the site frontage to avoid the vegetative buffer mapped on the site. In doing so, the design of this project will meet the exemption in OCMC 17.49.080(H): "where all new construction is located outside of the NROD boundary." Avoidance of the NROD area exempts PGE development.

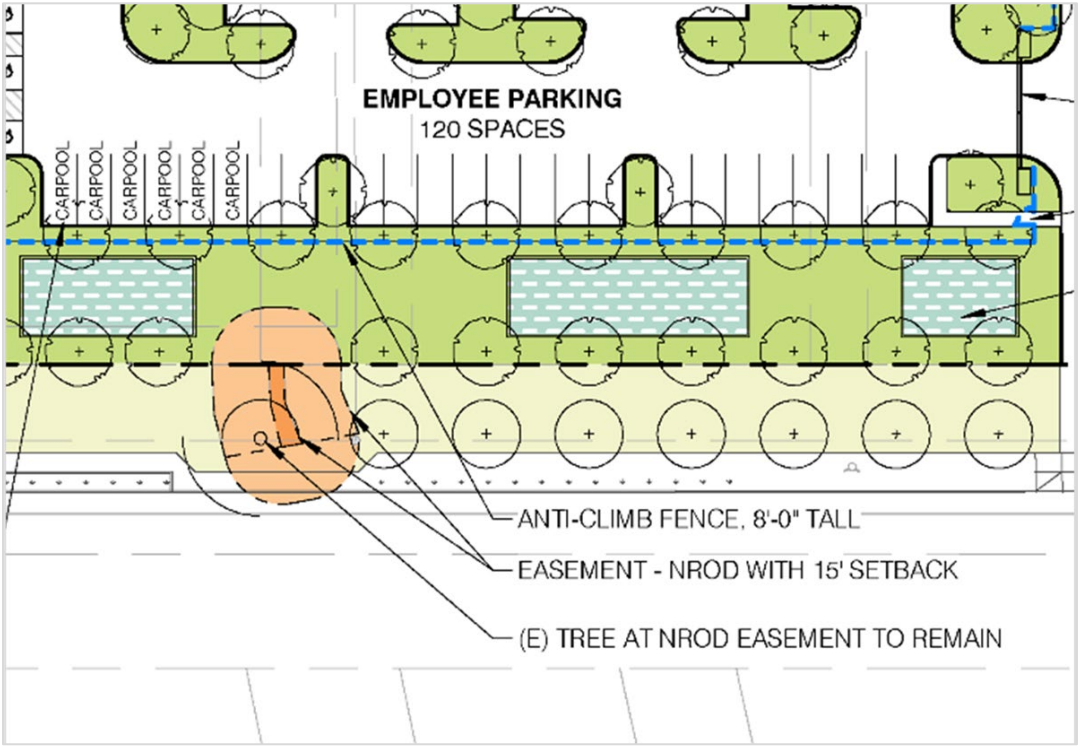

Figure 5. Site Plan, Showing NROD Area

South of PGE's property line, some land that is within the NROD vegetative buffer and in public right of way, including paved sidewalk and street that is on top of the culvert. PGE, in coordination

with Oregon City engineering staff, has narrowed the sidewalk at this location to keep the existing condition and minimize impacts to the resource. In that sense, replacement of the sidewalk at this location is exempt from NROD review because it is "replacement, addition, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased." (17.49.080.J) In short, PGE has avoided the NROD in the small area where it touches the site.

The findings in the following sections address all applicable and relevant OCMC standards. These include standards in the following chapters:

- OCMC 12.04 – Street Sidewalks and Public Spaces
- OCMC 13.12 - Stormwater Management
- OCMC 15.48 – Grading, Filling, and Excavating
- OCMC 16.12 – Minimum Public Improvements and Design Standards for Development
- OCMC 17.29 - MUC Mixed-Use Corridor District
- OCMC 17.41 - Tree Protection, Preservation, Removal And Replanting Standards
- OCMC 17.47 - Erosion And Sediment Control
- OCMC 17.49 - Natural Resource Overlay District
- OCMC 17.52 - Off-Street Parking And Loading
- OCMC 17.54 - Supplemental Zoning Regulations And Exceptions
- OCMC 17.56 - Conditional Uses
- OCMC 17.58 – Lawful Nonconforming Uses, Structures, And Lots
- OCMC 17.62 - Site Plan And Design Review
- OCMC 17.80 - Communication Facilities

Neighborhood Engagement

The development area is located within the Elyville Neighborhood Association. On September 9, 2025, PGE attended one of the neighborhood association meetings, where members of the project team presented plans for the Operations Center and answered questions. Neighbors expressed support for the proposal. PGE heard concerns about the design and the desire to preserve existing trees and to use native plantings wherever possible.

Meeting materials in compliance with OCMC 17.50.055 are included in Exhibit I.

Section 2: Land Use Review Findings

Findings for applicable land use criteria and standards are shown below. Oregon City code is quoted in *italics*, followed by the applicant's response in plain text. The order of findings is the same as listed in the city code, and follows a template provided by planning staff.

OCMC 12.04 – Street Sidewalks and Public Spaces

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.

C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.

Response: Warner Milne Road is the only right-of-way that abuts the site. The city has jurisdiction over this facility. Construction of facilities in or adjacent to the road will be only with permission from the city.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

Response: The PGE Operations Center proposes three driveway entrances to access the new development. These are all in accordance with OCMC 16.12.

12.04.030 - Maintenance and repair.

The owner of land abutting the street where a sidewalk has been constructed shall be responsible for maintaining said sidewalk and abutting curb, if any, in good repair.

Response: PGE assumes responsibility for maintaining the abutting sidewalk and curb.

12.04.032 - Required sidewalk repair.

A. When the Public Works Director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk. […]

Response: The proposed project includes repair and/or reconstruction of the existing north side sidewalk on Warner Milne as part of the overall construction of the site. Right-of-way improvements meet city engineering standards, except where a public works exception is requested, and are shown on the included plans.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

Response: No land is at any risk of slipping into the street or sidewalk, given the existing topography of the site, which is shown on existing conditions topographic survey drawings. No retaining wall is necessary at the street frontage.

12.04.100 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Response: Insofar as any pavement is excavated or damaged as part of the construction of the new PGE facility it will be restored per city standards as outlined in this section.

12.04.120 - Obstructions—Permit required.

A. Permanent Obstructions. It is unlawful for any person to place, put or maintain any obstruction, other than a temporary obstruction, as defined in subsection B. of this section, in any public street or alley in the City, without obtaining approval for a right-of-way permit from the City Commission by passage of a resolution. […]

B. Temporary Obstructions. […]

Response: PGE does not anticipate the need for any permanent or temporary obstructions in the right of way as part of this project. If any are needed, the applicant will follow the permitting process as outlined in this section.

12.04.150 - Street and alley vacations—Cost.

At the time of filing a petition for vacation of a street, alley or any part thereof, a fee as established by City Commission resolution shall be paid to the City. The City Commission, upon hearing such petition, may grant the same in whole or in part, or may deny the same in whole or in part, or may grant the same with such reservations as would appear to be for

the public interest, including reservations pertaining to the maintenance and use of underground public utilities in the portion vacated.

Response: No streets or alleys are proposed to be vacated as part of this application. This standard is not applicable.

12.04.170 - Street design—Purpose and general provisions.

All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings and engineering specifications. All streets shall be reviewed and approved by the city engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Response: The proposed improvements to the Warner Milne Road frontage and the new entrance to the site opposite Beavercreek Road have been designed in close collaboration with city engineers to insure conformance with the city's policies, standards, and specifications. Review of this design is part of the land use application and is shown on project drawings.

12.04.270 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Street Standard Drawings provide other design details, in which case the requirements of this chapter and the Public Works Street Standard Drawings shall control. In the case of work within ODOT or Clackamas County rights-of-way, work shall be in conformance with their respective construction standards.

Response: All work proposed is consistent with standard construction specifications. Details not provided with the land use drawings will be fleshed out in construction drawings that will be reviewed by Oregon City engineers.

OCMC 13.12 - Stormwater Management

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.

A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:

1. The conveyance facilities are located entirely on one privately owned parcel;

2. The conveyance facilities are privately maintained; and

3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.

Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the Building Official.

Response: Stormwater management will be done on-site, following city-approved standards and as outlined in the stormwater report prepared by KPFF, the applicant's consulting engineer. That preliminary report is part of this land use submittal.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:

1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or

2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.

Response: The proposed development creates more than 5,000 square feet of new impervious surface, therefore the development is not exempt from water quality and flow control requirements. Stormwater management will follow city-approved standards and will be as outlined in the stormwater report prepared by KPFF, the applicant's consulting engineer. That preliminary report is part of this land use submittal.

C. Exemptions. The following exemptions to subsection B of this section apply:

1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met: […]

Response: Flow control requirements apply because they do not meet the exemptions listed in this section. The stormwater plan is an attachment to this application.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the Public Works Stormwater and Grading Design Standards:

1. Bulk petroleum storage facilities;

2. Above ground storage of liquid materials;

3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;

4. Exterior storage of bulk construction materials;

5. Material transfer areas and loading docks;

6. Equipment and/or vehicle washing facilities;

7. Development on land with suspected or known contamination;

8. Covered vehicle parking for commercial or industrial uses;

9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and

10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.

Response: The proposed vehicle and equipment storage area on the west side of the site includes some of the above-listed uses. The stormwater management plan includes details about how these facilities will be managed according to Public Works Stormwater and Grading Design Standards.

13.12.080 - Submittal requirements.

A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards.

B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.

Response: The applicant's preliminary drainage and stormwater plan satisfies the submittal requirements listed above. The project is considered a single site, composed of multiple tax lots.

13.12.090 - Approval criteria for engineered drainage plans and drainage report.

An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:

A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.

B. The plan and report meet the requirements of the Public Works Stormwater and Grading Design Standards adopted by resolution under OCMC 13.12.020.

C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.

D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.

E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.

Response: The Stormwater and Grading Design Standards require certain stormwater management for any new and redeveloped impervious surfaces. New and redeveloped impervious surfaces on the site are proposed to be managed, retained, and treated with vegetated planter facilities that act as a storage area. Treatment will occur via biofiltration (stormwater filtering through vegetation and engineered soils). Treated stormwater will be collected in the underdrain system and routed to onsite storm sewer pipes). Following treatment and detention, stormwater will ultimately discharge to the public storm system at the south side of the site, a culvert leading under Warner Milne Road.

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the Public Works Stormwater and Grading Design Standards, provided any alternate has been approved and its use authorized by the City Engineer. The City Engineer may approve any such alternate, provided that the City Engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The City Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the City files.

Response: No alternative methods requiring special approval are proposed.

13.12.110 - Transfer of engineering responsibility.

Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the City shall be notified in writing and the work shall be stopped until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the City within seventy-two hours of accepting the position as project engineer.

Response: PGE will assign a project engineer. If this role changes, PGE will follow the written notice provisions outlined above.

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.

Response: The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city.

13.12.140 - Maintenance of public stormwater facilities.

A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the City through the granting of a stormwater easement or other means acceptable to the City.

Response: No public stormwater facilities are proposed.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the City a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the City accepts the stormwater conveyance system.

C. The City will perform an inspection of the development's entire publicly maintained stormwater system approximately forty-five days before the two-year warranty period expires. The stormwater system shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City.

Response: No public stormwater facilities are proposed.

13.12.145 - Maintenance of private stormwater facilities.

A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the Public Works Stormwater and Grading Design Standards. The information in the operation and maintenance plan shall satisfy the requirements of the Public Works Stormwater and Grading Design Standards.

B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to City inspection staff upon request.

C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.

Response: PGE will execute an agreement with Oregon City providing for the maintenance of private stormwater management facilities. This agreement will be in accordance with Public Works standards.

13.12.170 - Permits from other jurisdictions.

A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DEQ representatives.

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the City or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DSL/USACE representatives.

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if City

personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate ODFW representatives.

Response: PGE anticipates a 1200-C permit for the project. It will provide a copy of this permit to Oregon City as part of the approval process. The project will not require DSL, Army Corps, or ODFW permits, so these requirements are not applicable.

OCMC 15.48 – Grading, Filling, and Excavating

15.48.030 Applicability—Grading permit required.

A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:

1. Grading activities in excess of ten cubic yards of earth;

2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;

3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;

4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or

5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.

Response: Fill and grading are anticipated with the proposed development. The construction plans submitted with the land use application and subsequent permit submittals provide adequate information to evaluate the proposal and therefore do not require a separate grading permit outside this application. A preliminary grading plan is included with the land use drawings (Sheet C01).

15.48.040 - Grading permit exemptions.

The following filling and grading activities shall not require the issuance of a grading permit:[…]

Response: The project does not qualify for exemptions. The submitted materials satisfy the grading permit standards.

OCMC 16.12 – Minimum Public Improvements and Design Standards for Development

16.12.010 - Purpose and general provisions.

All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and City design standards and specifications. In reviewing applications for development, the City Engineer shall take into consideration any approved development and the remaining development potential of adjacent properties. All street, water, sanitary sewer, storm drainage and utility plans associated with any development shall be reviewed and approved by the City Engineer prior to construction. All streets, driveways or storm drainage connections to another jurisdiction's facility or right-of-way shall be reviewed by the appropriate jurisdiction as a condition of the preliminary plat and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Response: The proposed development will comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction.

16.12.011 - Applicability.

A. Compliance with this chapter is required for all development including land divisions, site plan and design review, master plan, detailed development plan and conditional use applications and all public improvements. Minor Site Plan and Design Review applications shall not be subject to this chapter unless improvements are proposed within the right-of-way, or as otherwise provided in this chapter.

B. Compliance with this chapter is also required for new construction or additions which exceed fifty percent of the existing square footage of all 3-4 plexes, single and two-family dwellings living space. Garages, carports, sheds, and porches may not be included in the calculation if these spaces are not living spaces. Accessory dwelling units are not subject to compliance with this chapter. All applicable 3-4 plexes, single and two -family dwellings shall provide any necessary dedications, easements or agreements as identified in the transportation system plan and this chapter, subject to constitutional limitations. In addition, the street frontage shall be improved to include the following priorities for improvements:

1. Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and

2. Plant street trees.

The cost of compliance with the standards identified in 16.12.011.B.1 and 16.12.011.B.2 is calculated based on the square footage valuation from the State of Oregon Building Codes Division and limited to ten percent of the total construction costs. The value of the alterations and improvements is based on the total construction costs for a complete project rather than costs of various project component parts subject to individual building permits. The entire proposed construction project cost includes engineering and consulting fees and construction costs. It does not include permit fees, recording fees, or any work associated with drafting or recording dedications or easements.

Response: The application includes site plan and design review. Therefore, Chapter 16.12 applies.

16.12.012 - Jurisdiction and management of the public rights-of-way.

The City has jurisdiction and exercises regulatory management over all public rights-of-way as defined and outlined within 12.04 of the Oregon City Municipal Code.

Response: The applicant acknowledges the city's authority over rights of way.

16.12.013 - Modifications.

The applicant may request and the review body may consider modification of the standards in this chapter resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications, except for adjustments approved by the City Engineer for tree preservation purposes pursuant to 16.12.013.A, shall be processed through a Type II Land Use application and may require additional evidence from a transportation engineer or others to verify compliance. Compliance with the following criteria is required:

A. The modification meets the intent of the standard;

Response: Per direction from the city, the PGE is requesting two modifications.

First, a modification is needed to the city's block length standard. This is noted in OCMC 17.62.050(B)(3): "Parcels larger than three acres shall provide streets as required in OCMC 16.12." The PGE site is approximately 12 acres in size. The proposed change will substitute an access for emergency vehicles and a parallel shared use path for bikes and pedestrians at the east edge of the property, rather than a full city street.

The intent of this standard is reflected in the heading of Section 17.62.050, "Vehicular Access and Connectivity." Access and connectivity through the site is retained by the new design. The public access through the PGE driveway creates emergency access on the east side of the site, connecting neighborhoods to the north with Warner Milne Road, in alignment with Hughes Street. This north-south connection creates access through the property for emergency vehicles without chopping up PGE property and creating a major barrier that would seriously impede operations. Likewise, a connection through the middle of the site would result in a dead-end stub leading to the cemetery. The cemetery is a very stable, longstanding land use that is highly unlikely to redevelop and ever complete this connection to the north and the rest of the city's street network. Consequently, the proposed connection at the east side of the site is a better solution for the intent of the standard, "connectivity." A parallel shared use path at the east edge of the site provides access and connectivity for non-motorized vehicles. Therefore, while the proposed public access through the site is not a full city street, access and connectivity is satisfied by the combination of an access for emergency vehicles along a Hughes Street alignment, and a parallel shared use path that connects to both Hughes and Kamm Streets. This solution meets the intent of the standard.

Second, a modification is needed from the city's standard widths and improvements along minor arterials. That standard, in Table 16.12.016, requires a significantly wider section that exists currently or is reasonable for future use: 116 feet of right of way and 94 feet of pavement. PGE's civil engineering consultant, KPFF, has provided narrative detail on this modification in Exhibit G. Effectively, the existing city standard requires a five-lane arterial through this corridor, when the existing condition is two lanes, occasionally widening to three. In the pre-application meeting and multiple subsequent meetings with city engineering staff, they indicated a narrower width would be acceptable, but that the applicant would need to request it through this modification process.

B. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;

Response: As shown, the modification includes safe and efficient movement for all the users listed in this standard. For the modification related to block length, pedestrians and bicyclists are accommodated with a new shared use path that connects into the neighborhood via Kamm Street and Hughes Street. Motor vehicles have access via the site driveway into the PGE parking lot, and emergency vehicles may use the same connection, but with access through to Hughes Street. Freight vehicles are most likely to use the driveway at Beavercreek Road to the paved work area and the back of the storeroom, but they may also use the PGE driveway to access the office building.

For the modification related to right-of-way width reduction, a narrower street allows safer conditions for pedestrians and bicyclists and enables the continuation of the current street section, with modernized facilities. Motor vehicles still have access to all the surrounding uses, without overbuilding the street to an unnecessarily wide dimension. The proposed Warner Milne section is sufficient to support both regular motor vehicle and freight uses.

In this way, all users may use the facility safely and efficiently.

C. The modification is consistent with an adopted transportation or utility plan; and

Response: The city's Transportation System Plan maps show, schematically, a potential future street through the center of the PGE property. As discussed in the pre-app meeting and in subsequent discussions with city planning and engineering staff, the intent of the TSP can be satisfied by creating that connection for emergency access, bicycles, and pedestrians somewhat further east along a Hughes Street alignment.

Likewise, the city's Transportation System Plan allows flexibility in situations where conditions allow it. For a location where a reduction from the standard widths of a street classification still allows all the mobility and benefits of the wider road, transportation plans are flexible enough to accommodate this change.

In that respect, the proposed modification is consistent with the city's adopted TSP.

D. The modification is complementary with a surrounding street design; or, in the alternative;

Response: The proposed modification to the provision of access through the site—from a full street through the center of the property to a public access at its east edge for emergency vehicles, bikes, and pedestrians—complements the surrounding street design by aligning with Hughes Street for vehicles and Hughes Street and Kamm Street for bikes and pedestrians. This modification is in fact superior to the alternative, a dead-end stub to the cemetery that would provide no connection to the surrounding street network and not be part of an existing street network.

The primary purpose of the proposed modification to allow a narrower improved right of way width than is dictated by the code's maximum for Minor Arterials is to complement surrounding street design. The reason is that it largely maintains the existing condition of the street and permits it to continue. Existing and projected future conditions do not anticipate the volume or type of traffic that would justify this large a facility. Conversely, a strict application of those standards would result in an excessively wide five lane section. PGE will dedicate land on its side of the street that would enable such a street section in the future, if conditions change significantly and the city finds a need for a greatly expanded street.

For these reasons, the proposed design of the site and the adjacent street section is complementary to surrounding street design.

E. If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.

Response: This standard only applies if the previous modification criteria are not being met. It is not applicable to this situation.

16.12.015 - Street design—Generally.

Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Development shall provide any necessary dedications, easements or agreements as identified in the Transportation System Plan, Trails Master Plan, and/or Parks and Recreation Master Plan and this chapter, subject to constitutional limitations. The location, width and grade of street shall be considered in relation to: existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. The arrangement of streets shall either:

A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;

B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the City Engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with OCMC 16.12.017 shall be required to preserve the objectives of street extensions.

C. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the City's Transportation System Plan. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation.

Response: As part of proposed development, the applicant is providing significant improvements, dedications, and easements to the public. This includes dedication of land along Warner Milne Road, street and sidewalk improvements within this public right of way, traffic signal and signage upgrades, a new eastbound left-turn lane on Warner Milne at Beavercreek Road, a shared use path, and public easements on the east side of the site. Each of these proposed changes has been designed according to city standards and in collaboration with city planning and engineering staff.

16.12.016 - Street design.

All development regulated by this chapter shall provide street improvements in compliance with the standards in Table 16.12.016 depending on the street classification set forth in the Transportation System Plan and the Comprehensive Plan designation of the adjacent property, unless an alternative plan has been adopted. The table implements the adopted Transportation System Plan and illustrates the maximum design standards. These standards may be reduced with an alternative street design which may be approved based on the modification criteria in OCMC 16.12.013. The steps for reducing the street design are found in the Transportation System Plan.

Table 16.12.016 Street Design. To read the table select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation for lands on either side of the street differs, the wider right-of-way standard shall apply.

Table 16.12.016 Street Design

[Modified to show relevant information]

Road Classi-fication	***Comp. Plan Designation***	***Right-of-Way Width***	***Pavement Width***	***Public Access***	***Sidewalk***	***Landscape Strip***	***Bike Lane***	***Street Parking***	***Travel Lanes***	***Median***
Minor Arterial	*Mixed Use, Commercial or Public/Quasi Public*	*116 ft.*	*94 ft.*	*0.5 ft.*	*10 ft.*	*0.5 ft. (5 ft. X 5 ft. tree wells within sidewalk)*	*6 ft.*	*8 ft.*	*(5) 12 ft. Lanes*	*6ft.*
Existing Street Section (half-street, on the project site's side of centerline)										
Minor Arterial	Mixed Use	33 ft.	17 ft.	1 ft.	0 ft.	0 ft.	6 ft.	None	11 ft.	0 ft.
Proposed Street Section (half-street, on the project site's side of centerline)										
Minor Arterial	Mixed Use	50 ft.	18 ft.	0.5 ft.	10 ft.	0.5 ft.	6 ft.	0 ft.	(1) 12 ft. full lane	0 ft.

1. Pavement width includes, bike lane, street parking, travel lanes and median.

2. Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.

3. A 0.5 foot curb is included in landscape strip or sidewalk width.

4. Travel lanes may be through lanes or turn lanes.

5. The 0.5 foot public access provides access to adjacent public improvements.

6. Alleys shall have a minimum right-of-way width of twenty feet and a minimum pavement width of sixteen feet. If alleys are provided, garage access shall be provided from the alley.

7. A raised concrete median or landscape median shall be utilized for roads identified to have access restrictions.

Response: The site has one frontage, Warner Milne Road, which is a minor arterial. The code standard, the existing condition, and the proposed change is shown in the revised Table 16.12.016 above.

The proposed change is less than the standard listed for Minor Arterials. However, because of the context of the street's existing public improvements, PGE collaborated with city engineering staff to design improvements through the modification process outlined in OCMC 16.12.013.

The applicant has designed the facility in anticipation of the approval of this modification. Findings for the modification are found above in the response to those criteria. The applicant's engineer has also submitted a memo explaining the change (Exhibit G).

A. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the development. Both sidewalks and curbs are to be constructed to City standards and at widths set forth above, and according to plans and specifications provided by the City Engineer. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a development without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the development application. Applicants for partitions may be allowed to meet this requirement by providing the City with a financial guarantee per OCMC 16.12.110.

Response: A continuous sidewalk is provided along the entire Warner Milne frontage of the site, as shown on project drawings. Along the full frontage, the sidewalk zone includes tree wells in some locations and a planting strip in others for stormwater management. All new sidewalk and curbs will be constructed to city engineering standards.

B. Pedestrian and Bicycle Accessways Routes. If deemed appropriate to extend pedestrian and bicycle routes, existing or planned, the decision-maker may require the installation of separate pedestrian and bicycle facilities.

Response: The applicant will provide full sidewalks and a bike lane on the north side of Warner Milne along the site frontage as required and directed by city staff. This is not a separated facility, but integrated into the right of way. To satisfy connectivity requirements, a shared use path will be constructed at the east edge of the site, aligned with Hughes Street.

C. Street Name Signs and Traffic Control Devices. The applicant shall install street signs and traffic control devices as directed by the City Engineer. Street name signs and traffic control devices shall be in conformance with all applicable city regulations and standards.

Response: A new north approach will be provided at the existing signalized intersection of Warner Milne and Beavercreek, which also serves the main truck driveway to the PGE site. The new north approach and existing traffic signal will be configured in conformance with all city regulations and standards.

D. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all City regulations.

Response: There are existing street lights along Warner Milne Road. No new street lights are anticipated as part of the development project.

E. Any new street proposed with a pavement width of less than thirty-two feet shall be processed through OCMC 16.12.013 and meet minimum life safety requirements, which may include fire suppression devices as determined by the Fire Marshall to assure an adequate level of fire and life safety. The modified street shall have no less than a twenty-foot wide unobstructed travel lane.

Response: No new streets are proposed. Pavement width exceeds 32 feet.

F. All development shall include vegetated planter strips that are five feet in width or larger and located between the sidewalk and curb unless otherwise approved pursuant to this chapter. All development shall utilize the vegetated planter strip for the placement of street trees or place street trees in other acceptable locations, as prescribed by OCMC 12.08. Development proposed along a collector, minor arterial, or major arterial roads may place street trees within tree wells within a wider sidewalk in lieu of a planter strip. In addition to street trees per OCMC 12.08, vegetated planter strips shall include ground cover and/or shrubs spaced four feet apart and appropriate for the location. No invasive or nuisance plant species shall be permitted.

Response: The proposed section along the Warner Milne frontage has several different conditions. Mostly, it is a 10-foot, curb-tight sidewalk, with tree wells at the street edge. This is consistent with the existing sidewalk format, except with new street trees. In other locations, there is a planting strip between the sidewalk and the street, both to manage stormwater and to provide a vegetated buffer. These locations and conditions are shown on the street plans and the landscape plans. The change to dimensions and layout requires a modification, which is included in this application request.

G. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker and only where dedication of a street is deemed impracticable.

H. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.

Response: A vehicle and pedestrian access easement across the east side driveway and along the shared use path are proposed as part of this development. This site layout was determined in collaboration with city planning and engineering staff. Dedicating a street through the center of the site, which would stub out into a cemetery, has been deemed impracticable. As such the application includes a modification of the requirement to build a street at this location, and instead provides connectivity and public access through other means.

Dedication of additional land along the Warner Milne site frontage is as shown on the site plans.

16.12.017 - Street design—Access control.

A. A street which is dedicated to end at the boundary of the development or in the case of half-streets dedicated along a boundary shall have an access control granted to the City as a City controlled plat restriction for the purposes of controlling ingress and egress to the property adjacent to the end of the dedicated street. The access control restriction shall exist until such time as a public street is created, by dedication and accepted, extending the street to the adjacent property.

B. The City may grant a permit for the adjoining owner to access through the access control.

C. The plat shall contain the following access control language or similar on the face of the map at the end of each street for which access control is required: "Access Control (See plat restrictions)."

D. Said plats shall also contain the following plat restriction note(s): "Access to (name of street or tract) from adjoining tracts (name of deed document number[s]) shall be controlled by the City of Oregon City by the recording of this plat, as shown. These access controls shall be automatically terminated upon the acceptance of a public road dedication or the recording of a plat extending the street to adjacent property that would access through those Access Controls."

Response: No such streets are proposed. This standard is not applicable.

16.12.018 - Street design—Alignment.

The centerline of streets shall be:

A. Aligned with existing streets by continuation of the centerlines; or

B. Offset from the centerline by no more than five feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.

C. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.

Response: The centerline of Warner Milne is unchanged. Additional right of way is dedicated. Three driveways are proposed along the site frontage. The main truck entrance is aligned with Beavercreek Road opposite the site. No other street intersections exist on adjacent sites near the other two driveways at the east and west ends of the property.

16.12.019 - Traffic sight obstructions.

All new streets shall comply with the Traffic Sight Obstructions in Chapter 10.32.

Response: No new streets are proposed. The Site Plan (Sheet A11) shows sight distances in compliance with OCMC 10.32.

16.12.020 - Street design—Intersection angles.

Except where topography requires a lesser angle, streets shall be laid out to intersect at angles as near as possible to right angles. In no case shall the acute angles be less than eighty degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least one hundred feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least fifty feet of tangent adjacent to the intersection unless topography requires a lesser distance. All street intersections shall be provided with a minimum curb return radius of twenty-five feet for local streets. Larger radii shall be required for higher street classifications as determined by the City Engineer. Additional right-of-way shall be required to accommodate curb returns and sidewalks at intersections. Ordinarily, intersections should not have more than two streets at any one point.

16.12.021 - Street design—Grades and curves.

Grades and center line radii shall conform to standards approved by the City Engineer.

Response: No new streets are proposed. The major truck entrance to the PGE site is at a right angle entrance to the street and directly across from Beavercreek Road.

16.12.022 - Street design—Development abutting arterial or collector street.

Where development abuts or contains an existing or proposed arterial or collector street, the decision maker may require: access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line; or such other treatment it deems necessary to adequately protect residential properties or afford separation of through and local traffic. Reverse frontage lots with suitable depth may also be considered an option for residential property that has arterial frontage. Where access for development abuts and connects for vehicular access to another jurisdiction's facility then authorization by that jurisdiction may be required.

Response: Warner Milne is a minor arterial. The design of the frontage along the site was laid out in collaboration with city planning and engineering staff. None of the screening elements or easements listed above are appropriate or required.

16.12.023 - Street design—Pedestrian and bicycle safety.

Where deemed necessary to ensure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, the decision maker may require that local streets be so designed as to discourage their use by nonlocal automobile traffic.

The City Engineer may require that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities. These curb extensions can increase the visibility of pedestrians and provide a shorter crosswalk distance as well as encourage motorists to drive slower. The

City Engineer may approve an alternative design that achieves the same standard for constrained sites.

Response: Street design, laid out in collaboration with city planning and engineering staff and consistent with all city standards, is shown on site drawings. Warner Milne is a minor arterial, and the main intersection at Beavercreek Road includes signalized crossings and crosswalks.

16.12.024 - Street design—Half street.

Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard. […]

16.12.025 - Street design—Cul-de-sacs and dead-end streets.

The City discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as geologic hazards, wetland, natural or historic resource areas, pre-existing dedicated open space, pre-existing development patterns, arterial access restrictions or similar situation as determined by the decision maker. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed. […]

Response: The proposal does not include any half streets or dead-ends.

16.12.026 - Street design—Alleys. […]

Response: No alleys are proposed or required. This standard is not applicable.

16.12.027 - Street design—Off-site street improvements.

During consideration of the preliminary plan for a development, the decision maker shall determine whether existing streets impacted by, adjacent to, or abutting the development meet the applicable design or dimensional requirements. Where such streets fail to meet these requirements, the decision-maker shall require the applicant to make proportional improvements sufficient to achieve conformance with minimum applicable design standards required to serve the proposed development.

Response: No off-site street improvements are required.

16.12.028 - Street design—Transit.

Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with transit agencies where the application impacts transit streets as identified in OCMC 17.04.1310. Pedestrian/bicycle access ways shall be provided as necessary to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.

Response: Under proposed conditions, Warner Milne has 10-foot wide sidewalks and a six-foot bike lane along the frontage of the site. Transit access is unchanged from existing conditions.

16.12.029 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standards in effect at the time the permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Response: Where excavations are proposed, the application will restore pavement following city standards.

16.12.030 - Blocks—Width.

The width of blocks shall ordinarily be sufficient to allow for two tiers of lots with depths consistent with the type of land use proposed. The length, width and shape of blocks shall take into account the need for adequate building site size, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation, and limitations imposed by topography and other natural features.

All new streets shall be designed as local streets unless otherwise designated as arterials and collectors in the current adopted Transportation System Plan. The maximum block spacing between streets is 530 feet and the minimum block spacing between streets is 150 feet as measured between the right-of-way centerlines except in zones GI, CI, MUE, I, and WFDD where determining the appropriate street spacing will be determined by the City Engineer. If the maximum block size is exceeded, pedestrian accessways shall be provided every 330 feet. The spacing standards within this section do not apply to alleys.

Response: No new blocks or streets are being proposed with this application.

16.12.031 - Street design—Street names.

Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names shall conform to the established standards in the City and shall be subject to the approval of the City.

Response: No new streets are proposed.

16.12.032 – Public off-street pedestrian and bicycle accessways.

[…] Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding three hundred thirty feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.

A. Entry points shall align with pedestrian crossing points along adjacent streets and with adjacent street intersections.

B. Accessways shall be free of horizontal obstructions and have a nine foot six inch high vertical clearance to accommodate bicyclists. To safely

accommodate both pedestrians and bicycles, accessway right-of-way widths shall be as follows:

1. Accessways shall have a fifteen-foot wide right-of-way with a seven-foot wide paved surface with a minimum four-foot planter strip on either side.

2. If an accessway also provides secondary fire access […]

C. Accessways shall be direct with at least one end point of the accessway always visible from any point along the accessway. On-street parking shall be prohibited within fifteen feet of the intersection of the accessway with public streets to preserve safe sight distance and promote safety.

Response: The new shared-use path is an off-street pedestrian and bicycle accessway, designed in coordination with city planning and engineering staff. The path is identified as a needed connection in the City's Trails Master Plan.

With access points on Warner Milne Road on the project site's northwest side, and Hughes Street and Kamm Street to the northeast, the L-shaped path will connect the three streets via a public access easement.

The path was designed in coordination with city planning and engineering staff to maximize connectivity and safe use by pedestrians and cyclists. The Site Plan demonstrates compliance with sub-standards (A) through (C).

D. To enhance pedestrian and bicycle safety, accessways shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.

Response: Bollard light fixtures will be provided for the shared-use path in compliance with the above standard.

E. Accessways shall comply with Americans with Disabilities Act (ADA).

Response: The shared-use path will comply with the Americans with Disabilities Act (ADA).

F. The planter strips on either side of the accessway shall be landscaped along adjacent property by installation of the following:

1. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average;

2. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees;

3. A two-inch minimum caliper tree for every thirty-five feet along the accessway. Trees may be planted on either side of the accessway, provided they are spaced no more than thirty-five feet apart; and

4. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.

Response: The planter strips on the east and north sides of the shared-use path will be located along adjacent property. The Landscape Plan (Exhibit C, Sheet L03) shows proposed plantings in these areas, demonstrating compliance with sub-standards (1) through (4).

G. Accessways shall be designed to prohibit unauthorized motorized traffic. Curbs and removable, lockable bollards are suggested mechanisms to achieve this.

Response: The width of the shared use path (seven feet) will deter unauthorized vehicles from accessing the path. Furthermore, the Site Plan shows removable bollards that will prevent unauthorized vehicles from access via Warner Milne Road, Hughes Street, and Kamm Street, in compliance with the above standard.

H. Accessway surfaces shall be paved with all-weather materials as approved by the city. Pervious materials are encouraged. Accessway surfaces shall be designed to drain stormwater runoff to the side or sides of the accessway. Minimum cross slope shall be two percent.

I. In parks, greenways or other natural resource areas […].

J. The decision maker may approve an alternative accessway design due to existing site constraints through the modification process set forth in OCMC 16.12.013.

Response: The shared-use path will be paved with asphalt and the Grading and Storm Drainage Plan (Sheet C01) demonstrates compliance with standard (H).

Standards (I) and (J) do not apply to the proposal as the path is not located within a park, greenway, or other natural resource area, nor is PGE requesting an alternative accessway design.

K. Ownership, liability and maintenance of accessways. To ensure that all pedestrian/bicycle accessways will be adequately maintained over time, the city engineer shall require one of the following:

1. Dedicate the accessways to the public as public right-of-way prior to the final approval of the development; or

2. The developer incorporates the accessway into a recorded easement or tract that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway.

Response: PGE will incorporate the shared-use path (shown on the Site Plan) into a recorded public-access easement, in accordance with sub-standard (2).

16.12.033 - Mobility standards.

Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection E below, to be maintained at or below the following mobility standards during the two-hour peak operating

conditions. The first hour has the highest weekday traffic volumes and the second hour is the next highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the Transportation System Plan (TSP) or as otherwise identified by the City Engineer.

A. For intersections within the regional center, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

3. Intersections located on the Regional Center boundary shall be considered within the Regional Center.

B. For intersections outside of the Regional Center but designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

C. For intersections outside the boundaries of the Regional Center and not designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. For signalized intersections:

a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

2. For unsignalized intersections outside of the boundaries of the Regional Center:

a. For unsignalized intersections, during the peak hour, all movements serving more than twenty vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than twenty vehicles during the peak hour.

D. For the intersection of OR 213 & Beavercreek Road, the following mobility standards apply:

1. During the first, second & third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.

E. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:

I-205/OR 99E Interchange

State intersections located within or on the Regional Center Boundaries

1. In the case of conceptual development approval for a master plan that impacts the above references intersections:

a. The form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the Code in place at the time the detailed development plan is submitted; and

b. Only those trips approved by a detailed development plan review are vested.

2. Development which does not comply with the mobility standards for the intersections identified in OCMC 16.12.033 shall provide for the improvements identified in the Transportation System Plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

Response: A traffic study is included with the application materials (Exhibit D). The proposed development complies with city standards as outlined in this section and existing and proposed public infrastructure can accommodate the new construction. See the study for additional details.

16.12.035 - Driveways.

A. All new development and redevelopment shall meet the minimum driveway spacing standards identified in Table 16.12.035.A.

Table 16.12.035.A Minimum Driveway Spacing Standards

[Revised to show relevant information]

Street Functional Classification	***Minimum Driveway Spacing Standards***	***Distance***
Minor Arterial Streets	*Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings*	*175 ft.*

[…]

2. All driveways, except for shared driveways, shall be placed a minimum of five feet from the property line.

3. The distance from a street corner to a driveway is measured along the right-of-way from the edge of the intersection (on the same side of the road) right-of-way to the nearest portion of the driveway and the distance between driveways is measured at the nearest portions of the driveway at the right-of-way.

Response: The proposed design has three site driveways off Warner Milne Road. The nearest street corners are Mollala Avenue, which is 1,200 feet east of the easternmost driveway, and Linn Avenue, which is 1,100 feet west of the westernmost driveway. The main truck driveway is signalized and aligned with Beavercreek Road across Warner Milne Road.

The west driveway is approximately 108 feet from the west property line. The east driveway is approximately 28 feet from the east property line. All driveways meet the city's spacing standards.

B. Nonresidential or multi-family residential driveways that generate high traffic volumes shall be treated as intersections and shall adhere to requirements of OCMC 16.12.020.

C. One driveway may be allowed per frontage, unless otherwise restricted. In no case shall more than two driveways be allowed for any single-family attached or detached residential property, duplex, 3-4 plex, or property developed with an ADU or internal conversion with multiple frontages, unless otherwise approved by the City Engineer.

Response: The PGE site has more than 1,400 linear feet of frontage on Warner Milne Road. It proposes three driveways, which is a net reduction in access points by four from existing conditions. The residential building driveways from the converted houses (now removed) at the east side of the site will be closed. The driveway at the Beavercreek intersection is designed in collaboration with city engineers and meets the requirements of OCMC 16.12. The property is not residential, so subsection (C) does not apply.

D. When a property fronts multiple roads, […]

Response: The property fronts only Warner Milne Road. This standard does not apply.

E. All driveway approaches shall be limited to the dimensions identified in Table 16.12.035.D.

Table 16.12.035.D Driveway Approach Size Standards

[Revised to show relevant information]

Property Use	***Minimum Driveway Approach Width***		***Maximum Driveway Approach Width***
Commercial, Industrial, Office, Institutional, Mixed Use, and/or Nonresidential	*One-Way* *12 feet*	*Two-Way* *20 feet*	*40 feet*

Driveway widths shall match the width of the driveway approach where the driveway meets sidewalk or property line but may be widened onsite (for example between the property line and the entrance to a garage). Groups of more than four parking spaces shall be so located

and served by driveways so that their use will not require backing movements or other maneuvering within a street right-of-way other than an alley.

F. The City Engineer reserves the right to require a reduction in the number and size of driveway approaches as far as practicable for any of the following purposes:

1. To provide adequate space for on-street parking;

2. To facilitate street tree planting requirements;

3. To assure pedestrian and vehicular safety by limiting vehicular access points; and

4. To assure that adequate sight distance requirements are met.

a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line.

Response: The three driveway approaches have been designed in collaboration with city engineers. The western and eastern driveway approaches are 30 and 24 feet, respectively. The Beavercreek Road-aligned driveway, the site's main truck entrance, has been designed to complement its abutting streets and is 42 feet wide to match the existing width of Beavercreek Road to the south (per guidance from city engineering staff). The proposed width will accommodate the large truck traffic that will be its primary use. An approach that is two feet wider than allowed by the maximum in this table may be permitted as an exception under subsection (H), below.

G. For all driveways, the following standards apply.

1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet back into the property as measured from the current edge of sidewalk or street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the City Engineer.

2. Any driveway approach built within public right-of-way shall be built and permitted per City requirements as approved by the City Engineer.

3. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the City Engineer.

Response: The proposed curb cuts on the Warner Milne frontage have approved concrete approaches to the street. Designs are consistent with city engineering standards and as approved by the City Engineer. None of them have slopes greater than fifteen percent as shown on the site plan.

H. Exceptions. The City Engineer reserves the right to waive these standards or not allow driveway access, if the driveway(s) would cause a significant traffic safety hazard. Narrower driveway widths may be considered where field conditions preclude use of recommended widths. When larger vehicles and trucks will be the predominant users of a particular driveway, turning templates may be utilized to develop a driveway width that can safely and expeditiously accommodate the prevalent type of ingress and egress traffic.

Response: As noted above, the main truck driveway to the site has been designed in collaboration with the city engineering staff. This entry is primarily for use by very large utility service vehicles. Because it is at the intersection and aligned with Beavercreek Road to the south, it has two lanes for leaving the site, one left-turn lane for travel eastbound on Warner Milne and one shared through/right lane for both southbound on Beavercreek and westbound on Warner Milne. Including the single inbound driveway land, this necessitates a three-lane width for operational reasons and matches the 42-foot section on Beavercreek Road south of Warner Milne. This width "safely and expeditiously" accommodates anticipated traffic at this driveway and so is eligible for the exception requested here.

16.12.065 - Building site—Grading.

Grading of building sites shall conform to the State of Oregon Structural Specialty Code, Title 18, any approved grading plan and any approved residential lot grading plan in accordance with the requirements of OCMC 13.12,15.48, 16.12 and the Public Works Stormwater and Grading Design Standards, and the erosion control requirements of OCMC 17.47.

Response: Grading is shown on project plans (Sheet C01) and is in conformance with city stormwater and grading design standards.

16.12.085 - Easements.

The following shall govern the location, improvement and layout of easements:

A. Utilities. Utility easements shall be required where necessary as determined by the City Engineer. Insofar as practicable, easements shall be continuous and aligned from block-to-block within the development and with adjoining subdivisions or partitions. Specific utility easements for water, sanitary or storm drainage shall be provided based on approved final engineering plans.

B. Unusual Facilities. Easements for unusual facilities such as high voltage electric transmission lines, drainage channels and stormwater detention facilities shall be adequately sized for their intended purpose, including any necessary maintenance roads. These easements shall be shown to scale on the preliminary and final plats or maps. If the easement is for drainage channels, stormwater detention facilities or related purposes, the easement shall comply with the requirements of the Public Works Stormwater and Grading Design Standards.

C. Watercourses. Where a development is traversed or bounded by a watercourse, drainageway, channel or stream, a stormwater easement or drainage right-of-way shall be provided which conforms substantially to the line of such watercourse, drainageway, channel or stream and is of a sufficient width to allow construction, maintenance and control for the purpose as required by the responsible agency. For those subdivisions or partitions which are bounded by a stream of established recreational value, setbacks or easements may be required to prevent impacts to the water resource or to accommodate pedestrian or bicycle paths.

D. Access. When easements are used to provide vehicular access to lots within a development, the construction standards, but not necessarily width standards, for the easement shall meet City specifications. The minimum width of the easement shall be 20 feet. The easements shall be improved and recorded by the applicant and inspected by the City Engineer. Access easements may also provide for utility placement.

E. Resource Protection. Easements or other protective measures may also be required as the Community Development Director deems necessary to ensure compliance with applicable review criteria protecting any unusual significant natural feature or features of historic significance.

Response: A public utility easement has been provided at the Warner Milne frontage of the site, as indicated on project plans. Public access easements will be provided for the shared-use path and for emergency access to the driveway on the east side of the site. A natural resources easement to protect the small area of NROD at the stormwater culvert will be provided if determined necessary by the city.

16.12.090 - Minimum improvements—Procedures.

In addition to other requirements, improvements installed by the applicant either as a requirement of these or other regulations, or at the applicant's option, shall conform to the requirements of this title and be designed to City specifications and standards as set out in the City's facility master plan and Public Works Stormwater and Grading Design Standards. The improvements shall be installed in accordance with the following procedure:

A. Improvement work shall not commence until construction plans have been reviewed and approved by the City Engineer and to the extent that improvements are located in County or State right-of-way, they shall be approved by the responsible authority. To the extent necessary for evaluation of the proposal, the plans may be required before approval of the preliminary plat of a subdivision or partition. Expenses incurred thereby shall be borne by the applicant and paid for prior to final plan review.

B. Improvements shall be constructed under the inspection and approval of the City Engineer. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. Where required by the City Engineer or other City decision-maker, the applicant's project engineer also shall inspect construction.

C. Erosion control or resource protection facilities or measures are required to be installed in accordance with the requirements of OCMC 17.47, 17.49 and the Public Works Erosion and Sediment Control Standards.

D. Underground utilities, waterlines, sanitary sewers and storm drains installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property.

E. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer upon completion of the improvements.

F. The City Engineer may regulate the hours of construction and access routes for construction equipment to minimize impacts on adjoining residences or neighborhoods.

Response: All the improvements to right of way, stormwater facilities, and other elements identified in these plans will be installed according to city standards and under the direction of the City Engineer.

16.12.095 - Minimum improvements—Public facilities and services.

The following minimum improvements shall be required of all applicants for a development, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:

A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the City's planned level of service on all public streets, including alleys within the development and those portions of public streets adjacent to but only partially within development. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points or curvature and points of tangency of their center line, and at such other points as directed by the City Engineer.

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within a development and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with City drainage master plan requirements, OCMC 13.12 and the Public Works Stormwater and Grading Design Standards.

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a development in accordance with the City's sanitary sewer design standards and shall connect those lots or parcels to the City's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. Applicants are responsible for extending the City's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development. The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the City Engineer before construction begins.

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a development in accordance with the City public works water system design standards and shall connect those lots or parcels to the City's water system. Applicants are responsible for extending the City's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

E. Street Trees. Refer to OCMC 12.08, Street Trees.

F. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane specified by the City Engineer.

G. Other Utilities. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities.

Existing and new electrical lines and other wires, including but not limited to communication, street lighting and cable television, shall be placed underground.

H. Oversizing of Facilities. All facilities and improvements shall be designed to City standards as set out in the City's facility master plan, public works design standards, or other City ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the City for oversizing based on the City's reimbursement policy and funds available, or provide for recovery of costs from intervening properties as they develop.

I. Erosion Control Plan—Mitigation. The applicant shall be responsible for complying with all applicable provisions of OCMC 17.47 with regard to erosion control.

Response: PGE's plans show improvements to the right of way, stormwater facilities on site, street trees, and public access through the site. These changes, in addition to any others shown on the drawings, will be consistent with city engineering standards.

16.12.100 - Same—Road standards and requirements.

A. The creation of a public street and the resultant separate land parcels shall be in conformance with requirements for subdivisions or partitions and the applicable street design standards of this Chapter. However, the decision-maker may approve the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions where any of the following conditions exist:

1. The establishment of the public street is initiated by the City Commission and is declared essential for the purpose of general traffic circulation and the partitioning of land is an incidental effect rather than the primary objective of the street;

2. The tract in which the street is to be dedicated is within an isolated ownership either not over one acre or of such size and characteristics as to make it impossible to develop building sites for more than three dwelling units.

B. For any public street created pursuant to subsection A of this section, a copy of a preliminary plan and the proposed deed shall be submitted to the Community Development Director and City Engineer at least ten days prior to any public hearing scheduled for the matter. The plan, deed and any additional information the applicant may submit shall be reviewed by the decision-maker and, if not in conflict with the standards of Title 16 and Title 17, may be approved with appropriate conditions.

Response: No public streets are proposed. This standard does not apply.

16.12.105 - Same—Timing requirements.

A. Prior to applying for final plat approval, the applicant shall either complete construction of all public improvements required as part of the preliminary plat approval or guarantee the construction of those improvements. Whichever option the applicant elects shall be in accordance with OCMC 17.50.140.

B. Construction. The applicant shall construct the public improvements according to approved final engineering plans and all applicable requirements of this Code, and under

the supervision of the City Engineer. Under this option, the improvement shall be complete and accepted by the City Engineer prior to final plat approval.

Response: No final plat approval is required or requested. This standard does not apply.

16.12.110 -Public improvements—Financial guarantees.

A. To ensure construction of required public improvements, the applicant shall provide the City with a performance guarantee in accordance with OCMC 17.50.140.

B. After satisfactory completion of required public improvements and facilities, all public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period as prescribed in OCMC 17.50.141.

Response: A performance guarantee will be provided by the applicant if necessary to satisfy the requirements of this section.

16.12.120 Waiver of Remonstrance

The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development. To ensure compliance with this chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the City Attorney.

Response: A waiver of remonstrance is not likely to be necessary for the proposed development, since the frontage proposed is the full build-out of the city's desired final condition, with the approved modification.

OCMC 17.29 - MUC Mixed-Use Corridor District

17.29.010 - Designated.

The mixed-use corridor (MUC) district is designed to apply along selected sections of transportation corridors such as Molalla Avenue, 7th Street, Beavercreek Road, and along Warner-Milne Road. Land uses are characterized by high-volume establishments such as retail, service, office, multi-family residential, lodging, recreation and meeting facilities, or a similar use as defined by the community development director. A mix of high-density residential, office, and small-scale retail uses are encouraged in this district. Moderate density (MUC-1) and high density (MUC-2) options are available within the MUC zoning district. The area along 7th Street is an example of MUC-1, and the area along Warner-Milne Road is an example of MUC-2.

17.29.020 - Permitted uses—MUC-1 and MUC-2.

[…]

17.29.030 - Conditional uses—MUC-1 and MUC-2 zones.

The following uses are permitted in this district when authorized and in accordance with the process and standards contained in OCMC 17.56:

[…]

E. Public utilities and services, and utility facilities, including sub-stations (such as buildings, plants and other structures) and outdoor storage associated with the conditional use;

Response: The existing line center and proposed operations center is a public utility use (17.04.985). This use of the site was confirmed in the Pre-application Notes (See Exhibit B). As a public utility, the use is permitted with conditional use approval in the MUC-1 zone.

In addition, outdoor storage and maintenance activities associated with the public utility use is also a conditional use. This code language is a result of the 2023 legislative code text amendment to OCMC 17.29.030(E) described in Section 1. Therefore, the proposed Operations Center and the storage and work area uses that are part of the site layout are all allowed conditionally under the base zone use allowances. They must comply with the OCMC 17.56 *Conditional Use* standards, which are addressed in the corresponding section of this narrative.

17.29.050 - Dimensional standards—MUC-1.

[…]

Table 17.29.050 - Dimensional standards—MUC-1 (A) – (G)

Standard	Requirement	Proposed
Minimum lot area	None	11.7 acres
Maximum building height	Forty feet or three stories, whichever is less	30.6 feet
Minimum required setbacks if **not** abutting a residential zone	None	N/A
Minimum required interior and rear yard setbacks if abutting a residential zone:	Twenty feet, plus one foot additional yard setback for every one foot of building height over thirty five feet	Rear: 3 feet (see response) Interior side: 25 feet (see response)
Maximum allowed setbacks.		
Front yard:	Five feet	Five feet
Interior side yard:	None	460 feet
Corner side setback abutting street:	Thirty feet	N/A
Rear yard:	None	217 feet
Maximum lot coverage of the building and parking lot:	80 percent	+/- 30 percent
Minimum required landscaping (including landscaping within a parking lot):	20 percent	21 percent
Residential minimum net density	17.4 units per acre	N/A, no residential development proposed

Response: Revised Table 17.29.050 above quotes the applicable dimensional requirements next to the proposed changes. As demonstrated in the submitted Site Plan (Sheet A11) and Elevation Drawings (Sheets A31 – A34), the Operations Center will meet all applicable base zone dimensional standards, with one exception, which is an existing condition.

The existing garage at the north side of the property is three feet from the north property line. This structure will be repaired, but its footprint will not change and the longstanding permitted building

will be retained at its current location. Though this structure encroaches on the 20-foot minimum rear setback, it is an existing nonconforming structure, and proposed renovations do not increase the degree of nonconformity. Building changes do not change the building footprint.

Also notable with setbacks is that both the communications tower and its auxiliary equipment shelter east of the garage building are located farther than 25 feet from all abutting property lines. That 25-foot minimum setback requirement is in the Communication Facilities chapter, OCMC 17.80.110(D), and supersedes the minimum side setback of the MUC-1 zone. The tower infrastructure complies with setbacks. The tower itself is a structure but not a building, and is therefore subject to a different height standard than the one listed above. Those standards are addressed in the responses to Section 17.80.

In short, all new development complies with applicable standards of the MUC-1 zone.

17.29.070 - Floor area ratio (FAR).

[…]

Response: This section is applicable to residential buildings, not public utility uses. In the Preapplication, city planning staff confirmed (Exhibit B, p. 7), FAR requirements do not apply to the proposed Operations Center.

OCMC 17.41 - Tree Protection, Preservation, Removal And Replanting Standards

17.41.020 - Tree protection—Applicability.

A. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.

[…]

C. Tree canopy removal greater than twenty-five percent on areas with greater than twenty-five percent slope, unless exempted under OCMC 17.41.040, shall be subject to these standards.

[…]

E. A tree that has been planted pursuant to this section shall remain or shall be replaced with a new tree if removed.

17.41.040 - Exemptions.

These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the natural resource overlay district (NROD) of OCMC 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930, for farm or forestlands. These regulations to not apply to the removal of trees that are considered invasive species. An applicant for development may claim exemption from compliance with these standards if

the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The community development director has the authority to modify or waive compliance in this case.

Response: The proposed Operations Center requires Site Plan and Design Review, and none of the above-stated exemptions are relevant to the proposal. Therefore, the provisions of this chapter apply.

17.41.050 - Compliance options.

Applicants for review shall comply with these requirements through one or a combination of the following procedures:

A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to OCMC 17.41.060;

B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to OCMC 17.41.080;

C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to OCMC 17.41.110; or

D. Option 4—Cash-in-lieu of planting pursuant to OCMC 17.41.120.

Response: PGE has proposed mitigation for trees that will be removed as part of the new development, and for trees that were removed for the Kamm Street Apartments project. That tree removal, violation, and mitigation obligation stated in the land use decision predates PGE's ownership of that land. This mitigation was never fulfilled and is presumed to run with the land. Proposed mitigation is 203 trees for those removed from the site for the Operations Center project and 72 trees for the previous Kamm Street Apartments project, for a total of 275 trees. The applicant has elected to mitigate by a combination of on-site plantings (Option 1) and planting on public land in the area. Both these options are allowed under Option 1.

17.41.060 - Tree removal and replanting—Mitigation (Option 1).

A. Applicants for development who select this option shall ensure that all healthy trees shall be preserved outside the construction area as defined in OCMC 17.04 to the extent practicable. Preserved trees are subject to Option 3 of this chapter. Compliance with these standards shall be demonstrated in a tree mitigation plan report prepared by a certified arborist, horticulturalist or forester or other environmental professional with experience and academic credentials in forestry or arboriculture. Tree inventories for the purposes of mitigation calculations may be prepared by a licensed surveyor. At the applicant's expense, the city may require the report to be reviewed by a consulting arborist. The number of replacement trees required on a development site shall be calculated separately from, and in addition to, any public or street trees in the public right-of-way required under OCMC 12.08, Public and Street Trees, any required tree planting in parking lots, and any trees planted in pedestrian and bicycle accessways.

B. The applicant shall determine the number of trees to be mitigated on the site by counting all of the trees six-inch DBH (minimum four and one-half feet from the ground) or larger on the entire site and either:

1. Trees that are removed outside of the construction area shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2; or

2. Dying, diseased or hazardous trees, when the condition is verified by a certified arborist to be consistent with the definitions in OCMC 17.04, may be removed from the tree replacement calculation. Dead trees may also be removed from the calculation, with the condition of the tree verified either by the community development director or by a certified arborist at the applicant's expense, when the community development director cannot make a determination. To the extent that the community development director determines that the dead, dying, hazardous or diseased condition of the tree is the result of intentional action, the removal of that tree shall require mitigation pursuant to Column 2 of Table 17.41.060-1.
[…]

C. Planting Area Priority for Mitigation. Development applications which opt for removal of trees with subsequent replanting pursuant to OCMC 17.41.050.A shall be required to mitigate for tree cutting by complying with the following priority for replanting standards below:

1. First Priority. Replanting on the development site.

2. Second Priority. Off-site replacement tree planting locations. If the community development director determines that it is not practicable to plant the total number of replacement trees on-site, a suitable off-site planting location for the remainder of the trees may be approved that will reasonably satisfy the objectives of this section. Such locations may include either publicly owned or private land and shall be approved by the community development director.[…]

Response: A tree mitigation plan report has been prepared by a licensed landscape architect and an arborist, closely following the requirements of this section. A table outlining all the tree protection and removal on site, and corresponding mitigation requirements, is included with the plans. As noted, 275 mitigation trees will be planted for the project. This combines obligations from the PGE development project and from the Kamm Street Apartments decision.

Of those trees, 193 will be planted on-site under subsection C.1 above, and 82 will be planted on public land off site, under subsection C.2. The 193 trees proposed on the site are shown on the tree planting plan included with the landscape drawings. This is the maximum number of trees that the landscape architect found to be practicable to plant on site. The off-site tree planting location is more suitable overall for satisfying the objectives of this section.

17.41.130 - Regulated tree protection procedures during construction.

A. No permit for any grading or construction of public or private improvements may be released prior to verification by the community development director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the community development director.

B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:

[…]

C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection.

Response: Numerous trees on the site will remain and are protected. These trees are shown in a tree protection and removal plan included with the land use drawings (Sheet L01 and L02). The measures depicted on this plan and described in notes follow the recommendations of a qualified arborist.

OCMC 17.47 - Erosion and Sediment Control

17.47.030 - Applicability.

A. This chapter, which may also be referred to as "erosion control" in this Code, applies to development that may cause visible or measurable erosion on any property within the city limits of Oregon City.

B. This chapter does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies, provided that after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.

Response: The application disturbs more than 1,000 square feet of earth; therefore, erosion and sediment control standards shall be followed.

17.47.060 - Permit required.

The applicant must obtain an erosion and sediment control permit prior to, or contemporaneous with, the approval of an application for any building, land use or other city-issued permit that may cause visible or measurable erosion.

Response: A city issued erosion and sediment control permit will be obtained prior to commencement of any earth disturbing activities.

17.47.070 - Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder. […]

Response: Erosion and sediment control plans shall be submitted for review and approval by the city prior to issuance of a permit.

17.47.080 - Plan implementation.

An approved erosion control and sediment control plan shall be implemented and maintained as follows:

A. Plan approval, where required, shall be obtained prior to clearing or grading. No grading, clearing or excavation of land requiring a plan shall be undertaken prior to approval of the plan.

B. The erosion and sediment control facilities shall be constructed prior to any clearing and grading activities, and maintained in such a manner as to ensure that sediment laden water does not enter the drainage system or violate applicable water standards.

C. The implementation of an erosion and sediment control plan and the construction, maintenance, replacement, and upgrading of erosion and sediment control facilities is the responsibility of the owner or his/her designated representative until all construction is completed and approved, and vegetation, landscaping or approved finished surfaces is established.

D. The erosion and sediment control facilities herein are the minimum requirements for anticipated site conditions. During the construction period, these erosion and sediment control facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment-laden water does not leave the site.

E. Any observation of visible or measurable erosion, or an observation of more than a ten-percent increase in downstream channel turbidities, will result in an enforcement action by the city.

F. The owner or his/her designated representative shall implement the measures and construct facilities as provided for and according to the implementation schedule in the approved plan. The manager shall be allowed reasonable access to the development site for inspection purposes.

Response: Plan approval is required to be obtained per chapter 16.12. City staff may access the development site and perform inspections to ensure compliance prior to any clearing and grading activities are permitted. Construction activities comply with this section and under city jurisdiction.

17.47.090 - Plan performance guarantee and security.

After the plan is approved by the manager and prior to construction or grading, the owner shall provide a financial guarantee. Erosion and sediment control shall be included in the cost estimate for the primary project, such as land division or site plan, and included in that project's performance guarantee.

Response: Insofar as a financial guarantee is required, erosion and sediment control will be part of that guarantee.

OCMC 17.49 - Natural Resource Overlay District

The extent of the Natural Resources Overlay District (NROD) on the site is approximately 410 square feet, encompassing an area north of a culvert that conveys storm drainage under Warner Milne Road (Figure 6). Stormwater currently drains across the PGE property in an open ditch, directing water that was collected from properties north of the site, before passing under Warner Milne Road. South of Warner Milne Road, the drainage continues to the southeast and eventually leads into Newell Creek.

Figure 6. Culvert on north side of Warner Milne Road

An NROD report associated with a land use case is included with these application materials (Exhibit F, Oregon City file no. NROD 21-00018). Because this land use decision was affirmed by the city—even though the proposed multi-family development was not constructed—this area of mapped NROD is incorporated into the applicant's site design. The resource is protected by the proposed site layout.

17.49.040 - NROD permit and review process.

> *An NROD permit is required for those uses regulated under OCMC 17.49.090, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure, unless an adjustment of standards pursuant to OCMC 17.49.200 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.*

Response: The proposed application requires a Type III development permit of which this is a part. An NROD permit is not required because the project is for a "use allowed outright (exempted)" due to the measures taken by the site plan. That approach is described in the findings for OCMC 17.49.080.

17.49.060 - Consistency and relationship to other regulations.

> *A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the OCMC, other city requirements, regional, state or federal law, the provisions that provides the greater protection of the resource shall govern.*
>
> *B. Compliance with Federal and State Requirements.[…]*

Response: The proposed plan for the site provides the greatest level of protection for the resource because it entirely avoids construction within the NROD on-site. In that way it is consistent with city regulations and any state or federal requirements.

17.49.070 - Prohibited uses.

The following development and activities are not allowed within the NROD:

A. Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.

Response: Project plans show that the existing culvert opening and the area around it that is on the project site will be protected. No new gardens, lawns, structures, or development is proposed by the applicant. Uses that are exempted are described in subsection.

B. New lots that would have their buildable areas for new development within the NROD are prohibited.

C. The dumping of materials of any kind is prohibited except for placement of fill as provided in subsection D. below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.

D. Grading, the placement of fill in amounts greater than ten cubic yards, or any other activity that results in the removal of more than ten percent of the existing native vegetation on any lot within the NROD is prohibited, unless part of an approved development activity.

Response: No new lots are proposed. No dumping or placement of fill within the NROD regulated area is proposed. No grading or placement of fill in the amount listed inside the boundary of the NROD is proposed.

17.49.080 - Uses allowed outright (exempted).

The following uses are allowed within the NROD and do not require the issuance of an NROD permit:

[…]

H. Site plan and design review applications where all new construction is located outside of the NROD boundary shown on the city's adopted NROD map, and the NROD area is protected by a conservation easement approved in form by the city.

I. Routine repair and maintenance of existing structures, roadways, driveways and utilities.

J. Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased.

[…]

M. Planting of native vegetation and the removal of non-native, invasive vegetation (as identified on the Oregon City Native Plant List or other locally adopted plant list (e.g. Metro or Portland), or as recommended by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, arboriculture, horticulture, wildlife biology, botany, hydrology or forestry), and removal of refuse and fill, provided that:

1. All work is done using hand-held equipment;

2. No existing native vegetation is disturbed or removed; and

3. All work occurs outside of wetlands and the top-of-bank of streams.

Response: Of the activities proposed by the applicant that are applicable to the NROD area, Subsections (H), (J), and (M) are relevant. First, the site design has carefully avoided the resource by modifying the shape of nearby stormwater facilities and routing its perimeter security fence around the outside edge of the mapped NROD. This qualifies as "all new construction…outside of the NROD boundary" under Subsection (H).

In accordance with sub-section (M), removal of non-native invasive vegetation and new native planting is proposed for this area, per PGE's landscape architect. All work in this area will be done in accordance with sub-standards (1), (2,) and (3).

Outside the property limits, redevelopment of the Warner Milne sidewalk will occur in public right of way. This sidewalk has been narrowed to preserve existing conditions and keeps the same level of impact as the current infrastructure. Consequently, it is a "replacement…of existing structures, roadways, utilities, etc." that does not increase impervious surface. That part of the development is therefore exempt under subsection (J). Overall, all the activities that will result in development in the NROD area are exempt under these three sections.

17.49.090 - Uses allowed under prescribed conditions.

The following uses within the NROD are subject to the applicable standards listed in OCMC 17.49.100 through 17.49.190 pursuant to a Type II process:[…]

Response: None of the proposed uses are listed in this section as allowed under prescribed conditions. As accounted for in the findings for 17.49.080, only exempt uses are proposed.

17.49.100 - General development standards.

The following standards apply to all uses allowed under prescribed conditions within the NROD with the exception of rights-of-way (subject to OCMC 17.49.150), trails (subject to OCMC 17.49.170), utility lines (subject to OCMC 17.49.140), land divisions (subject to OCMC 17.49.160), and mitigation projects (subject to OCMC 17.49.180 or 17.49.190):

[…]

Response: Because the applicant does not proposed any uses allowed under prescribed conditions within the NROD, none of the general development standards are applicable.

17.49.110 - Width of vegetated corridor.

A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a

stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Response: The width of the vegetated corridor was determined as part of the previous land use case for the Kamm Street Apartments, which established the limits of the NROD. PGE has adopted this mapped area, which was reviewed by city staff and adopted by the City Council in a final land use decision.

17.49.120 - Maximum disturbance allowance for highly constrained lots of record.

In addition to the general development standards of OCMC 17.49.100, the following standards apply to a vacant lot of record that is highly constrained by the NROD, per OCMC 17.49.090.B and 17.49.090.F: […]

Response: No disturbance is proposed and the site is not a highly constrained lot of record. This standard is not applicable.

17.49.130 - Existing development standards.

In addition to the General Development Standards of OCMC 17.49.100, the following standards apply to alterations and additions to existing development within the NROD, except for trails, rights-of-way, utility lines, land divisions and mitigation projects. As of June 1, 2010, applicants for alterations and additions to existing development that are not exempt pursuant to OCMC 17.49.080.J shall submit a Type II or Type III application pursuant to this section.

Mitigation is required, subject to OCMC 17.49.180 or 17.49.190.

Response: The proposed development on the site does not proposed any non-exempt development within the NROD. Consequently, the existing development standards do not apply.

17.49.140 - Standards for utility lines.

The following standards apply to new utilities, private connections to existing or new utility lines, and upgrades of existing utility lines within the NROD: […]

17.49.150 - Standards for vehicular or pedestrian paths and roads.

The following standards apply to public rights-of-way and private roads within the NROD, including roads, bridges/stream crossings, driveways and pedestrian paths with impervious surfaces: […]

Response: The proposed development that affects the NROD is to completely avoid it where it is on PGE property, and to reconstruct an existing sidewalk over the top of the culvert, with no change to impervious surface. Both of these actions are exempt from NROD review as noted above in the finding for 17.49.080. As such, the standards listed above for NROD review of utility lines and rights of way are not directly applicable.

17.49.155 - Standards for stormwater facilities.

Approved facilities that infiltrate stormwater on-site in accordance with public works low-impact development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards: […]

Response: The existing culvert under Warner Milne Road is part of a stormwater facility. The stormwater management plan for the site includes outfall toward the culvert but does not place new infrastructure within it. For that reason, the standards in this section do not apply.

17.49.160 - Standards for land divisions.

Other than those land divisions exempted by OCMC 17.49.070.G., new residential lots created within the NROD shall conform to the following standards:[…]

17.49.170 - Standards for trails.

All trails that are not exempt pursuant to OCMC 17.49.80.F shall be processed through a Type II or Type III process pursuant to this chapter; and shall provide mitigation, subject to OCMC 17.49.180 or 17.49.190.

Response: No land divisions, new residential lots, or trails are proposed within the NROD. These section are not applicable.

17.49.180 - Mitigation standards.

The following standards (or the alternative standards of OCMC 17.49.190) apply to required mitigation: […]

17.49.190 - Alternative mitigation standards.

In lieu of the above mitigation standards of OCMC 17.49.180, the following standards may be used. Compliance with these standards shall be demonstrated in a mitigation plan report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the city may require the report to be reviewed by an environmental consultant.[…]

Response: No impacts to the NROD area of the site will occur, therefore mitigation is not required. These sections are not applicable.

17.49.200 - Adjustment from standards.

If a regulated NROD use cannot meet one or more of the applicable NROD standards then an adjustment may be issued if all of the following criteria are met. Compliance with these criteria shall be demonstrated by the applicant in a written report prepared by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, wildlife biology, botany, hydrology or forestry. At the applicant's expense, the city may require the report to be reviewed by an environmental consultant. Such requests shall be processed under the Type III development permit procedure. The applicant shall demonstrate:[…]

Response: No adjustments from NROD standards are required because all proposed development is exempt as identified in the findings for OCMC 17.49.080. This section is not applicable.

17.49.240 - Density transfer.

The NROD allocates urban densities to the non-NROD portions of properties located partially within the NROD, generally resulting in a substantial increase in net development potential.

For lots of record that are located within the NROD, density transfer is allowed, subject to the following provisions:[…]

Response: Density transfer is not applicable because no development is proposed within the NROD that is not exempt, per OCMC 17.49.080.

17.49.265 - Corrections to violations.

For correcting violations, the violator shall submit a remediation plan that meets all of the applicable standards of the NROD. The remediation plan shall be prepared by one or more qualified professionals with experience and credentials in natural resource areas, including wildlife biology, ecology, hydrology and forestry. If one or more of these standards cannot be met, then the applicant's remediation plan shall demonstrate that there will be:

A. No permanent loss of any type of resource or functional value listed in OCMC 17.49.10, as determined by a qualified environmental professional;

B. A significant improvement of at least one functional value listed in OCMC 17.49.10, as determined by a qualified environmental professional; and

C. There will be minimal loss of resources and functional values during the remediation action until it is fully established.

Response: No violations to the NROD standards have occurred. Therefore, no corrections are appropriate.

OCMC 17.52 - Off-Street Parking And Loading

17.52.010 - Applicability.

The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. […]

Response: The proposed Operations Center includes a parking lot for employees and visitors that is east of the new office and storeroom building. This lot includes 120 vehicle parking spaces for employees and 31 spaces for fleet vehicles. The provision of parking for employees of the Operations Center and for larger fleet vehicles is an integral part of the overall project to reconstruct the existing facility. This is a “parking lot” full of “parking spaces” per the city’s definitions in OCMC 17.04.890 and 17.04.895.

In addition to the employee lot, the site also includes a large, paved work area north and west of the new buildings. This area is used for equipment storage, material storage, exterior work areas, fueling and vehicle repair, storage for large vehicles, stormwater management, and a communications tower. An image of the work area was shown in the introductory section of this narrative. Large trucks and equipment will be stored there and will maneuver around this paved area as they come to and leave the site. However, this paved work area is not suited for passenger vehicle use and not a “parking lot” according to the code definition, which simply says “off-street parking spaces”. Related, the code defines “parking space” as “an unobstructed off-street area having an all-weather surface for the temporary parking or storage of one automobile.” The paved

work area is designed for large trucks, not automobiles, and is full of obstructions, including a highly secure gate system to prevent unauthorized users from accessing the work area. As such, requirements for parking lots, including interior landscaping, drive aisles, landscaping, and so on do not apply to this work area. The findings below focus on the parking lot east of the main building, which provides those elements, except where adjustments are requested.

17.52.015 - Planning commission adjustment of parking standards.

A. Purpose. The purpose of permitting a planning commission adjustment to parking standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. Adjustments provide flexibility to those uses which may be extraordinary, unique, or provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum parking standard may be approved based on a determination by the planning commission that the adjustment is consistent with the purpose of this code, and the approval criteria can be met.

B. Procedure. A request for a planning commission parking adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

Response: The proposed site design requires two adjustments from the planning commission from the parking standards.

First, the site exceeds the maximum allowed parking. That maximum is 120 spaces, based on the nearest use category in the parking ratios table, Table 17.52.020, which is “office.” This use category is not exactly a direct parallel, but since most of the building is used as office, it comes the closest. In addition, the need for a larger lot is partly driven by the need to accommodate fleet vehicles used by PGE employees. These areas for fleet vehicles are required to be included toward the maximum, even though that is not true of many zoning codes. PGE has determined from its experience at other facilities that 151 spaces are needed for a facility of this size and with the range of activities that will occur there. That figure exceeds the maximum and therefore requires an adjustment.

Second, the west side of the proposed parking lot will serve double duty as passenger vehicle parking but also as a fleet storage area for longer vehicles. These vehicles, due to their length and maneuverability limitations, will park perpendicular to the regular pattern of striped spaces. This orientation allows for long vehicle parking and for the drive aisles to remain unobstructed. That being the case, this layout makes is impossible to meet the standard for interior parking lot landscaping in 17.52.060(E), which includes provisions for planting trees, shrubs, and landscape strips throughout the paved area. Because the landscaping requirement is a “parking standard” contained in 17.52, and the applicant needs “flexibility in modifying” it, a planning commission adjustment per this section is requested here. It is notable that the request to waive the landscaping requirements only applies to the 31 spaces at the west side of the employee parking lot. The other 120 spaces in this lot are in full compliance.

C. Approval criteria for the adjustment are as follows:

1. Documentation. The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.

2. Parking Analysis for Surrounding Uses and On-Street Parking Availability. The applicant shall show that there is a continued fifteen percent parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the community development director.

a. For the purposes of demonstrating the availability of on street parking as defined in OCMC 17.52.020.B.3, the applicant shall undertake a parking study during time periods specified by the community development director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the community development director.

b. The on-site parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in on-site parking shall be calculated as follows: […]

Response: PGE has determined that the effective functioning of the new development requires more parking than the maximum allowed under the ratio in the code that most closely approximates the proposed use. A minimum for the site if it were an "office" use is 120 spaces; 151 spaces are proposed for the public utility use. This determination is based on decades of PGE experience with these kinds of facilities, both at the current Oregon City location and at other site around the region. Because this is a request to exceed the maximum, "all applicable reductions" have not been taken and that phrase is not relevant.

Likewise, a parking analysis for surrounding uses and on-street parking availability is not relevant to this adjustment because it is not for a reduction from a minimum, it is to exceed the maximum. By constructing a parking lot that is larger than would otherwise be required, PGE would presumably ease curbside parking congestion. In addition, there is no on-street parking permitted along Warner Milne Road in front of the PGE site, so it is presumed that all demand generated by the new Operations Center must be accommodated on-site, which is part of the rationale for such a large lot.

With regard to the adjustment request to waive parking lot landscaping required on a sub-area of the parking lot on the west side of it, this does not relate to the amount of parking. Rather, it relates the design requirements for it. Changing the minimum requirements for landscaping on 31 of the lots 151 spaces will not have any effect on surrounding uses or on-street parking availability. For that reason the requirements of subsection 2 above are not applicable.

3. Function and Use of Site. The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites.

Response: Modifying the amount of required parking by allowing 151 spaces, 31 more than the maximum, does not significantly impact the use or function of the site. Accommodating all the

anticipated employee and visitor vehicles in a secured, on-site parking area is a core element of the property and enables the public utility use to occur. Because many PGE employees come to the site and then use PGE-branded vehicles for going out into the community for maintenance and repair, this requires a larger number of dedicated spaces than would otherwise be the case. Likewise, since public utility facilities need to be secured to protect the integrity of critical infrastructure, all the spaces are within a fence line, and the use cannot depend on employees parking in the neighborhood in publicly shared spaces that might reduce the demand for on-site spaces.

Likewise, the larger parking lot does not impact the use or function of adjacent sites. If anything, a larger parking lot will insure that there is no spillover parking that occurs on adjacent streets or parking areas, which could potentially impact the use or function of those sites. Managing its own demand fully on the PGE property has the effect of insulating adjacent sites from any parking impacts.

4. Compatibility. The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood.

Response: The subject site is a very large, 12 acre property, part of which is already occupied by the PGE line center. Large-scale uses currently occupy the surrounding neighborhood in a way that is entirely compatible with a slightly larger parking lot than what would otherwise be allowed. Other large-site, large-format uses currently surround the PGE site: a middle school, a church, the Red Soils campus, a cemetery, and the Hilltop Mall. Many of these sites also have very large parking lots. This proposal is also considered in context with the existing line center, which has been at the same location for many decades and is currently compatible with the surrounding neighborhood. Because the increment of change from the baseline requirement is small, and the surrounding neighborhood has many comparably-scaled uses, the proposal is compatible.

With regard to the landscape elements that the applicant requests waiving for a portion of the parking lot, this change is also compatible with the surrounding area. Overall, the PGE parking lot will have generous landscaping along its perimeter and at the interior of the rest of the parking lot. The area where fleet vehicles will park and landscaping not provided is well to the interior of the site and not noticeable to adjacent property owners or passersby on Warner Milne. Forgoing several landscape islands in a parking lot that otherwise has many of them does not have any significant effect on the proposal's compatibility with the area. It also appears from aerial photography that many of the parking lots in the surrounding area were constructed prior to the adoption of this requirement and are significantly less landscaped overall than is proposed by PGE. In this sense, the proposed parking lot design is compatible with the parking lots of surrounding uses.

5. Safety. The proposal does not significantly impact the safety of adjacent properties and rights-of-way.

Response: The proposed adjustment to the number of parking spaces allowed brings all the anticipated demand for motor vehicle parking on to the subject site via an approved access point along Warner Milne Road. A too-small lot that is within the maximum, in PGE's experience, would result in some spillover parking and pedestrian activity farther away from the site. This could increase the opportunity for pedestrian-vehicle conflicts. In that respect, adjacent property and right of way are safer with the lot being sized appropriately to the proposed use. The parking lot will also be highly secure and protected by a gate that prevents unauthorized users from accessing the facility, which also insures safety for adjacent property owners. The Warner Milne Road right of

way will not be affected by 31 additional parking spaces inside the property boundary, accessed through an internal driveway that is entirely on private property.

Likewise, the adjustment to waive landscaping requirements within a portion of the parking area has no effect on safety for adjacent properties and/or rights of way. The area where the fleet vehicles will park and which necessitates the adjustment to landscaping is well away from the street and from adjacent property. The amount of landscaping on a property generally does not have a significant impact on safety for adjacent property, regardless of whether it is more or less.

> *6. Services. The proposal will not create a significant impact to public services, including fire and emergency services.*

Response: The proposed adjustment to the maximum number of parking spaces allowed on the site from 120 to 151 has no effect on public services, including fire and emergency services. The facility at 120 spaces in size, which would be allowed outright, requires the same degree of water, sewer, stormwater, transportation and other services as does one slightly larger. The city has indicated that it can provide these services to the site, and an incremental change to the size of the parking lot has no appreciable or significant impact on the ability to do so.

Likewise, the adjustment request to waive landscaping on 31 spaces within this lot does not have an impact to public services. Forgoing several landscape islands at the interior of a large parking area does not affect the city's ability to provide utility services or to serve the site with emergency responders. Insofar as any impact at all could be detected from the minor difference, it is certainly not significant.

17.52.020 - Number of automobile spaces required.

> *A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.*

Table 17.52.020 [Revised to show relevant information]

Land Use	*Parking Requirements*	
	Minimum	*Maximum*
Office	*2.70* [Not Applicable]	*3.33*

> *[…]*
>
> *2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the community development director, based upon the requirements of comparable uses listed.*
> *[…]*
>
> *4. Fleet vehicle parking shall be accommodated within the maximum parking ratio, except that in GI, CI, and MUE zones, fleet vehicle parking may be included in a parking lot in addition to the maximum number of permitted parking spaces.*

Response: The proposed use of the site is "public utility," as was discussed earlier in the findings and agreed upon by city staff. That use category is not listed in the parking requirements table. Because of that, subsection 2 requires an interpretation that the site should apply "comparable uses listed" to assess its parking needs. At the direction of Planning Staff, "office" is the closest land use category to the Operations Center, for the purposes of parking ratios. This has numerical

requirements listed in OCMC Table 17.52.020. Minimum parking does not apply to the proposed Operations Center because the site is located within a half-mile of a frequent transit line (#33).

Maximum permitted parking is calculated using "net leasable area". The definition does not neatly apply to the proposed Operations Center, since the property is not leased to any user. However, the new office and storeroom building contains 36,000 square feet of floor area, as shown on submitted plans. The applicant has included the entire structure in the calculation because although the two sides of the building have different functions, they operate in tandem and are connected. This building is both the primary site structure and the largest building on site, so it is an acceptable proxy for what drives parking demand.

At the rate of 3.33 spaces maximum per 1,000 square feet of floor area, up to 120 parking spaces are permitted. The applicant has proposed 151, which requires an adjustment. That adjustment was addressed in a previous section of the findings.

The proposed Operations Center is a unique public utility use and requires more parking than allowed under the standard allocation for office uses alone. In part, this is due to the presence of fleet vehicles in the parking area, which is unique to the public utility use. As noted in sub-standard (4), the city requires incorporating this fleet vehicle parking, which makes up 31 stalls in this case, in the total parking count. PGE requests an adjustment to the maximum spaces to allow the 151 proposed stalls (120 employee spaces, 31 fleet spaces). With approval of the requested adjustment, these standards are satisfied.

> *B. Parking requirements can be met either on-site, or off-site by meeting one or multiple of the following conditions:*
>
> > *1. Parking may be located on the same site as the associated use which it is supporting.*
> > *[…]*

Response: All proposed vehicle parking is located on the project site.

> *C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted. […]*

Response: The project site is within a half-mile of a frequent transit line, so no minimum parking is required. Without a minimum requirement, a reduction from it is not applicable.

17.52.030 - Standards for automobile parking.

> *A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.*

Response: There are three proposed ingress and egress locations on Warner Milne Road. This is a reduction from the nine that currently exist across the project site. PGE's consultants coordinated with the City Engineer to design the Operations Center in a manner that complies with all applicable traffic and public works requirements. Special attention was given to the signalized intersection with Beavercreek Road and the major truck driveway that aligns with that road. Integrating the driveway with a traffic signal offers significant safety benefits both for PGE and for

the general public including anticipated new signalized pedestrian crosswalks. In addition, all three driveways are designed to prevent backing or maneuvering within the public right-of-way.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce stormwater runoff and improve water quality pursuant to the city's stormwater and low impact development design standards are encouraged.

C. Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the city public works stormwater and grading design standards.

Response: All on-site parking spaces and access aisles are paved, as shown on the plans. PGE will adequately maintain these areas in compliance with sub-standard (B).

The Stormwater Report (Exhibit E) and PGE's responses to OCMC 13.12 *Stormwater Management* show that all applicable standards are met.

D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard dimensions. The community development director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

2. Alternative Parking/Plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the community development director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.

Response: All proposed parking spaces will be standard size, except for the larger ADA accessible spaces. Because there is no minimum parking requirement for the project site, the sub-standard (1) limitation on number of compact spaces does not apply.

The Site Plan shows all proposed spaces have been designed at standard 90-degree or zero-degree angles, and the stall dimensions comply with the dimensional requirements established in the *Parking Angle Space Dimensions* table within sub-standard (2).

E. Carpool and Vanpool Parking. New developments with seventy-five or more parking spaces, excluding projects where seventy-five percent or more of the total floor area is residential, and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at

least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved — Carpool/Vanpool Only."

Response: With approval of PGE's requested adjustment to the maximum parking total, 151 spaces are proposed, 31 of which are designated for fleet vehicles. Because of that, 120 of these are "available for employees." Five percent of that number is six carpool/vanpool spaces that are required.) None of the listed exclusions applies to the proposed Operations Center.

Six spaces have been designated for carpool/vanpool parking. These spaces are near the main entrance to the office building and are shown on the site plan. In compliance with the above standard, these spaces will be clearly marked with the required signage and located closest to the main entrance than all other parking, with the exception of ADA accessible parking spaces.

17.52.040 - Bicycle parking standards.

A. Purpose—Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than exclusively residential use with less than five dwellings on-site (excluding cottage clusters).

Response: The proposed Operations Center is a public utility use. As this is non-residential, the standards within this section are applicable.

B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the community development director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

*Table A Required Bicycle Parking Spaces**

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

Use	*Minimum Bicycle Parking*	*Minimum Bicycle Parking — Covered — The following percentage of bicycle parking is required to be covered*
Bank, office	*1 per 20 auto spaces (minimum of 2)*	*50% (minimum of 1)*

Response: As with vehicle parking space requirements, there is no corresponding use category for public utility. To determine the number of required bike parking spaces, PGE assumes the same land use category. Ultimately, the requirements are based on the vehicle parking counts. At a count of 151 vehicle spaces, 8 bike parking spaces are required. 10 bicycle parking spaces are proposed, as shown on the plans (See Floor Plan, Sheet A21). This quantity exceeds the minimum ratio. Though not required, the proposed bike parking is covered. Therefore, the above standard is met.

C. Design Standards.

1. Bicycle parking facilities shall be in the form of a lockable enclosure on-site, secure room in a building on-site, a covered or uncovered rack on-site, or within the adjacent right-of-way.

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.

3. All bicycle racks shall be designed so that:

a. The bicycle frame is supported horizontally at two or more places.

b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.

c. The user is not required to lift the bicycle onto the bicycle rack.

d. Each bicycle parking space is accessible without moving another bicycle.

e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.

f. Provides an area of six feet by two feet per bicycle.

g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.

Response: Proposed bicycle parking is located near the east façade of the new office and storeroom building, just north of the building's main entrance. At this location, bicycle parking will be plainly visible from the building entrance.

All 10 secure spaces will be located beneath a canopy, designed and spaced to comply with the requirements of sub-standards (1) and (3).

17.52.060 - Parking lot landscaping.

A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.

Response: The proposed Operations Center includes construction of a new parking lot on the east side of the site. As discussed previously, the paved west side of the site is work area. This includes a canopy for covering heavy vehicles. This is not a parking garage or parking structure as described in the code. The standards of this section are applicable to the new parking lot at the east side of the site.

B. Development Standards.

1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.

2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.

3. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.

Response: The Landscape Plan (Sheet L03) shows proposed landscaped areas and parking lot trees, uniformly distributed throughout the parking area, designed in conformance with sub-standards (1) and (3). All non-landscaped areas are necessary for safe navigation and circulation, as permitted by sub-standard (2). An adjustment to the landscaping standard for a limited area of the parking lot was discussed at the beginning of this section.

4. Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List or approved by an arborist.

5. At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.

6. Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the community development director, that can demonstrate adequate maintenance.

7. All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.

Response: The Landscape Plan shows proposed tree sizes and planting plans, including compliance with the requirements of sub-standards (4), (5), and (7). Irrigation will be provided as noted on this landscape plan and the area will be adequately maintained, in compliance with subsection (6).

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. Parking lots and associated drive aisles shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the community development director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.

1. The perimeter parking lot area shall include:

a. Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;

b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width,

shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.

Response: The proposed parking lot is largely interior to the site and does not abut (directly share a property line with) the right of way or adjoining properties. The Warner Milne right of way is buffered by a thirty-six-foot deep landscaped area that has stormwater detention facilities that are landscaped. The north side of the parking lot is buffered by landscaping, a row of trees, the security fence, and a shared use path to Kamm Street. The east side of the site is buffered by two landscape strips sandwiched around the north-south shared use path that aligns with Hughes Street. In all these cases, the Landscape Plan shows at least five feet of landscaping as a buffer to the parking area, which trees at least every thirty feet.

Since the proposed Operations Center and its parking area is a fenced and secure site, new perimeter plantings do not need to permit pedestrian site access from the sidewalk as provided in subsection (b). However, openings in the landscaping as shown allow access for maintenance and visual breaks.

D. Parking Area/Building Buffer. Except for parking lots with fewer than five parking stalls, parking areas (excluding drive aisles with no adjacent parking) shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:

1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or:

2. Minimum seven-foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.

Response: The Site Plan shows that all vehicle parking located near structures will be separated by pedestrian entranceways or loading areas and, therefore, do not necessitate additional buffers. The east side of the office building is occupied by the entry plaza to the main entrance which is a "pedestrian entranceway." This separates the exterior wall of the structure from the parking area and serves as an adequate buffer. Additional planter strips or tree wells at this location would not be appropriate.

E. Interior Parking Lot Landscaping. Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce stormwater runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:

a. A minimum of one tree per four parking spaces.

b. A minimum of 1.5 shrubs per parking space.

c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

Response: The Landscape Plan shows interior parking lot landscaping incorporated into the design of all proposed parking areas with more than five parking stalls. The Plan shows the following, designed in conformance with the above standards.

There is one exception to the landscaping described above. At the northwest side of the proposed parking lot, PGE proposes an adjustment to accommodate fleet parking. The adjustment allows fifteen contiguous stalls in one bay, and seventeen contiguous stalls in another, without landscape strips. The reason for this is the need to park longer fleet vehicles. Compliance with the adjustment criteria is shown under PGE's responses to OCMC 17.52.015.

> *F. Alternative landscaping plan.*
> *Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the community development director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with subsection 1 and/or 2 below.*
>
> *[…]*

Response: No alternative landscape plan is proposed. An adjustment to waive the landscape strips and planting requirements in one sub-area of the parking lot is requested.

17.52.080 - Maintenance.

> *The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.*
>
> *All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that: […]*

Response: PGE acknowledges and accepts the requirements of this section.

17.52.090 - Loading areas.

> *B. Applicability. OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The city engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.*
>
> *C. Standards.*
>
> > *1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the city engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.*
> >
> > *2. Where parking areas are prohibited between a building and the street, loading areas or drive isles are also prohibited.*

3. The city engineer and decision maker, through site plan and design review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

a. Short in duration (i.e., less than one hour);

b. Infrequent (less than three operations daily between five a.m. and twelve a.m. or all operations between twelve a.m. and five a.m. at a location that is not adjacent to a residential zone);

c. Does not obstruct traffic during peak traffic hours;

d. Does not interfere with emergency response services; and

e. Is acceptable to the applicable roadway authority.

Response: As a location for maintenance and repair vehicles, the Operations Center will have different circulation and loading needs for its large trucks, somewhat separate from what the new office building will require for "service or delivery truck visits" which is the focus of the standards in this section. The Transportation Impact Study (TIS, Exhibit D) predominantly addresses circulation of large trucks, but also discusses service and delivery to the office building. To accommodate such uses, PGE proposes a loading area north of the storeroom portion of the new building. The City Engineer may review the proposal and refine the loading area requirements, subject to the above standards.

Operations-Center circulation for large truck vehicles that provide utility repair and installation is critical to the basic operations of the site and was central to the site layout. The TIS conclusions demonstrate the operational efficiency and the safety of the Circulation Plan (Exhibit C, Sheet A12).

OCMC 17.54 - Supplemental Zoning Regulations And Exceptions

17.54.100 Fences, hedges, walls, and retaining walls.

A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:

1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5 feet in total height as measured from the finished grade at any point on the fence.

2. A fence, hedge, wall, located next to, or behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:

a. Six feet in total height for residential properties […]

b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.

3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.

4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.

Response: The proposed Operations Center – like the existing line center – will be a secure facility. Fencing and security gates are a critical element site operations. The Site Plan shows the proposed fencing around the site perimeter and outside of the right-of-way. The new fencing will be inside the easternmost driveway because it is an emergency access route between Warner Milne Road and Hughes Street. Likewise, the publicly accessible shared use path is outside the fence line and open to use by non PGE users.

The main building, the proposed office and storeroom, has a main façade on Warner Milne Road. No fencing is required between this frontage and the building, but fencing does extend to the side of the building and along the side and rear property lines. No fencing is proposed in front of the forward-most buildings, meeting sub-standard (1). The proposed fencing next to the new office and storeroom *and* within 40 feet of the Warner Milne Road right-of-way will be eight feet tall, in compliance with sub-standard (2)(b).

The retaining wall proposed at the northwest corner of the project site is approximately 180 feet from the right-of-way, rendering sub-standard (3) non-applicable. The wall is no less than sixteen feet from nearby fencing, rendering sub-standard (4) non-applicable.

> *5. Property owners shall ensure compliance with the traffic sight obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.*

Response: The Site Plan (Sheet A11) shows that the requirements of OCMC 10.32 will be met.

> *6. Retaining walls completely below the elevation of the right-of-way may be up to six feet in height.*
>
> *7. Minimum fall protection required by the building official, such as railings, is not included in the height of a retaining wall but must comply with the fence height requirements.*

Response: The proposed retaining wall is discussed in response to sub-standard (A)(3) and (4). The Grading Plan (Sheet C01) demonstrates that the retaining wall elevation will not be completely below the right-of-way, rendering sub-standard (6) non-applicable.

PGE has not received direction from the city building official regarding minimum fall protection for the retaining walls. Accordingly, no such protections are proposed and sub-standard (7) is satisfied.

> *B. When no other practicable alternative exists, the city engineer may permit a fence, hedge, wall, retaining wall, or combination thereof to be located within the right-of-way subject to all of the following:[…]*

Response: The Site Plan shows that no existing or proposed fencing will be located within the right-of-way. This standard does not apply.

> *C. It is unlawful for any person to erect any electric fence or any fence constructed in whole or in part of barbed wire or to use barbed wire, except as erected in connection with security installations at a minimum height of six feet, providing further that prior written approval has been granted by the city manager.*

Response: No new fencing will be electric fencing or barbed wire. Where new security fencing is installed, it will be metal, mesh, anti-climb fencing. This product, “WireWorks Anti-Climb” fencing has anti-scale and anti-cut welded wire mesh.

Most of the existing fencing at the west and north sides of the property will remain. Existing fencing in these locations is 8 feet tall and does have razor wire at the top. If new fencing is installed at these locations, those segments of new fencing must comply with current city requirements.

OCMC 17.56 - Conditional Uses

17.56.010 - Permit—Authorization—Standards—Conditions.

A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the planning commission in accordance with the standards and procedures of this title. A conditional use permit listed in this section may be permitted, enlarged or altered upon authorization of the planning commission or city commission in accordance with the standards and procedures of this section. Any expansion to, alteration of, or accessory use to a conditional use shall require planning commission or city commission approval of a modification to the original conditional use permit unless authorized in this chapter.

A. Conditional uses, because of their public convenience and necessity and their effect upon the neighborhood shall be permitted only upon the approval of the planning commission or city commission after due notice and public hearing, according to procedure as provided in OCMC 17.50. The applicant shall provide evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrate that the proposed use also satisfies the following criteria:

1. The use is listed as a conditional use in the underlying district;

Response: The existing PGE line center and the proposed expansion is a Public Utility use. "Public utilities and services" is defined in OCMC 17.04.985 as,

"[…] facilities for providing electric power, communication, water, sewers, and transportation."

The project site is located in the Mixed-use MUC-1 zone, where the Public Utility use is permitted with conditional use approval. (OCMC 17.29.030.E) That section of code also explicitly permits outdoor storage ("…and outdoor storage associated with the conditional use") which is directly relevant to the proposal since it is part of the current and proposed site design.

The proposed Communications Tower is an integral part of the public utility, will replace two existing towers. Regardless of whether it is accessory to the primary public utility use or if it were a development on its own, the tower would require conditional use approval. "Construction or modification of a support tower" is a conditional use per OCMC 17.80.070.

Finally, as part of this development, the applicant will use land area to the west of its current property owned by the neighboring church for a temporary construction and parking area. This land is zoned R-2. Though it is not permanent development, public utility uses are listed as a conditional use in the R-2 zone (OCMC 17.12.025.G).

Therefore, the use and all its associated development is listed as a conditional use in the MUC-1 and R-2 zones. This includes the new facility, the communications tower, and the temporary construction area.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;

Response: The existing site containing the PGE line center has been in operation for many decades and is suitable for the public utility use. The proposed Operations Center will expand on currently vacant land to the east to use the full project site. This site is marginally different from the existing conditions, and its characteristics will meet the Operations Center needs while continuing to be a compatible land use. Below, we detail the suitability of the characteristics listed in this criterion.

Size and shape

The existing line center is on approximately six and a half acres, which is a significant constraint on the facility. The proposed Operation Center modernizes the buildings and accessory development on the property, necessitating a larger site of 11.7 acres.

The site size will sufficiently accommodate the sizable outdoor storage needs. The Site Plan (Sheet A11) depicts the storage areas for critical elements such as utility poles and material like spools of wire. The site size and design also permits covered fleet vehicle storage and a garage which will be critical for maintaining PGE fleet vehicles.

The rectangular shape is made up of approximately 1,500 linear feet of frontage on Warner Milne Rd, the two side lot lines (412 feet and 310 feet, respectively), and the rear lot lines which total approximately 1,550 linear feet. The long frontage allows sufficient spacing to allow three proposed vehicle access points well away from each other. Multiple accesses and sufficient driveway spacing is a necessity for the efficient and safe on-site circulation of Operations Center employees and fleet vehicles, as well as controlling interaction with traffic on Warner Milne Rd.

Location

The proposed Operations Center is well positioned along Warner Milne Road, where a long site frontage provides strong connectivity to the surrounding transportation network. Warner Milne Road, classified as a Minor Arterial, together with the nearby north-south Beavercreek Road (Minor Arterial), offers roadway capacity and circulation patterns that readily accommodate multiple ways for trucks and other vehicles to reach out into the surrounding area and maintain the electrical power infrastructure in the area. The presence of a signalized intersection at Warner Milne and Beavercreek is particularly advantageous, as it can reliably support the primary fleet-vehicle movements as well as safe, efficient ingress and egress for daily operations.

Transit accessibility further strengthens the site's suitability: nearby bus stops and regular transit service provides convenient travel options for employees who may use public transportation. Additionally, existing sidewalks and bike lanes along most of the Warner Milne frontage create safe and comfortable conditions for pedestrians and cyclists, reducing the need for extensive off-site improvements and supporting sustainable transportation choices.

Surrounding land uses—including educational, civic, medical, and cemetery uses—are compatible with the anticipated activity levels and operating hours of the Operations Center, minimizing potential land-use conflicts. The current site has operated with no notable conflicts for many years with its abutting neighbors. The expansion onto properties to the west is anticipated to keep the same degree of compatibility with neighboring uses. The site also offers strategic operational benefits: its location in the heart of Oregon City enables a communications tower to reach PGE fleet and customer areas, enhancing service reliability and response capabilities.

Related to location, the proposed temporary use of the abutting church property for construction laydown and parking is a conditional use immediately west of the site. This land has been vacant for many years and is appropriate for such a short-duration. It will be returned to its original condition after a 12 to 18 month construction period.

Finally, because the project site is already developed, essential public utilities are readily available, reducing cost, complexity, and construction impacts.

Topography and Natural features

As stated previously, the project site is highly developed, relatively flat and ideal for redevelopment and infill. In part, the site and surrounding area are highly developed due to the existence of the current line center and a relative lack of natural resources.

A small area along the Warner Milne Road frontage is within the city's Natural Resources Overlay District (NROD). The overlay protects a drainage that flows south through the site and then under the road in a culvert. This area of inventoried natural resources was defined and mapped by a previous land use decision and is depicted on the Site Plan. This natural feature and the NROD overlay has been incorporated into the design of the project, largely by avoiding it. The small size of the vegetated buffer on the property and the abutting right of way allows the proposed use to operate efficiently, and protects the resource. requirements in the corresponding section of this narrative. Landscape buffering and sidewalk design are specifically oriented to accommodate the drainage and overlay protecting it.

The site contains no other topographic (steep slopes) or natural (floodplains, geologic hazards) constraints to development. For these reasons the topography and natural features of the site are suitable for the proposed use.

Existing improvements

The project site is also well suited for development because much of it is already developed with the same use. The existing line center has operated on the west side of the property for many decades, coexisting with its neighbors. The property is immediately adjacent to the full suite of public utilities, reducing needs for infrastructure development and enabling efficient construction. In addition, the existing site transportation facilities—including the signalized intersection at Warner Milne Road and Beavercreek Road, as well as sidewalks and bike lanes along the frontage—provide a strong baseline network for the benefit of Operations Center users and the surrounding community. Proposed development includes enhancements to public transportation infrastructure.

The site's current access to the street network further contributes to its suitability. The site has numerous vehicular access points along its long frontage, some of which are being removed with new development. Proposed changes call for a new emergency through access point aligned with Hughes Street, creating a valuable opportunity for emergency response planning. This expands the city's network of access for emergency response purposes.

Together, these existing improvements demonstrate that the site can readily and efficiently accommodate the proposed Operations Center, making it an ideal and highly suitable location for the project.

3. Development shall demonstrate compliance with OCMC 16.12;

Response: The proposed Operations Center meets all applicable requirements of OCMC 16.12 Minimum Public Improvements and Design Standards for Development. This includes two modifications, for provision of streets through the property and the width of the abutting minor

arterial. Separate findings for this chapter of the code were provided above in the corresponding section.

> *4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;*

Response: PGE's proposed Operations Center will redevelop the existing PGE line center. The proposed use, which is categorized as a public utility, will infill a currently vacant and underutilized area along Warner Milne Road. By improving ordinary maintenance of the local and regional electrical grid and emergency response, the project will be an asset to the area and to PGE's regional network. Any potential impacts will be minor, highly localized, and incremental, relative to existing conditions. They will not reach a degree that would negatively affect the character of the surrounding area. Below, we address potential impacts in the context of this criterion, which contains several highly subjective words or phrases.

The "surrounding area" is non-specific, allowing for flexibility based on the intensity of the proposed use and the geographic extent of its potential impacts. Broadly defined, this surrounding area contains all properties immediately abutting or across the street from the property and some parts of the greater Elyville neighborhood. For the purposes of this criterion, PGE considers the "surrounding area" to be those lots that share a property line or are across a right-of-way from the project site[1].

The existing area is characterized by

- The traffic on Warner Milne and Beavercreek Roads,
- Day-time non-residential uses including a church, cemetery, middle school, and County administration and services
- Low and medium density residences
- Flat topography
- A Title 3-protected stream
- Unconstrained vacant land
- Vacant land constrained by protected natural resources

To date, PGE is not aware of neighboring property concerns regarding the existing use and its impact on the area's character.

In the context of this criterion, the existing PGE line center – an approved conditional use itself – provides a base case from which to judge development impacts. The existing and proposed use

[1] Tax Lot IDs: 32E06DA00200, 32E06AD07800, 32E05CB01000, 32E05CB00900, 32E05CB00400, 32E05CB00301, 32E05CB00200, 32E05CB01700, 32E05C 00600, 32E05C 00603, 32E05C 00811, 32E05C 00813, 32E05C 00801, 32E05C 00700, 32E05C 00812

necessitate activities including material storage, fleet vehicle traffic and maintenance, offices, and long-range communications via towers, and temporary construction siting.

At present, users of nearby properties may experience the existing use via operational traffic and noise, or visual impacts of the two communications towers – the extent of which are limited to the adjacent properties. As we discuss more below, the anticipated extent of potential Operations Center impacts includes visibility of the proposed replacement communications tower. The submitted renderings (Exhibit C, A41, A42) depict the tower – approximately seven feet taller than the two existing towers it will replace. A visual study required for the Communications Facilities section of the code depicts future impacts on views toward the PGE site.

Any potential change in impact types resulting from the Operations Center development would be minor compared to existing conditions. The small-scale changes would not reach a level of altering the character of the area, let alone to a degree that would "substantially limit, preclude, or impair" permitted uses on the properties.

Traffic

The submitted Transportation Impact Study (TIS) (Exhibit D) demonstrates that the proposed Operations Center will generate an increase in daily trips proportional to the facility's expanded operational capacity. However, these additional trips remain within the carrying capacity of the surrounding roadway network. Current traffic associated with the site consists of routine operational travel—employees and visitors arriving in personal vehicles, PGE crews or staff using fleet or company vehicles, as well as contractor related vehicles plus deliveries—which collectively result in an AADT of approximately 368. According to the TIS, the anticipated increase in vehicle trips (roughly 61% on a daily basis) represents only a marginal change from existing conditions (an increase of 30 AM peak hour trips and 10 PM peak hour trips) and, with proposed improvements, will not result in traffic levels that alter roadway function or disrupt the established character of the area.

The TIS concludes that PGE's planned on-site circulation system and frontage improvements along Warner Milne Road will effectively mitigate the incremental increase in traffic. Key access improvements include consolidation/elimination of existing access to Warner Milne to be replaced with a new secure gated entrance aligned with the signalized intersection at Beavercreek Road, a gated access on Warner Milne Road near the west campus boundary, and a new employee parking area accessed via a north–south private corridor aligned with Hughes Street and supported by appropriate stop-controlled movements. The new driveway on the east side of the facility will also provide a public emergency-access easement. The parallel shared use path provides a pedestrian connection to Hughes Street and Kamm Street.

The applicant recommends the following modifications to the intersection of Warner Milne Road and Beavercreek Road, as explained in the TIS:

- A new southbound approach (private access to PGE) with a separate left-turn lane and a shared through/right lane;
- A new eastbound left-turn lane with at least 150 feet of storage;
- Restripe the northbound approach to provide a separate left-turn lane and a shared through/right turn lane with the existing storage available today;

- Provide protected/permissive left-turn signal heads on all approaches to allow the City flexibility as multi-modal traffic volumes grow at the intersection (permissive phasing will be used upon opening for the north-south movements and protected/permissive phasing for east-west movements, consistent with current operations).
- Replace the existing eastbound and northbound right-turn permissive and overlap phases with permissive-only phasing (due to the new north approach, the eastbound right-turn movement will no longer overlap with an exclusive northbound phase and the northbound right-turn movement will no longer have an exclusive turn lane).

Landscaping, utilities, and signage along the frontage and internal drive aisles will be positioned to maintain City-required sight distances. The temporary use of the church property for construction equipment and parking has no additional impact on traffic. Collectively, these measures mitigate the Operations Center's transportation-related impacts and allow the proposed use to remain compatible with existing conditions and will not alter the character or function of the surrounding area.

Noise

Existing activities on the site already generate a baseline level of daytime noise typical for a public utility facility, including routine vehicle movements and backup beepers from fleet vehicles. These sounds have long been part of the area's operational context and have not interfered with the surrounding neighborhood's character. While redevelopment of the Operations Center may introduce a modest increase in these existing noise sources—similar to the minor changes anticipated for traffic and visual conditions—any such increase would remain incremental rather than transformative.

The proposed generator on the site will run to "feed the grid" situations where there are regional outages, in other emergency situations, and during infrequent testing. This results in an average operation of about 30 minutes of use per week. This degree of noise will remain below established nuisance thresholds and does not create new or disruptive effects. Similarly, the temporary construction area on church property will generate some noise from construction equipment moving around and temporary vehicle parking. This will abate in approximately one year after the main building is constructed. Ultimately, noise generated by the redeveloped Operations Center will stay consistent with the operational character already present at the site and will not rise to a level capable of altering the overall character of the surrounding area.

Visual

The Existing Conditions Plan (Sheet A10) illustrates that the project site is already characterized by the PGE line center. This utility-related development has long included an office and storage structure with an associated work yard. Other existing development includes two communications towers of approximately 70 and 88 feet, and masonry walls. Additionally, approximately half the site consists of vacant land.

The Elevation Drawings (Sheets A31 through A33) and architectural renderings (Sheet A41) show that the proposed Operations Center will remain consistent with this established utility character, with visible elements—such as building facades, the replacement communications tower, parking areas, and landscaping—limited to views from the public right-of-way, the future shared-use path at the east end of the site, and adjacent properties. A visual study with photo-simulations of the new tower from several vantage points in the neighborhood is part of the application submittal and also indicates the relatively minor visual impacts of the proposed use.

Rather than introducing a visual shift that could alter the character of the area, the proposed redevelopment will substantially enhance the site's appearance. The new buildings incorporate modern design features, including increased transparency and varied, human-scaled façade treatments, which soften the facility's visual presence and improve compatibility with nearby development. Additionally, the introduction of structured landscaping and stormwater features will transform currently vacant portions of the site into active, well-maintained spaces. Together, these improvements are designed so that the Operations Center will not only uphold but improve the existing visual character of the area without altering its established identity as a mixed-use corridor.

A temporary visual impact occurs due to the construction area proposed on church land west of the site. This is proposed, during the construction period of 12 to 18 months, to be a fenced area with vehicles, construction equipment, and parking. This visual impact will be short-lived and the land returned to its previous state after completion of the construction project.

Figure 7. Perspective view from SE along Warner Milne

Primary Uses on Surrounding Properties

A second prong of criterion (4) is analyzing the primary uses on the surrounding properties, to see if they are substantially impaired by the (potentially) impacted area's character, ostensibly caused by the proposed use.

As concluded above, the proposed Operations Center will not alter the character of the area. Therefore, PGE finds that the question of a changed character and the effect on surrounding uses is

a moot point. However, in an abundance of caution, below PGE has discussed how the Operations Center also will not "substantially limit, impair, or preclude" these uses.

As with the above analysis of impacts on the character of the area, PGE has assessed the surrounding properties as those lots that share a property line or are across a right-of-way from the project site.

The analysis next identifies the "primary uses" allowed in zoning districts on these "surrounding properties." Because the code states "allowed," conditional uses are not included. Identifying the applicable zones and primary uses is necessary to determine whether the proposed utility line will "substantially limit, impair, or preclude" them.

Only four zoning districts apply to the fifteen tax lots that meet the interpretation of surrounding properties. Those zones are the High Density Residential (R-2), Low Density Residential (R-6), Medium Density Residential (R-3.5), and Mixed-Use Employment (MUE) districts. The MUE zone has nine lots, the R-6 zone has five lots, the R-2 zone has one lot, and the R-3.5 zone has one lot. Primary uses for each zone are listed in its corresponding chapter of the code: OCMC 17.12, OCMC 17.10, OCMC 17.08, or OCMC 17.31.

The primary uses listed in each of the four zones fall into the following use categories:

- Residential, low to high densities
- Recreational, such as parks, playgrounds, playfields
- Home occupations and family day care providers
- Small-scale urban agriculture
- Outdoor markets and food carts
- Medical and health
- Offices and laboratories
- Light industrial
- Civic, including emergency services facilities and postal services
- Utilities
- Transportation facilities

The Operations Center's minor and well-mitigated traffic, noise, and visual impacts will not interfere with any primary uses allowed on surrounding properties. It is important that the proposed use is merely an incremental change from the existing use, not the conversion of a vacant property. That incremental change will not create the conditions to limit, impair, or preclude any of the uses otherwise allowed on these nearby properties. In other words, residential, commercial, civic, and recreational uses may continue to function normally. There will be no changes to access, noise levels, or site conditions that would limit or impair their operations. Because the project introduces no externalities substantial enough to affect these uses, all permitted activities in the applicable zoning districts can continue without being significantly affected by the PGE development.

Conclusion

When placed in proper context, none of the impacts identified were found to alter the character of the area, considering the presence of existing development, the scale and variability of the

surrounding area, and potential favorable impacts that result from the project. Given that public utility is a long-established existing use, a proposal would need a high degree of impact to alter the character of the entire area. Even more improbable is the idea that this character change would rise to the level of limiting, impairing, or precluding allowed uses on nearby lots.

5. The proposal satisfies the goals and policies of the city comprehensive plan which apply to the proposed use.

Response: The proposed Operations Center satisfies the goals and policies of the Oregon City Comprehensive Plan that apply to the use. As detailed throughout this narrative, the project complies with the applicable standards of the Oregon City Municipal Code (OCMC), with adjustments and modifications where allowed.

With respect to natural resources, the proposal is consistent with the Comprehensive Plan's Natural Resources objectives. Under *Chapter 4 (Protected Environment)*, Goal 2, Policy 2.2 encourages site development and design that minimizes impacts on natural resources. The policy is implemented through the City's Natural Resources Overlay District (NROD). The NROD applies to a portion of the project site, and the applicant demonstrates full compliance with the findings for OCMC 17.49. The Landscape Plan, stormwater design, and related site enhancements further advance these goals by improving on-site conditions for the water feature and integrating natural features into the redevelopment.

The proposal also advances the Comprehensive Plan's economic development objectives. Under *Chapter 2 (Diverse Economy)*, Goal 3, Policy 3.1 encourages efficient land use, infill, and redevelopment of properties with access to existing infrastructure. The proposed Operations Center accomplishes this by redeveloping an existing line center and utilizing adjacent under-utilized lands, all within an area already served by public roads, utilities, and essential infrastructure. Policy 3.2, which promotes walkable neighborhoods and multimodal connectivity, is likewise met: the proposed shared-use path will create a new link between Warner Milne Road—a minor arterial—and nearby neighborhoods to the north, enhancing transportation options and local accessibility.

The project further complies with *Chapter 3 (Connected Infrastructure)*, meeting several key policies that guide sustainable and coordinated development. The project aligns with Goal 3, Policy 3.4, which calls for coordination with service providers to ensure high levels of public utility and infrastructure service. As a public utility project, the Operations Center is inherently coordinated with the city and regional service providers, and its design, circulation, communications facilities, and utility improvements are planned to maintain and enhance reliable service throughout the area. In addition, in compliance with Goal 4, Policy 4.1.A, the proposal places a public facility on underdeveloped and vacant buildable land where public services are readily available, consistent with the Comprehensive Plan's strategy for efficient and compatible growth. Policy 4.2 is also satisfied by the project's green, low-impact stormwater design, which consolidates and manages runoff without adding strain to public infrastructure.

Collectively, these elements demonstrate that the proposed Operations Center is aligned with, and meaningfully advances, the Comprehensive Plan goals and policies applicable to the site and the proposed use.

B. Permits for conditional uses shall stipulate restrictions or conditions which may include, but are not limited to, a definite time limit to meet such conditions, provisions for a front, side or rear yard greater than the minimum dimensional standards of the zoning ordinance,

suitable landscaping, off-street parking, and any other reasonable restriction, condition or safeguard that would uphold the spirit and intent of the zoning ordinance, and mitigate adverse effect upon the neighborhood properties by reason of the use, extension, construction or alteration allowed as set forth in the findings of the planning commission.

Response: The applicant acknowledges that conditions of approval may be applied to this proposal.

C. Any conditional use shall meet the dimensional standards of the zone in which it is to be located pursuant to subsection B of this section unless otherwise indicated, as well as the minimum conditions listed below.

D. In the case of a use existing prior to the effective date of the ordinance codified in this title and classified in this title as a conditional use, any change of use expansion of lot area or expansion of structure shall conform with the requirements for conditional use.

Response: The proposed Operations Center meets the dimensional standards of the MUC-1 zone. The applicant responded in detail to those standards in the OCMC 17.29 section of this narrative. As demonstrated in those findings and in the responses to the minimum conditions below, sub-standard (C) is met.

In this application, PGE requests conditional use approval for multiple elements of this project. The proposed Operations Center expands the existing PGE line center (an approved conditional use) with new building area and lot area. Additionally, the proposed communications tower replaces two existing towers, which is new construction and a conditional use (OCMC 17.80.070(B)). Finally, temporary construction area is proposed on land to the west of the PGE site that is owned by the neighboring church. A public utility is also a conditional use on this property, which will be returned to its original condition after construction. As demonstrated in the responses to the standards in this section, sub-standard (D) is met.

17.56.040 - Criteria and standards for conditional uses.

In addition to the standards listed herein in OCMC 17.56.010, which are to be considered in the approval of all conditional uses and the standards of the zone in which the conditional use is located, the following additional standards shall be applicable:

A. Building Openings. The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the planning commission.

Response: There are only three adjacent residential properties in residential zones are adjacent to the project site, located at its northeast corner[2]. These are within the R-3.5 and R-6 zones. None of the proposed new building entrances will be located within fifty feet of these properties. Therefore, this criterion is not applicable.

B. Additional Street Right-of-Way. The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is

[2] Tax Lot IDs west to east: 32E05CB00400, 32E05CB00301, and 32E05CB00200.

inadequate for its use; or where the nature of the proposed development warrants increased street width.

Response: The project site has frontage on Warner Milne Road, classified as a Minor Arterial roadway. Accordingly, the existing street section on the project's side of the road centerline necessitates additional right-of-way to comply with the required minor arterial dimensions, which are also modified as discussed in the response to Section 16.12. To comply with criterion (B) above and the public improvement standards (OCMC 16.12), PGE will dedicate sufficient of right-of-way to meet requirements. The Site Plan shows that, with the requested modification, the proposed frontage improvements meet all applicable standards and requirements of the City Engineer.

This criterion is met.

C. Public Utility or Communication Facility. Such facilities as a utility substation, water storage tank, radio or television transmitter, tower, tank, power transformer, pumping station and similar structures shall be located, designed and installed with suitable regard for aesthetic values. The base of these facilities shall not be located closer to the property line than a distance equal to the height of the structure. Hydroelectric generation facilities shall not exceed ninety megawatts of generation capacity.

Response: The proposed Operations Center, including the new communications tower, is subject to Conditional Use criterion (C) because it constitutes a public utility use with an associated communication facility. As demonstrated throughout this narrative, the site has been designed with careful consideration for aesthetic values and, with approval of the requested adjustments and modifications, the project meets all applicable development and design standards of the Oregon City Municipal Code. The proposed communications tower (Sheet A61) is 102 feet tall including its antenna, is an essential operational component of the facility, and replaces two existing towers on the site, currently 70 feet and 88 feet in height. Although the increased height requires an adjustment to OCMC 17.80.110(B), the proposed tower is sited in a location that places it significantly farther from the public street frontage—approximately 334 feet and 192 feet, respectively—than the existing structures it replaces.

The criterion's requirement that the tower be located, designed, and installed with "suitable regard for aesthetic values" is necessarily subjective. PGE acknowledges that the new tower will be visible, and it would not be accurate to suggest that its appearance will be indistinguishable from current conditions. However, whether the aesthetic change is perceived as positive, negative, or neutral depends largely on viewer location, context, and individual preference. Throughout project planning, PGE's architects, landscape architects, and engineers intentionally evaluated the visual environment, selecting non-reflective material and refining the tower's profile to minimize massing, reduce visual clutter, and keep the structure as short as technically feasible while meeting functional requirements. The concept images (Sheets A41, A42) illustrate how the tower has been integrated into the overall campus design with particular sensitivity to nearby residential areas and the property's street-facing character.

The second half of criterion (C) requires that the base of the facility not be located closer to the property line than a distance equal to its height. The proposed tower, due to its essential role in system operations, is a uniquely integral component of the public utility use. While the tower height exceeds the standard threshold and therefore necessitates an adjustment under OCMC 17.80.110, approval of that adjustment allows the facility to meet all other applicable siting, setback, and design requirements. With the adjustment in place, the proposal satisfies both the intent and the functional objectives of criterion (C) by ensuring that the tower is placed

thoughtfully, designed with aesthetic consideration, and incorporated into the broader public utility campus in a manner compatible with its surroundings.

OCMC 17.58 – Lawful Nonconforming Uses, Structures, And Lots

17.58.015 - Applicability.

> *The regulations of this chapter apply only to those nonconforming situations that were lawfully established or that were approved through a land use decision. All nonconforming structures, uses or lots shall have been maintained over time. These situations have lawful nonconforming status. Nonconforming situations that were not allowed when established or have not been maintained over time have no lawful right to continue.*

Response: The only nonconforming situation that is relevant to this development proposal is the presence of an existing garage at the north edge of the site, adjacent to the cemetery. This garage building is being repaired and updated for continued use. It is one of the few elements of the site that is being retained with the construction of the new Operations Center. This structure, which is 8,000 square feet is approximately three feet from the north property line, which makes it nonconforming as to its building setback, which would otherwise be twenty feet for new structures.

17.58.040 - Lawful nonconforming structure or site.

> *A structure or site that was lawfully established but no longer conforms to all development standards of this land use code (such as setbacks) shall be considered lawfully nonconforming. Notwithstanding development standard requirements in this code, minor repairs and routine maintenance of a lawful nonconforming structure are permitted. The continuation of a lawful nonconforming structure or site is subject to the following:*
> *[…]*

Response: The garage building was lawfully established and will be continued with the proposed development.

17.58.060 - Process to confirm the legality of a nonconforming use, lot or structure.

> *Any person may request a Type I or a Type II review to confirm the legality of a nonconforming use, lot, structure or site. In order to confirm that the nonconforming use, lot, structure or site is legal, sufficient evidence shall be submitted to the city determining the following:[…]*

Response: As noted, the existing garage will be repaired and updated as part of the site's redevelopment. A formal determination of the nonconforming status of this building is not understood to be necessary.

OCMC 17.62 - Site Plan and Design Review

17.62.015 - Modifications that will better meet design review requirements.

> *The review body shall consider modification of certain site related development standards of this chapter specified below. These modifications may be approved as part of a Type II design review process.*

A. Applicability.

1. This process shall apply to modifications to:

[…]

e. Building location in OCMC 17.62.055.D;

[…]

h. Parking lot landscaping in OCMC 17.52.060.

Response: The proposed Operations Center will comply with most standards within this chapter without modification. However, PGE requests one modification to OCMC 17.62.055(D) *Siting Standards* and, therefore, the requirements of this section are applicable.

The standard for parking lot landscaping may be addressed under this modification section, as listed above. However, as a "parking standard" it is also expressly allowed to be addressed by an adjustment to Section 17.52. A request to waive interior landscaping on a subarea of the parking lot was part of the findings for that section.

The full standard of *OCMC 17.62.055(D)* for which PGE requests a modification is:

> "*Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage."*

The standards within OCMC 17.62 apply to specific building-use types. Oregon City planning staff advised PGE that on a large site with multiple buildings, many of which are utilitarian uses for public utility infrastructure, building design requirements apply only to the office building which is the east part of the new building with frontage on Warner Milne Road. The standard quoted above cannot be met for a site with a very long street frontage, either by just the office component or all proposed buildings with street frontage.

The project site has 1,500 linear feet of frontage on Warner Milne Road. The office portion of the main building is situated five feet from the property line, and occupies 299-feet of that frontage. In addition, the storeroom portion of the building and the covered storage building west of the main truck driveway are also within five feet of the property line, further defining the street edge. These building frontages provide an additional 260 feet of building at the edge of the property. The office portion that is subject to this regulation occupies 20 percent of the total linear frontage of the site, well short of the 60 percent minimum. Even adding in the other two buildings, storeroom and covered storage, this takes up only 37 percent of the linear frontage of the site. In either situation, an adjustment is needed.

Hypothetically, to meet this standard, PGE would be required to construct a very long, very shallow building along the street frontage. Holding constant the proposed total area of the office building and storeroom, this would result in an impractical and bizarre building shape of 900 feet long and only 40 feet in depth. A building shape like this is not practical or responsive to the needs of the proposed Operations Center.

As demonstrated in response below, the modification will better meet design guidelines, and be consistent with the intent of the standard.

B. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:

1. The modification will result in a development that better meets the applicable design guidelines; and

Response:

Sub-criterion (1) asks about the modification's overall design *outcome* and *performance* relative to the standard being modified. While a 900-foot building frontage would technically satisfy the standard, it would do so at the expense of good design. A structure stretching this length would either be bizarrely shallow in its north-south dimension, or at a normal depth would be vastly oversized for PGE's needs.

Instead, the Site Plan and Elevation Drawings show a proposed 299-foot façade, in addition to the attached storeroom (146 feet) and nearby covered storage building (115 feet), will result in a far more appropriate design given the scale of the site. Along with stormwater detention ponds and street trees occupying the remainder of the Warner Milne Frontage, the resulting effect will improve the overall experience from the street of this long frontage.

2. The modification meets the intent of the standard. On balance, the proposal will be consistent with the purpose of the standard for which a modification is requested.

Response: The intent of the standard is to enhance the quality of the streetscape, and to avoid long, inactive stretches of frontage that detract from the public realm. Sub-criterion (2) asks whether the specific code standard being modified is still consistent with that purpose, even if not followed literally. This standard is aimed at institutional, office, multi-family, retail, and commercial buildings. The public utility use is quasi-industrial in some ways, but still subject to these streetscape requirements that are better suited to commercial buildings.

The proposed design fully respects the principles of a pleasant and activated streetscape. As shown on the Site Plan, the overall presence of buildings at the edge of the street is strengthened by the placement of the storeroom, covered storage building, and vegetated stormwater facilities—all positioned within five feet of the property line. Together, these elements create visual interest, reinforce the human scale, and eliminate the potential for wide, empty gaps along the frontage. In doing so, the project upholds the spirit of the standard while achieving a more functional and context-sensitive design.

17.62.030 - When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-family uses, manufactured home parks, and nonresidential uses in all zones. Site plan and design review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80.

Response: The Operations Center is a public utility use, which is permitted with conditional use approval in the MUC-1 zone. Therefore, the standards of this chapter are applicable.

17.62.035 - Minor site plan and design review.

This section provides for a minor site plan and design review process. Minor site plan review is a Type I or Type II decision, as described in OCMC 17.62.035.A, subject to administrative proceedings described in OCMC 17.50 and may be utilized as the appropriate review process only when authorized by the community development director. The purpose of this type of review is to expedite design review standards for uses and activities that require only a minimal amount of review, typical of minor modifications and/or changes to existing uses or buildings. […

Response: Under the requirements of this section, the proposed development does not qualify for a Type I review. Specifically, it is "an increase in square footage of a conditional or nonconforming use" (A.1.b), and proposes a modification (A.1.d). Therefore it is a Type II site plan and design review.

17.62.050 - General standards.

All development shall comply with the following standards:

A. Landscaping.

1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

Response: The Landscape Plan (Sheets L01 through L03) includes the proposed planting plan. No existing plant material will be preserved, with the exception of existing trees as indicated on the tree protection and removal plan. Plant preservation will not be possible since virtually the entire site will be regraded to accommodate new construction. In areas where trees will be preserved, most of the existing plant material is grass or invasive plants, all of which will need to be removed for planting upgrades. Therefore, the requirements are met.

2. The amount of landscaping required is found in the standards for each underlying zone. Where the underlying zone does not contain and minimum landscaping standard, the minimum site landscaping shall be fifteen percent of the total site area. Except as allowed elsewhere in Title 16 or 17 of this code, all areas to be credited towards landscaping shall be installed with growing plant materials.

3. Pursuant to OCMC 17.49, landscaping requirements within the natural resource overlay district, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.

Response: The underlying zone, MUC-1, requires a minimum twenty percent landscaped area on the project site. The Landscape Plan shows proposed landscaping and has calculated that twenty-one percent of site area is landscape, exceeding the minimum requirement. All such landscaped areas are to be planted with growing plant materials. Therefore, the requirements of standard (2) are met.

Non-native plants within the NROD will be removed and new native plants will be planted. PGE's responses to the requirements of OCMC 17.49 demonstrate compliance with the chapter's applicable landscaping standards.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.

Response: The proposed landscaping and parking lots were designed by the applicant's registered landscape architect, Lango Hansen. The Landscape Plan Land Use Notes affirm compliance with the above standard.

See the Tree Inventory and Notes (Sheet L01), Tree Protection and Removal Plan (Sheet L02), and PGE's responses to OCMC 17.42 *Tree Protection, Preservation, Removal, and Replanting Standards* demonstrating compliance with tree-related standards.

5. Landscaping shall be visible from public thoroughfares to the extent practicable.

6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.

Response: Proposed landscaping includes plantings in the setbacks along the site's Warner Milne Road frontage and the new shared-use path. These will be readily visible.

Landscaping elements not immediately adjacent to public thoroughfares, such as internal parking lot plantings, and landscaped setbacks around the side and rear property lines, will be visible at a distance, though at certain angles obscured by the new structures.

The Site Plan (Sheet A11) includes sightlines at the site access points, noting and demonstrating that the plantings will comply with the visibility requirements of OCMC 10.32.

B. Vehicular Access and Connectivity.

1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.

Response: The southern façade of the proposed office and storeroom building is closest to Warner Milne Road. The Site Plan shows the proposed employee and fleet parking lot located east of the new building, along with covered fleet-vehicle parking behind it. Therefore, in line with the standard above, all proposed parking areas are situated behind or to the side of the buildings.

2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.

Response: There are no existing vehicle or pedestrian access easements through the project site that connect the right-of-way and adjoining properties. In accordance with OCMC 16.12.032, the applicant proposes a shared-use pedestrian and cyclist path that will connect the Warner Milne

Road right-of-way on the south to the Hughes Street and Kamm Street rights-of-way to the north. The Site Plan shows the path and the accompanying easement.

3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.

Response: The project site is approximately 12 acres. Therefore, this standard applies, as do the requirements of OCMC 16.12. PGE responds in detail to those requirements in the corresponding earlier section of this narrative. In lieu of a full street, PGE will provide an emergency vehicle easement and pedestrian/bicycle path on the east boundary of the site. As discussed in the findings for Section 16.12, and as requested by staff in the pre-app, PGE requests a modification to this requirement for a street through the site as a public works modification. It should also be noted that that section explicitly permits public access easements in lieu of streets, per 16.12.016(G) and (H). This approach to the exception was determined in collaboration with city planning and engineering staff.

4. Parking garage entries shall not be more than half of the streetscape.

Response: No parking garages are proposed. This standard is not applicable.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:

1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.

Response: City planning staff clarified that the standards of this section apply solely to the office building, and not the existing garage or covered storage building on the site. Therefore, this is applicable to pedestrian routes between Warner Milne Road and the entrances to the proposed office/storeroom building.

Due to the security requirements of the proposed Operations Center, much of the site is contained within gated fencing (see more detailed findings for fencing standards in response to 17.54 *Supplemental Zoning Regulations).* Consequently, pedestrian access from the sidewalk on Warner Milne Road is limited to the main entrance on the east side of the office part of the building location (see Site Plan, Sheet A11). The pathway from the sidewalk to the office building's main entrance on the eastern façade is direct and will not cross a drive aisle. In compliance with the above standard, a contiguous pedestrian path wraps around the north side of the building and connects to the other office/storeroom building entrances on that side of the structure.

2. The pedestrian circulation system shall connect all main entrances, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.

Response: The Site Plan demonstrates compliances with the above standard, showing the pedestrian pathways connecting main entrance to the building and the site to Warner Milne Road. Within the site, there are internal pedestrian pathways to:

- Employee and fleet-parking lot on the site's east side

- Covered fleet-vehicle parking north of the office and storeroom building
- Bicycle parking near the office building's main entrance
- Shared courtyards on the office and storeroom building's northern façade

> *3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.*

Response: The main building entrance is connected to site uses, including the sidewalk, the parking lot, and other building entries. In addition, a new shared use path connects the Warner Milne Road sidewalk to adjacent sites north of the PGE property. As a secure property inside an access controlled fence, there is not a need to connect with pedestrian infrastructure the main PGE office building entrance to buildings on adjacent sites.

> *4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.*

Response: No external stairways or walkways are proposed. The above standard is not applicable.

> *5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier.*
>
> *If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive isles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.*

Response: On site pedestrian walkways consist of:

- a shared use path on the east side of the site that connects the Warner Milne Road sidewalk to Hughes Street and Kamm Street;
- a pathway to the main office building entry from the Warner Milne Road sidewalk,
- a walkway at the edge of the parking lot west of the last bay of parking spaces, leading to main entry, and
- a walkway around the north side of the office building.

The Site Plan and Drainage Plan show all proposed pedestrian walkways designed in compliance with the above standard. The Plans show the walkways are constructed with either asphalt (shared use path) or concrete (other paths), and visually contrast with adjoining surfaces. The pathways are all at least five feet wide. The shared use path at the east end of the site is seven feet wide, consistent with city standards for such a facility.

> *D. All development shall maintain continuous compliance with applicable federal, state, and city standards.*

Response: PGE acknowledges the ongoing requirements set forth in the above standard.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to city standards as set out in the city's facility master plans and public works design standards. A development may be required to modify or replace existing off-site systems if necessary to provide adequate public facilities. The city may require over sizing of facilities where necessary to meet standards in the city's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the city for over sizing based on the city's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Response: The submitted civil plans and PGE's responses to the applicable requirements of OCMC 16.12 (in the corresponding section of this narrative) demonstrate that the proposed Operations Center will comply with the above standard.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the city's transportation system plan.

Response: The transit agency, TriMet, has thus far not commented on the proposal. Nevertheless, PGE acknowledges the authority given by the above standard.

G. Screening of Mechanical Equipment. Commercial, mixed-use, institutional, and multi-family buildings shall include the following measures to screen or block views of mechanical equipment from adjacent streets according to the following requirements:

1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street on all new buildings or building additions. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened from adjacent streets, as viewed from the sidewalk or future sidewalk location on the adjacent street at pedestrian level. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening. Screening requirements do not apply to new or replacement equipment

on existing buildings. New or replacement rooftop mechanical equipment on existing buildings shall be painted or powder-coated.

2. Wall-mounted mechanical HVAC and air conditioning equipment, and groups of multiple utility meters shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including-air conditioning and groups of multiple utility meters, that extend six inches or more from the outer building wall shall be screened from view from adjacent streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall [be] exempt from this standard if painted.

3. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view from the public right-of-way.

4. This section shall not apply to the installation of solar energy panels, photovoltaic equipment, wind power generating equipment, dishes/antennas, pipes, vents, and chimneys.

Response: Though the proposed Operations Center is a public utility use, city planning staff have indicated that only the office portion of the proposed office and storeroom building must comply with commercial building standards (Pre-application Notes, Exhibit B).

Figure 8 shows the location of rooftop mechanical equipment on the office and storeroom building roof and that all such equipment will comply with the above requirements. The building roof plan (Sheet A21) and Elevation Drawings (Sheet A31) show additional detail.

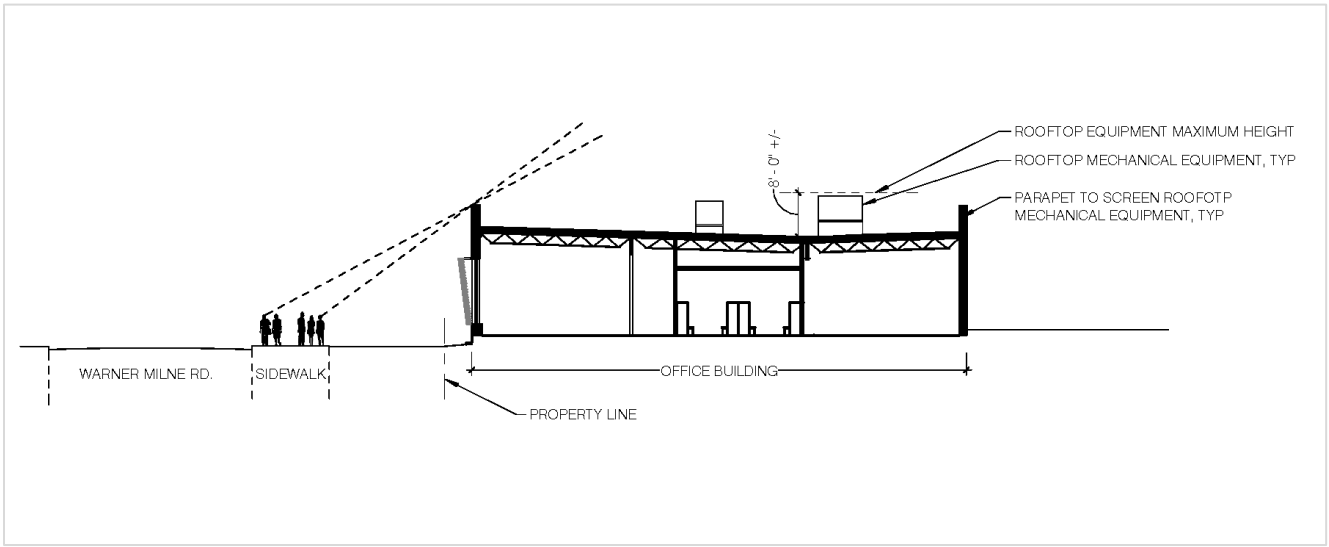

Figure 8. Rooftop equipment section drawing

The Site Plan shows the location of a ground-mounted transformer south of the new fencing, near the site access at the intersection of Wartner Milne Road and Beavercreek Road. The Landscape Plan demonstrates compliance with sub-standard (3).

H. Building Materials.

1. Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure:
[…]

d. Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, when excepted by 17.62.050.H.2.g, or when located on properties within the general industrial district).

2. Special Material Standards. The following materials are allowed if they comply with the requirements found below:

a. Concrete Block. When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.

b. Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.

c. Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.

d. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.

e. Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.

f. Vinyl or powder coated chain link fencing is permitted for city-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the general industrial district.
[…]

Response: The Elevation Drawings and Materials Board (Sheet A51) show that, in compliance with sub-standard (1), no new prohibited building materials are proposed. Furthermore, use of metal siding (a special material), will comply with sub-standard (2).

In general, no new chain link fencing is proposed. As permitted under (1)(d), some will be installed around the temporary construction lay down and parking area that will be established west of the site on church property. This fencing will be removed after construction is complete.

Similarly, the site has existing longstanding perimeter fencing on the west and north sides of the property that will remain. Approximately 1,030 linear feet of the existing chain link, perimeter fencing will stay in its current location. PGE further responds to related fencing standards in the narrative section corresponding to OCMC 17.54 *Supplemental Zoning Regulations.*

> *I. Temporary Structures. Temporary structures are permitted pursuant to the following standards: […]*

Response: No temporary structures are proposed. The above standard is not applicable.

> *J. All new utilities shall be placed underground.*
>
> *1. Service poles may be allowed on private property when undergrounding service is technically or physically infeasible.*

Response: The Utility Plan (Sheet C02) shows all new utilities located underground, in compliance with the above standard. No service poles are proposed, therefore sub-standard (1) is not applicable.

> *K. Development shall comply with requirements of the following Oregon City Municipal Code chapters, as applicable, including but not limited to: […]*

Response: PGE acknowledges the authority of OCMC chapters listed under the above standard. PGE has responded to the requirements of applicable chapters listed under this standard, according to direction from city planning staff.

17.62.055 - Institutional, office, multi-family, retail, and commercial building standards.

> *B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures.*

Response: The proposed Operations Center is a public utility use. This use does not fall neatly under any of the categories listed above. Practically, buildings on the site are a mix of office and quasi-industrial uses. City planning staff indicated that the utilitarian buildings such as the covered storage and garage buildings do not need to comply with these commercial building standards, only the office portion of the proposed new main structure must. The pre-app notes stated: "the city would see office buildings or portions thereof being reviewed under commercial standards and the other facility buildings being reviewed under industrial standards." (Exhibit B, page 1). That section of the building that contains office uses is a 23,000 foot structure with 299 feet of frontage on Warner Milne Road.

The Elevation Drawings and Figure 9 below depict the relevant office portion, to which the requirements of this section apply.

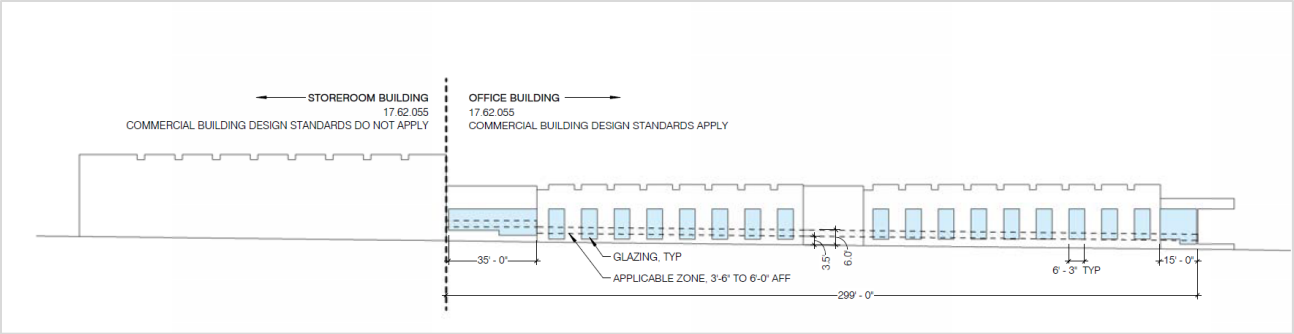

Figure 9. Office portion of the new building

C. Conflicts. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

Response: The standards of the MUC-1 zone are addressed in the findings above for Section 17.29. None of these standards appear to directly conflict with the site plan and design review standards. A parallel standard is that the maximum allowed front yard setback from Warner Milne Road in the MUC-1 zone is 5 feet, which is met by the proposed building.

D. Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, […]

A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

1. Tables, benches or other approved seating area.

2. Cobbled, patterned or paved stone or enhanced concrete.

3. Pedestrian scale lighting.

4. Sculpture/public art.

5. Fountains/water feature.

6. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.

7. Outdoor café.

8. Enhanced landscaping or additional landscaping.

9. Other elements, as approved by the community development director, that can meet the intent of this section.

Response: The project site frontage is approximately 1,500 linear feet. Therefore, the above standard is applicable. Given the long site frontage and limited need for office space, meeting the 60 percent façade requirement is not conducive to the realities of the proposed Operations Center.

PGE requests a modification to the standard to allow the 299-foot frontage of the office-portion of the new building. Responses to the OCMC 17.62.015 *Modifications* requirements were addressed

at the beginning of this section. These findings demonstrate that the requested modification meets the intent of the requirement and will result in an outcome that better suits the site.

Because the proposed building sits at the five-foot setback required by this provision, that part of the standard is met, and the modification is only needed for the length of the building along this frontage. As a bonus, the other buildings that are not technically required to meet this standard are also at the same location five feet from the property line, offering more definition to the street edge. Landscaping and vegetated stormwater facilities provide additional visual interest.

> *E. Building Orientation. All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.*

Response: The Elevation Drawings (Sheet A31) show the office's most architecturally significant façade and the building's main entrance, face Warner Milne Road. The main building entrance, a vestibule, will be recessed, and a canopy will provide weather shelter.

> *F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:*
>
> > *1. Display windows; recesses or projections; peaked roof or raised parapet over the door; canopy of at least five feet in depth; porch; distinct materials; architectural details such as tile work and moldings; pedestrian amenities such as benches, planters or planter boxes; landscape treatments integrating arbors, low walls, trellis work; or similar elements. Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.*

Response: The main entrance to the office building includes many of the elements listed above. As detailed in elevation drawings, the entry has:

- A canopy at least five feet in depth
- Benches and planters
- Landscape arbors
- Low walls
- Distinct materials defining the building entry

In combination, this main entry has architectural features that satisfy the requirement.

> *G. Corner Lots. For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required: […]*

Response: The project site is not on a corner lot. This standard is not applicable.

> *H. Variation in Massing. For street facing facades greater than one hundred twenty feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:*

1. A minimum depth of two percent of the length of the façade and a minimum width of thirty percent of the length of the façade; or

2. A minimum depth of four percent of the length of the façade and a minimum width of twenty percent of the length of the façade.

Response: The façade of the new office is approximately 299 feet in length, therefore this standard is applicable along the street facing façade. The Elevation Drawings show modulation along this façade and has calculations demonstrating compliance with the above standard. Those details shown include:

- Modulation extending through the full height of the façade
- A three-foot roof overhang
- A 22.5-foot recess depth across 75 feet of the façade length

Based on these provisions, the standard is met.

I. Building Design Elements.

1. All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include: […]

2. Street facing facades shall include additional design features. For every thirty feet of façade length, three of the following elements are required: […]

3. Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.

Response: Because these standards apply only to the office building, this particular one applies to the Warner Milne Road (south) and parking lot facing (east) façades the new main building. The office portion of the building does not have a west façade, since that part of it is covered by the storeroom portion of the structure. Other buildings on the site—garage, covered storage, storeroom—are not subject to the commercial building standards.

These two façades have design elements that satisfy the above standards. Elevation drawings included with the submittal also have notes with measurements and calculations that demonstrate compliance.

- Each of these facades has regular windows or other changes in the façade so that there are no blank walls longer than 30 feet
- On these frontages, there are at least three of the following features for every 30 feet in length:
    - Repeating pattern of building materials
    - Alternative feature of visual relief
    - Decorative profiled roof line
    - Repeating pattern of window shade

The detail shown in the drawings is provides more information about the particular patterns of architectural features, and specific callouts about what and where these elements are located.

J. Windows.

1. The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred-foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.

Table 17.62.055.J Minimum Windows

[Modified to show relevant information]

Use	*Ground Floor: Front and Street Facing Facades*	*Upper Floor(s): Front and Street Facing Facades*	*Ground Floor: Side(s) Facades*
Non-Multi-Family (or Portions of Buildings Thereof)	*60%*	*10%*	*30%*
Proposed: Public Utility (Office-portion of building)	180.25 ft. / 299 ft. = 60.03%	N/A	30 ft. / 90 ft. = 30%

2. Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.

3. Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.

[…]

Response: The modified *Table 17.62.055.J* above summarizes compliance with the minimum window requirements of sub-standard (1). In short, the street facing façade has 60.03 percent windows which exceeds the 60% minimum, and the east side façade has 30% windows, which satisfies the minimum for side walls. The building is only one story, so the upper story requirements are not relevant. Additional detail is provided on the Elevation Plans, showing the overall façade design and including detailed calculations that demonstrate compliance.

Because this is an office building, standard, clear, commercial glass is proposed at the window locations indicated. No reflective, glazed, mirrored, or tinted glass is proposed. These windows will meet the reflectivity requirements of sub-standard (2).

Likewise, the windows on the side wall façade facing the entry plaza and parking area will be standard commercial glass. A view out and natural daylight in is a desirable condition at this location. No false windows are proposed anywhere on the office portion of the new building, in compliance with sub-standard (3).

K. Roof Treatments. The maximum length of any continuous roofline on a street-facing façade shall be seventy-five feet without a cross gable or change in height of at least two feet.

Response: The Elevation Drawings show regular indentations in the office building's roofline, which match the metal panel assembly on the front of the building. These indentations along the roofline are greater than two feet in height, and repeat about every 20 feet, far more frequently that the minimum 75 linear feet required by the above standard.

L. Drive-through facilities shall:

Response: No drive-through facilities are proposed. This standard is not applicable.

M. Special development standards along transit streets.

[…]

2. Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.

Response: The office portion of the new building will have frontage on Warner Milne Road (a transit street). Therefore, these sub-standards are applicable.

3. Development Standards.

a. All buildings shall have at least one main building entrance oriented towards the transit street. A main building entrance is oriented toward a transit street if it is directly located on the transit street, or if it is linked to the transit street by an on-site pedestrian walkway that does not cross off-street parking or maneuvering areas.

i. If the site has frontage on more than one transit street, or on a transit street and a street intersecting a transit street, the building shall provide one main building entrance oriented to the transit street or to the corner where the two streets intersect.

ii. For building facades over three hundred feet in length […]

b. In the event a requirement of this section conflicts with other requirements in Title 17, the requirements of this section shall control.

Response: The main entrance on the east side of the office building faces Warner Milne Road. A pedestrian walkway will directly connect the main entrance to the Warner Milne sidewalk. This sub-standard is met.

PGE further describes pedestrian walkways in response to the OCMC 17.62.050(C).

17.62.065 - Outdoor lighting.

B. Applicability.

1. General.

a. All exterior lighting for any type of commercial, mixed-use, industrial, institutional, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.

b. The city engineer or public works director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.

2. Lighting Plan Requirement. All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.

3. Excepted Lighting. The following types of lighting are excepted from the requirements of this section:

[…]

b. Public street and right-of-way lighting.
[…]

d. Temporary lighting for emergency or nighttime work and construction
[…]

Response: The proposed Operations Center is a public utility use. This use category does not neatly fit within the types of development listed in sub-standard (1)(a). The use is both an office headquarters for PGE in Oregon City and a quasi-industrial use for storage, heavy vehicle dispatch, and equipment maintenance and repair. City planning staff indicated in the Pre-application meeting that the office standards should apply to the parking lot and office building elements of the proposal. The submitted Building Elevations (Sheets A31 – A34) and Photometric Plans (Sheets E01 – E08) therefore must demonstrate conformance with the requirements of this section.

Therefore, the Plans demonstrates compliance of all proposed exterior lighting (except for exempt public street and right-of-way lighting (b), and temporary construction lighting (d)).

C. Design and Illumination Standards.

1. Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 footcandles of light as measured at the property line.

2. Lighting shall be provided in parking lots and vehicular circulation areas.

3. Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.

4. Lighting shall be provided at all building entrances.

Response: In compliance with sub-standard (1) and consequent requirements of this section, the Lighting Plan demonstrates the effectiveness of the proposed external lighting. Accordingly:

- Lighting will provide security and support navigability for Operations Center users on site and pedestrians on the sidewalks and shared use path
- Light fixtures will prevent glare or illumination on adjacent properties past the permitted levels

In compliance with sub-standards (2), (3), and (4), exterior lighting will be located:

- In the employee/fleet vehicle parking lot and circulation areas throughout the project site
- Along on-site pedestrian walkways and gathering spaces (such as the courtyard along the office building's north façade)
- On the east side of the site for the off-street shared-use path, also in accordance with OCMC 16.12.032(D)
- At all entrances to the office and storeroom building and garage

> *5. With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.*

Response: PGE acknowledges this requirement. All non-pedestrian-scale lighting on the project site will be concealed with a full cut-off style fixture in compliance with the above standard.

> *6. The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.*

Response: The site is not a multi-family residential use. Proposed light poles in the parking lot are limited to 25 feet tall. The Lighting Plans indicate proposed parking lot pole-height is 18 feet, in compliance with this standard.

The paved work area on the west side of the site is, for the purposes of area lighting, the same as a parking lot larger than five acres. No part of this area is within 100 feet of any residential use. To efficiently illuminate this large work area, PGE has proposed light poles that are 33 feet tall. These are within the 35 foot limit in the standard listed above. All poles and their respective heights are indicated on the plans.

> *7. Floodlights shall not be utilized to light all or any portion of a building facade between ten p.m. and six a.m.*

Response: No floodlights are proposed. This standard is not applicable.

> *8. Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.*
>
> *9. All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.*

Response: Lighting on outdoor canopies is shown on the lighting plans and will comply with sub-standard (8).

In compliance with sub-standard (9), motion sensors shift the lighting between "low output" mode and "high output". These electrical plan details will be provided with the building permit set.

10. Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.

Response: No such lighting is proposed. This standard is not applicable.

11. For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.

Response: The architectural drawings show landscape lighting in the two recessed landscaped areas along the office building's south façade, and the courtyard on the north façade. Resulting direct light emissions will not be visible above the building roofline.

12. No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.

13. Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.

Response: No flickering or flashing lighting, nor lighting for outdoor recreational uses, is proposed.

14. Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.

Response: The Elevation Drawings show lighting for the office building's main entrance. In compliance with the above standard, the main entrance will be well lit for safety and aesthetic reasons and will meet the above standard.

17.62.085 - Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.

The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions, or exterior alterations to uses, other than single-family detached residential units, duplexes, triplexes, quadplexes, townhouses, cottage clusters or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:

A. Fully enclosed and visually screened;

B. Located in a manner easily and safely accessible by collection vehicles;

C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;

D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;

E. Maintained by the property owner;

F. Used only for purposes of storing solid waste and recyclable materials;

G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20, Solid Waste Collection and Disposal) and city adopted policies.

Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).

Response: The proposed Operations Center is a public utility use and does not neatly fit within the types of development listed in sub-standard (1)(a). Nevertheless, as a redevelopment of an existing use and an infill development, PGE acknowledges the necessity for the project to meet the above standards.

A refuse and recycling area that serves the office building is near the storeroom loading area. Separately, line operations has a refuse and recycling area for the paved work areas of the site near laydown storage and the fuel station.

The office building waste will by collected by the approved hauler for the area. Separately, line operations waste is for recycling materials coming from work sites around the region. This will be fully managed by PGE. The Circulation Plan and conclusions from the TIS demonstrate that this area complies with sub-standards (B) through (G).

Both the office building and the line operations waste areas will be effectively screened from the right-of-way in one of two ways.

- The office waste area is located abutting the north façade of the storeroom building and therefore completely obscured from view by the public.
- The line operations waste area is behind the covered storage building, approximately 160 feet back from the Warner Milne Road sidewalk. This area is likewise obscured from public view.

Accordingly, sub-standard (A) is satisfied.

OCMC 17.80 - Communication Facilities

17.80.030 - Applicability and exemptions.

A. Applicability. All wireless communication facilities that are not exempt pursuant to this section shall conform to the standards specified in this chapter.

B. Exemptions. The following are exempt from the provisions of this chapter and shall be allowed: […]

8. Wireless communication facilities for public safety are exempt from the following sections: Section 17.80.090.C.17, Section 17.80.090.D.2, Section 17.80.090.D.5, and Section 17.80.100; and
[…]

Response: PGE proposes a new, 102-foot communications tower (Exhibit C, Sheet A61) to replace two existing towers on the site. The tower has a 95 foot support structure and a 7 foot antenna attached to the top. Therefore, elements of this chapter are applicable.

The proposed communication tower is a facility “for public safety” due to its essential function in communicating with workers who maintain and repair critical power line infrastructure. A letter from a PGE engineer documents the public safety need for this facility (Exhibit J), and this issue was discussed in an email with Planning Staff. As a public safety facility, the sections referenced in subsection 17.80.030(B)(8) do not apply. This includes the collocation requirements of 17.80.100.

17.80.070 - Construction or modification of a support tower.

Except for "eligible modifications" authorized in OCMC 17.80.035:

A. Site Plan and Design Review. Required if the following exists:

1. Property is zoned GI, CI, I, C, MUC-2 or MUE; and

2. No adjacent parcel is zoned for residential use.

B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.070.A.

C. Prohibited Zoning Districts and Locations. […]

Response: The proposed tower qualifies as "construction or modification of a support tower" because it is an entirely new tower in a new location on the site. This tower will replace two existing towers.

Figure 10. Existing towers on PGE site

In compliance with the above standards, PGE requests Site Plan and Design Review and Conditional Use approval for the new tower.

The project site is not located within any of the prohibited districts or locations listed under sub-standard (C).

17.80.080 - Site review process.

> *No wireless communications facilities, as defined in Section 17.80.020, may be constructed, collocated, modified to increase height, installed, or otherwise located within the city except as provided in this section or unless otherwise authorized by Section 17.80.035. Depending on the type and location of the wireless communication facility, the facility shall be subject to the following review unless collocation or an increase in height was granted through a prior land use process. A conditional use review shall require site plan and design review to occur concurrently with the conditional use review process.*
>
> *[…]*
>
> *B. Site Plan and Design Review. A wireless communication facility that, pursuant to Sections 17.80.040—17.80.070, is subject to site plan and design review shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.62, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.62 shall govern approval or denial of the site plan and design review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the site plan and design review process, including any local appeal.*
>
> *C. Conditional Use Review. A wireless communication facility that, pursuant to Sections 17.80.050—17.80.070, is subject to conditional use review, shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.56, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.56 shall govern approval or denial of the conditional use review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the conditional use review process, including any local appeal.*

Response: The above standards elaborate on the approval requirements established under OCMC 17.80.070 above. In this application, PGE concurrently proposes the communications tower and the Operations Center public utility use (conditionally permitted in the MUC-1 zone). The proposed communications tower is a conditional use and, therefore, must comply with the criteria of OCMC 17.56 *Conditional Uses* and the communication facilities' design standards of OCMC 17.80.110.

PGE's detailed responses to the standards and criteria of both of the above-referenced sections demonstrate the proposed tower's compliance with applicable standards.

17.80.100 - Support tower location requirements.

> *No new support tower shall be permitted under the provisions of Section 17.80.070 unless the applicant demonstrates to the satisfaction of the community development director, and the results are verified by a State of Oregon certified professional engineer, that no existing collocation or modification possibility can accommodate the service needs of the applicant's proposed support tower. […]*

Response: The proposed communications tower is "*communication facilities for public safety*" (OCMC 17.80.030(B)) and is, therefore, exempt from the collocation standards within this section. A letter from PGE's engineer (Exhibit J) explains why collocation of this facility is not feasible. The status of this tower as a public safety facility was agreed upon by city planning staff.

17.80.110 - Design standards.

Installation, collocation, construction, or modification of all support towers, structures, and antennas shall comply with the following standards, unless it qualifies as an "eligible modification" under Section 17.80.035 or an adjustment is obtained pursuant to the provisions of Section 17.80.120:

A. Support Tower. The support tower shall be self-supporting.

Response: The proposed communications tower will be self-supporting. This standard is met.

B. Height Limitation. Support tower and antenna heights shall not exceed the maximum heights provided below.

1. If the property is zoned GI, CI or I; […]

2. If the property is zoned: a. GI, CI or I, and […]

3. If the property is zoned MUC-1, MUD or NC; the maximum height of a support tower, including antennas, is seventy-five feet.
[…]

Response: The project site is located in the MUC-1 zoning district. Therefore, sub-standard (3) applies and the maximum height is 75 feet. The proposed height of the new tower is 95 feet to the top of the tower structure, plus seven additional feet of an antenna, as shown on the included drawings. Typically, the standards within this chapter regulate cell towers, for which the 75-foot height maximum is sufficient. However, the proposed PGE Operations Center and communications tower offer unique circumstances. The site is secure and the tower is intended for vehicle dispatch and public safety uses that necessitate a height greater than the standard maximum.

The tower drawing (Sheet A61) shows that the proposed tower height, including antennas, will be 102 feet. PGE requests an adjustment to this standard and, as demonstrated in PGE's responses to OCMC 17.80.120, all adjustment criteria are met.

With approval of the requested adjustment, this standard is satisfied.

C. Collocation. New support towers shall be designed to accommodate collocation of additional providers.

1. New support towers of a height greater than seventy-five feet shall be designed to accommodate collocation of a minimum of two additional providers either outright or through future modification of the tower.

2. New support towers of a height between sixty feet and seventy-five feet […]

Response: As confirmed by city planning staff, the communications tower is a public safety facility and therefore exempt from collocation requirements. PGE has submitted a letter from a qualified engineer in support of this exemption (Exhibit J).

PGE is held to certain reliability and security standards by state law. These security standards dictate that PGE's assets, both physical and cyber, must remain inaccessible to unauthorized persons or entities that could physically damage or access its cyber network. Only authorized PGE personnel are allowed at the communications site, and no non-PGE communications equipment will be permitted on the tower. Allowing such access would violate FERC security standards and potentially expose PGE's communications network to harmful actions.

D. Setbacks. The following setbacks shall be required from property lines, not the lease area, for support towers, auxiliary support equipment, and perimeter fencing.

1. Support towers not designed to collapse within themselves […]

2. Support towers designed to collapse within themselves shall be setback from the property line a distance equal to the following:

[…]

b. If the property is zoned:

i. GI, CI, I, C, MUC-2 or MUE […]

ii. MUC-1, MUD or NC; the setback shall be a minimum of twenty-five feet from all adjacent residentially zoned property lines and the underlying zoning setback for all other adjacent property lines; or […]

Response: The Site Plan shows the proposed tower located at the north side of the subject property to be retained. In compliance with sub-standard (2)(b)(ii), the support tower is designed to collapse within itself. A description of the construction materials and structural integrity of the tower is part of Exhibit J. In addition, the auxiliary support equipment will be at least 25 feet from the nearby property lines, which is shown on the site plan.

E. Auxiliary Support Equipment. The following standards shall be required.

1. If the property is zoned:

a. For GI, CI, I, MUC-1, MUC-2, C, MUD, MUE or NC, the auxiliary support equipment footprint shall not exceed an area of three hundred forty square feet and fifteen feet in height at the peak; […]

2. Only one auxiliary accessory cabinet shall be allowed per service provider located on a support structure.

Response: The Site Plan shows the auxiliary support equipment, which, in compliance with the above standards, will consist of a 330 square-foot, 11-foot-tall structure to contain communications equipment related to the tower.

F. Landscaping. In all zoning districts, existing vegetation shall be preserved to the maximum extent practicable. Screening of a site is mandatory.

1. If the property is zoned: […]

b. For all cases other than those identified in Section 17.80.110.F.1.a. above, landscaping shall be placed completely around the perimeter of the wireless communication facility, except as required to gain access. The minimum planting height shall be a minimum of six feet at the time of planting, densely placed so as to screen the facility. The landscaping shall be compatible with vegetation in the surrounding area, and shall be kept healthy and well maintained as long as the facility is in operation. Failure to maintain the site will be grounds to revoke the ability to operate the facility.

c. The community development director may approve an alternative landscaping plan that visually screens the facility and is consistent with the intent of this standard.

Response: In compliance with sub-standard (1)(b), landscaping surrounds the communications tower and its auxiliary equipment to the north and east. The east façade of the existing garage screens the tower to the west, and the tower will remain accessible to the south for maintenance.

The Landscape Plan demonstrates proposed plantings that will meet the above requirements. PGE acknowledges the requirements to maintain these plantings, in addition to all others on the project site.

G. Noise Reduction. Noise generating equipment shall be baffled to reduce sound level measured at the property line to the following levels except during short durations for testing and operation of generators in emergency situations:

1. For any property where no adjacent parcel is zoned residential, the sound level at the property line shall not be greater than fifty dB;

2. For all other cases, the sound level shall not be greater than forty dB when measured at the nearest residential parcel's property line.

Response: In compliance with sub-standard (2), the new communications tower equipment will not generate noise greater than the maximum 40 dB measured at the nearest residential property line. No significant noise is associated with the communications tower at all.

As a receiving sound source, the abutting cemetery property is in a residential zone but is not in residential use. The nearest "residential parcel," according to the language in subsection (2), that is, a parcel that is actually being in use for residential purposes, is tax lot 32E05CB00400, 582 feet east of the new tower. At that distance, any sound emitted by the tower equipment will undoubtedly be quieter than 40 dB.

H. Lighting.

1. Unless required by the Federal Aviation Administration or the Oregon Aeronautics Division, artificial lighting of wireless communication towers and antennas shall be prohibited.

2. Strobe lighting is prohibited unless required by the Federal Aviation Administration.

3. Security lighting for equipment shelters or cabinets and other on-the-ground auxiliary equipment shall be initiated by motion detecting lighting. The lighting shall be the minimal necessary to secure the site, shall not cause illumination on adjacent properties in excess of a measurement of 0.5 footcandles at the property line, and shall be shielded to keep direct light within the site boundaries.

Response: No artificial lighting or strobe lighting is proposed for the new communications tower. Therefore, sub-standards (1) and (2) are met. The Photometric Plan (Sheets E01 – E08) shows that proposed pole-mounted work area lighting adequately lights this area of the site, including the base of the tower and equipment shelter. In addition, the Plan shows that proposed lighting does not cause illumination on surrounding properties in excess of 0.5 footcandles.

I. Color.
Unless otherwise required by the Federal Aviation Administration, all support towers and antennas shall have a non-glare finish and blend with the natural background.

Response: The proposed tower material (galvanized steel) will have a non-glare finish and color (gray and white with a matte finish), complying with standard (I).

J. Signage.
Support towers and antenna(s) shall not be used for signage, symbols, flags, banners, or other devices or objects attached to or painted on any portion of a wireless communication facility.

Response: The proposed communications tower will not be used for any of the prohibited activities listed above in sub-standard (J).

K. Access Drives.

1. On a site with an existing use, access shall be achieved through use of the existing drives to the greatest extent practicable. If adequate intersection sight distance is unavailable at the existing access intersection with a city street, an analysis of alternate access sites shall be required.

2. Site shall be serviced by an access adequate to ensure fire protection of the site.

3. New access drives shall be paved a minimum of twenty feet deep from the edge of the right-of-way (though the use of pervious paving materials such as F-mix asphalt, pavers, or geotech webbing is encouraged) and designed with material to be as pervious as practicable to minimize stormwater runoff.

4. New access drives shall be reviewed for adequate intersection sight distances.

Response: The tower is one element of the larger PGE Operations Center redevelopment and infill project. The tower, located on a portion of the subject property that is currently used as the PGE line center, will be accessible through the use of improved existing drives, and has been incorporated into the overall circulation plan of development.

The Transportation Impact Study and Circulation Plan demonstrate that tower access complies with the above standards.

L. Informing the City. All service providers with facilities within the city of Oregon City shall be required to report in writing to the community development director any changes in the status of their operation.

1.An annual written statement shall be filed with the planning manager verifying continued use of each of their facilities in the city's jurisdiction as well as continued compliance with all state and federal agency regulations.

2.The report shall include any of the following changes:

a. Changes in or loss of Federal Communication Commission license from the Federal Communication Commission to operate;

b. Receipt of notice of failure to comply with the regulations of any other authority over the business or facility;

c. Change in ownership of the company that owns wireless communication facility or provides telecommunications services; or

d. Loss or termination of lease with the telecommunications facility for a period of six months or longer.

Response: No changes in use are expected for the communications tower or public facility use of the site. The existing site has been in operation for more than 50 years. PGE will notify the

community development director in the extremely unlikely event there are any changes to the status of the operation.

17.80.120 - Adjustments.

> *Adjustments to the standards of this chapter may be approved by the planning commission at a duly noticed public hearing. The planning commission may grant an adjustment under either of the following circumstances:*
>
> *1. The planning commission may grant an adjustment when a gap in the applicant's service exists and the gap can only be alleviated through the adjustment of one of more of the standards in this section. If an adjustment is to be approved, the applicant must demonstrate each of the following:*

Response: There is no "gap in service" that necessitates an adjustment. The adjustment is for a tower height that is appropriate for the communication needs of a critical public service facility, but taller than the local code allows. The height limit in this section is 75 feet, whereas the proposed height is for a tower that is 95 feet to the top of the tower plus a 7 foot antenna. The adjustment is discussed further below under subsection (2).

> *2. The planning commission may grant an adjustment to a standard when the proposed adjustment would utilize existing site characteristics to minimize demonstrated or potential impacts on the use of surrounding properties. For the purposes of this subsection, site characteristics shall include, but need not be limited to, the suitability of the proposed use considering size, shape, location, topography, existence of improvements, and natural features. Applicants for an adjustment under this provision must demonstrate that the adjustment will result in a lower level of impact on surrounding properties than would be generated if the standard were not adjusted.*

Response: The proposed adjustment for height is to exceed the 75 foot height limit for communication towers and allow one that is 102 feet tall, the top 7 feet of which is an antenna. This proposed tower is tucked into a corner of the site along its rear property line, adjacent to a garage building and closest to a cemetery. It also replaces two existing towers that are much closer to the street and that are approximately 70 feet and 88 feet tall.

The characteristics of the site are used to minimize potential impacts on the use of surrounding properties. The large size of the site helps minimize the additional height because it allows the tower to be placed at a far distance from areas of the property that are more frequently visited. The tower is 400 feet from Warner Milne Road, 600 feet from the nearest residence on Kamm Street to the east, and 400 feet from Gardiner Middle School. With a typical person only looking at the tower from a substantial distance, its height becomes less apparent.

Existing improvements are also a factor, since the location of the new tower will be close to a longstanding garage building. Placing the tower relatively close to a building that has been in place for decades minimizes the visual appearance of the tower, including its height, and obscures the lower 20 or so feet of the structure from many vantage points. There are no natural features in the vicinity of the tower, but landscaping will be installed along the nearby property lines which are 25 or more feet away.

The adjustment for a taller tower will result in a lower level of impact on surrounding properties than if the standard were not adjusted because without this communications infrastructure, surrounding properties would potentially be subject to greater risk in a storm or other event that

damages electrical infrastructure. A tower of this height is critical to maintain that communications capability and provide effective connection with repair and maintenance crews. A shorter tower would potentially require a second tower elsewhere in the area, doubling the potential impacts of towers in the neighborhood.

In considering the requested adjustment, the planning commission may consider the following:
a. Visual impacts;

Response: The overall visual impacts of a single communications tower on the site is relatively minor, considering the size of the site, the proposed location for the tower at the extreme rear of the site and next to the garage, and the elimination of the two existing towers.

The photo below shows the two existing towers from the current PGE line center parking area. The third pole in the photograph is a light pole that will be removed. This gives a visual sense of the communication towers within the existing site. The proposed tower is about 15 feet taller than the taller communication tower on the right.

Figure 11. Communication towers viewed from parking area

Given a 12 acre site, its location at the back of the property, and the relatively narrow and low-profile nature of the metal structure, a taller tower will not generate a significant visual impact.

b. Impacts on views;

Response: There are no city-inventoried views from the site that would be impeded by a tower taller than the 75 feet allowed.

As part of this application, the applicant has provided a visual impacts assessment that includes vantage points toward the tower from five locations surrounding the PGE property (Exhibit C, Sheets A41 and A42). This is a submittal requirement for the Communication Facilities application listed in OCMC 17.80.090.E.4. The vantage points are from the ground level, which is a more accurate way to assess impacts than an aerial or oblique angle, because viewers looking toward the

site will be standing on the ground (rather than levitating in the air). Under this analysis, the tower blends in with its surroundings, on balance. The new tower is only one of many elements in the field of view of an urban location that includes many other buildings and trees. Given its location abutting a cemetery, almost no one will be in a position to regularly stand close to the tower and have any sort of view impaired, because no residential uses or rights of way are nearby. Any viewers, if they notice it at all, will look at the tower from a substantial distance. For that reason, there is no significant impact on views that result from an adjustment for a marginally taller tower at this location.

c. Impacts on property values; and

Response: There is no evidence that utility communications towers have negative impacts on property values. In fact, the accurate comparison would be between a 75 foot tower that could be constructed by-right, and this proposed tower at 102 feet tall. This kind of analysis would be further clouded by the consideration that there are already two towers on the site, one of which is taller than the 75 feet allowed. Moreover, the properties nearest to the proposed communication tower are those least likely to be affected by property value impacts. That is, the immediately abutting land is a cemetery owned by a church, which is a very long-term use of land and would be extremely difficult to appraise, especially with the hypothetical with and without a nearby communication facility. To the northwest is a middle school, which was recently completed and opened. The value of this property would also be difficult to evaluate because of its large and unique institutional use. The property to the west is a church that has been on that property for many years. The proposed tower is also farther away from the church than the two existing towers shown in the image above. For what it's worth, all three of the close-by properties listed in this paragraph are tax-exempt properties. These are presumably less likely to need to sell and more insulated from property value changes than taxable ones.

d. Other impacts that the planning commission finds can be mitigated by an adjustment so that the proposed use will have greater compliance in not altering the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary use listed in the underlying district.

Response: The potential for the overall operations center use to impact the character of the surrounding area was discussed extensively in the conditional use findings. Those findings included the expectation of a 102 foot tall tower at the location proposed and so are equally applicable to this adjustment request. The proposed use, which is categorized as a public utility, will infill a currently vacant and underutilized area along Warner Milne Road. The communications tower will support ordinary maintenance and emergency repair of the local and regional electrical grid, creating an asset to the area and to PGE's regional network. Any potential impacts from the tower height will be minor, highly localized, and incremental, relative to existing conditions. They will not reach a degree that would negatively affect the character of the surrounding area.

The "surrounding area" is non-specific, allowing for flexibility based on the intensity of the proposed use and the geographic extent of its potential impacts. PGE considers the "surrounding area" those properties that can see the new tower, though it should be noted that many of these properties would also be able to see a tower that is 75 feet tall, which would be allowed outright. PGE is not aware of neighboring property concerns regarding the existing tower, which is taller than 75 feet, and its impact on neighborhood character.

In the context of this criterion, the existing PGE line center – an approved conditional use itself – provides a base case from which to judge development impacts. The existing and proposed use includes two communication towers at the center of the site.

The potential change in impacts resulting from the Operations Center development would be minor compared to existing conditions. This also applies to the adjustment to the height of the communications tower. Such a change would not reach a level of altering the character of the area, let alone to a degree that would "substantially limit, preclude, or impair" permitted uses on the properties.

> *3. Requests for adjustments under this subsection shall only be considered concurrently with the applicable site review process as required by Section 17.80.080. If the site review process required by Section 17.80.080 is a compatibility review or a site plan and design review, the inclusion of an adjustment will require that the application be subject to a conditional use review under Section 17.80.090.C.*

Response: The application is already subject to a conditional use review that includes the communications tower as one of its elements. This adjustment to the height of the tower is within the communications facilities section and part of a consolidated review with the conditional use review.

Section 3: Conclusion

The proposed PGE Operations Center represents a highly functional, aesthetically appealing, and important expansion of PGE's longstanding presence in Oregon City. The change will transform an aging and underutilized property into a modern, efficient, and well-integrated facility that allows better service to customers and more efficient maintenance and emergency response. As infill development on the site's vacant area, it strengthens existing patterns of uses while enhancing the reliability of electric service for the community and region. The application demonstrates that the Operations Center, together with several requested modifications and adjustments, meets all applicable requirements of the Oregon City Municipal Code. The project is compatible with surrounding properties, provides improvements to the transportation system and site, and minimizes off-site impacts. The resulting project will upgrade critical public utility operations, improve the site's function and appearance, and continue to serve the community while reinforcing and supporting the established character of the area.

December 6, 2021

Harper Houf Peterson Righellis Inc.
ENGINEERS ◆ PLANNERS
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PHONE: 360.750.1131 www.hhpr.com FAX: 360.750.1141

Christina Robertson-Gardiner
City of Oregon City
Community Development – Planning
695 Warner Parrott Road
Oregon City, Oregon 97045

RE: GLUA-21-00066 – Determination of Incompleteness Response

Dear Christina,

We have reviewed your letter dated November 30, 2021 indicating the application SP-21-00117 to be incomplete. We have the following responses to the issues as raised in your letter.

a. The development did not make a formal request for proposed deviations from city required street and/or accessway improvements.
   i. The preliminary engineering plans show a shared path which is less than 7' wide
   ii. The preliminary engineering plans show street frontage improvement which is less than what is required by the City's Street design standards found in chapter 16.12 of the Oregon City Municipal Code.
b. The preliminary stormwater report proposes a undersized stormwater facility.
   i. The stormwater utilized "grass" as the pre-development surface for the project instead of "forest" as prescribed by the Oregon City Stormwater Design Standards.

We will address each of the comments here:

a.(i) After discussing this issue with Sang Pau we have modified the frontage plans to include a 10' wide sidewalk from the west property line to the east of the proposed driveway. East of the driveway the sidewalk will transition to 7' to avoid the wetland at the entrance to the existing culvert.

a(ii). The applicant is not necessary requesting a modification to the standard as much as they are requesting to accept the status quo other than widening the sidewalk along Warner Milne Road. The applicant will dedicate an additional eight feet to the right of way in compliance with the standard. The applicant proposes to increase the sidewalk width from five-feet to ten-feet along the roadway frontage. The applicant requests a width of seven-feet where the widening to ten-feet could impact the existing wetland.

According to 2017 traffic counts, Warner Milne Road has an average daily traffic count of approximately 5,000 vehicles per day. Due to the low trip generation of the site, a left turn lane is not warranted. A review of crash history for Warner Milne Road from Beavercreek Road to Molalla Avenue does not indicate a history of crashes near the project.

A. The modification meets the intent of the standard;

The intent of the standard is to provide a safe and functional roadway system that meets the needs of the neighborhood. The existing road meets that criteria because it is functioning for diverse development along the corridor.

B. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;

The existing roadway provides efficient movement of pedestrians, motor vehicles, bicycles and freight.

C. The modification is consistent with an adopted transportation or utility plan; and

D. The modification is complementary with a surrounding street design; or, in the alternative.

According to the Oregon City TSP Figure 6, Warner Milne Road is identified as having the smallest growth in traffic Volumes (less 250 additional vehicles during the peak PM hour)

Therefore, the applicant believes the existing roadway and proposed changes to the sidewalk meets the intentions of Chapter 16.12 of the standards.

b(i) Section 4.3.2 of the City Stormwater Standards states that pre-developed conditions shall be modeled as the historic vegetation that existed at the site prior to urban settlement. Most of the areas of the City will be modeled as forest under pre-developed conditions. The applicant may use historic photos, reports, or other available resources to document an alternative condition of the site prior to urban settlement.

The applicant provided an aerial photograph from 1952 that shows the site, and all surrounding properties were grass covered. This photo was emailed to Sang Pau on December 2, 2021 to which he replied, *"I confirmed that the attached photo would be acceptable to confirm the pre-developed ground cover is "grass". Please provide some narrative to explain the justification for the proposed classification"*. This has been addressed in the revised stormwater management report.

The aerial photo clearly indicates the site was mostly grass with some sparse agriculture. The stormwater management as designed meets the Stormwater Management criteria.

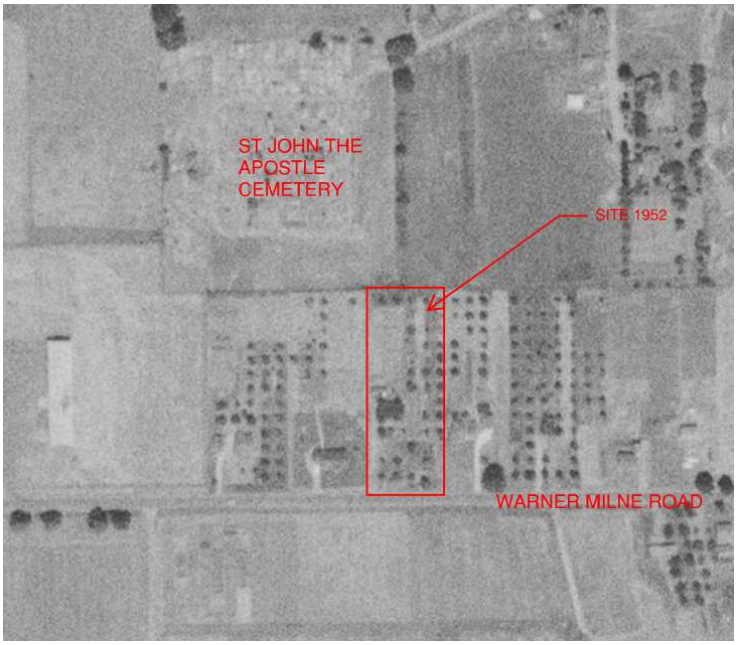


Figure 1 1952 Aerial Photograph

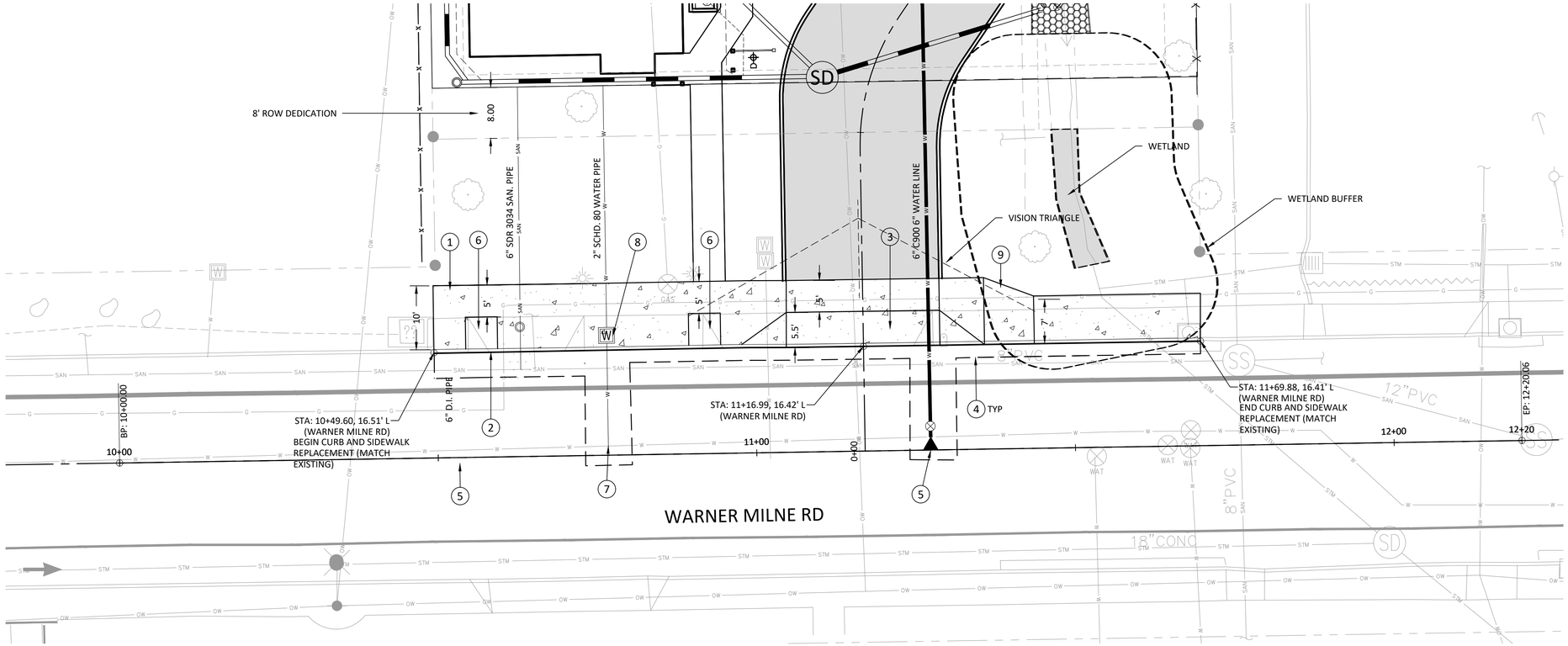
Please find the attachments including the revised stormwater management report addressing the grass ground cover, Warner Milne frontage plan and traffic engineer's memorandum.

The applicant requests that based on the resolution of these issues that the application will be deemed complete and continue the review process.

Sincerely,

Ken Valentine, PE

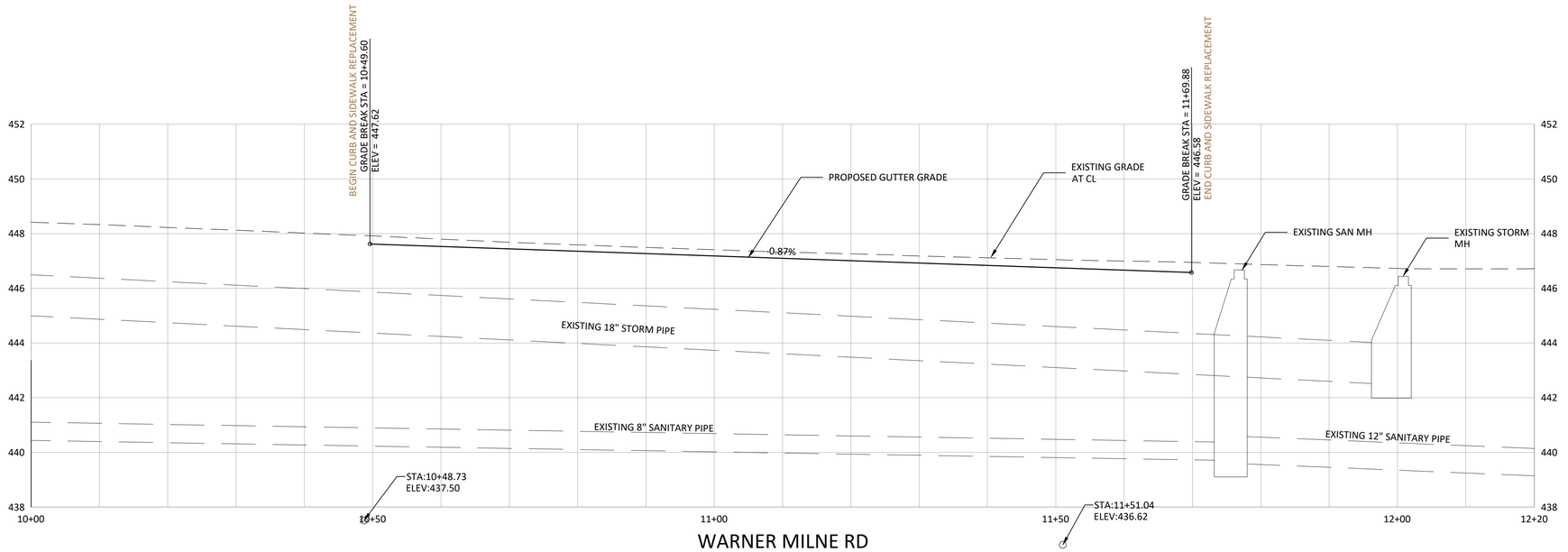
Kenneth K Valentine



CONSTRUCTION NOTES:

1. REPLACE EXISTING SIDEWALK AS SHOWN PER O.C. STD. DTL. 508.
2. REPLACE EXISTING CURB WITH STANDARD CURB PER O.C. STD. DTL 510.
3. CONSTRUCT 24' COMMERCIAL DRIVEWAY PER O.C. STD. DTL. 505.
4. SAWCUT LIMITS. REPALCE AC SECTION PER EXISTING. MIMIMUM SAWCUT 24" FROM CURB LINE.
5. INSTALL 6" WET TAP ON EXISTING 12" WATER LINE PER O.C. STD. DTL. 411.
6. INSTALL 5' X 5' TREE WELL.
7. INSTALL 2" WET TAPON EXISTING 12" WATER LINE PER O.C. STD. DTL. 411.
8. INSTALL 2" WATER SERVICE PER O.C. STD. DTL. 404.
9. TRANSITION SIDEWALK WIDTH TO 7' TO AVOID WETLAND.

0 5 10 20
SCALE: 1" = 10'



WARNER MILNE RD
SCALE: 1" = 10' (HORIZ.)
1" = 2' (VERT.)

PRELIMINARY

WARNER MILNE ROAD PLAN & PROFILE
KAMM STREET APARTMENTS
OREGON CITY, OREGON

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REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
OREGON
KENNETH K. VALENTINE
EXPIRES: 06/30/22

DESIGNED: KKV
DRAWN: HHPR TEAM
CHECKED: KKV
DATE: 09/2021

DATE	NO.	DESCRIPTION
12/01/2021	1	REVISED DRIVEWAY AND SIDEWALK

REVISIONS

SHEET NO.
C8.0

JOB NO.
MSC-261

GREENLIGHT ENGINEERING

December 8, 2021

Todd Iselin
Iselin Architects, P.C.
1307 7th Street
Oregon City, OR 97045

Subject: Kamm Street multi-family project frontage improvements

Dear Mr. Iselin,

This letter supplements our August 21, 2021 Traffic Analysis Letter ("TAL") regarding the proposed 30 unit multi-family development at 279 Warner-Milne Road in Oregon City, Oregon. The City of Oregon City has requested additional information regarding the city's standard improvements along Warner-Milne Road versus the applicant's proposed improvements.

As referenced in the TAL, the proposed development is expected to generate eight new weekday AM peak hour trips and 10 new weekday PM peak hour trips above the previously operating use. This is not considered to be a large increase in trips that would warrant extensive roadway improvements.

According to Oregon City Standard Drawing 502, the standard cross section for a minor arterial without a landscape strip includes a 7-10 foot wide sidewalk and curb. The existing sidewalk improvements are slightly narrower than the standard cross section.

The Harper Houf Peterson Righellis *Wetland and Waters of the U.S. and State Delineation Report* dated May 2021 notes the presence of a wetland along the project frontage of Warner-Milne Road. The presence of this wetland would complicate and increase the construction costs associated with the standard frontage improvements.

Additionally, the development's Warner-Milne Road frontage is only 120 feet in length and transitioning to the city's standard arterial cross section would expend a portion of that frontage in taper to the standard cross section on the east end of the frontage in order to match existing improvements.

As noted in the TAL, the existing Warner-Milne Road frontage improvements consist of an approximate six foot wide bike lane, approximate six inch curb and approximate five foot wide sidewalk. These improvements appear to be consistent with most of the remainder of the existing frontage improvements along Warner-Milne Road. The sidewalk and curb are in good condition as evidenced in the TAL.

After further coordination with the city, the applicant now proposes the following improvements to the Warner-Milne Road frontage:

- Retain existing curb
- On the east end of the project frontage, transition from the existing sidewalk width to a seven (7) foot wide sidewalk in the area near the wetland in order to avoid construction impacts.

- Transition from the seven foot wide sidewalk to a 10 foot sidewalk with tree wells.
- Relocate the site driveway to the east.

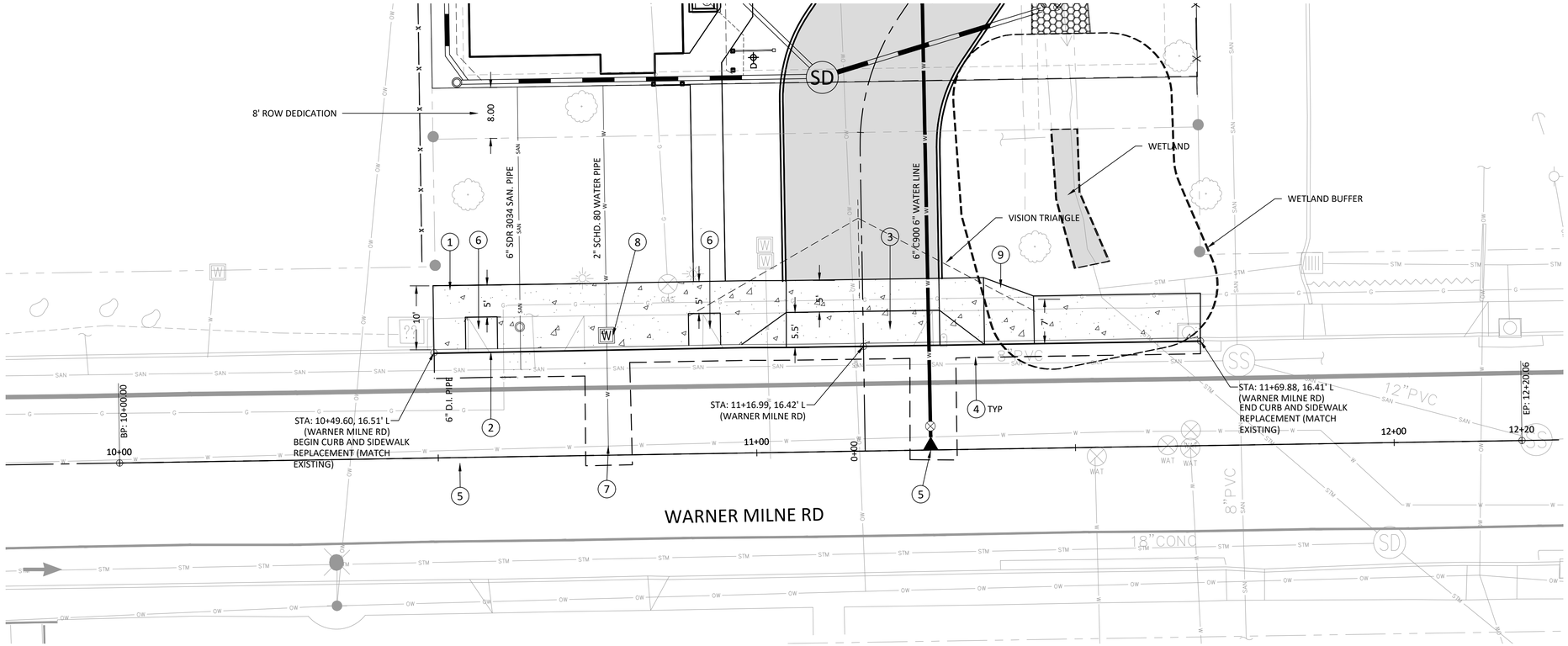
These improvements are illustrated in Sheet C8.0 (attached).

With these improvements, the intent of the city standard can be met by providing a pedestrian buffer along most of the property frontage while avoiding the impacts of the wetland and retaining a portion of the existing improvements.

Should you have any questions, please contact me at rick@greenlightengineering.com or 503-317-4559.

Sincerely,

Rick Nys, P.E.
Principal Traffic Engineer



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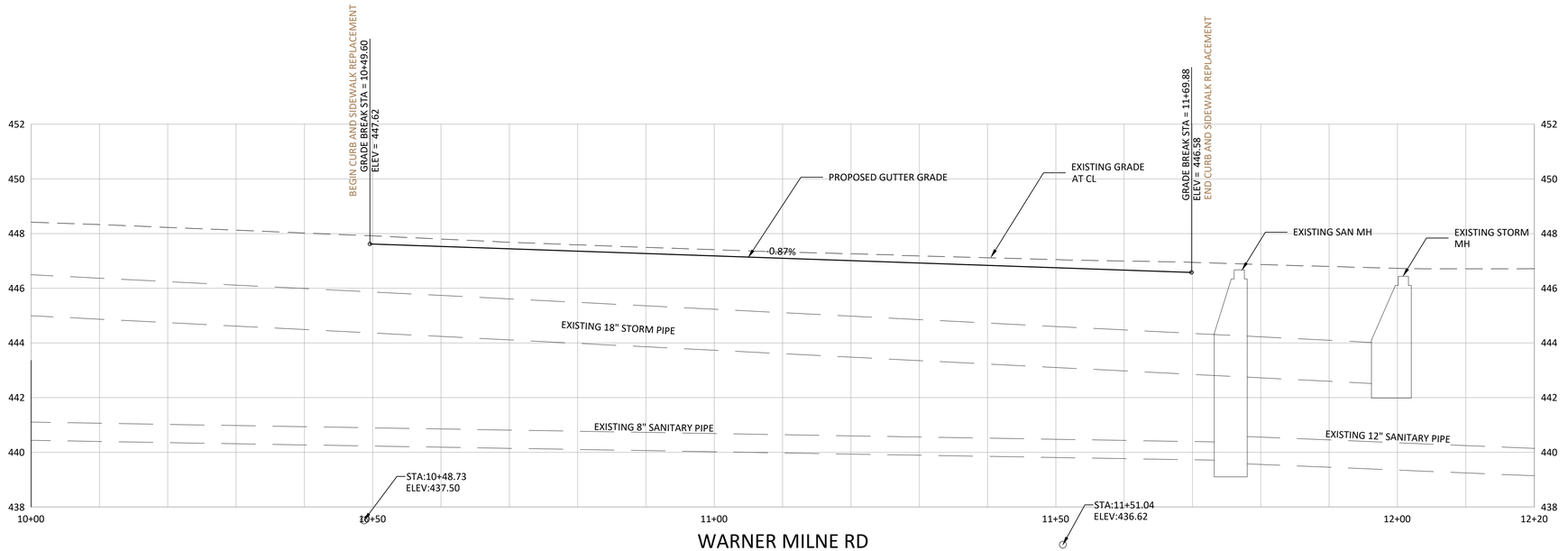

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REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY
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EXPIRES: 06/30/22

DESIGNED:	KKV
DRAWN:	HHPR TEAM
CHECKED:	KKV
DATE:	09/2021

REVISIONS

DATE	NO.	DESCRIPTION
12/01/2021	1	REVISED DRIVEWAY AND SIDEWALK

SHEET NO.
C8.0

JOB NO.
MSC-261

Harper
Houf Peterson
Righellis Inc.

Kamm Street Apartments

MSC-261

Stormwater Management Report PA-21-00007

September 3, 2021

Prepared For:

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MSC-261

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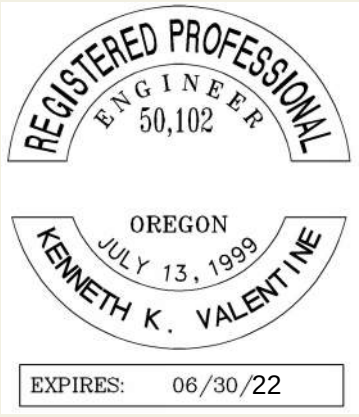
Ken Valentine, PE



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ENGINEERS ◆ PLANNERS
LANDSCAPE ARCHITECTS ◆ SURVEYORS

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OPERATIONS & MAINTENANCE - STORMWATER PLANTERS

SITE PLAN

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Project Description

Ron Laughlin is redeveloping the existing 0.91-acre site located at 279 Warner Milne Road, Oregon City, Oregon for the construction of a 30-unit apartment project. The proposed development will disturb approximately 0.85 acres. The south end of the site is currently developed with a single-family resident that has been converted for commercial use. The north end of the site is undeveloped and generally grass covered.

Minor sidewalk and driveway reconstruction is proposed. There is a 24" pipe that daylights onto the site on the north and follows a small ditch to the south end where it enters a 44" x 22" concrete culvert that runs under Warner Milne Road. A wetland delineation was performed by Ivy Watson at Harper Houf Peterson Righellis Inc. in May 2021. The report found that only a very small section of the ditch on the south end of the site where the drainage enters the culvert could be classified as a wetland. The report was subsequently submitted to the Oregon Department of State Lands and the US Army Corp of Engineers for review and concurrence. Both agencies agreed with the determination and confirmed that the existing ditch is not waters of the state or of the US. Therefore, the ditch will be replaced a with a 24" pipe.

Low impact development site approaches (LID) "stormwater planter – infiltration" are proposed to treat the impervious surfaces and pervious runoff. The LID facilities will also provide flow control for their respective basin areas.

Proposed stormwater management improvements are detailed further in this report. Refer to the Appendix for EX-1 vicinity exhibit, EX-2 existing (pre-developed) conditions, EX-3 proposed (post-developed) basin maps, EX-4 downstream analysis, and WES BMP calculator printouts along with additional calculation and information.

Purpose and Objectives

The purpose of this drainage report is to present options for best management practices (BMP) for conveyance, detention, infiltration and water quality treatment to be installed as part of this Oregon City Public Works project. The City of Oregon City Stormwater and Grading Design Standards (July 2019) have been used as design requirements and guidelines.

Existing Site Description

The site mildly slopes from north to south. Elevations range from 451' to 447' (NAVD88). The site's highest elevation is the northwest corner and the lowest in the southeast corner near Warner Milne Road. The site contains an existing ditch that conveys stormwater from Kamm Street on the north to Warner Milne to the south. There are no known existing stormwater treatment or flow control facilities on the site. A small public street, Kamm Street, terminates about 20-feet north of the site and Warne Milne Road fronts the property to the south. There is a single-family residence that has been converted to an office space with two driveways entering Warner Milne Road and small parking area.

Soils Characteristics

The Natural Resources Conservation Services (NRCS) with the United States Department of Agriculture has classified the soils as Bornestedt silt loam. The soils are categorized into Hydrologic Sols Groups based on the estimated runoff from precipitation. The soil survey the site are in Soil Group C.

Infiltration

No infiltration testing has been performed. Based on familiarity with projects in the area and the soils survey the infiltration rate is likely to fall between 0.06 to 0.20 inches per hour.

Groundwater

Per the soil survey ground water would be at about 36" below ground surface. Please note that groundwater levels can fluctuate during the year depending on climate, irrigation season, extended periods of precipitation, drought, and other factors."

Therefore, based on this information, coupled with the low to negligible infiltration rates, stormwater infiltration is not feasible for this site. The proposed stormwater planters will be impermeable lined due to lack of soil infiltration, proximity to groundwater, and their location adjacent to building foundations.

Proposed Improvements and Impervious Surfaces

Proposed onsite impervious surface area consists of the parking lot, drive aisles, sidewalks, plazas and building. See Table 1 below for a summary of site areas:

Table 1: Total Site Area			
	Impervious Area	**Pervious Area**	**Total**
Existing	6,098 SF (0.14 ac)	33,541 SF (0.0.77 ac)	39,639 SF (0.91 ac)
Proposed	28,830 SF (0.66 ac)	10,806 SF (0.24 ac)	39,639 SF (0.91 ac)

Stormwater Management

Table 2: City of Oregon City Stormwater Management Requirements	
Design Requirement	City of Oregon City Criteria
Conveyance Design Storm	10-Year; 24-hour SBUH Method for Pipe
Treatment Area	All Disturbed Impervious Area + New Impervious Area
Treatment Storm	1.0" / 24-hour storm per City of Oregon City
Detention	Peak Flow Duration matching between 42% of the 2-year up through the 10-year storm event

The WES BMP calculator is an acceptable method of sizing stormwater facilities per the City's manual. This project utilizes the WES BMP calculator to size stormwater facilities and meet requirements.

Table 2a – City of Oregon City Precipitation-Frequency Estimates

Frequency	**Precipitation**
WQ; 24-hr	1.0 inches
2-yr; 24-hr	2.80 inches
10-yr; 24-hr	3.50 inches
25-yr; 24-hr	4.00 inches

Existing Basin Characteristics

The existing site's stormwater basins are conveyed to the low point on the southeast corner of the site and into the existing ditch. Existing basins consist primarily of pervious surfaces with impervious building roof and asphalt pavement. Section 4.3.2 of the Grading and Stormwater Standards states that the predeveloped conditions for the site will be modeled as the historic vegetation as existing prior to urban settlement. It further states that most areas of the City are modeled as forest. However, the applicant may use historic photos, reports, or other available sources to document an alternative condition of the site prior to urban settlement. A seventy-year-old aerial photo of the site and surrounding area shows the area to be grass cover, therefore the predeveloped condition of grass covered has used in this analysis. A copy of the aerial photo is included in the appendix of this report.

The required stormwater management area is determined by calculating the disturbed impervious area that is replaced with impervious area, and any new impervious area. See exhibit EX-2 in the Appendix for an illustration of this area. See Table 3 below for a summary of the required stormwater management area.

Table 3: Required Stormwater Management Area	
	Dist. + New Impervious Area
Required	28,830 SF (0.66 ac)

Proposed Basin Characteristics

The proposed site's stormwater management basins are broken into three basins A-C. These basins were thoughtfully chosen because they convey a significant amount of stormwater to an existing low point on the site. This is done in an effort to work in harmony with the existing site's topography and stormwater system, reduce grading, and provide the maximum amount of stormwater management in an economical way. See exhibit EX-3 in the Appendix for an illustration of these proposed management basin areas. See Table 4 below for a summary of the proposed basin areas depicting the treatment area is greater than the required area:

Table 4: Proposed Basin Areas			
Basin	**Impervious Area**	**Facility Type**	**Facility Size**
North Lot	9,100 SF	Planter	444 SF
South Lot	8,700	Planter	570 SF
Front Walk	331	Planter	To South Lot
R1	640 SF	Planter	40 SF
R1A	654 SF	Planter	40 SF
R2	640 SF	Planter	32 SF
R2A	591 SF	Planter	28 SF
R3 & R4	1,762 SF	Planter	77 SF
R5	563 SF	Planter	39 SF
R6	568 SF	Planter	32 SF
R7	565	Planter	To South Lot
R7A	565	Planter	To South Lot
R8	565	Planter	32
R8A	609 SF	Planter	To South Lot
R9	926 SF	Planter	To South Lot

R9A	510 SF	Planter	To South Lot
R10	563	Planter	48
R10A	510	Planter	To R10
TOTAL PROVIDED	28,782 SF (1.15 ac)		1,382 SF

Water Quality

The City of Oregon City water quality treatment criteria will be met by treatment of the site runoff through LID vegetated planter facilities. Treatment will occur via biofiltration and is met through the use of the WES BMP Calculator. The proposed LID planter facilities will consist of an overflow set 12 inches above the topsoil growing media elevation. This will allow for 12" of ponding depth and filtration through the soil media prior to overflow. The planters consist of an 18" depth section of growing filtration soil media, with 15" of drain rock below, and a PVC liner at the bottom. A perforated underdrain pipe is set at the bottom to ensure full drawdown. The water quality event has been routed through each LID facility in the WES BMP calculator to ensure that the event does not cause stormwater to enter the overflow structure during the water quality storm event. Treated stormwater will be collected in the underdrain system and routed to site conveyance. Studies from the International Stormwater BMP Database (July 2012) indicate that bio filtration BMPs are good candidates for treatment of phosphorus, TSS and algae and mercury / metals.

Landscaping and trees are retained and proposed throughout the site to the maximum extent feasible. Above-ground vegetated stormwater facilities will benefit from tree canopy during the summer months to mitigate stormwater temperature rise. Underdrain systems will be necessary for collecting and routing stormwater that will filter through the proposed soil media but will not infiltrate the underlying native soils. Impervious liners are proposed on all facilities.

The WES BMP calculations can be located in the Appendix.

BMP design constrains include area limitations, existing topography, and existing soil permeability. The City of Oregon City Public Works department has strict requirements for developed sites and desire for safety, efficient use of the site, large vehicle turning movements and future opportunities.

Proper delineation and erosion and sediment control will be installed to protect the proposed facilities from potentially being compacted and/or inundated with sediment during construction.

Following treatment and detention, stormwater will ultimately discharge to the public storm system at the west side of the site. Refer to the Appendix for a proposed storm drainage schematic. See Table 4 above for a summary of stormwater management basins.

Detention / Flow Control

All proposed LID planter facilities are designed to allow for 12" of ponding to provide flow control while stormwater is infiltrating through the soil media. Each planter overflow structure has an orifice cap on the incoming perforated underdrain to limit inflow and facilitate detention storage ponding within the basin. Flow control for the site is required to meet peak flow duration matching between 42% of the 2-year up through the 10-year storm event. The WES BMP calculator has been used to size the facilities to ensure that this requirement is met. See Table 4 above for a summary of stormwater management basins.

Conveyance

The proposed storm pipe system is designed to have the capacity to convey the runoff from a 10-year storm event return frequency storm event without ponding. The site storm system was designed to convey all of the impervious area and contributing pervious area for the entire site. A minimum pipe size and slope will be maintained throughout the system. The intent is to maintain a minimum free flow velocity of 3.0 fps in all pipes. See the Appendix for pipe sizing calculations (minimum pipe slopes & sizes required to meet these conditions).

A conduit Flow Mannings "n" = 0.013 for pipe flow is used in all calculations.

The time of concentration (tc) is defined as the time for runoff to travel from the furthermost point of the watershed to the point in question. Time of concentration can be estimated from several formulas. The minimum time of concentration is 5 minutes in developed urban areas and the maximum is 100 minutes in rural areas. A time of concentration of 5 minutes is used for design of the stormwater basins in this project.

The 100-year design storm and emergency flow routes have been analyzed for the site. Since there are multiple catchment basins for the site, each with their own piped conveyance system, this includes analyzing the "controlling" basin having the least diameter pipe size and slope and ensuring its' flow is unrestricted during the 100-year storm event. As seen in the Appendix, the controlling conveyance link is an 8" diameter pipe with a slope of S=0.0075 ft/ft. This conveyance link has a flow capacity of 1.05 cfs. Assuming the entire site were impervious it would produce a peak flow of 0.75 cfs, therefore the 8" diameter pipes are adequate for the 100-year storm event.

Downstream Analysis

Per Oregon City stormwater standards section 5.2.4 a preliminary downstream analysis has been completed to ensure that the downstream stormwater infrastructure has adequate capacity to convey the 10-year/24-hours storm event. The analysis shall extend until the project contributes less than 15% of the total basin or 1,500 feet, whichever is greater. Reference exhibit EX-4 in the Appendix for a basin map and existing stormwater infrastructure.

Several sources of information were used to complete this downstream analysis. A survey was completed of the site to confirm the directly adjacent stormwater sizes. City GIS and Metro Data were also used for this analysis. Per current City of Oregon City GIS mapped storm system records, the downstream pipe system consists of 52" x 30" elliptical concrete storm pipe from the site for a distance of approximately 100 feet before out falling to an existing ditch between the Clackamas Federal Credit Union and the Willow Springs Apartments on the south side of Warner Milne Drive.

This proposed development is part of the Newell Basin, and the ultimate downstream infrastructure analyzed with this analysis (at a point 1,500 ft. downstream) conveys a basin area of approximately 83.2 acres. The proposed development site is 0.91 acres is approximately 1.09% of the total contributing basins. The project increases the total site impervious area by approximately 28,500 SF (0.654 acres) which is negligible within the overall approximate basin of 83.2 acres (0.6% increase of the basin). Therefore, the conveyance design storm is analyzed for the 10-year, 24-hour storm event per Table 5-1 Conveyance System Design Storms of the Oregon City Stormwater and Grading Design Standards. The Santa Barbara Urban Hydrograph method (SBUH) was used to estimate runoff from the overall basin, as the receiving basin is greater than 83 acres. The basin was determined by reviewing the OCCMAPS website and tracing the portion of the Newell Basin that flows through the site. Due to the variability of soil types and site coverages, a

composite curve number was calculated assuming 26% of the basin is impervious surfaces and 73% of the basin area is pervious surfaces. The lag method was used to determine the time of concentration for the basin and was determined to be approximately 40 minutes. The post developed flow was determined by increasing the impervious area by 0.65 acres and calculating the 10-year event.

Table 5 represents the flow from the basin in its existing state and post developed.

Table 5: Upstream Basin			
Basin	**Impervious Area**	**Pervious Area**	**Flow cfs**
Existing	22 ac	61.2 ac	19.64
Developed	22.65 ac	60.55	20.09

The 10-yr/24-hour pipe flow was computed using this overall basin area and routed it through the existing 52" x 30" elliptical culvert and then through a grassy channel south the site to check conveyance adequacy in the post developed condition. Even though only about 60% of the basin actually flows through the culvert it was analyzed using the entire basin flow. As seen in the Appendix, the existing culvert and grassy swale at the limit of 1,500 feet has sufficient capacity to convey the 10-yr/24-hour storm event. As a result, no adverse impacts to the downstream system are expected as a result of this development.

Figures 1 and 2 below are pictures taken from Google Street view of the open channels on the south side of Warner Milne Road and again where the channel meets Beaver Creek road about 1500' south of the site.

Photos of Existing Downstream Ditch

Figure 1 Open ditch south side of Warner Milne Road

Figure 2 Open Channel ditch where it meets Beavercreek Road

Appendix

EX-1 VICINITY EXHIBIT

EX-2 PREDEVELOPED CONDITIONS

EX-3 ONSITE BASIN MAP

EX-4 UPSTREAM/DOWNSTREAM BASIN

DOWNSTREAM ANALYSIS CALCULATIONS

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SITE PLAN

VICINITY MAP

KAMM STREET APARTMENTS

OREGON CITY, OREGON

Harper Houf Peterson Righellis Inc.
ENGINEERS ◆ PLANNERS
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REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 13, 1990 — KENNETH K. VALENTINE — EXPIRES: 06/30/22

DESIGNED:	KKV	CHECKED:	KKV
DRAWN:	HHPR TEAM	DATE:	09/2021

NO.	DATE	DESCRIPTION

REVISIONS

0 500 1000 2000

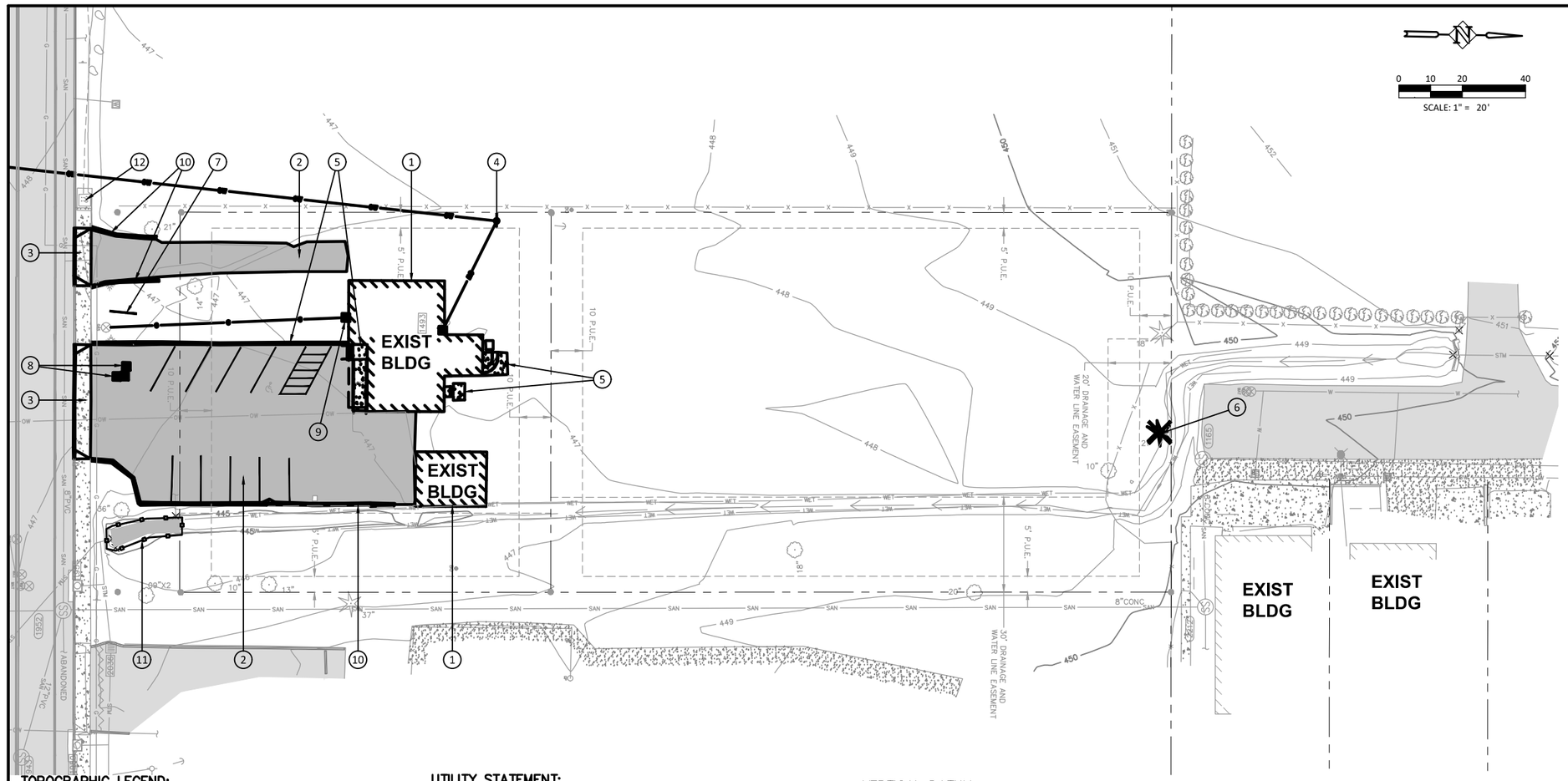
SCALE: 1" = 1000

SHEET NO.

EX-1

JOB NO. MSC-261

PRELIMINARY



CONSTRUCTION NOTES:

1. REMOVE EXISTING BUILDING.
2. REMOVE EXISTING ASPHALT.
3. REMOVE EXISTING DRIVEWAY APRON.
4. REMOVE EXISTING POWER POLE AND OVERHEAD WIRES. COORDINATE WITH PGE.
5. REMOVE EXISTING CONCRETE.
6. REMOVE EXISTING TREE.
7. REMOVE EXISTING SIGN.
8. REMOVE EXISTING WATER METERS. CLOSE CORP STOP AT MAIN.
9. REMOVE EXISTING GAS METER. COORDINATE WITH NWNG.
10. REMOVE EXISTING RETAINING WALL.
11. PROTECT EXISTING WETLAND. INSTALL ORANGE CONSTRUCTION FENCE.
12. PROTECT EXISTING VAULT.

TOPOGRAPHIC LEGEND:

- STORM SEWER LINE
- SANITARY SEWER LINE
- WATER LINE
- GAS LINE
- OVERHEAD WIRE
- FENCE LINE, TYPE AS NOTED
- ELECTRIC LINE
- BUILDING LINE
- LINEAR AC PATCH (UTILITY?)
- UTILITY LINE IS BELIEVED TO CONTINUE, CONNECTION NOT LOCATED OR UNKNOWN
- MAJOR CONTOUR – 5' INTERVALS
- MINOR CONTOUR – 1' INTERVALS
- SANITARY SEWER MANHOLE
- CLEANOUT
- STORM SEWER MANHOLE
- CATCH BASIN
- CURB INLET
- WATER METER
- IRRIGATION BOX
- POWER METER
- GAS VALVE
- GAS METER
- FINISH FLOOR ELEVATION (FF=XXX.XX')
- UNKNOWN UTILITY VAULT
- GUY WIRE
- GROUND LIGHT
- UTILITY POLE W/ UNDERGROUND UTILITIES
- UTILITY POLE W/ STREET LIGHT
- UTILITY POLE W/ UNDERGROUND UTILITIES AND STREET LIGHT
- SINGLE POST SIGN
- GATE POST
- BOLLARD
- MAIL-BOX
- HANDI-CAP PARKING SPACE
- SHRUB / BUSH (SIZE AS NOTED)
- CONIFEROUS TREE (APPROXIMATE DIAMETER BREAST HIGH AS NOTED)
- DECIDUOUS TREE (APPROXIMATE DIAMETER BREAST HIGH AS NOTED)
- ROCK (SIZE AS NOTED)
- EXISTING CONCRETE SURFACE
- EXISTING ASPHALT SURFACE
- EXISTING GRAVEL SURFACE

NOTE: SYMBOLS SHOWN HEREON ARE FOR GRAPHICAL REPRESENTATION PURPOSES AND DO NOT NECESSARILY SHOW SHAPE, SIZE, ROTATION, CONDITION, TYPE, ETC. OF THE ACTUAL PHYSICAL IMPROVEMENTS THAT THEY REPRESENT. CONDITION, TYPE, ROTATION, ETC. MAY VARY AMONGST ITEMS SHOWN BY THE SAME SYMBOL.

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM LOCATE PAINT MARKINGS TIED IN THE FIELD SURVEY AND AS-BUILT DRAWINGS PROVIDED BY UTILITY COMPANIES. THIS SURVEY DOES NOT SHOW ANY PAINT MARKINGS PROVIDED AFTER THE FIELD SURVEY WAS COMPLETED. AS-BUILT DRAWING INFORMATION THAT WAS NOT PROVIDED IS NOT REFLECTED ON THIS SURVEY. **AS-BUILT INFORMATION, IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE (IF SHOWN, AND NOT MEASURED). PAINTED SIZE INFORMATION, IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE (IF SHOWN, AND NOT MEASURED).** IF NO LOCATE PAINT MARKINGS WERE PROVIDED, AS-BUILT INFORMATION WAS USED TO HORIZONTALLY LOCATE THE UNDERGROUND UTILITIES.

THIS SURVEY MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE OF ALL SUCH UTILITIES IN THE AREA. THE UNDERGROUND UTILITIES SHOWN MAY NOT BE IN THE EXACT LOCATION AS NOTED ON THIS SURVEY, BUT ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. MANHOLES OTHER THAN SANITARY AND STORM SEWER WERE IDENTIFIED BY MANHOLE LIDS AND MAY NOT BE LABELED CORRECTLY.

UTILITY LOCATIONS MUST BE VERIFIED BY THE STATE UTILITY NOTIFICATION CENTER IMMEDIATELY PRIOR TO ANY EXCAVATION.

UTILITY LOCATES WERE REQUESTED **2/9/2021** UNDER TICKET NUMBERS **21038042** AND **21038079** FOLLOWING IS A LIST OF UTILITY PROVIDERS NOTIFIED:

BCTO	BEAVER CREEK TELEPHONE (800)778-9140(503)632-3113(503)632-4114
*CCDOT05	CLACK CO DOT-TELECOM SRVCS (503)655-8828(503)655-8322(503)655-8828
*CCDOT06	CLACKAMAS COUNTY- DOT- CBX (503)722-6663(503)722-6663(503)940-6940
CMCST01	COMCAST CABLE COMM. MNGMT, LLC(800)778-9140(800)934-6489(503)617-1212
COC01	CITY OF OREGON CITY(503)657-8241(503)657-8241(503)657-8241
*NWN01	NW NATURAL(503)220-2415(503)220-2415(800)882-3377
PGE01	PORTLAND GENERAL ELECTRIC(503)255-4634(800)544-1793(503)464-7777
PGEF01	PORTLAND GENERAL ELECTRIC(503)255-4634(800)544-1793(503)464-7777
QLNOR01	CTLQL-CENTURYLINK(800)778-9140(800)283-4237(800)573-1311

* – DENOTES ASBUILT MAPS RECEIVED

MANHOLE LOCATION INFORMATION:

DUE TO THE HAZARDOUS NATURE AND APPLICABLE OSHA REQUIREMENTS REGARDING CONFINED SPACES, IT IS COMPANY POLICY TO NOT SEND OUR FIELD STAFF INTO UTILITY MANHOLES TO RETRIEVE DEPTH AND SIZE INFORMATION (PIPE SIZES AND DEPTHS ARE OBTAINED THROUGH ABOVE GROUND METHODS). THEREFORE, ANY MANHOLE ELEVATION INFORMATION SHOWN HEREON IS SUBJECT TO AN UNCERTAINTY IN ACCURACY OF PLUS OR MINUS 0.1' OR GREATER (DEPENDING ON DEPTH, SIZE, FLOW, AND CONSTRUCTION OF MANHOLE). MANHOLE PIPE SIZES ARE ALSO SUBJECT TO AN UNCERTAINTY OF TWO INCHES OR MORE (DEPENDING ON DEPTH, SIZE, FLOW, AND CONSTRUCTION OF MANHOLE). IF A HIGHER ACCURACY IS NEEDED, ADDITIONAL TIME, EQUIPMENT, AND PERSONNEL WILL BE REQUIRED TO ENTER THE MANHOLE AND RETRIEVE SAID INFORMATION.

MANHOLE LOCATIONS SHOWN ARE TO CENTER OF LID, NOT CENTER OF STRUCTURE.

VERTICAL DATUM:

ELEVATION DATUM:
BENCHMARK:
LOCATION:
ELEVATION:

HORIZONTAL DATUM

[ADD HORIZONTAL REFERENCE FRAME HERE

THIS IS AN EXAMPLE:

HORIZONTAL COORDINATES ARE BASED ON WASHINGTON STATE PLANE (SOUTH ZONE) – REFERENCE FRAME: NAD 83 (CORS96)(EPOCH:2002.0000), US SURVEY FEET. ALL DISTANCES ARE GROUND, SO STATE PLANE COORDINATES ARE APPROXIMATE, AND WERE DETERMINED FROM AN OPUS SOLUTION (THROUGH NGS) FOR CONTROL POINTS AT THE NORTH (CP-5) AND SOUTH (CP-1) ENDS OF THE PROJECT. THE CONTROL POINT AT THE SOUTH END OF THE PROJECT WAS HELD FOR ITS COORDINATES (CP-1), AND THE PROJECT WAS ROTATED TO THE LINE BETWEEN SAID CONTROL POINTS (PER THEIR OPUS SOLUTIONS).]

TOPOGRAPHIC SURVEY

LOCATED IN THE NORTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF SECTION 5, TOWNSHIP 3 SOUTH, RANGE 2 EAST, WILLAMETTE MERIDIAN CITY OF OREGON CITY, CLACKAMAS COUNTY, OREGON

FIELD WORK DATES: FEBRUARY AND MARCH 2021

SANITARY SEWER NOTES

- (1165) SANITARY MANHOLE RIM=449.08' IE 8"CONC(N)=441.93' IE 8"CONC(E)=441.78' BOTTOM=441.88'
- (1267) SANITARY MANHOLE RIM=452.15' IE 8"CONC(N)=442.75' IE 8"CONC(S)=442.70' BOTTOM=442.75'
- (1943) SANITARY MANHOLE RIM=446.75' IE 12"PVC(NW)=438.85' IE 12"CONC(E)=438.70' BOTTOM=438.75'
- (1952) SANITARY MANHOLE RIM= 446.70' IE 8"PVC(S)= 440.40' IE 8"PVC(N)= 439.70' IE 8"PVC(W)= 439.65' IE 12"PVC(SE)=439.40' BOTTOM=439.55'
- (2210) SANITARY MANHOLE RIM=450.50' IE 8"CONC(W)=441.40' IE 8"CONC(E)=441.30' BOTTOM=441.35'
- (2212) SANITARY MANHOLE RIM=450.85' IE 8"CONC(W)=441.55' IE 8"CONC(E)=441.55' IE 8"CONC(S)=441.35' BOTTOM=441.45'

STORM SEWER NOTES

- (1493) CLEANOUT RIM=447.12'
- (1950) CURB INLET RIM= 446.98' IE 12" HDPE(N)= 444.18' SUMP= 442.58'
- (1951) CURB INLET RIM=447.14' IE 12"HDPE(N)=443.94' SUMP=442.44'
- (2036) CATCH BASIN RIM=446.69'
- (2050) STORM MANHOLE OVER BOX CULVERT RIM=446.48' IE 18"CONC(W)=442.48' IE BOX CULVERT(NW)=441.98' IE BOX CULVERT(SE)=441.98' BOTTOM=441.98'
- (2051) CURB INLET RIM= 446.98' IE 12" HDPE(S)= 444.18' BOTTOM= 444.48'
- (2169) CATCH BASIN RIM=450.50' IE 18"CONC(W)=447.80' IE 18"CONC(E)=447.70' BOTTOM=447.40'

PRELIMINARY

EXISTING CONDITIONS & DEMO PLAN
KAMM STREET APARTMENTS
OREGON CITY, OREGON

Harper Houf Peterson Righellis Inc.
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phone: 360.750.1141 www.hhpr.com fax: 360.750.1141

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON JULY 13, 1988 KENNETH K. VAN LEUVEN
PRELIMINARY
EXPIRES: 06/30/22

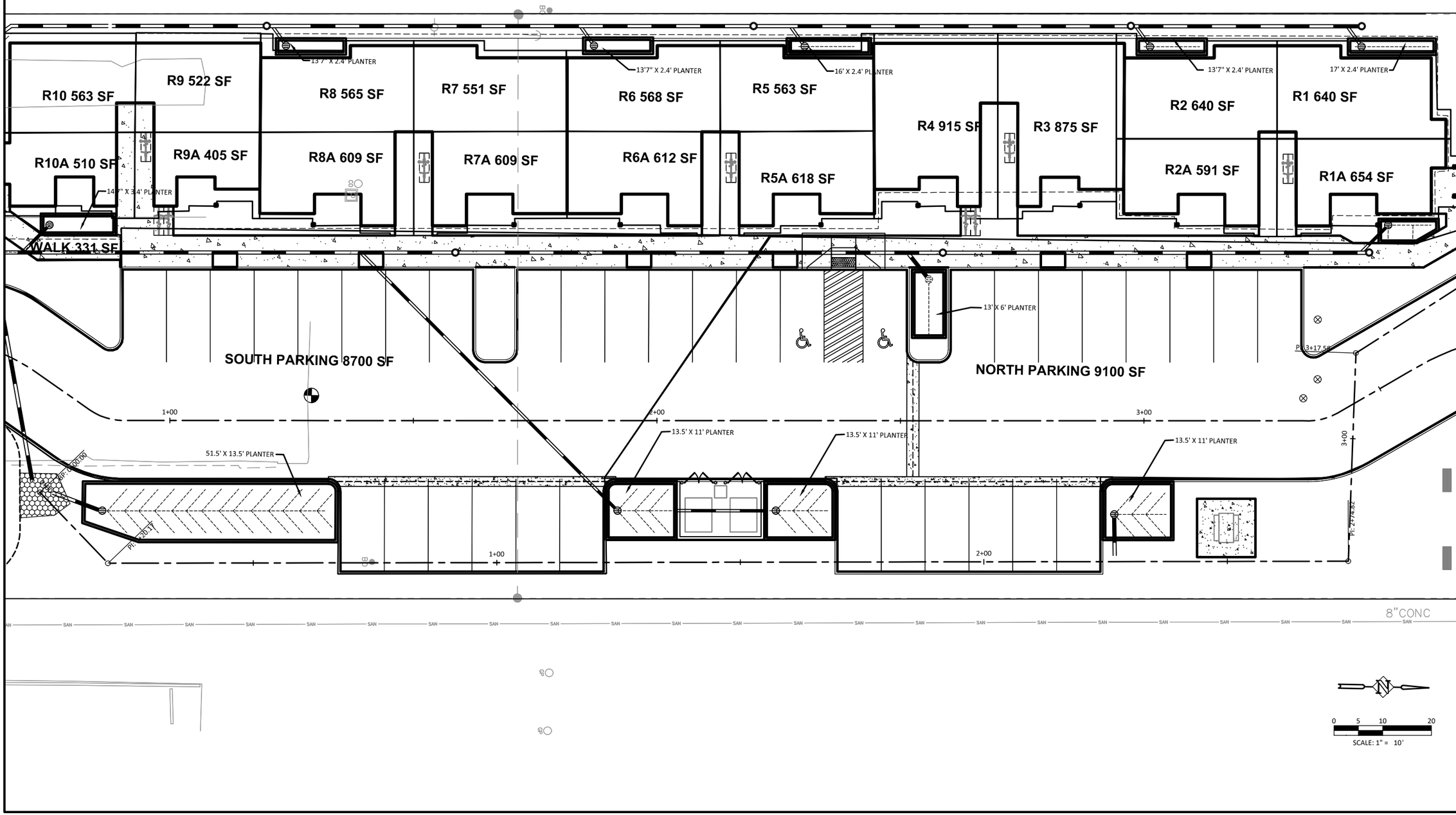
DESIGNED:	KKV
DRAWN:	HHPR TEAM
CHECKED:	KKV
DATE:	09/2021

REVISIONS

NO.	DESCRIPTION	DATE

SHEET NO.
EX-2

JOB NO.
MSC-261



BASIN MAP

KAMM STREET APARTMENTS

OREGON CITY, OREGON

Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS
1220 Main Street, Suite 150, Vancouver, WA 98660
phone: 360.750.1131 www.hhpr.com fax: 360.750.1141

REGISTERED PROFESSIONAL ENGINEER 50,102 OREGON JULY 13, 1999 KENNETH K. VALENTINE

PRELIMINARY

EXPIRES: 06/30/22

DESIGNED:	KKV
DRAWN:	HHPR TEAM
CHECKED:	KKV
DATE:	09/2021

REVISIONS

DATE	NO.	DESCRIPTION

SHEET NO.

EX-3

JOB NO.

MSC-261

DOWNSTREAM ANALYSIS

APPROXIMATE OVERALL BASIN LIMITS WITHIN ANALYSIS (83.2 AC)

BEAVERCREEK RD

MOLALLA AVE

KAMM STREET

PROJECT SITE

30" X 52" CULVERT

WARNER MILNE

BEAVERCREEK

1,500 LF DRAINAGE EXTENT

DITCH

DITCH

DITCH

0 500 1000 2000

SCALE: 1" = 1000

PRELIMINARY

DOWNSTREAM ANALYSIS EXHIBIT

KAMM STREET APARTMENTS

OREGON CITY, OREGON

Harper Houf Peterson Righellis Inc.
ENGINEERS ★ PLANNERS
LANDSCAPE ARCHITECTS ★ SURVEYORS
1220 Main Street, Suite 150, Vancouver, WA 98660
phone: 360.750.1141 www.hhpr.com fax: 360.750.1141

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 13, 1989
KENNETH K. VALENTINE
EXPIRES: 06/30/22

DESIGNED:	KKV	CHECKED:	KKV
DRAWN:	HHPR TEAM	DATE:	09/2021

DATE	NO.	DESCRIPTION

REVISIONS

SHEET NO.

EX-4

JOB NO. MSC-261

Culvert Report

WARNER MILNE CULVERT

Invert Elev Dn (ft)	=	441.38
Pipe Length (ft)	=	96.00
Slope (%)	=	0.50
Invert Elev Up (ft)	=	441.86
Rise (in)	=	30.0
Shape	=	Elliptical
Span (in)	=	52.0
No. Barrels	=	1
n-Value	=	0.013
Culvert Type	=	Horizontal Ellipse Concrete
Culvert Entrance	=	Groove end projecting (H)
Coeff. K,M,c,Y,k	=	0.0045, 2, 0.0317, 0.69, 0.2

Embankment

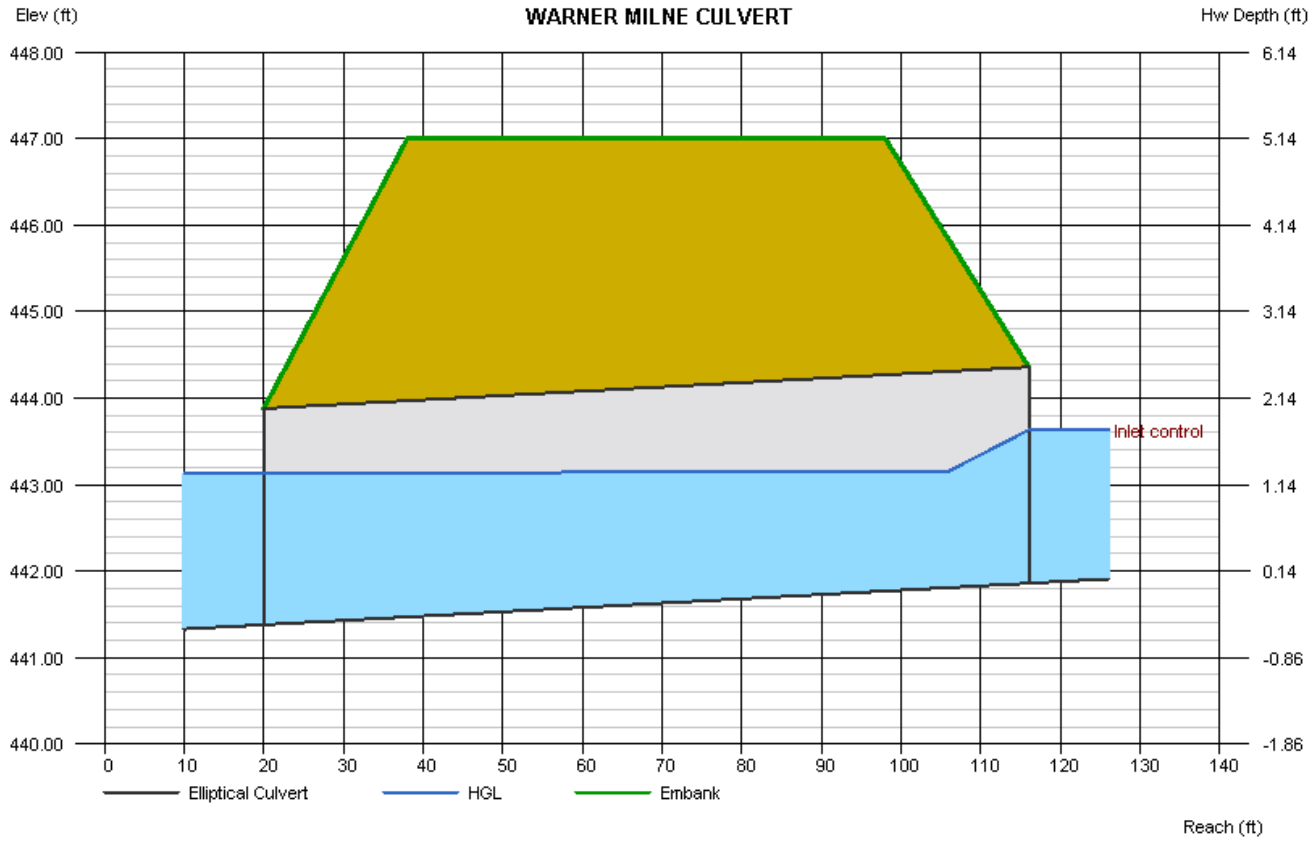
Top Elevation (ft)	=	447.00
Top Width (ft)	=	60.00
Crest Width (ft)	=	10.00

Calculations

Qmin (cfs)	=	0.00
Qmax (cfs)	=	21.00
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	21.00
Qpipe (cfs)	=	21.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	3.10
Veloc Up (ft/s)	=	4.75
HGL Dn (ft)	=	443.13
HGL Up (ft)	=	443.16
Hw Elev (ft)	=	443.63
Hw/D (ft)	=	0.71
Flow Regime	=	Inlet Control



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Oct 13 2021

DOWNSTREAM DITCH ANLYSIS

Trapezoidal

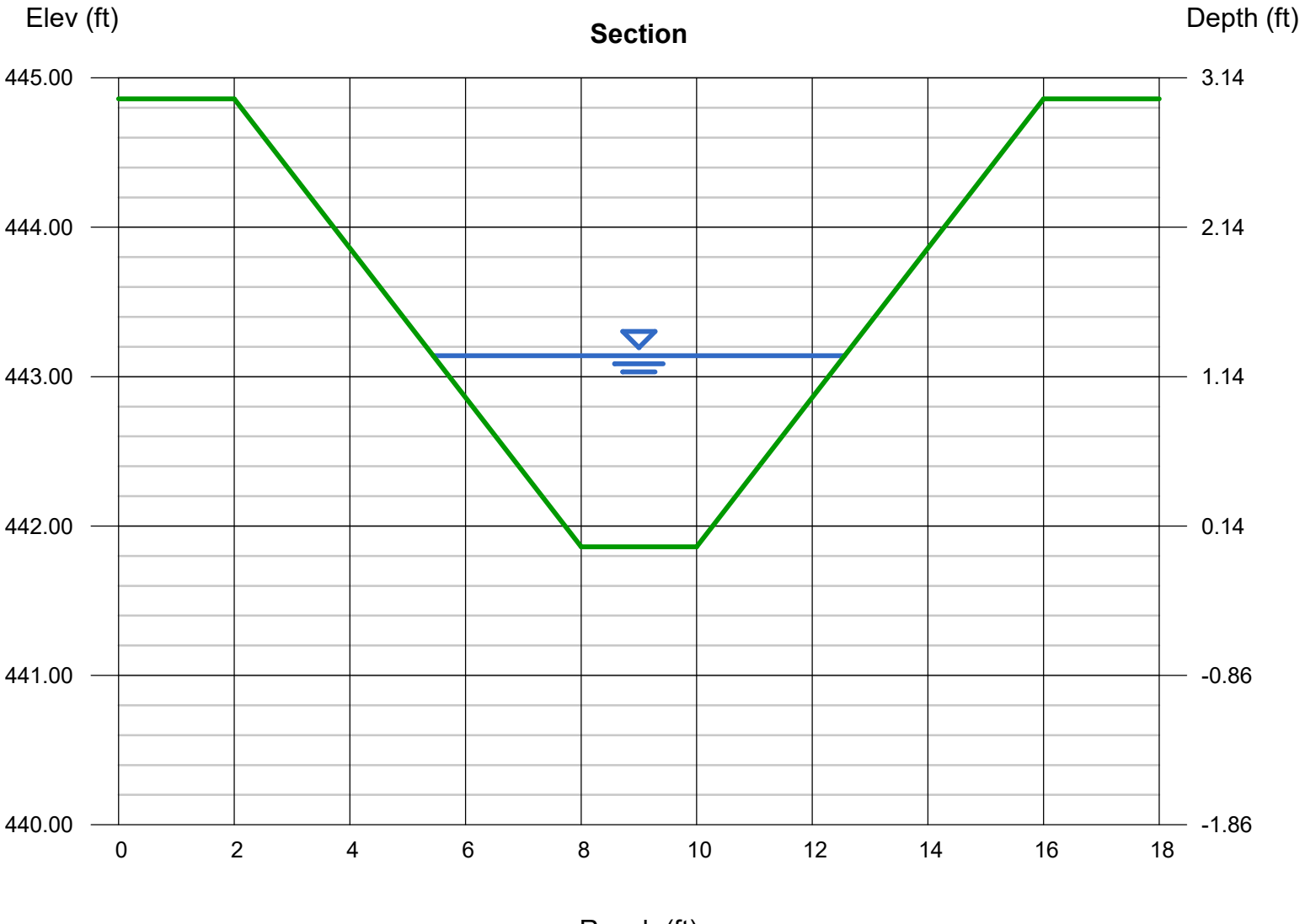
Bottom Width (ft)	= 2.00
Side Slopes (z:1)	= 2.00, 2.00
Total Depth (ft)	= 3.00
Invert Elev (ft)	= 441.86
Slope (%)	= 0.50
N-Value	= 0.025

Calculations

Compute by:	Known Q
Known Q (cfs)	= 20.09

Highlighted

Depth (ft)	= 1.28
Q (cfs)	= 20.09
Area (sqft)	= 5.84
Velocity (ft/s)	= 3.44
Wetted Perim (ft)	= 7.72
Crit Depth, Yc (ft)	= 1.05
Top Width (ft)	= 7.12
EGL (ft)	= 1.46



BASIN HYDROGRAPHS

Hydraflow Table of Contents

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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	19.64	2	490	516,012	------	------	------	Complete Basin
2	SBUH Runoff	0.301	2	480	5,116	------	------	------	Existing Site
3	SBUH Runoff	0.636	2	476	8,935	------	------	------	Proposed Site
5	Combine	19.89	2	488	521,128	1, 2,	------	------	Basin with existing site
6	Combine	20.09	2	488	524,946	1, 3,	------	------	Basin with Site

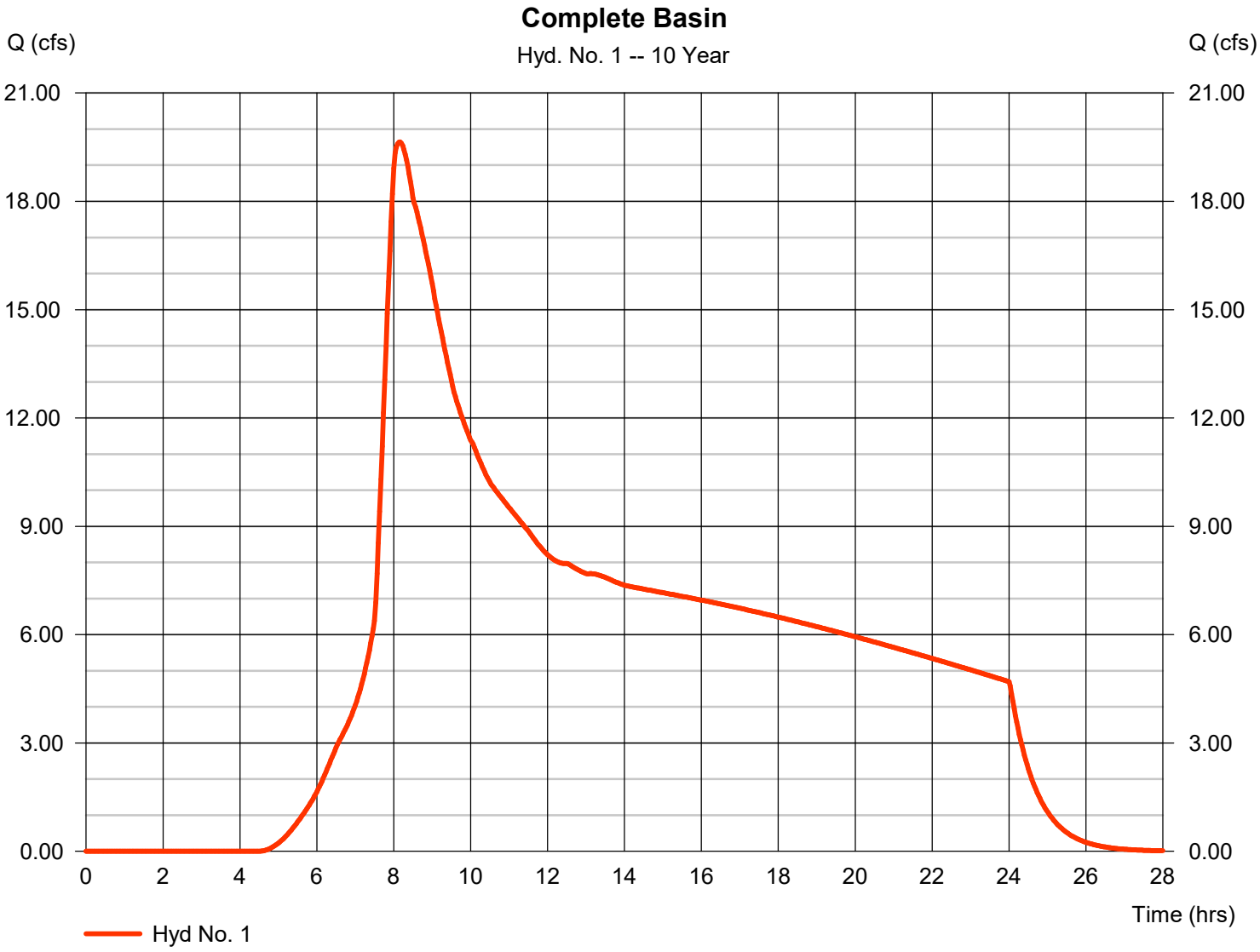
Hydrograph Report

Hyd. No. 1

Complete Basin

Hydrograph type	= SBUH Runoff	Peak discharge	= 19.64 cfs
Storm frequency	= 10 yrs	Time to peak	= 8.17 hrs
Time interval	= 2 min	Hyd. volume	= 516,012 cuft
Drainage area	= 83.200 ac	Curve number	= 81*
Basin Slope	= 3.0 %	Hydraulic length	= 2800 ft
Tc method	= LAG	Time of conc. (Tc)	= 40.50 min
Total precip.	= 3.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(22.000 x 98) + (61.200 x 75)] / 83.200



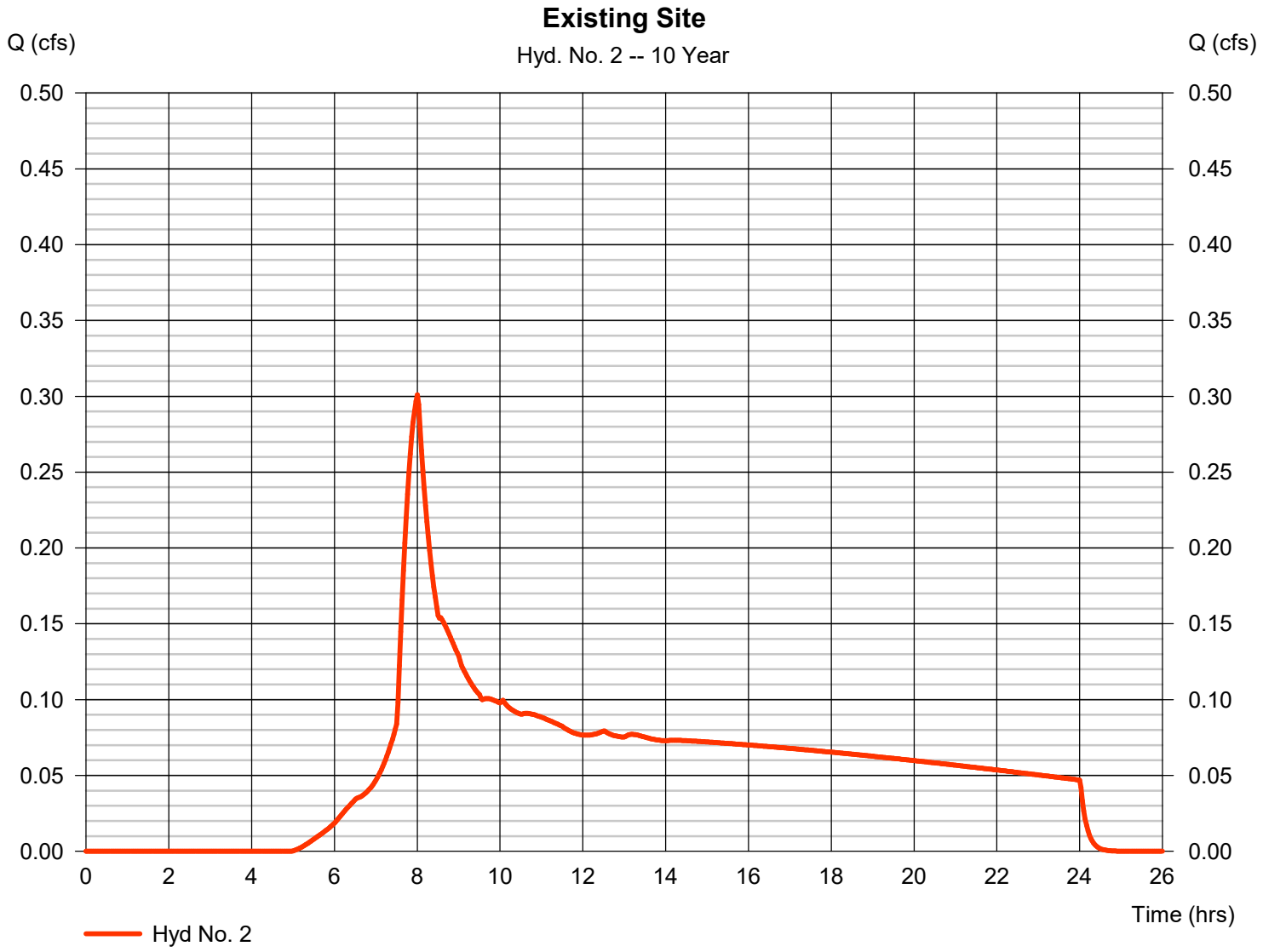
Hydrograph Report

Hyd. No. 2

Existing Site

Hydrograph type	=	SBUH Runoff	Peak discharge	=	0.301 cfs
Storm frequency	=	10 yrs	Time to peak	=	8.00 hrs
Time interval	=	2 min	Hyd. volume	=	5,116 cuft
Drainage area	=	0.900 ac	Curve number	=	79*
Basin Slope	=	2.0 %	Hydraulic length	=	300 ft
Tc method	=	LAG	Time of conc. (Tc)	=	8.80 min
Total precip.	=	3.50 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(0.140 x 98) + (0.760 x 75)] / 0.900



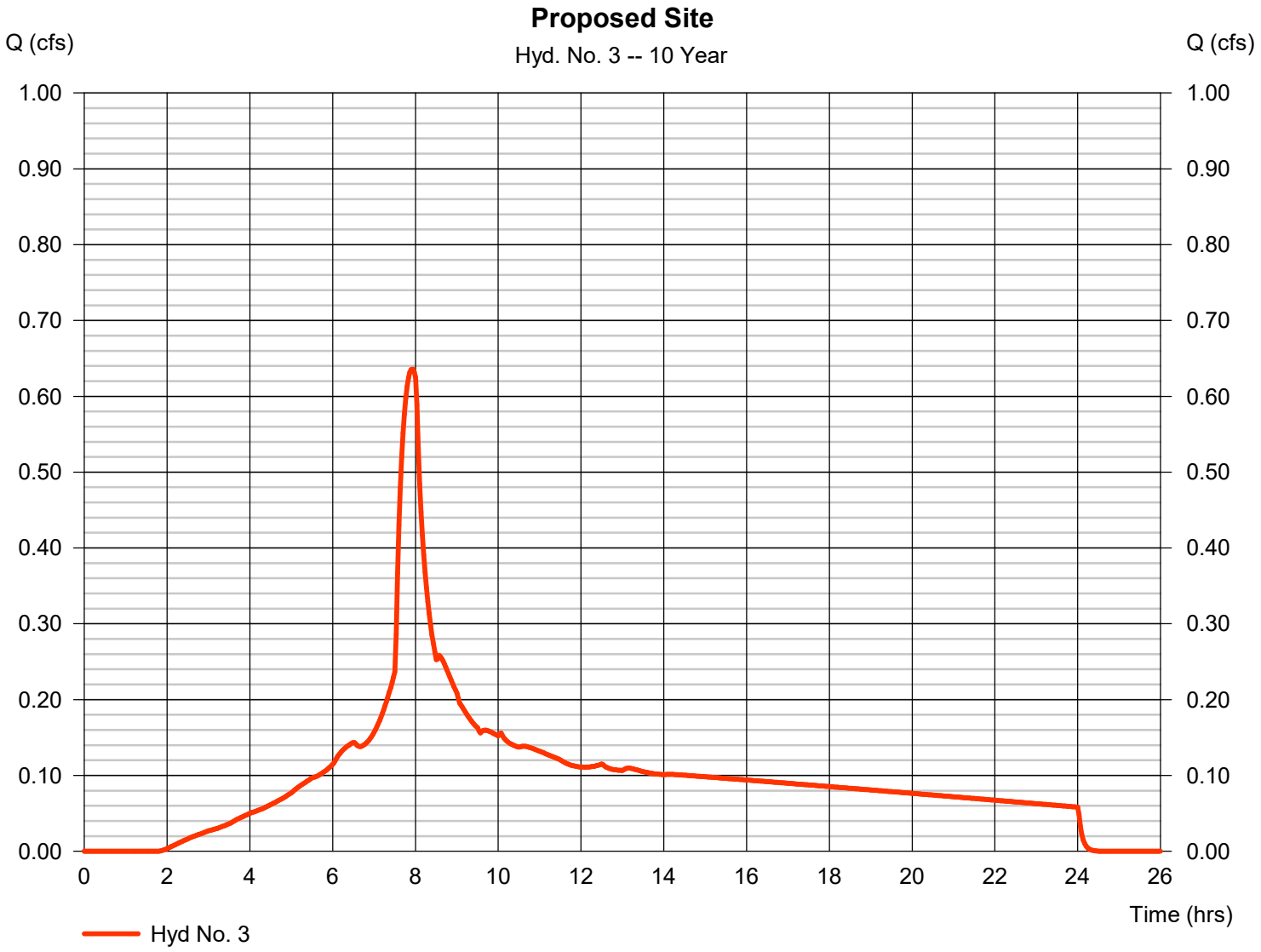
Hydrograph Report

Hyd. No. 3

Proposed Site

Hydrograph type	= SBUH Runoff	Peak discharge	= 0.636 cfs
Storm frequency	= 10 yrs	Time to peak	= 7.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,935 cuft
Drainage area	= 0.900 ac	Curve number	= 93*
Basin Slope	= 2.0 %	Hydraulic length	= 300 ft
Tc method	= LAG	Time of conc. (Tc)	= 5.20 min
Total precip.	= 3.50 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= n/a

* Composite (Area/CN) = [(0.650 x 98) + (0.250 x 80)] / 0.900

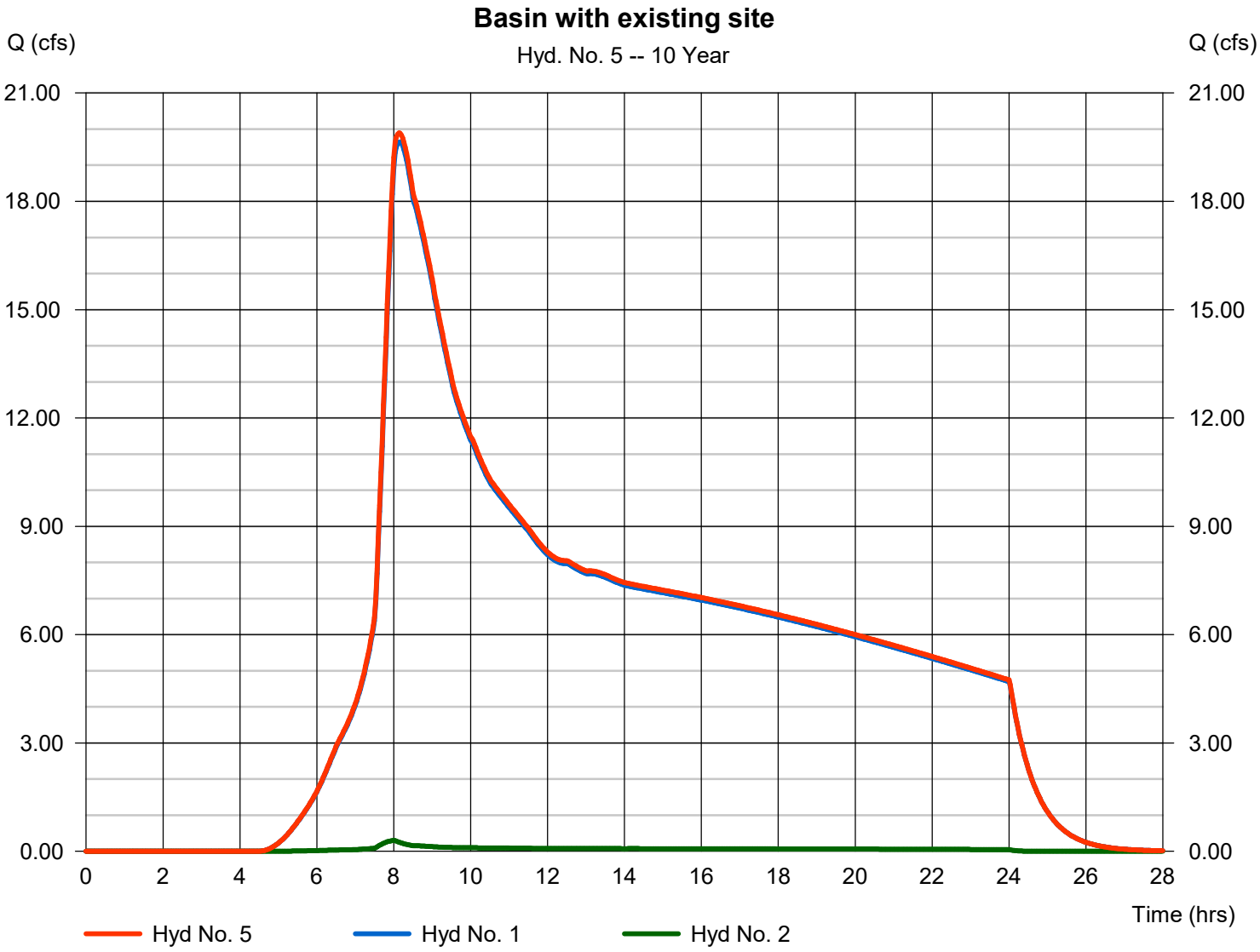


Hydrograph Report

Hyd. No. 5

Basin with existing site

Hydrograph type	= Combine	Peak discharge	= 19.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 8.13 hrs
Time interval	= 2 min	Hyd. volume	= 521,128 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 84.100 ac

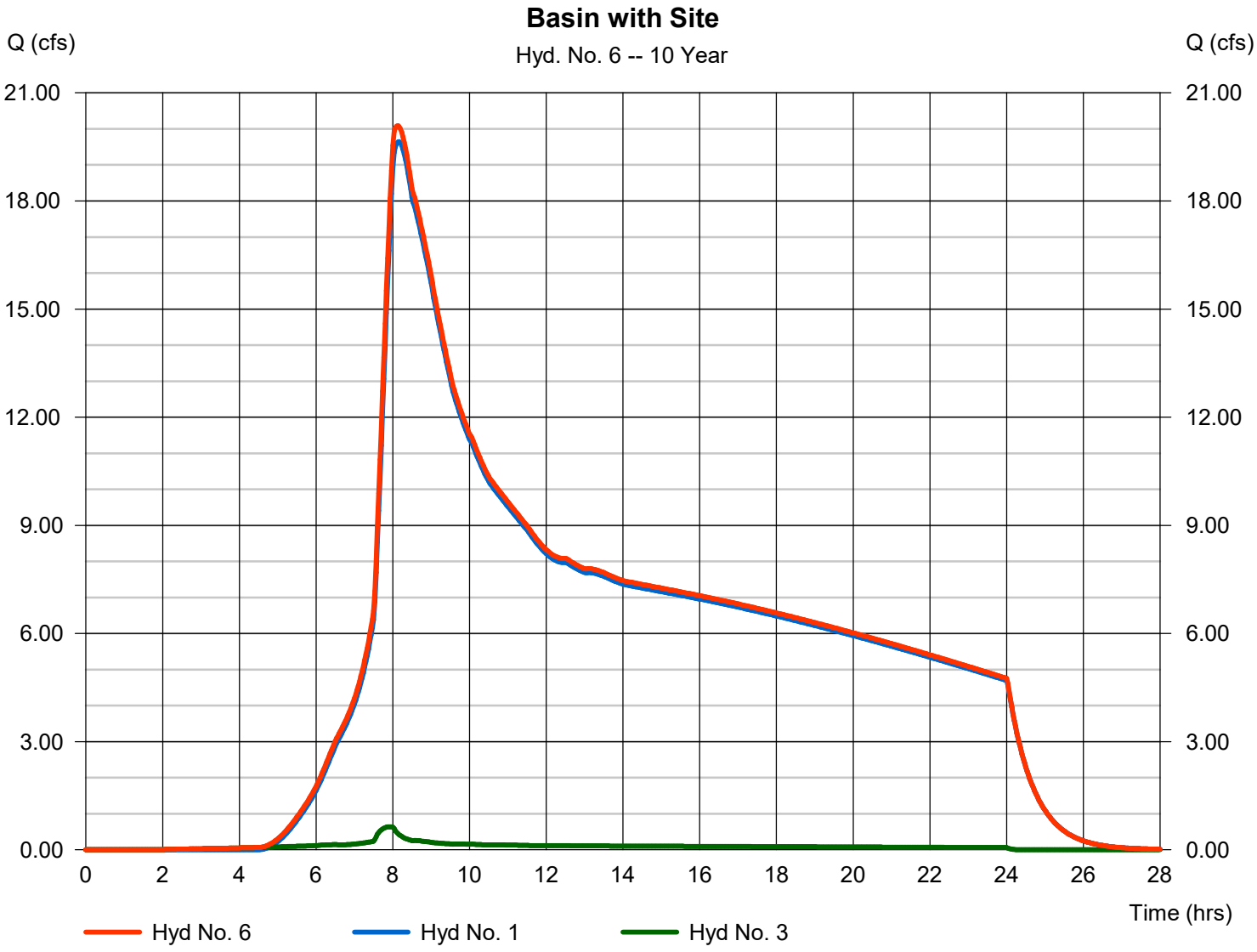


Hydrograph Report

Hyd. No. 6

Basin with Site

Hydrograph type	= Combine	Peak discharge	= 20.09 cfs
Storm frequency	= 10 yrs	Time to peak	= 8.13 hrs
Time interval	= 2 min	Hyd. volume	= 524,946 cuft
Inflow hyds.	= 1, 3	Contrib. drain. area	= 84.100 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SBUH Runoff	31.52	2	488	769,556	------	------	------	Complete Basin
2	SBUH Runoff	0.489	2	480	7,764	------	------	------	Existing Site
3	SBUH Runoff	0.862	2	474	12,113	------	------	------	Proposed Site
5	Combine	31.94	2	486	777,321	1, 2,	------	------	Basin with existing site
6	Combine	32.17	2	486	781,671	1, 3,	------	------	Basin with Site

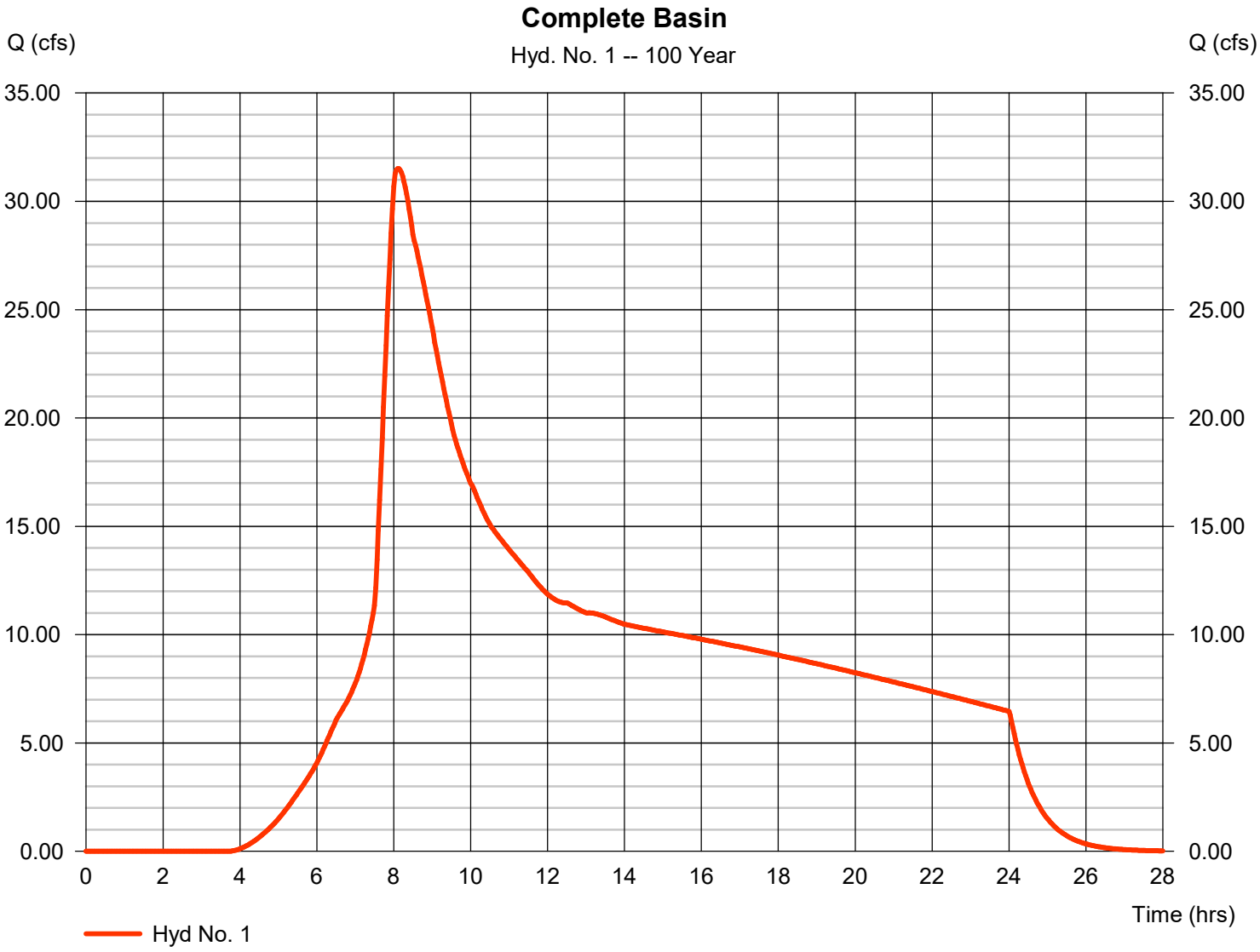
Hydrograph Report

Hyd. No. 1

Complete Basin

Hydrograph type	=	SBUH Runoff	Peak discharge	=	31.52 cfs
Storm frequency	=	100 yrs	Time to peak	=	8.13 hrs
Time interval	=	2 min	Hyd. volume	=	769,556 cuft
Drainage area	=	83.200 ac	Curve number	=	81*
Basin Slope	=	3.0 %	Hydraulic length	=	2800 ft
Tc method	=	LAG	Time of conc. (Tc)	=	40.50 min
Total precip.	=	4.50 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(22.000 x 98) + (61.200 x 75)] / 83.200



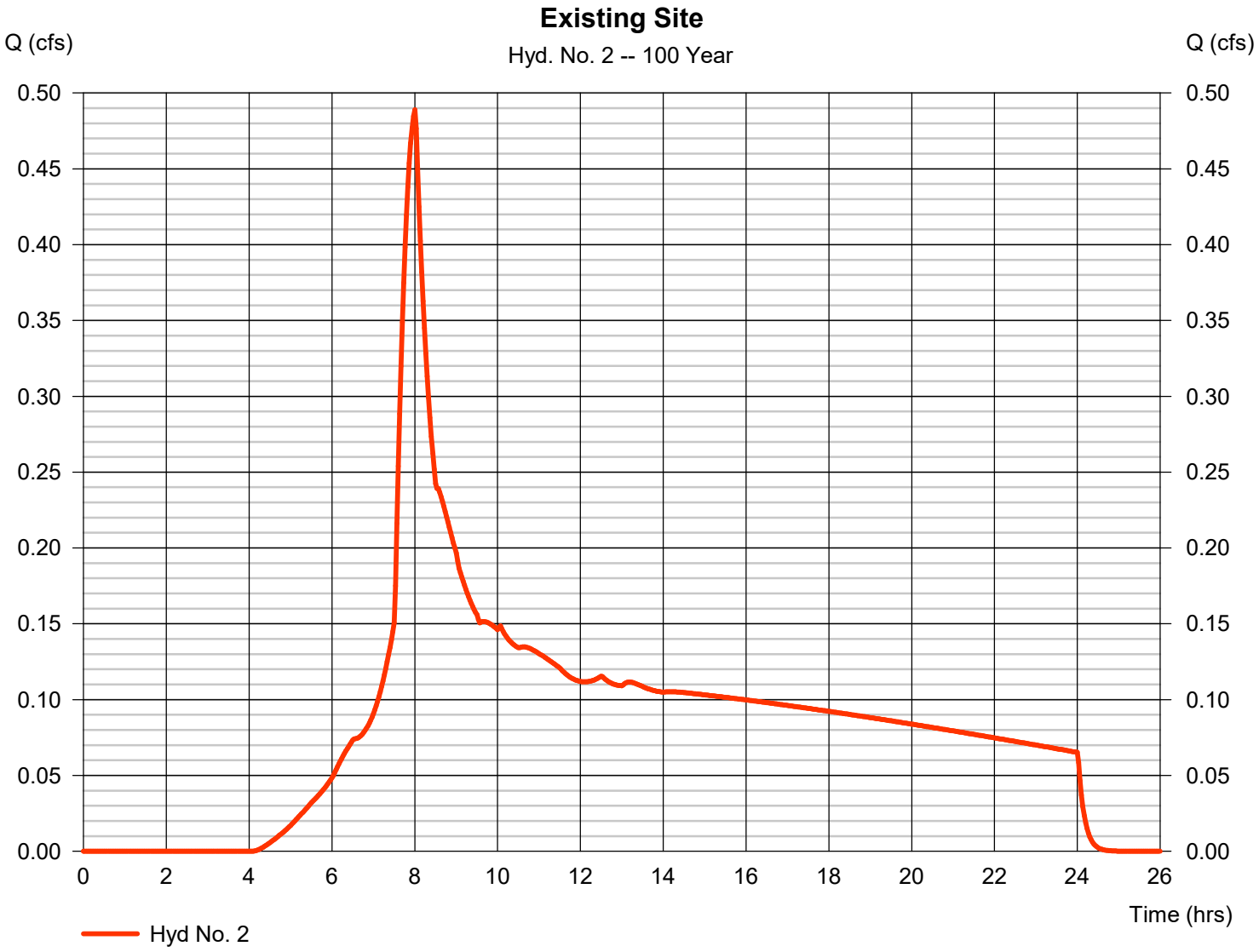
Hydrograph Report

Hyd. No. 2

Existing Site

Hydrograph type	=	SBUH Runoff	Peak discharge	=	0.489 cfs
Storm frequency	=	100 yrs	Time to peak	=	8.00 hrs
Time interval	=	2 min	Hyd. volume	=	7,764 cuft
Drainage area	=	0.900 ac	Curve number	=	79*
Basin Slope	=	2.0 %	Hydraulic length	=	300 ft
Tc method	=	LAG	Time of conc. (Tc)	=	8.80 min
Total precip.	=	4.50 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(0.140 x 98) + (0.760 x 75)] / 0.900



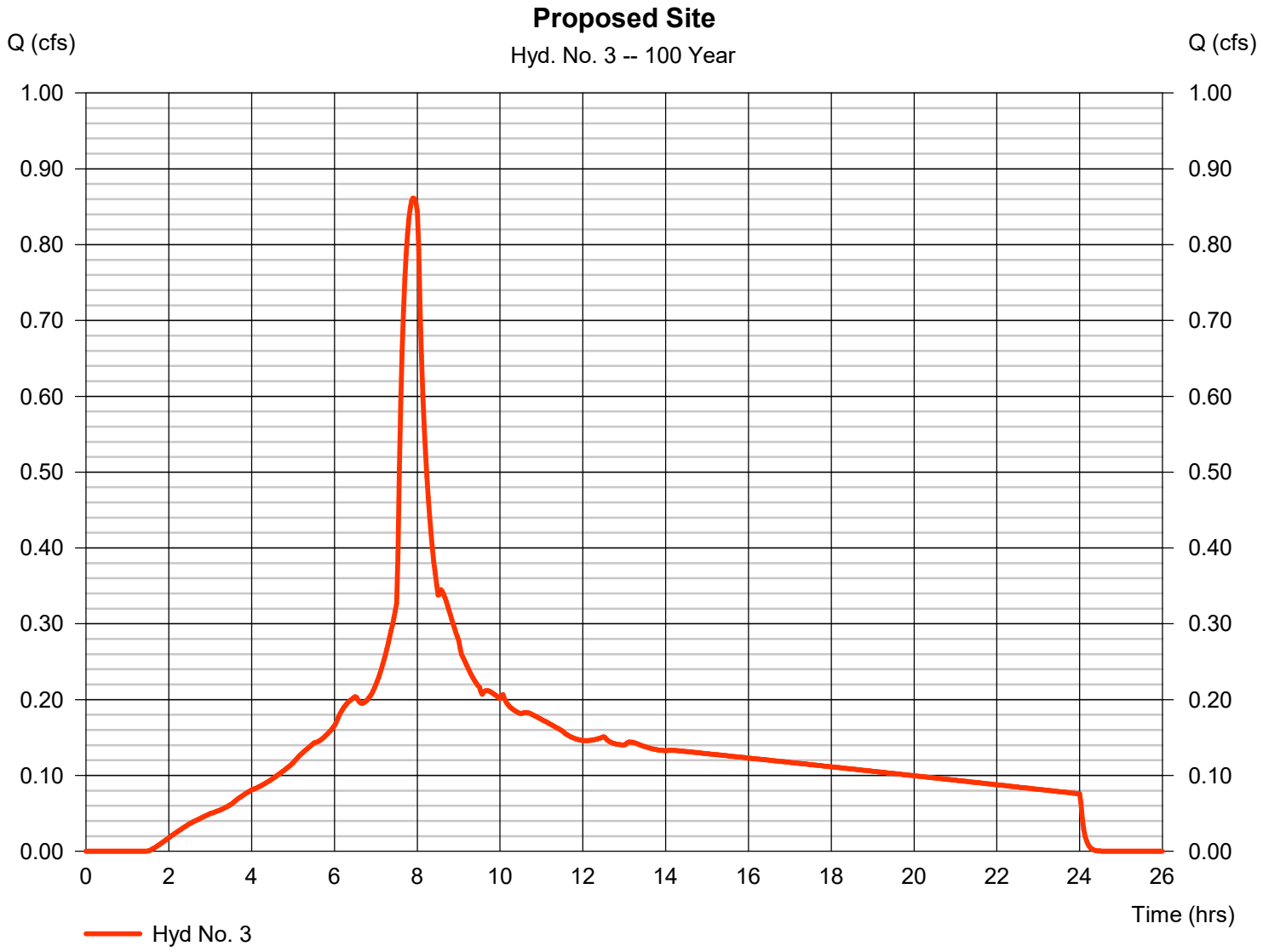
Hydrograph Report

Hyd. No. 3

Proposed Site

Hydrograph type	=	SBUH Runoff	Peak discharge	=	0.862 cfs
Storm frequency	=	100 yrs	Time to peak	=	7.90 hrs
Time interval	=	2 min	Hyd. volume	=	12,113 cuft
Drainage area	=	0.900 ac	Curve number	=	93*
Basin Slope	=	2.0 %	Hydraulic length	=	300 ft
Tc method	=	LAG	Time of conc. (Tc)	=	5.20 min
Total precip.	=	4.50 in	Distribution	=	Type IA
Storm duration	=	24 hrs	Shape factor	=	n/a

* Composite (Area/CN) = [(0.650 x 98) + (0.250 x 80)] / 0.900

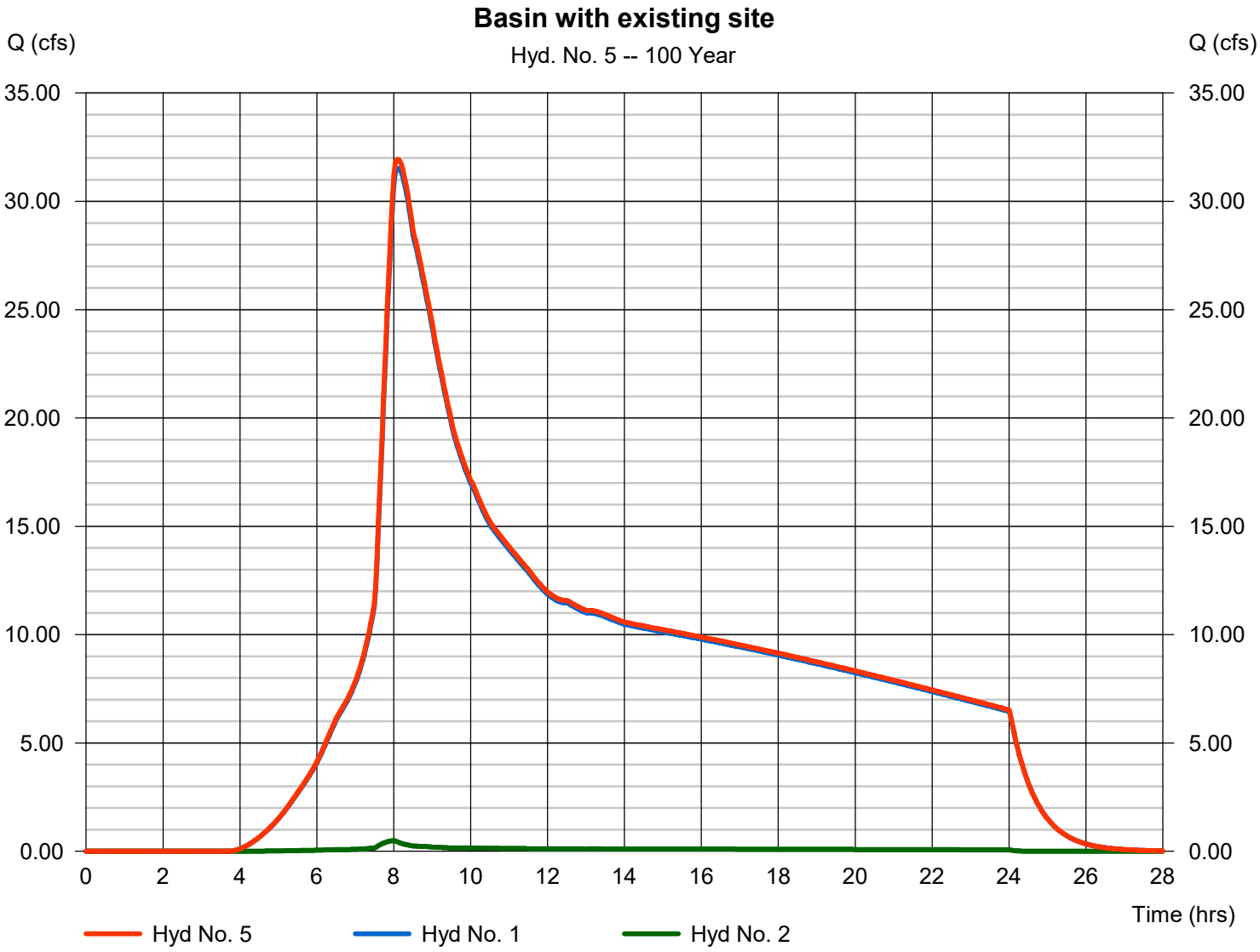


Hydrograph Report

Hyd. No. 5

Basin with existing site

Hydrograph type	= Combine	Peak discharge	= 31.94 cfs
Storm frequency	= 100 yrs	Time to peak	= 8.10 hrs
Time interval	= 2 min	Hyd. volume	= 777,321 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 84.100 ac

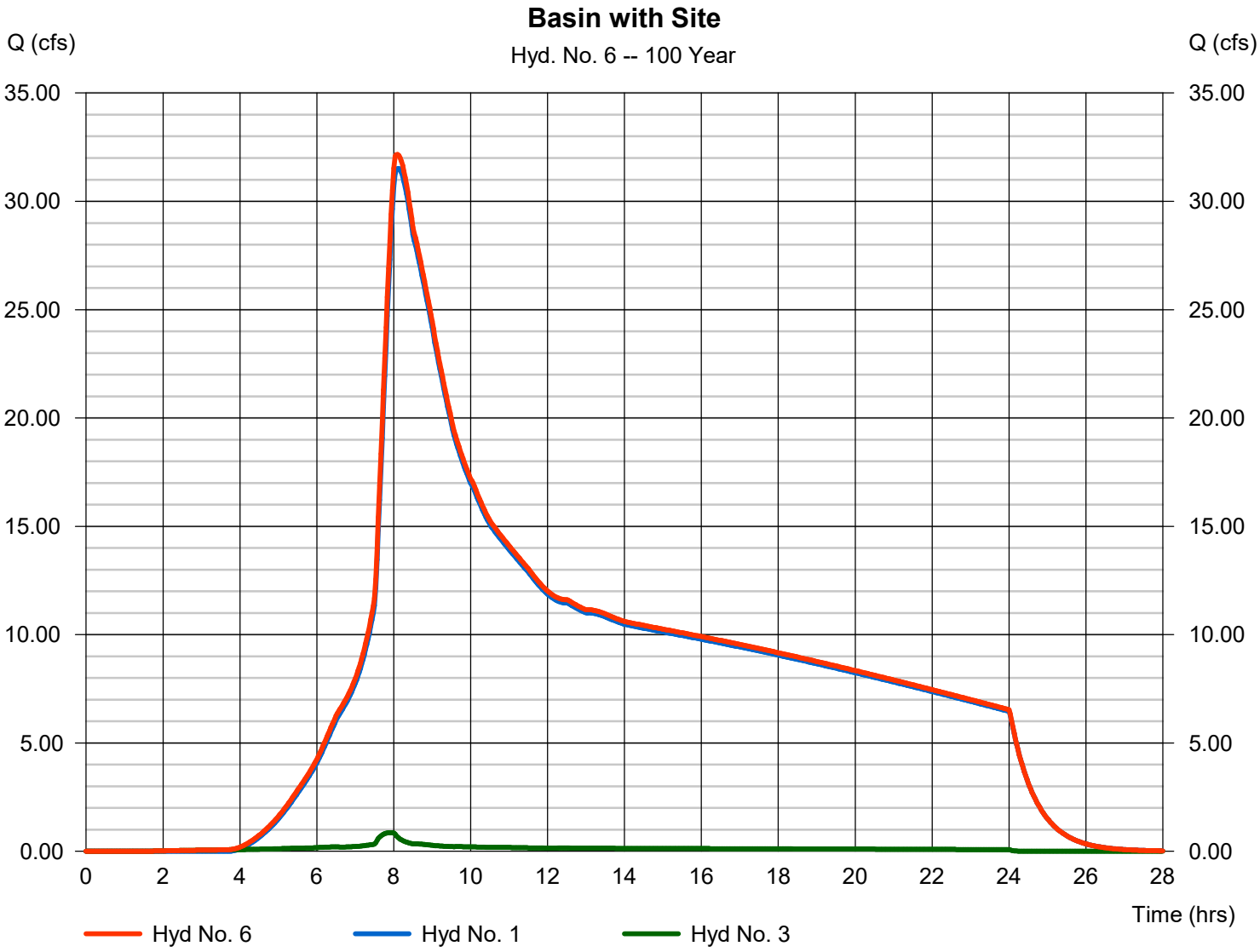


Hydrograph Report

Hyd. No. 6

Basin with Site

Hydrograph type	= Combine	Peak discharge	= 32.17 cfs
Storm frequency	= 100 yrs	Time to peak	= 8.10 hrs
Time interval	= 2 min	Hyd. volume	= 781,671 cuft
Inflow hyds.	= 1, 3	Contrib. drain. area	= 84.100 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.idf

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

Precip. file name: Sample.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	3.50	5.77	6.80	4.50
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

WES BMP PRINTOUT

WES BMP Sizing Report

Project Information

Project Name	KAMM STREET APARTMENTS
Project Type	MultiFamily
Location	279 WARNER MILNER ROAD
Stormwater Management Area	1382
Project Applicant	RON LAUGHLIN
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
R1	640	Grass	Roofs	C	R1
R1A	654	Grass	Roofs	C	R1A
R2	640	Grass	Roofs	C	R2
R2A	591	Grass	Roofs	C	R2A
R3	847	Grass	Roofs	C	R3 & R4
R4	915	Grass	Roofs	C	R3 & R4
R5	563	Grass	Roofs	C	R5
R5A	618	Grass	Roofs	C	SOUTH PARKING
R6	568	Grass	Roofs	C	R6
R6A	612	Grass	Roofs	B	NA
R7	551	Grass	Roofs	C	SOUTH PARKING
R7A	609	Grass	Roofs	C	SOUTH PARKING
R8	565	Grass	Roofs	C	R8
R8A	609	Grass	Roofs	C	SOUTH PARKING
R9	522	Grass	Roofs	C	SOUTH PARKING
R9A	405	Grass	Roofs	C	SOUTH PARKING
R10	563	Grass	Roofs	C	R10
R10A	510	Grass	Roofs	C	R10
NORTH	9,100	Grass	ConventionalCo	C	NORTH

PARKING			ncrete		PARKING
SOUTH PARKING	8,700	Grass	ConventionalConcrete	C	SOUTH PARKING
FRONT WALK	331	Grass	ConventionalConcrete	C	SOUTH PARKING

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
R1	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	25.6	40.0	0.2
R1A	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	26.2	40.0	0.2
R2	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	25.6	32.0	0.2
R2A	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	23.6	28.0	0.2
R3 & R4	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	70.5	77.0	0.4
R5	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	22.5	39.0	0.2
R6	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	22.7	32.0	0.2
R8	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	22.6	32.0	0.2
R10	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	42.9	48.0	0.3
NORTH PARKING	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	364.0	444.0	0.9
SOUTH PARKING	FlowControlAndTreatment	Stormwater Planter - Filtration	C3	493.8	570.0	1.1
R8A	FlowControlAndTreatment	Stormwater Planter - Infiltration	A1	0.0	0.0	0.0

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

NRCS WEB SOIL SURVEY

United States Department of Agriculture

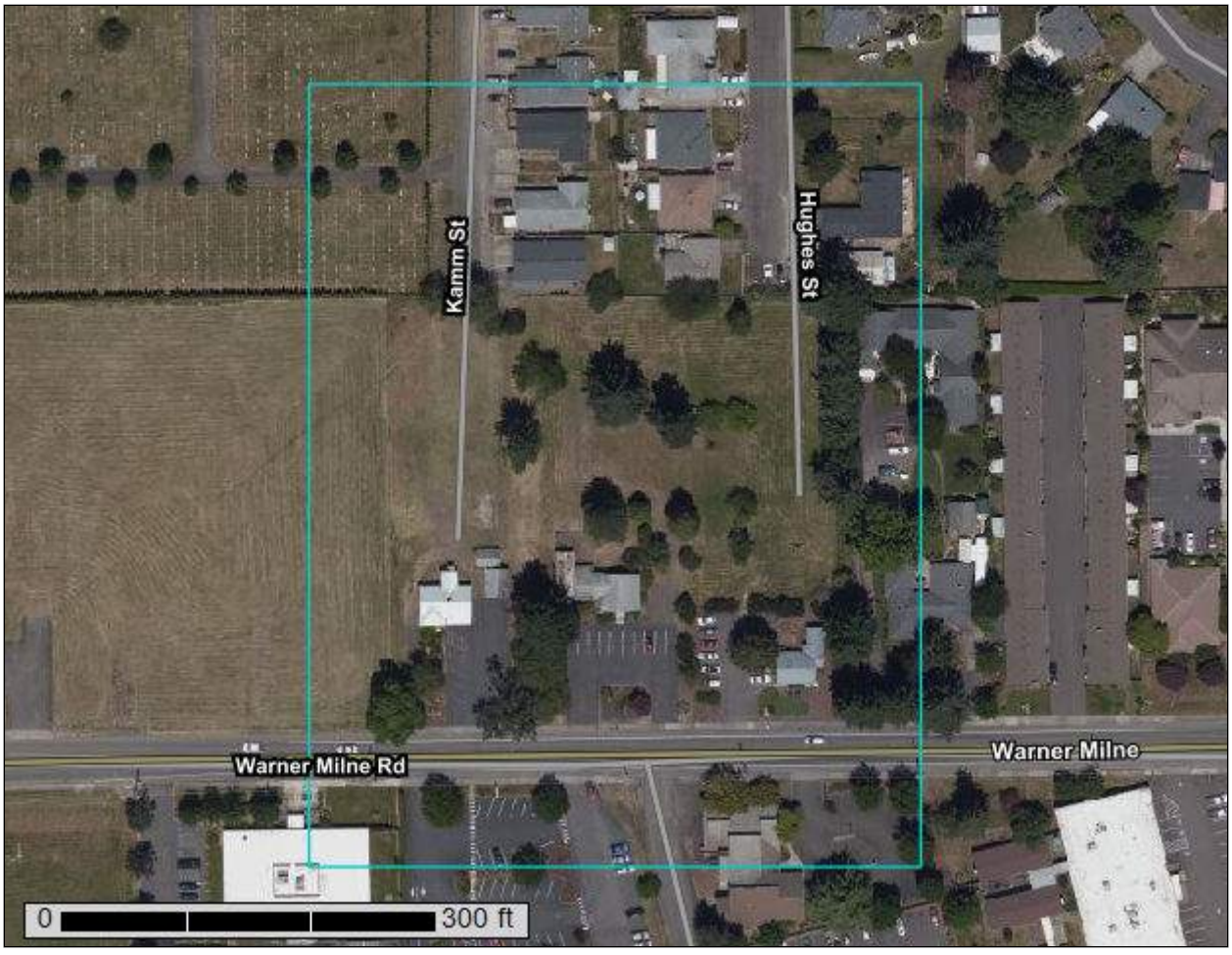
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Clackamas County Area, Oregon

Kamm Street Apartments



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

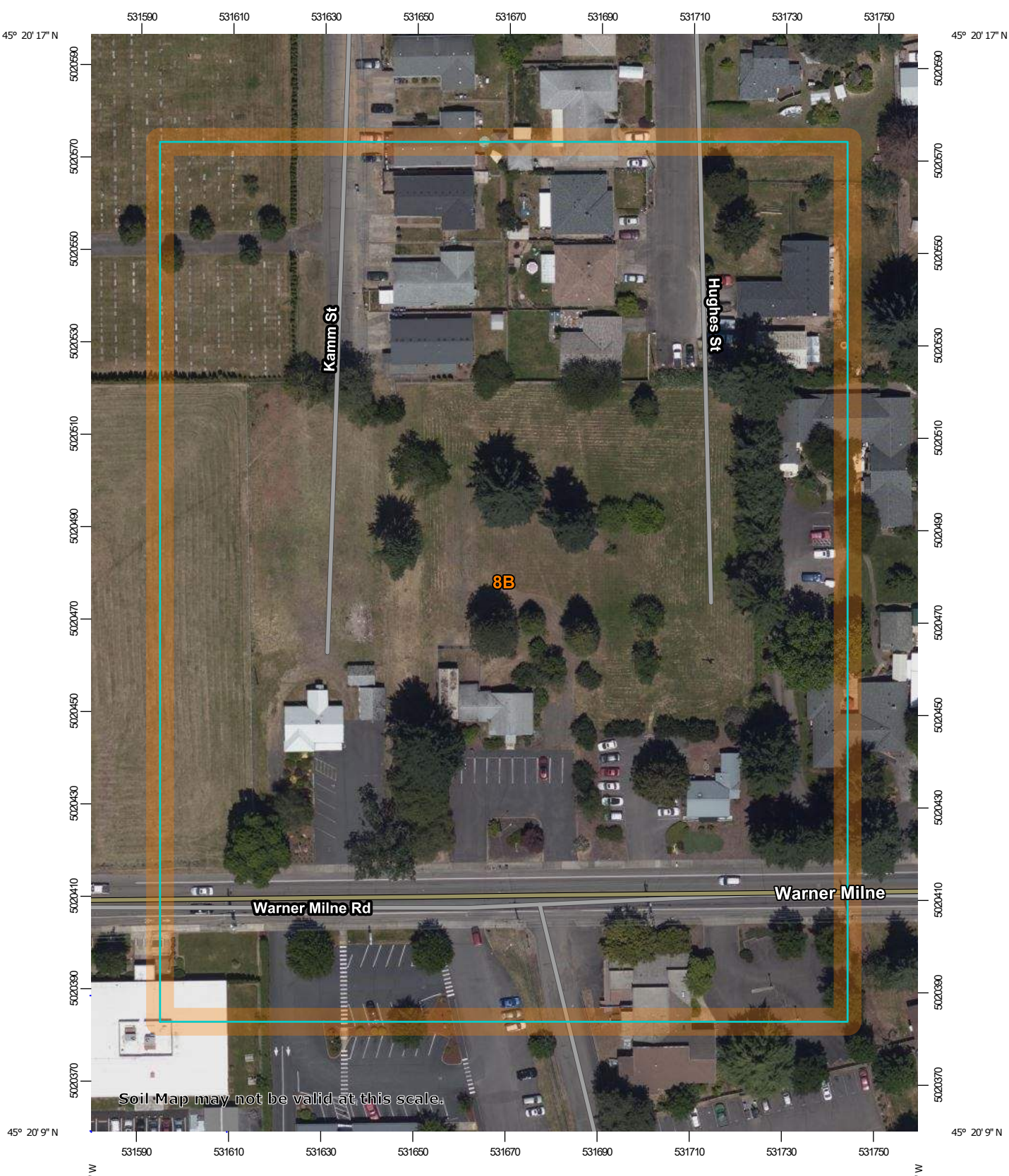
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:1,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 13, 2019—Jul 25, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Kamm Street Apartments)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8B	Bornstedt silt loam, 0 to 8 percent slopes	7.1	100.0%
Totals for Area of Interest		**7.1**	**100.0%**

Map Unit Descriptions (Kamm Street Apartments)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clackamas County Area, Oregon

8B—Bornstedt silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 227t
Elevation: 300 to 650 feet
Mean annual precipitation: 48 to 65 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bornstedt and similar soils: 85 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bornstedt

Setting

Landform: Hillslopes, terraces
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed old alluvium

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 33 inches: silty clay loam
H3 - 33 to 71 inches: silty clay

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Borges

Percent of map unit: 5 percent

Landform: Hillslopes, depressions on terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Aquults

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

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OPERATIONS AND MAINTENANCE
STORMWATER PLANTERS

Stormwater Planters
Operations & Maintenance Plan

What to Look For	What to Do
Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
Vegetation	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A.
Ponding	-Rake, till, or amend to restore infiltration rate.

Annual Maintenance Schedule:

Summer. Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.
Fall. Replant exposed soil and replace dead plants. Remove sediment and plant debris.
Winter. Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.
Spring. Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.
All seasons. Weed as necessary. Clean scuppers or curb inlets as needed.
Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.
Access: Maintain ingress/egress to design standards.
Infiltration/Flow Control: All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.
Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.
Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

Stormwater Planters
Operations & Maintenance Plan

What to Look For	What to Do
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Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
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Weeds	-Manually remove weeds. Remove all plant debris.
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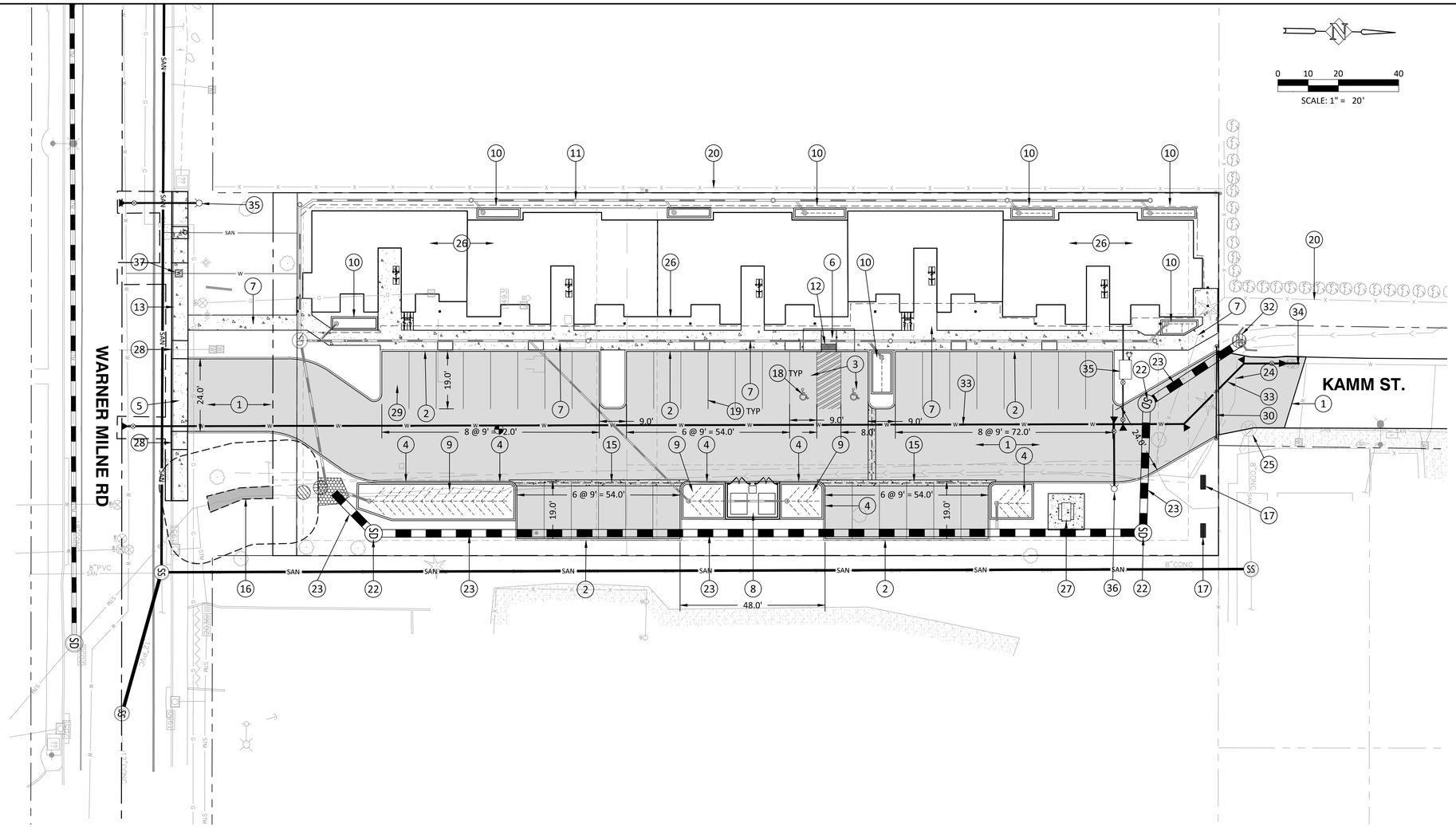
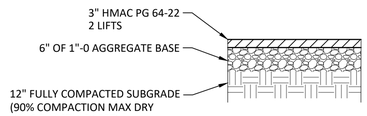
SITE PLAN



CONSTRUCTION NOTES:

1. CONSTRUCT ASPHALT PAVEMENT PER SECTION THIS SHEET.
2. CONSTRUCT CONCRETE CURB PER DETAIL.
3. CONSTRUCT ADA ACCESSIBLE PARKING STALLS.
4. CONSTRUCT CURB CUT FOR DRAINAGE SEE DETAIL.
5. CONSTRUCT CONCRETE COMMERCIAL DRIVEWAY APPROACH PER O.C. DETAIL 504A AND 505. REPLACE CURB.
6. CONSTRUCT ADA RAMP.
7. CONSTRUCT CONCRETE SIDEWALK PER DETAIL.
8. TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS.
9. STORMWATER PLANTER TYPE A WITH OPENINGS FOR STORMWATER DRAINAGE PER DETAIL SHEET C9.1.
10. STORMWATER PLANTER TYPE B PER DETAIL SHEET C9.1.
11. POWER POLE TO BE REMOVED.
12. INSTALL TACTILE WARNING TRUNCATED DOMES PER DETAIL.
13. PROTECT EXISTING CURB.
15. INSTALL CONCRETE VALLEY GUTTER PER DETAIL SHEET C9.0.
16. PROTECT WETLAND.
17. BENCH SEATING BY OTHERS.
18. INSTALL ADA STRIPING PER DEAIL SHEET C9.0.
19. INSTALL 4" WIDE, WHITE, TRAFFIC RATED PARKING STALL STRIPING.
20. PROTECT EXISTING FENCE.
22. INSTALL MANHOLE PER O.C. STANDARD DRAWING 301. SEE CIVIL UTILITY PLAN.
23. INSTALL 30" NDS DOUBLE WALL PIPE PER CIVIL UTILITY PLAN.
24. CONNECT TO EXISTING KAMM STREET AC. SEE GRADING PLAN.
25. ADJUST EXISTING MANHOLE TO FINISH GRADE. SEE GRADING PLAN.
26. PROPOSED BUILDINGS. SEE ARCHITECTURAL PLANS.
27. PICNIC TABLE AND CONCRETE PAD BY OTHERS.
28. REPLACE CURB AT EXISTING DRIVEWAY.
29. REMOVE OVERHEAD POWER LINES. COORDINATE WITH PGE.
30. INSTALL 24' WIDE SWING GATE WITH FIRE DEPARTMENT APPROVED KNOX BOX.
32. INSTALL CONCRETE HEADWALL
33. INSTALL 8" WATER LINE.
34. REMOVE EXISTING BLOW OFF AND CONNECT TO EXISTING WATER LINE.
35. INSTALL 4" FIRE SERVICE WITH VAULT AND FDC.
36. INSTALL FIRE HYDRANT
37. INSTALL 1-1/2" WATER SERVICE.



AC PAVEMENT SECTION
NTS

SITE PLAN
KAMM STREET APARTMENTS
OREGON CITY, OREGON

Harper Houf Peterson Righellis Inc.
ENGINEERS•PLANNERS
LANDSCAPE ARCHITECTS•SURVEYORS
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REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 13, 1999
KENNETH K. VAN
EXPIRES: 06/30/22

PRELIMINARY

DESIGNED:	KKV
DRAWN:	HHPR TEAM
CHECKED:	KKV
DATE:	09/2021

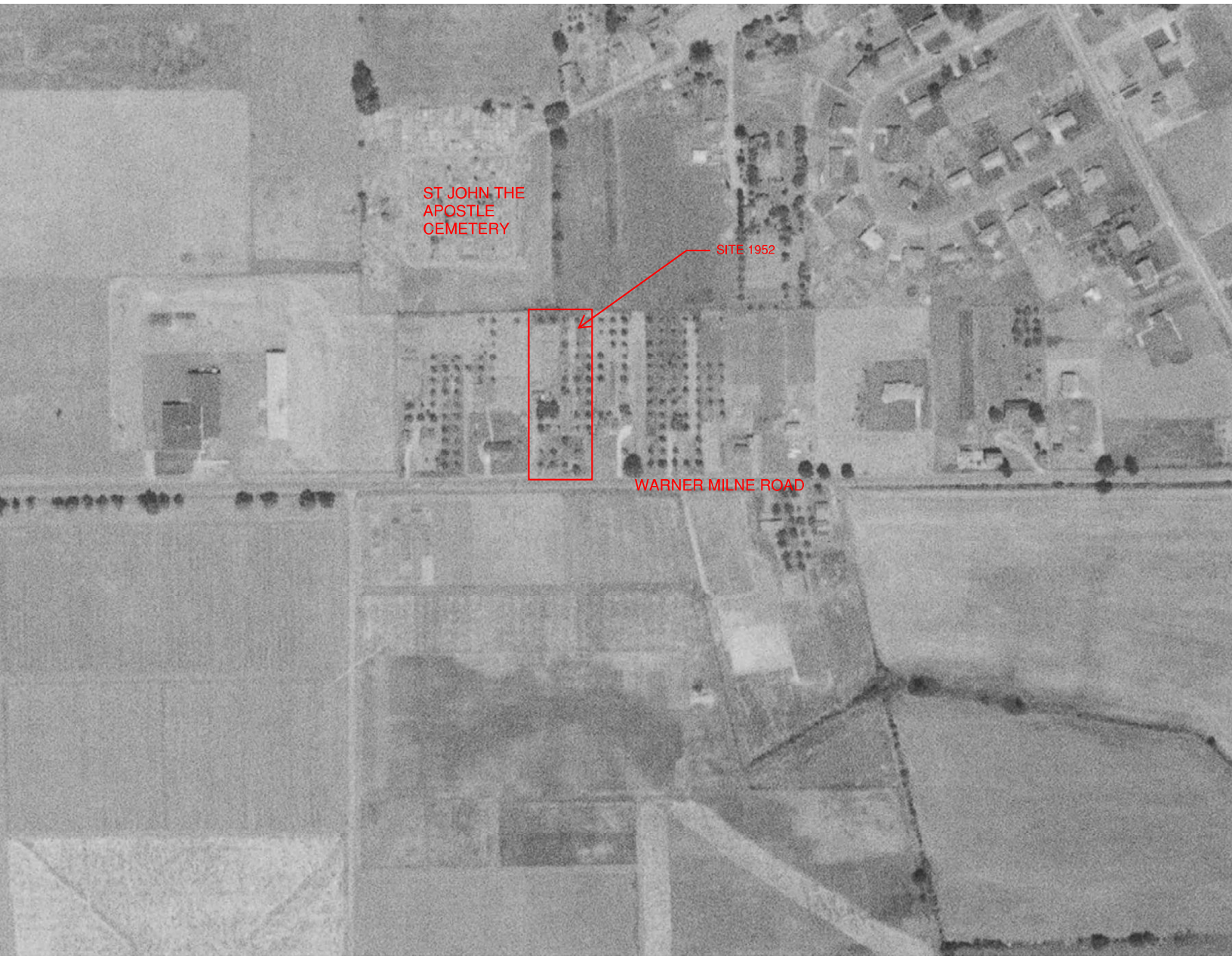
REVISIONS

NO.	DESCRIPTION	DATE

SHEET NO.
C3.0

JOB NO.
MSC-261

1952 AERIAL PHOTO


ST JOHN THE
APOSTLE
CEMETERY
SITE 1952
WARNER MILNE ROAD

Community Development
695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

TYPE II STAFF REPORT AND NOTICE OF DECISION WITH CONDITIONS OF APPROVAL
GLUA 21-00066 SP 21-00117 NROD 21-0018 -Kamm Street Apartments
April 14, 2022

FILE NUMBER: GLUA 21-00066 SP 21-00117 NROD 21-0018 -Kamm Street Apartments

APPLICANT: Iselin Architects, P.C.
1307 Seventh Street
Oregon City, OR 97045

OWNER: Ron L. Laughlin, Jr.
Warner Milne Commercial LLC
401 6th Street
Oregon City, OR 97045

Application Submitted: 11/05/2021
Application Complete: 1/02/2022
120-Day Decision Deadline: 05/03/2022 extended to May 18, 2022
NOD: April 14, 2022

REQUEST: Development of a new three-story 30-unit apartment building and associated site improvements, including parking lot, pedestrian pathway, garbage/recycling enclosure, and landscaping on 0.86 acres.

LOCATION: 1155 Kamm Street & 279 Warner Milne Road
3-2E-05CB-01400 & 3-2E-05CB-01402

REVIEWER: Christina Robertson-Gardiner, AICP Senior Planner
Sang Pau, Engineering Associate

DECISION: Approval with Conditions.

PROCESS: Pursuant to OCMC 17.50. The decision of the Community Development Director is final unless appealed to the City Commission within fourteen (14) days following the mailing of this notice. The last day to submit an appeal is 4PM April 28, 2022. Only persons who commented in writing to the Community Development Director may appeal this limited land use decision. The request for a hearing shall be in writing. The request for a hearing shall demonstrate how the party is aggrieved or how the proposal does not meet the applicable criteria. The application, decision (including specific conditions of approval), and supporting documents are available for inspection at the Oregon City Planning Division. Copies of these documents are available (for a fee) upon request. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION, PLEASE CONTACT THE PLANNING DIVISION OFFICE AT (503) 722-3789.

Conditions of Approval

Planning File GLUA 21-00066 SP 21-00117 NROD 21-0018 -Kamm Street Apartments

(P) = Verify that condition of approval has been met with the Planning Division.
(DS) = Verify that condition of approval has been met with the Development Services Division.
(B) = Verify that condition of approval has been met with the Building Division.
(F) = Verify that condition of approval has been met with Clackamas Fire Department.

<u>The applicant shall fulfill the following conditions prior to issuance of a public improvement and/or Building permit associated with the proposed application.</u>

1. The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction. (DS)
2. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City.(DS)
3. The development shall provide the following improvements along the frontage of Warner Milne Road:
   Behind the existing curb:
   - 0.5-foot-wide curb & 10-foot-wide sidewalk with 5 ft x 5 ft tree wells
   - Sidewalk may be narrowed to 7-foot-wide where it is adjacent an NROD or to preserve exiting tree(s). (DS)
4. The applicant shall submit a photometric plan to confirm existing street lighting levels along the property frontage is adequate as determined by the City and Portland General Electric (PGE) or provide streetlights along Warner Milne Road in conformance with all City standards, specifications, codes, and policies and as approved by Portland General Electric (PGE). (DS)
5. The driveway connecting to Warner Milne shall be designed to comply with the Traffic Sight Obstructions in Chapter 10.32. (DS)
6. The pedestrian accessway proposed through the development shall have a seven-foot-wide paved surface contained within a public access easement and have a minimum average four-foot landscaped area on one side. (DS)
7. The planter strip along the side of the pedestrian accessway shall be landscaped by the installation of the following:
   a. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average; and
   b. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and
   c. Two-inch minimum caliper trees shall be provided for every thirty-five-feet on average along the accessway. Such trees may be located within a 3'X5' tree wells within the paved portion of the accessway.
   d. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.
8. The pedestrian accessway shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent

properties. Street lighting shall be provided at both entrances. Ownership and maintenance responsibilities shall remain with the property owner. (DS)

9. The pedestrian accessway shall be Americans with Disabilities Act (ADA) compliant.(DS)
10. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum prior to receiving a permit and beginning construction. (DS)
11. To ensure there is proper clearance on existing Kamm Street, the developer shall provide "no parking" signs along the west side of existing Kamm Street. (DS)
12. The developer shall provide engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer which accurately addresses all items from Section 9.3 & 9.4 of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction. The development shall utilize only non-infiltration type facilities. (DS)
13. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards. (DS)
14. A city issued erosion and sediment control permit shall be obtained prior to commencement of any earth disturbing activities. (DS)
15. Erosion and sediment control plans shall be submitted for review and approval by the City prior to issuance of an erosion and sediment control permit. (DS)
16. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided prior to receiving a permit and beginning construction. The estimated costs shall be supported by a verified engineering estimate and approved by the city engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the city. (DS)
17. Prior to issuance of construction plans of the right-of-way improvements, the applicant shall submit a street tree plan which includes 5 street trees planted spacing shall be evenly distributed throughout the total development in accordance with OCMC 12.08 or accept fee-in-lieu of planting pursuant to OCMC 12.08 if site or other constraints prevent meeting the required total number of tree plantings. (P)
18. The applicant shall display the tree protection fencing and notices associated per 17.41.130 on the grading and erosion control plan. (P)
19. Prior to the release of Building Permits, the applicant is responsible for submitting a Type I Site Plan and Design Review tree removal application for those trees removed in 2018/2019 based on the compliance options in 17.41.050. The trees removed in 2018/2019 are above and beyond any tree proposed to be removed as part of the current application. If the caliper sizes of the trees that were removed cannot be verified, the applicant shall use the 19" to 24" *healthy tree located outside of the construction area category* as a default category in their calculations unless further refined with additional documentation. (P)
20. Per OCMC 17.41, 4 trees proposed to be removed will be replaced based on the size of the tree and the location of the removed tree. The total number of mitigation trees required to be planted is 10. Prior to the release of Building Permits, the applicant shall demonstrate that all mitigation trees identified above are in excess of any required landscape plantings required by OCMC 17.62 and OCMC 17.52 or provide an alternate mitigation approach per 17.41 to account for the needed trees. (P)
21. In order for the open space to be accessible, a designated crossing area from the pedestrian sidewalk along the building frontage to the site shall be constructed. Prior to release of building permits, the applicant shall work with Planning and Development Services to design a safe and direct pedestrian crossing across the drive isles to the designated common space. (P)

22. No disturbance may be performed within the delineated 15 -foot buffer of Drainage A—Downstream Reach without additional Type I or Type II review beyond the planting of native grass submitted with the approved landscaping plan. (P)

The applicant shall fulfill the following conditions during construction.

23. Pavement cuts and pavement restoration associated with work within city streets or rights-of-way shall be in accordance with the City of Oregon City Public Works Pavement Cut Standards.(DS)
24. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city.(DS)
25. The applicant's project engineer shall inspect construction, and the cost shall be borne by the applicant. (DS)
26. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the PUE. (DS)
27. The applicant shall comply with permitted hours of construction as set forth by the City Engineer. (DS)
28. Prior to Building Permit release, the applicant shall resubmit a revised landscape plan that indicates that the plantings will cover one hundred percent of the landscape area within three years. (P)

The applicant shall fulfill the following conditions prior to final occupancy.

29. The property owner(s) shall execute an agreement providing maintenance of, and giving Oregon City access to, privately-owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The agreement shall be reviewed and accepted by the City prior to occupancy. (DS)
30. The developer shall incorporate the pedestrian accessway into a recorded easement that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway. (DS)
31. The development shall provide 15-foot-wide public utility easements for water and storm mains proposed through the development. (DS)
32. The development shall provide a public utility easement (PUE) along all the Warner Milne Road right-of-way which is a minimum of 5 feet in width. (DS)
33. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements. (DS)
34. All new franchise utilities shall be placed underground unless deemed infeasible by the City and the franchise utility provider(s) prior to occupancy. (DS)
35. Improvements shall be completed and accepted by the City prior to occupancy. The applicant shall complete all items from a city-provided punch list prior to occupancy. (DS)
36. The applicant shall provide a 24-foot-wide vehicular access easement that allows for public access through the property from Warner Milne Road to Kamm Street. The vehicular access easement shall specifically require the property owner and future property owners to provide for the ownership and maintenance of the area. The agreement shall be reviewed and accepted by the City prior to occupancy. Though not required, the applicant is encouraged to work with Development Services to

add additional traffic calming features at the transition of Kamm Street and vehicle easement to address neighborhood speed concerns (DS)

37. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public. The improvements as shown in city approved construction plans shall be provided prior to occupancy. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. (DS)
38. Prior to obtaining a Certificate of Occupancy, the applicant shall confirm the final tree count onsite includes the required minimum trees and two required mitigation trees as part of the alternate landscape plan. Any trees planted onsite to meet OCMC 17.41 Tree Protection, Preservation, Removal, and Replanting Standards are above and beyond these requirements (P)
39. The applicant shall ensure that, prior to obtaining a Certificate of Occupancy, a pedestrian cross over easement is recorded allowing pedestrian access across the site from Tax Lot 1300 (currently owned by PGE) to Kamm Street. The easement shall be a minimum of 7-feet wide and be located near the north property line of the subject property. The easement shall allow the construction of a connecting approximately 25 foot long 5-foot wide ADA accessible pedestrian path from the property line of Tax Lot 1300 to the proposed pedestrian path onsite. The cost of this shall be born by the developer of Tax Lot 1300 if a pedestrian connection to Kamm Street is required as part of a future application on Tax lot 1300. (P)

I. BACKGROUND:

1. Existing Conditions

The existing development site currently consists of two tax lots, one of which fronts Warner Milne Road and contains a small residential-style office building, and one lot that is accessed off Kamm Street and contains no structures. The two lots will be combined as part of this development, and the existing structure will be demolished. Kamm Street will be connected to Warner Milne Road by way of a vehicular and pedestrian access easement to be provided on the combined property.

The site is zoned Mixed Use Corridor (MUC-1). Multifamily is a permitted use in the Zoning District.

The mixed-use corridor (MUC) district is designed to apply along selected sections of transportation corridors such as Molalla Avenue, 7th Street, Beavercreek Road, and along Warner-Milne Road. Land uses are characterized by high-volume establishments such as retail, service, office, multi-family residential, lodging, recreation and meeting facilities, or a similar use as defined by the community development director. A mix of high-density residential, office, and small-scale retail uses are encouraged in this district. Moderate density (MUC-1) and high density (MUC-2) options are available within the MUC zoning district. The area along 7th Street is an example of MUC-1, and the area along Warner-Milne Road is an example of MUC-2.

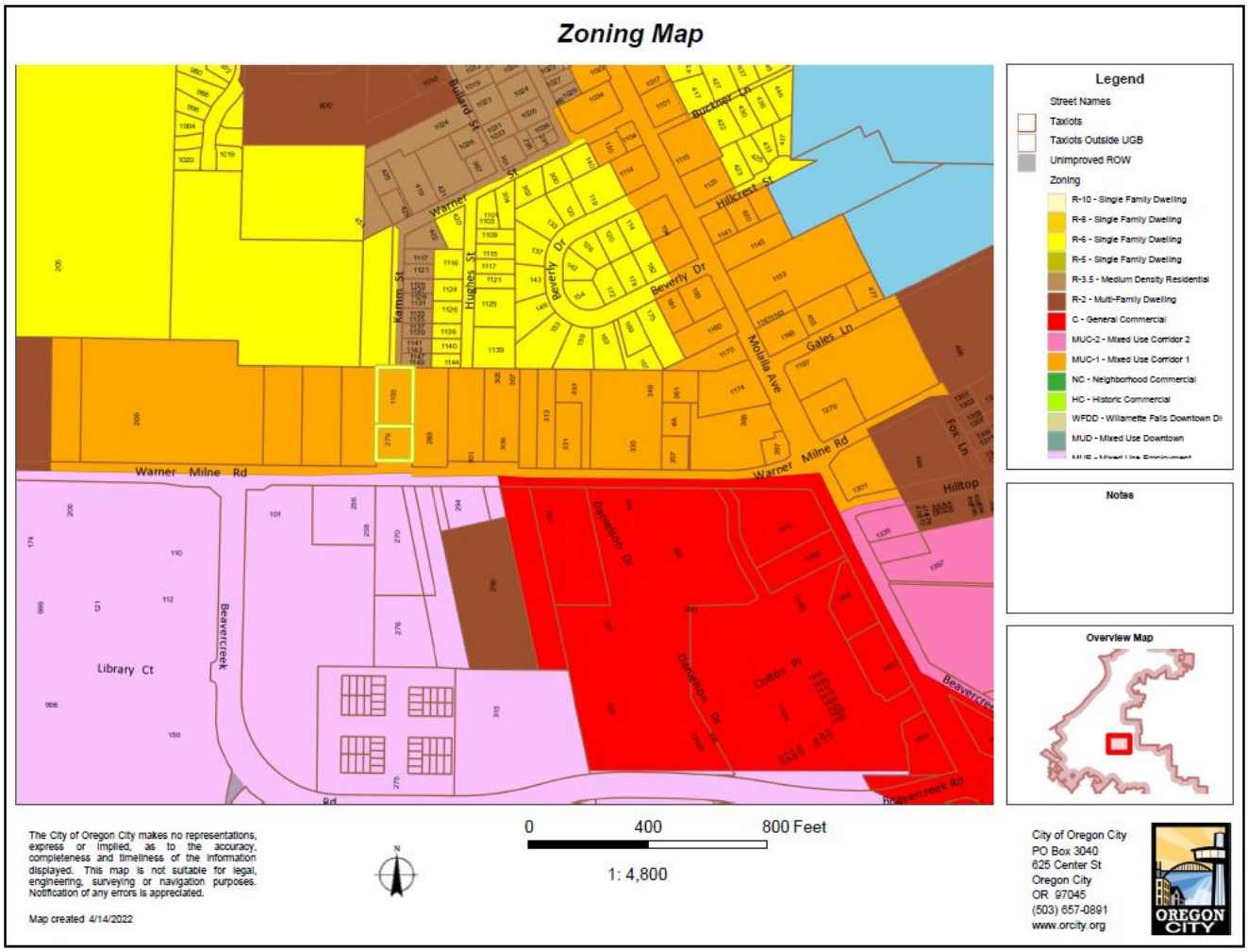


Figure 1. Zoning Map

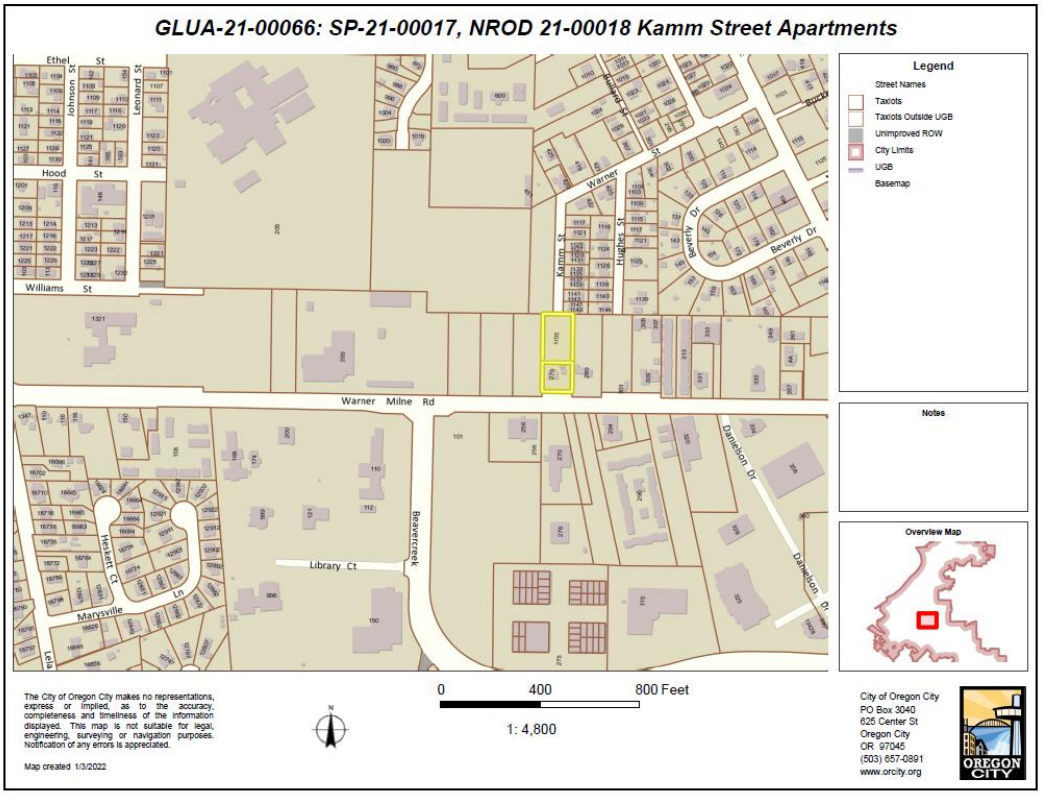


Figure 2. Vicinity Map

Figure 3: Existing Conditions – Warner Milne Frontage 2021 Google Street View

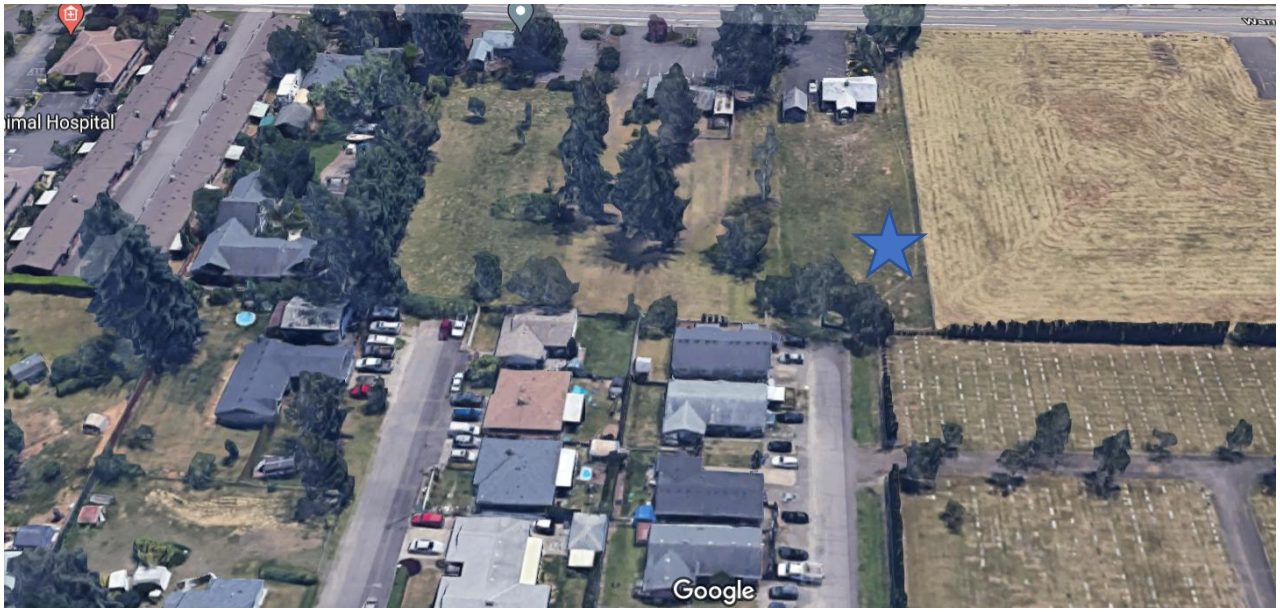


Figure 4: Existing Conditions- Google Maps

Figure 5: 2018 Aerial – OC Webmaps (showing previous tree canopy)

Figure 6: 2019 Aerial – OC Webmaps- showing trees removed onsite

2. Project Description

Description
The project includes the development of a new three-story 30-unit apartment building and associated site improvements including parking lot, pedestrian pathway, garbage/recycling enclosure and landscaping on 0.86 acres. The apartments will consist of one three-story building, containing a total of 12 one-bedroom and 18 two-bedroom units. All main level units will be ADA accessible. One of the units will be utilized as the manager's apartment/rental office. A total of 36 parking spaces will be created on the site.

The buildings will be residential in style, wood framed and sided with a combination of lap, shingle and board and batt siding and trim. Roofs will be gabled trusses finished with composition roof shingles. Upper-level units will be accessed via exterior stairways located in covered alcoves.

Type II decisions are technical reviews based on the code approval criteria and require limited discretion by Community Development and Development Services staff. Staff is not authorized to waive any requirements of the code except for modifications through Chapters 12.04 and 17.62

Proposed Building Area:

Main Level:	8,624 sf
Second Level:	8,591 sf
Third Level:	8,591 sf
Total Building Area:	25,806 sf

Unit Composition:

(12) One Bedroom	700 sf	48 sf Deck/Patio *
(18) Two Bedroom	955 sf	62 sf Deck/Patio **
(30) Total Units		
	**End Unit*	*760 sf 60 sf Patio*
	*** End Unit*	*988 sf 93 sf Patio*

Site Coverage:

Building:	11,012 sf	30%
Parking	14,528 sf	39%
Paving:	16,490 sf	45%
Landscape:	9,426 sf	25%

Density:

Required: minimum net density of 17.4 units per acre
Proposed: 30 units @ 0.848 acres = 35.4 units per acre

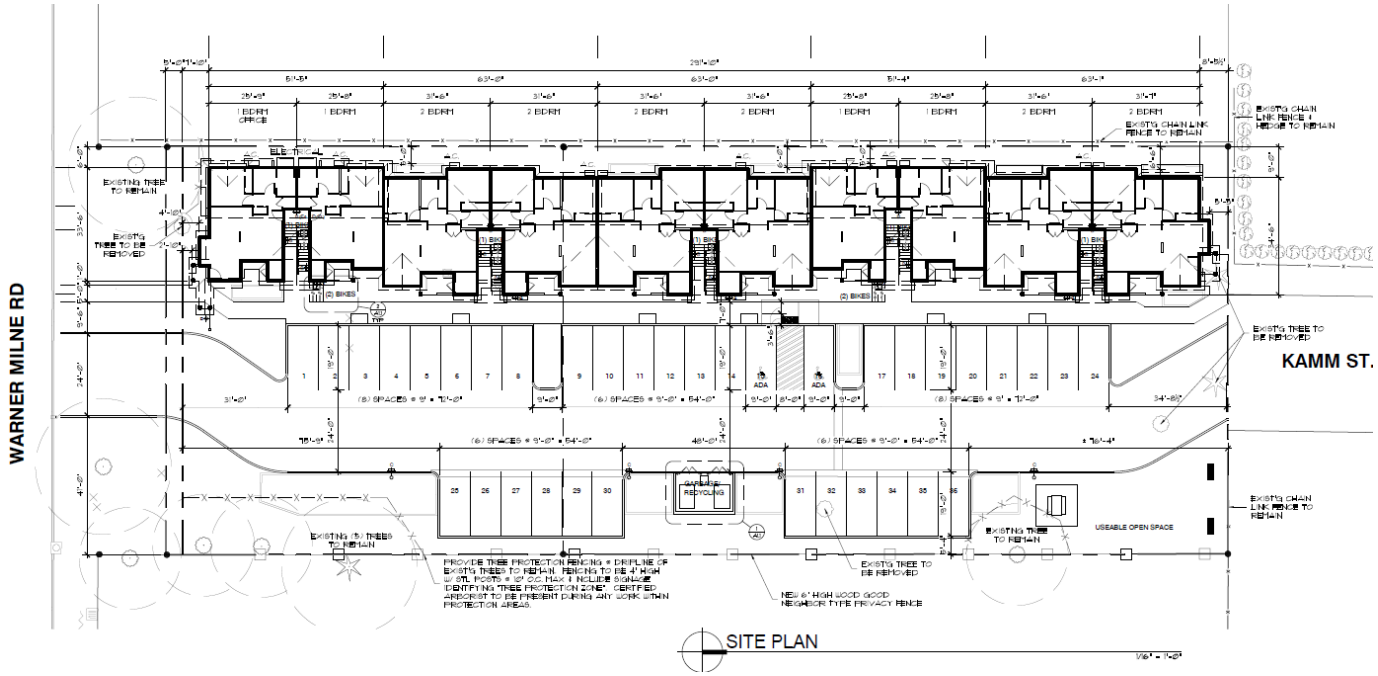


Figure 7: Proposed Site Plan

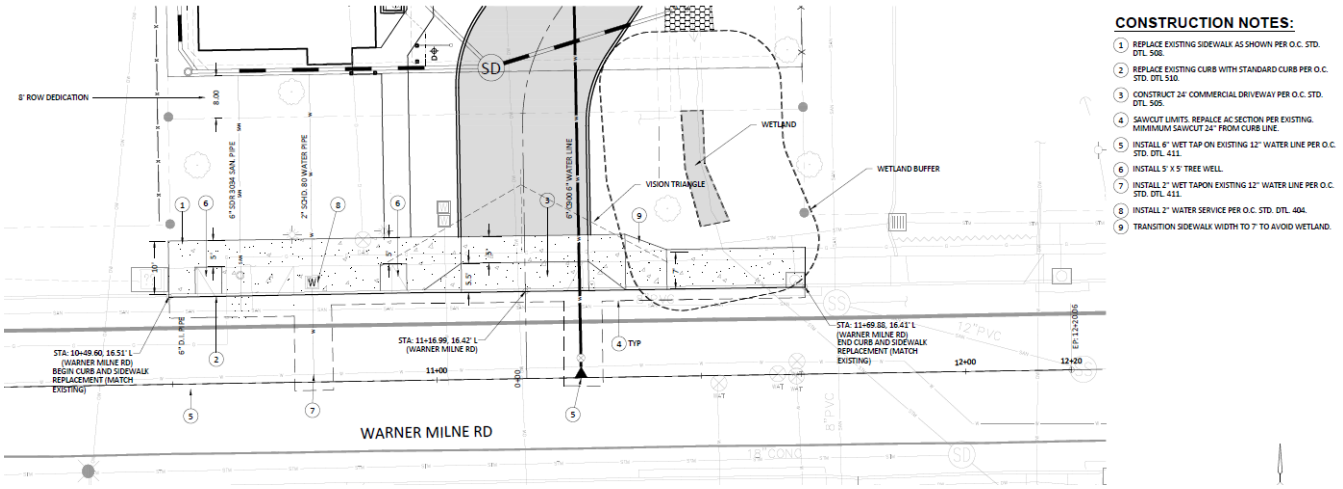


Figure 8: Proposed Street Improvements on Warner Milne

Figure 9: Proposed Building Elevations

Figure 10: Proposed Building Elevations

3. **Permits and Approvals:** The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City, including but not limited to the Engineering and Building Divisions.

4. **Public Comment**
   Public comments submitted include (Exhibit 3):

   Aaron Wolf
   Troy Brummell
   Elyvile Neighborhood Association (ENA)
   St. Johns the Apostle Cemetery
   Catherine Pieslewicz
   Leon H. Liegel
   Dave Wakefield
   Steve Lewis

   This technical review is for a use that is permitted in the zone and the applicant has submit a Type II Site Plan and Design Review. Type II decisions are based on the code approval criteria and entail limited discretion by Community Development staff. The Community Development Directors decision can be appealed to the City Commission by anybody who has submitted public comments.

   Staff has indicated below how the submitted comment has been addressed through A. Conditions of approval, B. Indicates that the issue/concern is not an approval criterion for the

subject project or C. The project's impact is not large enough to legally trigger any off-site improvements.

1. **Aaron Wolf- Trees removal in 2018-2019 –** Public comments by various neighbors indicate that numerous trees were removed from the site sometime between 2018-2019 as indicated in the figures below at the beginning of the staff report. Tree removal on commercial sites requires a Type I Site Plan and Design Review. It appears the previous property owner failed to submit for Type I approval for the removed trees, nor did the current applicant include the number and caliper size in the current submittal. Prior to the release of Building Permits, the applicant is responsible for submitting a Type I Site Plan and Design Review tree removal application for those trees removed in 2018/2019 based on the compliance options in 17.41.050. The trees removed in 2018/2019 are above and beyond any tree proposed to be removed as part of the current application. If the caliper sizes of the trees that were removed cannot be verified, the applicant shall use the 19" to 24" *healthy tree located outside of the construction area category* as a default category in their calculations unless further refined with additional documentation
2. **Aaron Wolf- "Request some proactive assurance or design specifications that clarify this as a public right-of-way rather than an issue of trespassing on private property."**
   The development will be required to provide a public vehicular access easement through the property extending from the south end of Kamm Street to Warner Milne Road. This is required to satisfy City Code 16.12.030 which limits maximum block spacing between streets to five hundred thirty feet. There is more than five hundred and thirty feet from the east or west sides of Kamm Street (distance to Warner Milne Road and Linn Avenue). The development is also required to provide a separate pedestrian accessway so that pedestrians do not have to use the vehicular path.
3. **Aaron Wolf- traffic calming needs** The plans show a vehicular access through the development property which has traffic calming measures identified as a "chicane" and "choker" by the Institute of transportation Engineers (ITE). A "chicane" is described by the ITE as, "A series alternating curves or lane shifts force a motorist to steer back and forth instead of traveling a straight path." The width of existing Kamm Street is also narrower than a typical road and acts as "choker" which the ITE says "Encourages lower speeds by funneling it through the pinch point."
4. **Troy Brummell– A connection to Kamm should not even be considered without improvements on KamSteet including sidewalks.**
   See answer 2. Creating connectivity also addresses the existing condition of Kamm Street (a dead-end road which is approximately 20' to 22' wide) which makes it difficult for use by emergency vehicles. A through connection from Kamm Street to Warner Milne Road will allow emergency vehicles travel between Warner Street (on the north) to Warner Milne Road (to the south) without the difficulty of having to turnaround or back out of Kamm Street. Widening of Kamm Street would not be proportional to the size of the development proposed due to added costs associated with replacing the existing drainage ditch along the west side of Kamm Street with a pipe. To ensure proper clearance of the roadway, the developer will be required to provide "no parking" signs along the west side of Kamm Street.
5. **Troy Brummell– Traffic** Mr Replinger found that the TAL meets city requirements and provides an adequate basis on which impacts of the development can be assessed. He also found that off-site improvement were not proportionally triggered in this analysis.
6. **Troy Brummell– inadequate parking spaces.** The applicant has provided a proposal (36 spaces) that meets the minimum requirements for off-street parking (30 spaces). The city cannot compel the applicant to provide more than what I required for a TYPE II by right development proposal.

7. **Troy Brummell– green space.** The applicant has provided a proposal that meets the minimum requirements for shared/private open space. The city cannot compel the applicant to provide more than what I required for a TYPE II by right development proposal.
8. **Troy Brummell– 30" culvert will not provide adequate drainage for stormwater**
The applicant's preliminary drainage plan and report contained enough information for the land use application to be deemed complete. The applicant will be required to provide conveyance calculations to determine if the 30" pipe is large enough to support stormwater flows originally conveyed by the drainage ditch. The calculations shall be per the Oregon City Stormwater Design Standards. The Oregon City Stormwater Design Standards states that, "The rainfall distribution to be used within the city is the design storm of 24-hour duration based on the standard NRCS Type 1A rainfall distribution using the 24-hour precipitation isopluvials in the National Oceanic and Atmospheric Administration Atlas 2, Volume 10, Precipitation-Frequency Atlas of the Western United States. The depth of rainfall for the 2 through 100-year 24-hour storm events is shown Table 5-2." The development will be required to provide an adequately sized stormwater system based on the Oregon City Stormwater Design Standards.
9. **Troy Brummell– Historic-** The site is not located in the OCMC 17.40 Historic Overlay districts. See answers 1, 26
10. **St. John The Apostle Cemetery – Increased traffic and safety issues on Kamm Street.**
See answers 2 & 3.
11. **St. John The Apostle Cemetery – Influence/impact of parking on Kamm Street**
See answer 4.
12. **St. John The Apostle Cemetery – Entrance and exit accessibility for the cemetery.**
Entrance and exit for the cemetery are not part of the scope of the project, and were not found to require offsite improvement by the application.
13. **St. John The Apostle Cemetery – Traffic flow patterns and their impact on Kamm Street and SJA Cemetery; i.e., no through traffic, no turn around, private property, private parking only, tow-away zone.**
See answers 2, 3, 4 & 11.
14. **St. John The Apostle Cemetery – Drainage issues, particularly disruption of current drainage ditches along Kamm Street. This area supports numerous underground springs and is largely comprised of a clay soil."**
The existing drainage ditches along Kamm Street will not be impacted by the development. The flow that is conveyed by the ditch along existing Kamm Street will be directed to a properly sized stormwater pipe. The application currently sizes this pipe as 24" in diameter. A condition of approval has been provided to require the applicant to meet the conveyance standards within the Stormwater and Grading Design Standards. The onsite stormwater will be collected in a number of stormwater planters meeting the requirements of the Stormwater and Grading Design Standards that will ensure no water backs up to existing Kamm Street and that the stormwater does not contribute to any future additional flooding problem downstream. While the development is not responsible to correct and current flooding issues upstream or downstream, they may not contribute to any additional flooding and that will be analyzed with the stormwater calculations following the Stormwater and Grading Design Standards. The current application can meet this standard and shows general compliance. Full compliance will be realized through the permit submittal.
15. **St. John The Apostle Cemetery – Placement of an "emergency services only" barricade at the current end of Kamm Street.**
See answer 2.
16. **St. John The Apostle Cemetery – No parking at any time signage on the cemetery side of Kamm Street, and at the area of the barricade.**
See answer 4.

17. **St. John The Apostle Cemetery – Installation of signage at the end of Warner Street; i.e., No through traffic, no turnaround, private property, private parking only, tow-away zone.**
See answer 2.

18. **St. John The Apostle Cemetery– Complete resurface of Kamm Street at the completion of construction.**
The city has a road maintenance schedule and resurfacing of Kamm Street is the responsibility of the city and is currently planned for summer of 2025.

19. **St. John The Apostle Cemetery – Ensure that proper lighting is in place to assure pedestrian traffic safety.**
The development is required to provide lighting for parking and driveway areas which will result in a lighted vehicular path from Kamm Street to Warner Milne Road. The development is also required to provide a lighted pedestrian path that runs through the development property. Offsite installation of lighting is not proportional to the size of the project not is it required as part of a by right Type II Development process.

20. **Catherine Pieslewicz– Natural Resources Overlay District** The Technical Memorandum by Ivy Watson, a Natural Resources Scientist, indicates that the resource is an artificial watercourse, reflects the predominate grass species of the flat upland portion of the site, does not have evidence of macroinvertebrates, and any inundation is related to stormwater events and not naturally occurring flows. A letter date July 15, 2021 from the Division of State Lands indicates that they only see the downstream portion of the ditch to be an intermittent stream and a Water of the State. "Based upon the information presented in the report, we concur with the waterway boundaries as mapped in Figure 6 of the report". David Evans and Associates (DEA) was contracted by the city to provide a third-party review of the applicant's submittal. In a letter dated April 11, 2022, (Exhibit 8), DEA concurred that no wetlands are on the site. Furthermore, DEA agreed with the applicant regarding the water feature on the site and found that it did not meet the OCMC definitions of perennial or intermittent stream and should not be viewed as a regulated water feature or NROD resource.

21. **Catherine Pieslewicz– Infiltration and Groundwater**
The stormwater report provided by the developer acknowledged the lack of infiltration by saying, "The proposed stormwater planters will be impermeable lined due to lack of soil infiltration, proximity to groundwater, and their location adjacent to building foundations."
The Oregon City Stormwater Design Standards provide two options for determining infiltration rates on a property, one of which is use of the Natural Resource Conservation Service (NRCS) report. The applicant opted to use the NRCS to determine infiltration rates. The development will be required to utilize only non-infiltration type facilities as indicated by the applicant's stormwater report. The stormwater report and design for the development is preliminary and the city will review the final design to ensure it complies with the Oregon City Stormwater Design Standards.

22. **Catherine Pieslewicz– The use of planters in front of the buildings on the west side of the development are not sufficient to control all stormwater across the entire development.**
The development is required to adhere to the Oregon City Stormwater Design Standards, which require developments to maintain stormwater drainage to pre-development levels. The Oregon City Stormwater Design Standards allow use of LID (Low Impact Development) stormwater facilities to the maximum extent practicable to mimic the natural stormwater runoff conditions of the pre-developed site. Stormwater planters is among the city-approved LID facility types. To size LID facilities, the Oregon City Stormwater Design Standards require the "BMP Sizing Tool" – A computer program approved by the City, for use in calculating the required size of LID stormwater management facilities. The Oregon City Stormwater Design Standards consider use of the BMP Sizing Tool to control stormwater flows to pre-development levels.

23. Catherine Pieslewicz -The current storm drain located at the southeast end of Kamm St. is insufficient to control the current volume of stormwater during the late fall, winter and spring. Not only is the drain insufficient, its location relative to the land topography would prevent the majority of stormwater from the proposed development from entering the drain.
The preliminary design for the site shows a grading plan with slopes directed to a new on-site stormwater system which connects to the city's pubic system downstream (the culvert within Warner Milne Road). The development will be required to provide a finalized grading and drainage plan for review. The city will review these plans to ensure it is designed to have flows directed to the appropriate downstream infrastructure (there is an existing 52" x 30" elliptical culvert within Warner Milne Road). All flow calculations for on-site and downstream infrastructure shall be per the Oregon City Stormwater Design Standards. The development is not required to fix all existing insufficient drainage systems but is required to provide additional stormwater management if flow calculations show lack of capacity in the existing downstream system. The amount of additional stormwater management will be proportional to the size of the development relative to the overall drainage basin. The development site is approximately 0.66 acres and the overall basin is approximately 83 acres.

24. **Catherine Pieslewicz**– "**Misleading traffic Report"** Oregon City's contract Transportation Engineer John Replinger, provided the following comments in his letter dated April 11, 2022 (Exhibit E). Among the specific comments were criticism of the Transportation Analysis Letter (TAL) for an incorrect estimate of traffic volumes on Warner-Milne Road and the use of an "old" edition of the Trip Generation Manual for estimating traffic generated by the development. The TAL prepared by the applicant's engineer met the standards specified in the city's Guidelines for Transportation Impact Analysis. For small developments (this development meets the definition), traffic counts and traffic operations analysis are not required. The traffic volume for Warner-Milne Road referenced in the TAL was merely a general descriptor of the traffic volume and did not factor into any analysis or conclusions about the development. The engineer used the 10th Edition of the Institute of Transportation Engineers' Trip Generation Manual. This edition was, in fact, the current version when he prepared his report in August 2021. The 11th Edition was released in September 2021. Interestingly, using the 11th Edition results in slightly fewer trips for the proposed development.

25. Catherine Pieslewicz– No Geotechnical Engineering Report is found it the current files for this proposed development. One should be done by a third-party engineer.
City code does not require a geotechnical report for the type of land use application. However, the Building department guidelines may require that the applicant provide a geotechnical report during review to obtain Building permits.

26. **Catherine Pieslewicz**– **Archeological Resources**. In response to the notification about the development proposal, the applicant received a copy of separate letters from the Oregon State Historic Preservation Office (SHPO) Archeologist notifying the applicant of applicable state laws ORS 358.905 and ORS 97.74 and response from the Confederated Tribes of the Umatilla Reservations (CTUIR) indicating they did not have any specific comments for this location. These letters are attached as exhibits to the staff report. *OCMC 17.62.040.G Archeological monitoring recommendations* does not give the city authority to apply any archeological conditions to the approval, rather it is intended to ensure communication between applicants, identified tribes and the State Historic Preservation Office (SHPO) occurs as early on in the process as possible and reminds applicants about applicable state and federal archeological regulations.

27. Leon H. Liegel- Stormwater
See answers 8, 21-24.

Putting the applicant's typographical errors aside, the use of the NRCS is only for stormwater design purposes. Building permit application (not land use) is when specifics regarding

foundation design (including drains for foundation) are required to be provided and reviewed. The applicant has provided a preliminary stormwater report with flow calculations showing that the existing culvert under Warner Milne Rd has adequate capacity. Land use conditions will require that the developer provide a finalized stormwater report to evaluate the capacity of downstream stormwater infrastructure to confirm findings from the preliminary report. The Oregon City Stormwater Design Standards require modeling of the site using pre-development conditions which were determined to be grass vegetation. The applicant provided historic aerial photos to show this.

28. **Elyvile Neighborhood Association (ENA)- On the West side of Kamm there is a large ditch to drain water since it is prone to flooding.**
The development will be required to provide a downstream analysis to evaluate existing conditions. The development is only required to provide improvements that are proportional to the development. Any enlargement of existing conveyance capacities would be relative to the development's impact to the overall drainage basin. The development site is approximately 0.66 acres and the overall basin is approximately 83 acres. Offsite improvements to the stormwater system was not identified in this review process.

29. **Elyvile Neighborhood Association (ENA)– How can a regular-sized truck or emergency vehicle navigate safely and turn around on the street?**
See answer 4 & 16.

30. **Elyvile Neighborhood Association (ENA)– How will residents navigate out of Warner Milne safely when the speed limit on Warner Milne is 35MPH?**
The development plans will be reviewed to comply with the vision requirements in OCMC 10.32.

31. **Elyvile Neighborhood Association (ENA)– Kamm does not have a speed limit posted for safety, but the speed limit ought to be no more than 20MPH. Pedestrians are hard to see on Kamm, especially with low visibility turning on Warner to Kamm. Long wait for turning on Molalla**
See answer 2-4.

32. **Elyvile Neighborhood Association (ENA)– existing stormwater infrastructure is in the wrong location and does not currently function**
The manhole referenced is a sewer manhole. The existing ditch is the only stormwater conveyance system along Kamm St. The ditch directs flows south until it enters a culvert at Warner Milne Rd. The development will convert the portion of the existing drainage on the development property to a 30" pipe except for the portion of the existing ditch identified as a wetland.

33. **Elyvile Neighborhood Association (ENA)–erosion control, highwater table, soil conditions, downstream effect of development.**
The development will be required to control and convey runoff from the area in a manner that mimics the existing conditions as required by the Oregon City Stormwater Design Standards. The Oregon City Stormwater Design Standards requires that the drainage design not adversely impact neighboring properties. The development is required to provide Erosion and Sediment Control per 17.47 of the Oregon City Code. The applicant will be required to provide an Erosion Control permit and obtain an Erosion Control permit prior to construction. During construction the applicant will be required to implement Erosion and Sediment Control per 17.47 of the Oregon City Code.

34. **Elyvile Neighborhood Association (ENA) Street Tree Plantings** – the applicant is required to plant one tree every 35 feet of site frontage. As condition in this application *Prior to issuance of construction plans of the right-of-way improvements, the applicant shall submit a street tree plan which includes 5 street trees planted spacing shall be evenly distributed throughout the total*

development in accordance with OCMC 12.08 or accept fee-in-lieu of planting pursuant to OCMC 12.08 if site or other constraints prevent meeting the required total number of tree plantings.

35. **Elyvile Neighborhood Association (ENA)) –Newell Creek**
See answer 20

36. **Elyvile Neighborhood Association (ENA) Open Space and parking requirements**. The applicant has provided a proposal that meets the minimum requirements for off-street parking and shared/private open space. The city cannot compel the applicant to provide more than what I required for a TYPE II by right development proposal.

37. **Elyvile Neighborhood Association (ENA)– Off Street Parking and Loading**
Street parking along Warner Milne is not required or proposed. See answer to 4 regarding parking on Kamm St.

38. **Elyvile Neighborhood Association (ENA)– overflow parking onto Kamm. How is a hearse supposed to safely park with more parked cars and traffic? How will this financially impact St John the Apostle Cemetery?**
See answers 10-14 for concerns related to St John the Apostle Cemetery. See answer to 4 regarding parking on Kamm St.

39. **Dave Wakefield– Comments are same as Tory Brummel**
See answers 4-9.

40. **(Lewis comment) –**
All of these comments are addressed by response to comments by others.

Additional general response to public comment topics

Connectivity concerns and use of Kamm St by traveling public.

City code (16.12.030 - Blocks—Width) specifies street spacing to be a maximum of five hundred and thirty feet. There are currently no street or pedestrian connects north of Warner Milne Road from Linn Avenue to Molalla Avenue. This distance is approximately 3,550 feet. Kamm Street currently dead-ends to the north side of the development property. Parking needs and location of the existing Kamm Street right-of-way make it prohibitive to construct a straight extension of Kamm Street as a full local street. The applicant is utilizing the provision of 16.12.030 which states, “If the maximum block size is exceeded, pedestrian accessways shall be provided every three hundred thirty feet.” The applicant will be providing a pedestrian path to create connectivity from Kamm Street to Warner Milne Road. The existing condition of Kamm Street (being a narrow long dead-end road) makes it difficult for access by emergency vehicles. A thru connection from Kamm Street will allow emergency vehicles to go through to Warner Milne Road without the difficulty of having to turn around or back out of Kamm Street. Major improvements to Kamm Street to widen the road would not be proportional due to the existing drainage ditch on one side of the road and the size of the development proposed. To ensure proper clearance of the roadway, the developer will be required to provide “no parking” signs along the west side of Kamm Street.
The development is required to provide lighting for parking and driveway areas which will result in a lighted vehicular path from Kamm Street to Warner Milne Road. The development is required to provide a lighted pedestrian path.

Stormwater design.
The development has proposed stormwater mitigation measures to control stormwater flows from added impervious areas as required by the city’s Stormwater Design Standards. The stormwater management facilities have been sized using the “BMP Sizing Tool” – A computer program, approved by the City, for use in calculating the required size of stormwater management facilities. This tool is limited

to a set list of pre-defined stormwater management facilities. The stormwater report provided with the land use application is preliminary but showed compliance by utilizing the BMP Sizing Tool. The applicant will be required to provide a finalized report which must have conveyance calculations to show that there is capacity in the existing and proposed stormwater conveyance systems.

Concerns of added traffic to Kamm Street.
John Replinger, PE contract Transportation Engineer for the city found that "*The connection of Warner-Milne Road to Kamm Street through the site will provide connectivity to Warner-Milne Road for the neighborhood along Warner Street and for the apartment residents to Molalla Avenue. Some cut-through traffic might be expected, but this is likely to be limited because the major streets, Warner-Milne Road and Molalla Avenue, experience limited delays, operate well, and have higher posted speeds than the local residential streets.* Mr. Replinger "recommend conditions of approval include implementing frontage improvements. There are no other transportation-related issues associated with this development proposal requiring mitigation."

In general, neighborhood concerns about the existing street design and lack of sidewalks on Kamm Steet to the north of the site are not proportional to the impact of the proposal to allow the city to exact off site improvement. No city TSP projects have been adopted on this stretch of Kamm street and staff is unable to indefinity any proportional project beyond the applicant' requirement to pay system development fees for their identified construction to the transportation system.
While not required or proportional to this proposal, the applicant is encouraged to work with Development Services to add additional traffic calming features at the transition of Kamm Street and vehicle easement to address neighborhood speed concerns.

Concerns about soil type being able to support the type of construction proposed.
Building foundation and plan review on a given plot of land is not under the purview of Development Services. The Building Department will review the foundation plans and provides foundation inspections in areas of high-water table.

None of the comments provided indicate that an approval criterion has not been met or cannot be met through the Conditions of Approval attached to this Staff Report.

II. ANALYSIS AND FINDINGS:

Municipal Code Standards and Requirements: The following sections of the Oregon City Municipal Code are applicable to this land use approval:

CHAPTER

CHAPTER 12.04 STREETS, SIDEWALKS, AND PUBLIC PLACES .....

CHAPTER 12.08 - PUBLIC AND STREET TREES.....

CHAPTER 13.12 STORMWATER MANAGEMENT .....

CHAPTER 15.48 - GRADING, FILLING AND EXCAVATING .....

CHAPTER 16.12 MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT.....

CHAPTER 17.29 MUC MIXED USE CORRIDOR DISTRICT .....

CHAPTER 17.41 TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS.....

CHAPTER 17.49 NATURAL RESOURCES OVERLAY DISTRICT .....

CHAPTER 17.50 ADMINISTRATION AND PROCEDURES.....

CHAPTER 17.52 OFF-STREET PARKING AND LOADING.....

CHAPTER 17.54 SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS.....

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW.....

CHAPTER 12.04 – STREETS SIDEWALKS AND PUBLIC SPACES

CHAPTER 12.04 – STREETS, SIDEWALKS AND PUBLIC PLACES

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.

Finding: Applicable. The City of Oregon City has jurisdiction over Warner Milne Road and Kamm Street.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

Finding: Applicable. See 16.12.035 for more information.

12.04.030 - Maintenance and repair.

The owner of land abutting the street where a sidewalk has been constructed shall be responsible for maintaining said sidewalk and abutting curb, if any, in good repair.

Finding: Not applicable. The existing sidewalk of the street abutting the development property is proposed to be replaced to meet frontage improvement requirements per section 16.12.

12.04.032 - Required sidewalk repair.

A. When the Public Works Director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk.

B. The notice shall require the owner of the property adjacent to the defective sidewalk to complete the repair of the sidewalk within ninety days after the service of notice. The notice shall also state that if the repair is not made by the owner, the City may do the work and the cost of the work shall be assessed against the property adjacent to the sidewalk.

1. *All sidewalks hereafter constructed in the City on improved streets shall be constructed to city standards and widths required in the Oregon City Transportation System Plan and OCMC 16.12. Sidewalks and curbs are to be constructed according to plans and specifications approved by the City Engineer.*
2. *Sidewalks constructed on unimproved streets shall be constructed of concrete according to lines and grades approved by the City Engineer. On unimproved streets, curbs do not have to be constructed.*

C. *The Public Works Director shall cause a copy of the notice to be served personally upon the owner of the property adjacent to the defective sidewalk, or the notice may be served by registered or certified mail, return receipt requested. If after diligent search the owner is not discovered, the Public Works Director shall cause a copy of the notice to be posted in a conspicuous place on the property, and such posting shall have the same effect as service of notice by mail or by personal service upon the owner of the property.*

D. *The person serving the notice shall file with the City recorder a statement stating the time, place and manner of service or notice.*

Finding: Not applicable. The existing sidewalk of the street abutting the development property is proposed to be replaced to meet frontage improvement requirements per section 16.12.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

Finding: Not Applicable. No retaining walls exist or are proposed on this project adjacent to the public sidewalk.

12.04.100 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: Complies with Condition. Pavement cuts are proposed within Warner Milne Road due to proposed utility service installations and required frontage improvements. Pavement cuts and pavement restoration associated with work within city streets or rights-of-way shall be in accordance with the City of Oregon City Public Works Pavement Cut Standards. (Also written in 16.12.029) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

12.04.120 - Obstructions—Permit required.

A. *Permanent Obstructions. It is unlawful for any person to place, put or maintain any obstruction, other than a temporary obstruction, as defined in subsection B. of this section, in any public street or alley in the City, without obtaining approval for a right-of-way permit from the City Commission by passage of a resolution.*

1. *The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.*
2. *The applicant shall submit at least the following information in the permitting process in order to allow the City Commission to adequately consider whether to allow the placement of an obstruction and whether any conditions may be attached:*
   a. *Site plan showing right-of-way, utilities, driveways as directed by staff;*
   b. *Sight distance per OCMC 10.32, Traffic Sight Obstructions;*
   c. *Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);*
   d. *Alternative routes if necessary;*
   e. *Minimizing obstruction area; and*
   f. *Hold harmless/maintenance agreement.*

3. *If the City Commission adopts a resolution allowing the placement of a permanent obstruction in the right-of-way, the City Engineer shall issue a right-of-way permit with any conditions deemed necessary by the City Commission.*

4. *Signage that acts as an obstruction is approved through OCMC 15.28*

B. *Temporary Obstructions.*
1. *A "temporary obstruction" is defined as an object placed in a public street, sidewalk, road, or alley which is not permanently anchored to another surface such as the pavement, sidewalk, or a building. A "temporary obstruction" includes, but is not limited to, moving containers, debris dumpsters, and seating.*
   a. Planters and benches are exempt from permitting unless the City Engineer finds by inspection that the planter or bench is impeding use of the right-of-way. If deemed an impeding use, a planter or bench will comply with the requirements for temporary obstructions.
2. *The City Engineer, or designee, is authorized to grant a permit for a temporary obstruction.*
3. *The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.*
4. *The applicant shall submit, and the City Engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the City Engineer:*
   a. *Site plan showing right-of-way, utilities, driveways as directed by staff;*
   b. *Sight distance per OCMC 10.32, Traffic Sight Obstructions;*
   c. *Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);*
   d. *Handicap accessible route complying with Americans with Disability Act (ADA) standards.*
   e. *Alternative routes if necessary;*
   f. *Minimizing obstruction area; and*
   g. *Hold harmless/maintenance agreement.*
5. *In determining whether to issue a right-of-way permit to allow a temporary obstruction, the City Engineer may issue such a permit only after finding that the following criteria have been satisfied:*
   a. *The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;*
   b. *The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;*

c. *No alternative locations are available that would not require use of the public right-of-way; and;*
d. *Any other factor that the City Engineer deems relevant.*

6. *The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.*
7. *Types*
   a. *A short-term temporary obstruction is allowed for a period of not more than 60 consecutive calendar days. It is permitted with a temporary obstruction in the right-of-way permit.*
   b. *A long-term temporary obstruction is allowed for a period of not more than one year, and it is permitted with a renewable right-of-way permit.*
8. *Signage that acts as an obstruction is approved through OCMC 15.28*

C. *Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the City Commission.*

Finding: Not Applicable. No obstructions are proposed within the right of way.

12.04.150 - Street and alley vacations—Cost.
At the time of filing a petition for vacation of a street, alley or any part thereof, a fee as established by City Commission resolution shall be paid to the City. The City Commission, upon hearing such petition, may grant the same in whole or in part, or may deny the same in whole or in part, or may grant the same with such reservations as would appear to be for the public interest, including reservations pertaining to the maintenance and use of underground public utilities in the portion vacated.
Finding: Not Applicable. No vacations are proposed as part of this application.

12.04.170 - Street design—Purpose and general provisions.
All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings and engineering specifications. All streets shall be reviewed and approved by the city engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.
Finding: Complies with condition. See findings from chapter 16.12 of this report.

12.04.270 - Standard construction specifications.
The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Street Standard Drawings provide other design details, in which case the requirements of this chapter and the Public Works Street Standard Drawings shall control. In the case of work within ODOT or Clackamas County rights-of-way, work shall be in conformance with their respective construction standards.
Finding: Complies with Condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 13.12 – STORMWATER MANAGEMENT

13.12.050 - Applicability and exemptions.
This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.
A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:
1. The conveyance facilities are located entirely on one privately owned parcel;
2. The conveyance facilities are privately maintained; and
3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.
Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the Building Official.
Finding: Applicable. Connection to a public stormwater conveyance system is required to serve this development.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:
1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or
2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.
Finding: Applicable. The proposed development will create or replace more than 5000 sf of impervious area.

C. Exemptions. The following exemptions to subsection B of this section apply:
1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met:
a. The project site is drained by a conveyance system that is comprised entirely of manmade elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and
b. The conveyance system between the project site and the exempt receiving water has sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.
2. Projects in the following categories are generally exempt from the water quality and flow control requirements:
a. Stream enhancement or restoration projects approved by the City.
b. Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.
c. Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.
d. Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the

preservation/maintenance activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.
e. Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.
f. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.
g. Maintenance or repair of existing utilities.
Finding: Not Applicable. The proposed development does not meet the criteria for exemption to the flow control requirements of this chapter.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the Public Works Stormwater and Grading Design Standards:
1. Bulk petroleum storage facilities;
2. Above ground storage of liquid materials;
3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;
4. Exterior storage of bulk construction materials;
5. Material transfer areas and loading docks;
6. Equipment and/or vehicle washing facilities;
7. Development on land with suspected or known contamination;
8. Covered vehicle parking for commercial or industrial uses;
9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and
10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.
Finding: Not Applicable. The development has not proposed use of the land that requires additional management practices as defined in the Public Works Stormwater and Grading Design Standards.

13.12.080 - Submittal requirements.
A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards.
B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.
Finding: Complies with Condition. The applicant's preliminary drainage plan and report shows general compliance with the current version of the Oregon City Stormwater and Grading Design Standards. However, the applicant did not fully address all requirements from the Public Works Stormwater and Grading Design Standards. Requirements of this code section can be met by meeting approval criteria outlined in section 13.12.090 of this report. **See findings from section 13.12.090 of this report.**

13.12.090 - Approval criteria for engineered drainage plans and drainage report.
An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:
A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.
B. The plan and report meet the requirements of the Public Works Stormwater and Grading Design Standards adopted by resolution under OCMC 13.12.020.

C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.
D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.
E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.
Finding: Complies with Condition. The development proposed the following:
The Stormwater and Grading Design Standards require certain stormwater management be provided for any new and redeveloped impervious surfaces. Impervious surfaces are hard surfaces including, but not limited to, asphalt, building structures, and concrete. The new and redeveloped impervious surfaces on the development site are proposed to be managed, retained, and treated with LID vegetated planter facilities. The planters act as a storage area. Treatment will occur via biofiltration (the act of stormwater filtering through vegetation and engineered soils). The amount of treatment is determined through the use of the WES BMP Calculator which the submittal has provided. The proposed LID planter facilities will consist of an overflow set 12 inches above the topsoil growing media elevation and allow for 12 inches of ponding depth and filtration through the soil media prior to overflow, both of which meet the Standards. Treated stormwater will be collected in the underdrain system and routed to site conveyance (onsite storm sewer pipes). Following treatment and detention, stormwater will ultimately discharge to the public storm system at the west side of the site.

The applicant's preliminary drainage plan and report contained enough information for their land use application to be deemed complete. The applicant states that "stormwater will ultimately discharge to the public storm system at the west side of the site", but there is no public storm system on the west side of the site. It is likely that the applicant's narrative was written with an error because the plans provided with the application shows a stormwater discharge location which connects to the public storm system on the south end of the site. The stormwater plan proposed a 30" culvert to replace the existing drainage ditch along the east side of the development property. The downstream analysis provided rainfall data intended for use in basin areas Less than 40 acres (10-year, 24-hour storm) but the drainage area is more than 40 acres. The applicant must provide conveyance calculations to determine if a 30" culvert is large enough to support drainage for existing drainage and the basin area (Item K of Section 9.4 of the Public Works Stormwater and Grading Design Standards). The development proposed use of the "BMP Sizing Tool" – A computer program, approved by the City, for use in calculating the required size of LID stormwater management facilities. The Oregon City Stormwater Design Standards considers use of the BMP Sizing Tool to control stormwater flows to pre-development levels. The stormwater report provided by the developer acknowledged the lack of infiltration by saying, "The proposed stormwater planters will be impermeable lined due to lack of soil infiltration, proximity to groundwater, and their location adjacent to building foundations.", but the applicant used infiltration for BMP sizing tool. The developer shall provide engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer which accurately addresses all items from Section 9.3 & 9.4 of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction. The development shall utilize only non-infiltration type facilities. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.100 - Alternative materials, alternative design and methods of construction.
The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the Public Works Stormwater and Grading Design Standards, provided any alternate has been approved and its use authorized by the City Engineer. The City Engineer may approve any such alternate, provided that the City Engineer finds that

the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The City Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the City files.
Finding: Not Applicable. The applicant has not proposed alternative design methods requiring special approval by the City Engineer. However, should the applicant propose such methods with the public facilities construction plan submittal, the proposal will be reviewed and approved by the City Engineer as required.

13.12.110 - Transfer of engineering responsibility.
Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the City shall be notified in writing and the work shall be stopped until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the City within seventy-two hours of accepting the position as project engineer.
Finding: See section 16.12.014. The developer is required to execute a "Developer/Engineer Agreement for Public Works Improvements" per section 16.12.014.

13.12.120 - Standard construction specifications.
The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.
Finding: Complies with Condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. (Also written in the findings of section 12.04.270) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.140 - Maintenance of public stormwater facilities.
A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the City through the granting of a stormwater easement or other means acceptable to the City.
Finding: Not applicable. The applicant has not proposed any public stormwater facilities. All stormwater facilities are private.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the City a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the City accepts the stormwater conveyance system.
Finding: Not applicable. The applicant has not proposed any public stormwater facilities. All stormwater facilities are private.

13.12.145 - Maintenance of private stormwater facilities.
A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the Public Works Stormwater and Grading Design Standards. The information in the operation and maintenance plan shall satisfy the requirements of the Public Works Stormwater and Grading Design Standards.
B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to City inspection staff upon request.
C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.
Finding: Complies with Condition. The property owner(s) shall execute an agreement providing maintenance of, and giving Oregon City access to, privately-owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The agreement shall be reviewed and accepted by the City prior to occupancy. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.170 - Permits from other jurisdictions.
A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DEQ representatives.
Finding: Not applicable. The development proposes less than 1.0 acre in disturbed area.

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the City or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DSL/USACE representatives.
Finding: Complies as proposed. A wetland delineation was performed by Ivy Watson at Harper Houf Peterson Righellis Inc. in May 2021. The report found that only a very small section of the ditch on the south end of the site where the drainage enters the culvert could be classified as a wetland. The report was subsequently submitted to the Oregon Department of State Lands and the US Army Corp of Engineers for review and concurrence. Both agencies agreed with the determination and confirmed that the existing ditch is not waters of the state or of the US. Therefore, no permit or additional steps are required. **See findings from 17.49 for potential additional requirements of Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits.**

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate ODFW representatives.

Finding: Complies as proposed. A wetland delineation was performed by Ivy Watson at Harper Houf Peterson Righellis Inc. in May 2021. The report found that only a very small section of the ditch on the south end of the site where the drainage enters the culvert could be classified as an intermittent stream. The report was subsequently submitted to the Oregon Department of State Lands and the US Army Corp of Engineers for review and concurrence. Both agencies agreed with the determination and confirmed that the existing ditch is not Waters of the State or under federal jurisdiction. Therefore, no permit or additional steps are required. See findings from 17.49 for potential additional requirements of Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits.

CHAPTER 15.48 – GRADING, FILLING AND EXCAVATING

15.48.030 Applicability—Grading permit required.
A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:
1. Grading activities in excess of ten cubic yards of earth;
2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;
3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;
4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or
5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.
B. Those fill and grading activities proposed to be undertaken in conjunction with a land use application, including but not limited to subdivisions, planned unit developments, partitions and site plan reviews, are subject to the standards of this chapter. However, a separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.
Finding: Applicable. Fill and grading activities are proposed to be undertaken in conjunction with a land use application. A separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

15.48.040 - Grading permit exemptions.
The following filling and grading activities shall not require the issuance of a grading permit:
A. Excavation for utilities, or for wells or tunnels allowed under separate permit by other governmental agencies;
B. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. The placement of any fill material removed from such an excavation requires a grading permit if:
1. It exceeds fifty cubic yards,
2. More than ten cubic yards are removed from the site, or
3. The fill is placed on the site to a depth greater than one foot;
C. Farming practices as defined in ORS 30.930 and farm uses as defined in ORS 215.203, except that buildings associated with farm practices and farm uses are subject to the requirements of this chapter;
D. Excavation for cemetery graves;
E. Sandbagging, diking, ditching, filling or similar work when done to protect life or property during an emergency;
F. Repaving of existing paved surfaces that does not alter existing drainage patterns;
G. Maintenance work on public roads performed under the direction of the city, Clackamas County or Oregon State Department of Transportation personnel.

Finding: Not Applicable. The application does not qualify for an exemption.

15.48.090 Submittal requirements.
An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.
A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:
1. No portion of the proposed site is within the flood management area overlay district pursuant to Chapter 17.42, the unstable soils and hillside constraints overlay district pursuant to Chapter 17.44, or a water quality resource area pursuant to Chapter 17.49; and
2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.
B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.
C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:
1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;
2. When an embankment for a stormwater pond is created by the placement of fill;
3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.
D .Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.
Finding: Complies with Conditions. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 16.12 – MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT

16.12.010 - Purpose and general provisions.
The purpose of this chapter is to identify the standards for development in and adjacent to spaces which benefit the public including right-of-way, access to the right-of-way, public off-street pedestrian and bicycle accessways, and easements. All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and City design standards and specifications. In reviewing applications for development, the City Engineer shall take into consideration any approved development and the remaining development potential of adjacent properties. All street, water, sanitary sewer, storm drainage and utility plans associated with any development shall be reviewed and approved by the City Engineer prior to construction. All streets, driveways or storm drainage connections to another jurisdiction's facility or right-of-way shall be reviewed by the appropriate jurisdiction as a condition of the preliminary plat and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: Complies with Condition. Compliance with the "purpose and general provisions" of chapter 16.12 can be met by adhering to the following: The development plans shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.011 - Applicability.

A. *Compliance with this chapter is required for all development including land divisions, site plan and design review, master plan, detailed development plan and conditional use applications and all public improvements that are required in conjunction with a land use decision.*
B. *Compliance with this chapter is also required for new construction or additions which exceed fifty percent of the existing square footage of all 3-4 plexes, single and two-family dwellings living space. Garages, carports, sheds, and porches may not be included in the calculation if these spaces are not living spaces. Accessory dwelling units are not subject to compliance with this chapter. All applicable 3-4 plexes, single and two -family dwellings shall provide any necessary dedications, easements or agreements as identified in the transportation system plan and this chapter, subject to constitutional limitations. In addition, the street frontage shall be improved to include the following priorities for improvements:*
    1. *Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and*
    2. *Plant street trees.*

    The cost of compliance with the standards identified in 16.12.011.B.1 and 16.12.011.B.2 is calculated based on the square footage valuation from the State of Oregon Building Codes Division and limited to ten percent of the total construction costs. The value of the alterations and improvements is based on the total construction costs for a complete project rather than costs of various project component parts subject to individual building permits. The entire proposed construction project cost includes engineering and consulting fees and construction costs. It does not include permit fees, recording fees, or any work associated with drafting or recording dedications or easements.
C. *Exemptions. The following are exempt from review by this chapter unless public improvements, driveways, PUEs, or other items regulated by this chapter are proposed.*
    1. *Minor Site Plan and Design Review applications*
    2. *Work within the right-of-way*
    3. *Lot Line Adjustments and Abandonments*
    4. *Public capital improvement projects*

Finding: Applicable. The application is a site plan and design review; therefore, the development shall follow the standards set forth in OCMC 16.12.

16.12.012 - Jurisdiction and management of the public rights-of-way.
The City has jurisdiction and exercises regulatory management over all public rights-of-way as defined and outlined within 12.04 of the Oregon City Municipal Code.
Finding: Applicable. The city has exercised its regulatory management authority by providing findings within this staff report with conditions to be met by the applicant prior to working within all public rights-of-way.

16.12.013 - Modifications.

The applicant may request and the review body may consider modification of the standards in this chapter resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications, except for adjustments approved by the City Engineer for tree preservation purposes pursuant to 16.12.013.A, shall be processed through a Type II Land Use application

and may require additional evidence from a transportation engineer or others to verify compliance. Compliance with the following criteria is required:

A. Compliance with the following criteria is required:

1. *The modification meets the intent of the standard;*

2. *The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;*
3. *The modification is consistent with an adopted transportation or utility plan; and*
4. *The modification is complementary with a surrounding street design; or, in the alternative;*
5. *If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.*

Finding: Complies as conditioned. A modification to the planter strip requirement on the sides of the accessway (16.12.032.B & 16.12.032.F) has been deemed necessary due to site space constraints. The pedestrian accessway proposed through the development shall have a seven-foot-wide paved surface contained within a public access easement and have a minimum average four-foot planter strip on one side. The planter strip along the side of the pedestrian accessway shall be landscaped along adjacent property by installation of the following:

a. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average; and

b. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and

c. Two-inch minimum caliper trees shall be provided for every thirty-five-feet along the accessway. Such trees may be located within a 3'X5' tree wells within the paved portion of the accessway.

d. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.

The modification meets the following criteria:

1. The modification meets the intent of the standards as it provides a vegetated buffer for the pedestrian path by providing trees one side and other vegetation on the opposite side.
2. The modification provides safe and efficient movement of pedestrian (the purpose of the path is for pedestrian movement from Kamm St). The design of the path as conditioned will satisfy ADA PROWAG which states, "Where the clear width of pedestrian access routes is less than 1.5 m (5.0 ft), passing spaces shall be provided at intervals of 61 m (200.0 ft) maximum. Passing spaces shall be 1.5 m (5.0 ft) minimum by 1.5 m (5.0 ft) minimum. Passing spaces are permitted to overlap pedestrian access routes."
3. There are no adopted transportation or utility plan that the modification must satisfy.
4. There is complementary surrounding street design which has sidewalk with tree wells.
5. The modification is not requested for constitutional reasons.

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

B. The following modifications shall be processed as a Type I modification by the City Engineer using the criteria in 16.12.13.A.

1. Modifications to driveway location, size, and sharing standards in 16.12.035

2. Modifications to sidewalk and planter strips widths and location in 16.12.016 that preserve existing street trees or trees on private property to ensure compliance with ADA standards.

Finding: Not applicable. Modifications to driveways or sidewalk and planter strip widths for 16.12.016 are not requested.

16.12.014 - Administrative provisions.

An applicant shall submit the following items to the City and complete the following tasks prior to proceeding with construction of proposed development plans. These items include the following:

A. Pre-Design Meeting;
B. Final Engineering Plans, Stamped and Signed by an Oregon Licensed Professional Engineer;
C. Stormwater Report, Stamped and Signed by an Oregon Licensed Professional Engineer;
D. Geotechnical Report, Stamped and Signed by an Oregon Licensed Professional Engineer (if applicable);
E. Engineer's Preliminary and Final Cost Estimates (also may be known as engineer's opinion of probable construction cost);
F. Plan Check and Inspection Fees (as set by City resolution);
G. Certificate of Liability Insurance for City funded public projects contracted by the City (not less than one million dollars single incident and two million dollars aggregate);
H. Preconstruction Meeting;
I. Financial Guarantee(s) per OCMC 17.50.140;
J. Applicable Approvals/Permits from other agencies or entities;
K. Developer/Engineer Agreement for public works improvements.

An applicant shall submit the following additional items to the City and complete the following tasks prior to completing construction of proposed development plans. These items include the following:

L. Project Engineer's Certificate of Completion;
M. Stormwater Operation and Maintenance Easement (if applicable);
N. Deed of Dedication (Bargain and Sale Deed);
O. Recorded Plat and/or Easements (if applicable);
P. Recorded Non-Remonstrance Covenant Agreement;
Q. Land Division Compliance Agreement (if applicable);
R. Permanent Stabilization and/or Restoration of the impact from the development;
S. Fulfillment of all Conditions of Approval;
T. Payment of all Outstanding Fees;
U. Maintenance Guarantee(s). per OCMC 17.50.141;
V. Indemnity Agreement (if applicable);
W. Completed Punchlist;
X. As-Built Drawings;

Details on individual items required by this subsection can be obtained by contacting Public Works. Many items, such as the engineer's cost estimate and plan check and inspection fee, maybe be submitted in conjunction with documentation for other infrastructure improvements that are done with the development (such as street, sanitary sewer, and water).

Finding: Complies with Condition. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City.

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

16.12.015 - Street design—Generally.

Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Development shall provide any necessary dedications, easements or agreements as identified in the Transportation System Plan, Trails Master Plan, and/or Parks and Recreation Master Plan and this chapter, subject to constitutional limitations. The

location, width and grade of street shall be considered in relation to: existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. The arrangement of streets shall either:
A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;
B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the City Engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with OCMC 16.12.017 shall be required to preserve the objectives of street extensions.
C. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the City's Transportation System Plan. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation.
Finding: Complies as proposed. The development fronts Warner Milne Road which is a fully improved street. Warner Milne Road has width, and grades that provides for the continuation or appropriate projection of existing principal streets in the surrounding area and gives access for future development of adjoining land. However, the sidewalk along the frontage of the development is not fully Americans With Disabilities Act compliant and its dimensions do not meet current city code standards. The continuation of existing Kamm Street will be provided as directed by 16.12.015.A. with a vehicular access easement through the property as allowed by 16.12.016.G. The development proposes a continuation of TSP project FF26 by providing a pedestrian path from existing Kamm Street to Warner Milne Street. **See findings from 16.12.016 for require street improvements.**

16.12.016 - Street design.
All development regulated by this chapter shall provide street improvements in compliance with the standards in Table 16.12.016 depending on the street classification set forth in the Transportation System Plan and the Comprehensive Plan designation of the adjacent property, unless an alternative plan has been adopted. The table implements the adopted Transportation System Plan and illustrates the maximum design standards. These standards may be reduced with an alternative street design which may be approved based on the modification criteria in OCMC 16.12.013. The steps for reducing the street design are found in the Transportation System Plan.

Table 16.12.016 Street Design
Table 16.12.016 Street Design. To read the table select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation for lands on either side of the street differs, the wider right-of-way standard shall apply.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Major Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	Industrial	120 ft.	88 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	N/A	(5) 14 ft. Lanes	6 ft.
	Residential	126 ft.	94 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Minor Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	Industrial	118 ft.	86 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(5) 12 ft. Lanes	N/A
	Residential	100 ft.	68 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	6 ft.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Collector	Mixed Use, Commercial or Public/Quasi Public	86 ft.	64 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(3) 12 ft. Lanes	N/A
	Industrial	88 ft.	62 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	N/A
	Residential	85 ft.	59 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 11 ft. Lanes	N/A

Road Classification	*Comprehensive Plan Designation*	*Right-of-Way Width*	*Pavement Width*	*Public Access*	*Sidewalk*	*Landscape Strip*	*Bike Lane*	*Street Parking*	*Travel Lanes*	*Median*
Local	*Mixed Use, Commercial or Public/Quasi Public*	*62 ft.*	*40 ft.*	*0.5 ft.*	*10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells*		*N/A*	*8 ft.*	*(2) 12 ft. Lanes*	*N/A*
	Industrial	*60 ft.*	*38 ft.*	*0.5 ft.*	*5 ft.*	*5.5 ft.*	*(2) 19 ft. Shared Space*			*N/A*
	Residential	*54 ft.*	*32 ft.*	*0.5 ft.*	*5 ft.*	*5.5 ft.*	*(2) 16 ft. Shared Space*			*N/A*

1. Pavement width includes, bike lane, street parking, travel lanes and median.
2. Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.
3. A 0.5 foot curb is included in landscape strip or sidewalk width.
4. Travel lanes may be through lanes or turn lanes.
5. The 0.5 foot public access provides access to adjacent public improvements.
6. Alleys shall have a minimum right-of-way width of twenty feet and a minimum pavement width of sixteen feet. If alleys are provided, garage access shall be provided from the alley.
7. A raised concrete median or landscape median shall be utilized for roads identified to have access restrictions.
8. A public utility easement (PUE) shall be provided on both sides of the right-of-way or public access easement on private property as identified in 16.12.85.

A. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the development. Both sidewalks and curbs are to be constructed to City standards and at widths set forth above, and according to plans and specifications provided by the City Engineer. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a development without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the development application. Applicants for partitions may be allowed to meet this requirement by providing the City with a financial guarantee per OCMC 16.12.110.
Finding: Complies with Condition. The applicant responded by saying the following:
The project site has frontage on Warner Milne Road, a designated minor arterial in Oregon City's TSP, and has existing five-foot sidewalk that will be preserved with this project. North of the project site there are no existing sidewalks, and south of the site there are five-foot-wide sidewalks – therefore, constructing a 10.5 foot sidewalk with tree wells would impede sidewalk and pedestrian access continuity along Warner Milne Road. Additionally, a 10.5-foot-wide sidewalk would impede the protected wetland and buffer in the southeast corner of the project site. Instead, the applicant is proposing to preserve and repair the existing sidewalk and plant trees and shrubs behind the sidewalk.

Staff does not concur with the applicant's response. Warner Milne Road is functionally classified as a "Minor Arterial" road and the development property is zoned "Mixed-Use" and there is 50 feet of ROW

along the development's half of the street frontage. The section of Warner Milne Road east of Beavercreek Road does not have on-street parking; therefore, on-street parking is not required for this frontage and the existing ROW width satisfies requirements of Table 16.12.016. The east end of Warner Milne Road was improved in 2009 (CI 08-012) to have 7-foot-wide sidewalks. There is ample space within the right-of-way and in areas outside of the delineated wetland to construct sidewalk as prescribed by 16.12.016. The development shall provide the following improvements along the frontage of Warner Milne Road:
Behind the existing curb:

- 0.5-foot-wide curb & 10-foot-wide sidewalk with 5 ft x 5 ft tree wells
- Sidewalk may be narrowed to 7-foot-wide where it is adjacent an NROD or to preserve exiting tree(s).

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

B. Pedestrian and Bicycle Accessways Routes. If deemed appropriate to extend pedestrian and bicycle routes, existing or planned, the decision-maker may require the installation of separate pedestrian and bicycle facilities.
Finding: See findings in 16.12.032 for extension of pedestrian and bicycle routes.

C. Street Name Signs and Traffic Control Devices. The applicant shall install street signs and traffic control devices as directed by the City Engineer. Street name signs and traffic control devices shall be in conformance with all applicable City regulations and standards.
Finding: Not applicable. No street signs or traffic control devices are required with this development.

D. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all City regulations.
Finding: Complies with Condition. The applicant shall submit a photometric plan to confirm existing street lighting levels along the property frontage is adequate as determined by the City and Portland General Electric (PGE) or provide streetlights along Warner Milne Road in conformance with all City standards, specifications, codes, and policies and as approved by Portland General Electric (PGE). **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Any new street proposed with a pavement width of less than thirty-two feet shall be processed through OCMC 16.12.013 and meet minimum life safety requirements, which may include fire suppression devices as determined by the Fire Marshall to assure an adequate level of fire and life safety. The modified street shall have no less than a twenty-foot wide unobstructed travel lane.
Finding: Not Applicable. A new street with a pavement width of less than thirty-two feet has not been proposed.

F. All development shall include vegetated planter strips that are five feet in width or larger and located between the sidewalk and curb unless otherwise approved pursuant to this chapter. All development shall utilize the vegetated planter strip for the placement of street trees or place street trees in other acceptable locations, as prescribed by OCMC 12.08. Development proposed along a collector, minor arterial, or major arterial roads may place street trees within tree wells within a wider sidewalk in lieu of a planter strip. In addition to street trees per OCMC 12.08, vegetated planter strips shall include ground cover and/or shrubs spaced four feet apart and appropriate for the location. No invasive or nuisance plant species shall be permitted.

Finding: Complies with Condition. See section 16.12.016 regarding requirements for vegetated planter strips located between the sidewalk and curb for the placement of street trees. **See section 12.08 regarding placement of street trees. Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

G. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker and only where dedication of a street is deemed impracticable.
Finding: Complies as conditioned. The decision maker has approved a vehicle access easement in lieu of streets. A vehicle and pedestrian access easement is approved by the decision maker so the development can meet block length requirements per code 16.12.030. The development has proposed a vehicular and pedestrian path through the development property to connect Kamm Street to Warner Milne Road. See findings from 16.12.030.

H. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.
Finding: Complies as conditioned. The development has proposed a vehicular and pedestrian access through the development property to connect existing Kamm Street to Warner Milne Road, but no easements have been proposed. Existing Kamm Street is a narrow long dead-end road without an approved emergency vehicle turnaround. A thru connection from existing Kamm Street will allow emergency vehicles to go through to Warner Milne Road without the difficulty of having to utilize reverse maneuvers to exit existing Kamm Street or the driveway at the south end of the development site. The applicant shall provide a 24-foot-wide vehicular access easement which allows for public access through the property from Warner Milne Road to Kamm Street. The vehicular access easement shall specifically require the property owner and future property owners to provide for ownership, liability and maintenance. The agreement shall be reviewed and accepted by the City prior to occupancy. **See findings in section 16.12.032 for requirements of a pedestrian easement. Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.017 - Street design—Access control.
A. A street which is dedicated to end at the boundary of the development or in the case of half-streets dedicated along a boundary shall have an access control granted to the City as a City controlled plat restriction for the purposes of controlling ingress and egress to the property adjacent to the end of the dedicated street. The access control restriction shall exist until such time as a public street is created, by dedication and accepted, extending the street to the adjacent property.
Finding: Not Applicable. No new streets with an access control are required. Access to Warner Milne Road by adjoining properties will be regulated by code section 16.12.035. Access through the development property is required for connectivity from Kamm Street to Warner Milne Road.

B. The City may grant a permit for the adjoining owner to access through the access control.
Finding: Not Applicable. No new streets with an access control are required. Access to Warner Milne Road by adjoining properties will be regulated by code section 16.12.035.

C. The plat shall contain the following access control language or similar on the face of the map at the end of each street for which access control is required: "Access Control (See plat restrictions)."
Finding: Not Applicable. No new streets with an access control are required. Access to Warner Milne Road by adjoining properties will be regulated by code section 16.12.035.

D. Said plats shall also contain the following plat restriction note(s): "Access to (name of street or tract) from adjoining tracts (name of deed document number[s]) shall be controlled by the City of Oregon City by

the recording of this plat, as shown. These access controls shall be automatically terminated upon the acceptance of a public road dedication or the recording of a plat extending the street to adjacent property that would access through those Access Controls."
Finding: Not Applicable. No new streets with an access control are required. Access to Warner Milne Road and Kamm Street by adjoining properties will be regulated by code section 16.12.035.

16.12.018 - Street design—Alignment.
The centerline of streets shall be:
A. Aligned with existing streets by continuation of the centerlines; or
B. Offset from the centerline by no more than five feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.
C. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.
Finding: Complies as proposed. There are no new streets proposed with the development. The driveway proposed for this development is twenty-four feet wide.

16.12.019 - Traffic sight obstructions.
All new streets shall comply with the Traffic Sight Obstructions in Chapter 10.32.
Finding: Complies as conditioned. Applicant acknowledges streets will be designed per this standard. Although there is no new street proposed with the development there will be a new vehicular connection from Kamm Street to Warner Milne Road in lieu of a new street. The driveway connecting to Warner Milne shall be designed to comply with the Traffic Sight Obstructions in Chapter 10.32. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.020 - Street design—Intersection angles.
Except where topography requires a lesser angle, streets shall be laid out to intersect at angles as near as possible to right angles. In no case shall the acute angles be less than eighty degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least one hundred feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least fifty feet of tangent adjacent to the intersection unless topography requires a lesser distance. All street intersections shall be provided with a minimum curb return radius of twenty-five feet for local streets. Larger radii shall be required for higher street classifications as determined by the City Engineer. Additional right-of-way shall be required to accommodate curb returns and sidewalks at intersections. Ordinarily, intersections should not have more than two streets at any one point.
Finding: Not applicable. Existing intersections are not impacted by the street design of the development. No new intersection is created by the development.

16.12.021 - Street design—Grades and curves.
Grades and center line radii shall conform to standards approved by the City Engineer.
Finding: Complies as Proposed. Applicant acknowledges streets will be designed per this standard.

16.12.022 - Street design—Development abutting arterial or collector street.
Where development abuts or contains an existing or proposed arterial or collector street, the decision maker may require: access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line; or such other treatment it deems necessary to adequately protect residential properties or afford separation of through and local traffic. Reverse frontage lots with suitable depth may also be considered an option for residential property that has arterial frontage. Where access for development

abuts and connects for vehicular access to another jurisdiction's facility then authorization by that jurisdiction may be required.
Finding: Not Applicable. The development abuts an arterial street, but access control is not required by the decision maker.

16.12.023 - Street design—Pedestrian and bicycle safety.
Where deemed necessary to ensure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, the decision maker may require that local streets be so designed as to discourage their use by nonlocal automobile traffic.
The City Engineer may require that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities. These curb extensions can increase the visibility of pedestrians and provide a shorter crosswalk distance as well as encourage motorists to drive slower. The City Engineer may approve an alternative design that achieves the same standard for constrained sites.
Finding: Complies as proposed. The development plans show a vehicular access through the development property which has traffic calming measures identified as a “chicane” and “choker” by the Institute of transportation Engineers (ITE). A “chicane” is described by the ITE as, “A series alternating curves or lane shifts force a motorist to steer back and forth instead of traveling a straight path.” The width of Kamm Street is also narrower than a typical road and acts as “choker” which the ITE says “Encourages lower speeds by funneling it through the pinch point.”

16.12.024 - Street design—Half street.
Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard. When approving half streets, the decision maker shall first determine that it will be practical to require the dedication of the other half of the street when the adjoining property is divided or developed. Where the decision maker approves a half street, the applicant shall construct a half street with at least twenty feet of pavement width and provide signage prohibiting street parking so as to make the half street safe until such time as the other half is constructed. Whenever a half street is adjacent to property capable of being divided or developed, the other half of the street shall be provided and improved when that adjacent property divides or develops. Access control may be required to preserve the objectives of half streets. When the remainder of an existing half-street improvement is completed it shall include the following items: dedication of required right-of-way, construction of the remaining portion of the street including pavement, curb and gutter, landscape strip, sidewalk, street trees, lighting and other improvements as required for that particular street. It shall also include at a minimum the pavement replacement to the centerline of the street. Any damage to the existing street shall be repaired in accordance with the City's "Pavement Cut Standards" or as approved by the City Engineer.
Finding: Not Applicable. This application does not propose any half streets.

16.12.025 - Street design—Cul-de-sacs and dead-end streets.
The City discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as geologic hazards, wetland, natural or historic resource areas, pre-existing dedicated open space, pre-existing development patterns, arterial access restrictions or similar situation as determined by the decision maker. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed.
A. When permitted, access from new cul-de-sacs and permanent dead-end streets shall be limited to a maximum of twenty-five dwelling units.
Finding: Not Applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

B. Cul-de-sacs and permanent dead-end streets shall include pedestrian/bicycle accessways to meet minimum block width standards as prescribed in OCMC 16.12.030.
Finding: Not Applicable. There are no cul-de-sacs or dead-end streets proposed with this project.

C. Cul-de-sacs shall have sufficient radius to provide adequate turn-around for emergency vehicles in accordance with fire district and City adopted street standards.
Finding: Not Applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

D. Permanent dead-end streets shall provide public street right-of-way/easements sufficient to provide a sufficient amount of turn-around space complete with appropriate no-parking signs or markings to accommodate waste disposal, sweepers, emergency and other long vehicles in the form of a hammerhead or other design to be approved by the decision maker.
Finding: Not Applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

E. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. A dead-end street shall include signage or barricade meeting Manual on Uniform Traffic Control Devices (MUTCD).
Finding: Complies as proposed. No cul-de-sacs or dead-end streets are proposed or required for this development. Kamm Street is an existing dead end that the project site has proposed for emergency or fire access. Existing Kamm Street is a narrow long dead-end road without an approved emergency vehicle turnaround. A thru connection from existing Kamm Street will allow emergency vehicles to go through to Warner Milne Road without the difficulty of having to utilize reverse maneuvers to exit existing Kamm Street. The design as proposed meets this standard.

16.12.026 - Street design—Alleys.
Alleys with public access easements on private property shall be provided in the Park Place and South End concept plan areas for the following districts R-5, R-3.5, R-2, MUC-1, MUC-2 and NC zones unless other permanent provisions for private access to off-street parking and loading facilities are approved by the decision maker. All alleys intended to provide access for emergency vehicles shall be a minimum width of twenty feet. The corners of alley intersections shall have a radius of not less than ten feet and shall conform to standards approved by the City Engineer. Access easements and maintenance agreements shall be recorded on affected properties.
Finding: Not Applicable. Alleys are not proposed or required for this development.

16.12.027 - Street design—Off-site street improvements.
During consideration of the preliminary plan for a development, the decision maker shall determine whether existing streets impacted by, adjacent to, or abutting the development meet the applicable design or dimensional requirements. Where such streets fail to meet these requirements, the decision-maker shall require the applicant to make proportional improvements sufficient to achieve conformance with minimum applicable design standards required to serve the proposed development.
Finding: Complies as proposed. A thru connection from existing Kamm Street to Warner Mline Road is needed to ensure emergency vehicle access through the site without reverse maneuvers onto Warner Milne Road. The pavement of existing Kamm Street is not wide enough to accommodate both street parking and emergency vehicle access at the same time. To ensure there is proper clearance on existing Kamm Street the developer shall provide “no parking” signs along the west side of existing Kamm Street.

The applicant provided a Traffic Analysis Letter; in it, it concludes that, "the proposed development is expected to generate eight new weekday AM peak hour trips and 10 new weekday PM peak hour trips above the previously operating use." The number of new trips generated would not warrant widening of Kamm Street. Furthermore, the Institute of Transportation Engineers has identified roadway narrowing as a traffic calming measure which can "reduce speed and enhance the street environment for non-motorists." Increased vehicular speeds on Kamm Street was a stated concern during the public comment period. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.028 - Street design—Transit.
Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with transit agencies where the application impacts transit streets as identified in OCMC 17.04.1310. Pedestrian/bicycle access ways shall be provided as necessary to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.
Finding: Complies as Proposed. The existing streets adjacent to the development is not a transit street. However, it near a transit corridor. The applicant has provided a pedestrian path through the development in a manner that promotes pedestrian and bicycle circulation.

16.12.029 - Excavations—Restoration of pavement.
Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standards in effect at the time the permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.
Finding: Complies with Condition. Pavement cuts are proposed within Warner Milne Road due to proposed utility service installations and required frontage improvements. Pavement cuts and pavement restoration associated with work within city streets or rights-of-way shall be in accordance with the City of Oregon City Public Works Pavement Cut Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.030 - Blocks—Width.
The width of blocks shall ordinarily be sufficient to allow for two tiers of lots with depths consistent with the type of land use proposed. The length, width and shape of blocks shall take into account the need for adequate building site size, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation, and limitations imposed by topography and other natural features.
All new streets shall be designed as local streets unless otherwise designated as arterials and collectors in the current adopted Transportation System Plan. The maximum block spacing between streets is 530 feet and the minimum block spacing between streets is 150 feet as measured between the right-of-way centerlines except in zones GI, CI, MUE, I, and WFDD where determining the appropriate street spacing will be determined by the City Engineer. If the maximum block size is exceeded, pedestrian accessways shall be provided every 330 feet. The spacing standards within this section do not apply to alleys.
Finding: Complies as proposed. There is lack of connectivity from existing Kamm Street to Warner Milne Road. Block Spacing along Warner Milne Road exceeds 530 feet. The layout of the proposed development shows a pedestrian and bicycle accessway which is located to minimize out-of-direction travel from Kamm Street to Warner Milne Road to meet this standard. Kamm Street ROW abuts the property. In lieu of a street, or constrained street, the applicant has proposed pedestrian a vehicular connection though

the site via the drive isle and the proposed share use path. This approach meets the block length standards. **See findings from 16.12.032.**

16.12.031 - Street design—Street names.
Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names shall conform to the established standards in the City and shall be subject to the approval of the City.
Finding: Not applicable. No new street is required or proposed.

16.12.032 – Public off-street pedestrian and bicycle accessways.
Pedestrian/bicycle accessways are intended to provide direct, safe and convenient connections between residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit-orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable. Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding 330 feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.
Finding: Complies as Proposed. The layout of the proposed development shows a pedestrian and bicycle accessway which connects existing Kamm Street to Warner Milne Road to minimize out-of-direction travel which meets the standards.

A. Entry points shall align with pedestrian crossing points along adjacent streets and with adjacent street intersections.
Finding: Complies as proposed. The development plan shows an accessway extending from the end of existing Kamm Street and connects to Warner Milne Road which meets the standards.

B. Accessways shall be free of horizontal obstructions and have a nine foot six inch high vertical clearance to accommodate bicyclists. To safely accommodate both pedestrians and bicycles, accessway right-of-way widths shall be as follows:
1. Accessways shall have a fifteen-foot-wide right-of-way with a seven-foot wide paved surface with a minimum four-foot planter strip on either side.
2. If an accessway also provides secondary fire access, the right-of-way width shall be at least twenty-four feet wide with a - sixteen foot paved surface between four-foot planter strips on either side.
Finding: Complies as conditioned. The proposed accessway is not intended, or required, to function as secondary fire access. The proposed accessway is less than seven-feet-wide and does not have four-foot planter strips on either side. Due to site constraints, it is not possible for the applicant to provide four-foot-wide planters trips on both sides of the accessway. Therefore, the city has accepted a modification to the planter strips requirement on the sides of the accessway. **See findings per 16.12.013 for the modification.**

C. Accessways shall be direct with at least one end point of the accessway always visible from any point along the accessway. On-street parking shall be prohibited within fifteen feet of the intersection of the accessway with public streets to preserve safe sight distance and promote safety.
Finding: Complies as Proposed. The layout of the proposed development shows an accessway with at least one end point visible from any point along the accessway which meets the standards.

D. To enhance pedestrian and bicycle safety, accessways shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle

average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.
Finding: Complies as conditioned. The development has not shown a lighting plan for the accessway. The pedestrian accessway shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances. Ownership and maintenance responsibilities shall remain with the property owner. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Accessways shall comply with Americans with Disabilities Act (ADA).
Finding: Complies with Condition. A detailed design of the accessway has not been provided so ADA compliance could not be verified. The pedestrian accessway shall be Americans with Disabilities Act (ADA) compliant. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

F. The planter strips on either side of the accessway shall be landscaped along adjacent property by installation of the following:
1. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average; and
2. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and
3. A two-inch minimum caliper tree for every thirty-five -feet along the accessway. Trees may be planted on either side of the accessway, provided they are spaced no more than thirty-five feet apart; and
4. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.
Finding: Complies as conditioned. A planting plan for planter strips on either side of the accessway have not been provided. Due to site constraints, it is not possible for the applicant to provide the prescribed vegetation requirement. Therefore, the city has accepted a modification to the planter strips requirement on the sides of the accessway. **See findings per 16.12.013 for the modification.**

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

G. Accessways shall be designed to prohibit unauthorized motorized traffic. Curbs and removable, lockable bollards are suggested mechanisms to achieve this.
Finding: Complies as proposed. The proposed pedestrian accessway is separated by landscaping and curbing and would prohibit unauthorized motorized traffic.

H. Accessway surfaces shall be paved with all-weather materials as approved by the City. Pervious materials are encouraged. Accessway surfaces shall be designed to drain stormwater runoff to the side or sides of the accessway. Minimum cross slope shall be two percent.
Finding: Complies as Proposed. The layout of the proposed development shows pedestrian and bicycle accessways which is paved with concrete.

I. In parks, greenways or other natural resource areas, accessways may be approved with a five-foot wide gravel path with wooden, brick or concrete edgings.
Finding: Not Applicable. The layout of the proposed development shows an accessway with no impact to parks, greenways, or natural resource areas.

J. The decision maker may approve an alternative accessway design due to existing site constraints through the modification process set forth in OCMC 16.12.013.
Finding: Not Applicable. No alternative design has been proposed for pedestrian and bicycle accessways.

K. Ownership, liability and maintenance of accessways. To ensure that all pedestrian/bicycle accessways will be adequately maintained over time, the City Engineer shall require one of the following:
1. Dedicate the accessways to the public as public right-of-way prior to the final approval of the development; or
2. The developer incorporates the accessway into a recorded easement or tract that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway.
Finding: Complies with Condition. Ownership, liability and maintenance of the accessway has not been specified by the applicant. The developer shall incorporate the pedestrian accessway into a recorded easement that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.033 - Mobility standards.
Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection E below, to be maintained at or below the following mobility standards during the two-hour peak operating conditions. The first hour has the highest weekday traffic volumes and the second hour is the next highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the Transportation System Plan (TSP) or as otherwise identified by the City Engineer.
A. For intersections within the regional center, the following mobility standards apply:
1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
3. Intersections located on the Regional Center boundary shall be considered within the Regional Center.
B. For intersections outside of the Regional Center but designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:
1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
C. For intersections outside the boundaries of the Regional Center and not designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:
1. For signalized intersections:
a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
2. For unsignalized intersections outside of the boundaries of the Regional Center:
a. For unsignalized intersections, during the peak hour, all movements serving more than twenty vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than twenty vehicles during the peak hour.
D. For the intersection of OR 213 & Beavercreek Road, the following mobility standards apply:
1. During the first, second & third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.
E. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:
I-205/OR 99E Interchange
State intersections located within or on the Regional Center Boundaries
1. In the case of conceptual development approval for a master plan that impacts the above references intersections:
a. The form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the Code in place at the time the detailed development plan is submitted; and
b. Only those trips approved by a detailed development plan review are vested.
2. Development which does not comply with the mobility standards for the intersections identified in OCMC 16.12.033 shall provide for the improvements identified in the Transportation System Plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

Finding: John Replinger, the City's contract transportation engineer, reviewed the applicant's TIA and provided the following findings and conditions of approval in his letter dated February 8 (Exhibit 4) reviewed the Transportation Analysis Letter (TAL) submitted in support of the development of an apartment complex at 279 Warner-Milne Road. The TAL, dated August 21, 2021, was prepared under the direction of Rick Nys, PE of Greenlight Engineering.

There is an existing driveway utilized by the prior office use. According to the TAL, the exiting driveway will be relocated to the east and will be reduced in width from approximately 36 feet to 24 feet. The new driveway will be approximately 80 feet west of the centerline of the nearest existing driveway to the abutting property to the east, which serves an accounting office. There is not a nearby driveway on the abutting property to the west. The proposal also includes a connection to Kamm Street, a public street that currently terminates at the property's north boundary. The connection is designed to enhance neighborhood connectivity.

Mr Replinger found that the TAL meets city requirements and provides an adequate basis on which impacts of the development can be assessed. He also found that off-site improvement were not proportionally triggered in this analysis.

"The TAL does not provide any estimates of the impact of providing a connection though the site between Warner-Milne Road and Kamm Street. A "trail connection" is identified in the TSP and increasing connectivity throughout the city is a key objective in the TSP to reduce reliance on single-occupant automobile use.

The connection of Warner-Milne Road to Kamm Street through the site will provide connectivity to Warner-Milne Road for the neighborhood along Warner Street and for the apartment residents to Molalla Avenue. Some cut-through traffic might be expected, but this is likely to be limited because the major streets, Warner-Milne Road and Molalla Avenue, experience limited delays, operate well, and have higher posted speeds than the local residential streets.

I recommend conditions of approval include implementing frontage improvements. There are no other transportation-related issues associated with this development proposal requiring mitigation. "

16.12.035 - Driveways.
A. All new development, redevelopment, and capital improvement projects shall meet the minimum driveway spacing standards identified in Table 16.12.035.A. Minor Site Plan and Design Review do not follow these standards unless a request is made to modify the driveway.

Table 16.12.035.A Minimum Driveway Spacing Standards

Street Functional Classification	*Minimum Driveway Spacing Standards*	*Distance*
Major Arterial Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single and two-family dwellings*	*175 ft.*
Minor Arterial Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single and two-family dwellings*	*175 ft.*
Collector Streets	*Minimum distance from a street corner to a driveway and between driveways for all uses other than detached single and two-family dwellings*	*100 ft.*
Local Streets	*Minimum distance from a street corner to a driveway and between driveways*	*25 ft.*

The distance from a street corner to a driveway is measured along the right-of-way from the edge of the intersection (on the same side of the road) right-of-way to the nearest portion of the driveway and the distance between driveways is measured at the nearest portions of the driveway at the right-of-way.
Finding: Complies as proposed. Warner Milne Road is classified as a minor arterial road. The development frontage on Warner Milne Road is 120 feet wide and the nearest driveway from an adjacent property is 20 feet away. The development is not able to meet driveway spacing requirements of 16.12.035. The development has located the driveway at Warner Milne Road to provide continuity with the driveway connection from existing Kamm Street.
B. All detached single and two family dwellings shall have driveways which meet the minimum distance standards except when the lot size is smaller than the minimum distance required. When minimum distance cannot be met due to lot size or due to the location of an overlay district, the driveway shall be located as far away from the intersection as possible as approved by the City Engineer.
Finding: Not applicable. The development is not a detached single and two-family dwelling.

C. Nonresidential or multi-family residential use driveways that generate high traffic volumes as determined by a traffic analysis shall be treated as intersections and shall adhere to requirements of OCMC 16.12.020.
Finding: Complies as Proposed. The applicant provided a Traffic Analysis Letter; in it, it concludes that, "the proposed development is expected to generate eight new weekday AM peak hour trips and 10 new

weekday PM peak hour trips above the previously operating use." The projected traffic volumes generated by the development do not warrant treatment of the driveway as an intersection.

D. Only one driveway is allowed per street frontage classified as a local street and in no case shall more than two driveways (one per frontage) be allowed for any single family attached or detached residential property, duplex, 3- 4 plex, or property developed with an ADU or internal conversion with multiple frontages, unless otherwise approved by the City Engineer.
Finding: Complies as Proposed. The proposed development shows one driveway per lot frontage.

E. When a property fronts multiple roads, access shall be provided from and limited to the road with the lowest classification in the Transportation System Plan whenever possible to minimize points of access to arterials and collectors. Access shall not be provided on Arterial or Collector roads unless there is no other alternative. At the discretion of the City Engineer, properties fronting a collector or arterial road may be allowed a second driveway, for the creation of a circulation pattern that eliminates reverse maneuvers for vehicles exiting a property if applied for and granted through procedures in OCMC 16.12.013. All lots proposed with a driveway and lot orientation on a collector or minor arterial shall combine driveways into one joint access per two or more lots unless the City Engineer determines that:

1. No driveway access may be allowed since the driveway(s) would cause a significant traffic safety hazard; or

2. Allowing a single driveway access per lot will not cause a significant traffic safety hazard.

Finding: Complies as Proposed. The development fronts existinig Kamm Street and Warner Milne Road. Existing Kamm Street is the road with the lower classification in the TSP. However, the existing condition of existing Kamm Street (being a narrow long dead-end road) make it difficult for access by emergency vehicles. The thru connection from existing Kamm Street to Warner Mline Road will eliminate the difficulty of emergency vehicles having to reverse to exit existing Kamm Street.

F. All driveway approaches shall be limited to the dimensions identified in Table 16.12.035.D.

Table 16.12.035.D Driveway Approach Size Standards

Property Use	*Minimum Driveway Approach Width*		*Maximum Driveway Approach Width*
Single-Family	*10 feet*		*24 feet*
Duplexes	*12 feet*		*24 feet*
3-4 Plexes	*12 feet*		*36 feet*
Multi-Family	*18 feet*		*30 feet*
Commercial, Industrial, Office, Institutional, Mixed Use, and/or Nonresidential	*One-Way 12 feet*	*Two-Way 20 feet*	*40 feet*

Driveway widths shall match the width of the driveway approach where the driveway meets sidewalk or property line but may be widened onsite (for example between the property line and the entrance to a garage). Groups of more than four parking spaces shall be so located and served by driveways so that their use will not require backing movements or other maneuvering within a street right-of-way other than an alley.
Finding: Complies as proposed. The development has proposed driveways 24-feet-wide and the development is for a multi-family complex.

G. The City Engineer reserves the right to require a reduction in the number and size of driveway approaches as far as practicable for any of the following purposes:
1. To provide adequate space for on-street parking;

2. To facilitate street tree planting requirements;
3. To assure pedestrian and vehicular safety by limiting vehicular access points; and
4. To assure that adequate sight distance requirements are met.
a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line.
Finding: Not Applicable. No restrictions are required by the City Engineer. The proposed driveway meets requirements of Table 16.12.035.D Driveway Approach Size Standards.

H. For all driveways, the following standards apply.
1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet back into the property as measured from the current edge of sidewalk or street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the City Engineer.
2. Any driveway approach built within public right-of-way shall be built and permitted per City requirements as approved by the City Engineer.
3. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the City Engineer.
Finding: Complies as proposed. The development has proposed a concrete approach and a minimum hard surface for at least ten feet back into the property for the driveway. The driveway proposed has slopes less than 15% which meets the standard.

I. Exceptions. The City Engineer reserves the right to waive these standards or not allow driveway access, if the driveway(s) would cause a significant traffic safety hazard. Narrower or wider driveway widths may be considered where field conditions preclude use of recommended widths. When larger vehicles and trucks will be the predominant users of a particular driveway, turning templates may be utilized to develop a driveway width that can safely and expeditiously accommodate the prevalent type of ingress and egress traffic.
Finding: Not Applicable. No exemptions are proposed.

16.12.065 - Building site—Grading.
Grading of building sites shall conform to the State of Oregon Structural Specialty Code, Title 18, any approved grading plan and any approved residential lot grading plan in accordance with the requirements of OCMC 13.12,15.48, 16.12 and the Public Works Stormwater and Grading Design Standards, and the erosion control requirements of OCMC 17.47.
Finding: Applicable. Please refer to the findings within sections 13.12,15.48, 16.12 & 17.47 of this report.

16.12.085 - Easements.
The following shall govern the location, improvement and layout of easements:
A. Utilities. Utility easements shall be required where necessary as determined by the City Engineer. Insofar as practicable, easements shall be continuous and aligned from block-to-block within the development and with adjoining subdivisions or partitions.

> *1. Specific public utility easements for water, sanitary or storm drainage shall be provided based on approved final engineering plans conforming to the requirements found within the applicable Design Standards.*
> *2. Conveyance of public utility easements for gas, electric, telecommunication, and fiberoptic shall be required where necessary as determined by the City Engineer. The City Engineer will require the easement unless it is found that the utility can be placed in a different location or can be placed in a smaller easement than what is required. The easement shall be located adjacent to all*

public right of ways or public access easements within private property. In the event that the provision of a public utility easement would create a conflict with achieving compliance with another part of the code, the location and width may be adjusted by the City Engineer.
a. The easement shall be 10 feet in the R-10, R-8, R-6, R-5, R-3.5, R-2, GI, and CI zones
b. The easement shall be a minimum of 5 feet in the NC, HC, I, C, MUC-1, MUC-2, MUE, MUD, and WFDD zones.
i. The applicant shall obtain a written determination from all utilities that the minimum 5 foot PUE coupled with use of a minimum of a 5 foot area under the public sidewalk or parkway area is sufficient to serve the development. Where the minimum width is deemed inadequate, a modification shall be required.
c. An applicant may seek a modification to the public utility easement dedication requirement using 16.12.013.

Finding: Complies with Condition. The development has proposed new public water and storm mains through the development. The development shall provide 15-foot-wide public utility easements for water and storm mains proposed through the development. The development did not propose a 5-foot-wide PUE adjacent the ROW of Warner Milne Road. The development property is zoned MUC-1. There is more than 10 feet between the sidewalk and the ROW line that a minimum of 5-foot-wide PUE would be adequate. Also, the maximum front yard setback in MUC-1 is 5 feet per zoning code. The development shall provide a public utility easement (PUE) along all the Warner Milne Road right-of-way which is a minimum of 5 feet in width. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Unusual Facilities. Easements for unusual facilities such as high voltage electric transmission lines, drainage channels and stormwater detention facilities shall be adequately sized for their intended purpose, including any necessary maintenance roads. These easements shall be shown to scale on the preliminary and final plats or maps. If the easement is for drainage channels, stormwater detention facilities or related purposes, the easement shall comply with the requirements of the Public Works Stormwater and Grading Design Standards.

Finding: Not applicable. Easements for unusual facilities are not required.

C. Watercourses. Where a development is traversed or bounded by a watercourse, drainageway, channel or stream, a stormwater easement or drainage right-of-way shall be provided which conforms substantially to the line of such watercourse, drainageway, channel or stream and is of a sufficient width to allow construction, maintenance and control for the purpose as required by the responsible agency. For those subdivisions or partitions which are bounded by a stream of established recreational value, setbacks or easements may be required to prevent impacts to the water resource or to accommodate pedestrian or bicycle paths.

Finding: Complies as conditioned. See findings from 17.49 for easements required for the protection of natural resource overlay district contained within the development site.

D. Access. When easements are used to provide vehicular access to lots within a development, the construction standards, but not necessarily width standards, for the easement shall meet City specifications. The minimum width of the easement shall be 20 feet. The easements shall be improved and recorded by the applicant and inspected by the City Engineer. Access easements may also provide for utility placement.

Finding: Not Applicable. The application has not proposed an easement to provide vehicular access to lots within the development; therefore, no access easements are required.

E. Resource Protection. Easements or other protective measures may also be required as the Community Development Director deems necessary to ensure compliance with applicable review criteria protecting any unusual significant natural feature or features of historic significance.
Finding: Complies as conditioned. A Natural Resource Overlay District is on the property. See findings from 17.49 regarding significant natural features.

16.12.090 - Minimum improvements—Procedures.
In addition to other requirements, improvements installed by the applicant either as a requirement of these or other regulations, or at the applicant's option, shall conform to the requirements of this title and be designed to City specifications and standards as set out in the City's facility master plan and Public Works Stormwater and Grading Design Standards. The improvements shall be installed in accordance with the following procedure:
A. Improvement work shall not commence until construction plans have been reviewed and approved by the City Engineer and to the extent that improvements are located in County or State right-of-way, they shall be approved by the responsible authority. To the extent necessary for evaluation of the proposal, the plans may be required before approval of the preliminary plat of a subdivision or partition. Expenses incurred thereby shall be borne by the applicant and paid for prior to final plan review.
Finding: Complies with Condition. Commencement of improvement work is further restricted by requirements of section 16.12.014; see section 16.12.014 of this report for associated findings. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Improvements shall be constructed under the inspection and approval of the City Engineer. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. Where required by the City Engineer or other City decision-maker, the applicant's project engineer also shall inspect construction.
Finding: Complies with Condition. The City Engineer has required that all improvements be primarily inspected by the applicant's project engineer, but city inspection is also required for city approval. An inspection fee is required to be paid by the applicant per requirements from 16.12.014. Also, a Project Engineer's Certificate of Completion is required per requirements from 16.12.014. The applicant's project engineer shall inspect construction and the cost shall be borne by the applicant. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Erosion control or resource protection facilities or measures are required to be installed in accordance with the requirements of OCMC 17.47, 17.49 and the Public Works Erosion and Sediment Control Standards.
Finding: Compiles with Condition. See findings from section 17.47, 17.49 of this report.

D. Underground utilities, waterlines, sanitary sewers and storm drains installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot-wide public utility easement within private property as defined in OCMC 16.12.85.A.2.
Finding: Compiles with Condition. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the PUE. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer upon completion of the improvements.

Finding: Complies with Condition: As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

F. The City Engineer may regulate the hours of construction and access routes for construction equipment to minimize impacts on adjoining residences or neighborhoods.
Finding: Complies with Condition. The applicant shall comply with permitted hours of construction as set forth by the City Engineer. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.095 - Minimum improvements—Public facilities and services.
The following minimum improvements shall be required of all applicants for a development, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:
A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the City's planned level of service on all public streets, including alleys within the development and those portions of public streets adjacent to but only partially within development. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points or curvature and points of tangency of their center line, and at such other points as directed by the City Engineer.
Finding: Complies as proposed. The applicant has proposed a plan which provides adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. The applicant has submitted a plan showing storm drainage facilities connecting to off-site natural and man-made drainageways.

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within a development and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with City drainage master plan requirements, OCMC 13.12 and the Public Works Stormwater and Grading Design Standards.
Finding: Complies as proposed. The development's drainage system connects to the appropriate downstream storm drainage system which provides service to the applicant's development. There is an existing 18-inch storm sewer main within Warner Milne Road which provides for the connection of upgradient properties to the existing downstream system. See section 13.12 for requirements to comply with the Public Works Stormwater and Grading Design Standards.

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a development in accordance with the City's sanitary sewer design standards, and shall connect those lots or parcels to the City's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. Applicants are responsible for extending the City's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the City Engineer before construction begins.
Finding: Complies as proposed. The applicant has proposed to install a sanitary sewer service to serve the development in accordance with the City's sanitary sewer design standards. There is an existing 8-inch sewer main within Warner Milne Road which allows for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a development in accordance with the City public works water system design standards, and shall connect those lots or parcels to the City's water system. Applicants are responsible for extending the City's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.
Finding: Complies as proposed. The applicant has proposed to install a water service line to serve the development in accordance with the City public works water system design standards. The development has proposed to install a new 6" water main to connect the existing 4-inch ductile iron water main at the end of Kamm Street to the 16-inch main within Warner Milne Road to create a loop in the water system. The existing 16-inch water main within Warner Milne Road will provide for future connection of neighboring undeveloped properties that are suitably zoned for future development.

E. Street Trees. Refer to OCMC 12.08, Street Trees.
Finding: See findings from section 12.08.

F. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane specified by the City Engineer.
Finding: Complies with Condition. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

G. Other Utilities. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities. All new utilities shall be placed underground unless the respective franchise agreements allow otherwise or unless it is physically or technically impossible to comply with applicable standards. Existing electrical lines and other wires, including but not limited to telecommunication, street lighting and fiberoptic shall be relocated underground.

1. *Exemptions to relocation of existing overhead utilities to underground for property development as follows (Only one exemption criteria is required to be exempt from this requirement):*
   a. *No transmission or feeder lines shall be relocated underground unless approved by the City Engineer.*
   b. *Properties with less than 1.0 acre of ownership and area shall not be required to relocate existing overhead utilities unless required by the franchise utility.*
   c. *Properties with less than 200 feet of frontage on any individual roadway shall not be required to relocate existing overhead utilities unless required by the franchise utility.*
   d. *Land divisions Properties which propose with 5 or less fewer subdivided lots shall not be required to relocate existing overhead utilities unless required by the franchise utility.*
2. *The exemptions in G.1. do not apply if properties within the same block were required to relocate the overhead utilities within the past 10 years. In those cases, the existing overhead utilities shall be relocated underground.*

3. *When any franchise utility (electric, gas, telecommunication, fiberoptic, street lighting or similar utility) is installed along an existing or new roadway, the utility shall be installed within the existing or proposed public utility easement unless it is physically or technically impossible.*
4. *These requirements do not apply to work by a franchise utility for improvement, repair, alteration or addition to their existing systems.*

Finding: Complies with Condition. Existing overhead utilities are on the opposite side of Warner Milne Road. All new franchise utilities shall be placed underground unless deemed infeasible by the City and the franchise utility provider(s) prior to occupancy. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

H. Oversizing of Facilities. All facilities and improvements shall be designed to City standards as set out in the City's facility master plan, public works design standards, or other City ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the City for oversizing based on the City's reimbursement policy and funds available, or provide for recovery of costs from intervening properties as they develop.
Finding: Not Applicable. No facilities are required to be oversized as part of this application.

I. Erosion Control Plan—Mitigation. The applicant shall be responsible for complying with all applicable provisions of OCMC 17.47 with regard to erosion control.
Finding: See findings from section 17.47 of this report.

16.12.100 - Same—Road standards and requirements.
A. The creation of a public street and the resultant separate land parcels shall be in conformance with requirements for subdivisions or partitions and the applicable street design standards of this Chapter. However, the decision-maker may approve the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions where any of the following conditions exist:
1. The establishment of the public street is initiated by the City Commission and is declared essential for the purpose of general traffic circulation and the partitioning of land is an incidental effect rather than the primary objective of the street;
2. The tract in which the street is to be dedicated is within an isolated ownership either not over one acre or of such size and characteristics as to make it impossible to develop building sites for more than three dwelling units.
Finding: Not Applicable. The creation of a new public street is not proposed or required.

B. For any public street created pursuant to subsection A of this section, a copy of a preliminary plan and the proposed deed shall be submitted to the Community Development Director and City Engineer at least ten days prior to any public hearing scheduled for the matter. The plan, deed and any additional information the applicant may submit shall be reviewed by the decision-maker and, if not in conflict with the standards of Title 16 and Title 17, may be approved with appropriate conditions.
Finding: Not Applicable. The applicant has not proposed the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions.

C. The design and construction of public streets shall be per the standards found in this chapter and the most recent version of any City Design and Construction Standards.
Finding: Not Applicable. The creation of a new public street is not proposed or required.

16.12.105 - Same—Timing requirements.
A. Prior to applying for final plat approval, the applicant shall either complete construction of all public improvements required as part of the preliminary plat approval or guarantee the construction of those improvements. Whichever option the applicant elects shall be in accordance with OCMC 17.50.140.
Finding: See findings from OCMC 17.50.140 regarding timing of construction of improvements and guarantee for construction of improvements.

B. Construction. The applicant shall construct the public improvements according to approved final engineering plans and all applicable requirements of this Code, and under the supervision of the City Engineer. Under this option, the improvement shall be complete and accepted by the City Engineer prior to final plat approval.
Finding: Complies as conditioned. There is no plat associated with this development so requirements will be applicable to issuance of final occupancy. The development is required to construct certain public improvements as set forth in previous sections of this staff report. Supervision of construction by the city, as required by the City Engineer, may result in creation of punch list prior to final acceptance of construction. Improvements shall be completed and accepted by the City prior to occupancy. The applicant shall complete all items from a city provided punch list prior to occupancy. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.110 -Public improvements—Financial guarantees.
A. To ensure construction of required public improvements, the applicant shall provide the City with a performance guarantee in accordance with OCMC 17.50.140.
Finding: Please see findings from Section17.50.140 of this report.

B. After satisfactory completion of required public improvements and facilities, all public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period as prescribed in OCMC 17.50.141.
Finding: Please see findings from Section17.50.141 of this report.

16.12.120 Waiver of Remonstrance
The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development. To ensure compliance with this chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the City Attorney.
Finding: Complies as proposed. The previous property owner has executed a Covenant Non-Remonstrance Agreement which is still valid and applicable to subsequent property owners.

CHAPTER 17.47 – EROSION AND SEDIMENT CONTROL

17.47.030 - Applicability.
A. This chapter, which may also be referred to as "erosion control" in this Code, applies to development that may cause visible or measurable erosion on any property within the city limits of Oregon City.

B. This chapter does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies, provided that after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.

Finding: Applicable. The application disturbs more than 1,000 square feet of earth; therefore, erosion and sediment control standards shall be followed.

17.47.060 - Permit required.

The applicant must obtain an erosion and sediment control permit prior to, or contemporaneous with, the approval of an application for any building, land use or other city-issued permit that may cause visible or measurable erosion.

Finding: Complies as conditioned. A city issued erosion and sediment control permit shall be obtained prior to commencement of any earth disturbing activities. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.47.070 - Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder.

B. Approval Standards. An erosion and sediment control plan shall be approved only upon making the following findings:

1. The erosion and sediment control plan meets the requirements of the City of Oregon City public works standards for erosion and sediment control incorporated by reference as part of this chapter;

2. The erosion and sediment control plan indicates that erosion and sediment control measures will be managed and maintained during and following development. The erosion and sediment control plan indicates that erosion and sediment control measures will remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch or other permanent soil stabilizing measures.

C. The erosion and sediment control plan shall be reviewed in conjunction with the requested development approval. If the development does not require additional review, the manager may approve or deny the permit with notice of the decision to the applicant.

D. The city may inspect the development site to determine compliance with the erosion and sediment control plan and permit.

E. Erosion that occurs on a development site that does not have an erosion and sediment control permit, or that results from a failure to comply with the terms of such a permit, constitutes a violation of this chapter.

F. If the manager finds that the facilities and techniques approved in an erosion and sediment control plan and permit are not sufficient to prevent erosion, the manager shall notify the owner or his/her designated representative. Upon receiving notice, the owner or his/her designated representative shall immediately install interim erosion and sediment control measures as specified in the City of Oregon City public works standards for erosion and sediment control. Within three days from the date of notice, the owner or his/her designated representative shall submit a revised erosion and sediment control plan to the city. Upon approval of the revised plan and issuance of an amended permit, the owner or his/her designated representative shall immediately implement the revised plan.

G. Approval of an erosion and sediment control plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

Finding: Complies as conditioned. Erosion and sediment control plans shall be submitted for review and approval by the City prior to issuance of an erosion and sediment control permit. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.47.080 - Plan implementation.
An approved erosion control and sediment control plan shall be implemented and maintained as follows:
A. Plan approval, where required, shall be obtained prior to clearing or grading. No grading, clearing or excavation of land requiring a plan shall be undertaken prior to approval of the plan.
B. The erosion and sediment control facilities shall be constructed prior to any clearing and grading activities, and maintained in such a manner as to ensure that sediment laden water does not enter the drainage system or violate applicable water standards.
C. The implementation of an erosion and sediment control plan and the construction, maintenance, replacement, and upgrading of erosion and sediment control facilities is the responsibility of the owner or his/her designated representative until all construction is completed and approved, and vegetation, landscaping or approved finished surfaces is established.
D. The erosion and sediment control facilities herein are the minimum requirements for anticipated site conditions. During the construction period, these erosion and sediment control facilities shall be upgraded as needed for unexpected storm events and to ensure that sediment-laden water does not leave the site.
E. Any observation of visible or measurable erosion, or an observation of more than a ten-percent increase in downstream channel turbidities, will result in an enforcement action by the city.
F. The owner or his/her designated representative shall implement the measures and construct facilities as provided for and according to the implementation schedule in the approved plan. The manager shall be allowed reasonable access to the development site for inspection purposes.
Finding: Applicable. Plan approval is required and is required to be obtained per chapter 16.12. The Oregon City Erosion Control Officer ensures that the development will comply with the city's Erosion and Sediment Control Standards. The Oregon City Erosion Control Officer will access the development site and perform inspections to ensure compliance prior to any clearing and grading activities are permitted. The Oregon City Erosion Control Officer ensures implementation of an erosion and sediment control plan and the construction, maintenance, replacement, and upgrading of erosion and sediment control facilities. The Oregon City Erosion Control Officer may issue a Stop Work Order if the owner or his/her designated representative fails to implement and maintain the approved erosion control and sediment control plan until all construction is completed and approved, and vegetation, landscaping or approved finished surfaces is established.

17.47.090 - Plan performance guarantee and security.
After the plan is approved by the manager and prior to construction or grading, the owner shall provide a financial guarantee. Erosion and sediment control shall be included in the cost estimate for the primary project, such as land division or site plan, and included in that project's performance guarantee.
Finding: Complies as conditioned. See findings in Section 17.50.140.

CHAPTER 12.08 – PUBLIC AND STREET TREES

12.08.015 - Street tree selection, planting and maintenance requirements.
All development shall provide street trees adjacent to all street frontages. Species and locations of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List, an approved street tree list for a jurisdiction in the metropolitan region, or be

approved by a certified arborist unless otherwise approved pursuant to this section. If a setback sidewalk has already been constructed or the Public Works Department determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip or within tree wells. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed according to OCMC 12.08.035.C.

A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage to meet the clearance distances required in subsection (B) below. The Community Development Director may approve an alternative street tree plan, or accept fee-in-lieu of planting pursuant to OCMC 12.08.035, if site or other constraints prevent meeting the required total number of tree plantings.

B. The following clearance distances shall be maintained when planting trees:

1. Fifteen feet from streetlights;

2. Five feet from fire hydrants;

3. Twenty feet from intersections;

4. Five feet from all public utilities (i.e. sewer, storm and water lines, utility meters, etc.);

C. All street trees planted in conjunction with development shall be a minimum of two inches in caliper at six inches above the root crown and installed to city specifications. Larger caliper size trees may be approved if recommended by a certified arborist or registered landscape architect.

D. All established trees shall be pruned tight to the trunk to a height that provides adequate clearance for street cleaning equipment and ensures ADA complaint clearance for pedestrians.

E. All trees planted within the right-of-way shall be planted with root barriers at least eighteen inches in depth adjacent to the sidewalk and curb to ensure proper root growth and reduce potential damage to sidewalks, curbs and gutters.

F. All trees planted beneath powerlines shall be selected based on what is appropriate for the location. In addition, the tree species shall be approved by the associated franchise powerline utility company.

G. Tree species, spacing and selection for stormwater facilities in the public right-of-way and in storm water facilities shall conform to requirements of OCMC 13.12 and the adopted Stormwater and Grading Design Standards and be approved by the City Engineer.

H. Any public or street trees planted within the Natural Resource Overlay District shall conform to the applicable requirements of OCMC 17.49 - Natural Resources Overlay District (NROD).

Finding: Complies with Condition. The proposal includes installation of street trees along approximately 160 feet of frontage (40 feet +120 feet) , requiring 5 street trees (160_/35= 4.5). The location of the street trees are subject to change with the placement of street lights, utility meters, etc. Prior to issuance of construction plans of the right-of-way improvements, the applicant shall submit a street tree plan which includes 5 street trees planted spacing shall be evenly distributed throughout the total development in accordance with OCMC 12.08 or accept fee-in-lieu of planting pursuant to OCMC 12.08 if site or other constraints prevent meeting the required total number of tree plantings. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

12.08.035 - Tree removal and replacement.

Existing street trees, trees in the right-of-way, and trees on public property shall be retained and protected during development unless removal is specified as part of a land use approval or in conjunction with a public capital improvement project, in accordance with OCMC 17.41.

Finding: Complies. Any street tree removal proposed is reviewed in accordance with OCMC 17.41.

CHAPTER 17.29 MUC MIXED USE CORRIDOR DISTRICT

17.29.020 - Permitted uses—MUC-1 and MUC-2.

A. Banquet, conference facilities and meeting rooms;

B. Bed and breakfast/boarding houses, hotels, motels, and other lodging facilities;

C. Child care centers and/or nursery schools;

D. Indoor entertainment centers and arcades;

E. Health and fitness clubs;

F. Medical and dental clinics, outpatient; infirmary services;

G. Museums, libraries and cultural facilities;

H. Offices, including finance, insurance, real estate and government;

I. Outdoor markets, such as produce stands, craft markets and farmers markets that are operated on the weekends and after six p.m. during the weekday;

J. Postal services;

K. Parks, playgrounds, playfields and community or neighborhood centers;

L. Repair shops, for radio and television, office equipment, bicycles, electronic equipment, shoes and small appliances and equipment;

M. Multifamily residential, 3-4 plex residential;

N. One or two dwelling units in conjunction with a nonresidential use, provided that the residential use occupies no more than 50% of the total square footage of the development;

O. Restaurants, eating and drinking establishments without a drive-through;

P. Services, including personal, professional, educational and financial services; laundry and dry-cleaning;

Q. Retail trade, including grocery, hardware and gift shops, bakeries, delicatessens, florists, pharmacies, specialty stores, marijuana, and similar, provided the maximum footprint for a stand-alone building with a single store or multiple buildings with the same business does not exceed sixty thousand square feet;

R. Seasonal sales;

S. Residential care facilities, assisted living facilities; nursing homes and group homes for over fifteen patients licensed by the state;

T. Studios and galleries, including dance, art, photography, music and other arts;

U. Utilities: Basic and linear facilities, such as water, sewer, power, telephone, cable, electrical and natural gas lines, not including major facilities such as sewage and water treatment plants, pump stations, water tanks, telephone exchanges and cell towers;

V. Veterinary clinics or pet hospitals, pet day care;

W. Home occupations;

X. Research and development activities;

Y. Temporary real estate offices in model dwellings located on and limited to sales of real estate on a single piece of platted property upon which new residential buildings are being constructed;

Z. Transportation facilities;

AA. Live/work dwellings;

BB. After-hours public parking.

Finding: Permitted. The applicant proposed to construct multi-family residential units, allowed in OCMC 17.29.020.M.

17.29.050 - Dimensional standards—MUC-1.
B. Maximum building height: Forty feet or three stories, whichever is less.
Finding: Complies as Proposed. Building is 3 stories and 34'-0" tall at highest roof peak.

C. Minimum required setbacks if not abutting a residential zone:
Finding: Complies as Proposed. Building setbacks at non-residential property lines are 5' (west), 2'-10" (south) and 76'-6" (east).

D. Minimum required interior and rear yard setbacks if abutting a residential zone: Twenty feet, plus one foot additional yard setback for every one foot of building height over thirty-five feet.
Finding: Complies as Proposed. The building has no side or rear yards facing residential zones. The north side of the building has a front yard facing the residential zones along Kamm Street and has a setback of 3'.

E. Maximum allowed setbacks.
1. Front yard: Five feet. Front yard setback is 2'-10" at the south and 3'-0" at the north.
Finding: Complies as Proposed. Largest setback proposed:

3. Corner side setback abutting street: Thirty feet.
Finding: Not applciable Not a corner lot

F. Maximum lot coverage of the building and parking lot: Eighty percent.
Finding: Complies as Proposed. Building (30%) + Parking Lot (39%) = 25,540 sq.ft. = 69%.

G. Minimum required landscaping (including landscaping within a parking lot): Twenty percent.
Finding: Complies as Proposed.
Lot size: 36,928 sq.ft
Square Feet of Landscaping: 9,426 sq.ft.
Percentage: Landscaping = 9,426 sq.ft. = 25%.

H. Residential minimum net density of 17.4 units per acre, except that no minimum net density shall apply to residential uses proposed above nonresidential uses in a mixed-use configuration or to live/work dwellings.
Finding: Complies as Proposed.
Density proposed: 30 units @ 0.848 acres = 35.4 units per acre

CHAPTER 17.41 – TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS

17.41.020 - Tree protection—Applicability.

1. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.

2. For public capital improvement projects, the City Engineer shall demonstrate compliance with these standards pursuant to a Type I process.

3. Tree canopy removal greater than twenty-five percent on areas with greater than twenty-five percent slope, unless exempted under OCMC 17.41.040, shall be subject to these standards.

4. A heritage tree or grove which has been designated pursuant to the procedures of OCMC 12.32 shall be subject to the standards of this section.

5. A tree that has been planted pursuant to this section shall remain or shall be replaced with a new tree if removed.

Finding: Complies as Condition. The applicant has indicated that a total of five trees within the construction zone will be removed as part of this development. See sections below for mitigation details. Public comments by various neighbors indicate that numerous trees were removed from the site sometime between 2018-2019 as indicated in the figures below at the beginning of the staff report. Tree removal on commercial sites requires a Type I Site Plan and Design Review. It appears the property owner failed to submit for Type I approval for the removed trees, nor did the current applicant include the number and caliper size in the current submittal. Prior to the release of Building Permits, the applicant is responsible for submitting a Type I tree removal application for those trees based on the compliance options in 17.41.050. The trees removed in 2018/2019 are above and beyond any tree proposed to be removed as part of the current application. If the caliper sizes of the trees that were removed cannot be verified, the applicant shall use the 19" to 24" healthy tree located outside of the construction area category as a default category in their calculations unless further refined with additional documentation.

The 2018 Google Maps street view looks to have a cluster of Cedar, and Douglas Fir trees of various sizes.

The 2018 Google Maps street view shows much of the cluster removed from the site.

As part of the current land use submittal, the applicant has indicated that a total of five trees within the construction zone will be removed as part of this development. See sections below for mitigation details. The remainder of the findings for this chapter are for the proposed trees to be removed ad part of this submittal. The conditioned future Type I review will be reviewed separately and is above and beyond whatever is conditions/required to be mitigated as part of this application.

17.41.030 - Tree protection—Conflicting code provisions.
Except as otherwise specified in this section, where these standards conflict with adopted city development codes or policies, the provision which provides the greater protection for regulated trees or groves, as defined in OCMC 17.04, shall govern.
Finding: Compies. No conflict has been identified.

17.41.040 - Exemptions.
These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the Natural Resource Overlay District (NROD) of OCMC 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930, for farm or forestlands. These regulations to not apply to the removal of trees that are considered invasive species. An applicant for development may claim exemption from compliance with these standards if the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The Community Development Director has the authority to modify or waive compliance in this case.
Finding: Complies. The applicant has not indicated that the site was a *designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application*

17.41.050 - Compliance options.
Applicants for review shall comply with these requirements through one or a combination of the following procedures:

A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to OCMC 17.41.060.
B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to OCMC 17.41.080; or
C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to OCMC 17.41.110; or
D. Option 4—Cash-in-lieu of planting pursuant to OCMC 17.41.120.
Finding: Complies with Condition The total number of mitigation trees required to be planted is 10. Prior to the release of Building Permits, the applicant shall demonstrate that all mitigation trees identified above are in excess of any required landscape plantings required by OCMC 17.62 and OCMC 17.52 or provide an alternate mitigation approach per 17.41 to account for the needed trees.

17.41.060 - Tree removal and replanting—Mitigation (Option 1).
A. Applicants for development who select this option shall ensure that all healthy trees shall be preserved outside the construction area as defined in OCMC 17.04 to the extent practicable. Preserved trees are subject to Option 3 of this Chapter. Compliance with these standards shall be demonstrated in a tree mitigation plan report prepared by a certified arborist, horticulturalist or forester or other environmental professional with experience and academic credentials in forestry or arboriculture. Tree inventories for the purposes of mitigation calculations may be prepared by a licensed surveyor. At the applicant's expense, the City may require the report to be reviewed by a consulting arborist. The number of replacement trees required on a development site shall be calculated separately from, and in addition to, any public or street trees in the public right-of-way required under OCMC 12.08— Public and Street Trees, any required tree planting in parking lots, and any trees planted in pedestrian and bicycle accessways.
Finding: Complies Mitigation is proposed for trees to be removed.

B. The applicant shall determine the number of trees to be mitigated on the site by counting all of the trees six-inch DBH (minimum four and one-half feet from the ground) or larger on the entire site and either:
1. Trees that are removed outside of the construction area shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2; or
2. Dying, diseased or hazardous trees, when the condition is verified by a certified arborist to be consistent with the definitions in OCMC 17.04, may be removed from the tree replacement calculation. Dead trees may also be removed from the calculation, with the condition of the tree verified either by the Community Development Director or by a certified arborist at the applicant's expense, when the Community Development Director cannot make a determination. To the extent that the Community Development Director determines that the dead, dying, hazardous or diseased condition of the tree is the result of intentional action, the removal of that tree shall require mitigation pursuant to Column 2 of Table 17.41.060-1.
Finding:

Table 17.41.060-1
Tree Replacement Requirements

Size of tree removed (DBH)	*Column 1* *Number of trees to be planted.* *(If removed **Outside** of construction area)*	*Column 2* *Number of trees to be planted.* *(If removed **Within** the construction area)*

6 to 12"	*3*	*1*
13 to 18"	*6*	*2*
19 to 24"	*9*	*3*
25 to 30"	*12*	*4*
31 and over"	*15*	*5*

Steps for calculating the number of replacement trees:

1. Count all trees measuring six inches DBH (minimum four and one-half feet from the ground) or larger on the entire development site.

2. Designate the size (DBH) of all trees pursuant to accepted industry standards.

3. Document in a certified arborist report any trees that are currently dead, dying, diseased or hazardous.

4. Subtract the number of dead, dying, diseased or hazardous trees in step 3 from the total number of trees on the development site in step 1. The remaining number is the number of healthy trees on the site. Use this number to determine the number of replacement trees in steps 5 through 8.

5. Identify the construction area (as defined in OCMC 17.04.230).

6. Determine the number and diameter of trees to be removed within the construction area. Based on the size of each tree, use Column 2 to determine the number of replacement trees required.

7. Determine the number and diameter of trees to be removed outside of the construction area. Based on the size of each tree, use Column 1 to determine the number of replacement trees required.

8. Determine the total number of replacement trees from steps 6 and 7.

Finding: Complies with Condition The total number of mitigation trees required to be planted is 10. Prior to the release of Building Permits, the applicant shall demonstrate that all mitigation trees identified above are in excess of any required landscape plantings required by OCMC 17.62 and OCMC 17.52 or provide an alternate mitigation approach per 17.41 to account for the needed trees.

Applicant's Response:

Requirements in Table 17.41.060-1 ***Size of tree removed (DBH)***	*Number of Trees Removed* ***Within*** *the Construction area*	*Number of Mitigation Trees Required (See Table 17.41.060-1)*
6 to 12"	*1*	*1*
13 to 18"	*3*	*6*
19 to 24"	*1*	*3*
25 to 30"	*0*	*0*
31 and over"	*0*	*0*

C. Planting area priority for mitigation.

Development applications which opt for removal of trees with subsequent replanting pursuant to OCMC 17.41.050.A. shall be required to mitigate for tree cutting by complying with the following priority for replanting standards below:

1. First Priority. Replanting on the development site.

2. Second Priority. Off-site replacement tree planting locations. If the Community Development Director determines that it is not practicable to plant the total number of replacement trees on-site, a suitable off-site planting location for the remainder of the trees may be approved that will reasonably

satisfy the objectives of this section. Such locations may include either publicly owned or private land and shall be approved by the Community Development Director.
Finding: Complies. The applicant intends to plant the required trees onsite for the current proposal.

D. Replacement tree planting standards.
1. All replacement trees shall be either two-inch caliper deciduous or six-foot high conifer.
Finding: Complies All replacement trees will be at least 2 inches in caliper.

2. Replacement tree species shall be approved by a landscape architect or certified arborist or shall be found on the City's Native Plant or Street Tree lists.
Finding: Complies All replacement trees will be approved by a landscape architect or certified arborist or shall be found on the City's Native Plant or Street Tree lists.

3. Due to their diminishing range in the region, Oregon white oak (Quercus garryana) trees, if removed, shall be replaced by the same species.
Finding: Not applicable. No while oaks are found onsite.

E. All existing tree(s) in the tract shall be protected by a permanent restrictive covenant or easement approved in form by the City.
Finding: Not applicable. No trees are proposed to be in a tract.

F. Alternative mitigation plan.
The Community Development Director may, subject to a Type II procedure, approve an alternative mitigation plan that adequately protects habitat pursuant to the standards for the Natural Resource Overlay District alternative mitigation plan in OCMC 17.49.190.
Finding: Not applicable. No alternative mitigation plan is being proposed at this time.

17.41.120 - Cash-in-lieu of planting (Option 4).
The applicant may choose this option in-lieu-of or in addition to Compliance Options 1 through 3. In this case, the Community Development Director may approve the payment of cash-in-lieu into a dedicated fund for the remainder of trees that cannot be replanted in the manner described above.
The cash-in-lieu payment per required mitigation tree shall be as listed on the adopted fee schedule and shall be adjusted annually based on the Consumer Price Index. The price shall include 150% of the cost of materials, transportation and planting.
Finding: Complies with Condition. The total number of mitigation trees required to be planted is 10. Prior to the release of Building Permits, the applicant shall demonstrate that all mitigation trees identified above are in excess of any required landscape plantings required by OCMC 17.62 and OCMC 17.52 or provide an alternate mitigation approach per 17.41 to account for the needed trees.

17.41.130 - Regulated tree protection procedures during construction.
A. No permit for any grading or construction of public or private improvements may be released prior to verification by the Community Development Director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the Community Development Director.
B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:
1. Except as otherwise determined by the Community Development Director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including, but not

limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

2. Approved construction fencing, a minimum of four feet tall with steel posts placed no farther than ten feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative may be used with the approval of the Community Development Director.

3. Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the Community Development Director.

4. No construction activity shall occur within the tree protection zone, including, but not limited to; dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

5. The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

6. No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on site and approved by the Community Development Director.

7. No machinery repair or cleaning shall be performed within ten feet of the dripline of any trees identified for protection.

8. Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the Community Development Director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.

9. The Community Development Director may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.

10. The Community Development Director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection. **Finding: Complies with Conditions.** The applicant shall display the tree protection fencing and notices per 17.41.130 on the grading and erosion control plan. (P)

CHAPTER 17.49 – NATURAL RESOURCES OVERLAY DISTRICT

17.49.035 - Addition of wetlands to map following adoption.

The NROD boundary shall be expanded to include a wetland identified during the course of a development permit review if it is within or partially within the mapped NROD boundary and meets the State of Oregon's definition of a "Locally Significant Wetland". In such cases, the entire wetland and its required vegetated corridor as defined in Table 17.49.110 shall be regulated pursuant to the standards of this chapter. The amended NROD boundary may be relied upon by the Community Development Director for the purposes of subsequent development review.

Finding: Not applicable. No addional wetland were found on the site as part of this review.

17.49.040 - NROD permit and review process.
An NROD permit is required for those uses regulated under OCMC 17.49.090, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure, unless an adjustment of standards pursuant to OCMC 17.49.200 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.
Finding: Complies. The applicant has submitted for a type II review of this proposal.

17.49.050 - Emergencies.
The provisions of this ordinance do not apply to work necessary to protect, repair, maintain, or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies. After the emergency has passed, any disturbed native vegetation areas shall be replanted with similar vegetation found in the Oregon City Native Plant List pursuant to the mitigation standards of OCMC 17.49.180. For purposes of this section emergency shall mean any man-made or natural event or circumstance causing or threatening loss of life, injury to person or property, and includes, but is not limited to fire, explosion, flood, severe weather, drought, earthquake, volcanic activity, spills or releases of oil or hazardous material, contamination, utility or transportation disruptions, and disease.
Finding: Not applicable. The applicant is not requesting an emergency review.

17.49.060 - Consistency and relationship to other regulations.
A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the OCMC, other City requirements, regional, state or federal law, the provisions that provides the greater protection of the resource shall govern.
Finding: No conflict has been indentifed as part of this review.

B. Compliance with Federal and State Requirements.
1. If the proposed development requires the approval of any other governmental agency, such as the Division of State Lands or the U.S. Army Corps of Engineers, the applicant shall make an application for such approval prior to or simultaneously with the submittal of its development application to the City. The planning division shall coordinate City approvals with those of other agencies to the extent necessary and feasible. Any permit issued by the City pursuant to this chapter shall not become valid until other agency approvals have been obtained or those agencies indicate that such approvals are not required.
Finding: Complies. The applicant submitted verification to the Army Corp of Engineers and the Division of State Lands.

2. The requirements of this chapter apply only to areas within the NROD and to locally significant wetlands that may be added to the boundary during the course of development review pursuant to OCMC 17.49.035. If, in the course of a development review, evidence suggests that a property outside the NROD may contain a wetland or other protected water resource, the provisions of this chapter shall not be applied to that development review. However, the omission shall not excuse the applicant from satisfying any state and federal wetland requirements which are otherwise applicable. Those requirements apply in addition to, and apart from the requirements of the City's comprehensive plan and this code.
Finding: Complies No additional wetland were found on the site as part of this review.

17.49.070 - Prohibited uses.
The following development and activities are not allowed within the NROD:
A. Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.

B. New lots that would have their buildable areas for new development within the NROD are prohibited.
C. The dumping of materials of any kind is prohibited except for placement of fill as provided in subsection D. below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.
D. Grading, the placement of fill in amounts greater than ten cubic yards, or any other activity that results in the removal of more than ten percent of the existing native vegetation on any lot within the NROD is prohibited, unless part of an approved development activity.
Finding: Complies. None of the above-prohibited activities is proposed within the significant natural resource mapped on the Warner Milne right-of-way or within the buffer

17.49.080 - Uses allowed outright (exempted).
The following uses are allowed within the NROD and do not require the issuance of an NROD permit:
A. Stream, wetland, riparian, and upland restoration or enhancement projects as authorized by the City.
B. Farming practices as defined in ORS 215.203 and farm uses, excluding buildings and structures, as defined in ORS 215.203.
C. Utility service using a single utility pole.
D. Boundary and topographic surveys leaving no cut scars greater than three inches in diameter on live parts of native plants listed in the Oregon City Native Plant List.
E. Soil tests, borings, test pits, monitor well installations, and other minor excavations necessary for geotechnical, geological or environmental investigation, provided that disturbed areas are restored to pre-existing conditions as approved by the Community Development Director.
F. Trails meeting all of the following:
1. Construction shall take place between May 1 and October 30 with hand held equipment;
2. Widths shall not exceed forty-eight inches and trail grade shall not exceed twenty percent;
3. Construction shall leave no scars greater than three inches in diameter on live parts of native plants;
4. Located no closer than twenty-five feet to a wetland or the top of banks of a perennial stream, or no closer than ten feet of an intermittent stream;
5. No impervious surfaces; and
6. No native trees greater than one-inch in diameter may be removed or cut, unless replaced with an equal number of native trees of at least two-inch diameter and planted within ten feet of the trail.
G. Land divisions provided they meet the following standards, and indicate the following on the final plat:
1. Lots shall have their building sites (or buildable areas) entirely located at least five feet from the NROD boundary shown on the City's adopted NROD map. For the purpose of this subparagraph, "building site" means an area of at least 3,500 square feet with minimum dimensions of forty feet wide by forty feet deep;
2. All public and private utilities (including water lines, sewer lines or drain fields, and stormwater disposal facilities) are located outside the NROD;
3. Impervious streets, driveways and parking areas shall be located at least ten feet from the NROD; and
4. The NROD portions of all lots are protected by:
a. A conservation easement; or
b. A lot or tract created and dedicated solely for unimproved open space or conservation purposes.
H. Site Plan and Design Review applications where all new construction is located outside of the NROD boundary shown on the City's adopted NROD map, and the NROD area is protected by a conservation easement approved in form by the City.
I. Routine repair and maintenance of existing structures, roadways, driveways and utilities.
J. Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc., where the ground level impervious surface area is not increased.
K. Measures approved by the City of Oregon City to remove or abate nuisances or hazardous conditions.

~~1.~~ *L. Tree Removal. The Community Development Director may permit the removal of any tree determined to be a dead, hazardous, or diseased tree as defined in OCMC 17.04. Any tree that is removed in accordance with this Section (L) shall be replaced with a new tree of at least ½-inch caliper or at least six foot overall height. An exception to this requirement may be granted if the applicant demonstrates that a replacement tree has already been planted in anticipation of tree removal, or if the existing site conditions otherwise preclude tree replacement (due to existing dense canopy coverage or other ecological reasons).*

~~2.~~ *The replacement tree(s) shall be located in the general vicinity of the removed tree(s), somewhere within NROD on the property. The replacement tree(s) shall be identified on the Oregon City Native Plant List or other locally adopted plant list (e.g. Metro or Portland). The property owner shall ensure that the replacement tree(s) survives at least two years beyond the date of its planting.*

M. Planting of native vegetation and the removal of non-native, invasive vegetation (as identified on the Oregon City Native Plant List or other locally adopted plant list (e.g. Metro or Portland), or as recommended by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, arboriculture, horticulture, wildlife biology, botany, hydrology or forestry), and removal of refuse and fill, provided that:

1. All work is done using hand-held equipment;

2. No existing native vegetation is disturbed or removed; and

3. All work occurs outside of wetlands and the top-of-bank of streams.

N. Activities in which no more than one hundred square feet of ground surface is disturbed outside of the bankfull stage of water bodies and where the disturbed area is restored to the pre-construction conditions, notwithstanding that disturbed areas that are predominantly covered with invasive species shall be required to remove the invasive species from the disturbance area and plant trees and native plants pursuant to this Chapter.

O. New fences meeting all of the following:

1. No taller than three and a half feet and of split rail or similar open design.;

2. Two feet width on both sides of fence shall be planted or seeded with native grasses, shrubs, herbs, or trees to cover any bare ground;

3. Six inches of clearance from ground level;

4. Fence posts shall be placed outside the top-of-bank of streams and outside of delineated wetlands.

P. Gardens, fences and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to be maintained but cannot expand further into the overlay district.

Finding: Complies With the approved NROD Verification, all proposed development on the project site will be happening outside of the NROD boundary and vegetated buffer. See the Type II Verification findings later in this document for additional background.

17.49.090 - Uses allowed under prescribed conditions.

The following uses within the NROD are subject to the applicable standards listed in OCMC 17.49.100 through 17.49.190 pursuant to a Type II process:

A. Alteration to existing structures within the NROD when not exempted by OCMC 17.49.080, subject to OCMC 17.49.130.

B. A residence on a highly constrained vacant lot of record that has less than three thousand square feet of buildable area, with minimum dimensions of fifty feet by fifty feet, remaining outside the NROD portion of the property, subject to the maximum disturbance allowance prescribed in OCMC 17.49.120.A.

C. A land division that would create a new lot for an existing residence currently within the NROD, subject to OCMC 17.49.160.

D. Land divisions when not exempted by OCMC 17.49.080, subject to the applicable standards of OCMC 17.49.160.
E. Trails/pedestrian paths when not exempted by OCMC 17.49.080, subject to OCMC 17.49.170 (for trails) or OCMC 17.49.150 (for paved pedestrian paths).
F. New roadways, bridges/creek crossings, utilities or alterations to such facilities when not exempted by OCMC 17.49.080.
G. Roads, bridges/creek crossings Subject to OCMC 17.49.150.
H. Utility lines subject to OCMC 17.49.140.
I. Stormwater detention or pre-treatment facilities subject to OCMC 17.49.155.
J. Institutional, industrial or commercial development on a vacant lot of record situated in an area designated for such use that has more than seventy-five percent of its area covered by the NROD, subject to OCMC 17.49.120.B.
K. City, county and state capital improvement projects, including sanitary sewer, water and storm water facilities, water stations, and parks and recreation projects.
L. Non-hazardous tree removal that is not exempted pursuant to OCMC 17.49.080.K.
M. Fences that do not meet the standards for exemption pursuant to OCMC 17.49. 080.O.4.

Finding: Complies With the approved NROD Verification, all proposed development on the project site will be happening outside of the NROD boundary and vegetated buffer. See the Type II Verification findings later in this document for additional background.

17.49.100 - General development standards.
The following standards apply to all Uses Allowed under Prescribed Conditions within the NROD with the exception of rights of ways (subject to OCMC 17.49.150), trails (subject to OCMC 17.49.170), utility lines (subject to OCMC 17.49.140), land divisions (subject to OCMC 17.49.160), and mitigation projects (subject to OCMC 17.49.180 or 17.49.190):
A. Native trees shall be preserved unless they are located within ten feet of any proposed structures or within five feet of new driveways, or if deemed not wind-safe by a certified arborist. Trees listed on the Oregon City Nuisance Plant List or Prohibited Plant List are exempt from this standard and may be removed. A protective covenant shall be required for any native trees that remain;
B. The Community Development Director may allow the landscaping requirements of the base zone, other than landscaping required for parking lots, to be met by preserving, restoring and permanently protecting habitat on development sites in the Natural Resource Overlay District.
C. All vegetation planted in the NROD shall be native and listed on the Oregon City Native Plant List or other locally adopted plant list (e.g. Metro or Portland), or as recommended by an environmental professional with experience and academic credentials in one or more natural resource areas such as ecology, arboriculture, horticulture, wildlife biology, botany, hydrology or forestry);
D. Grading is subject to installation of erosion control measures required by the City;
E. The minimum front, street, or garage setbacks of the base zone may be reduced to any distance between the base zone minimum and zero in order to minimize the disturbance area within the NROD portion of the lot;
F. Any maximum required setback in any zone, such as for multi-family, commercial or institutional development, may be increased to any distance between the maximum and the distance necessary to minimize the disturbance area within the NROD portion of the lot;
G. Fences in compliance with OCMC 17.49.080.N;
H. Exterior lighting shall be placed or shielded so that they do not shine directly into resource areas;
I. If development will occur within the one hundred-year floodplain, the standards of OCMC 17.42 shall be met; and
J. Mitigation of impacts to the regulated buffer is required, subject to OCMC 17.49.180 or 17.49.190.

Finding: Complies. The applicant is not proposing prescribed conditions. With the approved NROD Verification, all proposed development on the project site will be happening outside of the NROD boundary and vegetated buffer. See the Type II Verification findings later in this document for additional background.

17.49.110 - Width of vegetated corridor.
A. Calculation of Vegetated Corridor Width within City Limits. The NROD consists of a vegetated corridor measured from the top of bank or edge of a protected habitat or water feature. The minimum required width is the amount of buffer required on each side of a stream, or on all sides of a feature if non-linear. The width of the vegetated corridor necessary to adequately protect the habitat or water feature is specified in Table 17.49.110.

Table 17.49.110

Protected Water Feature Type (see definitions)	*Slope Adjacent to Protected Water Feature*	*Starting Point for Measurements from Water Feature*	*Width of Vegetated Corridor (see Note 1)*
Anadromous fish-bearing streams	*Any slope*	*• Edge of bankfull flow*	*200 feet*
Intermittent streams with slopes less than 25 percent and which drain less than 100 acres	*< 25 percent*	*• Edge of bankfull flow*	*15 feet*
All other protected water features	*< 25 percent*	*•Edge of bankfull flow • Delineated edge of Title 3 wetland*	*50 feet*
	≥25 percent for 150 feet or more (see Note 2)		*200 feet*
	≥25 percent for less than 150 feet (see Note 2)		*Distance from starting point of measurement to top of ravine (break in ≥25 percent slope) (See Note 3) plus 50 feet.*

Notes:
1. Required width (measured horizontally) of vegetated corridor unless reduced pursuant to the provisions of OCMC 17.49.120.
2. Vegetated corridors in excess of fifty feet apply on steep slopes only in the uphill direction from the protected water feature.
3. Where the protected water feature is confined by a ravine or gully, the top of the ravine is the break in the ≥25 percent slope.
Finding: Complies with Condition. The project complies with this standard. The designated vegetated corridor width is 15 feet based on stream type, drainage basin area, slopes, and fish-bearing. No disturbance may be performed within the delineated 15 -foot buffer without additional Type I or Type II review beyond the native grass submitted with the approved landscaping plan.

17.49.120 - Maximum disturbance allowance for highly constrained lots of record.
In addition to the General Development Standards of OCMC 17.49.100, the following standards apply to a vacant lot of record that is highly constrained by the NROD, per OCMC 17.49.090.B and 17.49.090.F:

A. Standard for Residential Development. In the NROD where the underlying zone district is zoned Residential (R-10, R-8, R-6, R-5, R-3.5): the maximum disturbance area allowed for new residential development within the NROD area of the lot is three thousand square feet.
Finding: Not Applicable. This is not a highly constrained lot of record

17.49.130 - Existing development standards.
In addition to the General Development Standards of OCMC 17.49.100, the following standards apply to alterations and additions to existing development within the NROD, except for trails, rights of way, utility lines, land divisions and mitigation projects. As of June 1, 2010, applicants for alterations and additions to existing development that are not exempt pursuant to OCMC 17.49.080.J. shall submit a Type II or Type III application pursuant to this section.
Mitigation is required, subject to OCMC 17.49.180 or 17.49.190.
Finding: Not Applicable This proposal is for a new development.

17.49.140 - Standards for utility lines.
The following standards apply to new utilities, private connections to existing or new utility lines, and upgrades of existing utility lines within the NROD:
Finding: Not Applicable This proposal is not a utility line

17.49.150 - Standards for vehicular or pedestrian paths and roads.
The following standards apply to public rights-of-way and private roads within the NROD, including roads, bridges/stream crossings, driveways and pedestrian paths with impervious surfaces:
A. Stream crossings shall be limited to the minimum number and width necessary to ensure safe and convenient pedestrian, bicycle and vehicle connectivity, and shall cross the stream at an angle as close to perpendicular to the stream channel as practicable. Bridges shall be used instead of culverts wherever practicable.
Finding: Not Applicable This proposal is not a pedestrian path or road.

17.49.155 - Standards for stormwater facilities.
Approved facilities that infiltrate stormwater on-site in accordance with Public Works Low-Impact Development standards, including but not limited to; vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins, and their associated piping, may be placed within the NROD boundary pursuant to the following standards:
Finding: Not Applicable This proposal is not placing the Stomwater facility in the regulated NROD buffer

17.49.160 - Standards for land divisions.
Other than those land divisions exempted by OCMC 17.49.070.G., new residential lots created within the NROD shall conform to the following standards.
A. For a lot for an existing residence currently within the NROD. This type of lot is allowed within the NROD for a residence that existed before the NROD was applied to a subject property. A new lot for an existing house may be created through a partition or subdivision process when all of the following are met:
Finding: Not Applicable This proposal is not a land divsion
17.49.170 - Standards for trails.
All trails that are not exempt pursuant to OCMC 17.49.80.F shall be processed through a Type II or Type III process pursuant to this chapter; and shall provide mitigation, subject to OCMC 17.49.180 or 17.49.190.
Finding: Not Applicable This proposal is not a trail

17.49.180 - Mitigation standards.
The following standards (or the alternative standards of OCMC 17.49.190) apply to required mitigation:

A. Mitigation shall occur at a two-to-one ratio of mitigation area to proposed NROD disturbance area. Mitigation of the removal or encroachment of a wetland or stream shall not be part of this chapter and will be reviewed by the Division of State Lands or the Army Corp of Engineers during a separate review process;

Finding: Not Applicable The applcaint has requested a Type II verification for this site. all proposed development on the project site will be happening outside of the NROD boundary and vegetated buffer

17.49.250 - Verification of NROD boundary.

The NROD boundary may have to be verified occasionally to determine the true location of a resource and its functional values on a site. This may be through a site specific environmental survey or a simple site visit in those cases where existing information demonstrates that the NROD significance rating does not apply to a site-specific area. Applications for development on a site located in the NROD area may request a determination that the subject site is not in an NROD area and therefore is not subject to the standards of OCMC 17.49.100. Verifications shall be processed as either a Type I or Type II process.

Finding: Complies. Based on the findings in the NROD Delineation Technical Memorandum by Ivy Watson, a Natural Resources Scientist, and reviewed by DSL and USACE, HHPR has determined that no protected water features are present on either tax lot (1400 or 1402) on the project site. One protected water feature, an intermittent stream (seen as Drainage A on the map), was delineated within the Warner Milne Road right-of-way adjoining tax lot 1402. The determined vegetated corridor for Drainage A downstream reach is 15 feet and is located partially within the Warner Milne ROW and tax lot 1402. Therefore, the applicant is requesting a verification of the NROD boundary on the project site to remove all areas that do not include significant features. This boundary and buffer is shown on the attached NROD site plan in the Delineation Memo.

17.49.255 - Type I verification.

A. Applicants for a determination under this section shall submit a site plan meeting the requirements of OCMC 17.49.220, as applicable.

B. An applicant may request a Type I Verification determination by the Community Development Director. Such requests may be approved provided that there is evidence substantiating that all the requirements of this chapter relative to the proposed use are satisfied and demonstrates that the property also satisfies the following criteria, as applicable:

1. No soil, vegetation, hydrologic features have been disturbed;

2. No hydrologic features have been changed;

3. There are no man-made drainage features, water marks, swash lines, drift lines present on trees or shrubs, sediment deposits on plants, or any other evidence of sustained inundation.

4. The property does not contain a wetland as identified by the City's Local Wetland Inventory or Water Quality and Flood Management Areas map.

5. There is no evidence of a perennial or intermittent stream system or other protected water feature. This does not include established irrigation ditches currently under active farm use, canals or manmade storm or surface water runoff structures or artificial water collection devices.

6. Evidence of prior land use approvals that conform to the Natural Resource Overlay District, or which conformed to the Water Quality Resources Area Overlay District that was in effect prior to the current adopted NROD (Ord. 99-1013).

7. There is an existing physical barrier between the site and a protected water feature, including:

a. Streets, driveways, alleys, parking lots or other approved impervious areas wider than fifteen feet and which includes drainage improvements that are connected to the City storm sewer system, as approved by the City.

b. Walls, buildings, drainages, culverts, topographic features or other structures which form a physical barrier between the site and the protected water features, as approved by the City.

C. If the City is not able to clearly determine, through the Type I verification process that the applicable criteria subsection B.1.—B.7 above are met, the verification application shall be denied. An applicant may then opt to apply for a verification through the Type II process defined below.
Finding: Not applicable. This proposal is being reviewed as Type II review as there is some evidence of intermittent stream at the Warner Milne frontage.

17.49.260. - Type II verification.
Verifications of the NROD which cannot be determined pursuant to the standards of OCMC 17.49.255 may be processed under the Type II permit procedure.
A. Applicants for a determination under this section shall submit a site plan meeting the requirements of OCMC 17.49.220 as applicable.
B. Such requests may be approved provided that there is evidence that demonstrates in an environmental report prepared by one or more qualified professionals with experience and credentials in natural resource areas, including wildlife biology, ecology, hydrology and forestry, that a resource function(s) and/or land feature(s) does not exist on a site-specific area.
C. Verification to remove a recently developed area from the NROD shall show that all of the following have been met:
1. All approved development in the NROD has been completed;
2. All mitigation required for the approved development, located within the NROD, has been successful; and
3. The previously identified resources and functional values on the developed site no longer exist or have been subject to a significant detrimental impact.
Finding: Complies. The study area is located within the City of Oregon City Local Wetland Inventory (LWI) (Shapiro Inc. 1999). The City of Oregon City Local Wetland Inventory shows a stream feature along the eastern edge of the study area that corresponds to Drainage A. The Local Wetland Inventory does not specify the flow regime of the stream feature as to whether it is a stream or an intermittent stream. The LWI does not show any wetlands or waters within the study area. The submitted wetland report further refines the Local Wetland Inventory through the Type II Verification process.

Based on the findings in the NROD Delineation Technical Memorandum by Ivy Watson, a Natural Resources Scientist, and reviewed by the Division of State Lands (DSL) and the United State Army Corp of Engineers (USACE), she determined that there are two distinct features onsite; an artificial watercourse (Drainage A upstream) and an intermittent stream (Drainage A downstream)

The applicant is requesting a verification of the NROD boundary on the project site to remove all areas that do not include protected features. This boundary and buffer are shown on the attached NROD site plan in the Delineation Memo and adopted by the USACE and DSL.

The report found that the small section near the Warner Milne frontage (Drainage A intermittent) presented some channelization over time and evidence of macroinvertebrates in the section, which may have traveled upstream south Warner Milne and were stranded in this location. While the applicant believes this section is also an artificial watercourse, they have chosen to accept the buffer for this section with the presence of additional channelization and macroinvertebrates in the small stretch.

Staff finds that there is adequate evidence in the record to demonstrate that the (Drainage A upstream) resource is not an intermittent stream and rather is an artificial watercourses that was not used to convey streams naturally occurring prior to the construction of such watercourses. The Drainage A downstream portion of the site was not contested and will remain a protected intermittent stream.

17.04.970 - Protected water features.
"Protected water features" shall include:
1. Title 3 wetlands;
2. Rivers and perennial and intermittent streams*;*
3. Springs which feed stream *and wetlands and have year-round flow; and*
4. Natural lakes.

The applicant, USACE, and DSL refer to portions of the water feature on site as an ephemeral stream which is not regulated by OCMC 17.49. The OCMC does not define “ephemeral stream.” The OCMC definition of an intermittent stream is in:

17.04.1205 - Stream.
"Stream" means areas where surface water produces a defined channel or bed, including bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed does not have to contain water year-round. This definition is not meant to include irrigation ditches, canals, storm or surface water runoff structures, or other artificial watercourses unless they are used to convey streams naturally occurring prior to construction of such watercourses. Streams are categorized into two classes: Perennial streams and intermittent streams. Perennial stream means a stream that flows year-round during years of normal precipitation. Intermittent stream means a stream that flows only part of the year, or seasonally, during years of normal precipitation.

The delineation of an ephemeral stream is not relevant to the Oregon City verification process, which determines if the resource meets or does not meet the definition of a stream. In this instance, the burden is on the applicant to show that the resource is an irrigation ditch, canal, storm or surface water runoff structure, or other artificial watercourses not used to convey streams naturally occurring prior to the construction of such watercourse

The Technical Memorandum by Ivy Watson, a Natural Resources Scientist, indicates that the resource is an artificial watercourse, reflects the predominate grass species of the flat upland portion of the site, does not have evidence of macroinvertebrates, and any inundation is related to stormwater events and not naturally occurring flows.

Staff has used the following information found in page 4 of the wetland report to determine that the upstream Drainage A reach does not meet the definition of a stream.

- *Drainage A is an excavated channel along the east edge of the study area.*
- *The channel is grass-lined with vegetation similar to the surrounding field (e.g. colonial bentgrass, tall fescue, bluegrasses [Poa spp.], rough cat’s ear, common selfheal [Prunella vulgaris], common dandelion, and English plantain).*
- *Channel morphology appeared to be the result of excavation rather than flow. At the end of Kamm Street, where the channel bends sharply, and at the south end near the transition to the downstream reach, scour marks were observed on the bank. These were used to extend the OHWM into the rest of the channel.*
- *The channel was dry during the field investigation and no saturation or hyporheic flow was detected in an auger hole to a depth of 24 inches (located at SP2).*
- *Where present, scour marks in this reach are interpreted as the result of high flows in response to storm events. Conversations with neighbors confirmed that the channel fills quickly in response to storm events and has been known to flood (i.e., the flow regime is flashy).*
- *No aquatic macroinvertebrates were found in this reach.*

A letter dated August 24, 2021 from the Army Corps of Engineers supports the applicant's findings and indicates "*The Corps has determined there are no waters of the U.S. within the review area. The enclosed drawings (Enclosure 1) identify the review area for this determination. The enclosed Approved Jurisdictional Determination Form (Interim) (Enclosure 2*)" Enclosure 2, an exhibit to the USACE determination letter was not attached to the wetland report, but generally provides a more detailed set of findings for the USACE determinations.

A letter date July 15, 2021 from the Division of State Lands indicates that they only see the downstream portion of the ditch to be an intermittent stream and a Water of the State*. "Based upon the information presented in the report, we concur with the waterway boundaries as mapped in Figure 6 of the report"*

David Evans and Associates (DEA) was contracted by the city to provide a third-party review of the applicant's submittal. In a letter dated April 11, 2022, (Exhibit 8), DEA concurred that no wetlands are on the site. Furthermore, DEA agreed with the applicant regarding the water feature on the site and found that it did not meet the OCMC definitions of a perennial or intermittent stream and should not be viewed as a regulated water feature or NROD resource.

Neighborhood comments relating to stormwater concerns and any high-water table in the area are addressed in the stormwater chapters of this report. They are not directly related to the wetlands report and stream definition/delineation, which is the focus of this Type II verification process. Neighborhood public comments have not provided specific evidence that contradicts the findings found in the applicant's wetlands report and concurrence letter from USACE and DSL or the letter from DEA..

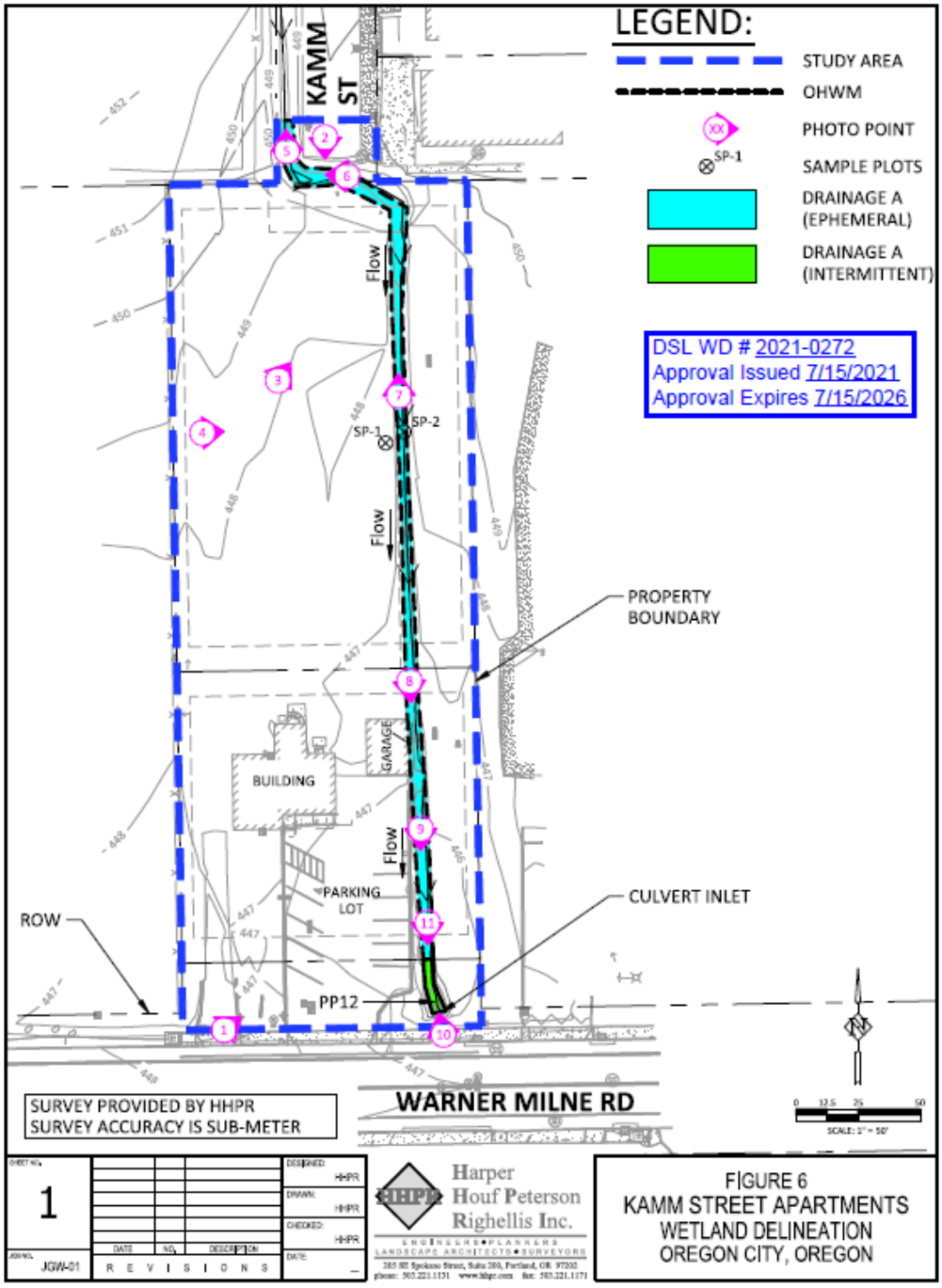


Figure 10- wetland delineation

Photograph 10: View looking north, along Drainage A from the Warner Milne Road culvert. The downstream reach, with bare bed and riprap, can be seen in the foreground. The yellow dashes indicate the reach boundary. Photograph taken April 12, 2021.

Photograph 7: View looking north towards Kamm Street showing the channel of Drainage A Vegetation and morphology within the channel is typical of the upstream reach: vegetation simila to the surrounding field and a u-shaped cross section. Photograph taken April 12, 2021.

Photograph 6: View looking west showing the Drainage A channel at the end of Kamm Street. Kamm Street is on the right. The field is to the left. Photograph taken April 12, 2021.

Photograph 2: View to the south from Kamm Street, showing the open field and building in the study area. Blue dashes indicate the approximate location of Drainage A. Photograph taken April 12, 2021.

17.49.265 - Corrections to violations.

For correcting violations, the violator shall submit a remediation plan that meets all of the applicable standards of the NROD. The remediation plan shall be prepared by one or more qualified professionals with experience and credentials in natural resource areas, including wildlife biology, ecology, hydrology and forestry. If one or more of these standards cannot be met, then the applicant's remediation plan shall demonstrate that there will be:

A. No permanent loss of any type of resource or functional value listed in OCMC 17.49.10, as determined by a qualified environmental professional;

B. A significant improvement of at least one functional value listed in OCMC 17.49.10, as determined by a qualified environmental professional; and

C. There will be minimal loss of resources and functional values during the remediation action until it is fully established.

Finding: The identified tree removal area in 2018 is not located within the revised NROD buffer for the downstream intermittent stream and therefore is not subject to this section of the application.

CHAPTER 17.50 – ADMINISTRATION AND PROCEDURES

17.50.050 – Pre-application conference.

A Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.

1. To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.

2. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.

3. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.

B. A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have not been significantly amended. In no case shall a pre-application conference be valid for more than one year.

Finding: Complies Pre-app conference meeting was held on March 24, 2021. A thirty extension was granted by the city on September 24, 2021.

17.50.055 - Neighborhood association meeting.

Neighborhood Association Meeting. The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.

A. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for

other projects than those identified above, a meeting with the neighborhood association is highly recommended.

B. The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the Citizen Involvement Committee.

C. A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, Citizen Involvement Committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a City facility.

D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the Citizen Involvement Committee.

E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.

Finding: Complies The project was presented to the neighborhood association at a meeting on September 14, 2021. Meeting notification, sign-in sheet, and summary are included in the applicant's submittal.

17.50.090 - Public notices.

All public notices issued by the city announcing applications or public hearings of quasi-judicial or legislative actions, shall comply with the requirements of this section.

A. Notice of Type II Applications. Once the community development director has deemed a Type II application complete, the city shall prepare and send notice of the application, by first class mail, to all record owners of property within three hundred feet of the subject property and to any city-recognized neighborhood association whose territory includes the subject property. The applicant shall provide or the city shall prepare for a fee an accurate and complete set of mailing labels for these property owners and for posting the subject property with the city-prepared notice in accordance with OCMC 17.50.100. The city's Type II notice shall include the following information:

1. Street address or other easily understood location of the subject property and city-assigned planning file number;

2. A description of the applicant's proposal, along with citations of the approval criteria that the city will use to evaluate the proposal;

3. A statement that any interested party may submit to the city written comments on the application during a fourteen-day comment period prior to the city's deciding the application, along with instructions on where to send the comments and the deadline of the fourteen-day comment period;

4. A statement that any issue which is intended to provide a basis for an appeal shall be raised in writing during the fourteen-day comment period with sufficient specificity to enable the city to respond to the issue;

5. A statement that the application and all supporting materials may be inspected, and copied at cost, at city hall during normal business hours;

6. The name and telephone number of the planning staff person assigned to the application or is otherwise available to answer questions about the application;

7. The notice shall state that a city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

17.50.100 - Notice posting requirements.

Where this chapter requires notice of a pending or proposed permit application or hearing to be posted on the subject property, the requirements of this section shall apply.

A. City Guidance and the Applicant's Responsibility. The City shall supply all of the notices which the applicant is required to post on the subject property and shall specify the dates the notices are to be posted and the earliest date on which they may be removed. The City shall also provide a statement to be signed and returned by the applicant certifying that the notice(s) were posted at the correct time and that if there is any delay in the City's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the applicable decision-making time limit in a timely manner.

B. Number and Location. The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and motorists. Notices shall not be posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

Finding: Complies The Applicant turned in the Application on November 5, 2021. It was deemed complete on January 2, 2022. The 120-day deadline is May 3, 2022, with an additional extension given to May 20, 2022. The Public Notice was posted and mailed to residents for a two week public comment period ending January 19, 2022

17.50.140 – Financial guarantees.

When conditions of permit approval require a permitee to construct certain public improvements, the City shall require the permitee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.

A. Form of Guarantee. Guarantees shall be in a form approved by the City Attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.

B. Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.

1. After Final Approved Design by The City: The City may request the Permittee to submit a Performance Guarantee for construction of certain public improvements. A permitee may request the option of submitting a Performance Guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.

2. Before Complete Design Approval and Established Engineered Cost Estimate: The City may request a permittee to submit a Performance Guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by *the permittee's engineer and approved by the City Engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.*

C. Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City Engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.

D. Fee-in-lieu. When conditions of approval or the City Engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City Engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City Attorney.

Finding: Complies as conditioned. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided prior to receiving a permit and beginning construction. The estimated costs shall be supported by a verified engineering estimate and approved by the city engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the city. The City engineer has not allowed the permittee to provide a fee-in-lieu of actual construction of public improvements. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.50.141 – Public improvements – Warranty

All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City Engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.

A. Duration of Warranty. Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.

B. Financial Guarantee. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.

C. Amount of Warranty. The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two year maintenance period), and shall

be supported by a verified engineering estimate and approved by the City Engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.

D. Transfer of Maintenance. The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City Engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public improvements shall occur when the City accepts the improvements at the end of the two year warranty period.

Finding: Complies as conditioned. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided prior to occupancy. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.010 - Applicability.
The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. This chapter does not apply to single-family attached, detached residential dwellings and duplexes.
Finding: Applies. The proposal includes a new or expansion to an existing parking lot.

17.52.020 - Number of automobile spaces required.
A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020		
LAND USE	*PARKING REQUIREMENTS*	
	MINIMUM	*MAXIMUM*
Multifamily Residential	*1.00 per unit*	*2.5 per unit*
3-4 Plex Residential	*2.00*	*4*
Hotel, Motel	*1.0 per guest room*	*1.25 per guest room*
Correctional Institution	*1 per 7 beds*	*1 per 5 beds*
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes	*1 per 7 beds*	*1 per 5 beds*
Hospital	*2.00*	*4.00*
Preschool Nursery/Kindergarten	*2.00*	*3.00*
Elementary/Middle School	*1 per classroom*	*1 per classroom + 1 per administrative employee + 0.25 per seat in auditorium/assembly room/stadium*
High School, College, Commercial School for Adults	*0.20 per # staff and students*	*0.30 per # staff and students*
Auditorium, Meeting Room, Stadium, Religious Assembly Building, movie theater,	*.25 per seat*	*0.5 per seat*
Retail Store, Shopping Center, Restaurants	*4.10*	*5.00*
Office	*2.70*	*3.33*
Medical or Dental Clinic	*2.70*	*3.33*

Sports Club, Recreation Facilities	*Case Specific*	*5.40*
Storage Warehouse, Freight Terminal	*0.30*	*0.40*
Manufacturing, Wholesale Establishment	*1.60*	*1.67*
Light Industrial, Industrial Park	*1.3*	*1.60*

1. Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.
Finding: Complies as Proposed.

Applicant's Response:

Parking Required:
30 Units @ 1.0 per unit = 30 spaces Minimum
30 Units @ 2.5 per unit = 75 spaces Maximum

Parking Provided:
34 Standard spaces
2 ADA space w/ access aisle
36 Total spaces @ 9' x 19' each

2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the Community Development Director, based upon the requirements of comparable uses listed.
Finding: Complies as Proposed—housing use specified in the table.

3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded, and any fraction of one-half or more shall require one space.
Finding: Complies as Proposed. Fractions were rounded in accordance with this chapter.

4. Fleet vehicle parking shall be accommodated within the maximum parking ratio, except that in GI, CI, and MUE zones, fleet vehicle parking may be included in a parking lot in addition to the maximum number of permitted parking spaces.
Finding: Complies as Proposed. The proposal does not include fleet vehicles in the calculation.

5. A change in use within an existing habitable building located in the MUD Design District or the Willamette Falls Downtown District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.
Finding: Not Applicable. The proposal includes a change in use within an existing habitable building located in the MUD Design District, and thus no additional parking requirements apply.

B. Parking requirements can be met either onsite or offsite by meeting one or multiple of the following conditions:
1. Parking may be located on the same site as the associated use which it is supporting.
Finding: Complies as Proposed. The parking lot is located on the same site as the use it is supporting.

2. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the Community Development Director.
Finding: Complies as Proposed. The applicant has not proposed to reduce the number of stalls onsite based on decreased peak demands due to the mix of uses onsite.

3. Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within one thousand feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.
Finding: Complies as Proposed. Shared parking is not requested.

4. On-Street Parking. On-street parking may be counted toward the minimum standards when it is on the street face abutting the subject land use. An on-street parking space shall not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:
a. Dimensions. The following constitutes one on-street parking space:
1. Parallel parking: twenty-two feet of uninterrupted and available curb;
2. Forty-five and/or sixty-degree diagonal parking: Fifteen feet of curb;
3. Ninety-degree (perpendicular) parking: Twelve feet of curb.
4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.
Finding: Complies as Proposed. The applicant has not proposed to use any on-street parking in their calculations.

C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted.
1. Downtown Parking Overlay. The minimum required number of parking stalls is reduced within the Downtown Parking Overlay by fifty percent.
2. Transit Oriented Development. For projects not located within the Downtown Parking Overlay District, the minimum required number of parking stalls is reduced up to twenty-five percent when:
a. In a commercial center (sixty thousand square feet or greater of retail or office use measured cumulatively within a five hundred foot radius) or
b. When adjacent to multi-family development with over eighty units or
c. Within 1,320 feet of an existing or planned public transit street and within 1,320 feet of the opposite use (commercial center or multi-family development with over eighty units).
3. Tree Preservation. The Community Development Director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a designated heritage tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition.

4. Transportation Demand Management. The Community Development Director shall reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.

A transportation demand management (TDM) program shall be developed to include strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the City determines the plan is not successful, the plan may be revised. If the City determines that no good-faith effort has been made to implement the plan, the City may take enforcement actions.

Finding: Complies as Proposed Parking reductions are not requested.

5. The minimum required number of stalls may be reduced by up to ten percent when the subject property is adjacent to an existing or planned fixed public transit route or within one thousand feet of an existing or planned transit stop.

Finding: Complies as Proposed. Parking reductions are not requested.

17.52.030 - Standards for automobile parking.

A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

Finding: Complies as Proposed. The Transportation Analysis Letter (TAL) dated August 21, 2021, was prepared under the direction of Rick Nys, PE of Greenlight Engineering.

There is an existing driveway utilized by the prior office use. According to the TAL, the exiting driveway will be relocated to the east and will be reduced in width from approximately 36 feet to 24 feet. The new driveway will be approximately 80 feet west of the centerline of the nearest existing driveway to the abutting property to the east, which serves an accounting office. There is not a nearby driveway on the abutting property to the west. The proposal also includes a connection to Kamm Street, a public street that currently terminates at the property's north boundary. The connection is designed to enhance neighborhood connectivity. The engineer indicates driveways will be constructed to a width of 24 feet to meet city standards.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce storm water runoff and improve water quality pursuant to the City's stormwater and low impact development design standards are encouraged.

Finding: Complies as Proposed. The applicant has proposed paved surfaces for all off-street parking spaces and access aisles.

C. Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the City public works stormwater and grading design standards.

Finding: See findings from section 13.12 of this report.

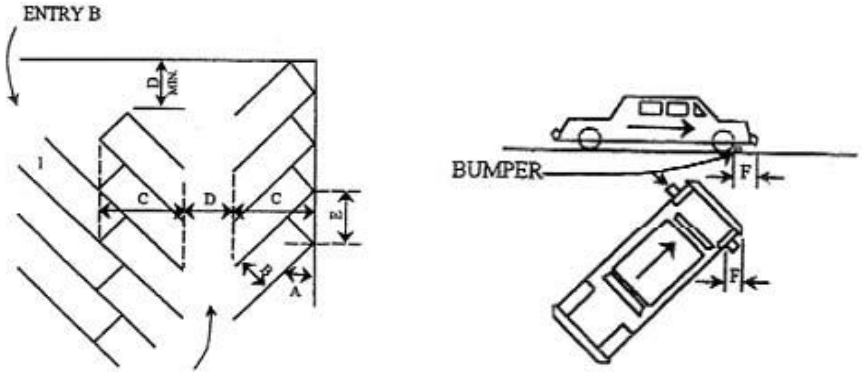
D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard dimensions. The Community Development Director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

PARKING STANDARD
PARKING ANGLE SPACE DIMENSIONS

A Parking Angle		*B Stall Width*	*C Stall to Curb*	*D Aisle Width*	*E Curb Length*	*F Overhang*
0 degrees		*8.5*	*9.0*	*12*	*20*	*0*
30 degrees	*Standard* *Compact*	*9'* *8'*	*17.3'* *14.9'*	*11'* *11'*	*18'* *16'*	
45 degrees	*Standard* *Compact*	*8.5* *8.5*	*19.8'* *17.0'*	*13'* *13'*	*12.7'* *11.3'*	*1.4*
60 degrees	*Standard* *Compact*	*9'* *8'*	*21'* *17.9'*	*18'* *16'*	*10.4'* *9.2'*	*1.7*
90 degrees	*Standard* *Compact*	*9'* *8'*	*19.0'* *16.0'*	*24'* *22'*	*9'* *8'*	*1.5*

All dimensions are to the nearest tenth of a foot.



Finding: Complies. A single 24 ft. wide access driveway will be utilized for ingress and egress. The required clearances for backing up and maneuvering is provided within the parking area onsite. The Parking lot design meets all dimensional standards with all standard size spaces and no compact. Refer to Site Plan.

2. Alternative parking/plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the Community Development Director may approve an

alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.
Finding: Not Applicable. The applicant did request an alternative parking plan.

E. Carpool and Vanpool Parking. New developments with seventy-five or more parking spaces, excluding projects where seventy-five percent or more of the total floor area is residential , and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."
Finding: Not applicable. The proposed project does not have more than 75 parking spaces.

17.52.040 - Bicycle parking standards.
B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the Community Development Director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

*TABLE A Required Bicycle Parking Spaces**

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

USE	*MINIMUM BICYCLE PARKING*	*MINIMUM BICYCLE PARKING - COVERED - The following percentage of bicycle parking is required to be covered*
Multi-family (five or more units)	*1 per 10 units (minimum of 2)*	*50% (minimum of 1)*
Correctional institution	*1 per 15 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Nursing home or care facility	*1 per 30 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Hospital	*1 per 20 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Park-and-ride lot	*1 per 5 auto spaces (minimum of 2)*	*50% (minimum of 1)*
Transit center	*1 per 5 auto spaces (minimum of 2)*	*50% (minimum of 1)*

Parks and open space	*1 per 10 auto spaces (minimum of 2)*	*0%*
Public parking lots	*1 per 10 auto spaces (minimum of 2)*	*50% (minimum of 1)*
Automobile parking structures	*1 per 10 auto spaces (minimum of 4)*	*80% (minimum of 2)*
Religious institutions, movie theater, auditorium or meeting room	*1 per 10 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Libraries, museums	*1 per 5 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Preschool, nursery, kindergarten	*2 per classroom (minimum of 2)*	*50% (minimum of 1)*
Elementary	*4 per classroom (minimum of 2)*	*50% (minimum of 1)*
Junior high and High school	*2 per classroom (minimum of 2)*	*50% (minimum of 2)*
College, business/commercial schools	*2 per classroom (minimum of 2)*	*50% (minimum of 1)*
Swimming pools, gymnasiums, ball courts	*1 per 10 auto spaces (minimum of 2)*	*30% (minimum of 1)*
Retail stores and shopping centers	*1 per 20 auto spaces (minimum of 2)*	*50% (minimum of 2)*
Retail stores handling exclusively bulky merchandise such as automobile, boat or trailer sales or rental	*1 per 40 auto spaces (minimum of 2)*	*0%*
Bank, office	*1 per 20 auto spaces (minimum of 2)*	*50% (minimum of 1)*
Medical and dental clinic	*1 per 20 auto spaces (minimum of 2)*	*50% (minimum of 1)*
Eating and drinking establishment	*1 per 20 auto spaces (minimum of 2)*	*0%*
Gasoline service station	*1 per 10 auto spaces (minimum of 2)*	*0%*

** Covered bicycle parking is not required for developments with two or fewer parking stalls.*

Finding: Complies as Proposed. Required bicycle parking spaces for multi-family = 1 per 10 units @ 30 units = 3 required Covered spaces @ 50% = 1.5 required. The Proposed bicycle parking spaces = 4 uncovered + 5 covered = 9 total

C. Design Standards.

1. Bicycle parking facilities shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, or within the adjacent right-of-way.
Finding: Complies as Proposed. The applicant's narrative identified that the proposed bicycle parking rack will be covered and anchored to the concrete to which bicycles may be secured to.

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.
Finding: Complies as Proposed. The bicycle parking is proposed to be located in front of the building near the entranceway, visible from the street.

3. All bicycle racks shall be designed so that:
a. The bicycle frame is supported horizontally at two or more places.
Finding: Complies as Proposed. The bicycle parking is a standard ribbon design.

b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.
Finding: Complies as Proposed. The bicycle parking is a staple "U" design which allows one wheel to be safely locked.

c. The user is not required to lift the bicycle onto the bicycle rack.
Finding: Complies as Proposed. The bicycle parking does not require the bicycle to be lifted.

d. Each bicycle parking space is accessible without moving another bicycle.
Finding: Complies as Proposed. The bicycle parking spaces are side by side, allowing access to each bicycle independent of the other bicycles on the rack.

e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.
Finding: Complies as Proposed. Each bike rack is approximately 34" tall and 19" wide.

f. *Provides an area of six feet by two feet per bicycle.*

Finding: Complies as Proposed. The bicycle parking

g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.
Finding: Complies as Proposed. The bicycle rack is proposed to be anchored to the ground.

17.52.060 - Parking lot landscaping.
A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.
Finding: Applicable. The applicant proposed parking lot landscaping.

B. Development Standards.

1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.
Finding: Complies as Proposed. The proposed landscaping throughout the parking lot is uniformly distributed.

2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.
Finding: Complies as Proposed. There is no area that is not required for parking space or maneuvering that is not landscaped.

3. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.
Finding: Complies as Proposed. The landscape plan includes a mix of deciduous and coniferous trees spread throughout the interior and perimeter parking lot landscaping.

4. Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List or approved by an arborist;
Finding: Complies as Proposed. The landscape plan identifies that all parking lot trees will be a minimum of two inches in caliper, planted according to American Nurseryman standards, and were approved by an arborist, Jermey Kreel at HHPR

5. At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.
Finding: Complies with as Proposed. The landscaping plan includes landscaped areas planted with ground cover, and that mulch is only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.

6. Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the Community Development Director, that can demonstrate adequate maintenance;
Finding: Complies as Proposed. The applicant submitted an irrigation plan demonstrating compliance with this criterion.

7. All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.
Finding: Complies as Proposed. The landscaping plan indicates that all landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. Parking lots and associated drive aisles shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the Community Development Director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.
1. The perimeter parking lot are[a] shall include:

a. Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;

Finding: Complies as Proposed. The perimeter parking lot landscaping includes trees spaced a maximum of 35 feet apart throughout the parking lot, and a tree on either side of the parking lot entryway.

b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.

Finding: Complies as Proposed. The landscaping plan includes shrubs spaced no more than 4 feet on center on average. The hedge/shrubs are parallel to and not nearer than two feet from the right-of-way line. The required screening allows for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, are provided every thirty feet within evergreen hedges abutting public right-of-ways. A perimeter landscape buffer of at least 5' is provided between the parking area and adjacent properties and the right of way. This buffer is completely landscaped with a variety of trees, shrubs**,** and groundcover.

D. Parking Area/Building Buffer. Except for parking lots with fewer than five parking stalls, parking areas (excluding drive aisles with no adjacent parking) shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:

1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or:

2. Minimum seven foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.

Finding: Complies as Proposed. Screening is provided through a combination of new and existing trees, shrubs, ground cover, grass and a stormwater planter filled with a variety of shrubs and ground cover The parking area is separated from the building with a 7' wide pedestrian pathway with 3' x 5' tree wells at 30' on center. In addition, a small landscape strip of varying width exists between the 7' pathway and the building.

E. Interior Parking Lot Landscaping. Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce storm water runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:

a. A minimum of one tree per four parking spaces.

b. A minimum of 1.5 shrubs per parking space.

Finding: Complies as Conditioned. 36 parking spaces = 1,620 sf of interior landscaping required. Proposed interior landscaping = 1,684 sf within four planting islands on the west side of the parking lot and the single, large planting island at the east side of the parking area surrounding the garbage/recycling enclosure. Nine trees are required to be planted within the interior of the lot based on a total of 36 parking spaces. Eight trees are planted within the interior landscape planting islands, with an additional six trees planted immediately adjacent to the parking spaces on the west side of the lot. Approval under the Alternative Landscaping Plan allowance is requested for trees within the parking lot interior. Refer to the alternate Landscaping section of this chapter for the analysis and mitigation condition of approval.

c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

Finding: Complies Contiguous parking spaces are limited to eight on the west side of the parking area and six on the east side

F. Alternative landscaping plan.

Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the Community Development Director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with A and/or B below.

1. General Review Standard. The alternative shall meet the standards in OCMC 17.62.015- Modifications that will better meet design review requirements.

Finding Complies with Condition: The applicant indicates that the landscape plan as proposed satisfies all requirements of the Oregon City Municipal Code with the exception of the number of trees within the interior of the parking area.

Eight of the nine trees required by code are provided within interior islands. An additional six trees are planted in tree wells along the west side of the parking area immediately adjacent to the paved parking surface. A cluster of four additional trees are located within approximately 10' of the paving at the northeast corner of the site. All of these trees are close enough to the parking area to shade the lot and are evenly distributed throughout the parking area such that the distance between the mature canopy between trees will be less than 30'. Low impact stormwater planters are utilized throughout the site, with the largest planters located adjacent to the parking area to accept surface drainage from the pavement. The use and location of these planters makes the provision of trees within the "interior" of the parking area slightly more difficult; however, we believe that the incorporation of these stormwater systems in conjunction with the overall site and parking area trees and other plantings provides the best and most functional site design. "

Staff agrees that the applicant has proposed an interior landscaping plan that achieves the intent of the code; however, as part of the alternative landscape analysis, the city aims to look to see if the alternate proposal meets or exceeds the code to be modified. In this case, the interior trees provide benefits that range from stormwater filtration, drive isles to speed calming, pedestrian buffering, and general aesthetics. In order to ensure that the final landscaping plan can achieve these benefits, the applicant shall ensure that two additional 2-inch caliper-sized trees are planted onsite above the minimum requirements for the site. Therefore, prior to obtaining a Certificate of Occupancy, the applicant shall confirm the final tree count onsite includes the required minimum trees and two required mitigation

trees as part of the alternate landscape plan. Trees planted onsite to meet OCMC 17.41 Tree Tree Protection, Preservation, Removal And Replanting Standards are above and beyond these requirements.

2. Credit for Pervious/Low Impact Development. The Community Development Director may count up to fifty percent of the square footage of any pervious hardscaped landscape material within a parking lot that is designed and approved pursuant to the City's adopted stormwater and low impact development design standards toward minimum landscaping requirements for the site. (This includes porous pavement detention, open celled block pavers, porous asphalt, porous concrete pavement, porous turf, porous gravel, etc.).

Finding: Not Applicable No pervious hardscaping is proposed

17.52.080 - Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

a. It will not interfere with the maintenance or repair of any public utility;

b. It will not restrict pedestrian or vehicular access; and

c. It will not constitute a traffic hazard due to reduced visibility.

Finding: Complies as Proposed. The applicant's narrative identified that the landscaped areas will be maintained by the owner in accordance with this section.

17.52.090 - Loading areas.

B. Applicability.

OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The City Engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.

Finding: Not applicable. The development does not propose loading areas to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week.

C. Standards.

1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the City Engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.

Finding: Not applicable. The development does not propose loading areas to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week.

2. Where parking areas are prohibited between a building and the street, loading areas or drive isles are also prohibited.

Finding: Not applicable. The development does not propose loading areas to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week.

3. The City Engineer and decision maker, through site plan and design review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

a. Short in duration (i.e., less than one hour);

b. Infrequent (less than three operations daily between 5:00 a.m. and 12:00 a.m. or all operations between 12:00 a.m. and 5:00 a.m. at a location that is not adjacent to a residential zone);

c. Does not obstruct traffic during peak traffic hours;

d. Does not interfere with emergency response services; and

e. Is acceptable to the applicable roadway authority.

Finding: Not applicable. The development does not propose loading areas adjacent to or within a street right-of-way.

CHAPTER 17.54 – SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS

17.54.100 Fences, Hedges, Walls, and Retaining Walls.

A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:

1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5-feet in total height as measured from the finished grade at any point on the fence.

2. A fence, hedge, wall, located next to, or behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:

a. Six feet in total height for residential properties with less than five units as measured from the finished grade at any point on the fence; or

b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.

3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.
4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.
5. Property owners shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.
6. Retaining walls completely below the elevation of the right-of-way may be up to six feet in height.
7. Minimum fall protection required by the Building Official, such as railings, is not included in the height of a retaining wall but must comply with the fence height requirements.
Finding: Complies Though not required, the applicant has indicated that they will build a 6-foot wood fence at the property lines.

B. When no other practicable alternative exists, the City Engineer may permit a fence, hedge, wall, retaining wall, or combination thereof to be located within the right-of-way subject to all of the following:
1. A Revocable Permanent Obstruction in the Right of Way permit is granted per OCMC 12.04.120;
2. Retaining walls, fences, or hedges comply with OCMC 17.54.100.A, unless determined to be impracticable by the City Engineer.
3. The abutting property owner shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.
Finding: *Not applicable*. There are no proposed fences in the ROW to be used on the project site.

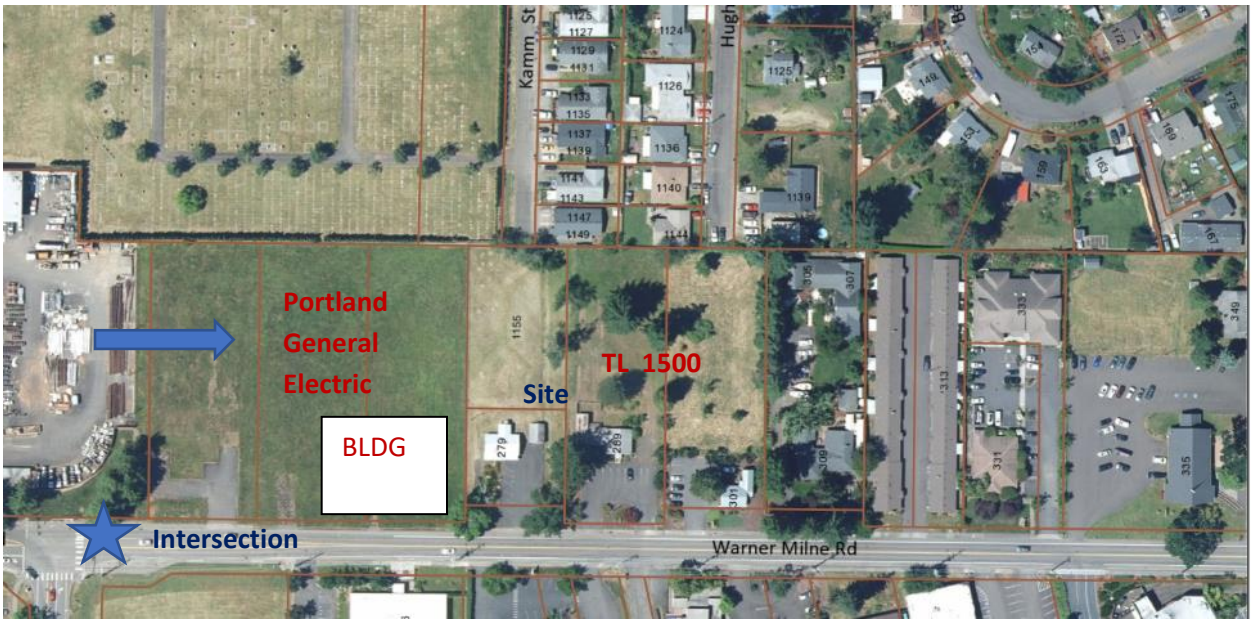
C. It is unlawful for any person to erect any electric fence or any fence constructed in whole or in part of barbed wire or to use barbed wire, except as erected in connection with security installations at a minimum height of six feet, providing further that prior written approval has been granted by the City Manager.
Finding:*Not applicable*. There are no electric fences or barbed wire material proposed to be used on the project site.

CHAPTER 17.62 – SITE PLAN AND DESIGN REVIEW

17.62.015 - Modifications that will better meet design review requirements.
The review body shall consider modification of certain site related development standards of this Chapter specified below. These modifications may be approved as part of a Type II design review process.

A. Applicability.
1. This process shall apply to modifications to:
a. Landscaping in OCMC 17.62.050.A;
b. Vehicular Connections to Adjoining Properties in OCMC 17.62.050.B.2;
c. On-site pedestrian circulation in OCMC 17.62.050.C;
d. Utility Undergrounding Requirements in OCMC 16.12.095.G;
e. Building location in OCMC 17.62.055.D;
f. Building Details in OCMC 17.62.050.B.9.055.I;
g. Windows in OCMC 17.62.050.B.10.055.JParking Lot Landscaping in OCMC 17.52.060.
h. **Finding: Complies as Proposed.** The Applicant has not request a modification to the Vehicular Connections to Adjoining Properties in OCMC 17.62.050.B.2; however staff has provided additional information to show compliance with this section. The applicant, through the conditions of approval is connecting the site to Kamm and Warner Milne Streets. However, staff has additionally provided findings to support not requiring an East/west connection to Tax Lots

The subject site is comprised of two tax lot that together provides a vertical connection to Warner Milne Road. The east-west connection options are problematic. Portland General Electric (PGE) recently purchased the tax lots to the west, which will allow them to expand their yard area and build a new office building (PA 21-16). Providing a connection to Kamm Street from the intersection of Warner Milne and Beavercreek (blue star) would be helpful in limiting non signalized turns on Warner Milne. However, the yard expansion precludes the ability to connect Kamm Street to a signalized intersection. Therefore, an East/West connection to the PGE site or to TAX Lot 1500 and its neighbor does not provide an overarching city benefit and could greatly reduce the development size of the parcel.



B. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:

1. The modification will result in a development that better meets the applicable design guidelines; and

2. The modification meets the intent of the standard. On balance, the proposal will be consistent with the purpose of the standard for which a modification is requested.

Findings: Complies with Condition. The proposal provides both vehicle and pedestrian connections to and from the site in a location that provides a public benefit and reduces the need for out of the way travel which can have an adverse effect on the city's transportation and pedestrian network.

17.62.040 – Items required.

G. Archeological Monitoring Recommendation. For all projects that will involve ground disturbance, the applicant shall provide:

1. A letter or email from the Oregon State Historic Preservation Office Archaeological Division indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the Oregon State Historic Preservation Office and that the Oregon State Historic Preservation Office had not commented within forty-five days of notification by the applicant; and

2. A letter or email from the applicable tribal cultural resource representative of the Confederated Tribes of the Grand Ronde, Confederated Tribes of the Siletz, Confederated Tribes of the Umatilla, Confederated Tribes of the Warm Springs and the Confederated Tribes of the Yakama Nation indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the applicable tribal cultural resource representative and that the applicable tribal cultural resource representative had not commented within forty-five days of notification by the applicant.

If, after forty-five days' notice from the applicant, the Oregon State Historic Preservation Office or the applicable tribal cultural resource representative fails to provide comment, the City will not require the letter or email as part of the completeness review. For the purpose of this section, ground disturbance is defined as the movement of native soils.

Finding: Complies as proposed. All required items were submitted. In response to notification about the development proposal, the applicant received a copy of separate letters from the Oregon State Historic Preservation Office (SHPO) Archeologist notifying the applicant of applicable state laws ORS 358.905 and ORS 97.74 and response from the Confederated Tribes of the Umatilla Reservations (CTUIR) indicating they did not have any specific comments for this location. These letters are attached as exhibits to the staff report. The above code section does not give the city authority to apply any archeological conditions to the approval, it is intended to ensure communication between applicants, identified tribes and the State Historic Preservation Office (SHPO) occurs as early on in the process as possible and reminds applicants about applicable state and federal archeological regulations.

17.62.050 - General Standards

All development shall comply with the following standards:

A. Landscaping.

1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

Finding: Complies as Proposed. The application included the removal of all plants listed on the Oregon City Nuisance Plant List prior to issuance of a final occupancy permit for the building.

2. The amount of landscaping required is found in the standards for each underlying zone. Where the underlying zone does not contain and minimum landscaping standard, the minimum site landscaping shall be

15% of the total site area. Except as allowed elsewhere in Title 16 or 17 of this Code, all areas to be credited towards landscaping shall be installed with growing plant materials.
Finding: Complies as Proposed. The MUC-1 zone requires 20% landscape coverage. The proposed design includes approximately 9,476 sf of landscape area, for in excess of 25%.

3. Pursuant to OCMC 17.49, landscaping requirements within the Natural Resource Overlay District, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.
Finding: Complies with Conditions. : A Wetland Delineation report was completed by HHPR, Inc which clarified the classification and extent of the onsite drainage channel. Based on this report, a buffer area around the drainage channel at the south end of the site was identified and is shown on the site and civil drawings. No work is being performed within this buffer. Further findings can be found in OCMC 17.49 Natural Resources Overlay District section of this report.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.
Finding: Complies with Condition. The applicant submitted a landscaping plan prepared by, Jeffery Creel, Landscape architect at HHPR, which identifies a visual variety of plants, shrubs, and trees, including a mix of vertical and horizontal elements. The proposal indicates that no bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees. The applicant, however, failed to provide to indicate that t within three years, the planting will cover one hundred percent of the landscape area. Therefore, prior to the Building Permit release, the applicant shall resubmit the landscape plan with the associated revisions. **The staff has determined that it is possible, likely, and reasonable that the applicant can meet this standard through the Conditions of Approval.**

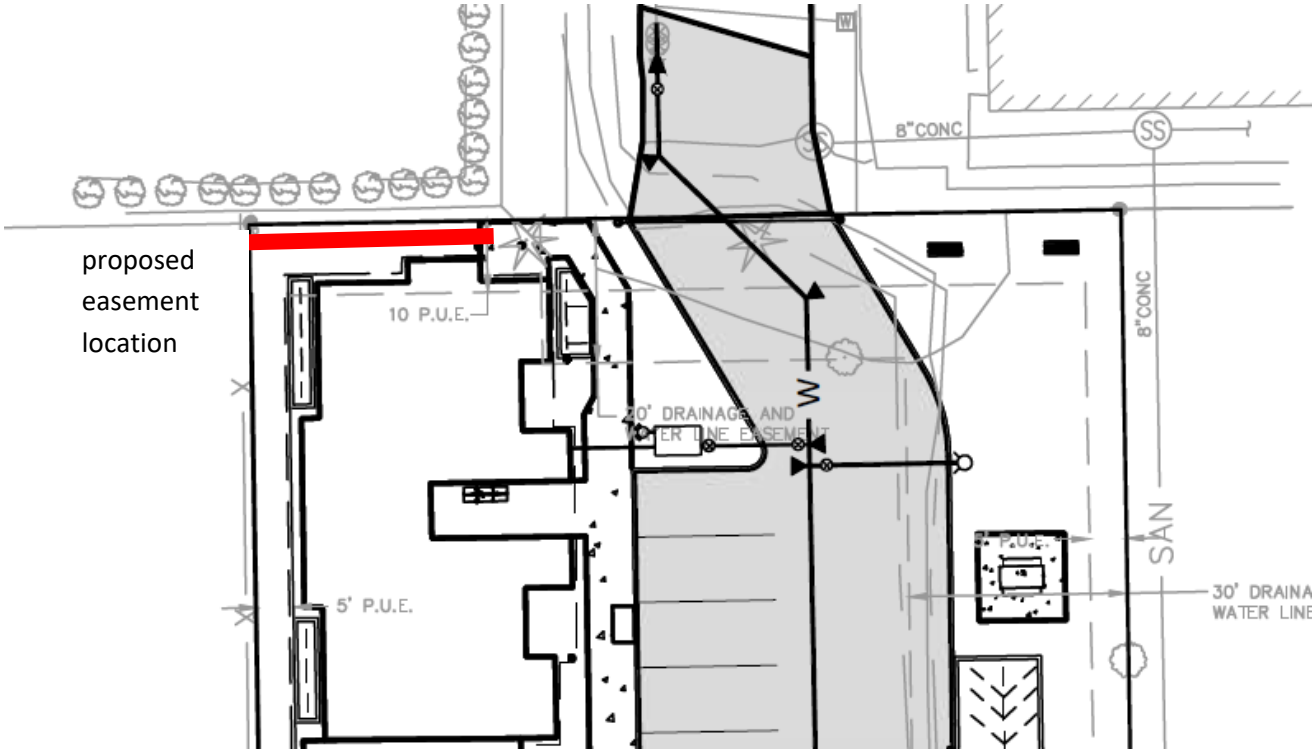
5. Landscaping shall be visible from public thoroughfares to the extent practicable.
Finding: Complies as Proposed. Landscaping is highly visible from the public thoroughfares (Kamm sTreet/Warner Milne. The visible landscape includes shrubs, ground covering, and both large shade trees and evergreen and deciduous trees.

6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.
Finding: Complies as Proposed. The applicant's transportation engineer indicated that the landscaping proposed would comply with the vision requirements in OCMC 10.32.

B. Vehicular Access and Connectivity.
1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.

Finding: Complies as Proposed. Parking is proposed behind the building. No new parking areas have been proposed in front of building.

2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.
Finding: Complies with the condition. The applicant has provided north/south pedestrian and vehicular connections as conditioned through the site. However, pedestrian access to the newly purchased PGE property to the west will allow pedestrians on Kamm Street. Therefore, the applicant shall ensure that, prior to obtaining a Certificate of Occupancy, a pedestrian cross-over easement is recorded, allowing pedestrian access across the site from Tax Lot 1300 (currently owned by PGE) to Kamm Street. The easement shall be a minimum of 7-feet wide and be located near the north property line of the subject property. The easement shall allow the construction of a connecting an approximately 25-foot long 5-foot wide ADA accessible pedestrian path from the property line of Tax Lot 1300 to the proposed pedestrian path onsite. The cost of this shall be borne by the developer of Tax Lot 1300 if a pedestrian connection to Kamm Street is required as part of a future application on Tax lot 1300.



3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.
Finding: Applies. Please refer to the analysis in 16.12.

4. Parking garage entries shall not be more than half of the streetscape.
Finding: Not Applicable. A parking garage has not been proposed as part of this development.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:

1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.
Finding: Complies as Proposed. A continuous pathway connects all building entrances to the public sidewalk in Warner Milne Road and extends to Kamm Street for a potential future sidewalk.

2. The pedestrian circulation system shall connect all main entrances, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.
Finding: Complies as Proposed. The proposal includes a direct pedestrian connection from the main building entrance of each proposed building to the bicycle parking, parking lot**,** and sidewalk. On-site pedestrian paths run continuously on- site between public entry points, all building entrances, and bike and car parking. The paths are five feet wide, paved, and even, and allow for pedestrians easy and safe access around the site. Stormwater facilities allow for drainage and prevent flooding of pedestrian walkways.

3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.
Finding: Complies as Proposed. The pedestrian path connects to the public sidewalk on Warner Milne Road, which provides access to entrances of buildings on adjacent properties

4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.
Finding: Not Applicable. No elevated external stairways or walkways are proposed.

5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive isles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.
Finding: Complies as proposed. The pedestrian walkway will be concrete and raised 6” above the vehicular driving surface typically. The walkway is 7’ wide with tree wells where it abuts parking spaces and 5’ wide where there is no adjacent parking

D. All development shall maintain continuous compliance with applicable federal, state, and City standards.
Finding: Complies as Proposed. The applicant’s narrative identified that the development proposal will maintain continuous compliance with applicable federal, state, and City standards.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to City standards as set out in the City's facility master plans and public works design standards. A development may

be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require over sizing of facilities where necessary to meet standards in the City's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the City for over sizing based on the City's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.
Finding: Complies with Condition. Please see OCMC 16.12 for additional findings.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the City's Transportation System Plan.
Finding: Complies as proposed. Notice of this application was provided to Tri-Met, who did not formally comment on the proposal.

G. Screening of Mechanical Equipment: Commercial, mixed-use, institutional, and multi-family buildings shall include the following measures to screen or block views of mechanical equipment from adjacent streets according to the following requirements.
1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street on all new buildings or building additions. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened from adjacent streets, as viewed from the sidewalk or future sidewalk location on the adjacent street at pedestrian level. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening. Screening requirements do not apply to new or replacement equipment on existing buildings. New or replacement rooftop mechanical equipment on existing buildings shall be painted or powder-coated.
Finding: Complies as Proposed. The applicant acknowledges that all rooftop mechanical equipment will be screened on all four sides from view. Final compliance will occur during Building Permit Review.

2. Wall-mounted mechanical HVAC and air conditioning equipment, and groups of multiple utility meters shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including air conditioning and groups of multiple utility meters, that extend six inches or more from the outer building wall shall be screened from view from adjacent streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall exempt from this standard if painted.

Finding: Complies as Proposed. The applicant acknowledges that all wall-mounted mechanical equipment will be screened on all four sides from view. Final compliance will occur during Building Permit Review.

3. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view from the public right of way.
Finding: Complies as Proposed. The applicant acknowledges that all ground-mounted mechanical equipment will be screened on all four sides from view. Final compliance will occur during Building Permit Review.

4. This section shall not apply to the installation of solar energy panels, photovoltaic equipment, wind power generating equipment, dishes/antennas, pipes, vents, and chimneys.
Finding: Not Applicable. No solar energy panels, photovoltaic equipment, wind power generating equipment, dishes/antennas, pipes, vents, and chimneys are proposed.

H. Building Materials.
1. Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the Community Development Director based on the integration of the material into the overall design of the structure.
i. Vinyl or plywood siding (including T-111 or similar plywood).
ii. Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.
iii. Corrugated fiberglass.
iv. Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, when excepted by 17.62.050.H.2.vii, or when located on properties within the General Industrial District).
v. Crushed colored rock/crushed tumbled glass.
vi. Non-corrugated and highly reflective sheet metal.
vii. Tarps, except for the protection of outside storage.
Finding: Not Applicable. The application does not propose any prohibited materials.

2. Special Material Standards. The following materials are allowed if they comply with the requirements found below:
i. Concrete Block. When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
ii. Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.
iii. Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
iv. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.
v. Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.

vi. Vinyl or powder coated chain link fencing is permitted for City-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the General Industrial District.
vii. Chain link fencing is permitted in the following circumstances:
1. Within City-owned parks and recreational facilities
2. On any property when used for a baseball or softball backstop or dugout, track and field facility, or sports court.
Finding: Not Applicable. The application does not propose any special materials.

J. Development shall comply with requirements of the following Oregon City Municipal Code chapters, as applicable, including but not limited to:
1. 12.04 Streets, Sidewalks and Public Places
2. 12.08 Public and Street Trees
3. 13.04 Water Service System
4. 13.08 Sewer Regulations
5. 13.12 Stormwater Management
6. 16.12 Minimum Improvements and Design Standards for Development
7. 17.20 Residential Design Standards for ADU's, Cluster Housing, Internal Conversions, Live/Work Units, and Manufactured Home Parks
8. 17.40 Historic Overlay District
9. 17.41 Tree Protection Standards
10. 17.42 Flood Management Overlay District
11. 17.44 Geologic Hazards
12. 17.47 Erosion and Sediment Control
13. 17.48 Willamette River Greenway
14. 17.49 Natural Resource Overlay District
15. 17.50 Administration and Procedures
16. 17.52 Off-Street Parking and Loading
17. 17.54 Supplemental Zoning Regulations and Exceptions
18. 17.58 Lawful Nonconforming Uses, Structures, and Lots
19. 17.65 Master Plans and Planned Unit Development
Finding: Applies. The applicable chapters are included within this report.

17.62.055 –Institutional, office, multi-family, retail, and commercial building standards.
B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures.
Finding: Applies. The proposed building is multi-family development; therefore, these standards apply.

C. Conflicts. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.
Finding: Not Applicable. No conflicts have been identified.

D. Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than

twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.

Finding: Complies. As a multi-family development, structures need to be placed within 20 feet of the front property line. When deducting the 38' width of the wetland buffer to the east property line, the frontage width is only 82'. For this modified frontage width, 50% coverage = 41'. The building frontage, including the entry pergola, is 42'-6". The furthest south building façade sits 2'-10" from the south property line as modified by the 5' dedication.

A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

1. Tables, benches or other approved seating area.
2. Cobbled, patterned or paved stone or enhanced concrete.
3. Pedestrian scale lighting.
4. Sculpture/public art.
5. Fountains/Water feature.
6. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.
7. Outdoor café.
8. Enhanced landscaping or additional landscaping.
9. Other elements, as approved by the Community Development Director, that can meet the intent of this section.

Finding: Not Applicable. The applicant has not requested additional setback provisions beyond the 20 feet allowed for multi-family development.

E. Building Orientation. All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Finding: Complies The most architecturally significant frontage of each residential building will face the street that each building fronts. Each building includes distinct recessed entrances facing the street.

F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:

1. Display windows; Recesses or projections; Peaked roof or raised parapet over the door; Canopy of at least five feet in depth; Porch; Distinct materials; Architectural details such as tile work and moldings; Pedestrian amenities such as benches, planters or planter boxes; Landscape treatments integrating arbors, low walls, trellis work; or Similar elements. Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.

Finding: Complies. Both the south and north end units have primary entrances facing the street. The south and north unit entrances are recessed from the adjacent walls and incorporate covered porches. The south pedestrian entrance to the site and other units is defined by a covered pergola near the public sidewalk.

G. Corner Lots.

For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required:

1. Incorporate prominent architectural elements, such as increased building height or massing, cupola, turrets, or pitched roof, at the corner of the building or within twenty-five feet of the corner of the building.
2. Chamfer the corner of the building (i.e. cut the corner at a forty-five degree angle and a minimum of ten feet from the corner) and incorporate extended weather protection (arcade or awning), special paving materials, street furnishings, or plantings in the chamfered area.
3. Standards 1 and 2 above do not apply to vertically attached 3-4 plexes, multi-family buildings or multi-family portions of residential mixed-use buildings.
Finding: Not Applicable. The site is not a corner lot.

H. Variation in Massing. For street facing facades greater than 120 feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:
1. A minimum depth of two percent of the length of the façade and a minimum width of thirty percent of the length of the façade; or
2. A minimum depth of four percent of the length of the façade and a minimum width of twenty percent of the length of the façade.
Finding: Not applicable. The front facades are less than 120 in length.

I. Building Design Elements.
1. All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include:
a. Change in building material or texture;
b. Window or door;
c. Balcony; or
d. Pillar or post
Finding: Complies All facades incorporate building offsets, roofline changes, material changes, and windows. The west side façade contains the least variation, but still provides building wall offsets at a maximum of 37', roofline variations at a maximum of 34', window separation of 15' maximum and numerous material changes occurring both horizontally and vertically. The south, east and north elevations also include recessed stair alcoves and decks.

2. Street facing facades shall include additional design features. For every thirty feet of façade length, three of the following elements are required:
a. Decorative materials on more than ten percent of the total wall area (e.g., brick or stonework, shingles, wainscoting, ornamentation, and similar features);
b. Decorative cornice and/or roof line (e.g., for flat roofs);
c. Roof gable;
d. Recessed entry;
e. Covered canopy entry;
f. Cupola or tower;
g. Dormer;
h. Balcony;
i. Pillars or posts;
j. Repeating pattern of building materials;
k. A change in plane of at least two feet in width and six inches in depth;
l. Bay or oriel window; or

m. An alternative feature providing visual relief and detail as approved by the Community Development Director

Finding: Complies The south and north street facing facades include the following design elements:

- Material variations of lap siding, board and batt siding and shingle siding, where the highest percentage of coverage of any material is less than 50%.
- At least three different roof gables
- Recessed entries
- Covered porches
- Pent roofs above windows
- Balconies visible from the façade
- Porch posts
- Repeating variations of building materials
- Four building wall plane changes

3. Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.

Finding: not applicable. The proposal consist of only one building.

J. Windows.

1. The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.

Use	*Ground Floor: Front and street Facing Facades*	*Upper Floors: Front and Street Facing Facades*	*Ground Floor: Side Facades*	*Upper Floors: Side Facades*
Multi- Family	*15%*	*15%*	*10%*	*10%*

Finding: Complies.

South Façade:

Ground floor: 48 sf / 289 sf = 17% (15% required)

Upper floors: 96 sf / 654 sf = 15% (15% required) East Façade:

Ground floor: 847 sf / 2,362 sf = 36% (10% required)
Upper floors: 1,756 sf / 5,466 sf = 32% (10% required)
North Façade:

Ground floor: 44 sf / 289 sf = 15% (15% required)
Upper floor: 96 sf / 622 sf = 15% (15% required)
West Façade:

Ground floor: 356 sf / 2,362 sf = 15% (10% required)
Upper floors: 712 sf / 5,607 sf = 13% (10% required)

2.Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.
Finding: Complies. No reflective, glazed, mirrored, or tinted glass is proposed with this project.

3. Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.
Finding: Complies. No false windows are proposed for this project.

4. Multi-family windows shall incorporate window trim at least four inches in width when surrounded by horizontal or vertical lap siding.
Finding: Complies. The project meets this standard. All window trim is four inches of fiber cement boards that will be smooth and painted

K. Roof Treatments. The maximum length of any continuous roofline on a street-facing façade shall be seventy-five feet without a cross gable or change in height of at least two feet.
Finding: Complies. None of the buildings proposed have a continuous roofline of more than 75 feet. The maximum continuous ridgeline on the south and north street-facing facades is 19'.

L. Drive-through facilities shall:
1. Be located at the side or rear of the building.
2. Be designed to maximize queue storage on site.
Finding: No applicable. The applicant is not proposing a drive-thru.

M. Special development standards along transit streets.

1. Purpose. This section is intended to provide direct and convenient pedestrian access to retail, office and institutional buildings from public sidewalks and transit facilities and to promote pedestrian and transit travel to commercial and institutional facilities.

2. Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.

a. Heavy equipment sales;

b. Motor vehicle service stations, including convenience stores associated therewith; or

c. Solid waste transfer stations.

Finding: Not Applicable. The proposed project is a multi-family residential development, not a retail, office, or institutional building. Therefore, this section does not apply to this project, and the remaining code language has been omitted.

17.62.057 - Multifamily Usable Open Space Requirements

B. Open Space Required. All new multi-family developments in all zones shall provide usable open space.

1. In residential zones, each development shall provide a minimum of one hundred square feet of open space per dwelling unit.

2. In non-residential, commercial and mixed-use zones, each development shall provide a minimum of fifty square feet of open space per dwelling unit.

Finding: Complies. The subject property is in a mixed-use zone (MUC-2) and therefore is required to provide a minimum of 50 square feet of open space per dwelling unit. For the 30 dwelling units to be developed, a total of 1,500 sf of open space is required. A contiguous, common outdoor area approximately 1,000 sf in area is provided at the northeast corner of the site. This area includes a picnic table and pad, benches and a grass area. This area, in conjunction with the private useable space (1,692 sf total provided, of which 750 sf may be counted toward common space), provides more than 1,500 sf of total open space.

3. Required setback areas shall not count toward the open space requirement unless setback areas are incorporated into spaces that meet all other requirements of this section.

Finding: Complies. The required setbacks are not included in the open space calculation in section (B)(2) above.

4. Required open space areas may be counted towards both the open space requirements and the minimum landscaping requirements in OCMC 17.62.050.A, if the spaces meet the requirements of both sections.

Finding: Complies. The landscaped areas within the open space have been included in the landscape percentage calculation. All requirements in OCMC 17.62.050 are being met.

C. Usable Open Space Types.

1. Common open spaces shall be accessible to all residents of the development and include landscaped courtyards, decks, gardens with pathways, children's play areas, common rooftop decks and terraces, and other multipurpose recreational or green spaces.

Finding: Complies. The primary common space includes an outdoor recreation area, including landscaping, a grass area, a picnic table, and benches, and meets the minimum requirements of this section.

Common open spaces may be used to meet one hundred percent of the usable open space requirement. Design standards:

a. Minimum dimensions for common open space shall be twelve feet with a minimum size of two hundred square feet for developments with twenty units or less, and twenty feet with a minimum size of four hundred square feet for developments with twenty-one or more units.

Finding: Complies The project meets this standard. The shared common space interior to the is approximately 1,000 sf in area with a minimum width of 24'.

b. Common open space shall feature a mix of natural and recreational amenities to make the area more functional and enjoyable for a range of users. Sites with twenty units or less shall provide a minimum of two of the following amenities, and sites with twenty-one units or more shall provide a minimum of three of the following amenities and an additional amenity for every twenty units over forty, rounded up.

1. Landscaping areas.
2. Community gardening areas.
3. Large trees expected to reach over eighteen inches dbh at maturity.
4. Seating.
5. Pedestrian-scaled lighting.
6. Hard-surfaced pedestrian paths in addition to those required for internal pedestrian circulation.
7. Paved courtyard or plaza.
8. Gazebos or other decorative shelters.
9. Play structures for children.
10. Sports courts.
11. An alternative amenity as approved by the Community Development Director.

Finding: Complies. The common open space meets the minimum requirments for this section and includes:

- Perimeter landscape plantings and core grass area
- Large trees
- Two benches
- Paved pad and picnic table

c. Common open space shall be separated from ground-level windows, streets, service areas and parking lots with landscaping, low-level fencing, and/or other treatments as approved by the City that enhance safety and privacy for both the common open space and dwelling units.

Finding: Complies. The common space is across the driveway from the building and approximately 70' from the garbage/recycling enclosure. The area is bordered on three sides by low shrub plantings and is open to the driveway to provide a visual and physical connection to the apartment units.

d. Common open space shall be accessible from the dwelling units and, as appropriate, from public streets and sidewalks. The space shall be oriented to encourage activity from local residents.

Finding: Complies. The common open space area is easily accessible from all dwelling units via a paved pedestrian walkway. The applicant indicates that access to the open space will be across the driveway at the north end of the parking area. In order for the open space to be accessible, a designated crossing area from the pedestrian sidewalk along the building frontage to the site shall be constructed. Prior to the

release of building permits, the applcaint shall work with Planning and Development Services to design a safe and direct pedestrian crossing across the drive isles to the designated common space.

2. Private open space that is not open to all residents includes balconies, patios, and other outdoor multi-purpose recreational or green spaces. It may be used to meet up to fifty percent of the usable open space requirement.

a. Minimum dimensions for private open space shall be five feet with a minimum size of forty square feet.

Finding: Not applicable. Each unit includes a patio/ balcony. The one-bedroom unit patios will be 6'-0" x 7'-10" = 48 sf, and the two-bedroom unit patios will be 6'-6" x 9'-6" = 62 sf. The total area of private open space for the development will be 1,692 sf.

3. Indoor recreational space may be used to meet up to twenty-five percent of the usable open space requirement provided the space is:

a. Accessible to all dwelling units.

b. Designed for and includes equipment for a recreational use (e.g., exercise, group functions, etc.).

Finding: Not applicable. Indoor recreation space is not proposed.

17.62.059 - Cluster housing.

All cluster housing shall comply with the standards in Chapter 17.20.020 in addition to the standards in this chapter.

Finding: Not Applicable. The applicant is not proposing cluster housing.

17.62.065 - Outdoor lighting.

B. Applicability.

1. General.

a. All exterior lighting for any type of commercial, mixed-use, industrial, institutional, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.

b. The City Engineer or Public Works Director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.

Finding: Complies. As a multi-family development, this project is subject to this section.

2. Lighting Plan Requirement. All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.

Finding: Complies. As a multi-family development, an exterior lighting plan is required. Lighting Plans have been prepared and are provided as sheets 1 of 2 and 2 of 2 at the end of the plan set.

3. Exempted Lighting. The following types of lighting are exempted from the requirements of this section.

a. Residential lighting for single-family attached and detached homes, and duplexes

b. Public street and right-of-way lighting.
c. Temporary decorative seasonal lighting provided that individual lamps have a light output of sixty watts or less.
d. Temporary lighting for emergency or nighttime work and construction.
e. Temporary lighting for theatrical, television, and performance areas, or for special public events.
f. Lighting for a special district, street, or building that, according to an adopted municipal plan or ordinance, is determined to require special lighting aesthetics as part of its physical character.
g. Lighting required and regulated by the Federal Aviation Administration.
Finding: Complies None of the above exempted lighting types are proposed with this project.

B. Design and Illumination Standards.
1. Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 footcandles of light as measured at the property line.

Finding: Complies Outdoor lighting is proposed interior to the site for the security and convenience of the future residents. Pedestrian scaled light poles are provided along the walking paths and the pedestrian access points to the site. Exterior lighting is provided through the use of exterior pole lighting in the parking area and wall-mounted fixtures along the front side of the building and within the stairwells. All light fixtures are shielded and provide a distribution that ensures light levels cast onto adjacent properties do not exceed 0.5 footcandles. Refer to Exterior Lighting Plan with photometric and light fixture cutsheets.

Lighting shall be provided in parking lots and vehicular circulation areas.
Finding: Complies: Lighting is proposed around the perimeter of the interior parking area, with several vehicular scaled light poles proposed. Lighting will be provided via public streetlights for the parking area along Maple Lane Court.

Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.
Finding: Complies The project meets this standard. As mentioned previously, lighting is provided to light all interior pedestrian walkways. Please see the attached landscape plan for exact details on light pole placement.

Lighting shall be provided at all building entrances.
Finding: Complies The project meets this standard. All building entrances have a light pole adjacent to the entrance. Please see the attached site plan and landscape plan for exact details on light pole placement.

With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.
Finding: Complies Acknowledged by the applicant. All lighting proposed on the site that is not pedestrian scale will be concealed with a full cut-off style fixture to minimize flare and diffusion on adjacent properties.

The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.
Finding: Complies As a multi-family residential development, the maximum height of lighting poles is twenty feet. The proposed height of light poles on the project site is 12-feet for pedestrian-oriented poles and 20 feet for vehicular poles.

Floodlights shall not be utilized to light all or any portion of a building facade between 10 p.m. and 6 a.m.
Finding: Complies There are no floodlights proposed with this project.

Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.
Finding: Complies Noted by the applicant. The primary location of a canopy is over the mail facilities. Lighting will be recessed and directed down as required.

All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.
Finding: Complies Acknowledged by the applicant. Any non-essential lighting will be reduced or turned off during non-operating hours.

Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.
Finding: Complies There is no lighting proposed to illuminate flags, statues, or other objects with this project.

For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.
Finding: Complies There is no upward-directed lighting proposed with this project.

No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.
Finding: Complies The project complies with this standard. No flickering or flashing lighting is proposed with this project.

Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.
Finding: Complies There are no outdoor recreational uses proposed with this project, and the open space on the project site will be lit with a standard pedestrian scale light pole.

Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.
Finding: Complies The project complies with this standard. All buildings that front Maple Lane Road have walkway connections to the public sidewalk that are well lit and visible from the street.

17.62.085 - Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.
The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions or exterior alterations to uses, other than single-family or duplex residences, single-family attached dwellings, 3-4 plexes, internal conversions, or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:
A. Fully enclosed and visually screened;
B. Located in a manner easily and safely accessible by collection vehicles;
C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;
D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;
E. Maintained by the property owner;
F. Used only for purposes of storing solid waste and recyclable materials;
G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20—Solid Waste Collection and Disposal) and city adopted policies.

Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).
Finding: Complies. As a new development, the proposed project is subject to this standard A 12'-6" x 18'-0" sf garbage and recycling enclosure will be provided on site. The enclosure will be constructed of 6' high concrete masonry units with steel-framed, wood-sided access doors for complete visual screening. The enclosure is sized to accommodate a 3 cubic yard garbage bin and a 3 cubic yard recycling bin, both of which will be collected multiple times each week. The enclosure will be located contiguous to the parking area in an area that will allow ease of access by both tenants and collection vehicles.

CONCLUSION AND DECISION:

Based on the analysis and findings as described above, Staff concludes that the Site plan and Design Review at 1155 Kamm Street & 279 Warner Milne Road, Oregon City, and identified as 3-2E-05CB-01400 & 3-2E-05CB-01402 can meet the requirements as described in the Oregon City Municipal Code by complying with the Conditions of Approval provided in this report. Therefore, the Community Development Director approves files GLUA 21-00066 SP 21-00117 NROD 21-0018 with conditions based upon the findings and exhibits contained in this staff report.

EXHIBITS:

1. Vicinity Map (On File)
2. Applicant's Narrative and Plans (On File)
3. Public Comments (On File)
4. April 6, 2022 Letter from John Replinger, PE (On File)
5. April 6, 2022 Public Comment Response Letter from John Replinger, PE (On File)
6. PA 21-07 SHPO Letter and CTUIR response (On File)
7. SHPO Response Letter Case for previous PA 19-47 onsite (On File)
8. April 11, 2022 Memo from David Evans and Associates, DEA (On File)

GLUA-21-00066: SP-21-00017, NROD 21-00018 Kamm Street Apartments

Legend

- Street Names
- Taxlots
- Taxlots Outside UGB
- Unimproved ROW
- City Limits
- UGB
- Basemap

Notes

Overview Map

The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 1/3/2022

N

0 400 800 Feet

1: 4,800

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

From: Aaron Wolf
To: Christina Robertson-Gardiner
Subject: Comment for Kamm St Apartments GLUA-21-00066
Date: Thursday, January 13, 2022 10:34:23 AM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi,

This is a formal public comment on the land use proposal at 1155 Kamm Street, GLUA-21-00066: SP-21-00017, NROD 21-00018 Kamm Street Apartments.

I reviewed the proposal though not in exceptional depth. I have a few specific concerns to emphasize.

As shown in the 2018 to 2019 comparison of aerial photography at https://maps.orcity.org/galleries/photocompare/index.html, the site in question had a very significant tree canopy which was nearly clear-cut. This may be bigger than this one case, but I imagine a troubling scenario in which clear cuts are done without permits in advance of a land use proposal so that the development doesn't need to deal with tree canopy issues when the development proposal is submitted. I suspect that the clear-cutting was indeed done specifically to prepare for this development and potentially to get the NROD designations as limited as possible. I would hope the permit can address the significant canopy loss and incorporate some extra mitigation for the effect of that.

On transportation and connection, I strongly support the potential for this becoming a publicly-open right-of-way that would allow pedestrians and cyclists to go from Kamm St to Warner Milne. This is a significantly-limited connectivity area where anyone from the entire region from Elyville / Barclay Hills neighborhood is forced to walk along heavier traffic on Mollala in order to get to the Clackamas campus and Farmer's Market. In practice, very few people make that trip. Instead, everyone drives. If this is opened, it will connect the whole area along Prospect St to be able to walk or cycle to the County campus area and beyond on safer, quieter, neighborhood streets. So, I request some proactive assurance or design specifications that clarify this as a public right-of-way rather than an issue of trespassing on private property.

That said, there are legitimate concerns about traffic safety if drivers can go from the apartments into the neighborhood. If that option is open, plans should be made to incorporate all appropriate traffic-calming measures to minimize unsafe speeds of cars and trucks in this area with no sidewalks.

I otherwise suspect this might not hit a specific code issue, but I wish that the development were set up to have some more common area and shared resources. All developments that have separate, private units with no space for connection, gathering, cohesion — these are anti-social. Even a shared picnic bench area or similar would be a huge improvement.

Thank you,
Aaron Wolf
vice-chair Elyville/Barclay-Hills NA (but not submitted on behalf of the NA, just as private

citizen)
wolftune@gmail.com

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION TRANSMITTAL – RESPONSE FORM

Date: 1-17-22

Land Use Application File Number: GLUA-21-00066: SP-21-00017, NROD 21-00018

NAME: Troy Brummell

AGENCY: Resident

EMAIL ADDRESS: t_brummell@hotmail.com

The land use application material is referred to you for your information, study and official comments. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return a copy of this form to facilitate the processing of this application and to ensure prompt consideration of your recommendations.

Please check the appropriate spaces below.

☐	The proposal does not conflict with our interests.
☑	The proposal conflicts with our interests for the reasons attached. (Please attach additional information)
☐	The proposal would not conflict our interests if the changes noted below or attached are addressed.

Please add any specific comments below or attach a separate document with more information.

Please see below comments that consist of 3 pages (7 bullet points) and an additional 6 pages consisting of (6) photos. This entire packet consist of 10 pages including this page.

CONTACT THE PLANNING DIVISION IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION

Troy Brummell
1147 Kamm St
Oregon City, OR 97045
503-704-0380
t_brummell@hotmail.com

RE: This is a public comment in response to concerns I have with project GLUA-21-00066: SP-21-00017, NROD 21-00018 at 1155 Kamm St & 279 Warner Milne Rd Oregon City OR.

I am a long-time resident of over 10 years at the above mentioned address. I am in opposition to the project listed above and writing the city with my concerns to the impact it will have in the community. My hope is the city will take pause to address issues that I believe will be a tremendous impact on safety to residents living in and around Kamm Street. I believe it is the responsibility of any city to consider community safety a top priority and my hope is that the city will address each issue accordingly.

1. These plans show an extension of Kamm street connecting it to Warner-Milne. A connection to Kamm should not even be considered by planning unless the developer is required to make street improvements to Kamm which would include widening the street to city standards and putting in sidewalk for pedestrians. This seems to be in order with Chapter 12.04 & 16.12 of city code. Kamm Street is currently what I would consider a single lane road that barley gives adequate spacing for (2) vehicles to pass. As a long-term resident at this address, I have observed for years the amount of foot traffic that utilizes Kamm street. This would range from children who ride bicycles to people walking dogs, to folks from Clipper Ridge Apartments walking to the bus stop. Kamm street has significant usage from the surrounding neighbors and a thru road would have a serious negative impact to the safety of those who use Kamm as they must walk in the street right of way. In addition, the city recently approved 60 homes to be built on Holmes Lane just to the North of this development. This will without a doubt increase traffic in the area. Currently, those who use Holmes Lane who wish to connect to Warner Milne must go up to Molalla Ave or Linn Ave which are the two main arteries for the city. If Kamm is connected as a thru street or as a “driveway” and with the addition of these already approved homes going in on Holmes Lane you will have an exponential increase in traffic using Kamm connecting thru to Warner Milne which again jeopardizes safety in the community.

2. These plans do not provide adequate parking for residents once the project is complete. The developer is proposing 30 units and providing 34 parking spaces. Although I understand this may meet minimum requirements per city code it simply is not realistic. The national average of vehicles owned per household is 1.88 vehicles. This would mean that the builder should provide no less then 56 parking spaces. Even if you were to give the benefit of doubt and assume each household living in this community had one vehicle, it would still stand to reason that these residents would at some point have guest

that will need a place to park. By providing only (1) parking stall per household you then are asking visitors to park either on Kamm Street or Warner Milne. Both options create a safety hazard, but especially on Kamm. The east side of Kamm Street is driveway ingress and egress for residents. Once again without proper street improvements and widening of Kamm street, any vehicle parked on the west side of Kamm will block residents from being able to back out of their own driveways. As such city code 17.52 states "An adjustment to a minimum parking standard may be approved based on a determination by the planning commission". Which means the planning department can at there discretion and considering public safety require more adequate parking.

3. 17.29 Site plans do not provide adequate green space or play area for children. This again will become a safety concern as children living inside this community will then play in the parking lot or street potentially getting hit by an oncoming vehicle.

4. Pursuant to 13.12 a 30" culvert will not provide adequate drainage for stormwater. I have attached photos taken on January 6, 2022 showing the amount of stormwater that flows thru this drainage ditch currently in place during a normal rain season. Furthermore, looking at the topography of the project sight all water naturally slops downward to the lowest point from both fields adjacent to this property ending at the current ditch that was put into place by the city to mitigate flooding. By changing the natural drainage and flood point for stormwater this increases the chances of flooding onto Kamm and eventually my property at 1147 Kamm Street. The report that was submitted by the developer is dated September 3, 2021 which suggest that it was performed after one of the driest summers on record in Oregon and the concern is this was not taken into account on the design for stormwater and thus will lead to flooding in this area.

5. Development does not meet standards for tree replacement per city code 12.08 & 17.41. According to public records the sight at 1155 Kamm St was sold in September 2018 & 279 Warner Milne in October 2018. Around November 2018 there were approximately 12-15 old growth trees removed from this project sight that measured greater than 31" in diameter. An attempt via a public records request was made to obtain a copy of the permit that should have been issued by the city to determine the exact number of trees removed. This records request was completed September 22, 2021 and Jakob Wiley assistant city recorder for Oregon City confirmed no permit was ever issued. Therefore, a determination could not be made on the exact number of old trees removed; however, google maps clearly shows that between June 2018 and May 2019 a clear cutting occurred on the development property. As such my concern is the developer did not follow city protocol in determining the environmental impact on any wildlife or endangered species that may have lived in this area among these old trees and the plans do not meet the standards set forth by the city for replacing those trees that were removed.

6. Pursuant to 17.49 NROD is part of the property at 1155 Kamm Street and doesn't seem to have been taken into consideration for the development of this property. If NROD was removed then is it due to the old growth trees that once sat on this property and were removed illegally by the developer? It's not my place to say but it is important to see

from the attached pictures the amount of ground water that is on site in what is considered NROD for this property. I will say from my time living here on Kamm that several species of squirrels and birds do utilize this space as a living habitation and source of water throughout the year.

7. Pursuant to 17.40 the sight development could potentially be in a historic overlay area and sight plans do not show supporting documentation from the Confederated Tribes of the Grand Ronde.

View looking East at the corner where Kamm ditch makes turn

View looking North at the corner where Kamm ditch makes turn

View looking South towards
Warner Milne

Area just to the side of the drainage ditch where NROD is currently. This photo shows the amount of ground water produced into this property.

St. John The Apostle Cemetery
451 Warner Street
Oregon City, OR, 97045
504-655-7148

Christina Robertson-Gardiner
Community Development/Planning
695 Warner Parrot Rd.
Oregon City, OR. 97045

RE: File No: GLUA-21-00017, NROD 21-00018 Kamm Street Apartments

Dear Ms. Robertson-Gardiner:

The Board of Directors of St. John The Apostle Cemetery has recently been notified that an application for the construction of a 30 unit apartment building at the end of Kamm Street has been submitted to the City of Oregon City and is currently undergoing the review process. We have also been informed that discussions are underway to extend Kamm Street to Warner Milne Street allowing access to Kamm off of Warner Milne Street.

We are very concerned about how access off Warner Milne might impact Kamm Street, the cemetery and its operations. Our concerns include the following:

1. Increased traffic and safety issues on Kamm Street.
2. Influence/impact of parking on Kamm Street
3. Entrance and exit accessibility for the cemetery.
4. Traffic flow patterns and their impact on Kamm Street and SJA Cemetery; i.e., no through traffic, no turn around, private property, private parking only, tow-away zone.
5. Drainage issues, particularly disruption of current drainage ditches along Kamm Street. This area supports numerous underground springs and is largely comprised of a clay soil.

We recommend the following:

1. Placement of an "emergency services only" barricade at the current end of Kamm Street.
2. "No parking at any time" signage on the cemetery side of Kamm Street, and at the area of the barricade.
3. Installation of signage at end of Warner Street; i.e., No through traffic, no turn around, private property, private parking only, tow-away zone.
4. Complete resurface of Kamm Street at completion of construction.
5. Ensure that proper lighting is in place to assure pedestrian traffic safety.

Thank you for giving consideration to our concerns. Please keep us informed as this application proceeds through the process. If we can be of assistance, please don't hesitate to contact us.

Sincerely yours,

St. John The Apostle Cemetery Board of Directors

Fr, Maxi D Costa, Pastor, St. John The Apostle Catholic Church

Gary Avery, Cemetery Manager

Janet Hochstatter, Chair
Greg Gardner
Rita Helberg
Mike Hegenbart
Rita Randall
Ron Rhode
Katy Sauber
Mike Thompson

From:	Catherine P
To:	Christina Robertson-Gardiner
Subject:	Comments for Notice of Land Use Application: FILE NUMBERS GLUA-21-00066: SP-21-00017, NROD 21-00018 Kamm Street Apartments
Date:	Wednesday, January 19, 2022 3:33:38 PM
Attachments:	Oregon City Community Development.docx

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

January 19, 2022

Oregon City Community Development
Planning Department
695 Molalla Ave.
Oregon City, Oregon 97045

Re: GALUA-21-00066: SP-2100017, NROD 21-00018 Kamm Street Apartments

Dear Planning Department,

After reading and reviewing the files listed in the Public Notice issued by your department, I am writing to document objections to the proposed development of the 30-Unit apartment complex located at 279 Warner Miline to connect at the South end of Kamm St. For the reasons listed below the propose development should be denied.

- **Water Quality Resource Area – Metro Title 3**

The stormwater report submitted by the developer refers to a “dry ditch” on the property and wetlands that will not impact the development. The city map clearly shows this is not valid. In fact, the seasonal stream flows above ground from south to north starting on southeast part of the property, migrates west to the north end of the proposed development, and is clearly labeled a “Title 3 Stream.” Therefore, the associated wetlands fall into the same category. OCMC 17.04.1285 states: "Title 3" means that part of the Metro urban growth management functional plan which requires local governments to comply with regional regulations. Title 3 is a part of those regional regulations. OCMC 17.04.1250 defines a Stream as being where surface water produces a defined channel or bed. The channel of bed does not have to contain water year-round. OCMC 17.40.1290 details Title 3 wetlands.

Metro Code Title 3 section 3.07.340(B) Water Quality Resource Areas shall be protected, maintained, enhanced or restored as specified in Section 3.07.340(b). In addition, section 3.07.340(C) “Prohibit development that will have significate negative impact on the functions and values of Water Quality Resources Area.” The stream flows North and migrates west. Not only would a paved parking lot have a negative impact, the north end of this stream flows directly across the proposed driveway onto Kamm St.

- Native Vegetation

The stormwater report included and arial photograph from the 1950’s. After reviewing more current photographs available on Oregon City’s online maps, I found the submitted photo to

be miss leading. The 2018 photo shows a large number of trees with sizeable canopies. The 2019 photo shows many of the trees had been removed and even more had been removed by 2021 when the last photo was taken. No permit was found for the removal of trees. Metro Code Title 3 section 3.07.340(D) states "Native vegetation shall be maintained, enhanced or restored, if disturbed, in the Water Quality Resource Area." A title search revealed the current owner took title to the Kamm St. lot of proposed development in 2018. This begs the question was this an oversite on the part of the owner or an internal clearing to allow future development?

- **Infiltration and Groundwater**

The stormwater report biased the conclusions on "familiarity with projects in the area" and "soil survey." Without knowing if "projects in the area" included an above ground stream or even how close to the proposed site does not validate the conclusions. Referring to "soil survey" without actual documentation of the survey used does not validate the conclusions. The documents and references attached to the report provide lessons on soils, however, give no insight as to how the conclusions were reached. The fact that a natural above ground stream is present on the proposed site would lead to the conclusion that groundwater is considerably closer to the surface than stated in the report. No actual testing was done across the site to validate any relative conclusions.

- **Stormwater Control**

The use of planters in front of the buildings on the west side of the development, although will provide some containment they are not sufficient to control all stormwater across the entire development. Currently stormwater is controlled by the remaining natural vegetation on the two lots of the proposed site. When the land is stripped to build and pave, stormwater will cause problems on the site and flooding of developed private property. The current storm drain located at the southeast end of Kamm St. is insufficient to control the current volume of stormwater during the late fall, winter and spring. Not only is the drain insufficient, its location relative to the land topography would prevent the majority of stormwater from the proposed development from entering the drain.

- **Misleading Traffic Report**

  Traffic Count: Traffic submitter by the developer refers to counts from 2017 at approximately 5,000 with no adjusted to reflect the increase over the next 4 years. The stated 5,000 cars in 2017 is below the actual count in the city's records. Comparing 2014 traffic counts to 2017 traffic counts, traffic increased at a rate of 1.207% a year. In fact: Warner Milne Road West of Molalla Ave. average daily traffic in 2017 was 7,246. Increasing this number 1.207% a year for 4 years would equal an average traffic count in Nov. 2021 of 7,596 cars. That's greater than one and a half times the 5,000 stated in the traffic report. The traffic report has under- stated the volume of traffic on Warner Milne Road and failed to address traffic on Kamm St.

  Parking: The OCMC mandates a Minimum of 1 space and a Maximum of 2 1/2 spaces per unit for a Multi Family development. In spite of the proposed site meeting the required minimum, it not realistic that a complex of 30 units, 80% of which are 2 bedrooms, will have so few cars. Overflow parking from this project is not addressed. Where will the residents park when the on-site lot is full that will not have a negative impact on emergency services, the neighborhood and the general public?

Table 1 Projected trip generation

		AM Peek			PM Peak		
Units	ADT	Total	Enter	Exit	Total	Enter	Exit
30	162	11	3	8	14	9	5

Reference use for projections- 10th Edition of the Institute of Transportation Engineers' *Trip Generation Manual 10 addition*
The Manual used is an old addition. Secondly, the estimates given for "Peak" hours are very low for a complex of this size and therefore questionable and not supported in the submission.

- **GEOTECHNICAL ENGINEERING REPORT**

No Geotechnical Engineering Report is found it the current files for this proposed development. One should be done by a third-party engineer.

- **ARCHEOLOGY SURVEY AND REPORT**

The area of the proposes site is located in what was historically Elyville and therefore possible archeologic remains including grave sites. The Warm Springs Tribe and The Ground Round Tribe should be consulted and peoples from both groups were known to be present in this area. If a prior survey does not exist, then one should be required before and ground is disturbed.

In addition to the above stated reasons to deny this proposed development, I have read the letter sent by ENA and that of Dr. Leon Liegel. I chose not to include what had already been said, However, I agree with both letters and include them as part of my personal comments.

Any additional information or documents added to the proposed development file after the deadline of 01/19/2021, I reserve the right to make additional comments on and to be considered as part of this document.

Respectfully submitted,

Catherine Pieslewicz
710 Cedar Ln
Oregon City, OR 97045

From:	Leon
To:	Christina Robertson-Gardiner
Cc:	Leon
Subject:	Comments for Notice of Land Use Application: FILE NUMBERS GLUA-21-00066: SP-21-00017, NROD 21-00018 Kamm Street Apartments
Date:	Wednesday, January 19, 2022 1:49:39 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Date:

19 January 2022

FROM:

Leon H. Liegel

710 Cedar Ln.

Oregon City, OR 97045

TO:

City of Oregon City

Community Development – Planning

Oregon City, OR 97045

Subject: FILE NUMBERS

GLUA-21-00066: SP-21-00017, NROD 21-00018 Kamm Street Apartments

and

Review of Harper Houf Peterson Righellis Inc. report:

Kamm Street Apartments

MSC-261

Stormwater Management Report PA-21-00007

September 3, 2021

Attention:

Christina Robertson-Gardiner

My comments and review of the Harper Houf Peterson Righellis Inc. report, 3 September 2021, are directed at statements, assumptions, and sources for soil properties plus prior, existing, and future water resources on and near a 0.91-acre site designated as 279 Warner Milne Road, Oregon City, Oregon. A 30-unit redevelopment apartment project [**RDP** hereafter] is proposed for this site. For convenience, the entire Stormwater Management Report PA-21-00007 of September 3, 2021, is hereafter called the Management Plan [**MP**].

Soil Resources

- The **SoilWeb** online Univ California Davis/Natural Resources Conservation Service [**NRCS**] database [https://casoilresource.lawr.ucdavis.edu/gmap/] confirms that Map Unit 8B, containing about 85% of the **Bornstedt soil series**, includes the RDP. **Note:** My spelling matches NRCS spelling; the MP incorrectly uses “Bornestedt.”
- The MP incorrect assumption is that the RDP actually contains the Bornstedt series. No onsite soil sampling data confirm this assumption. Reputable soil science texts will also confirm that onsite soil sampling is needed when considering family/commercial construction.
- Why is onsite soil sampling even more important for a multi-unit apartment complex? All soils have physical properties that limit or do not limit engineering ratings for dwellings, road construction, and stormwater containment or redirection to offsite areas.
- The Bornstedt soil series has stated **Engineering Ratings** based on laboratory samples collected at several sites. Limitations are based on a water table located at ≤36 inches of the surface.

---Dwellings W/O Basements; Not limited

---Dwellings With Basements; Very limited

---Small Commercial Buildings; Somewhat limited

---Lined Retention Systems; Somewhat limited

---Shallow Infiltration Systems; Severely limited

- These limitations will a) affect construction and maintenance of Stormwater Planters Type C (bioretention areas, bioswales) described in the MP, b) parking

lot construction, and c) construction for and depth of crawl/access space under the apartment complex for drinking water/sewerage pipes, electrical lines, and communication cables. The MP does not address how Bornstedt soil series E*ngineering Ratings* will affect construction and maintenance of the 30-unit apartment complex and its surroundings. The MP does not indicate what engineering methods will direct near-surface groundwater away from the apartment building crawl space area for 6-month or longer yearly rainy seasons over the apartment's life span.

Water Resources and Historical Land Use Changes

- Tables 2 and 2A in the MP Stormwater Management section present data that evidently comply with City of Oregon City design requirements for detention of water for 1-, 2-, 10-, and 25-yr storm events dumping, respectively, 1, 2, 3, and 4 inches of rain in 24 hours across the RDP. However, increasing rain-snow-tornado-hurricane storm frequency and intensity across the USA are harbingers of global climate changes in local/regional weather patterns observed for the past 100 years. How realistic, then, are current ditch, culvert, and specified Stormwater Planters Type C water removal methods from the RDP?
- Up to certain thresholds, Nature has tremendous ability to renew itself from major natural- and human induced disturbances. For example, some but not all 1930s dustbowl soil degradation was remediated by the 1960s using new tillage techniques, improved soil management, and plant breeding. But it seems ludicrous to assume that water movement over the RDP 0.91-acre site showing grass cover 70 yrs ago will be the same as water movement over the site in 2022 even if grass vegetation is still present.

Uphill from the RDP is a cemetery and urbanized area. Roadways, driveways, and rooftops all accumulate water in ways not possible 70 yrs ago. And, via laws of physics, all this water moves downhill, combines with runoff from the new paved RDP site, and flows southward past it to Warner Milne Rd. Is existing culvert piping diverting water under Warner Milne Rd. sufficient to handle increased water stormflow from the RDP? The existing MP does not address or answer this question.

In Summary

- Without onsite soil testing at the RDP, generalizations from an NRCS soil survey map about factual engineering ratings for the site are impossible. Stating the equivalent of "Everything is OK!" in the current MP is unacceptable.

- In similar fashion, grass vegetation at the RDP 70 yrs ago does not predict water movement into and away from the site now in 2022. Climatic conditions are different and overall stormwater flow into and away from the RDP is considerably more today than 70 yrs ago. The existing MP does not adequately address onsite RDP water excess, its removal, and increased long-term downstream flow consequences, particularly the stability of a necessary underground culvert at Warner Milne Rd.

Sincerely,

Leon H. Liegel
Co-Major PhD [Forestry/Soil Science]

Elyville/Barclay-Hills NA
% Karla Laws
419 Roosevelt St
Oregon City, OR 97045

January 16, 2022

Planning Department
City of Oregon City
695 Warner Parrott Rd
Oregon City, OR 97045

Subject: Comments GLUA-21-00066, SP-21-00017, NROD 21-00018 Kamm Street Apartments

To: Planning Department

This land use project at address 1155 Kamm St / 279 Warner Milne Rd. was presented to Elyville NA previously known as Barclay Hills NA in September of 2021 by Todd Iselin, Selin Architects PC. After the public proposal was published, we further discussed concerns and voted to submit comments as a Neighborhood Association at our duly-announced general meeting on January 11, 2022. Please respond to this comment in writing to the address above.

The main concerns neighbors identified include street infrastructure and safety, stormwater management, fire/emergency access on Kamm, and parking.

12.04 Streets, Sidewalks, and Public Places
Warner Milne is a busy street which makes visibility a concern. There is no pedestrian access, such as a sidewalk or a crosswalk. Will parking be legal on Warner Milne? Kamm is a quiet street that lacks infrastructure for more traffic and is also without a sidewalk. Kamm is only 20ft wide with no room for extra cars or adding sidewalks, which makes it technically a one lane street (<24 ft). On the West side of Kamm there is a large ditch to drain water since it is prone to flooding. On the North side of the street are residential duplexes. How can a regular-sized truck or emergency vehicle navigate safely and turn around on the street? If there is an emergency fire exit, will there be enough room for a fire truck to get in and out with extra residential parking on an already narrow street? How will residents navigate out of Warner Milne safely when the speed limit on Warner Milne is 35MPH? Kamm does not have a speed limit posted but for safety, but the speed limit ought to be no more than 20MPH. Pedestrians are hard to see on Kamm, especially with low visibility turning on Warner to Kamm. When Neighbors asked about a potential fire barricade or gate to keep apartment traffic off of Kamm, the architect and developer said they would support that but the City is saying “no.” Currently, residents turning from Warner onto Molalla Ave can wait as long as 5 mins to make a safe left.

12:08 Public and Street Trees
We see little room for street trees on Kamm, though if some plantings are possible without interference with residential parking, it could be good. Warner Milne should get street trees.

13:12 Stormwater Management
Currently, St John the Apostle Cemetery owns the easement to the ditch next to Kamm to drain water runoff/stormwater. Tremendous amounts of runoff affect this area that comes from the property. Rainfall this winter (2021-2022) is within normal levels. Looking at the stormwater vents for runoff, it looks like they are in the wrong location and most of the outlets/vents are inadequate for proper drainage (manhole on right next to the car in the picture here). This contributes to runoff issues. Looking at the city maps on stormwater, the pipe does a 90 degree angle on the NE side of Kamm to address the property. With additional rainfall, there are concerns of more flooding and wetness to an area that was recently NROD protected. Why is there permission from the Army if there are no wetlands? Doesn't the Army just deal with rivers? Does the developer recognize we have been in an over 10 year drought and lifting the protected status seems premature?

15:48 Filling and Excavating
Since this area was recently protected by NROD, there are many concerns. For instance, at least 15 large trees were removed without permits. At his presentation to the NA, the architect said that owner has had the lot for over 10 years. Other records show the lot was purchased in 2018, after which the large trees were removed. The soil content is mostly clay, and the loss of trees worsens runoff concerns. Foreseeably, there will be many issues, such as needing a cement treatment. When the trees were removed, the soil was not properly managed and compacted. GIS maps indicate this area is a ''wetlands' that drains directly into Newell Creek Canyon which feeds into Abernathy Creek. We are concerned about whether a typical excavator or developer could

manage the water runoff properly. Will the structure be built to do well long-term on this land? Where will the water go and will it affect the neighbors of the area? Will the runoff impact the ecology of Newell Creek Canyon? Several layers of soil will need to be removed, so where will the sediment go and will there be adequate sediment control? This also is an issue for municipal code *Erosion and Sediment Control 17:47*.

Mixed Use Corridor 17:32
There will be no room for much greenspace, park or community room. Where will residents enjoy the outdoors, kids play, or have a place to host special occasions? There are no playgrounds or parks within short walking distance.

Tree Protection Standards 17:41
In 2018 after the property was purchased, over 15 trees were removed and no permit was purchased. This can be seen on aerial photographs and street photography (such as Google Maps) from 2018 and prior. These trees absorbed water and helped with the water run. Many birds, insects, amphibians, and smaller animals used this area as their habitat. The tree canopy and habit should be restored for the neighborhood.

Erosion and Sediment Control 17:47
The soil is clay and the ditches move the water away from the lot. If the topsoil is removed, where will the sediment go? The drainage system barely can handle its current runoff levels. We are concerned about whether the city is requiring adequate measures to account for more rainfall. Current ditches do not sufficiently compensate for what cannot drain underground. The middle-bottom picture on pg. 2 shows where tree removal occurred, and the area is very soggy. The pictures were taken 1/7/22.

Natural Resources Overlay District 17:49
NROD should have not been removed. The wetlands here feed into Newell Creek Canyon. The land has potential significance for flood protection, aquifer recharge, and wildlife habitat. Where did animals go when the trees were cut down? Neighbors mentioned seeing hawks regularly before the tree removal. There are smaller creatures like racoons, skunks, possums, squirrels, ducks, many assortment of birds, insects, and amphibians. How can the habitats and scenic area be preserved once the structure and parking lot is put in? We are concerned that the development is not designed to be conscientious about the natural environment and wildlife at this site.

Off Street Parking and Loading 17:52

Warner Milne has posted speeds in excess of most residential districts. Our primary concern is pedestrian and vehicle safety due to low visibility. Sidewalks, bike lanes, and crosswalks are a must, especially with a substantial increase in demand for street parking. There is concern about overflow onto Kamm where there is no possible room to turn around. There is a drainage ditch on the south side and parking on that side is not advisable for proper maintenance of both vehicles and the drainage system. Kamm needs to be protected by a barrier and there is only enough room for the current residents to park there. Saint John the Apostle Cemetery is a business running along Kamm with the residents. The ditches are owned by Saint John the Apostle Cemetery and the city was given permission to build the ditches for the benefit of the community as the cemetery needs to be properly drained. How is a hearse supposed to safely park with more parked cars and traffic? How will this financially impact St John the Apostle Cemetery?

Parking for this complex is a concern that neighbors brought up.There are 24 2-bedroom units and 6 1-bedroom units. With a minimum expectation of 54 residents, the demand for parking could exceed availability. While we want to minimize impervious pavement, we are concerned about overflow parking into the streets. The easiest solution would be to have fewer units.

Site Plan and Design Review 17:62

Issues with the size of the development and NROD are discussed above. Issues of drainage are discussed above. Additionally, the wet area presents mold concerns, so we hope that would be planned for. Neighbors brought up concerns about the lack of gathering areas or shared community resources for the residents.

Administrative Processes 17:50

After the NA did an appeal of 535 & 545 Holmes Land Use GLUA-21-00002, we had concerns about the support of administration through the process and of the neutrality of staff. We have approached these comments with a focus on helping neighbors participate effectively in the process, but concerns remain about how engagement will go. We hope to not feel the need for another appeal. We call on the city staff to work in partnership with the NA and neighbors and not to see our questions and concerns as something to work against. We want to be sure that our comments and issues are actually considered for their intent and merit without efforts to dismiss them over whether we used every sort of proper language and reference. Also, we ask for transparent discussions (avoiding topics being only in executive sessions), and to support citizen ability to request public records. We hop this process is not only informative but helps teach and build knowledge for representation of the neighborhood associations. We are not professionals and have no legal support, and we rely on the city staff to help incorporate our expertise in knowing the places we live into the policy process. Wherever our concerns cannot

be directly applied because of current policy, we would like help identifying how policies could be improved in the future, especially environmental policy to better protect our tree canopy and the health of our water. ENA reserves the right to comment on documents that are provided after the comment period.

Other Concerns

There is no archeology report and we would like one. While reviewing history with Clackamas Historical Society, there may be historical significance with the building site since it is a possible burial site next to Historic Ely Plots. We would like the Archeologist of the Grand Ronde to provide a recommendation. The May 21 HHPR Wetland Delineation Report is not stamped and we should get recommendations. There should be a Geotechnical Investigation using test pits and this should have been done prior to the stormwater and traffic analysis. We would like to see the tree canopy restored and the developer accountable for removing the old large trees. Current Kamm residents are concerned about keeping their parking capacity as well as the safety of children and others on foot around their homes. They feel that the area lacks infrastructure to handle traffic from new residents.

Sincerely,
Karla Laws, Chair
Elyville / Barclay Hills NA

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION TRANSMITTAL – RESPONSE FORM

Date: 1-17-22

Land Use Application File Number: GLUA-21-00066: SP-21-00017, NROD 21-00018

NAME: Troy Brummell

AGENCY: Resident

EMAIL ADDRESS: t_brummell@hotmail.com

The land use application material is referred to you for your information, study and official comments. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return a copy of this form to facilitate the processing of this application and to ensure prompt consideration of your recommendations.

Please check the appropriate spaces below.

☐	The proposal does not conflict with our interests.
☑	The proposal conflicts with our interests for the reasons attached. (Please attach additional information)
☐	The proposal would not conflict our interests if the changes noted below or attached are addressed.

Please add any specific comments below or attach a separate document with more information.

Please see below comments that consist of 3 pages (7 bullet points) and an additional 6 pages consisting of (6) photos. This entire packet consist of 10 pages including this page.

CONTACT THE PLANNING DIVISION IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION TRANSMITTAL – RESPONSE FORM

Date: 1/16/22

Land Use Application File Number: GLUA-21-00066: SP-21-00017, NRO

NAME: Troy Brummell

AGENCY: Resident

EMAIL ADDRESS: t_brummell@hotmail.com

The land use application material is referred to you for your information, study and official comments. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return a copy of this form to facilitate the processing of this application and to ensure prompt consideration of your recommendations.

Please check the appropriate spaces below.

☐	The proposal does not conflict with our interests.
☑	The proposal conflicts with our interests for the reasons attached. (Please attach additional information)
☐	The proposal would not conflict our interests if the changes noted below or attached are addressed.

Please add any specific comments below or attach a separate document with more information.

Please respond in a paper by mail to Karla Laws 419 Roosevelt St Oregon City, OR 97045.
Please see below comments that consist of 3 pages (7 bullet points) and an additional 6 pages consisting of (6) photos. This entire packet consist of 10 pages including this page.

CONTACT THE PLANNING DIVISION IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION

To: City of Oregon City
c/o Christina Robertson-Gardiner
Crobertson@orcity.org

14 January, 2022

To whom it may concern:

My name is Brian J. Paulsen. I reside at 1129 Kamm Street in Oregon City and am a minority member of Kamm Street Properties, LLC, which owns and manages house numbers 1129, 1131, 1133, and 1135. As a member-occupant and neighborhood resident, it is my desire to express concerns about the proposed apartment development at 1155 Kamm Street, just a few lots down from where I live.

While I must admit that I have not been an active member of the Elyville (Barclay Hills) Neighborhood Association, I must compliment them on the awareness campaign that brought this proposed development to my attention. This being said, the fact that I didn't know about this proposal, just yards from my residence, speaks to a suspiciously clandestine effort to make this come to pass. Over the last months, I have seen workers along my street, sometimes even on our LLC's private property, who refused to identify the reasons for their presence. They spray-paint the road, place flags, and take photos. On one case, a worker even dug a small hole in our gravel parking area under the witness of my teenage child and informed our family that he was not obligated to let the residents know the purpose of the intrusion or to whom he reported. The workers may or may not have been related to this proposed development, but there is no way for us as residents to assess this because many of us only recently found out about this plan. Furthermore, the public notice stands as a small blue sign, unreadable at a distance, and placed at the very end of a dead-end road. This is in stark contrast to the last pair of neighborhood developments (the container homes at Warner & Prospect and the parking lot across from the vet's office) where, because of their visibility at the entrance to Warner Street, much more of the local populace had an understanding of what was being proposed. A 30-unit apartment structure constitutes a much larger change to the neighborhood; it deserved a more prominent display to residents.

For those who are not intimately familiar with the layout of the area, Kamm, Warner, Bullard, Hughes, Prospect, and May Streets are bordered and captive to Holmes Lane and Molalla Avenue. They are, by-and-large, narrow and without meaningful sidewalks and, with the exception of a large complex on May Street, house just one or two families per structure. There are no parks, but plenty of tree-cover, and the centerpiece is the Catholic cemetery. Understand that when I refer to "my neighborhood" in this letter, I am referring to this captive set of streets and not the larger city-defined neighborhood of Elyville.

It is my understanding that the proposed Kamm Street Apartment development was first intended to have fewer units and a barrier to prevent traffic backflow into the existing Kamm Street neighborhood. Please correct the record if it was not at the insistence of the city that more dwelling units were mandated, and the barrier removed. A building of this nature constitutes a major cultural shift in how the residents of our community live and furthers the argument that better notice ought to have been communicated. It seems that there has been no consideration given to those that live on Kamm Street, or the connecting streets that will be affected. For this reason, I feel I must make these comments in

opposition on the proposed development in order to protect those, like myself, who feel blindsided and betrayed.

Arguments in opposition:

I – Preservation of natural resources and habitats

The currently accessible version of the city's NROD map shows that much of Kamm Street and the properties proposed for development are within the NROD boundary (see map insert). As a resident, I know that our immediate area is home to many species of animals, including those typically found in a wetland environment. At my own residence, just yards from the proposed development, we have frogs (see photo from my front garden from November, 2021), ducks, and geese regularly in the rainy months. We are home to several species of birds, rodents, and even the occasional small snake. There is concern that the Wetland and Waters Report performed by Harper Houf Peterson Righellis, Inc., was unable to document any fauna, but one possible explanation is that over the six weeks previous to their study there was just over 1" of accumulated precipitation and less than one-tenth over the two-week period leading up to it; all of this leading up to a drought summer with the hottest temperatures ever recorded. Diligence would suggest that the study should have been postponed until adequate rain had returned to restore this habitat. Even seasonal natural resources deserve to be protected.

II – Traffic

A traffic study is part of the documents provided by the city. It is dated August 21, 2021. In it, it is suggested that an apartment building of this scale will generate 162 average daily ins and outs from the property. It insufficiently estimates, however, how many of these trips will come from the north or south drive entrances. If one is to assume that even half of the trips will leave the apartments by way of Kamm Street, that is an increase in traffic of over 80 car trips per day. These are cars that will travel to Molalla Ave. or Holmes Ln. by way of streets that are not meant to have this kind of traffic. Much of the immediate area (Kamm, Warner, Hughes, Bullard, May, and Prospect Streets) is barely wide enough for two cars to safely pass each other. Kamm Street itself is only about 20ft. wide. These streets have no lane dividers, and are not well-maintained. The edges of the street butt up against gravel driveways and parking lots, lawns, and gardens, and drainage ditches. There is no safe place for pedestrians to walk except in the traffic right-of-way and no place to introduce sidewalks without seizing property from homeowners and, in the case of Kamm Street specifically, disturbing the parking pads for the existing stretch of duplexes. The extra traffic will undoubtedly create a much greater potential for pedestrian versus car hazards or deter residents from walking or biking around the area altogether.

Additionally, there are no city parks or public green spaces in our immediate area and may homes have parking pads in lieu of driveways. For this reason, residents use the streets to walk their pets and

children use the streets and the grassy area around the drainage ditch to recreate. Soccer, basketball, hide & seek, radio-controlled cars, and bicycle races are common on Kamm and Warner Streets during good weather. It is also the route children must walk to get to the school bus stops in the early, darkened hours of the morning and afternoon at the beginning of the homebound commute. An increase in vehicle traffic like the one suggested by the cited traffic study would jeopardize the safety these activities.

III – Parking

The proposed 30-unit dwelling comes complete with about that many parking spaces. The DMV reports that in 2019 there were 375,262 passenger vehicle registrations in Clackamas County. The US Census Bureau counted 170,724 housing units. That means the average housing unit in Clackamas County will have an average of 2.20 cars per dwelling. While it may be true that the specific make-up of the residents chosen to live at the proposed apartment building may not each own two cars, the parking situation is gravely underserved. As stated before, Kamm Street is not particularly wide and is certainly of insufficient width or repair to become the overflow parking lot for the proposed development. As it stands, vehicles backing in and out of the duplexes' parking pads with anything larger than a compact car requires travelling nearly to the grassy edge of the drainage ditch to navigate. This area is also used on a temporary basis for event parking at St. John the Apostle Cemetery for memorial services and neighborhood events. Residents acknowledge the long-standing presence of the cemetery and adapt to the temporary use of this parking area; very rarely do we have vehicles left parked overnight.

The constant presence of overflow street parking from the proposed development will make the area unnavigable for residents, especially those with longer vehicles. In addition, the statistics above suggest that the parking deficit could be up to thirty extra vehicles. Kamm Street only has the west side to accommodate street parking of any kind as any cars parking on its east bank would impede access to private property. This means that residents of the 30-unit building may have to park on adjoining streets (like Warner, Hughes, or Bullard) simply to walk home. These cars would then be parked against homeowners' properties without the buffer of a sidewalk increasing the potential for trampled garden spaces, tire marks in lawns, or trespass.

Given the situation and the make-up of our community, a 30-unit dwelling ought to have 45-50 parking spaces or risk creating a street-parking situation that does not fit with the current character and scale of the surrounding neighborhood (Code 17.52.015). As a matter of opinion, there is a lot about more than tripling the number of households on Kamm Street that does not fit the current character or scale of the surrounding neighborhood.

Conclusion:

I must admit that I see some merit in developing the proposed properties. I recognize the need for additional housing, I like the idea of safe pathway to walk toward the Hilltop shopping center without walking along the busy Molalla Avenue. I even see a safety benefit from having a throughfare and additional hydrant to accommodate the needs of the fire department. However, all of these needs can be met with a much smaller development – one that mirrors the single-family and duplex homes that

are native to Kamm Street. It should be considered that a 30-family development is impractically big as it drastically changes the culture of the area adding dozens of new residents and their automobiles to an area which for decades has been a quiet, dead-end road in a manner that cannot preserve the habit provided by the current environment. Even if the drainage ditch is man-made, it has been there for a very long time and thus has become part of the natural environment and if I can receive visits from aquatic animals at my home at 1129 then they must exist at 1155. If one must develop this habitat, lower density homes with yards is a much closer replacement than a three-story building and a paved parking lot and a tiny picnic area.

In the case where the city approves this development at the current scope and size, I would implore them to reconsider the swing-gate barrier originally proposed and approved by Clackamas Fire for the well-being of the surrounding residents. Warner-Milne Road is well-developed. There are no children that use it for play and no residents that must back in or out to get to their homes. Warner-Milne Road features sidewalks with bike lanes on both sides of the road to safely separate cyclists and pedestrians from the increase in vehicle traffic. No logical reason exists to increase the traffic level, and thus the danger to residents, on Kamm Street, Warner Street, or any other neighborhood street when a safe option exists on the arterial road. In addition, I would suggest that the west side of Kamm Street that abuts the Church's property be designated to restrict overnight parking as a deterrent against the new residents filling the street with extra parked cars. This is a courtesy to the Church, who owns the property that includes the drainage ditch, so they can stage visitors for their daytime purposes, and a courtesy to the current residents of Kamm Street so they can safely navigate the street, entering and exiting their homes without the risk of collision.

I respectfully submit these facts and opinions to the committees responsible for final approval. It is my conclusion that, while the goal of further housing in Oregon City is noble, the proposed development cannot fit the form and function the surrounding area without posing both nuisance and safety hazard to its current residents and wildlife. Please consider drastically reducing the impact on the neighborhood at large with vast reductions to the project's scope or by denying the project outright.

Regards,

Brian J. Paulsen, resident

1129 Kamm St.

Oregon City, OR 97045

b.j.zytron@gmail.com

Member, Kamm Street Properties, LLC

PO Box 71

Oregon City, OR 97045

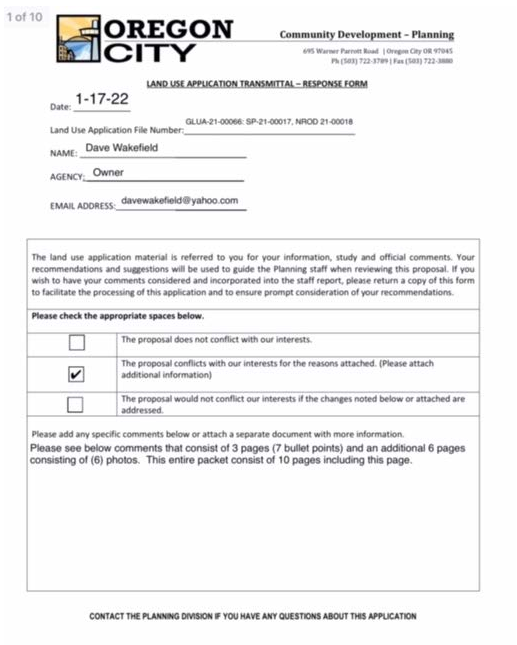
From: dave wakefield
To: Troy Brummell
Cc: Christina Robertson-Gardiner; Planning; Karla Laws; dave wakefield
Subject: Public Comment for Kamm Develpment
Date: Tuesday, January 18, 2022 3:13:21 PM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Christina,

See the attached public comment for GLUA-21-00066: SP-21-00017, NROD 21-00018 development on Kamm Street. Please respond to this email confirming you received the attached.

Sincerely,
Dave Wakefield, Owner
971-409-7005



1 of 10

OREGON CITY — Community Development – Planning
695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION TRANSMITTAL – RESPONSE FORM

Date: 1-17-22

Land Use Application File Number: GLUA-21-00066: SP-21-00017, NROD 21-00018

NAME: Dave Wakefield

AGENCY: Owner

EMAIL ADDRESS: davewakefield@yahoo.com

The land use application material is referred to you for your information, study and official comments. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return a copy of this form to facilitate the processing of this application and to ensure prompt consideration of your recommendations.

Please check the appropriate spaces below.

☐	The proposal does not conflict with our interests.
☑	The proposal conflicts with our interests for the reasons attached. (Please attach additional information)
☐	The proposal would not conflict our interests if the changes noted below or attached are addressed.

Please add any specific comments below or attach a separate document with more information.
Please see below comments that consist of 3 pages (7 bullet points) and an additional 6 pages consisting of (6) photos. This entire packet consist of 10 pages including this page.

CONTACT THE PLANNING DIVISION IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION

RE: This is a public comment in response to concerns I have with project GLUA-21-00066: SP-21-00017, NROD 21-00018 at 1155 Kamm St & 279 Warner Milne Rd Oregon City OR.

1. These plans show an extension of Kamm street connecting it to Warner-Milne. A connection to Kamm should not even be considered by planning unless the developer is required to make street improvements to Kamm which would include widening the street to city standards and putting in sidewalk for pedestrians. This seems to be in order with Chapter 12.04 & 16.12 of city code. Kamm Street is currently what I would consider a single lane road that barley gives adequate spacing for (2) vehicles to pass. As a long-term resident at this address, I have observed for years the amount of foot traffic that utilizes Kamm street. This would range from children who ride bicycles to people walking dogs, to folks from Clipper Ridge Apartments walking to the bus stop. Kamm street has significant usage from the surrounding neighbors and a thru road would have a serious negative impact to the safety of those who use Kamm as they must walk in the street right of way. In addition, the city recently approved 60 homes to be built on Holmes Lane just to the North of this development. This will without a doubt increase traffic in the area. Currently, those who use Holmes Lane who wish to connect to Warner Milne must go up to Molalla Ave or Linn Ave which are the two main arteries for the city. If Kamm is connected as a thru street or as a "driveway" and with the addition of these already approved homes going in on Holmes Lane you will have an exponential increase in traffic using Kamm connecting thru to Warner Milne which again jeopardizes safety in the community.

2. These plans do not provide adequate parking for residents once the project is complete. The developer is proposing 30 units and providing 34 parking spaces. Although I understand this may meet minimum requirements per city code it simply is not realistic. The national average of vehicles owned per household is 1.88 vehicles. This would mean that the builder should provide no less then 56 parking spaces. Even if you were to give the benefit of doubt and assume each household living in this community had one vehicle, it would still stand to reason that these residents would at some point have guest that will need a place to park. By providing only (1) parking stall per household you then are asking visitors to park either on Kamm Street or Warner Milne. Both options create a safety hazard, but especially on Kamm. The east side of Kamm Street is driveway ingress and egress for residents. Once again without proper street improvements and widening of Kamm street, any vehicle parked on the west side of Kamm will block residents from being able to back out of their own driveways. As such city code 17.52 states "An adjustment to a minimum parking standard may be approved based on a determination by the planning commission". Which means the planning department can at there discretion and considering public safety require more adequate parking.

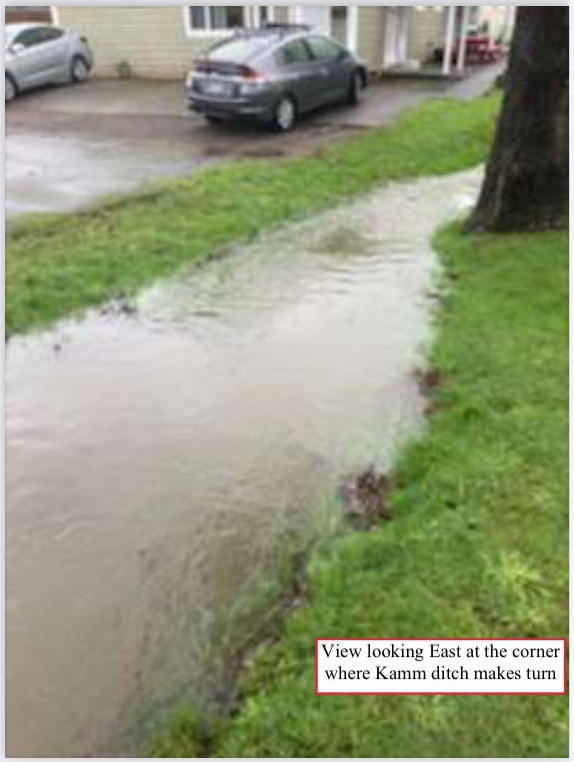
3. 17.29 Site plans do not provide adequate green space or play area for children. This again will become a safety concern as children living inside this community will then play in the parking lot or street potentially getting hit by an oncoming vehicle.

4. Pursuant to 13.12 a 30" culvert will not provide adequate drainage for stormwater. I have attached photos taken on January 6, 2022 showing the amount of stormwater that flows thru this drainage ditch currently in place during a normal rain season. Furthermore, looking at the topography of the project sight all water naturally slops downward to the lowest point from both fields adjacent to this property ending at the current ditch that was put into place by the city to mitigate flooding. By changing the natural drainage and flood point for stormwater this increases the chances of flooding onto Kamm and eventually my property at 1147 Kamm Street. The report that was submitted by the developer is dated September 3, 2021 which suggest that it was performed after one of the driest summers on record in Oregon and the concern is this was not taken into account on the design for stormwater and thus will lead to flooding in this area.

5. Development does not meet standards for tree replacement per city code 12.08 & 17.41. According to public records the sight at 1155 Kamm St was sold in September 2018 & 279 Warner Milne in October 2018. Around November 2018 there were approximately 12-15 old growth trees removed from this project sight that measured greater than 31" in diameter. An attempt via a public records request was made to obtain a copy of the permit that should have been issued by the city to determine the exact number of trees removed. This records request was completed September 22, 2021 and Jakob Wiley assistant city recorder for Oregon City confirmed no permit was ever issued. Therefore, a determination could not be made on the exact number of old trees removed; however, google maps clearly shows that between June 2018 and May 2019 a clear cutting occurred on the development property. As such my concern is the developer did not follow city protocol in determining the environmental impact on any wildlife or endangered species that may have lived in this area among these old trees and the plans do not meet the standards set forth by the city for replacing those trees that were removed.

6. Pursuant to 17.49 NROD is part of the property at 1155 Kamm Street and doesn't seem to have been taken into consideration for the development of this property. If NROD was removed then is it due to the old growth trees that once sat on this property and were removed illegally by the developer? It's not my place to say but it is important to see from the attached pictures the amount of ground water that is on site in what is considered NROD for this property. I will say from my time living here on Kamm that several species of squirrels and birds do utilize this space as a living habitation and source of water throughout the year.

7. Pursuant to 17.40 the sight development could potentially be in a historic overlay area and sight plans do not show supporting documentation from the Confederated Tribes of the Grand Ronde.



View looking East at the corner where Kamm ditch makes turn

View looking North at the corner where Kamm ditch makes turn

View looking South towards Warner Milne

Area just to the side of the drainage ditch where NROD is currently. This photo shows the amount of ground water produced into this property.

GLUA-21-00066: SP-21-00017, NROD-00018 Kamm Street Apartments

Saturday, January 8, 2022 9:39 AM

Hello my name is Steve Lewis and I live at 1143 Kamm St and I have some concerns about these apartments.

First, what they build on this property I don't have a problem with, other than the concern about the water run off and that the creek stays clear to flow with no back up. My concern is with opening up Kamm Street at all. Mainly because I worry about the creek flow and how putting a bridge or culvert over the creek might effect that flow. Also Kamm St is a very narrow road and increase traffic would be very dangerous. Because of the creek flow down one side of the street there can be no widening, no parking, no sidewalks on that side of the street. On the other side there is just enough room for residents to park in their driveways, no room to widen to allow sidewalks or street parking.

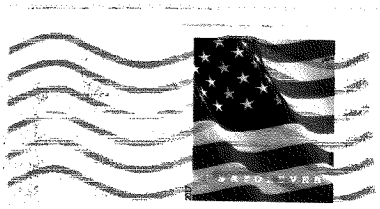
Please do not open Kamm Street to anything more than a pedestrian walk through. Go ahead and build the apartments but make the only entrance and exit on Warner Milne.

Thank You

Steve E Lewis

VE LEWIS
3 KAMM ST
EGON CITY
97045

PORTLAND OR 972
8 JAN 2022 PM 2 L



OREGON CITY PLANNING
P.O. BOX 3040
OREGON CITY OR.
97045

97045-03040

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

April 6, 2022

Ms. Christina Robertson-Gardiner
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF TRANSPORTATION ANALYSIS LETTER – KAMM STREET APARTMENTS – GLUA21-66 SP21-117

Dear Ms. Robertson-Gardiner:

In response to your request, I have reviewed the Transportation Analysis Letter (TAL) submitted in support of the development of an apartment complex at 279 Warner-Milne Road. The site, most recently utilized for an office, is located on the north side of Warner-Milne Road between Molalla Avenue and Beavercreek Road. The TAL, dated August 21, 2021, was prepared under the direction of Rick Nys, PE of Greenlight Engineering.

The proposal would result in construction of 30 units of multi-family housing.

Overall

I find the TAL addresses the city's requirements and provides an adequate basis to evaluate impacts of the proposed development.

Comments

1. ***Trip Generation.*** The TAL presents information on trip generation from the construction of 30 units of multi-family housing. The trip generation rates were taken from the Institute of Transportation Engineers' *Trip Generation Manual.* The 30 units are calculated to produce 11 AM peak hour trip; 14 PM peak hour trips; and 162 weekday trips. The TAL also estimated the trips from the prior use.

2. ***Access Locations.*** There is an existing driveway utilized by the prior office use. According to the TAL, the exiting driveway will be relocated to the east and will be reduced in width from approximately 36 feet to 24 feet. The new driveway will be approximately 80 feet west of the centerline of the nearest existing driveway to the abutting property to the east, which serves an accounting office. There is not a nearby driveway on the abutting property to the west.

As illustrated in the site plan, the proposal also includes a connection to Kamm Street, a public street that currently terminates at the property's north boundary. The connection is designed to enhance neighborhood connectivity.

3. ***Driveway Width.*** The engineer indicates driveways will be constructed to a width of 24 feet to meet city standards.

4. ***Intersection Spacing.*** The proposal does not create any new intersections.

5. ***Sight Distance.*** The engineer states that sight distance at the driveway location will exceed 335 feet, the distance associated with the 30-mph posted speed on Warner-Milne Road. He concludes sight distance is adequate and recommends no mitigation for sight distance. I concur.

6. ***Safety Issues.*** The TAL includes reported crashes along Warner-Milne Road from the Oregon Department of Transportation records. Most of the crashes in the crash history occurred at the intersections of Warner-Milne Road with Beavercreek Road and with Molalla Avenue. The engineer indicates there is not a history of crashes at the site or nearby driveways. The engineer states there are no safety issues associated with the design and location of pedestrian, bicycle, or transit safety.

7. ***Consistency with the Transportation System Plan (TSP).*** The TAL indicates that the existing sidewalk is somewhat less than current standards. The engineer raises an issue about proportionality of improvements but states that if upheld, frontage improvements will be made to city standards.

   The planned street connection to Kamm Street is shown in the site plan though it is not discussed in the TAL. The need for a connection from the apartment complex to Kamm Street is based on Oregon City Municipal Code Title 16. In addition, the planned local street connection is consistent with TSP policies. Connectivity is a key element of the TSP and the goal of increasing non-single-occupant automobile use. A connection through the site to Kamm Street is supported by the TSP.

8. ***Conclusion.*** The engineer properly estimates traffic generated by the development. He indicates the driveway will be relocated to an appropriate location and width. He concludes that sight distance is adequate and that there are no safety issues raised by the development proposal.

Conclusion and Recommendations

I find that the TAL meets city requirements and provides an adequate basis upon which impacts of the development can be assessed.

The TAL does not provide any estimates of the impact of providing a connection though the site between Warner-Milne Road and Kamm Street. Such estimates are not required by the city's *Guidelines for Transportation Impact Analysis*, which does not require traffic counts, estimates of traffic on individual streets, or operational analysis for small developments. This development meets the definition of a small development that requires only a TAL.

The connection of Warner-Milne Road to Kamm Street through the site will provide connectivity to Warner-Milne Road for the neighborhood along Warner Street and for the apartment residents to Molalla Avenue. Some cut-through traffic might be expected, but this is likely to be limited because the major streets, Warner-Milne Road and Molalla Avenue, experience limited delays, operate well, and have higher posted speeds than the local residential streets.

I recommend conditions of approval include implementing frontage improvements. There are no other transportation-related issues associated with this development proposal requiring mitigation.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

John Replinger, PE
Principal

Oregon City\2021\GLUA21-66TAL2

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

April 6, 2022

Ms. Christina Robertson-Gardiner
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF PUBLIC COMMENTS – KAMM STREET APARTMENTS – GLUA21-66

Dear Ms. Robertson-Gardiner:

In response to your request, I have reviewed the public comments provided in relation to the proposed Kamm Street Apartment project.

The comments I reviewed included those from Wolf, Brummell, St. John The Apostle Cemetery, Pieslewicz, Laws, Paulsen, and Lewis.

Among the specific comments were criticism of the Transportation Analysis Letter (TAL) for an incorrect estimate of traffic volumes on Warner-Milne Road and the use of an "old" edition of the *Trip Generation Manual* for estimating traffic generated by the development.

The TAL prepared by applicant's engineer met the standards specified in in the city's *Guidelines for Transportation Impact Analysis.* For small developments (this development meets the definition), traffic counts and traffic operations analysis are not required. The traffic volume for Warner-Milne Road referenced in the TAL was merely a general descriptor of the traffic volume and did not factor into any analysis or conclusions about the development. The engineer used the 10th Edition of the Institute of Transportation Engineers' *Trip Generation Manual.* This edition was, in fact, the current version when he prepared his report in August 2021. The 11th Edition was released in September 2021. Interestingly, using the 11th Edition results in slightly fewer trips for the proposed development.

Many comments related to Kamm Street, its current usage, and configuration. With a connection from Kamm Street to Warner-Milne Road, there will undoubtedly be some increase in traffic on Kamm Street. Residents of Warner Street and Kamm Street will be able to access Warner-Milne Road through the apartment complex and residents of

the apartments will be able to access Molalla Avenue via Kamm Street and Warner Street.

There is some potential for cut-through traffic, but I think this will be minimal since the major streets, such as Warner-Milne Road and Molalla Avenue are relatively uncongested and have higher speed limits than the residential streets. I think there is little potential for saving time by using this connection.

Suggestions that Kamm Street be widened and be upgraded for "safety reasons" might actually encourage higher traffic speeds and more cut-through traffic. As explained by city staff, requiring the developer to fund off-site improvements can only be justified if proportional to the development's impacts.

I concluded that Kamm Street can accommodate traffic from the proposed development and that most traffic will use the primary access to Warner-Milne Road. The configuration of Kamm Street will tend to discourage traffic and will help cause motorists to operate at slow speeds.

I find nothing in the comments to alter my conclusion that the transportation system is adequate to accommodate the proposed development. None of the comments leads me to conclude that the transportation study needs to be corrected or supplemented.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

John Replinger, PE
Principal

Oregon City\2021\GLUA21-66COM1

July 23, 2021

State Archaeologist
Oregon State Historic Preservation Office
725 Summer St. NE, Ste. C
Salem, OR 97301

Oregon City's municipal code requires notice be sent to selected Tribes and SHPO before development involving ground disturbance may occur. Oregon City will not be reviewing projects on archeological criteria, but we want to make sure that the applicant is aware of any potential archeological issues as early in the process as possible.

Please review the attached maps and descriptions on the following pages and return any comments regarding potential archeological issues to me **within 45 days** and your comments will be forwarded to the applicant.

You can send replies to:

Diliana Vassileva
Oregon City Planning Division
PO Box 3040
Oregon City, OR 97045

Thank you and please feel free to contact me with any additional questions or concerns.

Sincerely,

Diliana Vassileva

Assistant Planner
Oregon City

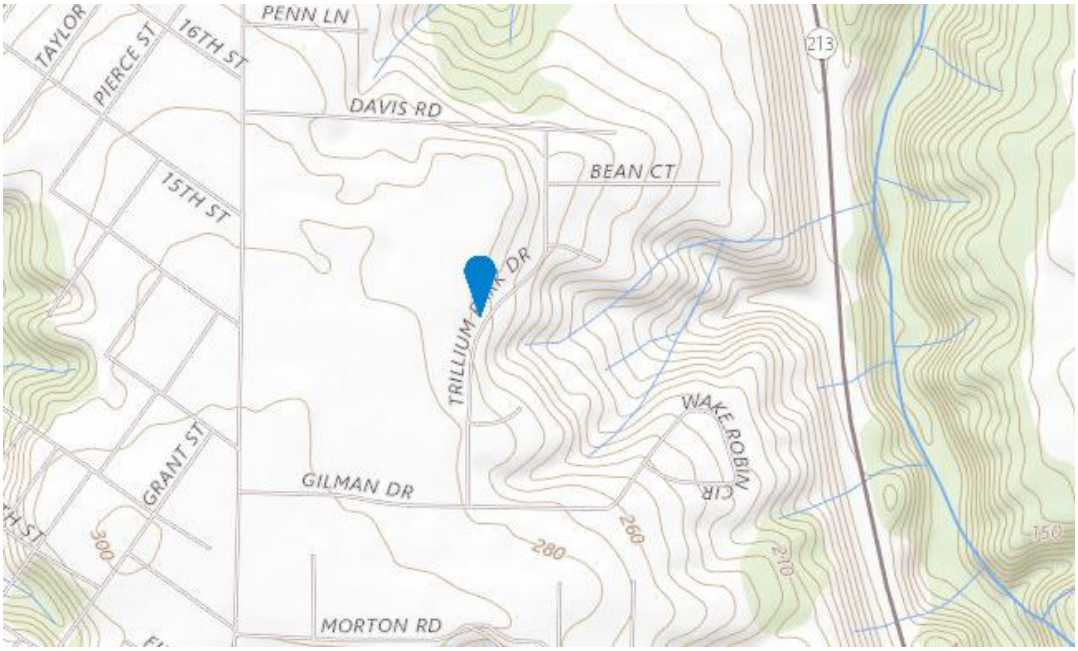
Project: PA 20-53

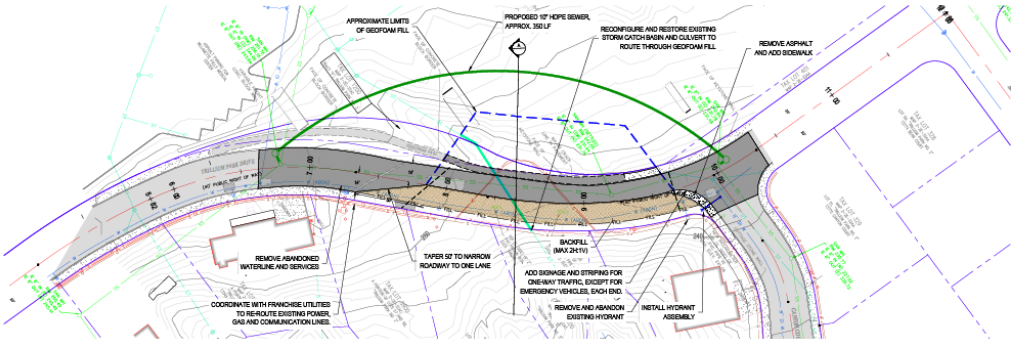
Project Description: Pre-application conference for Trillium Park Drive reconstruction.

Location: Trillium Park Drive Public Right-of-Way, Oregon City Oregon 97045

Clackamas County Map:

- T: N/A (Public right-of-way)
- R: N/A (Public right-of-way)
- S: N/A (Public right-of-way)
- Tax Lot: N/A (Public right-of-way)





PLAN VIEW

OREGON CITY

FIGURE X-X
APRIL 2019
JOB NO. 818-007

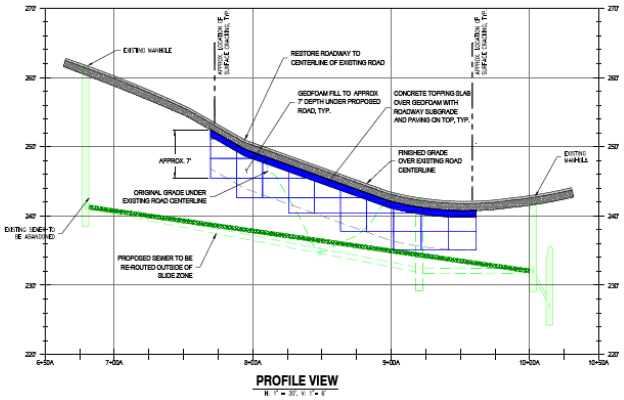
TRILLIUM PARK DRIVE LANDSLIDE MITIGATION ALTERNATIVES ANALYSIS

ALTERNATIVE 2.3.3

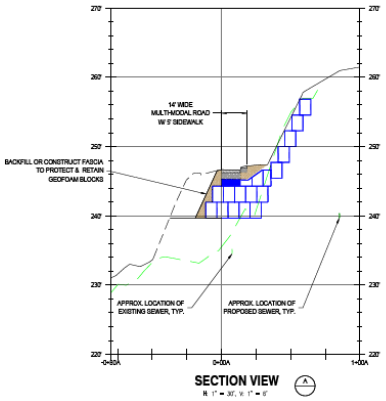
RECONSTRUCT ROAD WITH GEOFOAM AS ONE-WAY / MULTI-MODAL ROAD. RESTORE UTILITY SERVICE BY RE-ROUTING SEWER VIA HDD.

SCALE: 1" = 30'

RH2 ENGINEERING



PROFILE VIEW



SECTION VIEW

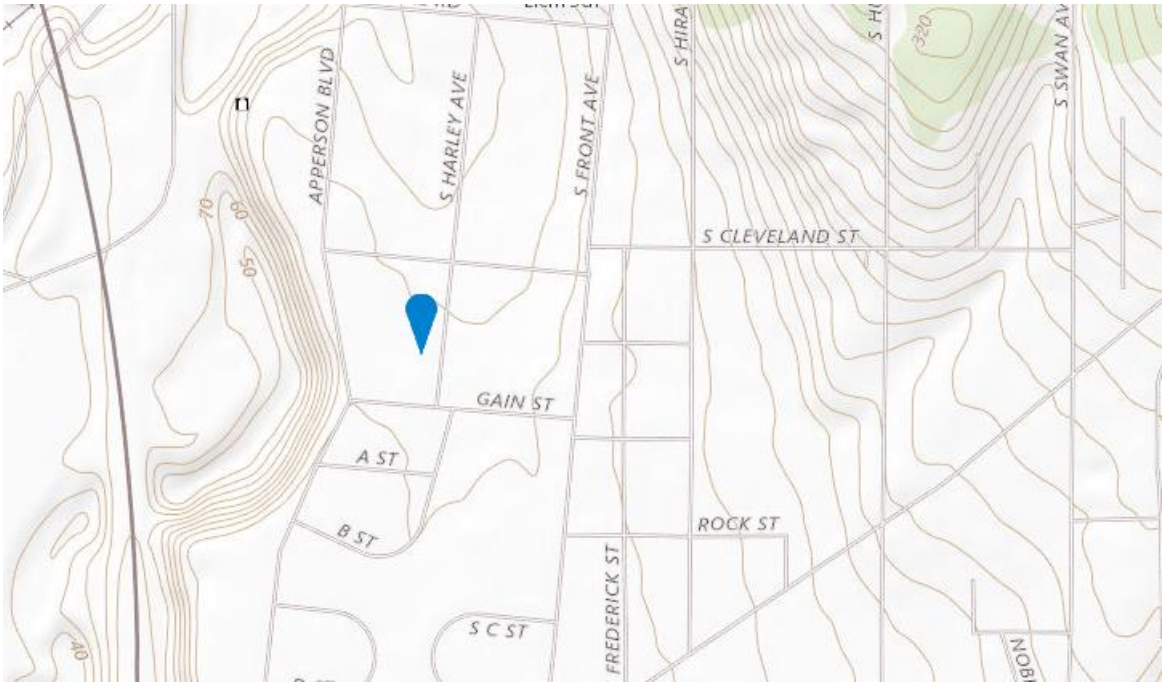
Project: PA 21-01

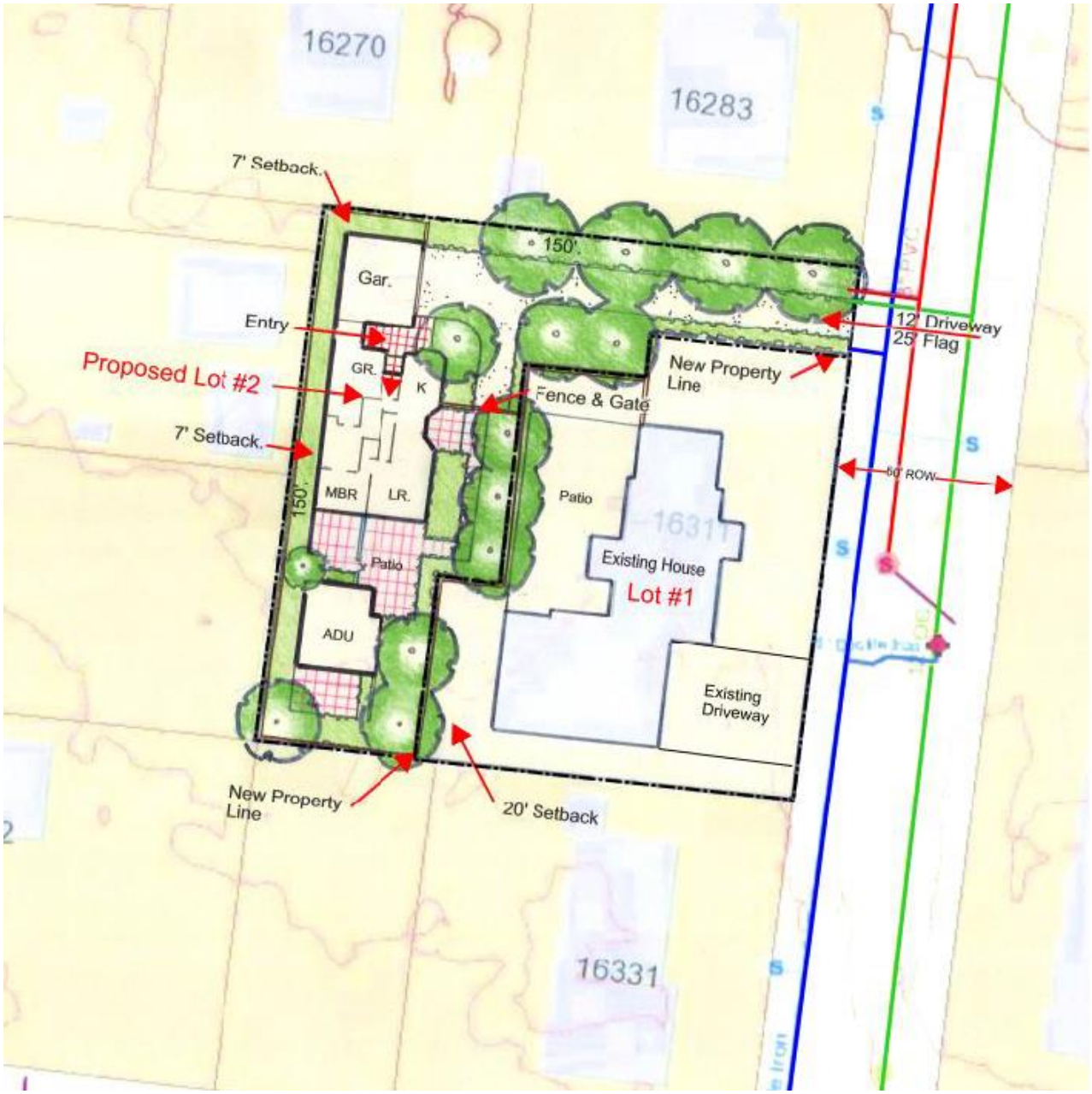
Project Description: Pre-application conference for a two-lot land division.

Location: 16311 Harley Avenue, Oregon City, Oregon 97045

Clackamas County Map:

- T: 2S
- R: 2E
- S: 29AA
- Tax Lots: 2400




16270
16283
16331
7' Setback.
150'
Gar.
Entry
GR.
K
Proposed Lot #2
7' Setback.
150'
MBR
LR.
Patio
ADU
Fence & Gate
New Property Line
12' Driveway
25' Flag
60' ROW
Patio
Existing House
Lot #1
Existing Driveway
New Property Line
20' Setback

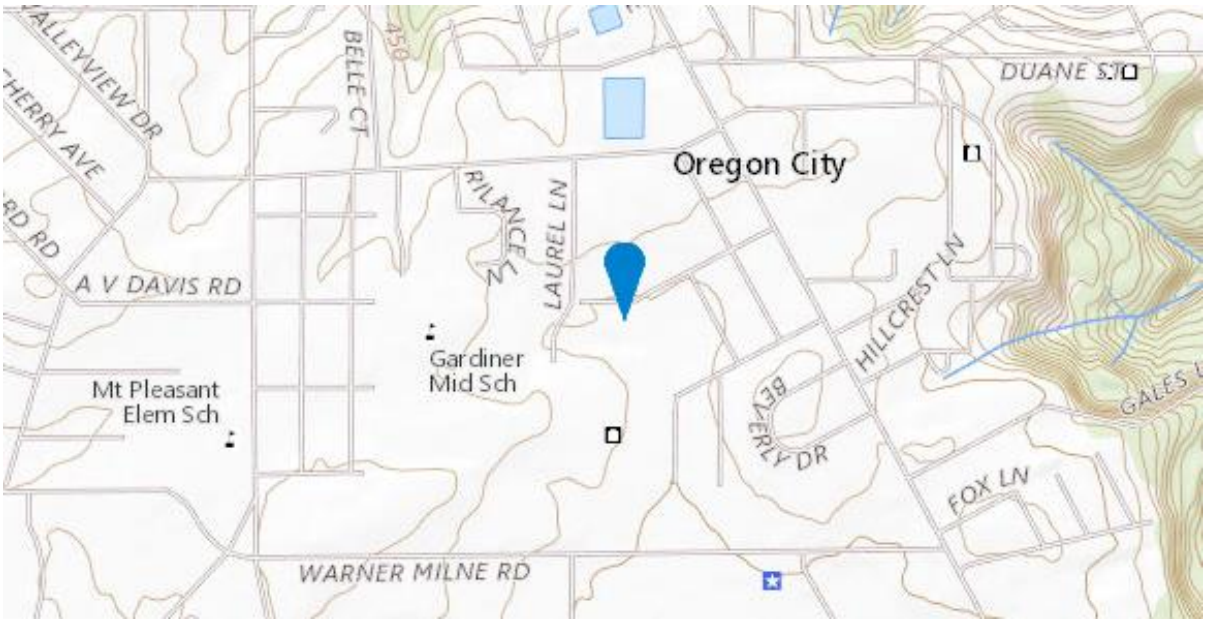
Project: PA 21-02

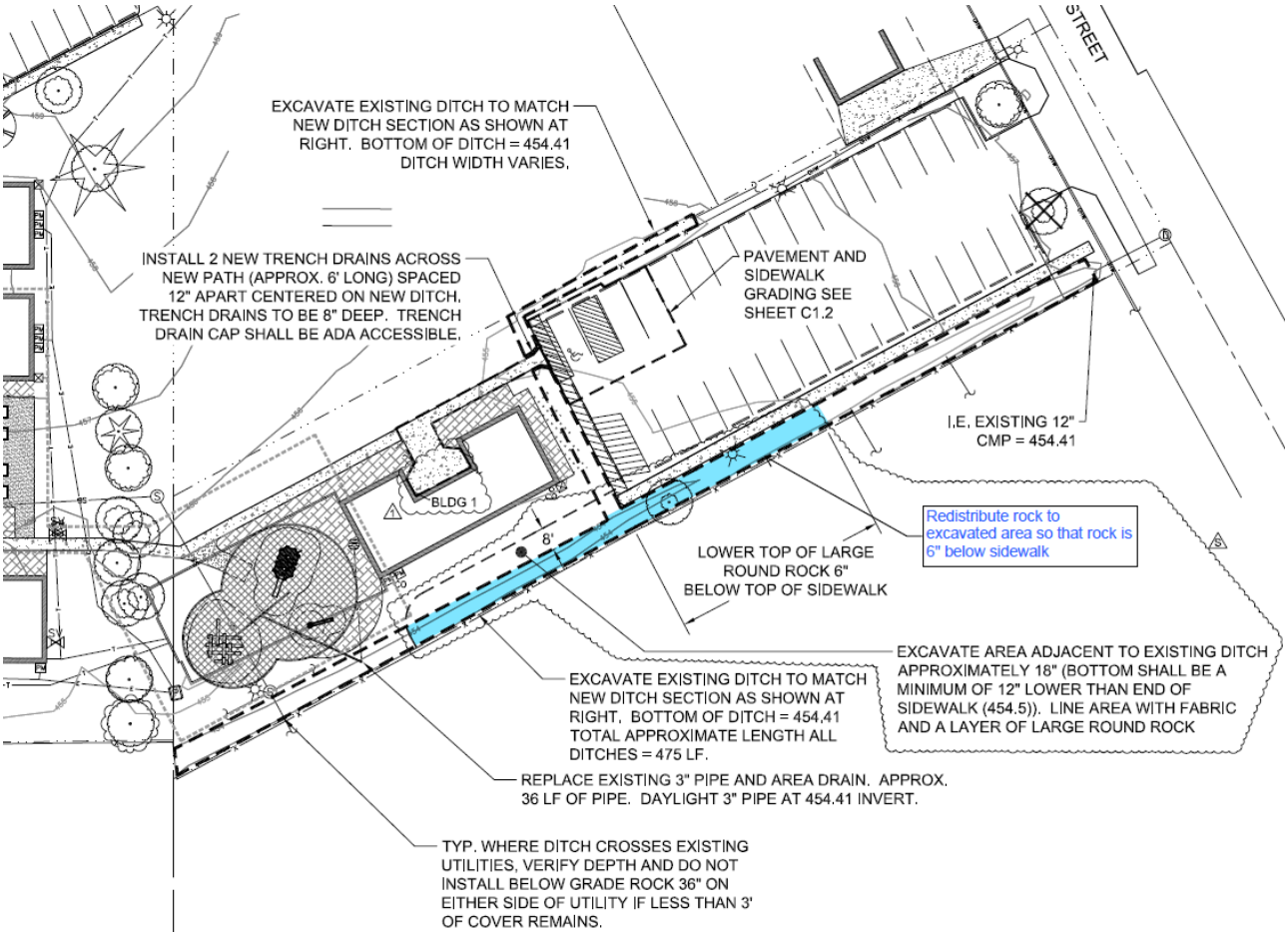
Project Description: Pre-application conference for natural resource review for proposed excavation work.

Location: 600 May Street, Oregon City, OR 97045

Clackamas County Map:

- T: 3S
- R: 2E
- S: 05BC
- Tax Lots: 7001




EXCAVATE EXISTING DITCH TO MATCH NEW DITCH SECTION AS SHOWN AT RIGHT. BOTTOM OF DITCH = 454.41 DITCH WIDTH VARIES.
INSTALL 2 NEW TRENCH DRAINS ACROSS NEW PATH (APPROX. 6' LONG) SPACED 12" APART CENTERED ON NEW DITCH. TRENCH DRAINS TO BE 8" DEEP. TRENCH DRAIN CAP SHALL BE ADA ACCESSIBLE.
PAVEMENT AND SIDEWALK GRADING SEE SHEET C1.2
I.E. EXISTING 12" CMP = 454.41
BLDG 1
8'
Redistribute rock to excavated area so that rock is 6" below sidewalk
LOWER TOP OF LARGE ROUND ROCK 6" BELOW TOP OF SIDEWALK
EXCAVATE AREA ADJACENT TO EXISTING DITCH APPROXIMATELY 18" (BOTTOM SHALL BE A MINIMUM OF 12" LOWER THAN END OF SIDEWALK (454.5)). LINE AREA WITH FABRIC AND A LAYER OF LARGE ROUND ROCK
EXCAVATE EXISTING DITCH TO MATCH NEW DITCH SECTION AS SHOWN AT RIGHT. BOTTOM OF DITCH = 454.41 TOTAL APPROXIMATE LENGTH ALL DITCHES = 475 LF.
REPLACE EXISTING 3" PIPE AND AREA DRAIN. APPROX. 36 LF OF PIPE. DAYLIGHT 3" PIPE AT 454.41 INVERT.
TYP. WHERE DITCH CROSSES EXISTING UTILITIES, VERIFY DEPTH AND DO NOT INSTALL BELOW GRADE ROCK 36" ON EITHER SIDE OF UTILITY IF LESS THAN 3' OF COVER REMAINS.

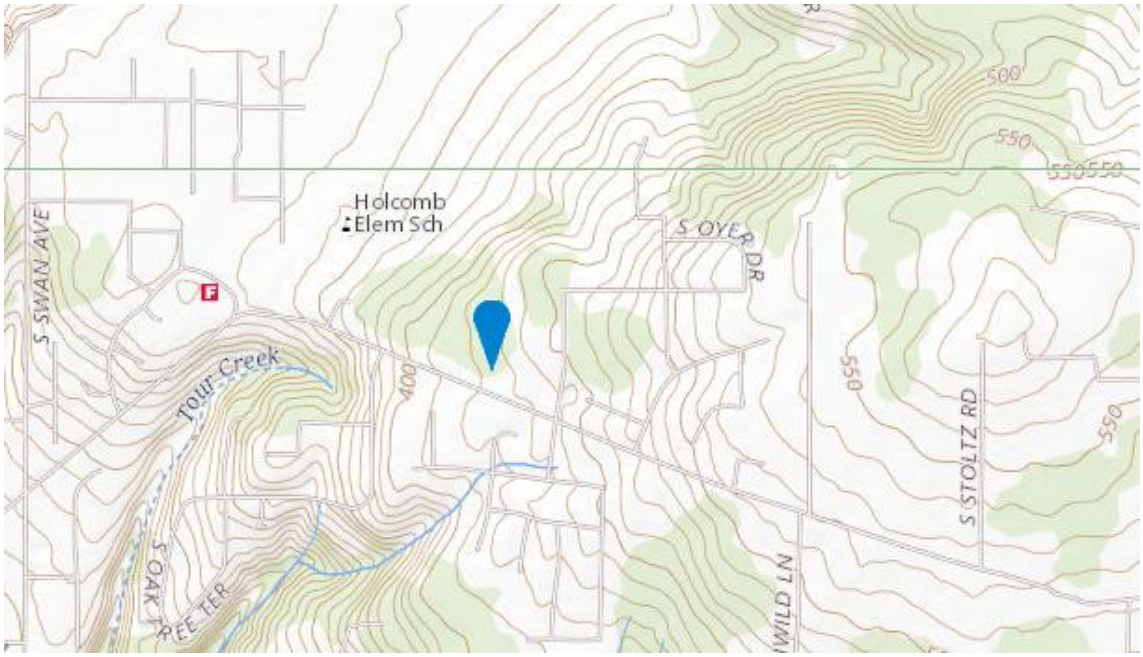
Project: PA 21-04

Project Description: Pre-application conference for a proposed zone change and subdivision.

Location: No Situs Address, Holcomb Boulevard, Oregon City, OR 97045

Clackamas County Map:

- T: 2S/2S
- R: 2E/2E
- S: 21D/28A
- Tax Lots: 2100, 2200, 2300/500, 2200, 2300



NROD
Urban Growth Boundary
Urban Growth Boundary
oundary
Holcomb Blvd
Gross Site Area = 35.26 Acres
Street Right-of-way = 7.94 Acres

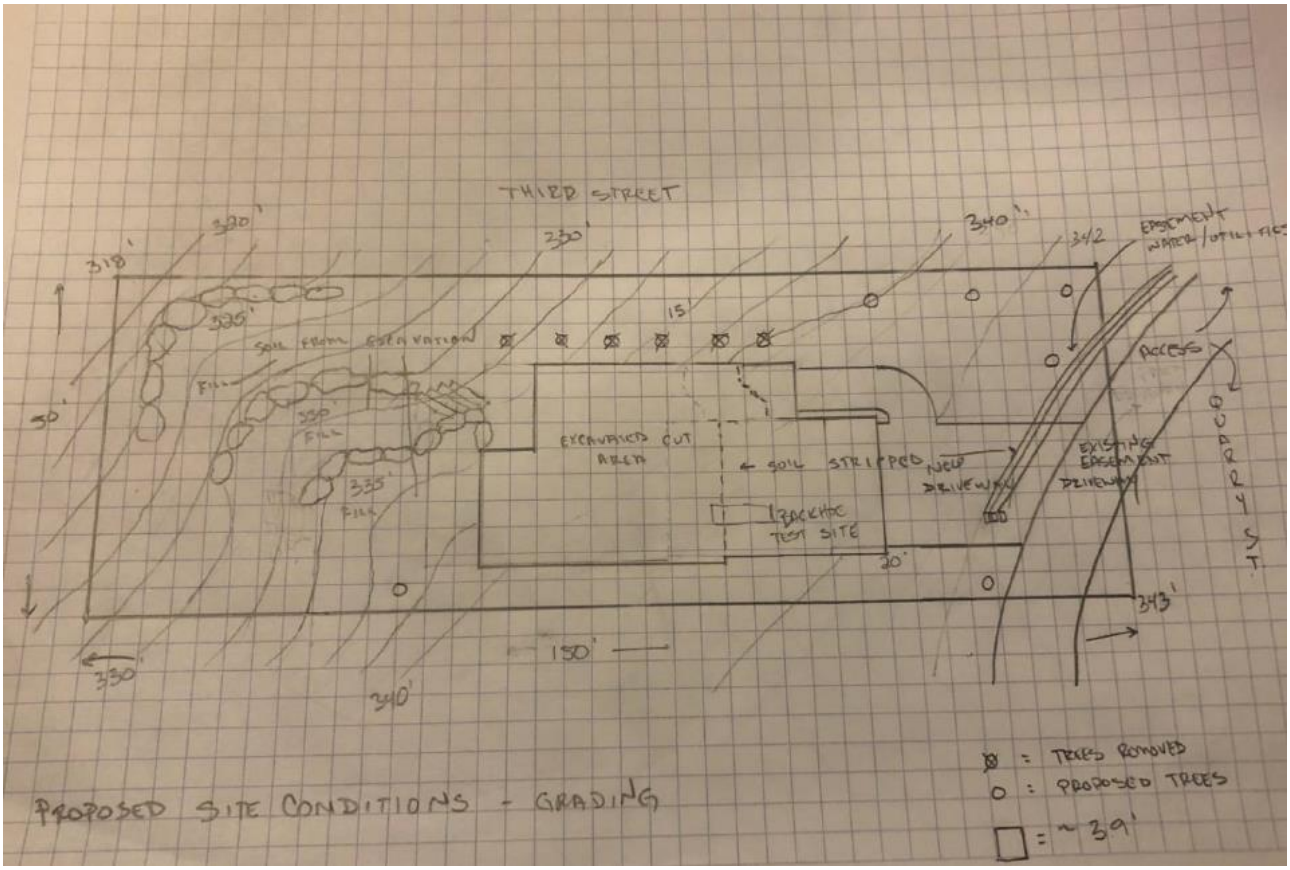
Project: PA 21-05

Project Description: Pre-application conference for new single-family home within the geologic hazards overlay.

Location: No Situs Address, Quarry Street, Oregon City, OR 97045

Clackamas County Map:

- T: 2S
- R: 2E
- S: 31DA
- Tax Lots: 6300


THIRD STREET
318'
320'
330'
340'
342
EASEMENT WATER/UTILITIES
325'
SOIL FROM EXCAVATION
FILL
15'
50'
330'
FILL
335'
FILL
EXCAVATED CUT AREA
SOIL STRIPPED
NEW DRIVEWAY
BACKHOE TEST SITE
20'
ACCESS
EXISTING EASEMENT DRIVEWAY
QUARRY ST.
343'
150'
330'
340'
= TREES REMOVED
O : PROPOSED TREES
= ~39'
PROPOSED SITE CONDITIONS - GRADING

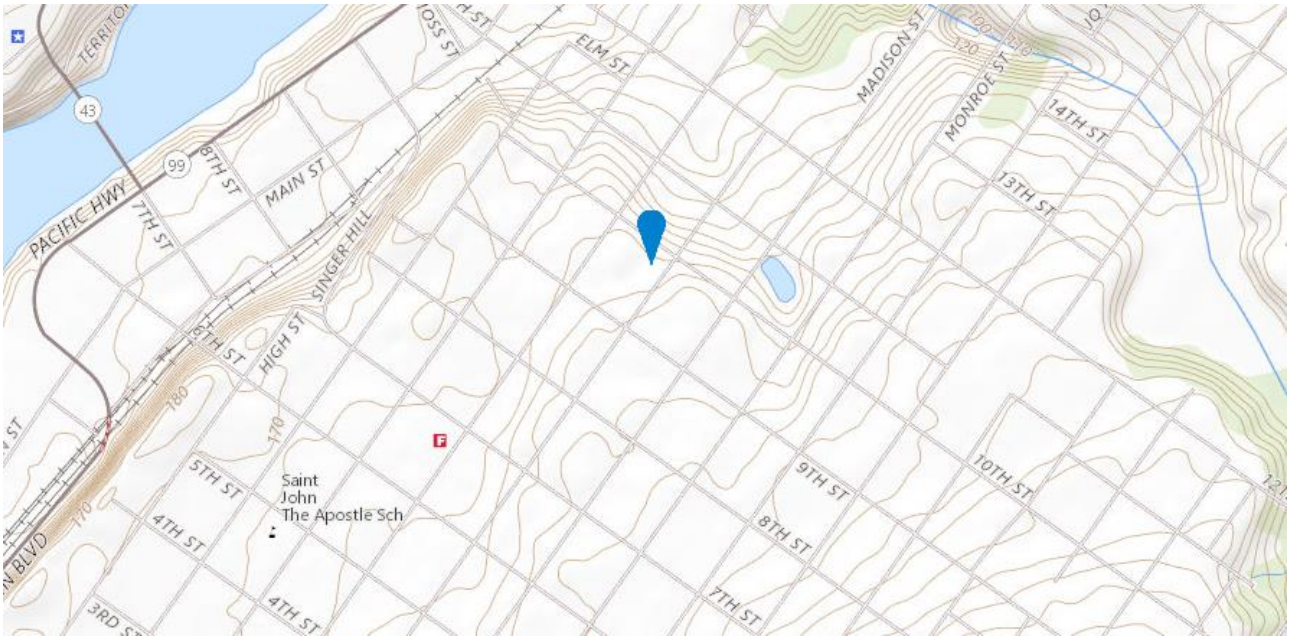
Project: PA 21-06

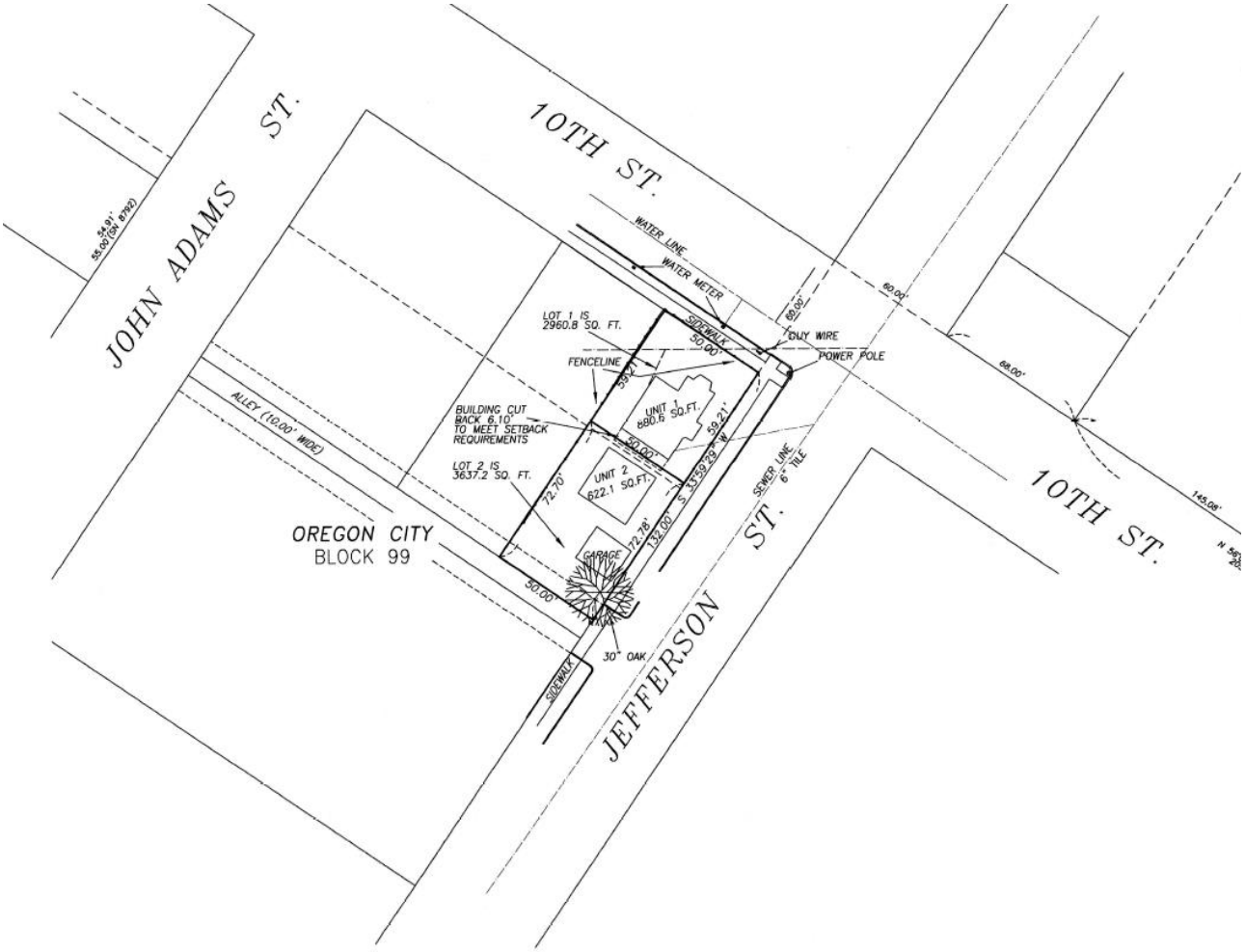
Project Description: Pre-application conference for proposed two-lot land division.

Location: 716 10th Street/917 Jefferson Street, Oregon City, OR 97045

Clackamas County Map:

- T: 2S
- R: 2E
- S: 31AA
- Tax Lots: 8900





JOHN ADAMS ST.
10TH ST.
WATER LINE
WATER METER
LOT 1 IS 2960.8 SQ. FT.
SIDEWALK
50.00'
GUY WIRE
POWER POLE
FENCELINE
BUILDING CUT BACK 6.10' TO MEET SETBACK REQUIREMENTS
UNIT 1 880.6 SQ.FT.
59.21'
LOT 2 IS 3637.2 SQ. FT.
UNIT 2 622.1 SQ.FT.
72.70'
72.78'
132.00'
S 33°59'29" W
SEWER LINE 6" TILE
ALLEY (10.00' WIDE)
OREGON CITY
BLOCK 99
GARAGE
30" OAK
SIDEWALK
JEFFERSON ST.
10TH ST.
60.00'
68.00'
145.08'

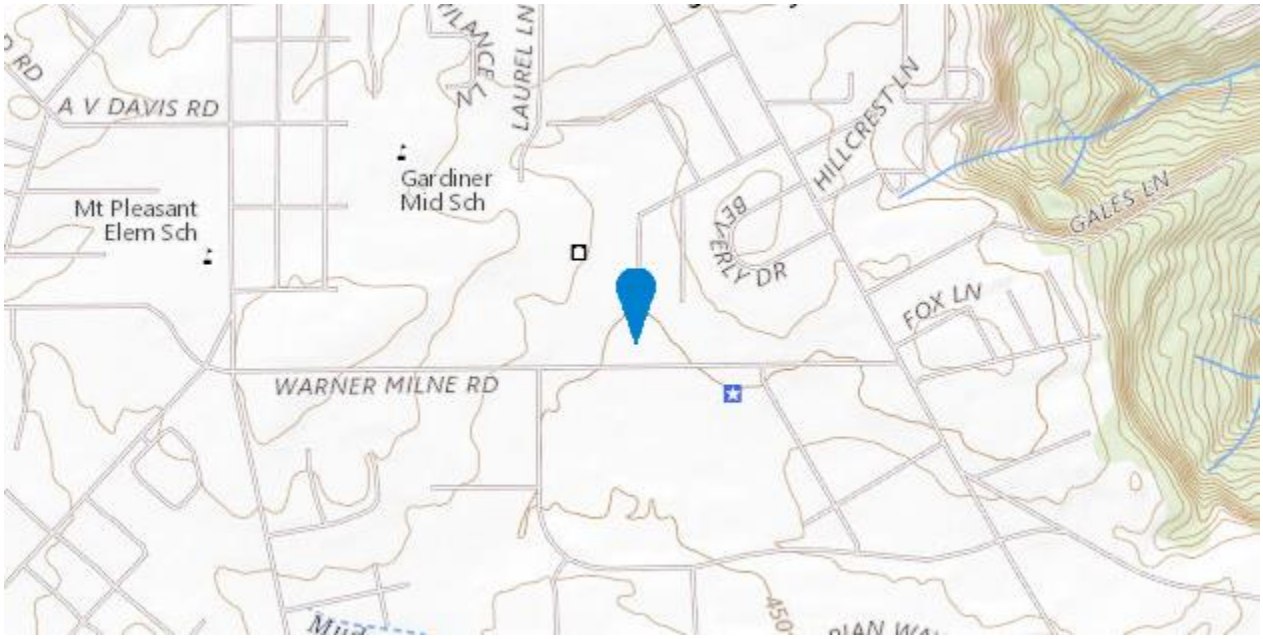
Project: PA 21-07

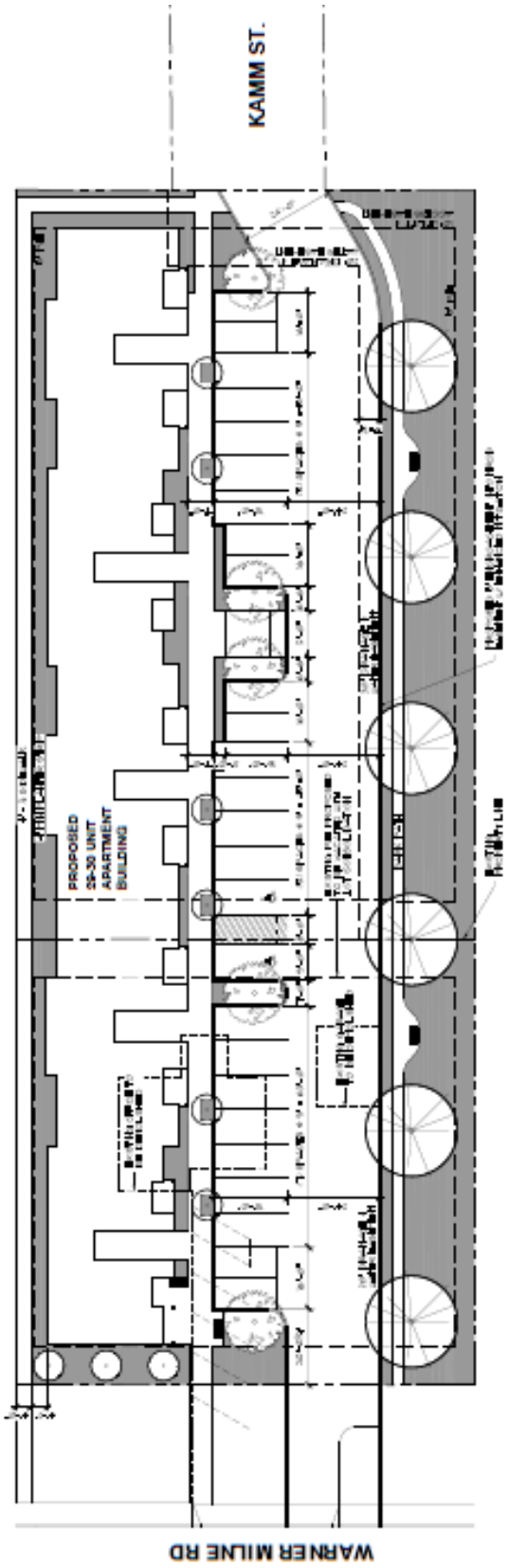
Project Description: Pre-application conference for a proposed 30-unit multi-family development.

Location: 279 Warner Milne Road, Oregon 97045

Clackamas County Map:

- T: 3S
- R: 2E
- S: 05CB
- Tax Lots: 1400 and 1402




KAMM ST.
PROPOSED
28-30 UNIT
APARTMENT
BUILDING
WARNER MILNE RD

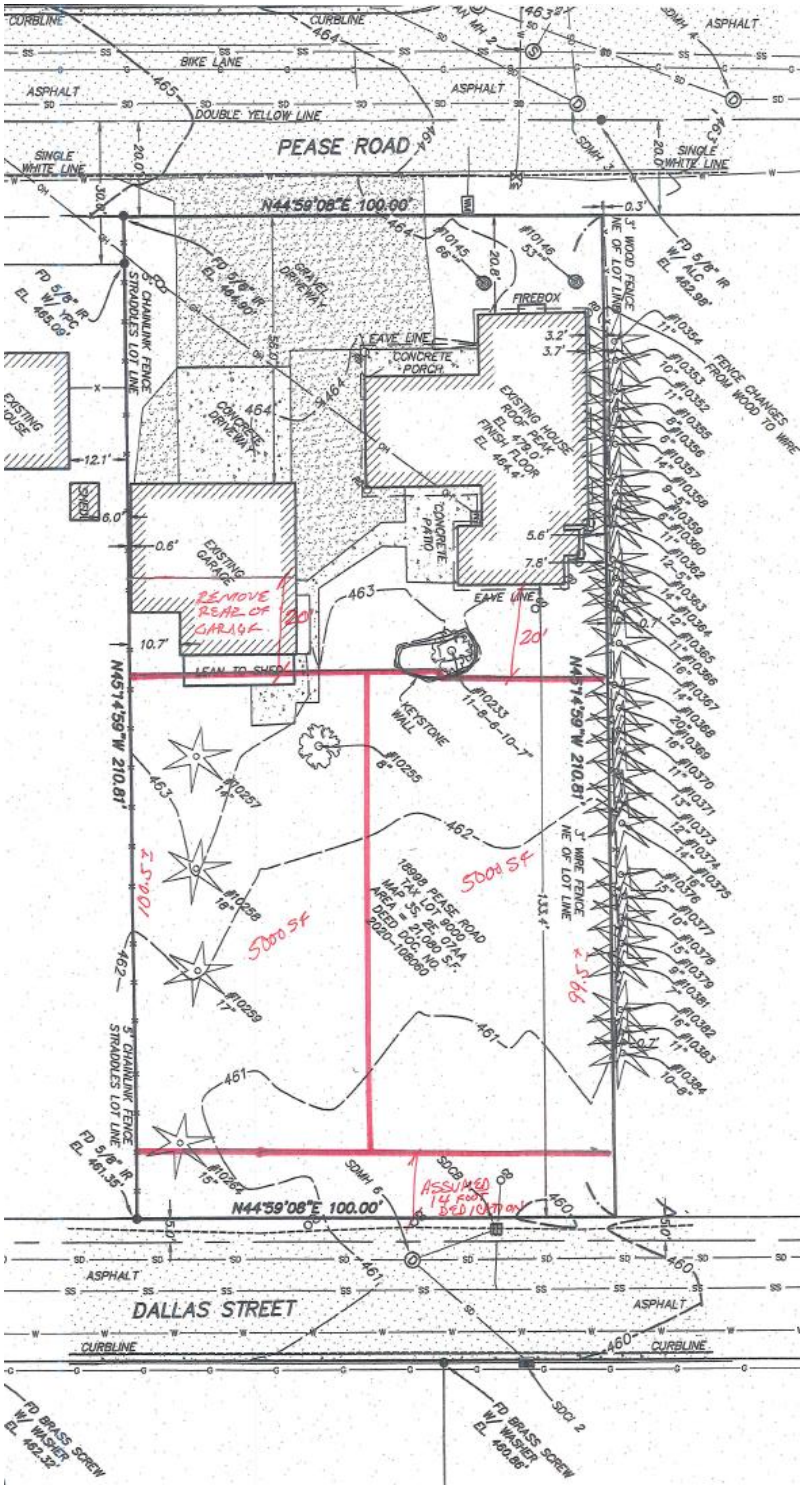
Project: PA 21-10

Project Description: Pre-application conference for a proposed zone change and three-lot land division.

Location: 18998 Pease Road, Oregon City, OR 97045

Clackamas County Map:

- T: 3S
- R: 2E
- S: 07AA
- Tax Lots: 9000


PEASE ROAD
DALLAS STREET
N44°59'08"E 100.00'
N45°14'59"W 210.81'
N45°14'59"W 210.81'
N44°59'08"E 100.00'
CURBLINE
BIKE LANE
ASPHALT
DOUBLE YELLOW LINE
SINGLE WHITE LINE
GRAVEL DRIVEWAY
CONCRETE DRIVEWAY
CONCRETE PORCH
CONCRETE PATIO
EAVE LINE
FIREBOX
EXISTING HOUSE
EXISTING GARAGE
LEAN TO SHED
KEYSTONE WALL
REMOVE REAR OF GARAGE
20'
5000 SF
5000 SF
18998 PEASE ROAD
TAX LOT 9000
MAP 3S, 2E, 07AA
AREA = 21,080 S.F.
DEED DOC. NO.
2020-108060
ASSUMED 14 FOOT DEDICATION
5' CHAINLINK FENCE STRADDLES LOT LINE
3' WOOD FENCE NE OF LOT LINE
3' WIRE FENCE NE OF LOT LINE
FENCE CHANGES FROM WOOD TO WIRE
FD 5/8" IR W/ YPC EL 465.09'
FD 5/8" IR W/ ALC EL 462.98'
FD 5/8" IR EL 464.90'
FD 5/8" IR EL 461.35'
FD BRASS SCREW W/ WASHER EL 462.32'
FD BRASS SCREW W/ WASHER EL 460.86'
SDMH 6
SDCB 2
SDMH 3
SDMH 4
SDCI 2
100.5'
99.5'
133.4'
20.0'
20.8'
12.1'
6.0'
0.6'
10.7'
5.6'
7.8'
3.2'
3.7'
0.3'
0.7'
463
464
465
462
461
460

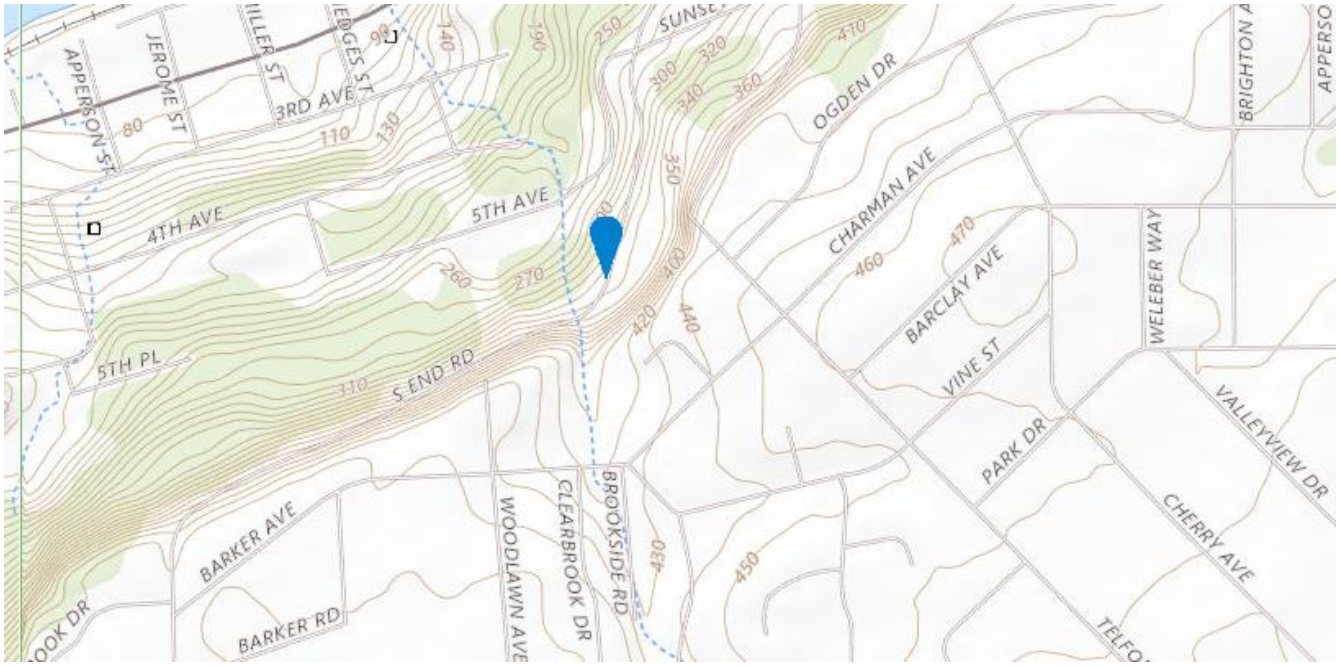
Project: PA 21-11

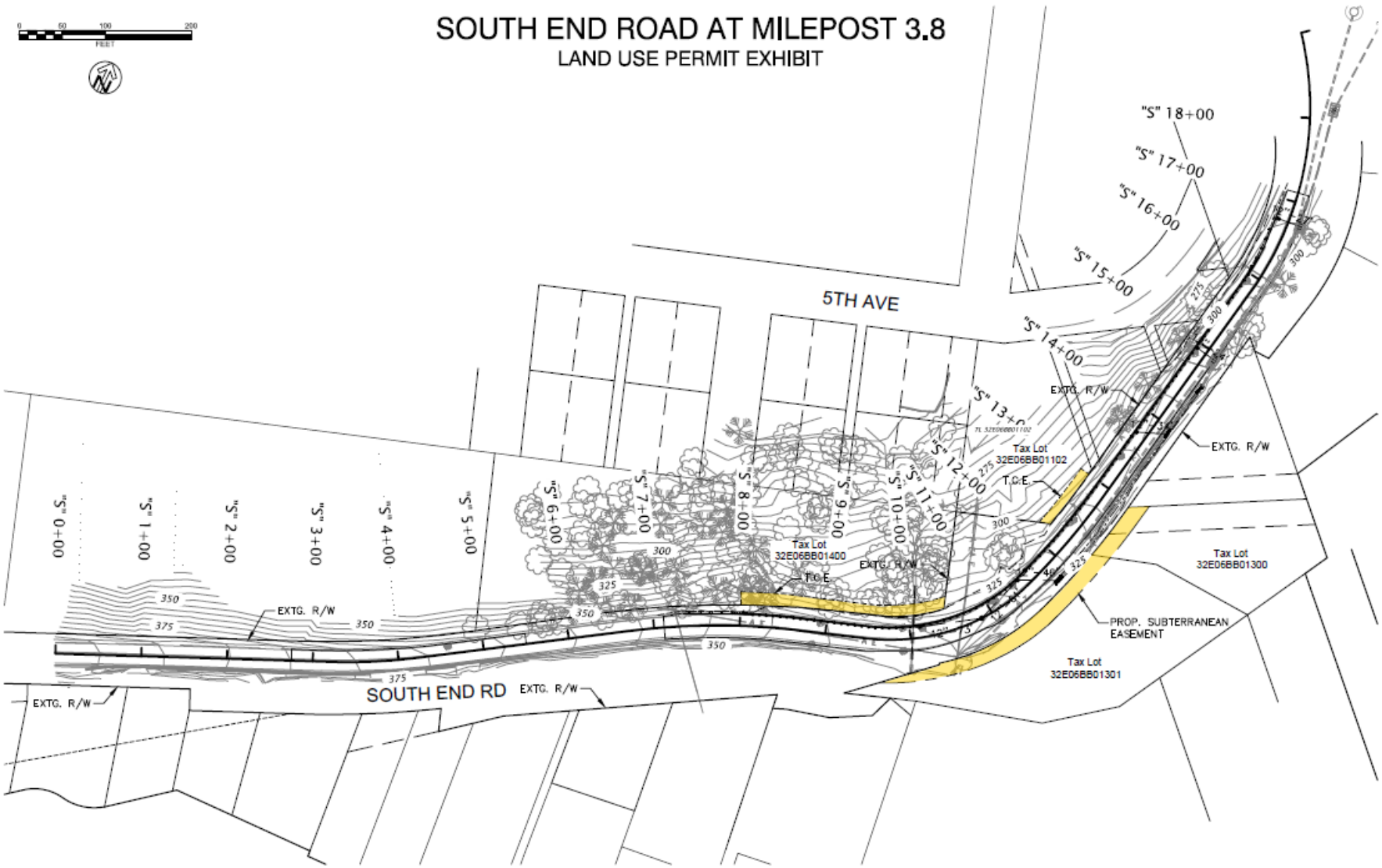
Project Description: Pre-application conference for South End Road stabilization project.

Location: No Situs Address, South End Road Public Right-of-Way Oregon City, OR 97045

Clackamas County Map:

- T: 3S
- R: 2E
- S: 06
- Tax Lots: 1102, 1300, 1301, 1400




SOUTH END ROAD AT MILEPOST 3.8
LAND USE PERMIT EXHIBIT
0 50 100 200
FEET
5TH AVE
SOUTH END RD
EXTG. R/W
"S" 0+00
"S" 1+00
"S" 2+00
"S" 3+00
"S" 4+00
"S" 5+00
"S" 6+00
"S" 7+00
"S" 8+00
"S" 9+00
"S" 10+00
"S" 11+00
"S" 12+00
"S" 13+00
"S" 14+00
"S" 15+00
"S" 16+00
"S" 17+00
"S" 18+00
Tax Lot 32E06BB01102
Tax Lot 32E06BB01400
Tax Lot 32E06BB01300
Tax Lot 32E06BB01301
T.C.E.
PROP. SUBTERRANEAN EASEMENT

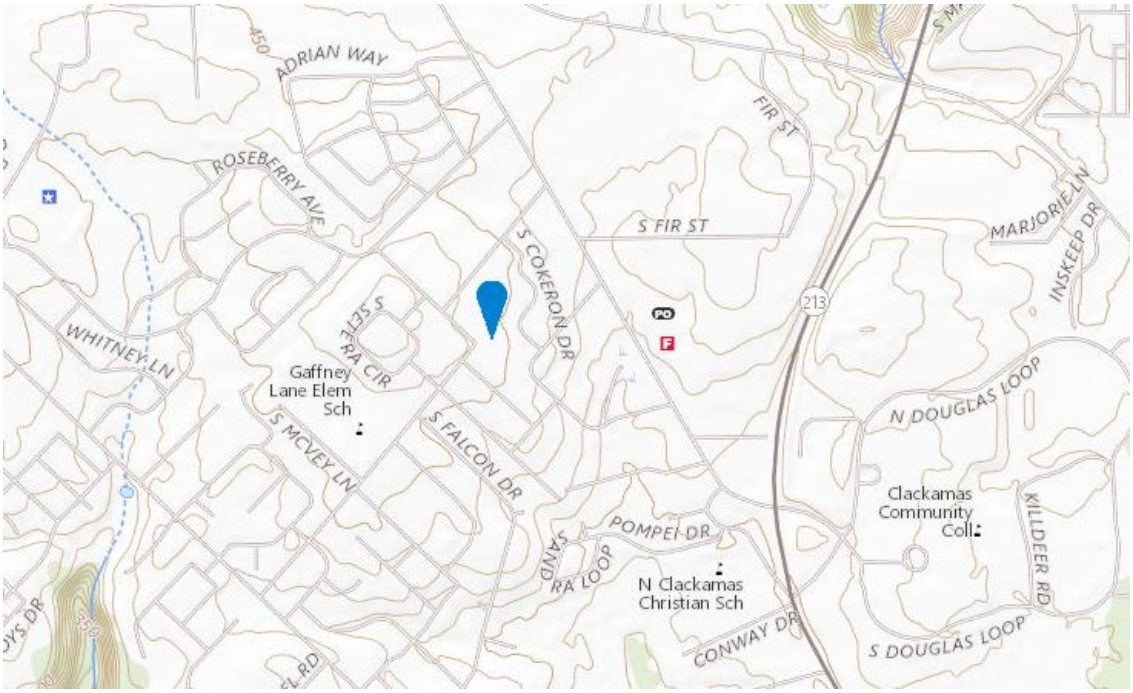
Project: PA 21-12

Project Description: Pre-application conference for proposed six-lot land division.

Location: 13548 Gaffney Lane Oregon City, OR 97045

Clackamas County Map:

- T: 3S
- R: 2E
- S: 08AC
- Tax Lots: 12800



VARIETY OF SOURCES INCLUDING GEOGRAPHIC INFORMATION SYSTEM (GIS) LAYERS, AERIAL PHOTOGRAPHS, AND TAX ASSESSORS INFORMATION. DIMENSIONS SHOWN ARE APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED.
ORIGINAL PAGE SIZE 22" x 34"
TAX LOT 2700
TAX MAP 32E08AB
TAX LOT 2800
TAX MAP 32E08AB
TAX LOT 9200
TAX MAP 32E08AC
COKERON DR
PROPERTY LINE
TAX LOT 9300
TAX MAP 32E08AC
TAX LOT 2000
TAX MAP 32E08AC
TAX LOT 1900
TAX MAP 32E08AC
TAX LOT 2100
TAX MAP 32E08AC
OAKFINEY LANE
STILLMEADOW DR
GARDEN MEADOW DR

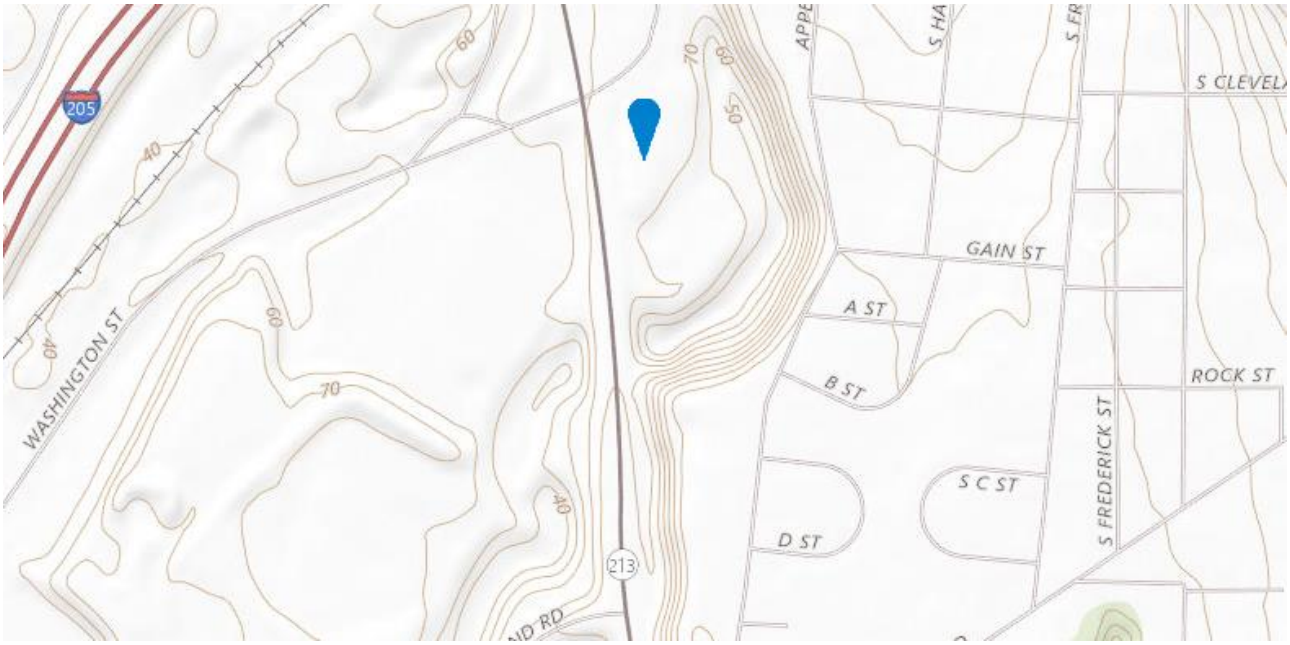
Project: PA 21-14

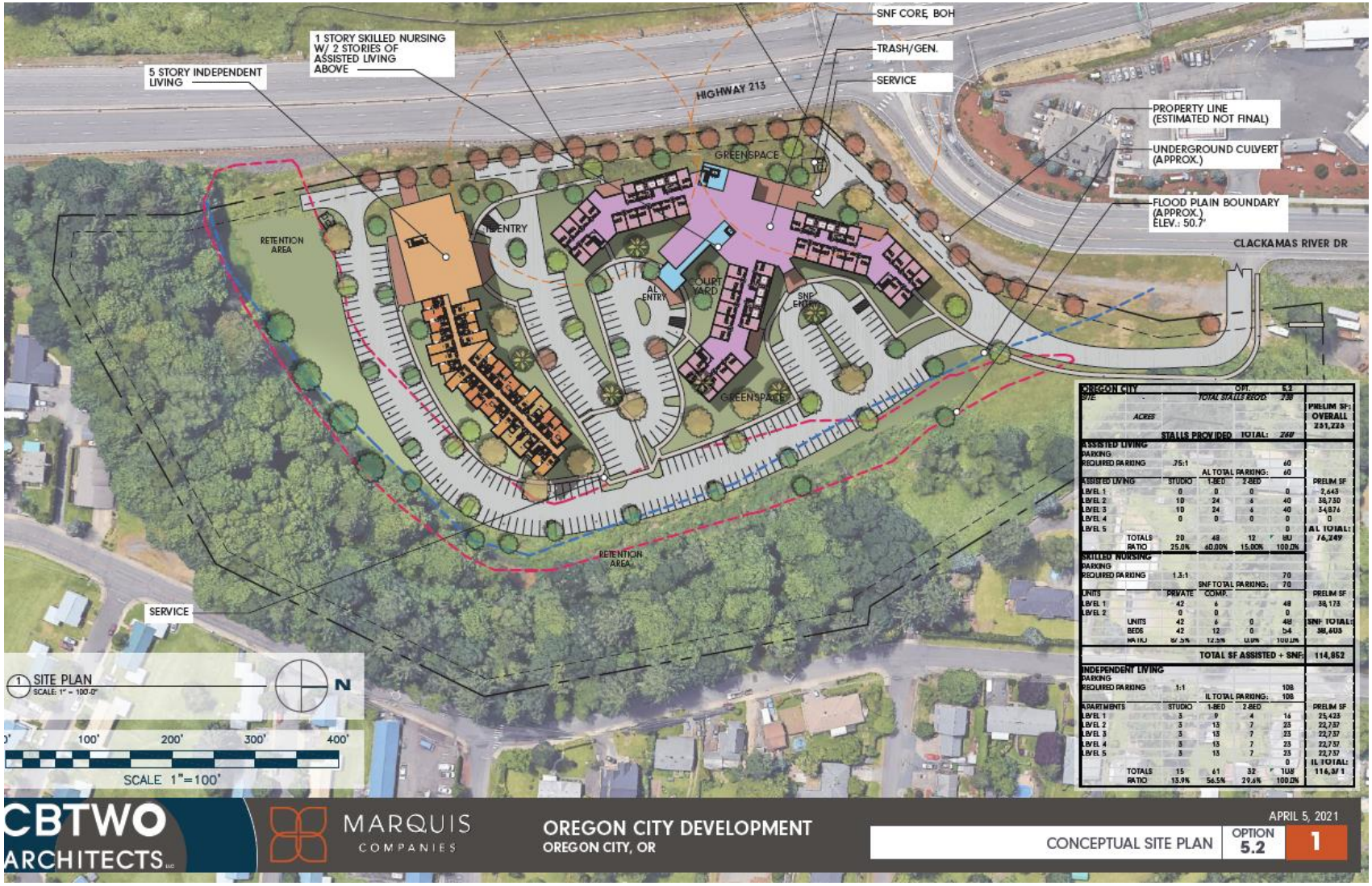
Project Description: Pre-application conference for a proposed senior housing campus.

Location: No Situs Address, Oregon City, OR 97045

Clackamas County Map:

- T: 2S
- R: 2E
- S: 29
- Tax Lots: 1200




SNF CORE, BOH
TRASH/GEN.
SERVICE
1 STORY SKILLED NURSING W/ 2 STORIES OF ASSISTED LIVING ABOVE
5 STORY INDEPENDENT LIVING
HIGHWAY 213
PROPERTY LINE (ESTIMATED NOT FINAL)
UNDERGROUND CULVERT (APPROX.)
FLOOD PLAIN BOUNDARY (APPROX.) ELEV.: 50.7'
CLACKAMAS RIVER DR
GREENSPACE
RETENTION AREA
IL ENTRY
COURT YARD
SNF ENTRY
GREENSPACE
RETENTION AREA
SERVICE
1 SITE PLAN
SCALE: 1" = 100'-0"
N
100' 200' 300' 400'
SCALE 1"=100'
OREGON CITY
OPT. 5.2
SITE
TOTAL STALLS REQ'D: 238
ACRES
PRELIM SF: OVERALL 231,223
STALLS PROVIDED TOTAL: 268
ASSISTED LIVING PARKING
REQUIRED PARKING .75:1 60
AL TOTAL PARKING: 60
ASSISTED LIVING STUDIO 1-BED 2-BED PRELIM SF
LEVEL 1 0 0 0 0 2,643
LEVEL 2 10 24 6 40 38,750
LEVEL 3 10 24 6 40 34,876
LEVEL 4 0 0 0 0 0
LEVEL 5 0 AL TOTAL: 76,269
TOTALS 20 48 12 80
RATIO 25.0% 60.00% 15.00% 100.0%
SKILLED NURSING PARKING
REQUIRED PARKING 1.3:1 70
SNF TOTAL PARKING: 70
UNITS PRIVATE COMP. PRELIM SF
LEVEL 1 42 6 48 38,173
LEVEL 2 0 0 0 0
UNITS 42 6 0 48 SNF TOTAL: 38,605
BEDS 42 12 0 54
RATIO 87.5% 12.5% 0.0% 100.0%
TOTAL SF ASSISTED + SNF: 114,852
INDEPENDENT LIVING PARKING
REQUIRED PARKING 1:1 108
IL TOTAL PARKING: 108
APARTMENTS STUDIO 1-BED 2-BED PRELIM SF
LEVEL 1 3 9 4 16 25,423
LEVEL 2 3 13 7 23 22,757
LEVEL 3 3 13 7 23 22,757
LEVEL 4 3 13 7 23 22,757
LEVEL 5 3 13 7 23 22,757
0 IL TOTAL: 116,371
TOTALS 15 61 32 108
RATIO 13.9% 56.5% 29.6% 100.0%
CBTWO ARCHITECTS
MARQUIS COMPANIES
OREGON CITY DEVELOPMENT
OREGON CITY, OR
APRIL 5, 2021
CONCEPTUAL SITE PLAN
OPTION 5.2
1

Project: PA 21-15

Project Description: Master Plan for residential subdivision development.

Location: 1511 S Holcomb Boulevard; 16472, 16582, 16544, 16530, 14631 S Livesay Road, Oregon City, Oregon 97045

Clackamas County Map:

- T: 2S
- R: 2E
- S: 27BC/28D
- Tax Lots: 1000, 2000/100, 190, 300, 301, 302, 303, 400, 500, 502, 3700, 3701

OAK VALLEY DR
S OAKTREE TER
TRACEY LEE CT
SMITHFIELD DR
WINSTON DR
BARLOW D
HOLCOMBS BLVD
CATTLE DRIVE
BUFFALO WAY
SHARTNER DRIVE
WILLAMETTE VALLEY DRIVE
TRAILVIEW DRIVE
HOLLY LANE
(COLLECTOR)
STREET 1
STREET 2
STREET 3
STREET A
STREET 4
STREET D
STREET 5
STREET 6
STREET E
STREET F
STREET 7
STREET C
STREET B
JOURNEY DRIVE
PHASE 2
PHASE 3
PHASE 4
PHASE 5
FUTURE PHASE
LIVESAY ROAD
(COLLECTOR)

Diliana Vassileva

From: Kristen Tiede <KristenTiede@ctuir.org>
Sent: Wednesday, August 4, 2021 2:20 PM
To: Diliana Vassileva
Cc: POULEY John * OPRD; Bambi Rodriguez; Jennifer Karson Engum
Subject: FW: Development Review in Oregon City - Multiple Properties
Attachments: 07272021SHPO Letter.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Diliana,

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Cultural Resources Protection Program (CRPP) has reviewed the proposed projects in your letter dated July 23. As PA 21-04, PA 21-14, and PA 21-15 are within one of our areas of concern, the CRPP recommends conducting archaeological surveys with subsurface testing prior to development. Please let me know if you have any questions or concerns.

Thank you,

Kristen Tiede
Archaeologist
Cultural Resources Protection Program
Confederated Tribes of the Umatilla Indian Reservation
46411 Timíne Way, Pendleton, OR 97801
Direct Line/Fax: (541) 429-7206
Main Office: (541) 276-3447
KristenTiede@ctuir.org

From: Diliana Vassileva [mailto:dvassileva@orcity.org]
Sent: Friday, July 30, 2021 9:34 AM
To: kate@yakama.com; rkentta@ctsi.nsn.us; thpo@grandronde.org; Teara Farrow Ferman <TearaFarrowFerman@ctuir.org>; robert.brunoe@ctwsbnr.org; johnson@yakama.com
Subject: Development Review in Oregon City - Multiple Properties

EXTERNAL EMAIL: Please use caution when clicking links or opening attachments.

Good morning,

Oregon City's Municipal Code requires that notice be sent to selected Tribes and SHPO before development involving ground disturbance may occur. Oregon City will not be reviewing projects on archeological criteria but we want to make sure that the applicant is aware of any potential archeological issues as early in the process as possible.

Please review the attached documents and return any comments regarding potential archeological issues to me within 45 days and your comments will be forwarded to the applicant.

Thank you and feel free to contact me with any additional questions or concerns.

Thank you.

Diliana Vassileva, AICP
Assistant Planner – Planning Division
She/Her
City of Oregon City
PO Box 3040
695 Warner Parrott Road,
Oregon City, Oregon 97045
Direct - 503.974.5501
Planning Division - 503.722.3789
Fax 503.722.3880

What's your Vision for Oregon City?

Website: www.orcity.org | [webmaps.orcity.org]webmaps.orcity.org | Follow us on: Facebook!|Twitter
Think **GREEN** before you print.

The City of Oregon City continues to offer services and programs in-person and online - find facility hours of operation here.

PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.

The opinions expressed by the author are his or her own and are not necessarily those of the Confederated Tribes of the Umatilla Indian Reservation. The information, contents and attachments in this email are Confidential and Private.

Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

October 31, 2019

Ms. Diliana Vassileva
City of Oregon City Planning
221 Molalla Ave
Ste 200
Oregon City, OR 97045

RE: SHPO Case No. 19-1625
City of Oregon City Project PA19-47, 18 Unit Multi Family Development
Construction for apartment complex
3S 2E 5 TL1400, Oregon City, Clackamas County

Dear Ms. Vassileva:

Our office recently received a request to review your application for the project referenced above. Thank you for your submittal.

In checking our statewide archaeological database, it appears that there have been no previous surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. In the absence of sufficient knowledge to predict the location of cultural resources within the project area, extreme caution is recommended during project related ground disturbing activities. Under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. If archaeological objects or sites are discovered during construction, all activities should cease immediately until a professional archaeologist can evaluate the discovery. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If the project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with the appropriate lead federal agency representative regarding compliance with Section 106 of the National Historic Preservation Act (NHPA).

If you have any questions about the above comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please reference the SHPO case number above in all correspondence.

Sincerely,

Shane P. James, M.S., RPA
SHPO Archaeologist
(503) 986-0805
shane.james@oregon.gov

DAVID EVANS
AND ASSOCIATES INC.

April 11, 2022

Christina Robertson-Gardiner, AICP
Senior Planner
City of Oregon City, Planning Division
695 Warner Parrott Road
Oregon City, OR 97045

SUBJECT: NROD-21-00018 Kamm Street Apartments

Dear Christina,

The applicant is seeking approval of a Type II Site Plan and Design Review for a new three-story 30-unit apartment complex on 0.86 acres at 1155 Kamm Street that has a Natural Resources Overlay District (NROD) overlay (OCMC Ch. 17.49).

Per your request of January 24, 2022, the purpose of this memorandum is to:

- Review the submitted delineation report and verify whether wetlands are present on the site.
- Determine whether the resource on the site meets the definition of stream in OCMC 17.04.1205 and recommend whether the water features on the site are regulated under OCMC 17.49.
- Review relevant public comment topics *(attached to email)*- provide responses if related to delineation and NROD review
- Review proposal based on the request for a Type II verification to remove the proposed area as a regulated stream.

Phil Rickus, ecologist and wetlands specialist, conducted a field reconnaissance on February 10, 2022 to observe site conditions.

Valerie Thompson, environmental specialist, reviewed the applicant's Wetland and Waters of the U.S. and State Delineation Report dated May 2021, prepared by Harper Houf Peterson Righellis Inc. (HHPR); the November 1, 2021 site plan prepared by Iselin Architects; and the public comments provided by the City.

Gigi Cooper assisted in the preparation of this memo. Ethan Rosenthal conducted a quality review.

Wetlands verification

The applicant contends that there are no wetlands on the site. DEA concurs that there are no wetlands on site; however, one stream is located on site which is described in the application

materials and discussed below.

Definition of stream in OCMC 17.04.1205

The 1999 LWI indicates a stream is located along the eastern portion of the site. DEA did not find a riparian data sheet in the LWI report for the stream on site. Many of the small streams and tributaries in the LWI do not have associated data sheets.

The applicant contends that the water feature on site is an ephemeral stream which is not regulated by OCMC 17.49. The OCMC does not define "ephemeral stream." The OCMC definition of an intermittent stream is in:

> ***17.04.1205 - Stream.***
>
> *"Stream" means areas where surface water produces a defined channel or bed, including bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed does not have to contain water year-round. This definition is not meant to include irrigation ditches, canals, storm or surface water runoff structures, or other artificial watercourses unless they are used to convey streams naturally occurring prior to construction of such watercourses. Streams are categorized into two classes: Perennial streams and intermittent streams. Perennial stream means a stream that flows year-round during years of normal precipitation. Intermittent stream means a stream that flows only part of the year, or seasonally, during years of normal precipitation.*

The OR City code explicitly states that regulated streams are either perennial or intermittent streams, which implies that ephemeral streams are not regulated. This is consistent with state regulations as administered by the Oregon Department of State Lands (DSL). In general, an ephemeral feature has water only during and for a short duration after precipitation events (i.e., a few hours to a few days). An intermittent stream contains surface water flowing continuously during certain times of the year (i.e., a few months) and not just in a direct response to precipitation.

During the site visit by DEA, photos of Drainage A (Attachment A) were taken in similar locations as the previous report, plots were dug in the channel, and the decision tree provided on the Streamflow Duration Field Assessment Form (Nadeau 2011) was revisited to determine if conditions had changed since the HHPR field investigation. The photos show that the channel was dry despite the precipitation data (Attachment B) confirming typical precipitation conditions during the middle of winter, which indicates ephemeral.

Based on the latest methodology, DEA concurs that the upstream reach of Drainage A meets the criteria for an ephemeral stream according to Nadeu 2011, as outlined in the applicant's report. The upper portion of the feature, which was correctly mapped as ephemeral, does not meet wetland criteria and has no indication of an ordinary high water line (e.g., scour marks, sorted gravel with no vegetation). Per the site visit, DEA found nothing that would alter or question the results of the HHPR delineation.

Based on our understanding of the OR City's definition of a stream, our site visit, and information provided by the applicant, we concur that the upper section does not meet the City's definition of a regulated stream. As noted above, this is consistent with State definitions and jurisdiction. The wetland delineation report received concurrence from the DSL which confirmed that DSL will regulate the lower intermittent portion of stream, but will not take jurisdiction over the upper ephemeral portion.

Responses to public comments regarding delineation and stream NROD

DEA reviewed the GLUA 21-0666 Kamm Street Apartments Public Comments Combined document for comments relevant to the wetland delineation report and the NROD.

The public comments are focused on issues such as stormwater, groundwater, drainage, constructability, traffic, geotechnical, archaeological, and other concerns. These topics are outside of the scope of a wetland delineation or NROD review and are therefore outside of the scope of DEA's review.

One comment was submitted that was related specifically to the wetland delineation report. This commenter was concerned that the wetland delineation report did not document wildlife uses of the stream. The purpose of a wetland delineation and report is to define the boundaries of wetlands and other waters (e.g., streams, ponds) that are regulated by the U.S. Army Corps of Engineers (Corps) and the Oregon Department of State Lands (DSL) in accordance with Section 404 of the Clean Water Act and the Oregon Removal Fill Law, respectively.

Documenting wildlife use of wetlands is not required or expected as part of a delineation report prepared for Corps and DSL.

Conclusions and Recommendations

DEA concurs that no wetlands are on the site. DEA agrees with the applicant regarding the water feature on the site. It does not meet the OCMC definitions of perennial or intermittent stream and is not a regulated water feature or NROD resource.

If you have any questions or need further information concerning this review, please contact me at Gigi.Cooper@deainc.com or 503-499-0229.

References:

Nadeau, T.L. 2011. Stream flow Duration Assessment Method for Oregon. U.S. Environmental Protection Agency, Region 10. Document number EPA 910-R-002. November 2011.

Sincerely,

DAVID EVANS AND ASSOCIATES, INC.

Gigi Cooper, AICP Planner

Attachment A: Site photographs

Attachment B: Precipitation Data and Analysis :

Photo 1. View looking north from end of the study area along Drainage A. Kamm Street is on the right.

Photo 2. Looking northwest showing the Drainage A channel at the end of Kamm Street, which is on the right.

Photo 3. View looking north towards Kamm Street showing the channel of Drainage A.

Photo 4. View looking south towards Warner Milne Road showing the channel of Drainage A next to the garage.

Photo 5. View looking south towards Warner Milne Road showing the lower end of the upstream reach.

Photo 6. View looking north along Drainage A from the Warner Milne Road culvert.

Photo 7. View looking south showing the inlet of the Warner Milne Road culvert.

Photo 8. Aquatic snail shells are present amongst riprap in the pool area of the culvert inlet.

Table 1 shows the two-week precipitation total prior to the field work on February 10, 2022, which reveals 0.45 inches of rain for two weeks prior to and including the site visit. Precipitation was above normal for the month of December prior to the site visit, but otherwise within the range of normal (Table 2). Water year precipitation for February 10, 2022 was within range of normal at 91% (Table 3).

Table 1. Precipitation on Day of Field Investigation and Two Weeks Prior, in Inches

Jan 27	Jan 28	Jan 29	Jan 30	Jan 31	Feb 1	Feb 2
0.00	0.00	0.00	0.24	0.00	0.06	0.04
Feb 3	**Feb 4**	**Feb 5**	**Feb 6**	**Feb 7**	**Feb 8**	**Feb 9**
0.10	0.01	0.00	0.00	0.00	0.00	0.00
Feb 10*		**Total**				
0.00		0.45				

Table 2. Percent of Normal Precipitation for the Three Months Preceding the Field Investigation

Date	Observed Precipitation for Month[1] (Inches)	Normal Precipitation for Month[2] (Inches)	Percent Normal Precipitation	WETS Table 30% Range of Normal	Within Normal WETS range?
Nov 2021	5.50	6.39	86%	4.48- 8.07	Yes
Dec 2021	9.90	6.46	153%	5.01- 8.72	No, above
Jan 2022	4.50	5.83	77%	4.35- 7.91	Yes

[1] Observed precipitation data from Oregon City, Oregon gage location. Source: (AgACIS 2022)
[2] Monthly normal values from the Oregon City, Oregon NRCS WETS table data. Source: (AgACIS 2022)

Table 3. Percent of Normal Precipitation for the Water Year through Day of Field Work

Date	Observed Precipitation (Inches)	Normal Precipitation (Inches)	Departure from Normal (inches)	Within 30% of Normal Precipitation for Water Year?
February 10, 2022	18.83	20.64	-1.81	Yes (91% of normal)

[1] Water year data for Oregon City, Oregon based on October 1 start date. Source: (AgACIS 2022)

The normal precipitation for the water year provided the amount of groundwater that would typically be present within wetlands during the site visit. Therefore, conditions were considered normal and no change in methods was needed.

Reference: Agricultural Applied Climate Information System (AgACIS). 2022. Monthly, daily, and WETS climatic data from Oregon City, OR weather station. URL: http://agacis.rccacis.org/. Accessed February 2022.

FIRST EVANGELICAL PRESBYTERIAN CHURCH OF OREGON CITY
1321 Linn Avenue
Oregon City, Oregon 97045

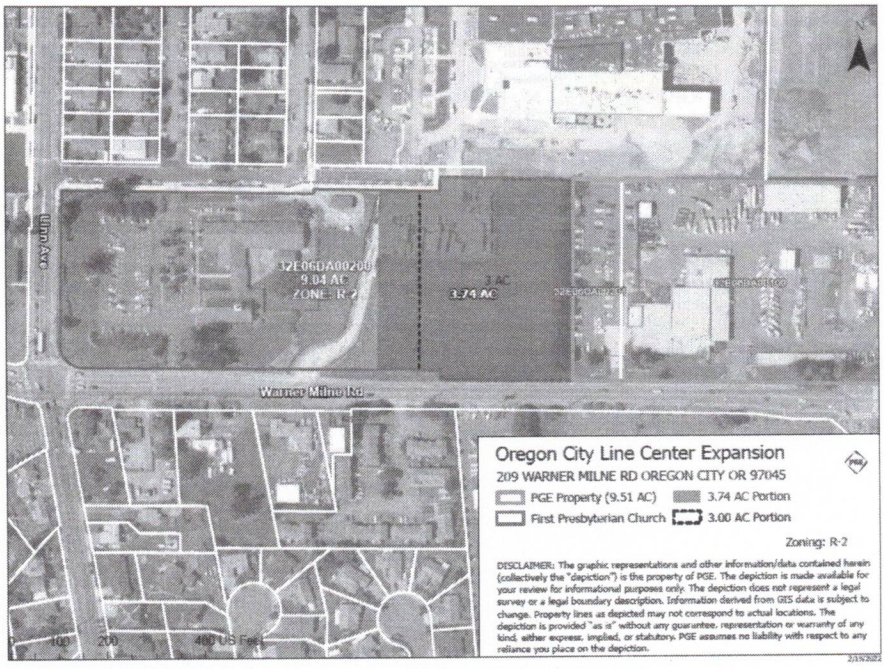
December 17, 2025

City of Oregon City Planning Department
695 Warner Parrott Road
PO Box 3040
Oregon City, OR 97045

RE: PGE Oregon City Operations Center Land Use Application No. PA25-031

To Whom It May Concern:

The purpose of this letter is to confirm that Portland General Electric Company ("PGE") and the First Evangelical Presbyterian Church of Oregon City have entered into a Lease allowing PGE to use that portion of the property located at **1321 Linn Avenue, Oregon City, Oregon 97045** illustrated in the following depiction consisting of approximately 3.74 acres:



The leased property is available to PGE for parking and construction laydown amongst other uses.

Should you require additional information please feel free to contact us.

Sincerely,

FIRST EVANGELICAL PRESBYTERIAN CHURCH OF OREGON CITY

Kirk Richmond
FPOC Trustee
503.730.7681

cc: Portland General Electric Company, Attn: Mark Lindley

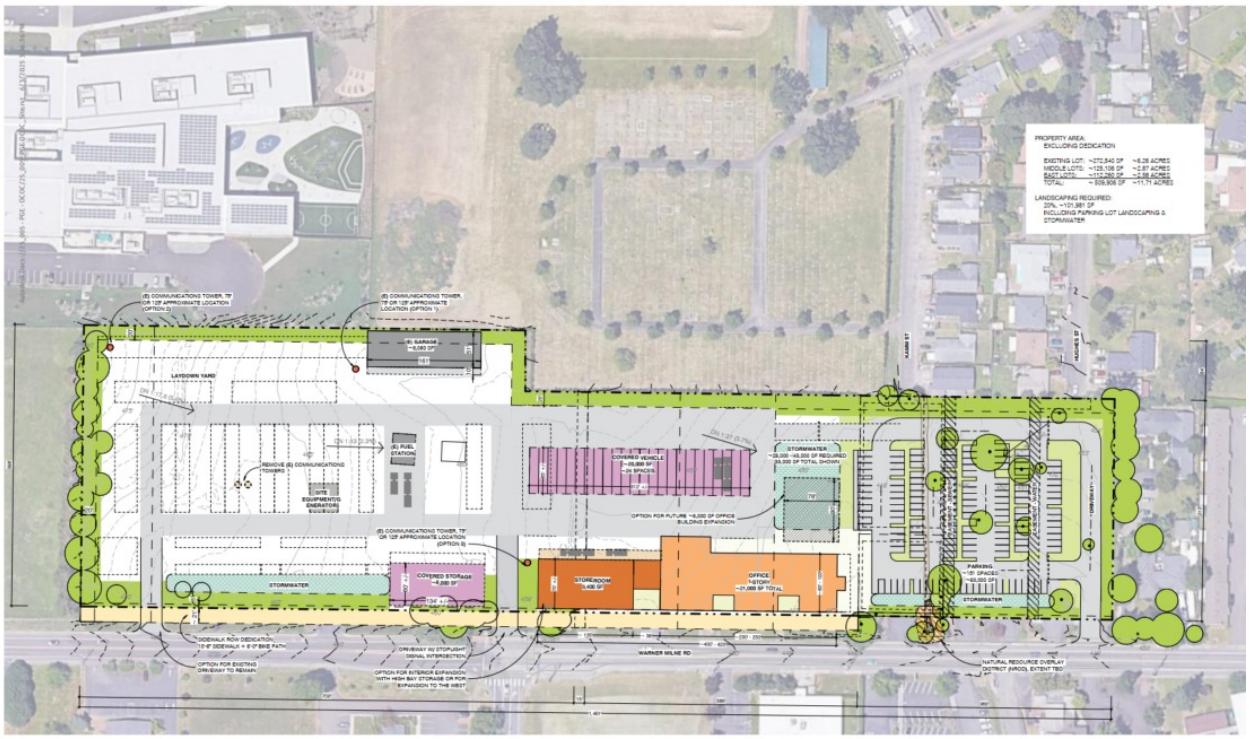
Pre-Application Conference Notes: *PA 25-031*
Meeting Date: July 1, 2025
Final Notes Sent: July 17, 2025

These non-binding pre-application conference notes reflect the applicant's submission to the City along with the discussion at the meeting. The applicant has one week from the receipt of the notes to notify City staff of any perceived mistake or omission in the notes; staff will then review and respond to the inquiry, and the inquiry will be added to the City's file. If no notification is received within 7 business days, the notes will be considered final and will not be modified. See additional disclaimers at the end of this document.

Proposed Project: PGE Line Center Expansion
Expansion of the existing PGE line centers on a 6-acre property adjacent to the existing facility at 209 Warner Milne Rd. The property is located in the Mixed Use Corridor (MUC-1) zoning district.

- In 2023, PGE proposed a Legislative Code Text Amendment to Chapter 17.29 – Mixed Use Corridor, Section 17.29.030 E. of the Oregon City Municipal Code (OCDC) to recognize its existing Operations Center as a Conditional Use in the MUC-1 District, including the outdoor storage and maintenance activities that are a part of that use. , the Code Amendment allows PGE to apply for a Conditional Use Permit to improve and expand the Operations Center.
- The office building is a permitted use in the zone and will be required to meet commercial building design standards.
- The remainder of the project is considered a conditional use in the zone. The City considers this to be an expansion of the conditional use with impacts on the neighborhood that may include noise, traffic, and the opportunity cost of needed housing, or jobs in the zone. Mitigation of these impacts is recommended. The conditional use process requires showing compliance with Comprehensive Plan goals and policies. The city is currently reviewing its Comprehensive Plan and new or revised policies may be included in a newly adopted Comprehensive Plan. The plan is proposed to be adopted in 2022/2023.
- Generally, the city would see office buildings or portions thereof being reviewed under commercial standards and the other facility buildings being reviewed under industrial standards. This approach worked with the County operation, building on Wachecno Parkway just east of the college.

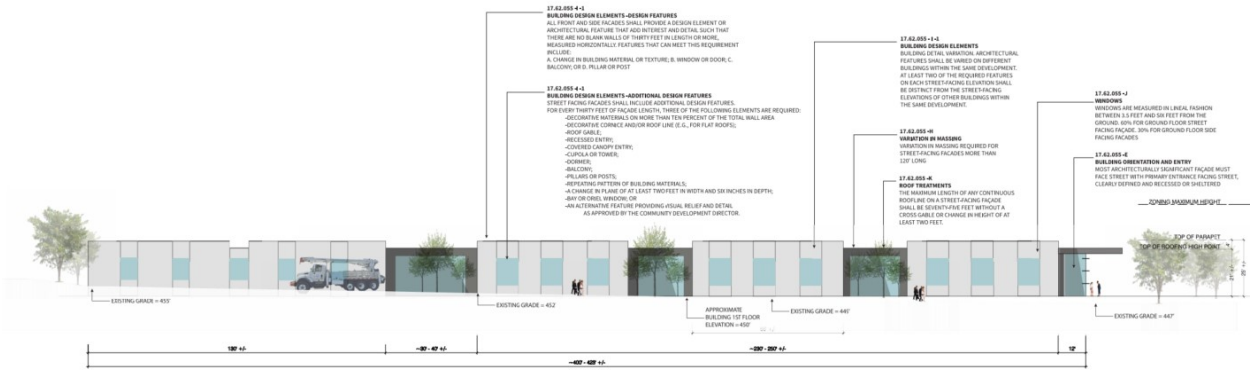
General Information:
- Location: 209 Warner Milne Rd. 3-2E-06DA-00100, 00201, 3-2E-05CB-01100, 01200, 01300
- Zoning: MUC-1
- Overlays: NROD



Hennebery Eddy

PGE | Oregon City Operation Center | 06/03/25

LU PREAPP MEETING
SITE DIAGRAM - PROPOSED



Planning Review and Application Fees:

The 2025 Planning applications and fees include

- Conditional Use: $5,218
- Site Plan and Design Review: See fee schedule
- Major Variance: $3,443 (if needed)
- Minor Variance $1,863 (if needed)
- Incomplete Applications: No charge for first incomplete submittal, $381 for each incomplete submittal thereafter

Review Process:
This application is a Type III process combined with a Type II Site Plan and Design Review process, meaning the entire package will be reviewed as a Type III application. The applicant has **180 days** from the date of submittal to have a complete application.

Upon a complete application submittal, the applicant is entitled to a decision from the city for a decision of approval, approval with conditions or denial within **120 days** of deeming the application complete, by state law.

Type III decisions require a minimum of one public hearing before the Planning Commission and involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the City Commission except upon appeal.

Items Needed for Land Use Application Review:

- Land use application form with property owner signature
- Fees (see above)
- Copy of Title Report or TRIO
- Proof of up-to-date property taxes
- Narrative description of project
- Site Plan and Architectural Drawings
- Materials Board (spec on plans)
- Traffic Study
- Code responses (see template)
- Copy of pre-application conference notes
- Neighborhood Meeting materials

Please see the Site Plan and Design Review checklist for full submittal requirements
https://www.orcity.org/DocumentCenter/View/3803/Type-II-Site-Plan--Design-Review-Checklist

Chapter 17.29 Mixed Use Corridor District /Site Plan and Design Review
Staff considers the PGE line center use to be a public utility, which is a conditional use, even though it includes some listed prohibited uses in the zone.

Conditional Uses:
E. Public utilities and services, and utility facilities, including sub-stations (such as buildings, plants and other
structures) and outdoor storage associated with the conditional use;

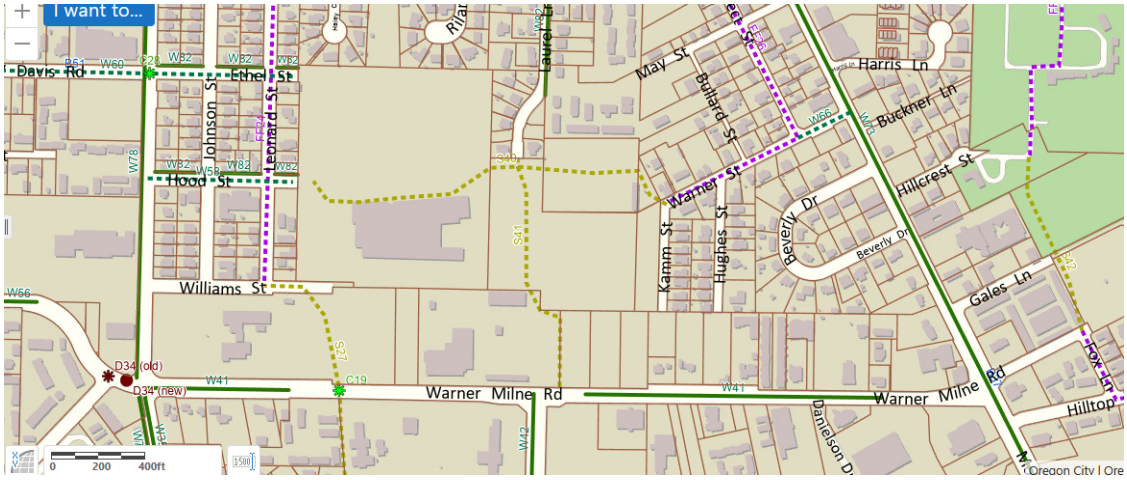
Dimensional Standards

- Maximum Building height: 40 feet or three stories
- Minimum setbacks from residential zone: 20 feet plus one foot additional yard setback for every one foot of building height over thirty-five feet.
- Maximum front yard setback: 5 feet; can be extended through 17.62.055.D

Site and Design Elements

- Parking must be to the side or behind the building
- The most architecturally significant façade must face the street.
- Note Pedestrian Circulation requirements in Chapter 17.62.050.A.9.

    - Pedestrian connections to other areas of the site, such as parking areas, recreational areas, common outdoor areas, and any pedestrian amenities are required.
    - Pathways between the street and buildings fronting on the street shall be direct.
- Note building materials requirements in Chapter 17.62.050.A.21.
- Outdoor lighting (OCMC Section 17.62.065). A photometric plan demonstrating compliance with lighting standards is required.
- Mechanical equipment should be screened (rooftop and ground mounted)
- Refuse and recycling enclosures (OCMC Section 17.62.085)
- Fences and walls –Typically, 3.5 feet in front, 6 feet in rear, but can be 8 feet in height through a type II or greater review. Chain link fencing not allowed in visible locations.
- Building design must meet 17.62.055
    - The current plan would not meet the frontage requirement; 60% of the site frontage must be occupied by a building within 5 feet of the property line (the 5-foot setback may be increased, but the 60% can be decreased with a type II modification.
- Parcels larger than 3 acres are required to provide streets to meet block length standards
    - It is not clear if this standard will be applicable; more information is needed on the development plans for the existing site. The new office building on its own will not trigger this standard.
    - If the required connections are not feasible, practical, or otherwise not included, the City is open to alternative options, even off-site options (such as crossing of Warner Milne discussed during meeting). This would be handled through a public improvement modification per 16.12.013.



Existing, potential, and planned TSP connections. Block length may also require connections- work with Public Works staff on street spacing requirements, pedestrian connections and process for modifications

Chapter 17.56 Conditional Uses

Your application will need to show compliance with the following criteria:

A. The planning commission may allow a conditional use, provided that the applicant provides evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrates that the proposed use also satisfies the following criteria:
    1. The use is listed as a conditional use in the underlying district;
    2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;
    3. Development shall demonstrate compliance with OCMC 16.12;

4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;
5. The proposal satisfies the goals and policies of the city comprehensive plan which apply to the proposed use.
    - Comprehensive Plan Goals and Policies that will apply include the following

A. Building Openings. The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the planning commission.

- Building openings related to the office building, are not expected to be problematic.

B. Additional Street Right-of-Way. The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is inadequate for its use; or where the nature of the proposed development warrants increased street width.

- See Development Services notes regarding Warner Milne Road.

C. Public Utility or Communication Facility. Such facilities as a utility substation, water storage tank, radio or television transmitter, tower, tank, power transformer, pumping station and similar structures shall be located, designed and installed with suitable regard for aesthetic values. The base of these facilities shall not be located closer to the property line than a distance equal to the height of the structure.

Chapter 17.52: Parking

June 18, 2025 City Commission agenda Final Packet- Code Amendment (effective July 1, 2025)

You are located within 1/2 mile of a frequent transit line (333), therefore, no minimum parking is required, though you are still assessed for maximum parking standards. Gated fleet parking inside a structure or outside is not counted as parking if it is considered part of the operation center's non-office use. This should be highlighted on the plans.

Additionally, there are several requirements regarding newly developed or redeveloped parking specified by OARs 660-012-0405 (Parking Regulation Improvements) and 660-012-0410 (Electric Vehicle Charging) that necessitate updates to Oregon City's code, and additional rules regulations addressing the maximum amount of parking that can be developed specified by OAR 660-012-0415

Tree Removal

Chapter 17.41 - TREE PROTECTION STANDARDS

- Tree removal for existing trees greater than 6" diameter at breast height requires that a tree removal and mitigation plan be prepared. This must include the lot setbacks, easements and the caliper of the trees to be removed as well as the species, caliper and location of the mitigation trees. The tree mitigation plan report shall be prepared by a certified arborist, horticulturalist, forester, or other environmental professional with experience and academic credentials in forestry or arboriculture.
- The applicant may select one or more of four options for how trees will be protected, removed and/or mitigated if removed from the site.
- Trees that are dead/diseased/dying/hazardous, as determined by an arborist, are exempt from mitigation requirements.
- Tree protection during construction is required per 17.41.130.

- Refer to recent Land use case for code enforcement action on non-permitted tree removal GLUA-21-00066: SP-21-00017, NROD 21-00018
    - 19. Prior to the release of Building Permits, the applicant is responsible for submitting a Type I Site Plan and Design Review tree removal application for those trees removed in 2018/2019 based on the compliance options in 17.41.050. The trees removed in 2018/2019 are above and beyond any tree proposed to be removed as part of the current application. If the caliper sizes of the trees that were removed cannot be verified, the applicant shall use the 25" to 30" *healthy tree located outside of the construction area category* as a default category in their calculations unless further refined with additional documentation. The applicant shall demonstrate that required mitigation trees shall be planted onsite to the extent practicable, based on direction from a certified landscape architect, with the remainder allowed to be planted offsite. The applicant is encouraged to seek advice from the Natural Resources Committee on suitable

Figure 5: 2018 Aerial – OC Webmaps (showing previous tree canopy)

Figure 6: 2019 Aerial – OC Webmaps- showing trees removed onsite

Neighborhood Association Meeting

- A neighborhood meeting is required for a conditional use and for site plan and design review per OCMC 17.50.055 - Neighborhood association meeting. This property is in the Ellyville Neighborhood Association.

Other notes:

- Please include the Citizen Involvement Committee Chair, Linda Baysinger team.baysinger@comcast.net in any Neighborhood Association meeting requests, notifications or correspondence. Linda can be reached at
- Please note, the land use application must be submitted within one year of the neighborhood association meeting. A second neighborhood association meeting must be held if the land use application is not submitted within one year of attending a neighborhood association meeting.
- OCMC 17.50.055 requires submittal of the meeting sign-in sheet, a summary of issues discussed, and a letter from the neighborhood association indicating that a meeting was held.

Applicant Planning Questions (these will be discussed at the meeting and updated in the final notes)

1. Use. Confirm operations center is use category "utility facility" (17.04.1450) Conditional Use. Confirm primary utility facility use and "associated outdoor storage" are both conditional uses in MUC-1 zone. (17.29.030.E)

In 2023, PGE proposed a Legislative Code Text Amendment to Chapter 17.29 – Mixed Use Corridor, Section 17.29.030 E. of the Oregon City Municipal Code (OCDC) to recognize its existing Operations Center as a Conditional Use in the MUC-1 District, including the outdoor storage and maintenance activities that are a part of that use. , the Code Amendment allows PGE to apply for a Conditional Use Permit to improve and expand the Operations Center.

2. NROD. Confirm that city-verified NROD boundaries from 2022 Kamm St. Apts. decision still apply. Can applicant reference case file number, or need to submit the HHPR and DEA analyses?

   Please submit the NROD report associated with GLUA-21-00066: SP-21-00017, NROD 21-00018 as part of your application.

3. Base zone (MUC-1) standards. Confirm max allowed setbacks.

   Max setbacks are 5 feet but can be increased through OCMC 17.62.005D

5. Site Plan Design Review. Interpretation:
a. Applicability of commercial building standards? (17.62.055**) Only the office portion of the building is subject to the commercial standards.**

b. Parking location (beside/behind building) - applicable only to Warner Milne frontage? **No parking shall be in front of a building that faces Warner Milne. Parking can be in front of accessory buildings behind the main office building.**
c. Building entries, transit street entrances (secure site) T**here must be a main building entrance that faces and is accessed from Warner Milne.**
d. Ground floor windows **Window transparency is based on the abutting grade of the building**
e. Street-facing façades – (.055.D) Building within 5 ft of lot line for 60% of site width. Not enough building to meet 60% requirement. Very long frontage. What is a reasonable interpretation? **This can be modified through the Type II Modification process with sufficient alternative analysis and mitigation.**
f. FAR. Confirm no minimum FAR. **Correct no FAR**

6. Commercial Building Standards (17.62.055)
a. Building entry. Confirm proposed building entry approach.T**here must be a main building entrance that faces and is accessed from Warner Milne. Two entrances are ok**
b. Active frontage. Review impact to building ground floor being a few feet **Window transparency is based on the abutting grade of the building** above or below the sidewalk elevation. Do the active frontage requirement includes limits in the difference between the building finished floor and the right-of-way elevation?
c. Variation in Massing (17.62.055 -H) **The proposed project looks to meet this section- let me know if you have any specific questions.**

2General review of proposed approach
Confirm modulation width is a total requirement and may be distributed. **Correct it is a total #**
Confirm depth percentage is based on total length of building for each instance. **Correct**

Confirm recess sections of facade where used to meet building modulation requirements may exceed the maximum 5' setback (similar to 17.62.055 -D) **Corrected**. Architectural features. (17.62.055 -I1) Does architectural feature for each 30 ft. section have to extend full height? **No not required- but must be integrated architecturally**
e. 17.62.055 -I2 Review examples of alternative features for each 30' section that may be used to provide relief and detail. This is given as an option and left open: "as approved by the community development director." **Happy to discuss in further detail**.
f. 17.62.055 -J Is the 3.5' maximum window sill requirement measured from grade of sidewalk or from **grade of building?**

7. Other standards.
a. Parking – Adjustment to maximum parking needed for fleet vehicles, Need ~50%- **Parking variance is recommended with CU submittal- staff supports this approach.** more than allowed. Unique use, public interest/resiliency goals.
b. Fence height and materials – need for secure site. Other fence standards besides max height (8 ft.) and no chain link (forfences next to or behind the forward-most building)? Do the height requirements of fencing (in relation to building and ROW) apply to primary frontage only? Limits on other site frontages?**Look at 17.54.100 or 17.62.055H for guidence**
c. Landscaping. Does stormwater retention area count towards the minimum landscaped area requirement? **Yes**

8. Communications tower.
a. Not a cell tower. Does it meet the definitions? How to classify?
b. Height to exceed 75 feet – adjustment criteria, process. **This appears to require a Planning Commission -Adjustment 17.80.120 – Adjustment to height- If this is Important enough for the applicant, this could be run ahead of the CU/SP process.**

10. Adjustments vs. design exceptions. Key criteria for adjustments (17.62.015).
Possible adjustments or design exceptions needed:
a. Building width- **Type II Site Plan Modification**
b. Public access- **Required by TSP- can be move to edge of the property**
c. Max parking (fleet)—**PC Variance**
d. Block length **(defer to Public Works)**
e. Communication tower height

11. Tree protection/removal.
a. Confirm tree mitigation requirements carry over from Kamm Street Apartments case.- **Will be reviewed with this application- will bring the same condition forward (amended as needed)**
b. Other removal/replacement quantities per Table 17.41.060-1. Confirm**. Can mix and match fee-in-lieu and on- and off-site plantings; must be finalized prior to Certificate of Occupancy**.

12. Process.
Confirm Type III conditional use, consolidated. Hearing at Planning Commission.
Anticipated timelines – **A consolidated Site plan, Parking Variance, and conditional use review can occur within the same 120-day review process**

Oregon City Municipal Code Criteria:
The following chapters of the Oregon City Municipal Code (OCMC) may be applicable to this proposal:

OCMC 12.04 - Streets, Sidewalks and Public Places
OCMC 12.08 - Public and Street Trees
OCMC 13.12 – Stormwater Management
OCMC 16.12 – Minimum Public Improvements and Design Standards for Development
OCMC 17.29 – Mixed Use Corridor District
OCMC 17.41- Tree Protection Standards
OCMC 17.50 – Administrative Processes
OCMC 17.52 – Off Street Parking and Loading
OCMC 17.54.100 – Fences and Walls
OCMC 17.56 – Conditional Uses
OCMC 17.58 – Nonconforming Uses, Structures, and Lots
OCMC 17.62 – Site Plan and Design Review

Planning Division
Christina Robertson-Gardiner, Senior Planner with the Oregon City Planning Division, reviewed your pre-application. You may contact her at 503.496.1564 or crobertson@orcity.org.

Development Services Division
Josh Wheeler, Assistant City Engineer with the Oregon City Development Services Division reviewed your pre-application. You may contact Josh at jwheeler@orcity.org.

Building Division:
Your application was transmitted to our Building Official, who provided comments. You may contact Jim Sayers, Building Official, at 503.496.1517 or jsayers@orcity.org if you have any building related questions.

Clackamas County Fire:
Your application was transmitted to Mike Boumann, Lieutenant Deputy Fire Marshal of Clackamas County Fire District #1. No comments were returned regarding your application. You may contact Mr. Boumann at 503.742.2660 or at michaelbou@ccfd1.com.

Planning staff will provide you with a Code Response template for the preparation of the required application narrative responding to the applicable approval criteria listed above.

NOTICE TO APPLICANT: A property owner may apply for any permit they wish for their property. HOWEVER, THERE ARE NO GUARANTEES THAT ANY APPLICATION WILL BE APPROVED. No decisions are made until all reports and testimony have been submitted. This form will be kept by the Community Development Department. A copy will be given to the applicant. IF the applicant does not submit an application within six (6) months from the Pre-application Conference meeting date, a NEW Pre-Application Conference will be required unless extended to one year.

Public Disclosure:

The purpose of a pre-application meeting is to introduce the impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal (City Code 17.50.050). Omissions or failures by staff to identify all relevant applicable land use requirements or how they might affect a proposal may occur, either as a result of a limited pre-application submittal or the consideration of discretionary criteria.

All pre-application conference related communications, including these notes, are informational only. They do not substitute for a public hearing and no land use decision is rendered at this phase.

Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of the Oregon City Municipal Code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

OREGON CITY

Public Works – Development Services

13895 Fir Street| Oregon City OR 97045
Ph (503) 657-0891

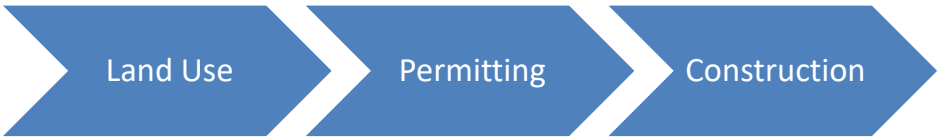
DEVELOPMENT SERVICES
PRE-APPLICATION MEETING NOTES

Planning Project Number:	PA 25-00031
Address:	209 Warner Milne Road
Map Number(s):	3-2E-06DA
Tax Lot(s):	00100
Project Name:	PGE Operations Center
Meeting Date:	July 1, 2025
Reviewer(s):	Erik Nichols | enichols@orcity.org | 971-204-4631

Public Disclosure:
The information provided shows the possible impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal (City Code 17.50.050). Omissions or failures by staff to recite all relevant applicable land use requirements to an applicant may occur, either as a result of a limited pre-application submittal or staff's interpretation of the codes at that time.

All pre-application conference related communications, including these notes, are informational only. They do not substitute for a public hearing and no land use decision is rendered at the pre-application conference. Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of the Oregon City Municipal Code, and any omission or failure by staff to recite all relevant or applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

The Development Process: https://www.orcity.org/1105/Land-Use



Land Use	Permitting	Construction
Pre-Application	**Application**	**Bonding**
Completeness	**City Review**	**Shop Drawing Approval**
Public Notice/Comment	**Consultant Revision**	**Onsite Specific PreCon Mtgs**
Staff Report	**Continued back and forth**	**Onsite Specific Inspections**
Issuance	**Issuance**	**Testing**
Appeal	**Pre-Construction Meeting**	**Closeout**

General Comments

1. A complete land use application will typically include a preliminary stormwater report and preliminary construction plans showing all required improvements (E.G., roads, sidewalks, sewer, water, stormwater facilities, grading, and erosion control). The application should also include a

narrative responding to all sections of the Oregon City Municipal Code (OCMC) applicable to the proposed development. See provided checklists at https://www.orcity.org/1065/Engineering-Development-Services-Checkli

2. The City will issue a Staff Report in response to the contents of the application package provided by the applicant. Once a Staff Report is issued, staff strongly encourages a pre-design meeting with the project engineer to discuss plan requirements, conditions of approval, and process.

3. Conditions of approval contained in the Staff Report will dictate what is needed after the land use decision is issued (providing the appropriate documents E.G., construction plans, reports, etc.).

4. All applicable System Development Charges (SDC) shall be due and payable upon building permit issuance unless deferment is requested, and a financing agreement is executed. The applicant will need to complete a SDC request form, found on the City's website. https://www.orcity.org/868/System-Development-Charges-SDCs

   SDC credits, reductions, and reimbursements are solely determined by the Director of Public Works and shall follow the process listed in City Code 13.20.040 and 13.20.050.

5. The applicant may be required to sign a Non-Remonstrance Agreement for the purpose of making sanitary sewer, storm sewer, water or street improvements in the future that benefit the property and assessing the cost to benefited properties

6. The contractor for the applicant will be required to attend a pre-construction meeting prior to any work beginning onsite.

7. All public improvements must be bonded with a 120% performance guarantee prior to the beginning of construction. Public improvements are defined as public utility extensions and roadway improvements within existing right-of-way. Public improvements may also be on private property in certain circumstances. This bond is released at the end of the construction period assuming everything is constructed as agreed upon.

8. All newly constructed public improvements shall be maintained for a two-year period following their acceptance of construction with a 15% maintenance guarantee. Newly constructed public improvements consist of those improvements within existing right of way and those that were constructed on private land to be deeded for City ownership following approval of a plat. This bond is released at the end of the maintenance period (typically 2 years).

9. PLEASE NOTE: A project will NOT be recommended for occupancy by Public Works to the Building Division until all public improvements are accepted by the Public Works Department.

10. PLEASE NOTE: Once the land use decision is made, permits need to be sought to be able to start construction. This process may take many months after the land use decision is made. The applicant will need to submit separately to Public Works/Engineering and Building.

11. PLEASE NOTE: **All** permits from Public Works, including an erosion control permit, must be obtained prior to any work beginning on the site and in the right-of-way (ROW).

Streets

1. Warner Milne is functionally classified as a "Minor Arterial" road and the development property is zoned "Mixed Use". The following tables show the existing road section and the maximum street section required by city code for this type of road.

Existing Street Section on the development's side of centerline

Road Classification	Zoning	R.O.W. width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street parking	Travel Lanes	Median
Minor Arterial	Mixed Use	33'	17'	1'	0'	0'	0'	None	11'	0'

Maximum Street Section city code may require on the development's side of centerline

Road Classification	Zoning	R.O.W. width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street parking	Travel Lanes	½ of a Median
Minor Arterial	Mixed Use	58'	47'	0.5'	10'	0.5' (5'x5' tree wells within sidewalk)	6'	8'	(2) 12' (1) 6' (half of center lane)	3'

2. Along Warner Milne the following may be accepted on the subject property side of the centerline. However, the applicant must request a reduction to the standard improvements, ROW dedication and other deviations from the City's street design standards through the modification process outlined in Section 16.12.013 of the Oregon City Municipal Code.

Potential acceptable street section on the development's side of centerline

Road Classification	Zoning	R.O.W. width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street parking	Travel Lanes	Median
Minor Arterial	Mixed Use	53'	21'	0.5'	10'	0.5' (5'x5' tree wells within sidewalk)	6'	0	(5) 12'	3'

3. TSP Project W41 and S41 are identified within the project area. Project W41 is to provide sidewalks along Warner Milne. Project S41 is to provide a shared use path connecting Beaver Creek Road to Laurel Lane.

4. As shown in the provided figures, the project would close off future street connections between Kamm Street and Hughes Street with Warner Milne. Transportation circulation issues will need to be addressed with the applicant's land use application.

5. The proposal provided with the pre-application submittal has not conceptually provided the required street improvements.

6. One street tree is required for every thirty-five feet of property frontage.

7. The existing driveways off Warner Milne will need to be adjusted to meet ADA requirements for curb-tight driveway cross-slope.

8. Fire truck turn-around must meet the requirements of and be approved by Clackamas County Fire District No.1.

9. The development will be required to provide a 10-foot-wide Public Utility Easement (PUE) along all property lines fronting existing or proposed ROW.

10. Existing street lighting appears to be adequate. No additional street lighting will be required.

11. **Any deviations from standards required within Table 16.12.016 of the Oregon City Municipal Code, such as elimination of typical street components, or reduction to the size of these components (drive lanes, sidewalks, bike lanes, landscaping, ROW dedication, etc.), requires a written request through the modification process outlined in Section 16.12.013 of the Oregon City Municipal Code. Proposed modifications may require additional evidence and analysis for review.**

Private Utilities (Gas, Electric, Telephone, Telecommunication, Cable, Fiberoptic, Etc.)

1. All new service lines are required to be placed underground.
2. All new utilities shall be placed on private property within a 10 foot utility easement or other area as agreed upon by Engineering. This may cause a shift in the location of the building footprint.
3. The applicant should be aware that utility coordination with these entities can be costly and substantially affect timelines. Early discussion with the utility company is imperative for a timely project. The City does not provide coordination with these utilities. Staff may provide suggestions or guidance for utility locations such as relocation of poles, but the design is ultimately up to the applicant's consultant and the private utility. However, the city must approve the design.

Stormwater

1. The Oregon City Stormwater and Grading Design Standards can be found online at: https://www.orcity.org/1227/Stormwater-Grading-Design-Standards

2. Projects within the General Thresholds (Section 1.2.1) of the Stormwater and Grading Design Standard are subject to the requirements of the City's Stormwater and Grading Design Standards. The project, as described in the Pre-Application submittal, appears to trigger Part A (see below) of the General Thresholds.

   A. Development activities that result in 5,000 square feet of new or replaced impervious surface, cumulative over a 5-year period.

B. Development activities that will result in the **creation of more than 500 square feet of new impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.

C. Development activities that will **disturb 1,000 square feet of existing impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.

New or replaced impervious surface, includes surfaces associated with required frontage improvements.

3. Where compliance with the Stormwater and Grading Design Standards is required, applicants must submit a completed Site Assessment and Planning Checklist (and other items as described in Section 9.1.1 of the Stormwater and Grading Design Standards) as part of the land use application review process. At a minimum, to receive Completeness Approval, the applicant should submit a preliminary stormwater report addressing the following items from Section 9.1.1 of the City's Stormwater and Grading Design Standards.
   A. Stormwater management strategy
   B. A site plan showing an adequately sized stormwater facility based on Stormwater Best Management Practices (BMP) Sizing Tool or sized using the Engineered Method (as defined by City's Stormwater and Grading Design Standards).
   C. A geotechnical report or a Natural Resource Conservation Service (NRCS) soils report documenting onsite infiltration and soil conditions in support of a proposed stormwater management strategy.
   D. Downstream analysis which extends to the distance where the project site contributes less than 15 percent of the cumulative tributary drainage area or 1,500 feet downstream of the approved point of discharge, whichever is greater, as required by Chapter 5 of the Stormwater and Grading Design Standards.

4. The proposal provided with the pre-application submittal has not conceptually provided the required stormwater improvements. The number of lots may need to be reduced. The size of the development may need to be reduced to accommodate stormwater requirements.

5. The nearest downstream public stormwater facility is an inlet located southwest of the proposed development, in Warner Milne Road. This structure directs flows southwest through an 18-inch pipe to the "Mud" basin.

6. The development may be required to extend a 12" stormwater line to the frontage of the proposed development for conveyance of stormwater to the nearest public stormwater system.

Water

1. There is an existing 16-inch ductile iron water main that runs within Warner Milne that appears to be sufficient to serve the proposed development.

2. The development will be required to provide the new lot with a new water service line and meter per City standards.

3. There are existing water service lines which are located along Warner Milne. If the applicant intends to use the existing water service line, it shall be at least 1" in diameter and the applicant shall perform inspections to confirm that it is in usable condition to the satisfaction of the City. Otherwise, the development shall install, at a minimum, a new 1" water service line to serve the development.

4. There is an existing fire hydrant located off Warner Milne.

5. New fire hydrants shall be located per the requirements and direction of Clackamas Fire District No. 1.

6. If irrigation is desired for the site, Discuss location with the city's project manager as there are pros and cons of locations and metering with respect to SDCs and fees.

7. The proposal provided with the pre-application submittal has not conceptually provided the required water infrastructure improvements.

Sanitary Sewer

1. An 8-inch sanitary sewer main exists within Warner Milne, with manholes located at the southeast and southwest corners of the property.

2. All lots must have a sanitary service lateral and two-way cleanout per City standards.

3. There is an existing sanitary sewer service lateral within Warner Milne Street. If the applicant intends to use an existing sanitary sewer service line, it shall be at least 6" for commercial in diameter and the applicant shall provide a video inspection report to the City and Public Works will confirm if the lateral is in usable condition.

4. The proposal provided with the pre-application submittal has not conceptually provided the required sanitary sewer infrastructure improvements.

Transportation

1. The applicant will need to have a traffic engineer to provide a Transportation Impact Analysis (TIA) in conformance with the City's Guidelines for Transportation Impact Analyses available on the Oregon City website. https://www.orcity.org/1164/Guidelines-for-Transportation-Impact-Ana

   The analysis may show offsite improvements such as turn lanes or intersection improvements could be required causing significant delays and increasing costs.

2. Based on the information provided by the applicant, it appears the trip generation level triggers the need to submit a Transportation Impact Study (TIS). For questions regarding the TIA please contact the following:

Commented [SP1]: Choose Either TAL or TIA depending on consultant's notes. If the project is more complex, reference consultant's notes and attach it to the pre-app notes.

Reah Flisakowski, PE
Direct: 503-972-1203
Email: rlf@dksassociates.com

*Please note the cost for the City Traffic Engineering consultant's review during the land use process will be charged at or near the time of Land Use Decision. This fee is not reimbursable if land use is denied or if the application does not proceed forward to permit.

Occupancy

Development Services will not recommend final occupancy of the building until construction of public improvements and private stormwater management facilities is completed with all construction punch list items addressed and all required documents are provided.

Other

1. Access and Water Supply Plan Review by Clackamas County Fire District No.1 is required. Following instruction found at https://clackamasfire.com/access-and-water-supply-plan-review-submittal/.

2. All public improvements and stormwater management facilities will need inspection by the applicant's civil engineer. The City only provides inspection oversight.

3. The proposed development resides within the Natural Resource Overlay District (NROD); therefore, additional requirements from Planning shall be addressed.

4. The proposed development resides within a high water table area. If the high-water table is part of a larger groundwater system rather than perched water, there may be addition requirements for the design of infiltration stormwater facilities.

FINAL REMINDERS

1. **These notes are the best available based on the submittal and the understanding at the time of pre-application. The notes are NOT a guarantee of requirements.**
2. **Traffic Engineering Fees will be due at or near time of Land Use Decision**
3. **The Public Improvements (new roads, road widening, sidewalks, sewer mains, water mains, etc) MUST be completed prior to Plat.**
4. **Land Use MUST be completed prior to permit. The Land Use Approval is NOT a permit. A separate Building and Engineering Permit Submittal after land use is required when seeking a permit for construction.**
5. **If a project involves a combination of overlay districts, those overlay districts may have requirements different from each other and different from basic zoning. It is recommended significant coordination is completed prior to scheduling any meeting before a public body such as**

Historic Review Board or Planning Commission.

6. **SDCs can be a significant cost to the project. It is recommended to seek an estimate prior to proceeding further with an application. There is no cost for an estimate.**
7. **Overhead utility work can cause significant delays to a project. Much of this coordination may need to start 6-12 months prior to construction.**

Supplemental Information:

I. Documentation required before any construction plan review can begin by Public Works (which is after a land use decision has been made):

A. Complete Engineering Plans (Public Improvements, all stormwater facilities, site grading and erosion control)
B. Preliminary Cost Estimate for construction of Public Improvements, all stormwater facilities, site grading and erosion control.
C. Plan Review Fee
D. Complete Storm Water Report and Site Assessment and Planning Checklist

II. Documentation required before any construction plan can be deemed approved by Public Works (to be able to start construction or obtain a building permit):

a. Inspection Fee
b. Final Cost Estimate of Public Improvements
c. Approved Engineering Plan stamped and signed by an Oregon Professional Engineer
d. Approved Storm Water Report stamped and signed by an Oregon Professional Engineer
e. NPDES 1200-C Permit
f. 120% Performance Bond
g. Developer/Engineer Agreement
h. Non-Remonstrance Agreement
i. Land Division Compliance Agreement *(for improvements to be provided by home builder such as trees, sidewalks, etc.)*
j. R.O.W. Dedication / Deed of Dedication

III. Documentation required before Public Works will recommend Certificate of Occupancy or allow any buildings to be permitted for construction on newly platted lots:

a. Engineer of Record Certificate of Completion
b. Completed Punchlist
c. 15% Warranty Guarantee
d. Recorded Easements
e. Recorded Plat
f. Public storm facilities - 2 Year Maintenance Bond
g. Private storm facilities - Maintenance Covenant and Access Easement

IV. Possible Fees

a. Plan Review Fee
b. Inspection Fee
c. Erosion Control Fee
d. Grading Permit Fee
e. Traffic Engineering Fee
f. Plat Fee
g. Vacation Fee
h. Engineering Permit Fees and System Development Charges:
   https://www.orcity.org/1067/Engineering-Services-Fees
   For commercial and multi-family projects an SDC estimate must be requested.

Note: These listed fees were most current at the time of this pre-application meeting. Additional fees may apply beyond the pre-application meeting.

CERTIFICATE OF ASSISTANT CORPORATE SECRETARY
PORTLAND GENERAL ELECTRIC COMPANY

I, Kristina Benson, hereby certify that I am a duly elected, qualified and acting Assistant Corporate Secretary of Portland General Electric Company. I further certify that as of the date of this Certificate:

1. Laura Bishop is the Manager of Property Rights for Portland General Electric Company.

2. As Manager of Property Rights for Portland General Electric Company, Laura Bishop is authorized to act on behalf of the company and execute all related land use applications for the Oregon City Operations Center project, including the following: Type III Land Use Application, Type II Site Plan and Design Review, and Modification/Adjustment Application per Pre-Application #25-031, for tax lots 32E06DA 00100, 32E06DA 00201, 32E05CB 1100, 32E05CB 1200, 32E05CB 1300, 32E05CB 1400, 32E05CB 1402, 32E05CB 1500, and 32E05CB 1600.

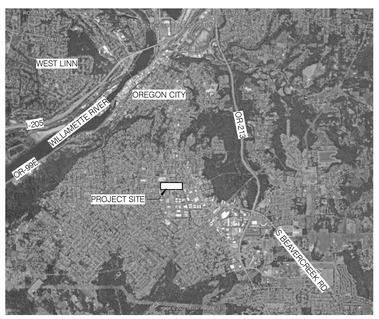
IN WITNESS WHEREOF, I have executed this Certificate on the 19th day of December 2025.

Kristina Benson

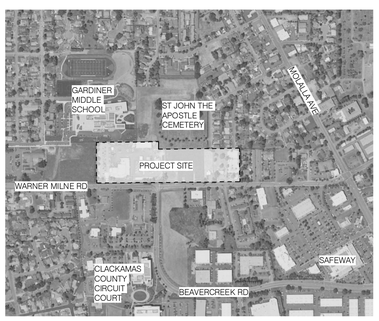
Kristina Benson
Assistant Corporate Secretary

PGE OREGON CITY OPERATIONS CENTER - LAND USE

REPRESENTATIONAL IMAGE
IMAGE SHOWN IS NOT AN EXACT REPRESENTATION
OF ACTUAL DESIGN AND CONSTRUCTION.



VICINITY MAP
NOT TO SCALE



CAMPUS MAP
NOT TO SCALE

PROJECT DIRECTORY

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PORTLAND, OR 97204
PHONE: 503-396-6753
CONTACT: JOSH FROMM

OWNER REPRESENTATIVE
OTAK
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PORTLAND, OR 97204
PHONE: 503-415-2365
CONTACT: CULLEN MCEVOY

CONTRACTOR
PERLO CONSTRUCTION
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TUALATIN, OR 97062
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CONTACT: DREW CARTER

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CONTACT: MISCHA VAN BUUREN

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FAX: 503-273-8169
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FAX: 503-227-4920
CONTACT: KYLE WOMACK

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CONTACT: BRIAN BUTLER

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CONTACT: SHANE FITZPATRICK

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PHONE: 503-584-1576
CONTACT: BEN PERRY

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COVER SHEET

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E02 LUMINAIRE SCHEDULE
E03 SITE LIGHTING CALCULATIONS -SITE WEST (HIGH OUTPUT)
E04 SITE LIGHTING CALCULATIONS -SITE EAST (HIGH OUTPUT)
E05 SITE LIGHTING CALCULATIONS -COVERED VEHICLE (HIGH OUTPUT)
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E07 SITE LIGHTING CALCULATIONS -SITE EAST (LOW OUTPUT)
E08 SITE LIGHTING CALCULATIONS -COVERED VEHICLE (LOW OUTPUT)

TEMPORARY CONSTRUCTION PHASE
T01 SITE DIAGRAM -TEMPORARY CONSTRUCTION PHASE

PRELIMINARY, NOT FOR CONSTRUCTION

Hennebery Eddy

HENNEBERY EDDY ARCHITECTS, INC.

PORTLAND OFFICE
921 SW WASHINGTON ST, SUITE 250
PORTLAND OREGON 97205
503 227 4860 TEL
503 227 4920 FAX

www.henneberyeddy.com

PGE

PGE Oregon City
Operations Center
209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

Drawn by: DP
Checked by: KW
Sheet: COVER

LAND USE
COVER

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
PRINTING THESE SAMPLES AT DIFFERENT SETTINGS WILL AFFECT
THIS GUIDANCE IS FOR REFERENCE ONLY.
SETTINGS FOR VIEWING AND PRINTING (DO NOT SCALE)

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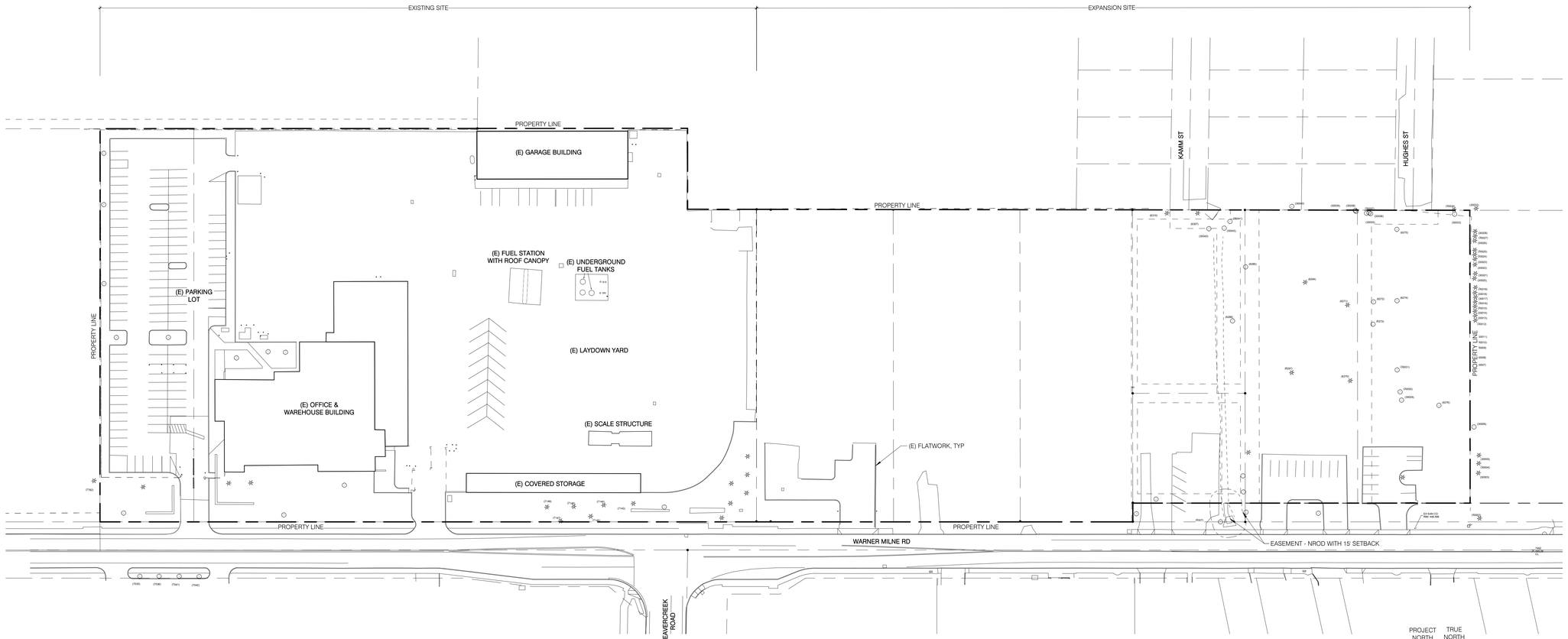

1 A10 SITE PLAN -EXISTING CONDITIONS
1" = 50'-0"

PRELIMINARY, NOT FOR CONSTRUCTION

Hennebery Eddy
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www.henneberyeddy.com

PGE

PGE Oregon City
Operations Center
209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

Drawn by: DP
Checked by: KW
Sheet:
LU SITE PLAN -EXISTING CONDITIONS

LAND USE

A10

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE LOTS ARE VISIBLE.
THIS GUIDANCE IS FOR REFERENCE ONLY.

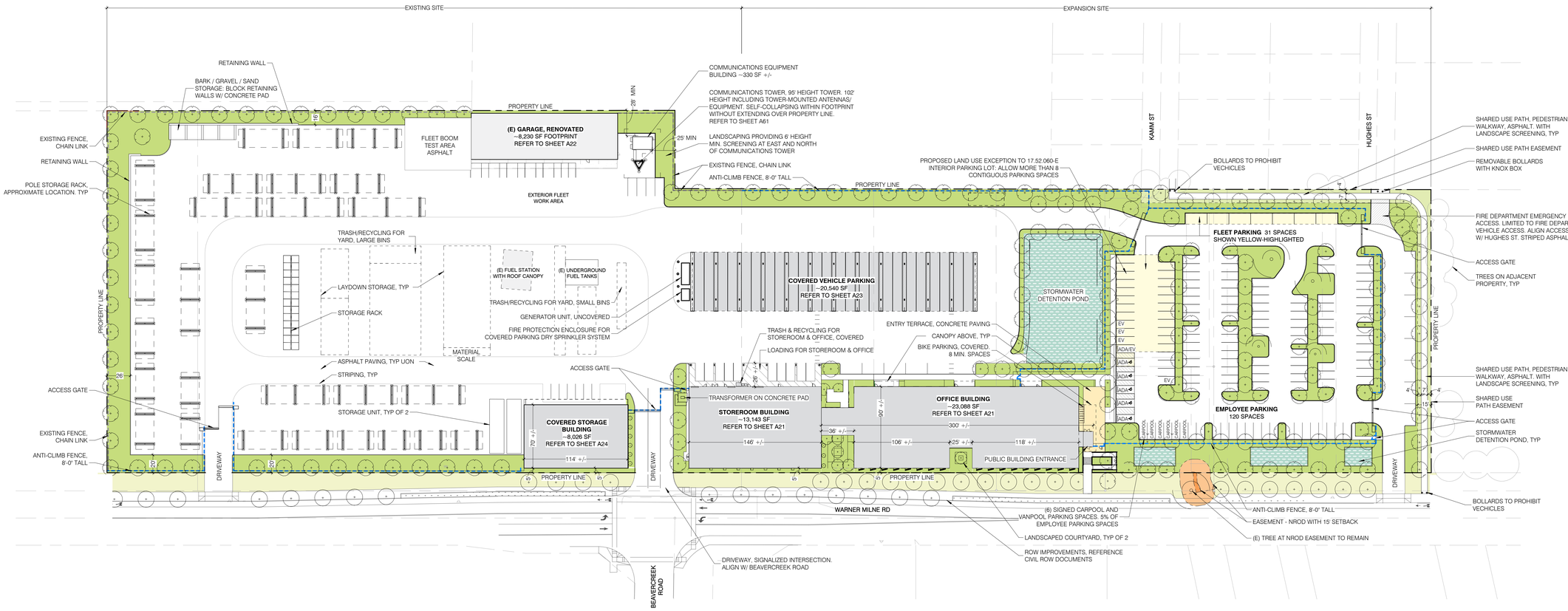
LAND USE NOTES

PROPERTY AREA:
EXCLUDING WARNER MILNE ROW DEDICATION, INCLUDING SHARED USE PATH

EXISTING LOT:	~6.3 ACRES
MIDDLE LOTS:	~2.9 ACRES
EAST LOTS:	~2.6 ACRES
TOTAL:	~11.7 ACRES

SITE LANDSCAPING - *INCLUDING SHARED USE PATH*
EXCLUDING WARNER MILNE ROW DEDICATION; LANDSCAPE AREA INCLUDES PUBLIC SHARED USE PATH WALKWAY AND STORMWATER

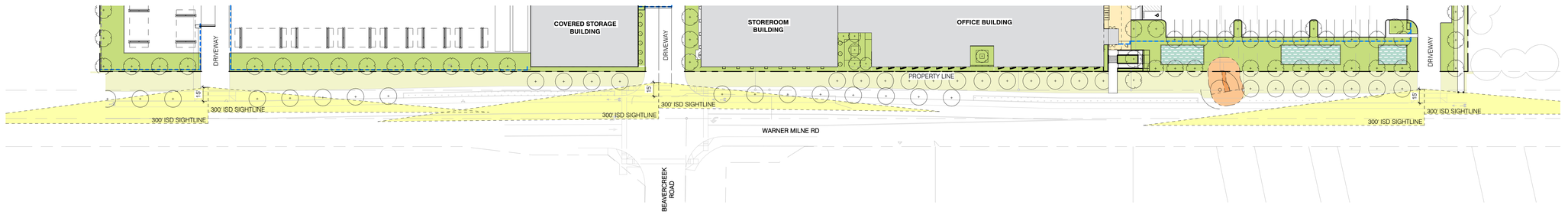
SITE AREA:	~511,425 SF
MIN LANDSCAPE REQUIRED:	20% = 102,285 SF
PROVIDED:	20.74% = 106,068 SF



1 A11 LU -ARCHITECTURAL SITE PLAN
1" = 50'-0"

0 12.5'25' 50' 100'

PROJECT NORTH TRUE NORTH



2 A11 LU -SITE DIAGRAM -SIGHT LINES
1" = 50'-0"

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTRAST ARE OPTIMIZED FOR THE MIDDLE SAMPLE. THIS GUIDANCE IS FOR REFERENCE ONLY.

BLACK
DARK GRAY
LIGHT GRAY

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Checked by: KW
Sheet:

LU SITE PLAN -OVERALL

LAND USE

A11

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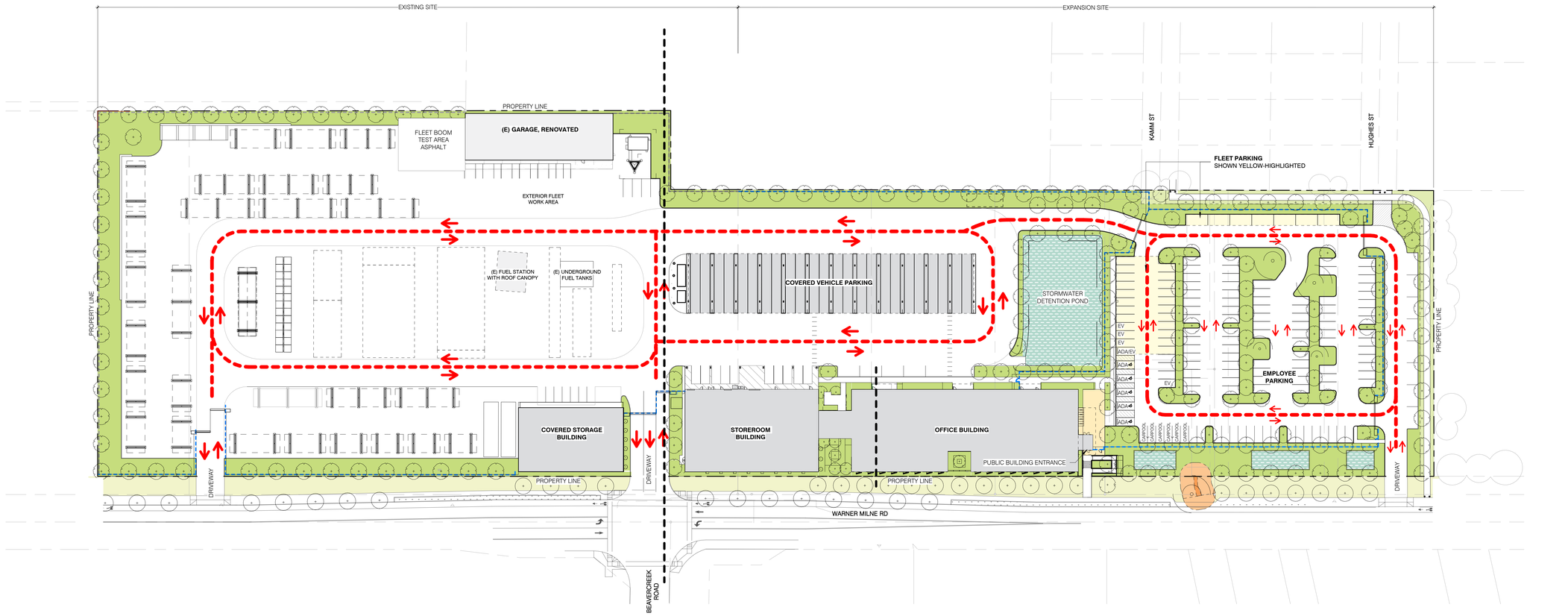

2 / A12 LU -DIAGRAM -SITE CIRCULATION
1" = 50'-0"

PROJECT NORTH TRUE NORTH

0' 12.5'25' 50' 100'

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LU SITE DIAGRAM -CIRCULATION

LAND USE

A12

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
CONFIRM WHICH LEVEL IS USED ON ALL PRINTED DRAWINGS.
THIS GUIDANCE IS FOR REFERENCE ONLY.
SETTINGS FOR VIEWING AND PRINTING CONTENT AND OPACITY

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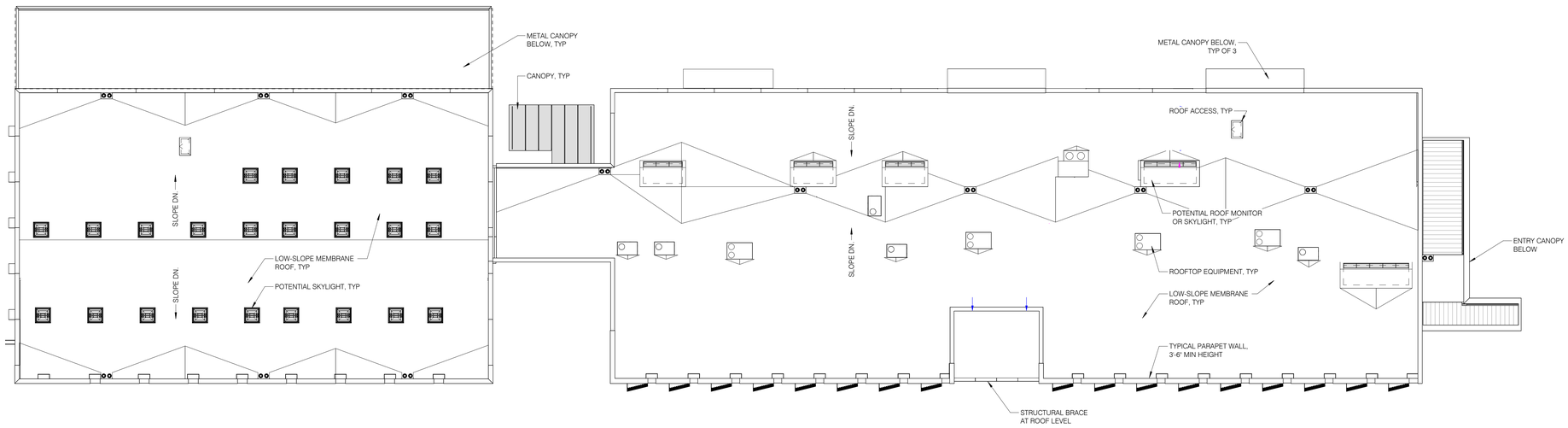
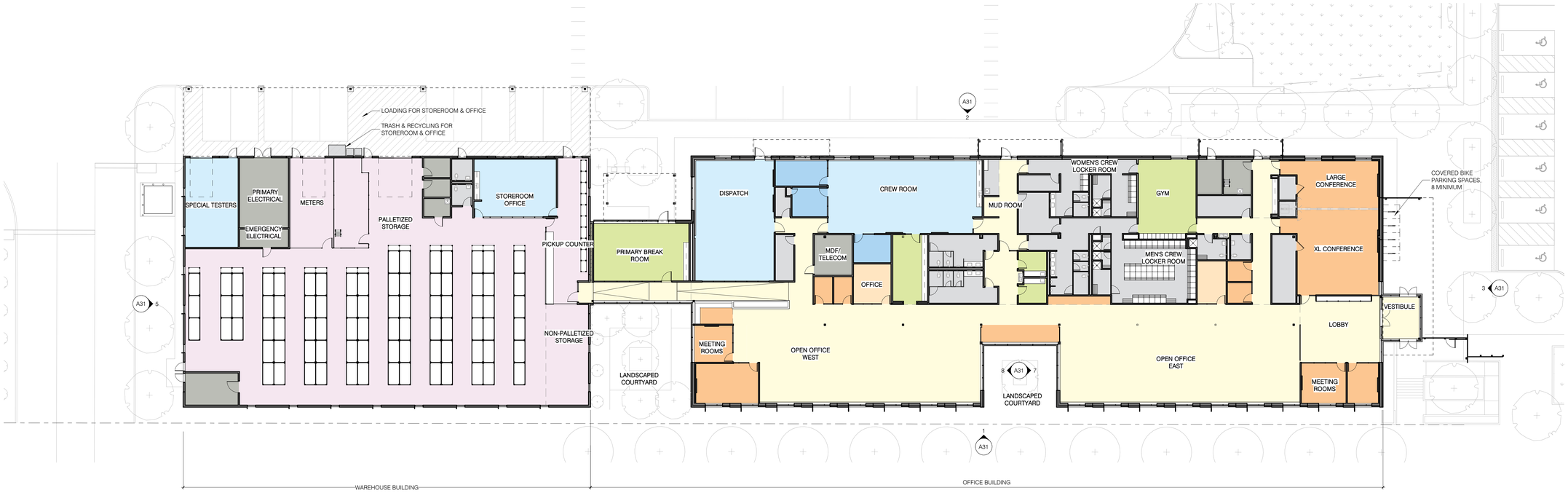


ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

2 A21 LU -ROOF PLAN -OFFICE & WAREHOUSE BUILDING
1/16" = 1'-0"

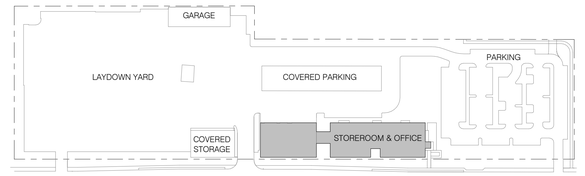


FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 A21 LU -FLOOR PLAN -OFFICE & WAREHOUSE BUILDING
1/16" = 1'-0"

PROJECT NORTH

0' 4' 8' 16' 32'



SITE KEY PLAN

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FLOOR PLAN -OFFICE & STOREROOM

LAND USE

A21

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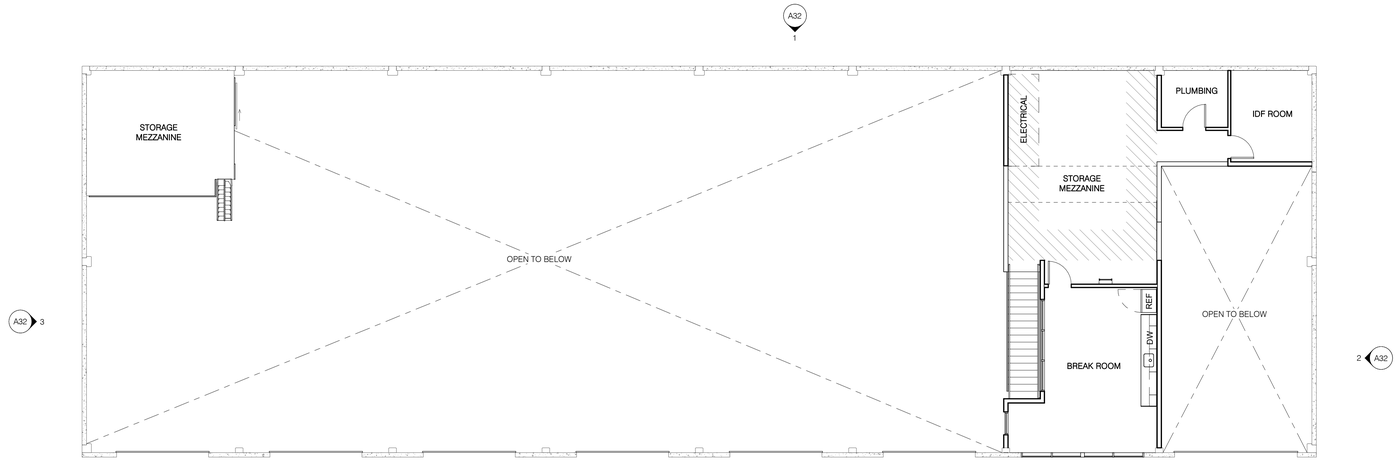
THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE DOTS ARE VISIBLE. THIS GUIDANCE IS FOR REFERENCE ONLY.

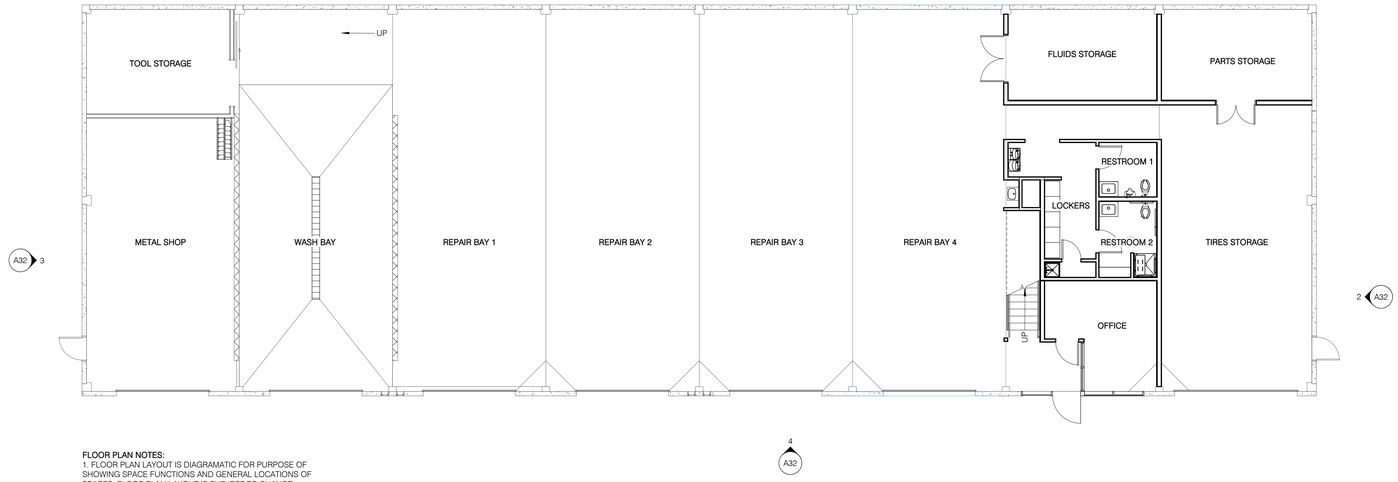


FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

2 A22 LU FLOOR PLAN - GARAGE LEVEL 2
1/8" = 1'-0"

0' 2' 4' 8' 16'

TRUE NORTH

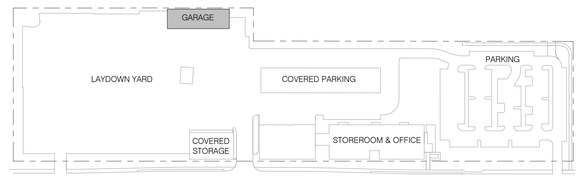


FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 A22 LU FLOOR PLAN - GARAGE LEVEL 1
1/8" = 1'-0"

0' 2' 4' 8' 16'

TRUE NORTH



SITE KEY PLAN

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING COVERED AREAS ARE AS FOLLOWS:
BACK: 0%
MID: 50%
LIGHT: 80%
THIS GUIDANCE IS FOR REFERENCE ONLY.

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OCOC - GARAGE

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LU FLOOR PLAN - GARAGE

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A22

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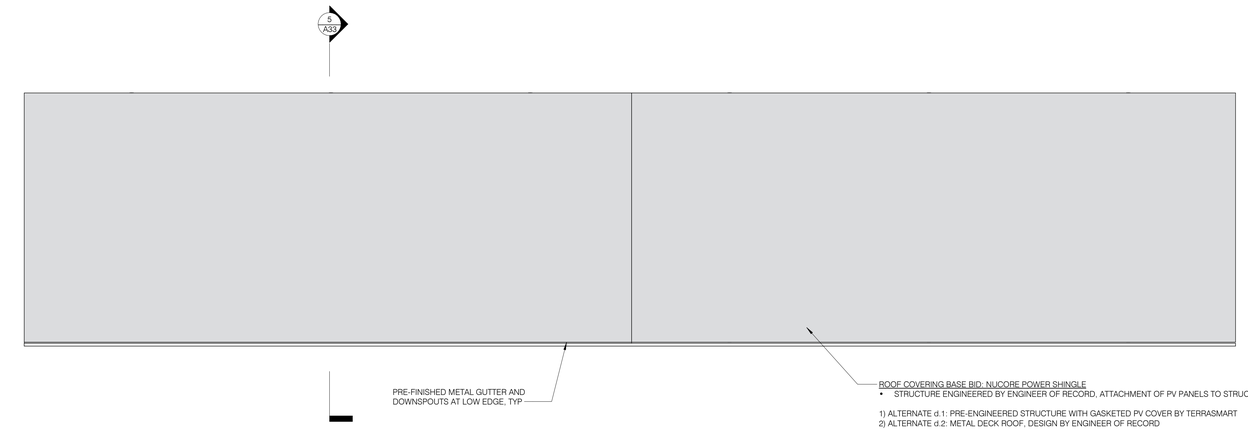
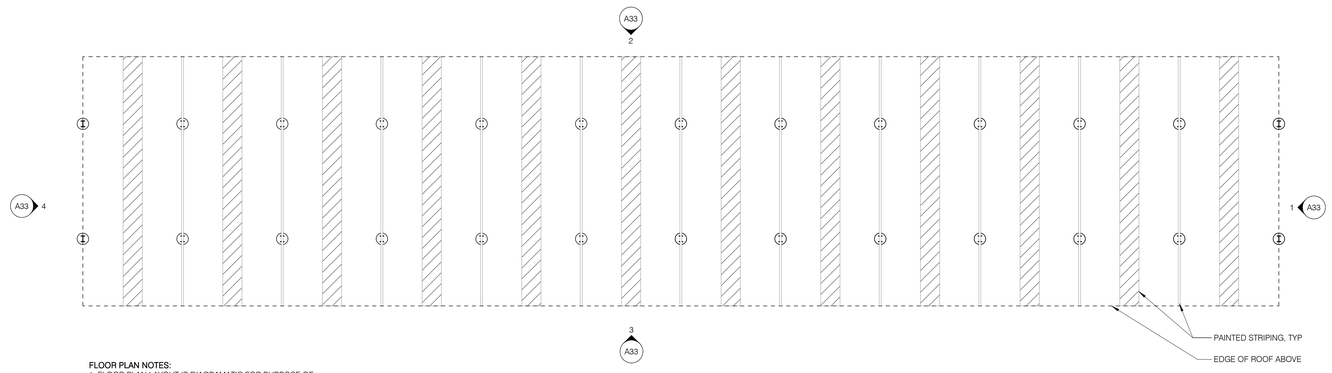


ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

2 COVERED PARKING -ROOF PLAN
1/16" = 1'-0"

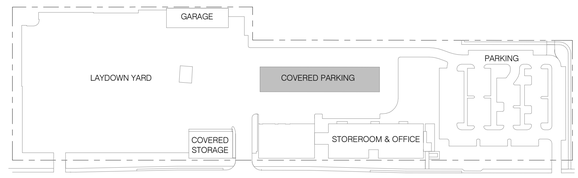
0' 4' 8' 16' 32'
PROJECT NORTH



FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

1 COVERED PARKING -FLOOR PLAN
1/16" = 1'-0"

0' 4' 8' 16' 32'
PROJECT NORTH



SITE KEY PLAN

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LU FLOOR PLAN -GARAGE

LAND USE

A23

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE DOTS ARE VISIBLE.
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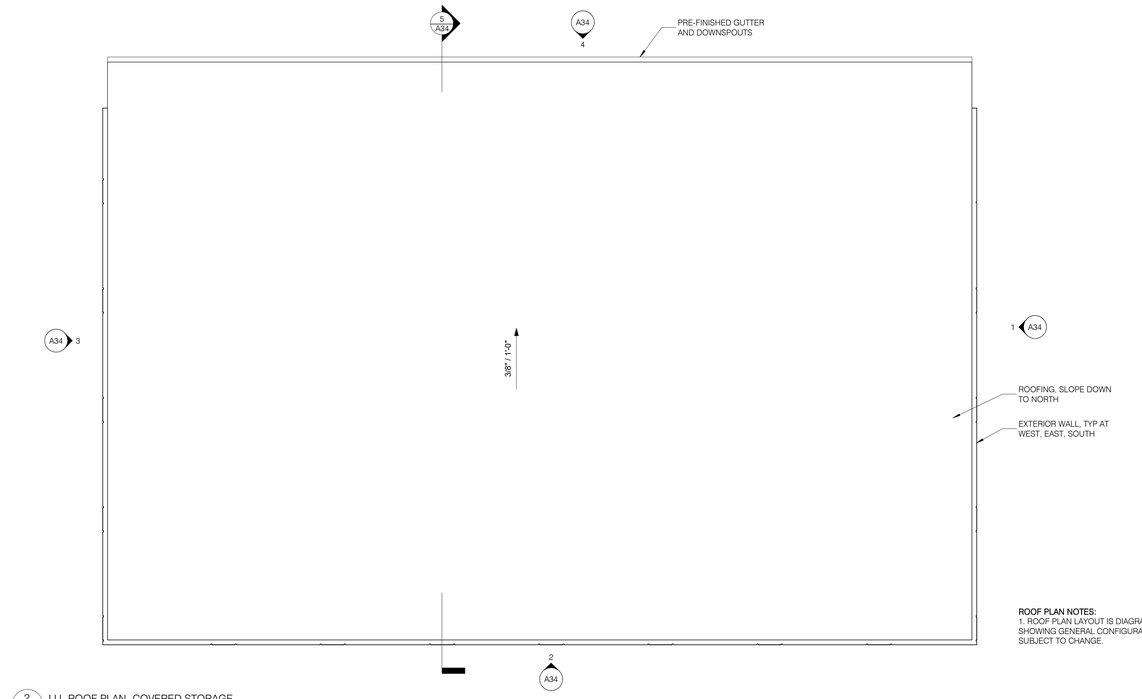
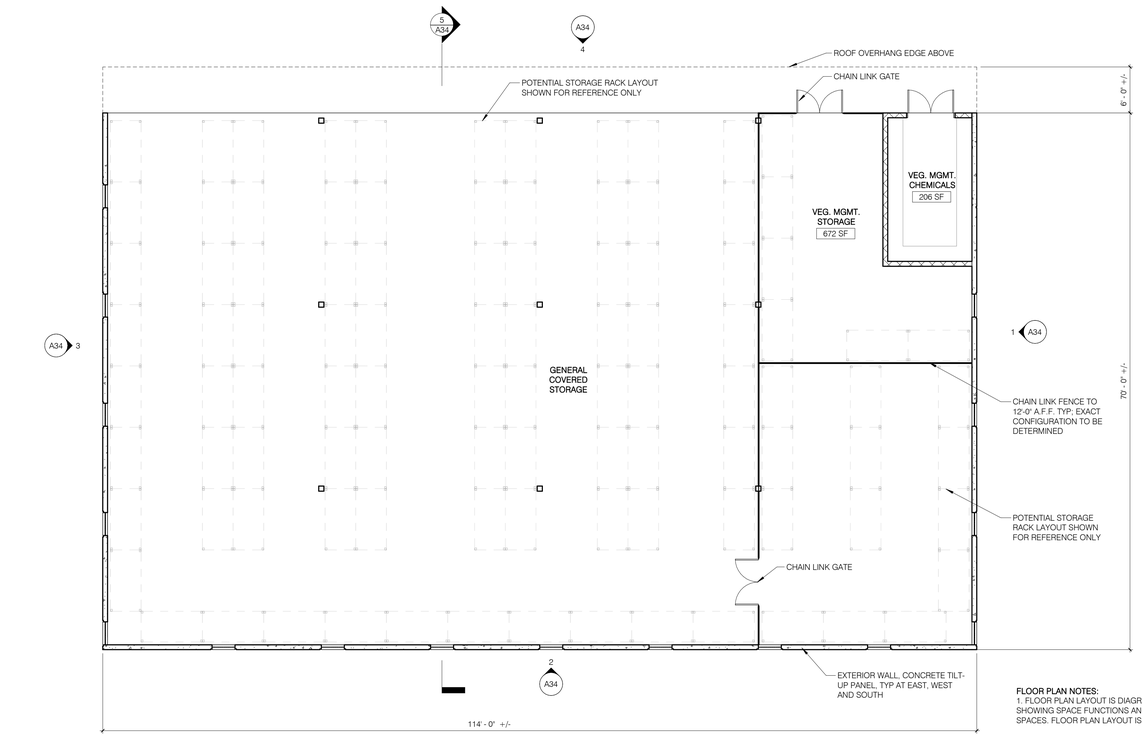


2 / A24 LU -ROOF PLAN -COVERED STORAGE
1/8" = 1'-0"

ROOF PLAN NOTES:
1. ROOF PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING GENERAL CONFIGURATION. ROOF PLAN LAYOUT IS SUBJECT TO CHANGE.

PROJECT NORTH

0' 2' 4' 8' 16'

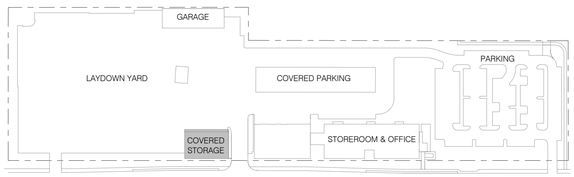


1 / A24 LU -FLOOR PLAN -COVERED STORAGE
1/8" = 1'-0"

FLOOR PLAN NOTES:
1. FLOOR PLAN LAYOUT IS DIAGRAMATIC FOR PURPOSE OF SHOWING SPACE FUNCTIONS AND GENERAL LOCATIONS OF SPACES. FLOOR PLAN LAYOUT IS SUBJECT TO CHANGE.

PROJECT NORTH

0' 2' 4' 8' 16'



SITE KEY PLAN

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FLOOR PLAN
-COVERED
STORAGE

LAND USE

A24

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTROL HOW ALL THREE LEVELS ARE USED. THIS GUIDANCE IS FOR REFERENCE ONLY.

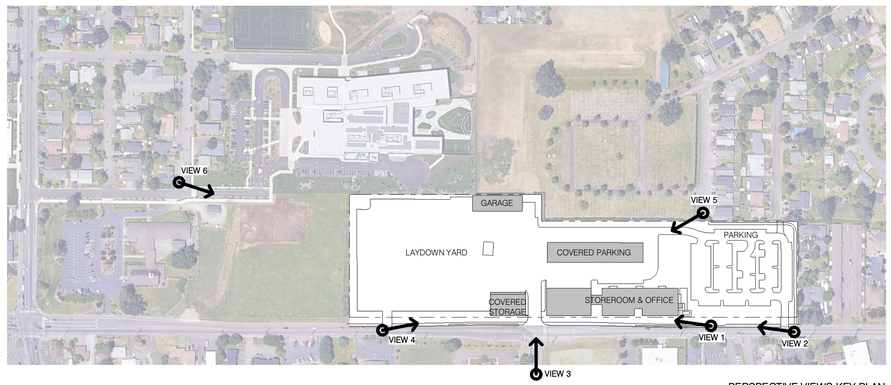
100%
50%
25%

VIEW 1

VIEW FROM WARNER MILNE
NEAR OFFICE BUILDING ENTRY
LOOKING WEST

VIEW 2

VIEW FROM WARNER MILNE
AT PARKING LOT DRIVEWAY
LOOKING WEST



PERSPECTIVE VIEWS KEY PLAN

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CONCEPT IMAGES

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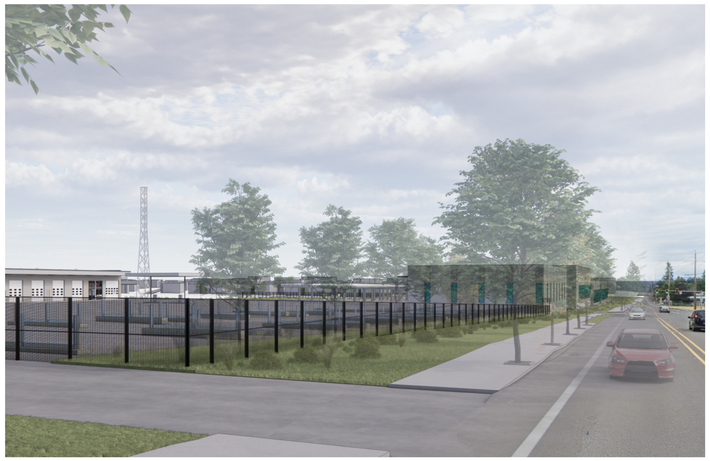
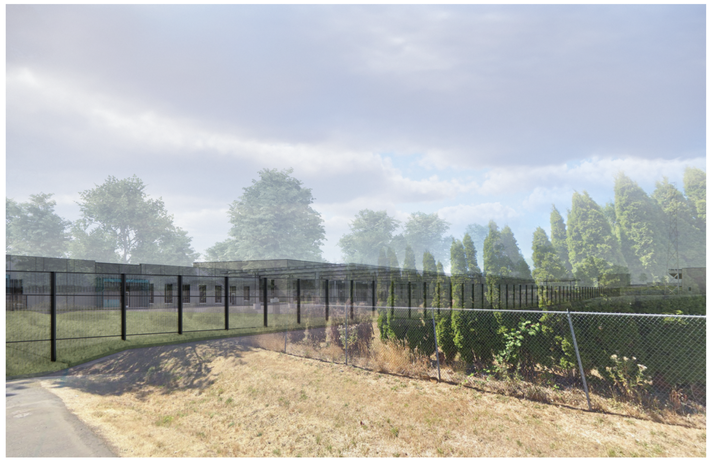
SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE DOTS ARE VISIBLE.
THIS GUIDANCE IS FOR REFERENCE ONLY.



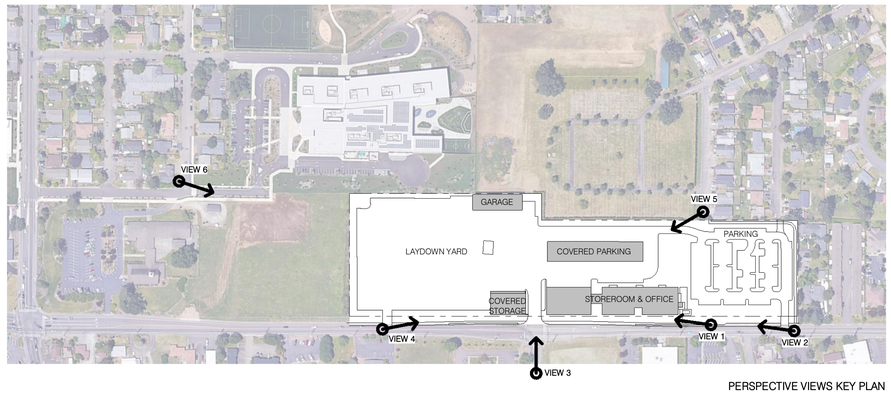
VIEW 4
VIEW FROM WARNER MILNE NEAR YARD DRIVEWAY
LOOKING EAST



VIEW 5
VIEW FROM KAMM ST.
LOOKING SW

VIEW 6
VIEW FROM WILLIAMS ST. & LEAONARD ST. INTERSECTION
LOOKING SE

VIEW 3
VIEW FROM BEAVERCREEK RD
LOOKING NORTH



PERSPECTIVE VIEWS KEY PLAN

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CONCEPT IMAGES

LAND USE

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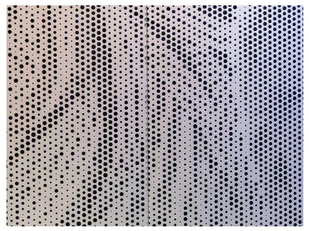
THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTROL HOW CLOSELY THESE SHADES RANGE.
THIS GUIDANCE IS FOR REFERENCE ONLY.

BLACK
GRAY 50%
GRAY 25%

ANTI-CLIMB FENCE
WIREWORKS ANTI-CLIMB FENCE BY AMERISTAR OR SIMILAR
COLOR: BLACK PREFINISHED

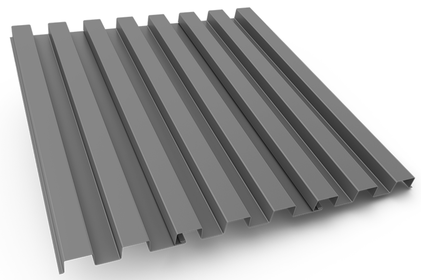


STEEL PLATE SHADING ELEMENT
STEEL PLATE OR FLAT STEEL PLATE, PERFORATED AT SOME LOCATIONS
PAINTED FINISH
ACCENT COLOR TO BE DETERMINED

CONCRETE, TEXTURED
CONCRETE SURFACE WITH PATTERNED LINER, PAINTED
NEUTRAL/GREY COLOR TO BE DETERMINED

ALUMINUM STOREFRONT
GLAZED ALUMINUM STOREFRONT

CONCRETE, PAINTED
CONCRETE SURFACE, PAINTED
NEUTRAL/GREY COLOR TO BE DETERMINED



RIBBED METAL WALL PANEL
PAINTED FINISH
COLOR TO BE DETERMINED

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MATERIALS BOARD

LAND USE

A51

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE DOTS ARE VISIBLE.
THIS GUIDANCE IS FOR REFERENCE ONLY.

EXTERIOR ELEVATION LEGEND

- CAST-IN-PLACE CONCRETE
- TILT PANEL CONCRETE, TYPICAL
- TILT PANEL CONCRETE, FORM LINER RELIEF TEXTURE
- METAL WALL PANEL
- PERFORATED STEEL PLATE
- ALUMINUM-FRAMED STOREFRONT SYSTEM

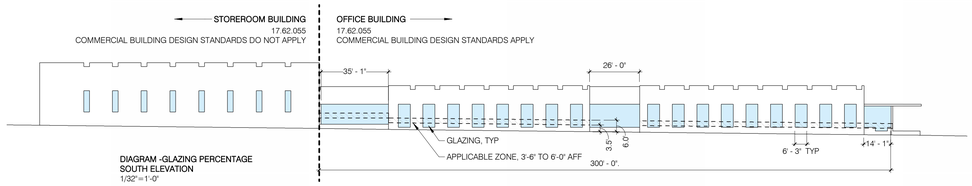
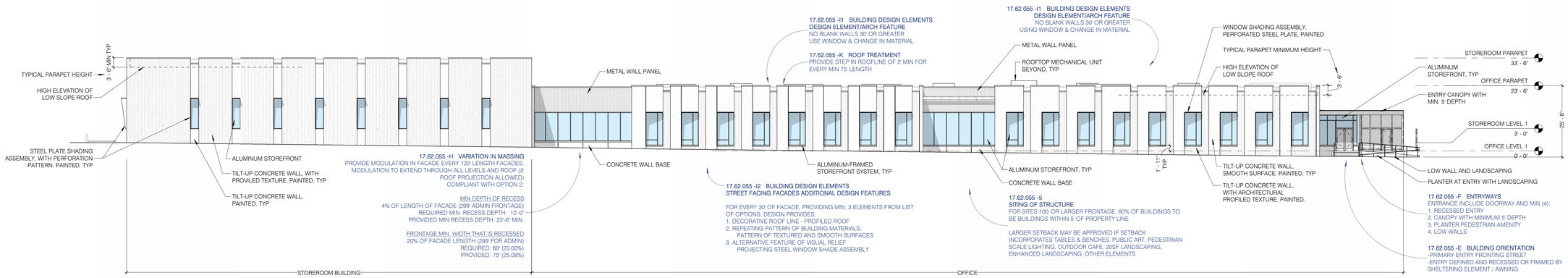


DIAGRAM -GLAZING PERCENTAGE
SOUTH ELEVATION
1/32"=1'-0"

REQUIRED FOR OFFICE BUILDING (STOREROOM BUILDING IS EXCLUDED)
17.62.055 -J WINDOWS

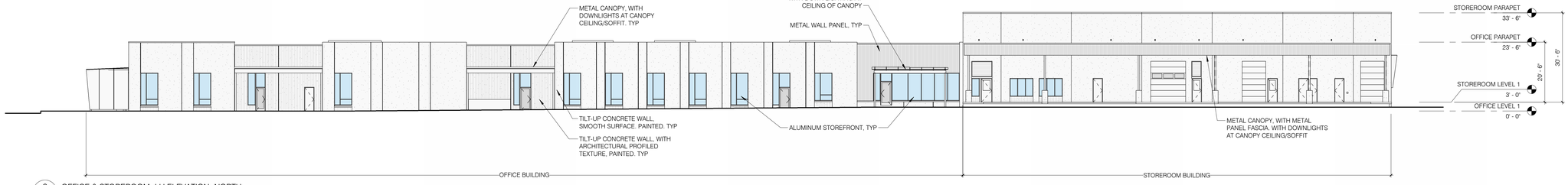
REQUIRED:
STREET FRONTING ELEVATION / SOUTH ELEVATION: 60% OF BUILDING FRONTAGE TO BE GLAZED
APPLICABLE GLAZING ZONE 3'-6" TO 6'-0"

PROVIDED:
DESIGN COMPLIES WITH THIS REQUIREMENT --> 60.47% PROVIDED
TOTAL BUILDING FRONTAGE = 300.00'
TOTAL GLAZING PROVIDED (3'-6" TO 6'-0") = 35.08' + 8(6.25) + 26.00' + 9(6.25') + 14.08' = 181.42' = 60.47%



1 / A31 OFFICE & STOREROOM -LU ELEVATION -SOUTH
1/16" = 1'-0"

0' 4' 8' 16' 32'



2 / A31 OFFICE & STOREROOM -LU ELEVATION -NORTH
1/16" = 1'-0"

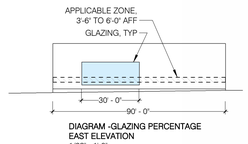
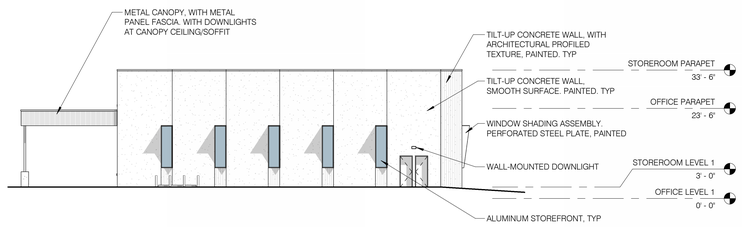


DIAGRAM -GLAZING PERCENTAGE
EAST ELEVATION
1/32"=1'-0"

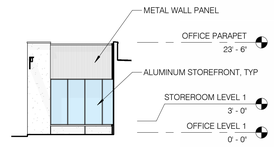
REQUIRED FOR OFFICE BUILDING (STOREROOM BUILDING IS EXCLUDED)
17.62.055 -J WINDOWS

REQUIRED:
SIDE FACADE / EAST ELEVATION: 30% OF BUILDING FRONTAGE TO BE GLAZED
APPLICABLE GLAZING ZONE 3'-6" TO 6'-0"

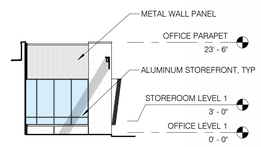
PROVIDED:
DESIGN COMPLIES WITH THIS REQUIREMENT - 30% PROVIDED
TOTAL BUILDING FRONTAGE = 90'
TOTAL GLAZING PROVIDED (3'-6" TO 6'-0") = 30' = 30%



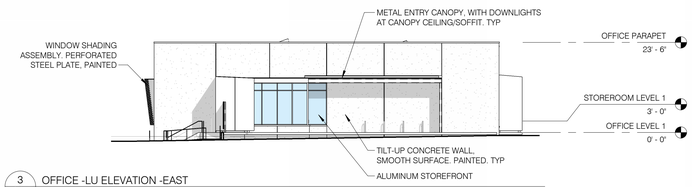
6 / A31 STOREROOM -LU ELEVATION -WEST
1/16" = 1'-0"



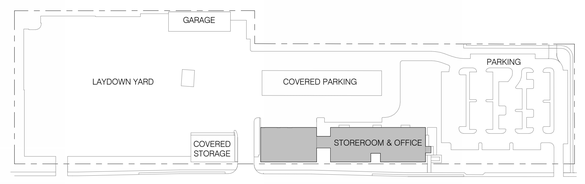
5 / A31 OFFICE COURTYARD -LU ELEVATION -NORTH
1/16" = 1'-0"



4 / A31 OFFICE COURTYARD -LU ELEVATION -SOUTH
1/16" = 1'-0"



3 / A31 OFFICE -LU ELEVATION -EAST
1/16" = 1'-0"



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LU EXTERIOR ELEVATIONS -OFFICE & STOREROOM

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTROL HOW THE COLORS WILL APPEAR ON SCREEN AND PAPER. THIS GUIDANCE IS FOR REFERENCE ONLY.

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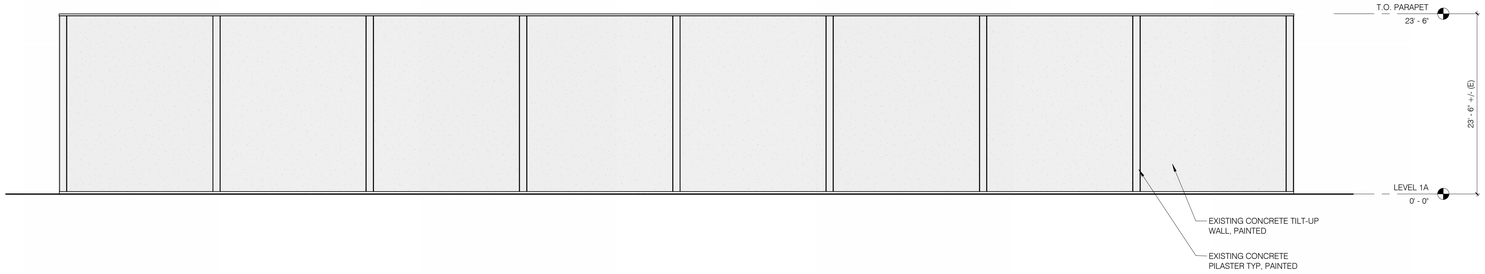
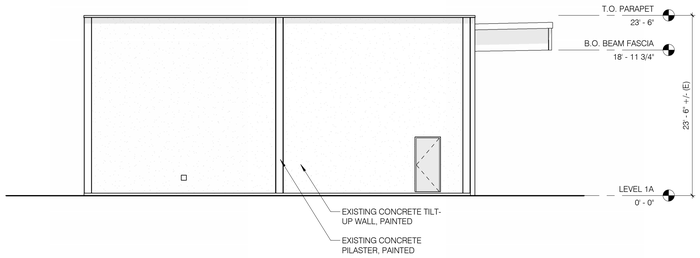
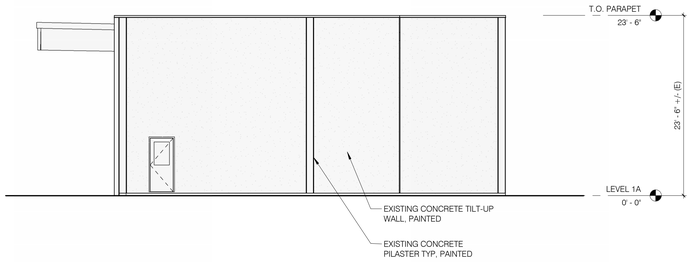


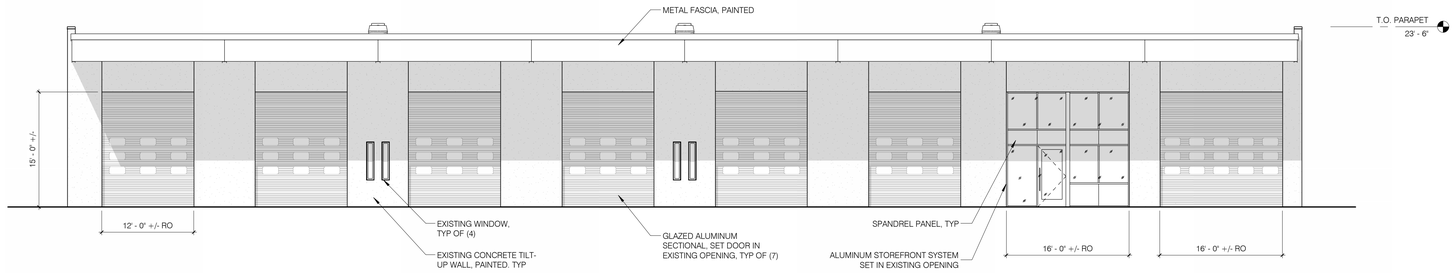
1 A32 GARAGE -LU ELEVATION -NORTH
1/8" = 1'-0"



3 A32 GARAGE -LU ELEVATION -WEST
1/8" = 1'-0"

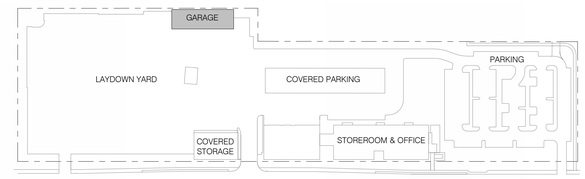


2 A32 GARAGE -LU ELEVATION -EAST
1/8" = 1'-0"



4 A32 GARAGE -LU ELEVATION -SOUTH
1/8" = 1'-0"

0' 2' 4' 8' 16'



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OCOC - GARAGE

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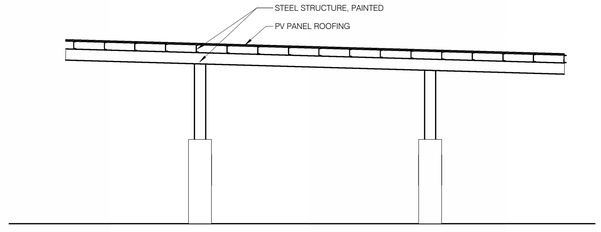
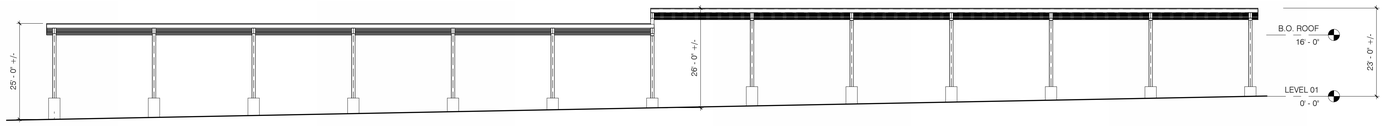
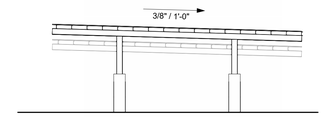


5 A33 COVERED PARKING -SECTION
1/8" = 1'-0"

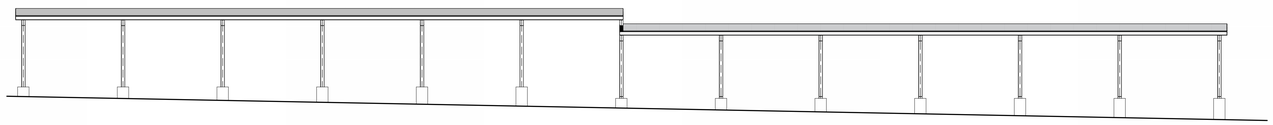
0' 2' 4' 8' 16'



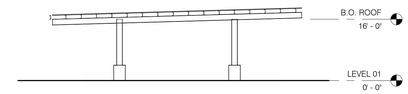
2 A33 COVERED PARKING -NORTH ELEVATION
1/16" = 1'-0"



4 A33 COVERED PARKING -WEST ELEVATION
1/16" = 1'-0"

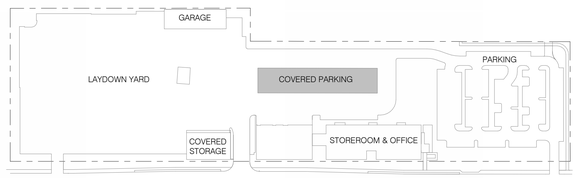


3 A33 COVERED PARKING -SOUTH ELEVATION
1/16" = 1'-0"



1 A33 COVERED PARKING -EAST ELEVATION
1/16" = 1'-0"

0' 4' 8' 16' 32'



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LU ELEVATIONS -COVERED PARKING

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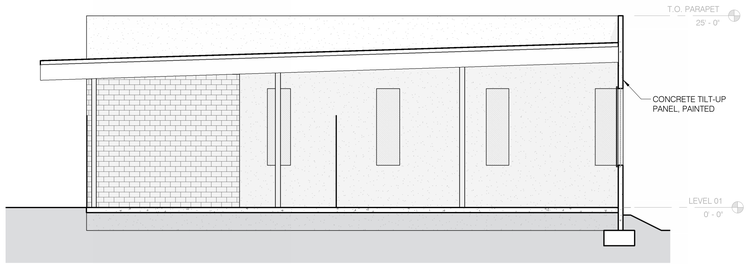
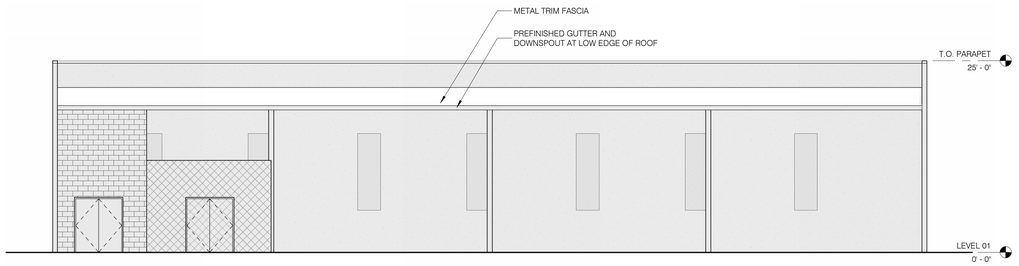


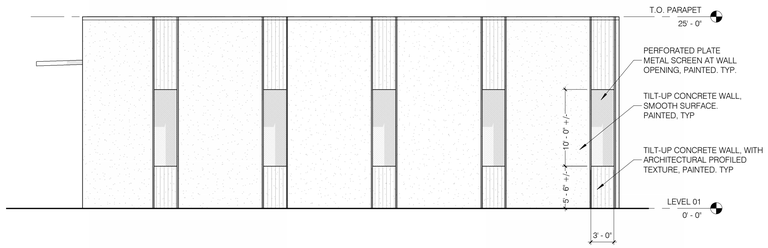
5 A34 COVERED STORAGE -LU BUILDING SECTION
1/8" = 1'-0"

0' 2' 4' 8' 16'



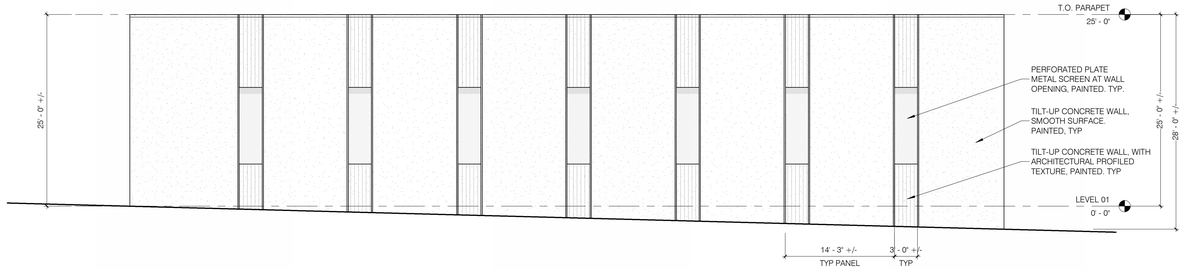
4 A34 COVERED STORAGE -LU ELEVATION -NORTH
1/8" = 1'-0"

0' 2' 4' 8' 16'



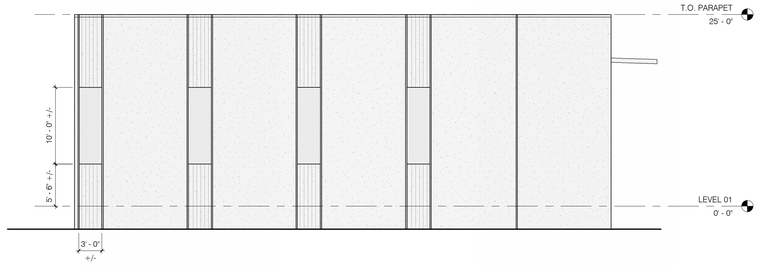
3 A34 COVERED STORAGE -LU ELEVATION -WEST
1/8" = 1'-0"

0' 2' 4' 8' 16'



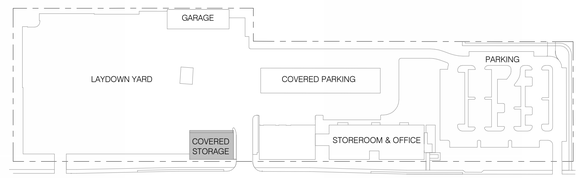
2 A34 COVERED STORAGE -LU ELEVATION -SOUTH
1/8" = 1'-0"

0' 2' 4' 8' 16'



1 A34 COVERED STORAGE -LU ELEVATION -EAST
1/8" = 1'-0"

0' 2' 4' 8' 16'



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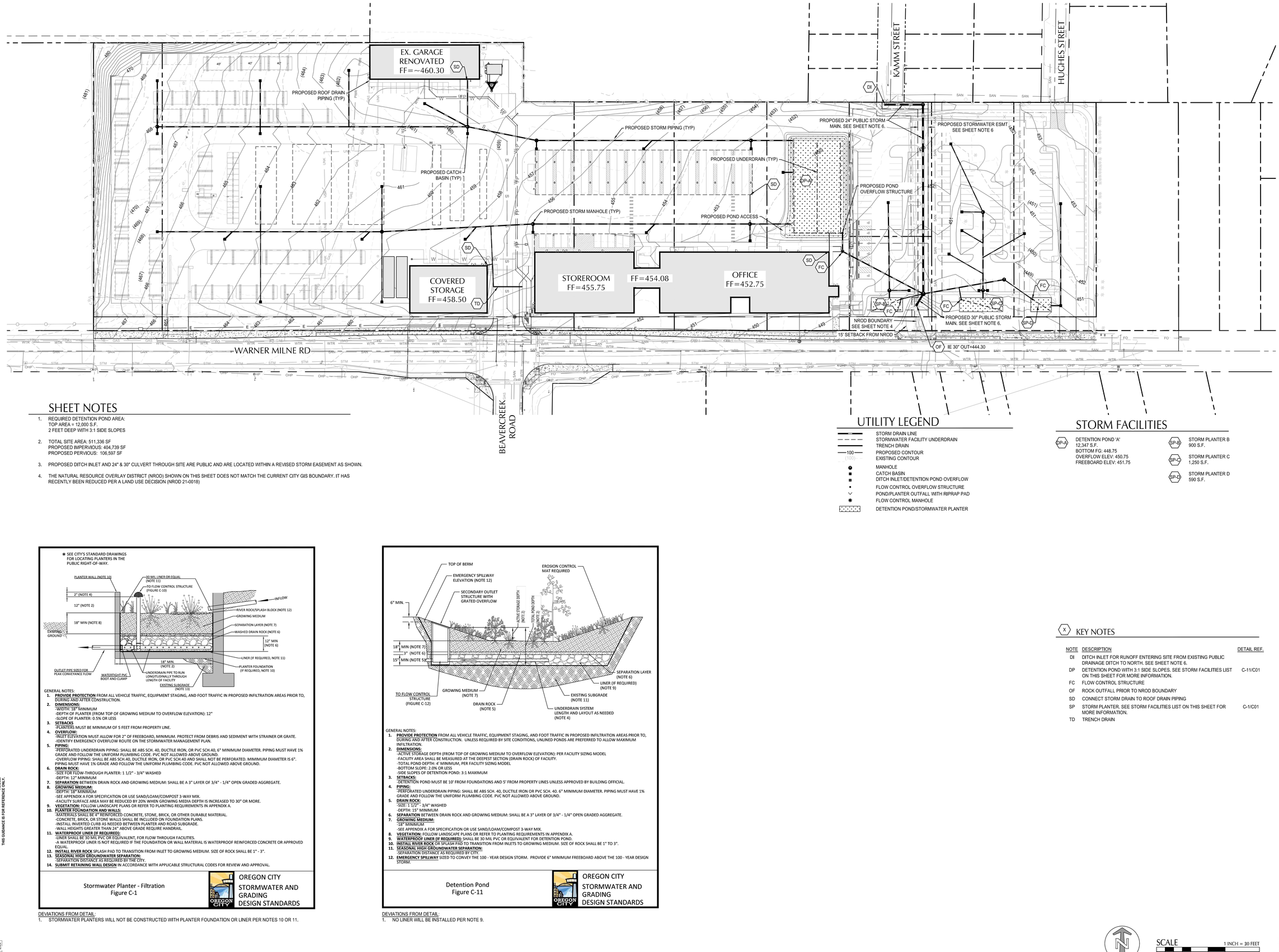

SHEET NOTES

1. REQUIRED DETENTION POND AREA:
   TOP AREA = 12,000 S.F.
   2 FEET DEEP WITH 3:1 SIDE SLOPES
2. TOTAL SITE AREA: 511,336 SF
   PROPOSED IMPERVIOUS: 404,739 SF
   PROPOSED PERVIOUS: 106,597 SF
3. PROPOSED DITCH INLET AND 24" & 30" CULVERT THROUGH SITE ARE PUBLIC AND ARE LOCATED WITHIN A REVISED STORM EASEMENT AS SHOWN.
4. THE NATURAL RESOURCE OVERLAY DISTRICT (NROD) SHOWN ON THIS SHEET DOES NOT MATCH THE CURRENT CITY GIS BOUNDARY. IT HAS RECENTLY BEEN REDUCED PER A LAND USE DECISION (NROD 21-0018)

UTILITY LEGEND

- STORM DRAIN LINE
- STORMWATER FACILITY UNDERDRAIN
- TRENCH DRAIN
- 100 — PROPOSED CONTOUR
- (100) EXISTING CONTOUR
- MANHOLE
- CATCH BASIN
- DITCH INLET/DETENTION POND OVERFLOW
- FLOW CONTROL OVERFLOW STRUCTURE
- POND/PLANTER OUTFALL WITH RIPRAP PAD
- FLOW CONTROL MANHOLE
- DETENTION POND/STORMWATER PLANTER

STORM FACILITIES

- DP-A: DETENTION POND 'A'
  12,347 S.F.
  BOTTOM FG: 448.75
  OVERFLOW ELEV: 450.75
  FREEBOARD ELEV: 451.75
- SP-B: STORM PLANTER B
  900 S.F.
- SP-C: STORM PLANTER C
  1,250 S.F.
- SP-D: STORM PLANTER D
  590 S.F.

GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION.
2. **DIMENSIONS:**
   -WIDTH: 18" MINIMUM
   -DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION): 12"
   -SLOPE OF PLANTER: 0.5% OR LESS
3. **SETBACKS**
   -PLANTERS MUST BE MINIMUM OF 5 FEET FROM PROPERTY LINE.
4. **OVERFLOW:**
   -INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE.
   -IDENTIFY EMERGENCY OVERFLOW ROUTE ON THE STORMWATER MANAGEMENT PLAN.
5. **PIPING:**
   -PERFORATED UNDERDRAIN PIPING: SHALL BE ABS SCH. 40, DUCTILE IRON, OR PVC SCH.40, 6" MINIMUM DIAMETER. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
   -OVERFLOW PIPING: SHALL BE ABS SCH.40, DUCTILE IRON, OR PVC SCH.40 AND SHALL NOT BE PERFORATED. MIMIMUM DIAMETER IS 6". PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
6. **DRAIN ROCK:**
   -SIZE FOR FLOW-THROUGH PLANTER: 1 1/2" - 3/4" WASHED
   -DEPTH: 12" MINIMUM
7. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
8. **GROWING MEDIUM:**
   -DEPTH: 18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 20% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
9. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
10. **PLANTER FOUNDATION AND WALLS:**
    -MATERIALS SHALL BE 4" REINFORCED CONCRETE, STONE, BRICK, OR OTHER DURABLE MATERIAL.
    -CONCRETE, BRICK, OR STONE WALLS SHALL BE INCLUDED ON FOUNDATION PLANS.
    -INSTALL INVERTED CURB AS NEEDED BETWEEN PLANTER AND ROAD SUBGRADE.
    -WALL HEIGHTS GREATER THAN 24" ABOVE GRADE REQUIRE HANDRAIL.
11. **WATERPROOF LINER (IF REQUIRED):**
    -LINER SHALL BE 30 MIL PVC OR EQUIVALENT, FOR FLOW THROUGH FACILITIES.
    -A WATERPROOF LINER IS NOT REQUIRED IF THE FOUNDATION OR WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL.
12. **INSTALL RIVER ROCK** SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3".
13. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY THE CITY.
14. **SUBMIT RETAINING WALL DESIGN** IN ACCORDANCE WITH APPLICABLE STRUCTURAL CODES FOR REVIEW AND APPROVAL.

Stormwater Planter - Filtration
Figure C-1

OREGON CITY STORMWATER AND GRADING DESIGN STANDARDS

DEVIATIONS FROM DETAIL:
1. STORMWATER PLANTERS WILL NOT BE CONSTRUCTED WITH PLANTER FOUNDATION OR LINER PER NOTES 10 OR 11.

GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION. UNLESS REQUIRED BY SITE CONDITIONS, UNLINED PONDS ARE PREFERRED TO ALLOW MAXIMUM INFILTRATION.
2. **DIMENSIONS:**
   -ACTIVE STORAGE DEPTH (FROM TOP OF GROWING MEDIUM TO OVERFLOW ELEVATION): PER FACILITY SIZING MODEL
   -FACILITY AREA SHALL BE MEASURED AT THE DEEPEST SECTION (DRAIN ROCK) OF FACILITY.
   -TOTAL POND DEPTH: 4' MINIMUM, PER FACILITY SIZING MODEL
   -BOTTOM SLOPE: 2.0% OR LESS
   -SIDE SLOPES OF DETENTION POND: 3:1 MAXIMUM
3. **SETBACKS:**
   -DETENTION POND MUST BE 10' FROM FOUNDATIONS AND 5' FROM PROPERTY LINES UNLESS APPROVED BY BUILDING OFFICIAL.
4. **PIPING:**
   -PERFORATED UNDERDRAIN PIPING: SHALL BE ABS SCH. 40, DUCTILE IRON OR PVC SCH. 40, 6" MINIMUM DIAMETER. PIPING MUST HAVE 1% GRADE AND FOLLOW THE UNIFORM PLUMBING CODE. PVC NOT ALLOWED ABOVE GROUND.
5. **DRAIN ROCK:**
   -SIZE: 1 1/2" - 3/4" WASHED
   -DEPTH: 15" MINIMUM
6. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
7. **GROWING MEDIUM:**
   -18" MINIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
8. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
9. **WATERPROOF LINER (IF REQUIRED):** SHALL BE 30 MIL PVC OR EQUIVALENT FOR DETENTION POND.
10. **INSTALL RIVER ROCK** OR SPLASH PAD TO TRANSITION FROM INLETS TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" TO 3".
11. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY CITY.
12. **EMERGENCY SPILLWAY** SIZED TO CONVEY THE 100 - YEAR DESIGN STORM. PROVIDE 6" MINIMUM FREEBOARD ABOVE THE 100 - YEAR DESIGN STORM.

Detention Pond
Figure C-11

OREGON CITY STORMWATER AND GRADING DESIGN STANDARDS

DEVIATIONS FROM DETAIL:
1. NO LINER WILL BE INSTALLED PER NOTE 9.

KEY NOTES

NOTE	DESCRIPTION	DETAIL REF.
DI	DITCH INLET FOR RUNOFF ENTERING SITE FROM EXISTING PUBLIC DRAINAGE DITCH TO NORTH. SEE SHEET NOTE 6.	
DP	DETENTION POND WITH 3:1 SIDE SLOPES. SEE STORM FACILITIES LIST ON THIS SHEET FOR MORE INFORMATION.	C-11/C01
FC	FLOW CONTROL STRUCTURE	
OF	ROCK OUTFALL PRIOR TO NROD BOUNDARY	
SD	CONNECT STORM DRAIN TO ROOF DRAIN PIPING	
SP	STORM PLANTER. SEE STORM FACILITIES LIST ON THIS SHEET FOR MORE INFORMATION.	C-1/C01
TD	TRENCH DRAIN	

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HEA Project no. **25005-01T**
Date: **12.18.25**
LAND USE
Revisions:

Drawn by: RFS
Checked by: MvB
Sheet:

GRADING AND STORM DRAINAGE PLAN

SCALE 1 INCH = 30 FEET
30 0 30 100

LAND USE

C01

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File: N:\cip\2025\25005-PGE-City-OC\CAD\PLOTTU\25005-LU-01-GDASD.dwg TAB:C01
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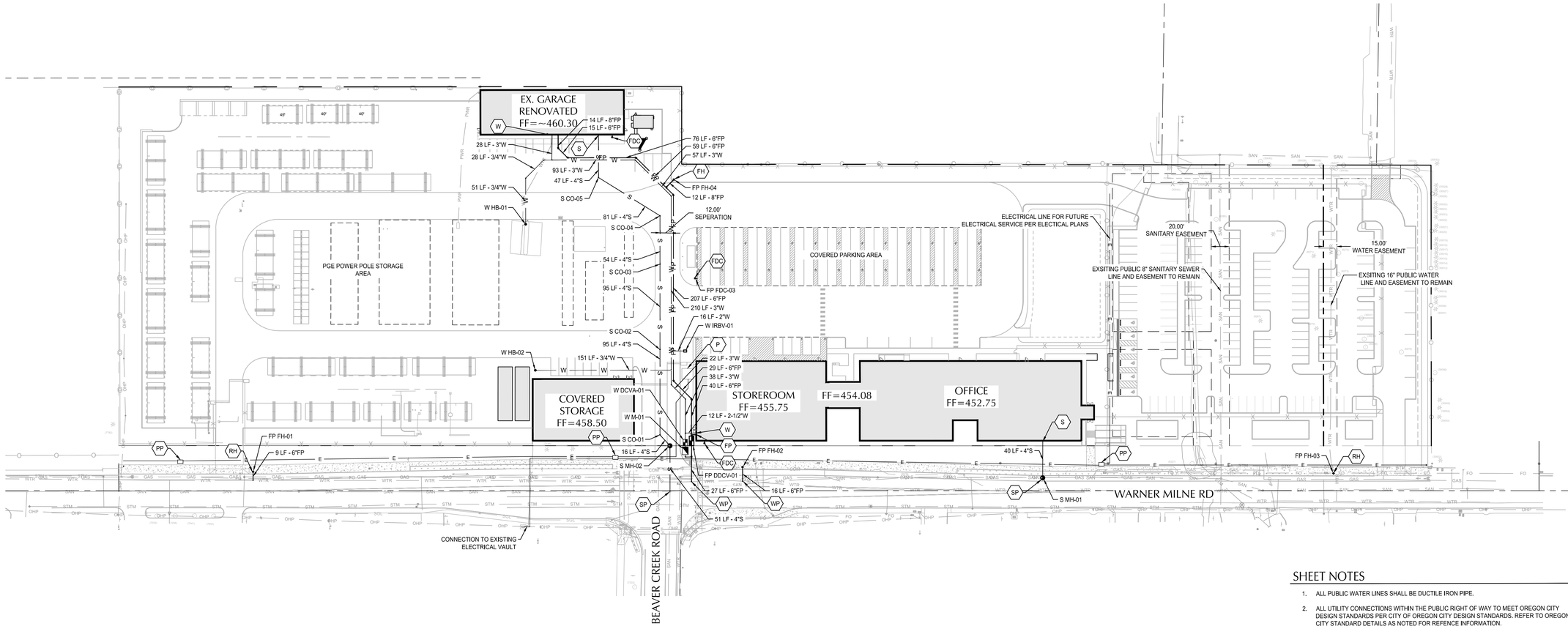

SHEET NOTES

1. ALL PUBLIC WATER LINES SHALL BE DUCTILE IRON PIPE.
2. ALL UTILITY CONNECTIONS WITHIN THE PUBLIC RIGHT OF WAY TO MEET OREGON CITY DESIGN STANDARDS PER CITY OF OREGON CITY DESIGN STANDARDS. REFER TO OREGON CITY STANDARD DETAILS AS NOTED FOR REFENCE INFORMATION.
3. ALL ELECTRICAL UTILITY DESIGN IS PRELIMINARY AND IS SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.
4. COVERED PARKING AREA TO HAVE DRY FIRE SUPPRESSION SYSTEM.

STRUCTURE TYPE

CALLOUT		DESCRIPTION	CALLOUT		DESCRIPTION
FDC	▪	FIRE DEPARTMENT CONNECTION	CO	▪	CLEANOUT
FH	✦	FIRE HYDRANT ASSEMBLY	M	■	WATER METER
TEE	▪	TEE	DDCV	■	DOUBLE DETECTOR CHECK VAULT
DCVA	■	DOUBLE CHECK VALVE ASSEMBLY	HB	●	HOSEBIB
VALVE	▪	ISOLATION VALVE	IRBV	■	IRRIGATION BACKFLOW VAULT
MH	●	MANHOLE			

W	FP	FIRE PROTECTION WATER LINE
W	W	WATER LINE
S	S S	SANITARY SEWER LINE
E	E	ELECTRIC LINE

(X) UTILITY KEY NOTES

NOTE	DESCRIPTION
FDC	PROPOSED FIRE DEPARTMENT CONNECTION (FDC).
FP	CONNECT TO BUILDING FIRE PROTECTION. SEE FIRE PROTECTION AND PLUMBING PLANS.
FH	PROPOSED FIRE HYDRANT.
P	CONNECT TO ON ABOVE GROUND POWER VAULT. SEE ELECTRIAL PLANS FOR DETIALED ELECTRICAL VAULT INFORMATION.
PP	PROPOSED PGE 577 POWER VAULT REFER TO ELECTRIAL PLANS FOR DETAILED ELECTRICAL DESIGN INFORMATION.
RH	RELOCATED EXISTING FIRE HYDRANT. REINSTALL PER OC401.
S	CONNECT TO BUILDING WASTE LINE. SEE PLUMBING PLANS.
SP	CONNECTION TO PUBIC SANITARY SEWER LINE. CONNECTION PER OREGON CITY STD. DWGS. OC301, OC310 AND OC311.
W	CONNECT TO BUILDING DOMESTIC WATER SYSTEM. SEE PLUMBING PLANS.
WP	CONNECTION TO PUBLIC WATER SYSTEM. CONNECTION PER OC STD. DWG. OC411.

SCALE 1 INCH = 30 FEET
30 0 30 100

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HEA Project no. **25005-01T**
Date: **10/24/2025**
SCHEMATIC DESIGN
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Drawn by: RFS
Checked by: MVB
Sheet:
UTILITY PLAN

SCHEMATIC DESIGN

C02

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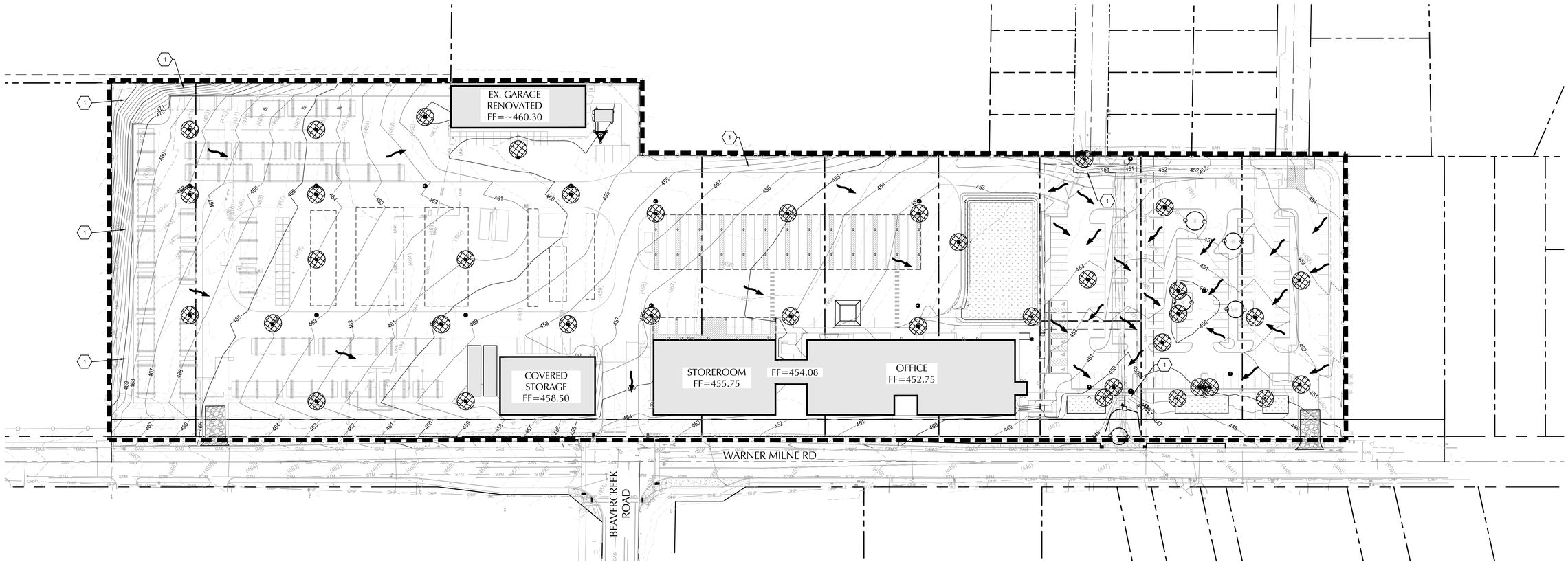
100% 50% 25%
In Inch



LEGEND

- PROPERTY LINE
- LIMITS OF DISTURBANCE - SEE SHEET NOTE 1 (SHOWN OFFSET FOR CLARITY)
- (450) / (451) — EXISTING CONTOUR
- PROPOSED FLOW ARROW
- 450 / 451 — PROPOSED CONTOUR (SEE GRADING PLAN)
- TREE PROTECTION FENCE
- SEDIMENT FENCE
- PERMANENT OUTFALL PROTECTION
- CATCH BASIN PROTECTION - INSTALL ON NEW AND EXISTING CATCH BASINS INCLUDING THOSE TO BE DEMOLISHED PRIOR TO DEMOLITION.
- WATER QUALITY FACILITY
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT

KEY NOTES

1. PROVIDE SLOPE PROTECTION ON 3:1 MAXIMUM SLOPES INCLUDING ONE OF THE FOLLOWING:
   1. TEMPORARY SEEDING AND JUTE MATTING PROVIDE SURFACE ROUGHENING ON SLOPES STEEPER THAN 3:1 AND 5' IN HEIGHT TO A DEPTH OF 2"-4" TO REDUCE RUN-OFF VELOCITY.
   2. PLASTIC SHEETING
   3. STRAW COVER
   4. PERMANENT SLOPE STABILIZATION
   5. STRAW WATTLES AT 10' O.C. MAXIMUM

WET WEATHER NOTES

1. DURING WET WEATHER CONSTRUCTION, THE FOLLOWING ADDITIONAL EROSION CONTROL MEASURES SHALL BE APPLIED (AT A MINIMUM):
   - PROTECT SOIL STOCKPILES WITH PLASTIC SHEETING AND INSTALL STRAW BALES AT BOTTOM SLOPE OF STOCKPILE TO PREVENT SEDIMENT TRANSPORT VIA RUN-OFF.
   - INSPECT THE EROSION CONTROL MEASURES ON A DAILY BASIS AND REPAIR AS NEEDED.
   - CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER.

SHEET NOTES

1. LIMITS OF DISTURBANCE SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY AND ADJUST ACCORDINGLY PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHOULD PROVIDE TEMPORARY SEEDING OVER DISTURBED AREAS USING LOCAL SEED MIX OR FINAL LANDSCAPING SEED MIX AS SPECIFIED IF AREA IS UNDEVELOPED.
3. CATCH BASIN PROTECTION TO BE INSTALLED ON EXISTING STRUCTURES TO REMAIN AND EXISTING STRUCTURES TO BE DEMOLISHED UNTIL REMOVED.
4. CONTRACTOR SHOULD ESTABLISH A CONCRETE TRUCK WASHOUT AT EACH CONSTRUCTION ENTRANCE FOR TRUCKS TO WASH OUT CONCRETE AFTER DELIVERY AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. TEMPORARY 6'x10'x4' PITS SHOULD BE LOCATED WITHIN 6' OF LOCATION FOR TRUCKS TO PARK OR CONCRETE EQUIPMENT LOCATIONS. ALL WASH WATER SHOULD BE ROUTED TO CONTRACTOR CONSTRUCTED PIT. CONTRACTOR SHOULD ENSURE THAT PIT IS NOT OVERFILLED AT ANY TIME. CONTRACTOR SHOULD REMOVE CONCRETE ON A REGULAR BASIS, TO PROVIDE A CLEAN AREA FOR WASHOUT, AND WHEN WORK IS COMPLETE. PIT SHOULD BE SURROUNDED BY ORANGE CONSTRUCTION FENCE.
5. THIS EROSION CONTROL PLAN SHOWS MINIMUM MEASURES REQUIRED. ADDITIONAL MEASURES MAY BE REQUIRED BASED ON FIELD CONDITIONS.
6. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION.
7. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING PERIMETER SEDIMENT CONTROL SHOULD BE IN PLACE BEFORE VEGETATION IS DISTURBED AND SHOULD REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDE PROTECTION FOR ACTIVE STORM DRAIN INLETS AND CATCH BASINS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS.
8. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES PER NPDES CONSTRUCTION BMP STANDARDS ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS.
9. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS PRIOR TO DEMOLITION ACTIVITIES.
10. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS SHOULD BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES.
11. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE.
12. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS, VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS.
13. USE WATER OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL.
14. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION SHOULD FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE.
15. AT THE END OF EACH WORKDAY SOIL STOCKPILES SHOULD BE STABILIZED OR COVERED, OR OTHER BMPS SHOULD BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS.
16. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL.
17. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT. AND BEFORE BMP REMOVAL.
18. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT.
19. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS SHOULD NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP SHOULD BE USED TO CLEANUP RELEASED SEDIMENTS.
20. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. HOWEVER, DO REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS.
21. DIRECT STORM WATER IN EXCAVATIONS TO RUNOFF COLLECTION PITS TO ALLOW SEDIMENT TO SETTLE PRIOR TO DEWATERING AND DISCHARGING TO PUBLIC RIGHT-OF-WAY.

SCALE 1 INCH = 50 FEET
50 0 50 100

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HEA Project no. **25005-01T**
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EROSION CONTROL PLAN

LAND USE
C03

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ADJUST YOUR MONITOR SETTINGS UNTIL ALL THREE ARE VISIBLE
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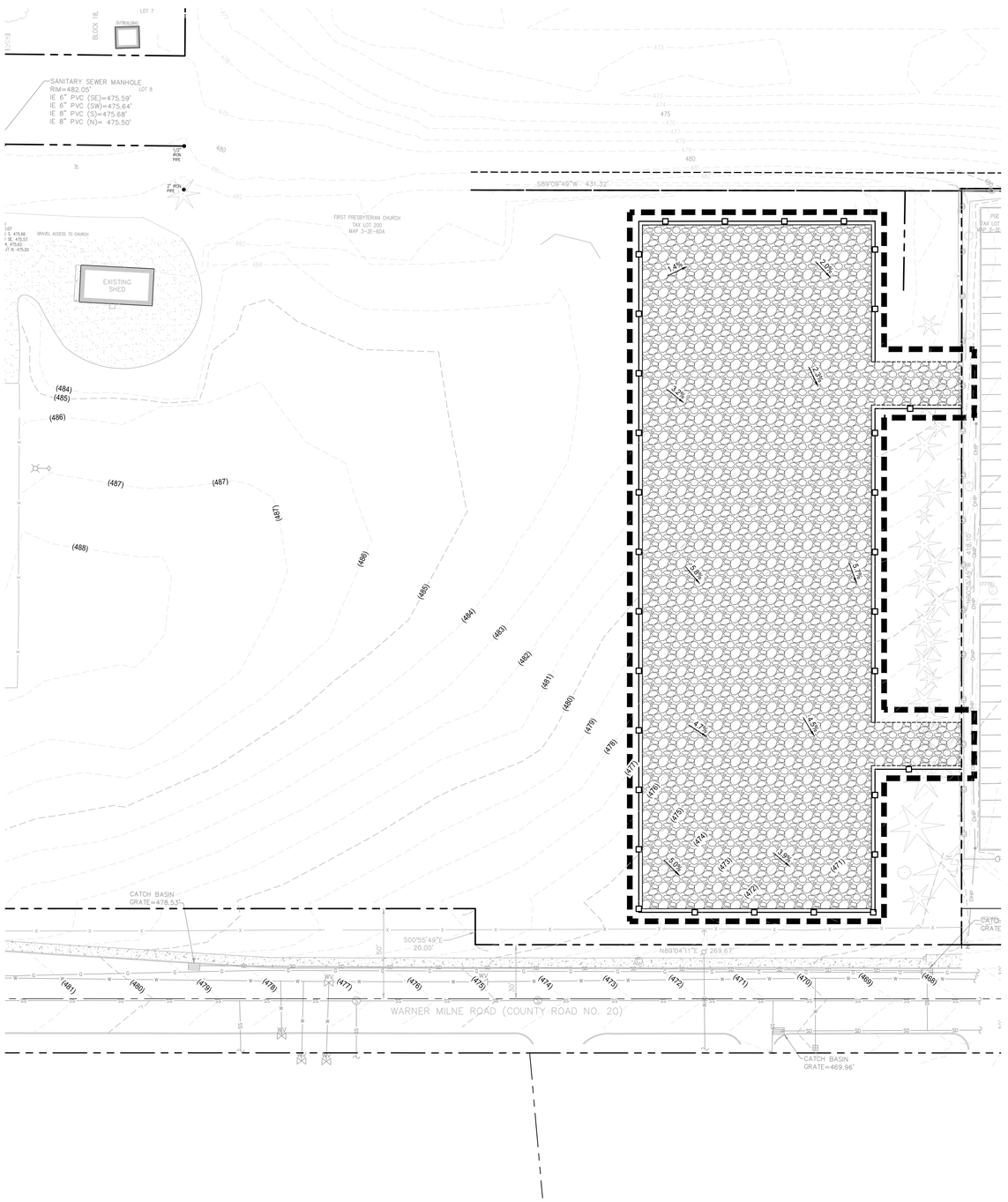
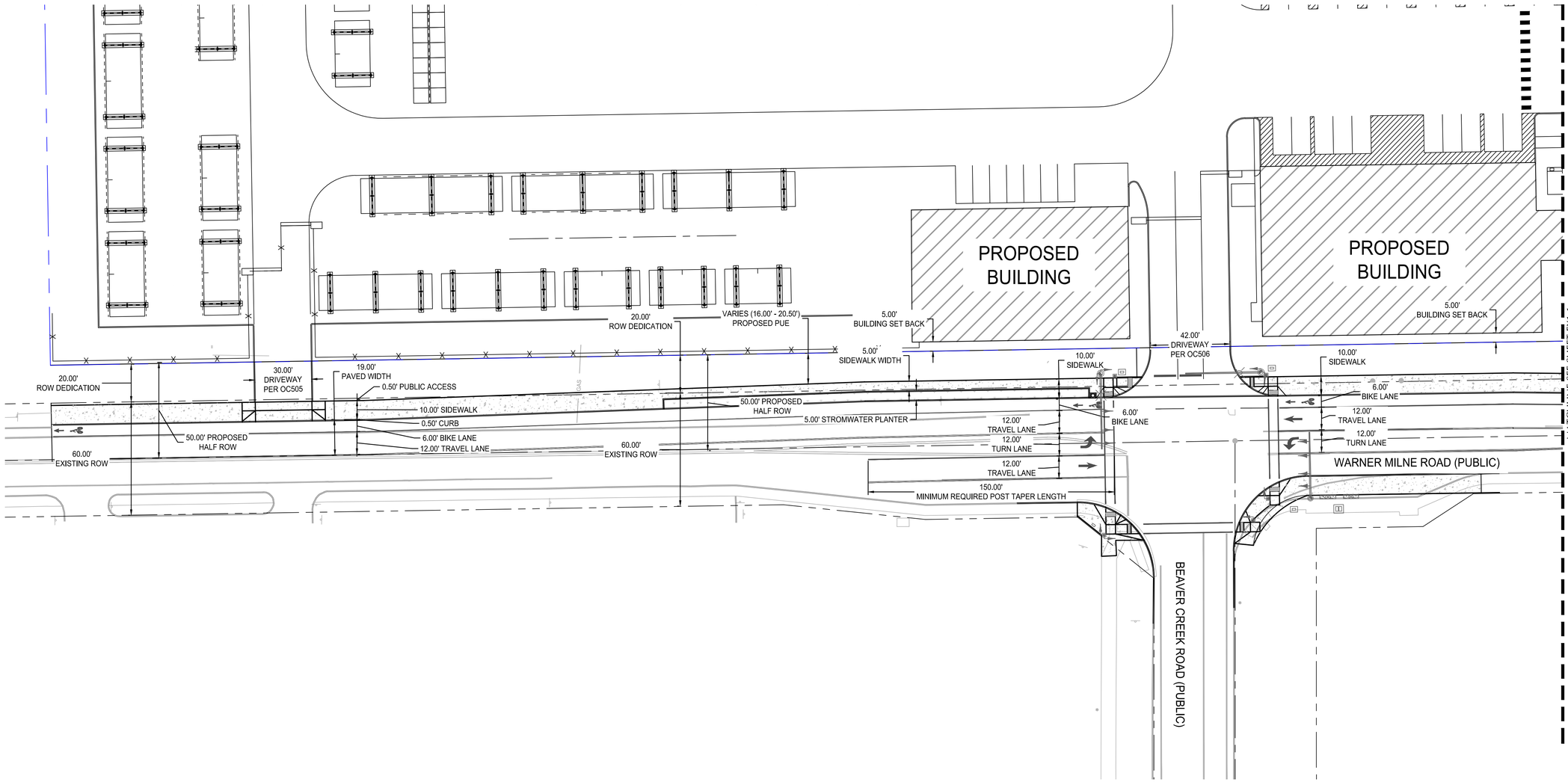

LOT 7
BLOCK 18
OUTBUILDING
SANITARY SEWER MANHOLE
RIM=482.05'
LOT 8
IE 6" PVC (SE)=475.59'
IE 6" PVC (SW)=475.64'
IE 8" PVC (S)=475.68'
IE 8" PVC (N)= 475.50'
1/2" IRON PIPE
2" IRON PIPE
FIRST PRESBYTERIAN CHURCH
TAX LOT 200
MAP 3-2E-4DA
GRAVEL ACCESS TO CHURCH
EXISTING SHED
S89°09'49"W 431.32'
PGE
TAX LOT
MAP 3-2E
CHP
CHP
CHP



PROPOSED RIGHT OF WAY HALFSTREET IMPROVEMENTS

ROAD CLASSIFACTION	ROW WIDTH	ROAD WIDTH	PUBLIC ACCESS	SIDEWALK	LANDSCAPE STRIP AND CURB	BIKE LANE	STREET PARKING	TRAVEL LANES	MEDIAN
MINOR ARTERAL	50.0'	18'.0	0.5'	10'	0.5	6.0'	0.0'	(1) 12.0' FULL LANE	0.0'

FULL RIGHT OF WAY HALFSTREET IMPROVEMENTS

ROAD CLASSIFACTION	ROW WIDTH	ROAD WIDTH	PUBLIC ACCESS	SIDEWALK	LANDSCAPE STRIP AND CURB	BIKE LANE	STREET PARKING	TRAVEL LANES	MEDIAN
MINOR ARTERAL	58.0'	47'.0	0.5'	10.0'	0.5	6.0'	8.0'	(2) 12.0' FULL LANE (1) HALF LANE	0.0'

DESIGN NOTES

1. ROADWAY SECTION IS A MODIFED VERSION OF THE STANDARD ARTERIAL SECTION AS OUTLINED BY OREGON CITY STREET DESIGN STANDARDS MANUAL AND OREGON CITY STANDARD DRAWING OC502.
2. DRIVEWAYS DESIGNED PER OREGON CITY STANDARD DRAWINGS C505 AND OC506. COMMERICAL DRIVEWAY WITH CURBS AT THE INTERSECTION OF WARNER MILNE ROAD AND BEAVER CREEK ROAD WILL REQUIRE PREAPPROVAL BY CITY ENGINEER.
3. CURB RAMPS PER OC509 AND ODOT RD900 SERIES AS SPECIFIED BY THE OREGON CITY STREET DESIGN STANARDS MANUAL

WARNER MILNE ROAD ROW EXHIBIT

SCALE: 1"=30'

0 30' 60'

SHEET NO.:

EX1.0

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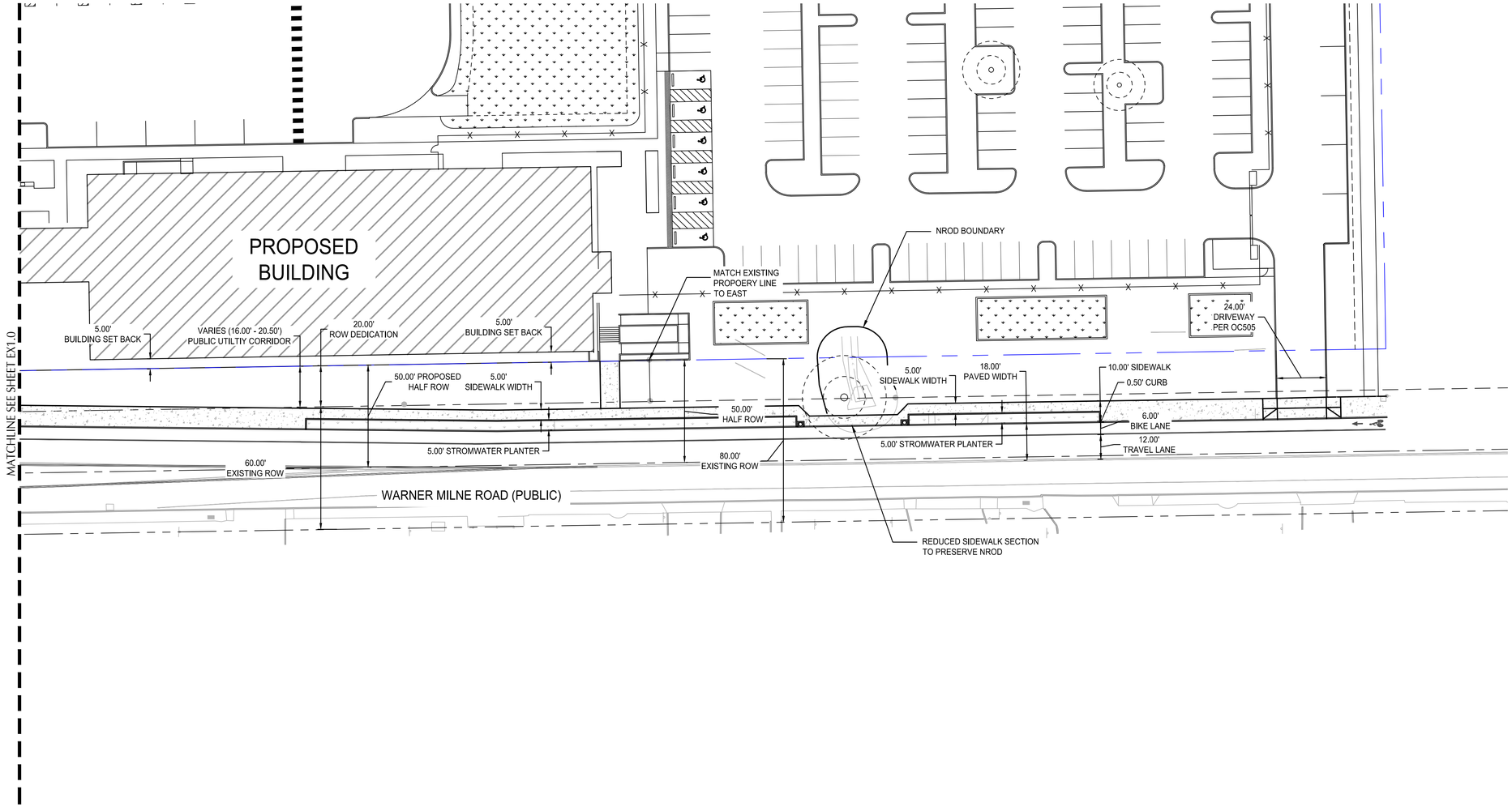
22x34



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FULL RIGHT OF WAY HALFSTREET IMPROVEMENTS

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WARNER MILNE ROAD ROW EXHIBIT

SCALE: 1"=30'

0 30' 60'

SHEET NO.:

EX1.1

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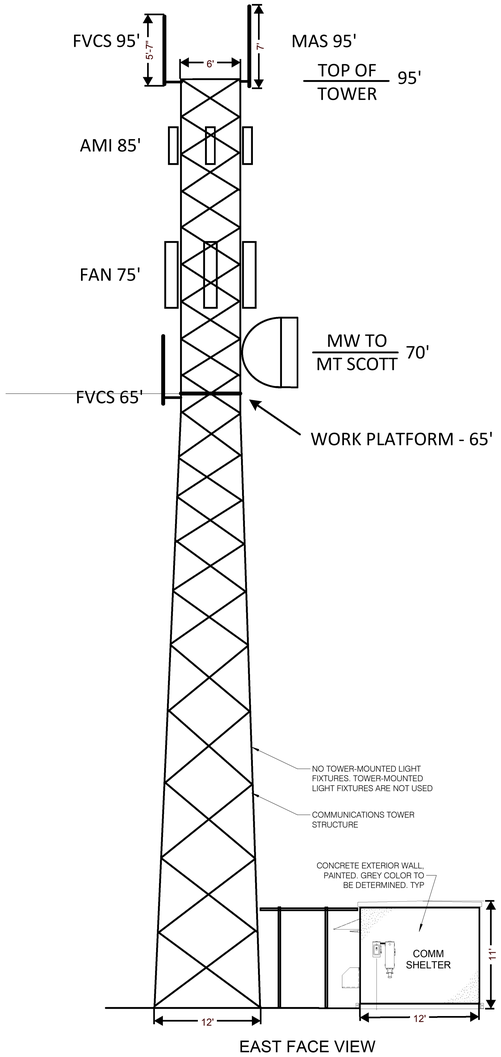


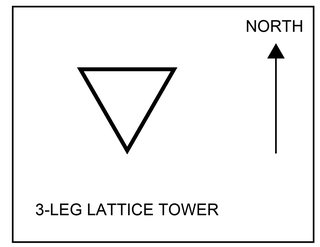
EAST FACE VIEW

TOWER ELEVATION

LOADING INFORMATION

(1)MAS = Antel BCD-8707
(3)AMI = WPA-70063-4CF-EDIN-8
(3)FAN = Amphenol CX063X24M00
(2)FVCS = dBSpectra DS2C03P36U-D
(1)M/W = HP6-107, AZ 17.9°

NOTE: Assume 7/8" coax to each antenna. Two runs each for the FAN antennas. The M/W will use EW90.



TOWER PLAN VIEW

Autodesk Docs://25_005 - PGE - OCOC/25_005_PGE OCOC_Site.rvt
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HEA Project no.	25005-01T
Date:	12.18.25
	LAND USE
Revisions:	

Drawn by:	DP
Checked by:	KW

Sheet:
COMMUNICATIONS TOWER

LAND USE

A61

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LEAVE BLANK FOR CITY APPROVAL STAMP

Electrical Abbreviations & Symbol Legend

Abbreviations

A	AMPERE
AC	ALTERNATING CURRENT, AIR CONDITIONING UNIT
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AVAILABLE INTERRUPTING CAPACITY
AF	AMPERE FRAME / AMPERE FUSED
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARMS	ARC FLASH REDUCTION MAINTENANCE SYSTEM
AT	AMPERE TRIP
AV	AUDIO / VIDEO
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CU	COPPER
dB	DECIBEL
DC	DIRECT CURRENT
DIM	DIMENSION
DIV	DIVISION
DTL	DETAIL
DWG	DRAWING
EL	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EOLR	END OF LINE RESISTOR
FACP	FIRE ALARM CONTROL PANEL
FF	FINISH FLOOR
FLA	FULL LOAD AMPERES
FT	FOOT, FEET
FBO	FURNISHED BY OTHERS
G, GND	GROUND FAULT CIRCUIT INTERRUPTER
GFCI	
HH	HAND HOLE
HP	HORSEPOWER
ID	IDENTIFICATION
IDC	INITIATING DEVICE CIRCUIT
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
KAIC	THOUSAND AMPS INTERRUPTING CURRENT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LED	LIGHT EMITTING DIODE
LS	LIMIT SWITCH
LSI	ELECTRONIC TRIP UNIT ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP
LSIG	ELECTRONIC TRIP UNIT WITH ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP, AND GROUND FAULT
LV	LOW VOLTAGE
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MHz	MEGAHERTZ
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
N	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUIT
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
ø	PHASE
PB	PULL BOX, PANIC BUTTON, PUSH BUTTON
PE	PHOTO EYE
PNL	PANEL
POE	POWER OVER ETHERNET
PTZ	PAN, TILT, ZOOM
RF	RADIO FREQUENCY
RFI	REQUEST FOR INFORMATION
SPD	SURE PROTECTION DEVICE
STD	STANDARD
SW	SWITCH
T/M	THERMAL MAGNETIC CIRCUIT BREAKER
TBD	TO BE DETERMINED
TV	TELEVISION/MONITOR OUTLET
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UH	UNIT HEATER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
USB	UNIVERSAL SERIAL BUS
V	VOLTS, VOLTAGE
VA	VOLT-AMP
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WI-FI	WIRELESS FIDELITY
W/	WITH
W/O	WITHOUT
XFMR	TRANSFORMER
Y	WYE
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
4P	FOUR POLE

General Electrical Notes

1. ALL LIGHTING BRANCH CIRCUITS SHALL BE 2#10, 1#10G IN 3/4" CONDUIT, UON.
2. ALL 20-AMP RECEPTACLE AND HARDWIRED BRANCH CIRCUITS SHALL BE 2#12, 1#12G IN 3/4" CONDUIT, UON.
3. ALL EXIT SIGNS SHALL BE WIRED TO THE LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING, UON.
4. PROVIDE 0-10V DIMMING CONDUCTORS TO ALL LUMINAIRES WHICH ARE CONTROLLED BY 0-10V DIMMERS SHOWN ON THE DRAWINGS.

Drawing Symbol Variables

3	THREE WAY SWITCH.
4	FOUR WAY SWITCH.
#J	QUANTITY OF JACKS AND HORIZONTAL CABLES. J = CAT6, JA = CAT6A, JE = CAT5E
+XX	MOUNTING UNITS EXPRESSED IN INCHES TO CENTERLINE ABOVE FINISHED FLOOR OR GRADE.
C	MOUNTED HORIZONTALLY AT 4" ABOVE COUNTERTOP.
CL	CLOCK.
DR	DUAL RELAY.
E	RED EMERGENCY SWITCH.
EL	ELEVATOR RECALL.
ETR	EXISTING DEVICE SHALL REMAIN.
G	GLASS BREAK SENSOR.
K	KEYED SWITCH.
LF	LOW FREQUENCY.
LV	LOW VOLTAGE SWITCH.
M	MOTOR RATED TOGGLE SWITCH.
NEX	REPLACE EXISTING WIRING DEVICE AND FACEPLATE WITH NEW. BACK BOX AND CONDUIT SHALL REMAIN.
O	INTEGRAL OCCUPANCY SENSOR.
P	ADA PHONE. VERIFY HEIGHT WITH ARCHITECT / OWNER.
REX	REMOVE EXISTING DEVICE / EQUIPMENT.
TK	MOUNTED IN TOE KICK OF CASEWORK.
TV	MOUNTED ADJACENT TO TV AT 60" AFF, UON.
V	VANDAL RESISTANT.
WG	WIREGUARD.
WP	WEATHERPROOF.

Annotation

(N)	INDICATES NEW EQUIPMENT.
(E)	INDICATES EXISTING EQUIPMENT TO REMAIN.
(D)	INDICATES EXISTING EQUIPMENT TO BE DEMOLISHED.
(RR)/(RD)	INDICATES EXISTING EQUIPMENT OR DEVICE TO BE REMOVED AND REINSTALLED.
PXXX	CONDUIT & CONDUCTOR CALLOUT. REFER TO CONDUIT & CONDUCTOR SCHEDULE.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX-XX	MECHANICAL EQUIPMENT CALLOUT. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
X / EX.XX	DETAIL CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
XX'-XX"	FIXTURE MOUNTING CALLOUT. HEIGHT ABOVE FINISHED FLOOR (A.F.F.)
XXXXX	EQUIPMENT CALLOUT. REFER TO NEMA CONNECTION SCHEDULE.
X / EX.XX	SECTION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
# EX.XX #	ELEVATION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.

Fire Alarm

15	FIRE ALARM AUDIO/VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM AUDIO/VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
FB	FIRE ALARM BELL.
S	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED.
S	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED.
H	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED.
H	FIRE ALARM HEAT DETECTOR - WALL MOUNTED.
S	FIRE ALARM DUCT SMOKE DETECTOR.
S TS	FIRE ALARM DUCT SMOKE DETECTOR WITH REMOTE TEST STATION.
S B	FIRE ALARM BEAM SMOKE DETECTOR - WALL MOUNTED.
F	FIRE ALARM MANUAL PULL STATION - WALL MOUNTED.
TS	FIRE ALARM MANUAL TAMPER SWITCH.
FS	FIRE ALARM MANUAL FLOW SWITCH.
PS	FIRE ALARM MANUAL PRESSURE SWITCH.
MM	FIRE ALARM MONITOR MODULE.
RI	FIRE ALARM RELAY INPUT.
RO	FIRE ALARM RELAY OUTPUT.
PIV	FIRE ALARM POST INDICATOR VALVE.
SA	FIRE ALARM SURGE ARRESTOR.
IM	FIRE ALARM ISOLATION MODULE.
FAA	FIRE ALARM ANNUNCIATOR.
	FIRE ALARM MAGNETIC DOOR HOLD.

Lighting

	TROFFER LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	DOWNLIGHT LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	UNDERCABINET LUMINAIRE.
	EMERGENCY BATTERY PACK LUMINAIRE, WALL OR CEILING MOUNTED.
	LINEAR PENDANT MOUNTED LUMINAIRE.
	LINEAR WALL MOUNTED LUMINAIRE.
	BOLLARD LUMINAIRE.
	SITE LUMINAIRE POLE MOUNTED. NUMBER OF HEADS AS SHOWN.
	TRACK LUMINAIRE.
	SPOT LUMINAIRE.
	WALL MOUNTED LUMINAIRE.
	RING PENDANT LUMINAIRE.
	WALL WASH LUMINAIRE POINTED IN DIRECTION AS SHOWN.
	EXIT SIGN, WALL OR CEILING MOUNTED, SINGLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	EXIT SIGN, WALL OR CEILING MOUNTED, DOUBLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	HALF HATCHED LUMINAIRE TO BE WIRED TO EMERGENCY CIRCUIT
	FULL HATCHED LUMINAIRE TO BE WIRED TO NIGHTLIGHT CIRCUIT.

Switches

$	SINGLE POLE SWITCH - MOUNTED AT 42" AFF, UON.
#	LOW VOLTAGE 0-10 VOLT DIMMING SWITCH - MOUNTED AT 42" AFF, UON.
M M	OCCUPANCY SENSOR - CEILING OR WALL MOUNTED.
PP	OCCUPANCY SENSOR POWER PACK.
PC PC	PHOTOCELL - CEILING OR WALL MOUNTED.
	ADA DOOR PUSHPLATE.
	EMERGENCY STOP SWITCH, MUSHROOM HEAD.
	PUSHBUTTON, SINGLE OR DOUBLE.

Low Voltage

	ETHERNET OUTLET MOUNTED AT 18" AFF, UON.
	COAXIAL OUTLET MOUNTED AT 18" AFF, UON.
	PHONE OUTLET MOUNTED AT 18" AFF, UON.
	LOW VOLTAGE OUTLET CEILING MOUNTED.
	WIRELESS ACCESS POINT CEILING MOUNTED.
	WIRELESS ACCESS POINT WALL MOUNTED.
	DIGITAL CLOCK.
	FLOORBOX DATA.
	POKETHRU DATA.
	IT RACK.
	VERTICAL WIRE MANAGEMENT.

Audio/Visual

	AV OUTLET - WALL MOUNTED AT 18" AFF, UON. SEE AUDIO VISUAL DETAILS FOR CONFIGURATIONS.
	AUDIO VIDEO OUTLET - CEILING MOUNTED.
S	AUDIO SPEAKER - WALL MOUNTED AT 96" AFF, UON.
S	AUDIO SPEAKER - CEILING MOUNTED.
P	PAGING SPEAKER - WALL MOUNTED AT 96" AFF, UON.
P	PAGING SPEAKER - CEILING MOUNTED.
	PAGING HORN - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - CEILING MOUNTED.
I	INTERCOM CALL BUTTON - MOUNTED AT 42", UON.
AE	ADMINISTRATION CONSOLE. PROVIDE ONE (1) CAT6 CABLE.
	AV PROJECTOR - CEILING MOUNTED.
AE	AUDIO ENHANCEMENT DEVICE.

Access Control & Security

	ACCESS CONTROL - DOOR CONTACT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - CARD READER. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - ELECTRIC STRIKE. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
K	ACCESS CONTROL - KEY PAD. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - MAGNETIC LOCK. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
RX	ACCESS CONTROL - REQUEST TO EXIT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
PB	ACCESS CONTROL - ELECTRIFIED PANIC BAR. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
S	ACCESS CONTROL - SECURITY JUNCTION BOX. SIZED AS RECOMMENDED BY SECURITY SYSTEM MANUFACTURER.
CI	ACCESS CONTROL - CAMERA / INTERCOM.
	ACCESS CONTROL - PANIC BUTTON.
	SECURITY CAMERA - CEILING MOUNTED.
	SECURITY CAMERA - WALL MOUNTED.
IS	INTRUSION SENSOR - CEILING MOUNTED.
IS	INTRUSION SENSOR - WALL MOUNTED.
IK	INTRUSION KEYPAD.

Power Distribution

	DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	SIMPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPERPROOF DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPERPROOF QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	NEMA SPECIAL RECEPTACLE, MOUNTED AT 18" AFF, UON. NEMA CONFIGURATION AS INDICATED.
	SIDE HATCHED RECEPTACLE, TO BE WIRED TO SWITCHED CIRCUIT.
	CENTER HATCHED RECEPTACLE TO BE WIRED TO EMERGENCY CIRCUIT.
	RECEPTACLE MOUNTED ON CEILING.
	RECEPTACLE MOUNTED IN-COUNTER.
	DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER.
	COMBINATION STARTER.
	FLOORBOX COMBINATION POWER & DATA.
	FLOORBOX POWER.
	POKETHRU COMBINATION POWER & DATA.
	POKETHRU POWER.
	POWER POLE.
	PANELBOARD SURFACE MOUNT.
	PANELBOARD FLUSH MOUNT.
	MAIN DISTRIBUTION PANEL.
	UTILITY CT METER.
	UTILITY TRANSFORMER.

Area Rescue Assistance

ARA	COMMAND UNIT.
AR	SPEAKER STROBE.
ARS	AREA OF RESCUE STATION.

Raceways

	CONDUIT AND/OR CONDUCTORS INSTALLED ABOVE GRADE, CONCEALED IN WALL OR CEILING SPACE.
	CONDUIT AND/OR CONDUCTORS INSTALLED ABOVE GRADE, BELOW SLAB.
	CONDUIT TURNED DOWN.
	CONDUIT TURNED UP.
	CONDUIT STUBBED AND CAPPED.
	CONDUIT DIRECT CONNECTION TO EQUIPMENT.
	FLEXIBLE CONNECTION TO EQUIPMENT.
	CONDUIT / WIRING CONTINUATION.
	HOMERUN TO PANELBOARD.
	CABLE TRAY. SIZE AND TYPE AS INDICATED ON DRAWINGS.

One-Line Diagram

	CIRCUIT BREAKER.
	DRAWOUT CIRCUIT BREAKER.
	ENCLOSED CIRCUIT BREAKER.
	MOTOR STARTER CONTACT.
	DISCONNECT SWITCH.
	ENCLOSED DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED FUSED DISCONNECT SWITCH.
	CURRENT TRANSFORMER METER.
	FUSE, RATING AS SHOWN ON DRAWINGS.
	GENERATOR, CONFIGURATION AS INDICATED ON DRAWING.
	GROUND ROD.
	EQUIPMENT GROUND.
	MOTOR, RATED AS INDICATED ON DRAWINGS.
	NEMA CONNECTION.
	PANEL.
	MINI POWER CENTER.
ST	SHUNT TRIP
HTR	HEATER.
RA	REMOTE ANNUNCIATOR.
BATT	BATTERY CHARGER.
	SURGE SUPPRESSION DEVICE
	DIGITAL METER
	VARIABLE FREQUENCY DRIVE
	SOFT STARTER
	TRANSFER SWITCH, WITH FUSES OR BREAKERS AS SHOWN ON DRAWINGS.
	TRANSFORMER

Miscellaneous

J	JUNCTION BOX (ROUND, SQUARE).
T	THERMOSTAT.
R	RELAY.
	CORD REEL.
	MOTOR / EXHAUST FAN.
	CEILING FAN.
	UTILITY POLE.
	WEATHERHEAD.
	GROUND ROD.
	GROUND ROD WITH TEST WELL.
	SURFACE RACEWAY / WIREMOLD.
	FIRE RATED BACKBOARD.
	GROUND BUS BAR.

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Checked by: MH
Sheet:

ELECTRICAL ABBREVIATIONS & SYMBOL LEGEND

LAND USE

E01

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTROL HOW THE DRAWINGS ARE DISPLAYED. THIS GUIDANCE IS FOR REFERENCE ONLY.
BLACK
DARK GRAY
LIGHT GRAY

LEAVE BLANK FOR CITY APPROVAL STAMP

LUMINAIRE SCHEDULE

FIXTURE NO.	DESCRIPTION	LAMP TYPE	LUMENS (MINIMUM)	CRI	COLOR TEMP.	DRIVER	EMERGENCY DRIVER	INTEGRAL MOTION/PHOTO SENSOR	VOLTS	LOAD	MFR.	MODEL NUMBER
B	24" OVERALL HEIGHT WITH 4" X 7" SINGLE HEAD, ALUMINUM HOUSING, TYPE II DISTRIBUTION, WET LOCATION LISTED, AND FINISH AS SELECTED BY ARCHITECT.	LED	725 LM	90	3000K	STANDARD 0-10V	-	NA	UNV	11 WATTS	STRUCTURA OR APPROVED	LINEAL SERIES
HBW	HIGH BAY WET LOCATION LISTED, WITH PARTIAL UPLIGHT COMPONENT. PROVIDE NEMA TWIST LOCK RECEPTACLE AND CORD AND PLUG CONNECTION.	LED	6,100 LM	80	3000K	STANDARD 0-10V	-	NA	UNV	45 WATTS	LUX DYNAMICS OR APPROVED	PK10 E SERIES
SA2H	26"L x 14"W x 2.25"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. SINGLE HEAD, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 20' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 15' HEIGHT x 4" SQUARE 0.12" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	8,300 LM	80	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS	LITHONIA OR APPROVED	DSX0 SERIES
S2A2	SIMILAR TO TYPE SA2H EXCEPT TWIN HEADS AND NO HOUSE SIDE SHIELD.	LED	8,300 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS / HEAD	LITHONIA OR APPROVED	DSX0 SERIES
SA3	SIMILAR TO TYPE SA2H EXCEPT TYPE III DISTRIBUTION AND NO HOUSE SIDE SHIELD.	LED	8,400 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS	LITHONIA OR APPROVED	DSX0 SERIES
S2A3	SIMILAR TO TYPE SA2H EXCEPT TWIN HEADS, TYPE III DISTRIBUTION, AND NO HOUSE SIDE SHIELD.	LED	8,500 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	69 WATTS / HEAD	LITHONIA OR APPROVED	DSX0 SERIES
SB3	33"L x 14"W x 2.75"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. SINGLE HEAD, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 40' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 30' HEIGHT x 5" SQUARE 0.18" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	21,000 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	188 WATTS	LITHONIA OR APPROVED	DSX1 SERIES
SB3H	SIMILAR TO TYPE SB3 EXCEPT PROVIDED WITH HOUSE SIDE SHIELD.	LED	21,000 LM	90	3000K	STANDARD 0-10V	-	YES	UNV	188 WATTS	LITHONIA OR APPROVED	DSX1 SERIES
S2C3	33"L x 14"W x 2.75"H SITE LUMINAIRE WITH DIE-CAST ALUMINUM HOUISING. TWIN HEADS, TYPE III DISTRIBUTION, IP66 RATED, PROVIDE ACCESSORY MOTION SENSOR AND PHOTOCELL. MOTION SENSOR SHALL BE SUITABLE FOR 40' POLE APPLICATIONS. FINISH AS SELECTED BY ARCHITECT. PROVIDE ACCESSORY HOUSE SIDE SHIELD. LUMINAIRE SHALL BE MOUNTED ON 30' HEIGHT x 5" SQUARE 0.18" THICK STEEL POLE WITH HAND HOLE AND FINISH AS SELECTED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POLE STYLE TOP AND POLE DRILL PATTERN BASED ON THE NUMBER OF LUMINAIRE HEADS BEING PROVIDED ON THE POLES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANCHOR BOLTS PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.	LED	32,600 LM / HEAD	90	3000K	STANDARD 0-10V	-	YES	UNV	279 WATTS / HEAD	LITHONIA OR APPROVED	DSX1 SERIES
W3	7"L x 11.5"W x 9"H WALL MOUNTED RECTILINEAR LUMINAIRE WITH SINGLE PIECE DIE-CAST ALUMINUM HOUSING. TYPE III DISTRIBUTION, WET LOCATION LISTED, AND IP66 RATED LUMINAIRE. FINISH SELECTED BY ARCHITECT.	LED	6,000 LM	90	3000K	STANDARD 0-10V		YES	UNV	50 WATTS	LITHONIA OR APPROVED	WDGE2 SERIES

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LUMINAIRE SCHEDULE

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E02

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THE ALIGHENT SAMPLES SHOW THREE LEVELS OF SHADING.
COLORS AND PRINTING CONTEXT AS SHOWN ARE FOR VIEWING.
SETTINGS FOR VIEWING AND PRINTING CONTEXT AS SHOWN ARE FOR VIEWING.
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GENERAL NOTES

1. 1 FC CONTOUR LINE.

ⓧ SHEET KEYNOTES

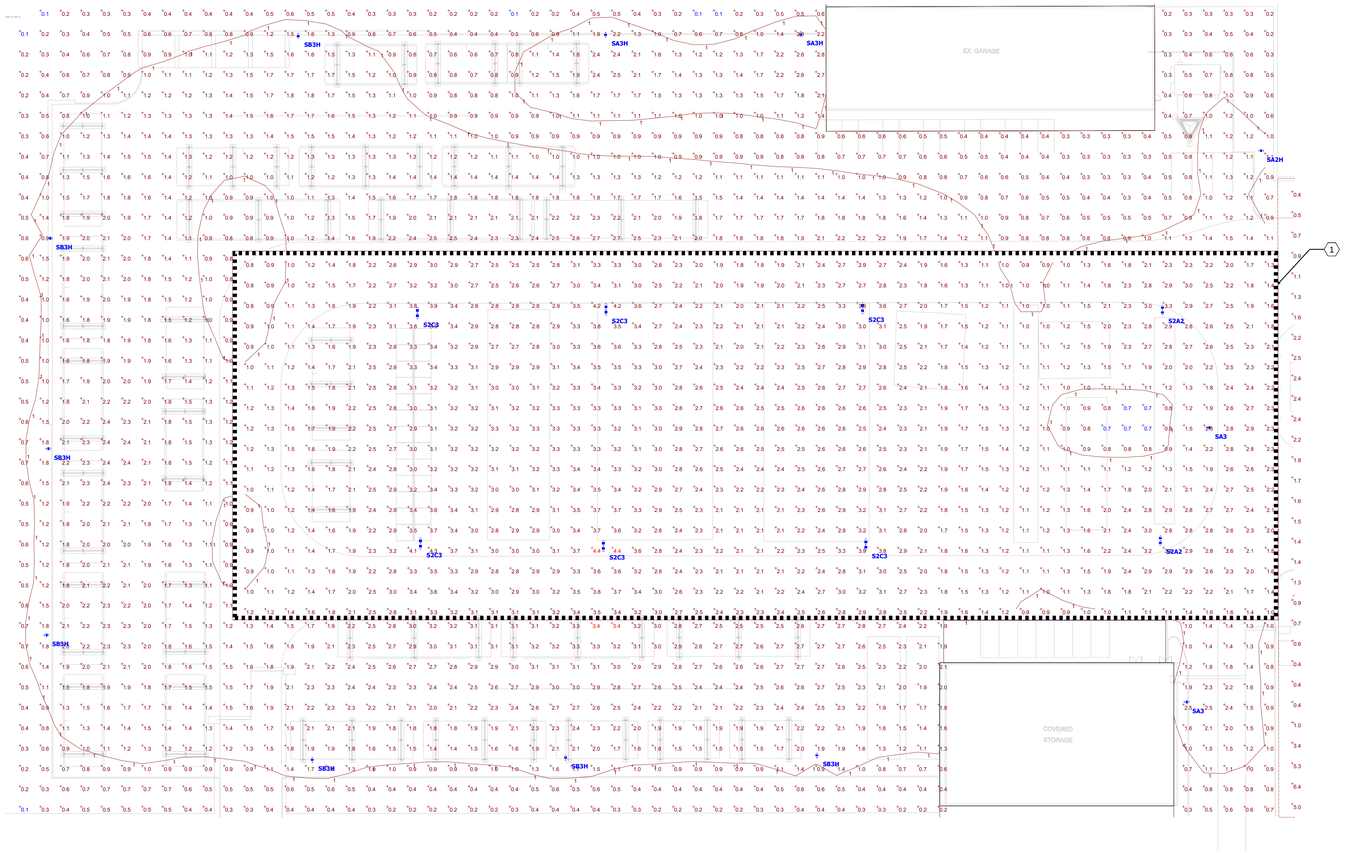
1. SITE CENTRAL WEST CALCULATION ZONE INSIDE THIS BOX. ALL CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE WEST CALCULATION ZONE.

LEAVE BLANK FOR CITY APPROVAL STAMP

LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST HIGH OUTPUT	+	2.3 fc	4.4 fc	0.7 fc	6.3:1	3.3:1
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1



1 SITE LIGHTING CALCULATIONS - SITE WEST (HIGH OUTPUT)
1' = 30'-0"

0' 15' 30'

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SITE LIGHTING CALCULATIONS - SITE WEST (HIGH OUTPUT)

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E03

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THE ADJACENT SAMPLES SHOWN THREE LEVELS OF SHADING.
THE ACTUAL SHADING LEVEL WILL VARY WITH MONITOR SETTINGS.
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GENERAL NOTES

1. 1 FC CONTOUR LINE.

ⓧ SHEET KEYNOTES

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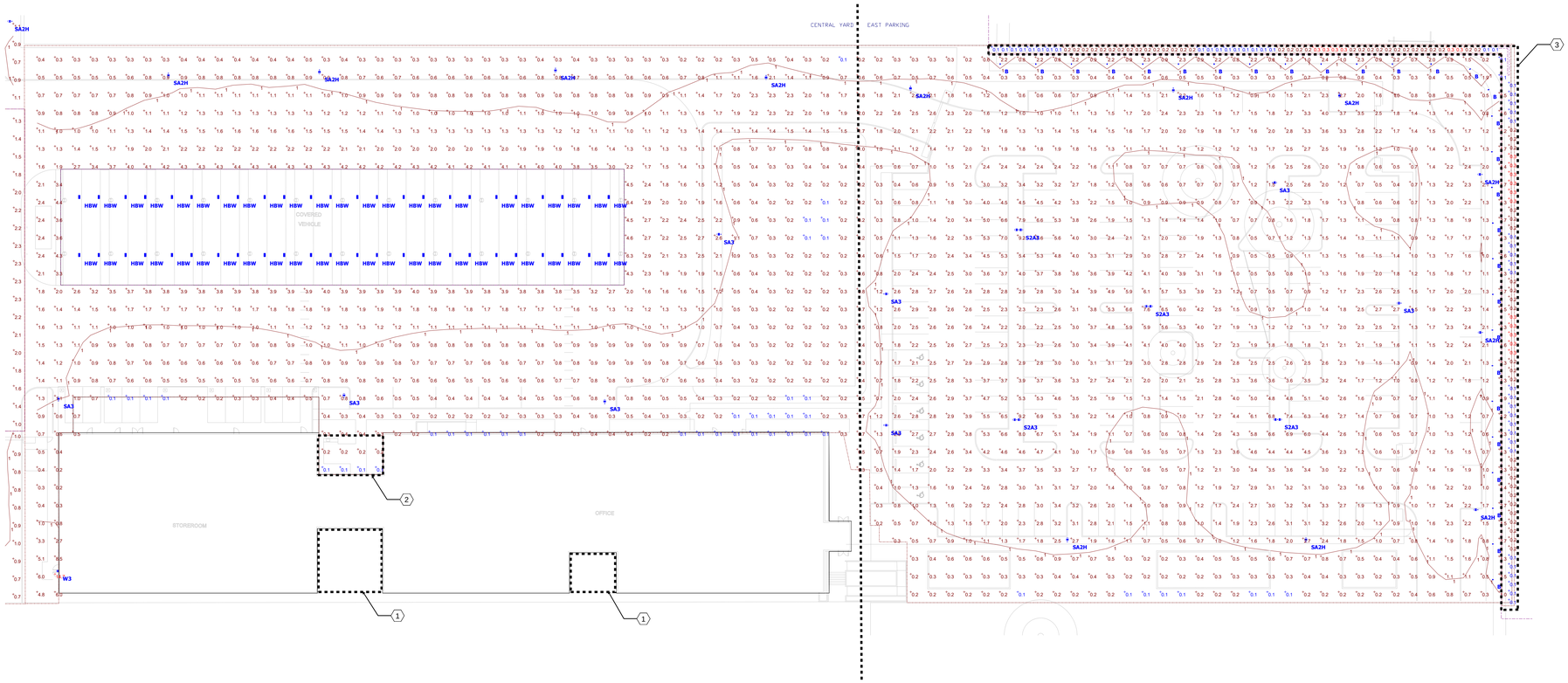
3. SHARED PATH CALCULATION ZONE INSIDE THIS BOX. ALL ILLUMINATION CALCULATIONS OUTSIDE THIS BOX SHOWN ON THIS SHEET ARE THE SITE EAST CALCULATION ZONE.

LEAVE BLANK FOR CITY APPROVAL STAMP

Statistics						
Description	**Symbol**	**Avg**	**Max**	**Min**	**Max/Min**	**Avg/Min**
SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST HIGH OUTPUT	+	2.3 fc	4.4 fc	0.7 fc	6.3:1	3.3:1
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1

LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'



1 SITE LIGHTING CALCULATIONS - SITE EAST (HIGH OUTPUT)
1' = 30'-0"

0' 15' 30'

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SITE LIGHTING CALCULATIONS - SITE EAST (HIGH OUTPUT)

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
ONLY ONE OPTION WILL BE CHOSEN AS THE FINAL SHADE.
THIS GUIDANCE IS FOR REFERENCE ONLY.
SETTINGS FOR VIEWING AND PRINTING CENTER AND OPTIMIZE ALL SHADES TO BLACK
BLACK
GRAY 50%
GRAY 25%
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GENERAL NOTES

1. ALL ILLUMINATION CALCULATIONS SHOWN ON THIS SHEET ARE THE COVERED VEHICLE CALCULATION ZONE.
2. 1 FC CONTOUR LINE.

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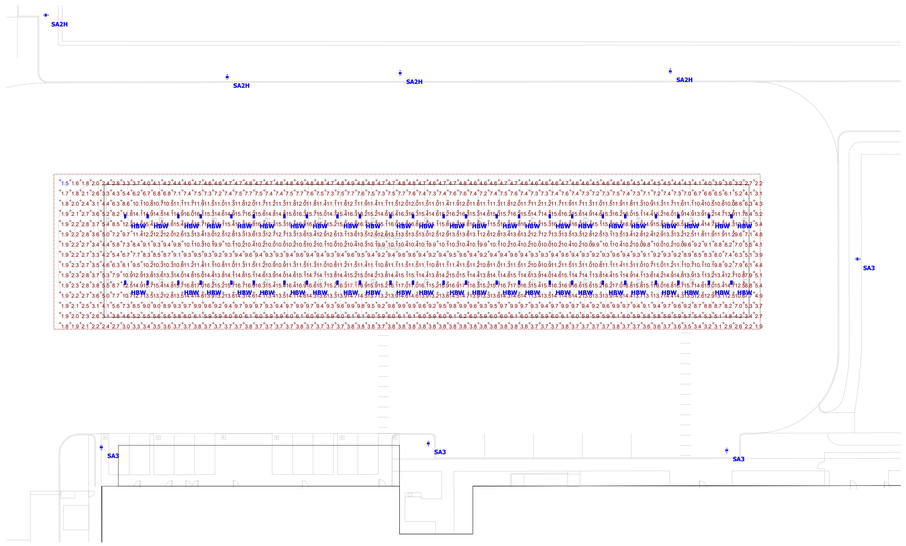
LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
SHARED PATH HIGH OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST HIGH OUTPUT	+	2.3 fc	4.4 fc	0.7 fc	6.3:1	3.3:1
SITE EAST HIGH OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST HIGH OUTPUT	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1
COVERED VEHICLE HIGH OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1



1 SITE LIGHTING CALCULATIONS - COVERED VEHICLE (HIGH OUTPUT)
1' = 30'-0"

0' 15' 30'

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GENERAL NOTES

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SHEET KEYNOTES

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LUMINAIRE	OVERALL HEIGHT
B	24"
HBW	16'
SA2H	18'
S2A2	18'
SA3	18'
S2A3	18'
SB3	33'
SB3H	33'
S2C3	33'
W3	8'

Statistics

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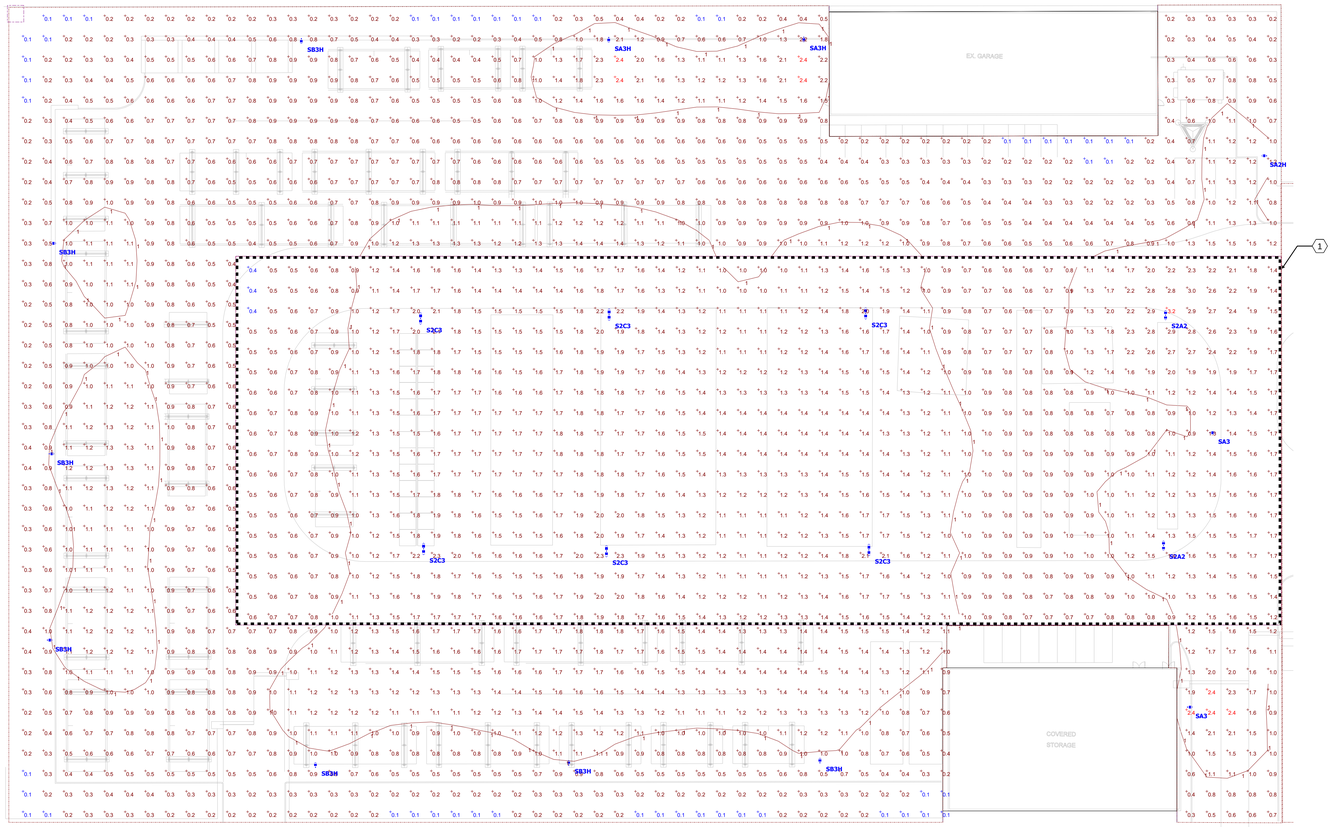
COVERED VEHICLE LOW OUTPUT	+	9.6 fc	16.8 fc	1.5 fc	11.2:1	6.4:1
SHARED PATH LOW OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST LOW OUTPUT	+	1.3 fc	3.2 fc	0.4 fc	8.0:1	3.3:1
SITE EAST LOW OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1



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SITE LIGHTING CALCULATIONS - SITE WEST (LOW OUTPUT)

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SHARED PATH LOW OUTPUT	+	0.2 fc	0.3 fc	0.1 fc	3.0:1	2.0:1
SITE CENTRAL WEST LOW OUTPUT	+	1.3 fc	3.2 fc	0.4 fc	8.0:1	3.3:1
SITE EAST LOW OUTPUT	+	1.6 fc	14.7 fc	0.1 fc	147.0:1	16.0:1
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1

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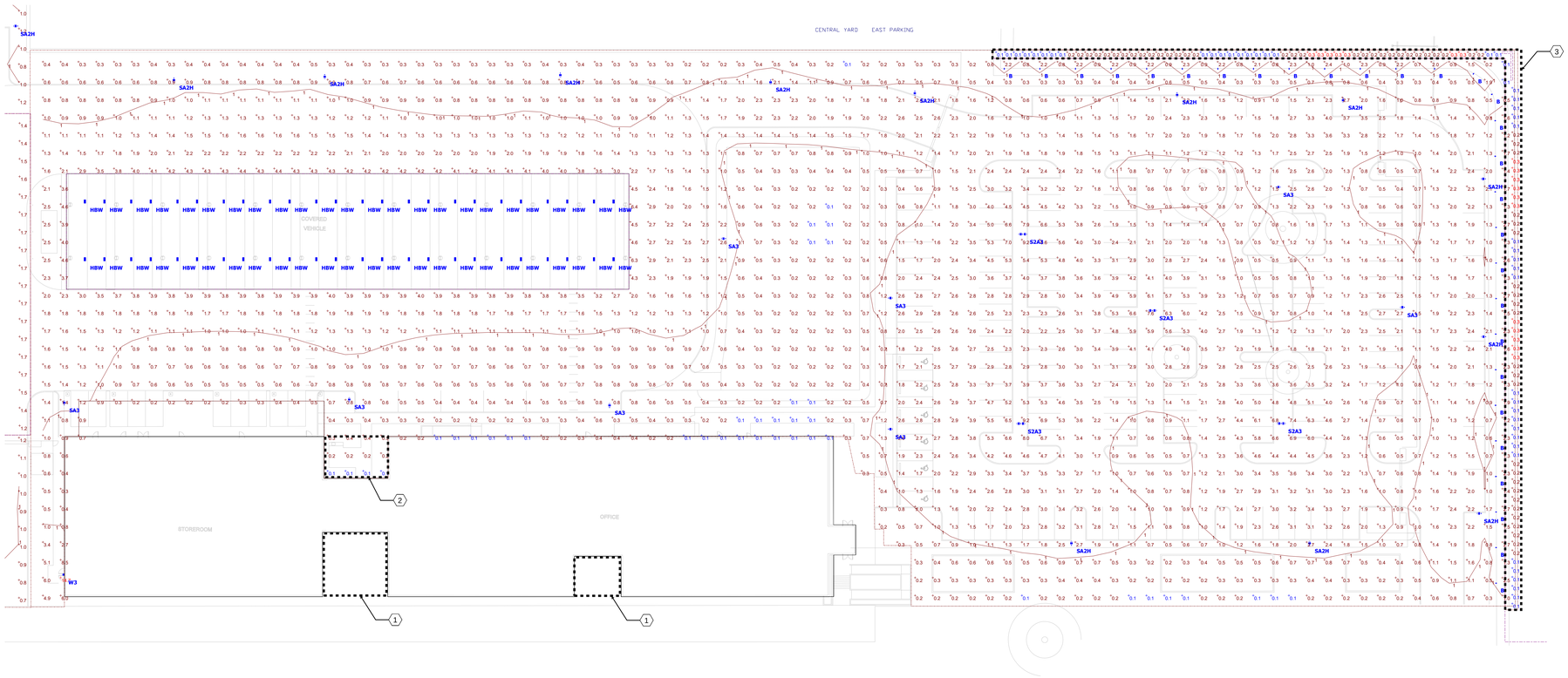

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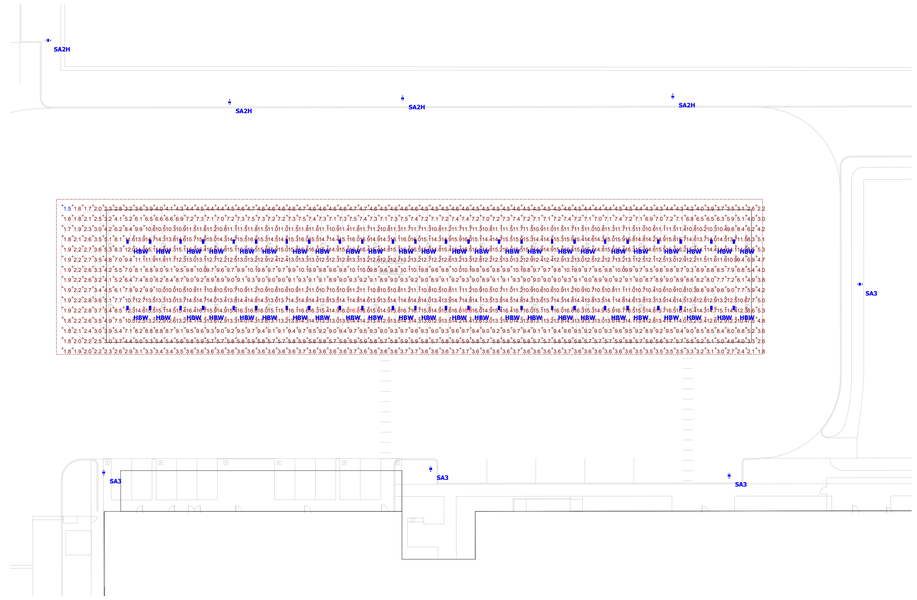
SITE WEST LOW OUTPUT	+	0.8 fc	2.4 fc	0.1 fc	24.0:1	8.0:1



1 SITE LIGHTING CALCULATIONS - COVERED VEHICLE (LOW OUTPUT)
1" = 30'-0"

0' 15' 30'

THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING.
SETTINGS FOR VIEWING AND PRINTING COLOR AS OPTIMAL AS POSSIBLE FOR ACCURATE RENDERING.
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SITE LIGHTING CALCULATIONS - COVERED VEHICLE (LOW OUTPUT)

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Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
1	7773	red oak	Quercus rubra	26	Good	Fair	25	Moderate	Growing on top of berm in corner of parking area, large heading cuts in canopy parking lot side, low foliage over truck parking		Non-CA	No	Remove	12	0
2	**7774**	**red oak**	**Quercus rubra**	**19**	**Fair**	**Fair**	**15**	**Moderate**	**Growing on top of berm along side of parking lot, heading cuts and minor thinning foliage**		**Non-CA**	**No**	**Remove**	**9**	**0**
3	7775	red oak	Quercus rubra	24	Good	Fair	20	Moderate	Growing on top of berm along parking lot, low foliage over lot, large leaders from lower trunk area		Non-CA	No	Remove	9	0
4	**7776**	**red oak**	**Quercus rubra**	**17**	**Good**	**Fair**	**15**	**Moderate**	**Growing in landscape cutout on side of parking area, heading cuts in canopy parking lot side, low foliage over parking**		**Non-CA**	**No**	**Remove**	**6**	**0**
5	7777	red oak	Quercus rubra	13	Poor	Poor	10	Moderate	Growing in landscape cutout in center of parking lot, dieback though crown with lower epicormic sprouting		Non-CA	No	Remove	6	0
6	**7778**	**cherry**	**Prunus serrulata**	**15**	**Fair**	**Good**	**10**	**Moderate**	**Growing in walled patio area, pruned for shape**		**Non-CA**	**No**	**Remove**	**6**	**0**
7	7779	cherry	Prunus serrulata	12	Fair	Good	10	Moderate	Growing in walled patio area, pruned for shape, large surface roots at base		Non-CA	No	Remove	3	0
8	**7780**	**cherry**	**Prunus serrulata**	**21**	**Good**	**Good**	**15**	**Moderate**	**Growing in walled patio area, pruned for shape, large surface roots at base**		**Non-CA**	**No**	**Remove**	**9**	**0**
9	7782	western-red-cedar	Thuja plicata	34	Fair	Fair	15	Poor	Codominate stems with included bark in lower canopy, growing from neighboring property with low foliage and surface roots encroaching pge property		Off-site	No	Protect	0	0
10	**7781**	**deodora-cedar**	**Cedrus deodara**	**25**	**Good**	**Good**	**20**	**Moderate**	**Stand alone treee with full crown, base on top of berm in landscape area**		**Non-CA**	**No**	**Remove**	**12**	**0**
11	30046	dogwood	Cornus sp.	2	Fair	Good	5	Poor	Young tree on border of right of way, still staked with gator bag at base, early fall color		CA	Yes	Remove	0	0
12	**7784**	**deodora-cedar**	**Cedrus deodara**	**33**	**Good**	**Poor**	**20**	**Moderate**	**Previously topped at 20' above grade, robust root flare, foliage encroaching building**		**Non-CA**	**No**	**Remove**	**15**	**0**
13	7785	deodora-cedar	Cedrus deodara	33	Good	Poor	20	Moderate	Previously topped at 20' above grade, heading cuts in canopy, robust root flare, low foliage encroaching building		Non-CA	No	Remove	15	0
14	**7786**	**Japanese-maple**	**Acer palmatum**	**14**	**Fair**	**Fair**	**10**	**Poor**	**3 stems from base, growing on edge of right of way**		**CA**	**No**	**Remove**	**2**	**0**
15	7148	deodora-cedar	Cedrus deodara	39	Good	Fair	20	Moderate	Many large leaders from lower trunk, growing at end of row on topside of slope		CA	No	Remove	5	0
16	**7147**	**deodora-cedar**	**Cedrus deodara**	**30**	**Fair**	**Fair**	**15**	**Moderate**	**Unbalanced crown to south growing mid grouping of cedars**		**CA**	**No**	**Remove**	**4**	**0**
17	7146	deodora-cedar	Cedrus deodara	31	Fair	Fair	15	Moderate	Growing mid grouping of cedars, multi leaders from trunk		CA	No	Remove	5	0
18	**7145**	**deodora-cedar**	**Cedrus deodara**	**37**	**Good**	**Fair**	**20**	**Moderate**	**Growing mid grouping of cedars near roadway, unbalanced crown to south**		**CA**	**No**	**Remove**	**5**	**0**
19	7144	deodora-cedar	Cedrus deodara	30	Good	Fair	20	Moderate	Growing in row of cedars, topped at 16' above grade, large reiterated trunks		CA	No	Remove	4	0

Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
20	**7143**	**deodora-cedar**	**Cedrus deodara**	**34**	**Good**	**Fair**	**20**	**Moderate**	**Growing at end of row of cedars, large reiterated trunks**		**CA**	**No**	**Remove**	**5**	**0**
21	30044	dogwood	Cornus sp.	2	Fair	Good	5	Poor	Young tree on border of right of way, early fall color		CA	Yes	Remove	0	0
22	**7142**	**deodora-cedar**	**Cedrus deodara**	**37**	**Good**	**Fair**	**20**	**Moderate**	**Growing at end of row of cedars, unbalanced crown to the south, base 2' from existing concrete**		**CA**	**No**	**Remove**	**5**	**0**
23	7141	deodora-cedar	Cedrus deodara	26	Good	Good	15	Moderate	Growing in row of cedars, single leader		CA	No	Remove	4	0
24	**7140**	**deodora-cedar**	**Cedrus deodara**	**30**	**Good**	**Poor**	**15**	**Moderate**	**Growing in row of cedars, previously topped with many leaders at 25' above grade, excess woodpecker damage on lower trunk**		**CA**	**No**	**Remove**	**4**	**0**
25	7139	deodora-cedar	Cedrus deodara	29	Good	Good	15	Moderate	Growing in row of cedars, single leader, unbalanced crown to SE		CA	No	Remove	4	0
26	**7138**	**deodora-cedar**	**Cedrus deodara**	**28**	**Good**	**Good**	**20**	**Moderate**	**Growing in row of cedars, leaning unbalanced crown to east**		**CA**	**No**	**Remove**	**4**	**0**
27	7137	deodora-cedar	Cedrus deodara	33	Good	Good	20	Moderate	Many leaders from trunk, growing from end of row of cedes		CA	No	Remove	5	0
28	**6310**	**western-red-cedar**	**Thuja plicata**	**16**	**Very Poor**	**Very Poor**	**10**	**Poor**	**Dying tree from top down, Lower stem wrapped in ivy, growing from fence line with small plum suckers at base**	**Yes**	**CA**	**Yes**	**Remove**	**0**	**0**
29	6307	ponderosa-pine	Pinus ponderosa	24	Fair	Poor	15	Moderate	Tree growing across existing fence line at end of adjacent street, three Codominate leaders, large scarring on lower trunk		CA	No	Remove	3	0
30	**30043**	**pear**	**Pyrus communis**	**14**	**Good**	**Fair**	**10**	**Moderate**	**3 stems, excessive fruiting**		**CA**	**No**	**Remove**	**2**	**0**
31	30042	sweet cherry	Prunus avium	6	Fair	Fair	10	Moderate	Leaning from base with many smaller suckers near base		CA	No	Remove	1	0
32	**30041**	**sweet cherry**	**Prunus avium**	**7**	**Good**	**Fair**	**10**	**Moderate**	**Leaning from base with many smaller suckers near base**		**CA**	**No**	**Remove**	**1**	**0**
33	6285	sweet cherry	Prunus avium	21	Poor	Poor	15	Moderate	Dead top, large deadwood and extended later growth	Yes	CA	Yes	Remove	0	0
34	**6288**	**black cottonwood**	**Populus trichocarpa**	**22**	**Good**	**Fair**	**10**	**Moderate**	**Stand alone, full crown, poor taper**		**CA**	**No**	**Remove**	**3**	**0**
35	30040	cherry	Prunus sp.	12	Good	Good	10	Moderate	Low canopy leaning over fence line, growing from neighbors backyard to the north		Off-site	No	Protect	0	0
36	**6264**	**Douglas-fir**	**Pseudotsuga menziesii**	**40**	**Good**	**Good**	**25**	**Moderate**	**Full crown, pronounced root flare with raised soil 3' surrounding base**		**Non-CA**	**No**	**Protect**	**0**	**0**
37	6271	Douglas-fir	Pseudotsuga menziesii	39	Good	Good	25	Moderate	Stand alone, full crown, raised soil with minor grade change at base, minor deadwood in crown		Non-CA	No	Protect	0	0
38	**6273**	**Pear**	**Pyrus communis**	**6**	**Fair**	**Poor**	**5**	**Poor**	**Orchard pear tree topped many times**		**Non-CA**	**No**	**Remove**	**3**	**0**
39	6272	apple	Malus sp.	9	Fair	Fair	10	Moderate	Orchard tree with much fruit		Non-CA	No	Remove	3	0
40	**6274**	**apple**	**Malus sp.**	**10**	**Poor**	**Very Poor**	**10**	**Moderate**	**Orchard tree with no fruit, rotten sect stems at base**	**Yes**	**Non-CA**	**Yes**	**Remove**	**0**	**0**
41	30039	sweet cherry	Prunus avium	13	Poor	Poor	10	Moderate	Declining crown, adjacent tree growing near base		Non-CA	No	Remove	6	0
42	**30038**	**sweet cherry**	**Prunus avium**	**10**	**Poor**	**Poor**	**10**	**Moderate**	**Declining crown, adjacent tree growing near base**		**Non-CA**	**No**	**Remove**	**3**	**0**

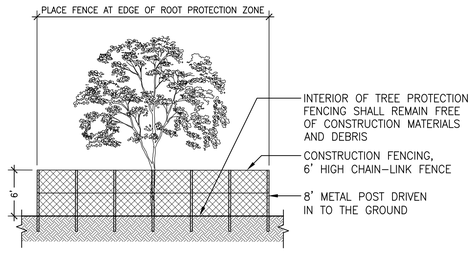
Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
43	30037	sweet cherry	Prunus avium	8	Poor	Poor	10	Moderate	Leaning from base, thinning foliage		CA	No	Remove	1	0
44	**30036**	**sweet cherry**	**Prunus avium**	**6**	**Fair**	**Poor**	**10**	**Moderate**	**Leaning from base, 2 stems at dbh**		**CA**	**No**	**Remove**	**1**	**0**
45	30035	sweet cherry	Prunus avium	15	Poor	Poor	10	Moderate	Dieback through canopy	Yes	CA	Yes	Remove	0	0
46	**6275**	**pear**	**Pyrus communis**	**12**	**Good**	**Fair**	**10**	**Moderate**	**Excessive fruit, Codominate leaders**		**CA**	**No**	**Remove**	**1**	**0**
47	30033	bigleaf maple	Acer macrophyllum	8	Fair	Fair	10	Poor	Supper vertical growth from adjacent fir		Non-CA	No	Remove	3	0
48	**30034**	**Douglas-fir**	**Pseudotsuga menziesii**	**36**	**Good**	**Good**	**20**	**Moderate**	**Large full crown, base is on opposite side of fence along property line**		**Off-site**	**No**	**Protect**	**0**	**0**
49	30032	Douglas-fir	Pseudotsuga menziesii	36	Good	Fair	25	Moderate	2 stems from base, growing from neighboring property		Off-site	No	Protect	0	0
50	**30028**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
51	30027	Norway-spruce	Picea abies	12	Fair	Fair	10	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
52	**30026**	**Norway-spruce**	**Picea abies**	**8**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
53	30025	Norway-spruce	Picea abies	18	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
54	**30024**	**Norway-spruce**	**Picea abies**	**14**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
55	30023	Norway-spruce	Picea abies	14	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
56	**30022**	**Norway-spruce**	**Picea abies**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
57	30021	Norway-spruce	Picea abies	22	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
58	**30020**	**Norway-spruce**	**Picea abies**	**12**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
59	30019	Norway-spruce	Picea abies	16	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
60	**30018**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
61	30017	Norway-spruce	Picea abies	16	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
62	**30016**	**Norway-spruce**	**Picea abies**	**8**	**Fair**	**Fair**	**10**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
63	30015	Norway-spruce	Picea abies	12	Fair	Fair	10	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
64	**30014**	**Norway-spruce**	**Picea abies**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
65	30013	Norway-spruce	Picea abies	14	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
66	**30012**	**Norway-spruce**	**Picea abies**	**10**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**

Tree Number	Survey Number	Common Name	Scientific Name	DBH	Condition Health	Condition Structure	Crown Radius	Construction Impact Tolerance	Field Notes/ Comments	Meets City Definition for dying tree	Location*	Exempt?	Protect or Remove	On-Site Mitigation	ROW Mitigation
67	30011	Norway-spruce	Picea abies	18	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
68	**30010**	**Norway-spruce**	**Picea abies**	**12**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
69	30009	Norway-spruce	Picea abies	12	Fair	Fair	15	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
70	**30008**	**Scots-pine**	**Pinus sylvestris**	**16**	**Fair**	**Fair**	**15**	**Moderate**	**Growing in line of conifer across fence, not tagged and dbh is approximate**		**Off-site**	**No**	**Protect**	**0**	**0**
71	30007	Scots-pine	Pinus sylvestris	28	Fair	Fair	20	Moderate	Growing in line of conifer across fence, not tagged and dbh is approximate		Off-site	No	Protect	0	0
72	**30031**	**Plum**	**Prunus domestica**	**9**	**Poor**	**Poor**	**10**	**Moderate**	**2 stems from base, fruiting plum tree**		**Non-CA**	**No**	**Remove**	**3**	**0**
73	30030	Plum	Prunus domestica	6	Poor	Very Poor	5	Moderate	Much decay at base, fruiting plum tree	Yes	Non-CA	Yes	Remove	0	0
74	**30029**	**Plum**	**Prunus domestica**	**6**	**Poor**	**Very Poor**	**5**	**Moderate**	**Much decay at base, fruiting plum tree**	**Yes**	**Non-CA**	**Yes**	**Remove**	**0**	**0**
75	6276	apple	Malus sp.	17	Fair	Fair	15	Moderate	Fruit tree, leaning from base with thick crown		Non-CA	No	Remove	6	0
76	**30006**	**weeping-willow**	**Salix babylonica**	**8**	**Fair**	**Fair**	**10**	**Poor**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
77	30005	Douglas-fir	Pseudotsuga menziesii	24	Good	Fair	15	Moderate	Growing accross fence line from neighbors property, not tagged and dbh is aproximate		Off-site	No	Protect	0	0
78	**30004**	**Douglas-fir**	**Pseudotsuga menziesii**	**26**	**Good**	**Fair**	**15**	**Moderate**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
79	30003	Douglas-fir	Pseudotsuga menziesii	28	Good	Fair	15	Moderate	Growing accross fence line from neighbors property, not tagged and dbh is aproximate		Off-site	No	Protect	0	0
80	**30002**	**Douglas-fir**	**Pseudotsuga menziesii**	**26**	**Good**	**Fair**	**15**	**Moderate**	**Growing accross fence line from neighbors property, not tagged and dbh is aproximate**		**Off-site**	**No**	**Protect**	**0**	**0**
81	6335	western-red-cedar	Thuja plicata	31	Poor	Fair	15	Poor	Dying from top down, base in planter cutout in old parking lot	Yes	Non-CA	Yes	Remove	0	0
82	**6270**	**Port-Orford-cedar**	**Chamaecyparis lawsoniana**	**25**	**Fair**	**Fair**	**15**	**Poor**	**Thinning foliage in upper crown, stand alone with full canopy**		**Non-CA**	**No**	**Protect**	**0**	**0**
83	6267	ponderosa-pine	Pinus ponderosa	28	Good	Good	15	Moderate	Full crown		Non-CA	No	Protect	0	0
84	**30001**	**Japanese-maple**	**Acer palmatum**	**11**	**Fair**	**Fair**	**10**	**Poor**	**Dbh measured at base, many stems**		**ROW**	**No**	**Remove**	**0**	**2**
85	30000	Douglas-fir	Pseudotsuga menziesii	45	Good	Fair	30	Moderate	Large Codominate stems at 6' above grade, pronounced root flare		CA	No	Remove	5	0
86	**6332**	**one-seed-hawthorn**	**Crataegus monogyna**	**18**	**Fair**	**Fair**	**15**	**Moderate**	**Leaning crown with 3 stems at 6' above grade**		**CA**	**Yes**	**Remove**	**0**	**0**
87	6331	one-seed-hawthorn	Crataegus monogyna	14	Good	Good	15	Moderate	Excessive fruiting, full crown		CA	Yes	Remove	0	0
88	**6328**	**one-seed-hawthorn**	**Crataegus monogyna**	**15**	**Fair**	**Fair**	**15**	**Moderate**	**3 stems at dbh, leaning crown**		**ROW**	**Yes**	**Remove**	**0**	**0**
89	6327	Oregon-white-oak	Quercus garryana	41	Fair	Fair	25	Moderate	Large deadwood in crown, base is at grade cut with stormwater creek and culvert near base, existing pavement near base 3 sides		CA	No	Protect	0	0
90	**6322**	**European-birch**	**Betula pendula**	**14**	**Poor**	**Poor**	**10**	**Poor**	**Dying from top down**	**Yes**	**CA**	**Yes**	**Remove**	**0**	**0**
91	6323	hickory	Carya glabra	23	Good	Good	20	Moderate	Large full canopy with existing pavement within 1' at base to east		ROW	No	Remove	0	4

* Location definitions:
"CA" indicates on-site trees within the Construction Area as defined in OCMC 17.04.230
"Non-CA" indicates on-site trees outside the Construction Area as defined in OCMC 17.04.230
"ROW" indicates trees within the construction area in the Right Of Way subject to OCMC 12.08.

	On-Site	ROW
Mitigation required for proposed construction:	**203**	**6**
Additional mitigation per previous Kamm Apartments COA:	**72**	**0**
(assumes 8 total 19"-24" trees in non-construction area)		
TOTAL MITIGATION TREES REQUIRED:	**275**	**6**

NOTES:
1. EXISTING SOIL CHEMISTRY SHALL NOT BE ALTERED BY CONSTRUCTION ACTIVITIES. CHEMICAL WASTES AT CONSTRUCTION SITE SHALL BE DISPOSED OF PROPERLY AND NOT DRAINED ONTO SOIL.
2. CONSTRUCTION FENCING SHALL BE PLACED BEFORE CONSTRUCTION STARTS AND REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED.



1 TREE PROTECTION FENCING — Section NTS

TREE PROTECTION AND REMOVAL NOTES

1. THIS PLAN IS BASED ON A SURVEY BY PGE DATED SEPTEMBER 2025. TREE INVENTORY AND ARBORIST REPORT PROVIDED BY TERAGAN & ASSOCIATES. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. SEE ARCHITECTURAL AND CIVIL FOR ALL SITE DEMOLITION INFORMATION.
3. TREE PROTECTION, REMOVAL, AND MITIGATION SHALL COMPLY WITH OCMC 17.41.
4. PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES. INSTALL PROTECTIVE FENCING WHERE INDICATED ON THE TREE PROTECTION PLAN. PROTECTIVE BARRIERS SHALL BE PLACED BEFORE PHYSICAL DEVELOPMENT STARTS AND SHALL STAY IN PLACE UNTIL AFTER PLANNING OFFICIAL AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.
5. TREE PROTECTION FENCING SHALL BE CHAIN LINK, MINIMUM OF 6' HEIGHT, SECURED WITH STEEL POSTS, INSTALLED 5' BEYOND THE EDGE OF THE ROOT ZONE OR AS INDICATED ON THE TREE REMOVAL AND PROTECTION PLAN.
6. EXCAVATION WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED USING ONLY NON-MOTORIZED HANDHELD TOOLS AND SHALL BE THE MINIMUM NECESSARY TO ACCOMPLISH THE PURPOSE FOR THE EXCAVATION AND TO ENSURE LONG-TERM SURVIVAL OF THE TREE.
7. TREE PROTECTION FENCING SHALL BE FLUSH WITH THE INITIAL UNDISTURBED GRADE.
8. APPROVED SIGNS SHALL BE ATTACHED TO PROTECTION FENCING, AND VISIBLY STATING THAT INSIDE THE FENCING IS A TREE PROTECTION ZONE, NOT TO BE DISTURBED UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE COUNTY MANAGER.
9. NO CONSTRUCTION ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE, INCLUDING, BUT NOT LIMITED TO DUMPING OR STORAGE OF MATERIALS SUCH AS BUILDING SUPPLIES, SOIL, WASTE ITEMS, OR PARKED VEHICLES AND EQUIPMENT.
10. THE TREE PROTECTION ZONE SHALL REMAIN FREE OF CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS SUCH AS PAINTS, THINNERS, CLEANING SOLUTIONS, PETROLEUM PRODUCTS, AND CONCRETE OR DRY WALL EXCESS, CONSTRUCTION DEBRIS, OR RUNOFF.
11. NO EXCAVATION, TRENCHING, GRADING, ROOT PRUNING OR OTHER ACTIVITY SHALL OCCUR WITHIN THE TREE PROTECTION ZONE UNLESS DIRECTED BY AN ARBORIST PRESENT ON SITE AND APPROVED BY THE CITY MANAGER.
12. NO FILL OR COMPACTION SHALL OCCUR WITHIN THE CRITICAL ROOT ZONES OF ANY OF THE TREES. IF COMPACTION IS UNAVOIDABLE, MEASURES SHALL BE TAKEN AS RECOMMENDED BY A CERTIFIED ARBORIST TO REDUCE OR MITIGATE THE IMPACT OF THE FILL OR COMPACTION.
13. CLEAR AND GRUB ALL EXISTING VEGETATION ON SITE. WITHIN TREE PROTECTION ZONES AND NROD BOUNDARY, NO MECHANICAL OR CHEMICAL REMOVAL IS AUTHORIZED, ONLY HAND REMOVAL IS ALLOWED.

ABBREVIATIONS

ARCH	ARCHITECTURAL
CAL	CALIPER
CONC	CONCRETE
DIA	DIAMETER
DBH	DIAMETER AT BREAST HEIGHT
DWG	DRAWINGS
EQ	EQUAL
HT	HEIGHT
N/A	NOT APPLICABLE
NO	NUMBER
NROD	NATURAL RESOURCE OVERLAY DISTRICT
OC	ON CENTER
OCMC	OREGON CITY MUNICIPAL CODE
PA	PLANTING AREA
SF	SQUARE FEET
SIM	SIMILAR

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HEA Project No. 25005-01T
Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
Checked by: KL
Sheet:
TREE INVENTORY AND NOTES

LAND USE
L01

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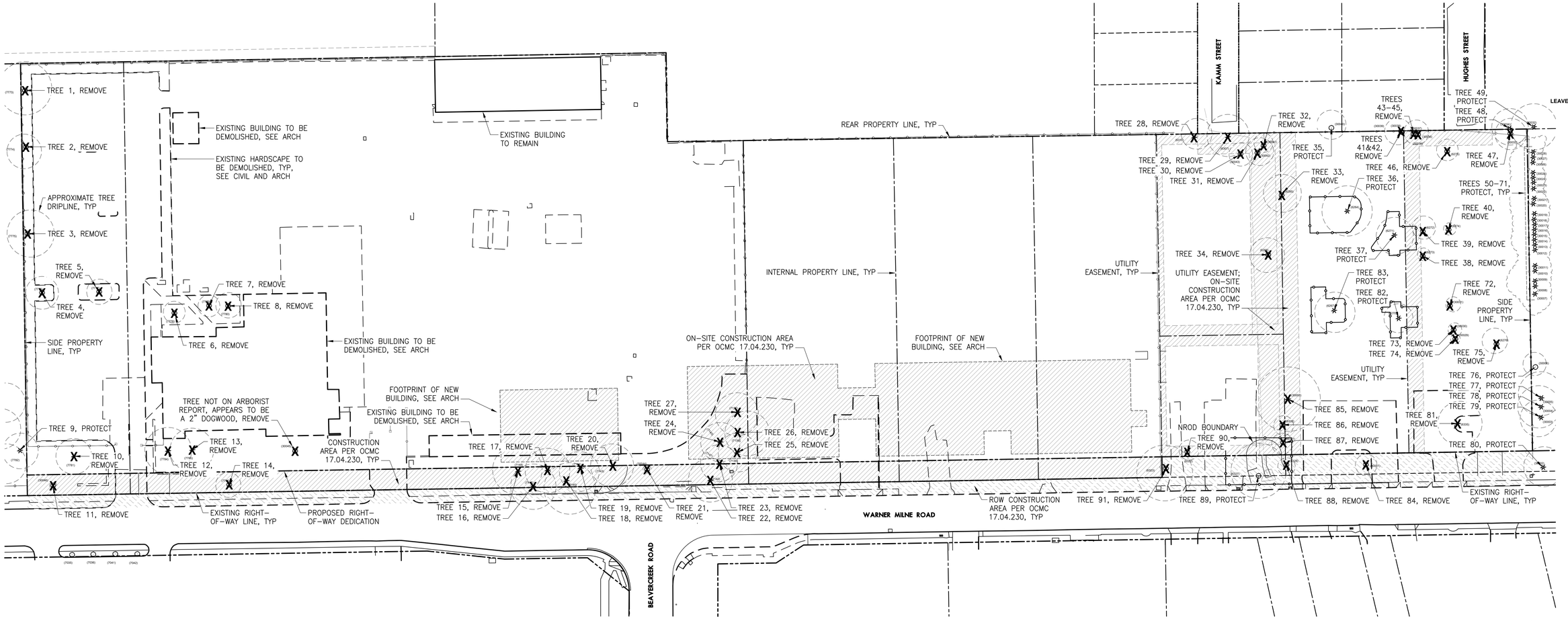
THE ADJACENT FARE LEB SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING QUALITY MAY VARY. VISIBLE THIS GUIDANCE IS FOR REFERENCE ONLY.



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1 TREE PROTECTION AND REMOVAL PLAN

SEE aL001 FOR TREE INVENTORY AND NOTES

SCALE: 1" = 40'

0 8' 20' 40' 80'

N

TREE PROTECTION LEGEND

- EXISTING DECIDUOUS TREE, TO BE REMOVED
- EXISTING CONIFEROUS TREE, TO BE REMOVED
- EXISTING DECIDUOUS TREE, TO BE PRESERVED
- EXISTING CONIFEROUS TREE, TO BE PRESERVED
- TREE PROTECTION FENCING, SEE NOTES
- ON-SITE CONSTRUCTION AREA PER OCMC 17.04.230, TYP
- ROW CONSTRUCTION AREA PER OCMC 12.08, TYP

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HEA Project No. 25005-01T
Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
Checked by: KL
Sheet:
TREE PROTECTION & REMOVAL PLAN

LAND USE
L02

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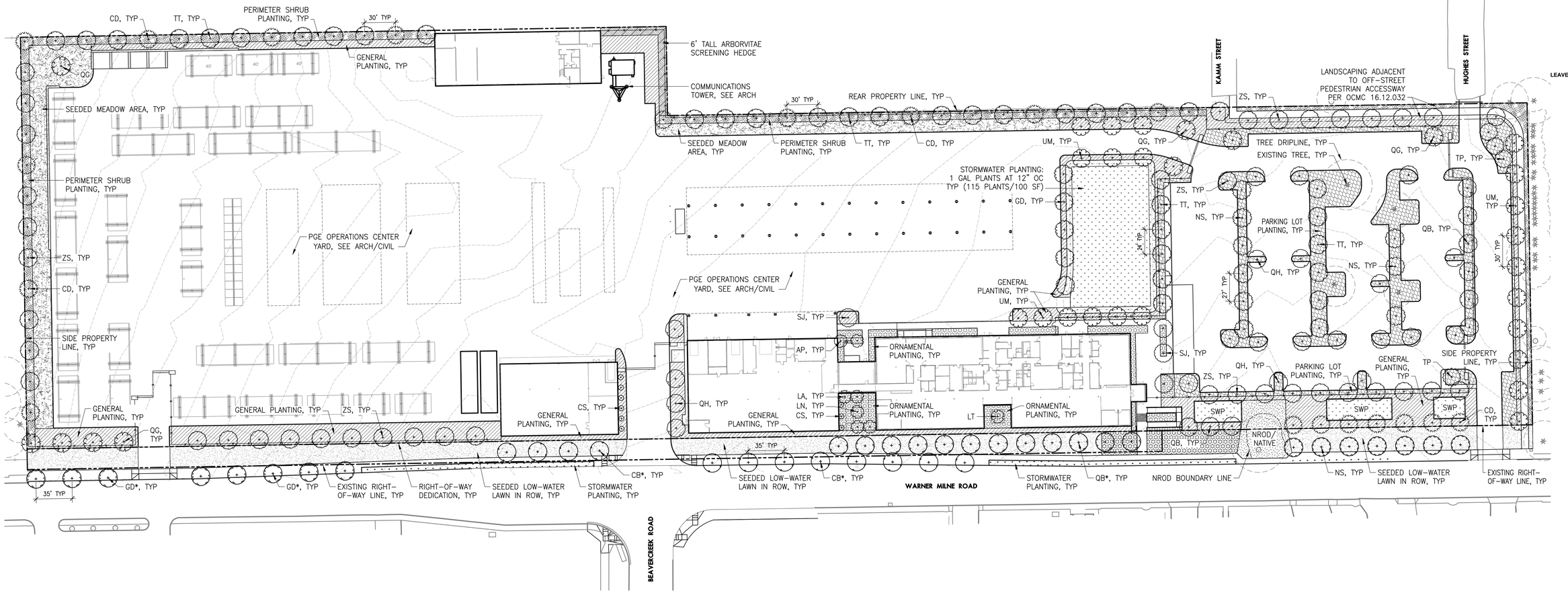

1 LANDSCAPE SITE PLAN

SCALE: 1" = 40' 0 8' 20' 40' 80'

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LEGEND

PROPERTY LINE/RIGHT-OF-WAY

SEEDED LAWN AREA: LOW-WATER SEED MIX, 7 LBS/1000 SF TYP

SEEDED NATIVE FLOWERING MEADOW SEED MIX: 7 LBS/1000 SF TYP

TREE MITIGATION CALCULATIONS

TOTAL NUMBER OF ON-SITE TREES TO BE MITIGATED:	275
NEW ON-SITE TREES PROPOSED:	193
NEW OFF-SITE MITIGATION TREES REQUIRED:	82
TOTAL NUMBER OF ROW TREES TO BE MITIGATED:	6
NEW ROW TREES PROPOSED:	39

LAND USE NOTES

1. ALL PROPOSED LANDSCAPING WILL CONFORM TO OCMC SECTION 17.62.050(A) – LANDSCAPING.
2. NONE OF THE PROPOSED PLANT SPECIES ARE LISTED ON THE OREGON CITY NUISANCE PLANT LIST.
3. ALL PROPOSED PLANTINGS WILL COVER ONE HUNDRED PERCENT OF THE LANDSCAPED AREA WITHIN THREE YEARS.
4. THE USE OF BARK, MULCH, ETC. AS GROUNDCOVER WILL BE LIMITED TO THE EXCEPTIONS MENTIONED IN THE ABOVE STANDARD.

ABBREVIATIONS

B&B	BALLED & BURLAPPED
CAL	CALIPER
CONT	CONTAINER
DIA	DIAMETER
DBH	DIAMETER AT BREAST HEIGHT
EQ	EQUAL
HT	HEIGHT
MIN	MINIMUM
MAX	MAXIMUM
MS	MULTISTEM
NO	NUMBER
O.C.	ON CENTER
SIM	SIMILAR
SL	SEEDED LAWN
TYP	TYPICAL
#	CONTAINER SIZE

LANDSCAPE NOTES

1. THIS PLAN IS BASED ON A SURVEY BY PGE DATED SEPTEMBER 2025. TREE INVENTORY AND ARBORIST REPORT PROVIDED BY TERAGAN & ASSOCIATES. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IDENTIFIED ON SITE RELATED TO SURVEY INFORMATION PRIOR TO INSTALLATION.
2. PROTECT EXISTING TREES TO REMAIN; SEE SHEETS aL001 AND aL002 FOR FENCING AND OTHER REQUIREMENTS.
3. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR SITE DEMOLITION INFORMATION.
4. SEE ARCHITECTURAL AND CIVIL DRAWINGS FOR ALL PEDESTRIAN PAVING IMPROVEMENTS AND VEHICULAR AREA IMPROVEMENTS, INCLUDING PAVING, CURBS, DRIVEWAY APRONS, STRIPING AND SIGNAGE, AS WELL AS ANY IMPROVEMENTS WITHIN THE RIGHT-OF-WAY.
5. SEE CIVIL DRAWINGS FOR STORMWATER AND UNDERGROUND UTILITY INFORMATION.
6. SEE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING SITE LIGHTING AND ELECTRIC UTILITIES.
7. ALL PLANTING AREAS SHALL BE PROVIDED WITH 18" DEPTH AMENDED NATIVE TOPSOIL, 36" DEPTH FOR TREE PLANTING. PROVIDE SOIL TESTING FOR EXISTING TOPSOIL TO DETERMINE SPECIFIC SOIL AMENDMENT REQUIREMENTS. PROVIDE IMPORT SOIL MEDIUM FOR STORMWATER FACILITIES. IF IMPORT TOPSOIL IS REQUIRED FOR GENERAL PLANTING AREAS, PROVIDE IMPORT TOPSOIL, PRO-GRO LANDSCAPE BLEND #2 OR APPROVED EQUAL.
8. ALL PLANTING AREAS SHALL BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WITH 100% HEAD-TO-HEAD COVERAGE WITH MP ROTATOR SPRINKLER HEADS AND/OR 100% SUBSURFACE DRIP IRRIGATION. ALL PLANTING AREAS SHALL BE HYDROZONED ACCORDING TO PLANT TYPE, SOLAR EXPOSURE, AND WATER USE.
9. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, WELL ROOTED, AND WELL BRANCHED. ALL TREES MUST BE FREE OF INSECTS, DISEASES, MECHANICAL INJURY, AND OTHER OBJECTIONABLE FEATURES WHEN PLANTED. ALL PLANT MATERIAL SHALL CONFORM TO "AMERICAN STOCK STANDARDS" LATEST EDITION.
10. ALL PARKING LOT AND STREET TREES MUST HAVE 6' CLEAR HEIGHT TO LOWEST BRANCHES.
11. ALL PLANT MATERIAL SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
12. STREET TREE LOCATIONS ARE PRELIMINARY, PENDING LAYOUT OF TREE WELLS, UTILITIES, AND STREET LIGHTS BY THE CIVIL ENGINEER.

PRELIMINARY TREE SCHEDULE

Sym/Abbr	Botanical Name	Common Name	Size
AP	Acer palmatum 'Sango Kaku'	Sango Kaku Japanese Maple	12' HT/MS
CD	Calocedrus decurrens	Incense Cedar (EG)	10' HT
CB	Carpinus betulifolius 'Frans Fontaine'	Frans Fontaine European Hornbeam	2½" CAL
CU	Cupressus sempervirens	Italian Cypress (EG)	10' HT
GD	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree*	2½" CAL
LA	Lagerstroemia x fauriei 'Apalachee'	Apalachee Crape Myrtle*	12' HT/MS
LS	Lagerstroemia x fauriei 'Sarah's Fav'	Sarah's Favorite Crape Myrtle*	12' HT/MS
NS	Nyssa sylvatica 'Afterburner'	Afterburner Black Tupelo*	2½" CAL
QG	Quercus garryana	Oregon White Oak*	2" CAL
QH	Quercus hypoleucoides	Silverleaf Oak (EG)	2½" CAL
QB	Quercus x bimundorum 'JFS-KW1QX'	Streetspire Oak	2½" CAL
SJ	Styrax japonicus	Japanese Snowbell*	2½" CAL
TP	Thuja plicata 'Hogan'	Hogan Western Red Cedar (EG)	10' HT
TT	Tilia tomentosa 'Sterling'	Sterling Linden	2½" CAL
UM	Ulmus 'Morton'	Accolade Elm*	2½" CAL
ZS	Zelkova serrata 'Green Vase'	Green Vase Zelkova*	2½" CAL

*approved OC street trees

PRELIMINARY PLANT SCHEDULE

Botanical Name	Common Name	ht/width
GENERAL PERIMETER PLANTING: 3 GAL SHRUBS, TYP		
Ceanothus cuneatus var. cuneatus	Buckbrush (Willamette Valley)	96x96
Ceanothus 'Victoria'	Victoria Ceanothus	96x96
Ceanothus 'Kurt Zadnick'	Kurt Zadnick Ceanothus	36x72
Cistus x obtusifolius	White-Flowering Rockrose	36x36
Escallonia x exoniensis 'Gold Brian'	Gold Brian Escallonia	48x48
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Vaccinium ovatum	Evergreen Huckleberry	36x36
COMMUNICATIONS FACILITY SCREENING (OCMC 17.80.110(F))		
Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	6' HT MIN
PARKING LOT INTERIOR PLANTING: 3 GAL SHRUBS & 1 GAL GROUNDCOVER, TYP		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos uva-ursi 'Emerald Carpet'	Emerald Carpet Kinnickinnick	18x18
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Nassella tenuissima	Mexican Feather Grass	24x18
NROD PLANTING: 3 GAL SHRUBS AND 1 GAL GROUNDCOVERS		
Arctostaphylos uva-ursi 'Emerald Carpet'	Emerald Carpet Kinnickinnick	18x18
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Deschampsia cespitosa 'Goldtau'	Goldtau Tufted Hair Grass	24x24
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia nervosa	Cascade Mahonia	24x36
Mahonia repens	Creeping Mahonia	24x36
Polystichum munitum	Western Sword Fern	36x36
Spiraea betulifolia 'Tor'	Tor Birch Leaf Spirea	30x30
Vaccinium ovatum	Evergreen Huckleberry	36x36
STORMWATER FACILITIES: 1 GAL PLANTS AT 12" OC (115 PLANTS PER 100 SF)		
Camassia quamash	Camas	12x12
Carex stipata	Sawbeak Sedge	12x12
Iris douglasiana	Pacific Iris	12x12
Juncus patens	Slender Rush	12x12
Scirpus microcarpos	Small-fruited Bulrush	12x12

Botanical Name	Common Name	ht/width
GENERAL PLANTING: 3 GAL SHRUBS AND 1 GAL GROUNDCOVERS		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos x 'Pacific Mist'	Pacific Mist Manzanita	24x48
Buxus sinica 'Sunburst'	Sunburst Korean Boxwood	24x24
Ceanothus gloriosus 'Pt. Reyes'	Pt. Reyes Ceanothus	12x36
Ceanothus 'Kurt Zadnick'	Kurt Zadnick Ceanothus	36x72
Cistus x dansereau 'Jenkyn Place'	Jenkyn Place Cistus (white)	60x60
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Escallonia x exoniensis 'Gold Brian'	Gold Brian Escallonia	48x48
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Lonicera pileata	Boxleaf Honeysuckle	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia nervosa	Cascade Mahonia	24x36
Mahonia repens	Creeping Mahonia	24x36
Nassella tenuissima	Mexican Feather Grass	24x18
Penstemon pinifolius	Pineleaf Penstemon	12x18
Polystichum munitum	Western Sword Fern	36x36
Rhaphiolepis umbellata var. minor	Dwarf Yedda Hawthorne	36x36
Spiraea betulifolia 'Tor'	Tor Birch Leaf Spirea	30x30
Taxus baccata standishii	Columnar English Yew	60x18
Vaccinium ovatum	Evergreen Huckleberry	36x36
ORNAMENTAL PLANTING AT BUILDING: 3 GAL SHRUBS & 1 GAL GROUNDCOVER, TYP		
Abelia x grandiflora 'Kaleidoscope'	Kaleidoscope Abelia	24x30
Arctostaphylos x densiflora 'Howard McMinn'	Howard McMinn Manzanita	72x72
Aucuba japonica 'Rozannie'	Rozannie Aucuba	48x48
Buxus sinica 'Sunburst'	Sunburst Korean Boxwood	24x24
Camellia x lutchuensis 'Cinnamon Cindy'	Cinnamon Cindy Camellia	72x36
Carex oshimensis 'Evergold'	Evergold Carex	18x18
Cistus x obtusifolius	White-Flowering Cistus (white)	36x36
Cistus x pulverulentus 'Sunset'	Sunset Cistus (magenta)	24x36
Choisya x 'Goldfingers'	Goldfingers Mexican Orange	48x60
Daphne x burkwoodii 'Carol Mackie'	Carol Mackie Variegated Daphne	48x48
Erigeron glaucus varieties	Oregon Beach Daisy Varieties	12x24
Escallonia 'Compact Pink'	Compact Pink Escallonia	24x36
Geranium macrorrhizum 'Albus'	Albus Hardy Geranium	18x18
Helianthemum 'Henfield Brilliant'	Henfield Brilliant Sunrose	12x12
Helleborus x hybridus 'Fire and Ice'	Fire and Ice Lenten Rose	12x24
Heuchera 'Mars'	Mars Coral Bells	12x24
Kalmia latifolia 'Minuet'	Minuet Mountain Laurel	36x36
Liriope muscari 'Big Blue'	Big Blue Lilyturf	18x18
Ilex glabra 'Gem Box'	Gembox Inkberry Holly	36x36
Mahonia aquifolium 'Compacta'	Compact Oregon Grape	36x36
Mahonia x media 'Winter Sun'	Winter Sun Hybrid Mahonia	60x96
Pachysandra terminalis	Japanese Spurge	12x12
Pittosporum tobira 'Wheeler's Dwarf'	Wheeler's Dwarf Mock Orange	18x36
Podocarpus lawrencei 'Blue Gem'	Blue Gem Mountain Plum-Pine	48x48
Sarcococca hookeriana var humilis	Dwarf Sarcococca	24x24
Sarcococca ruscifolia	Fragrant Sarcococca	36x36

lango.hansen
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PGE

PGE Oregon City Operations Center
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HEA Project No. 25005-01T
Date: 12.18.2025
LAND USE
Revisions:

Drawn by: KS
Checked by: KL
Sheet:

LANDSCAPE SITE PLAN

LAND USE

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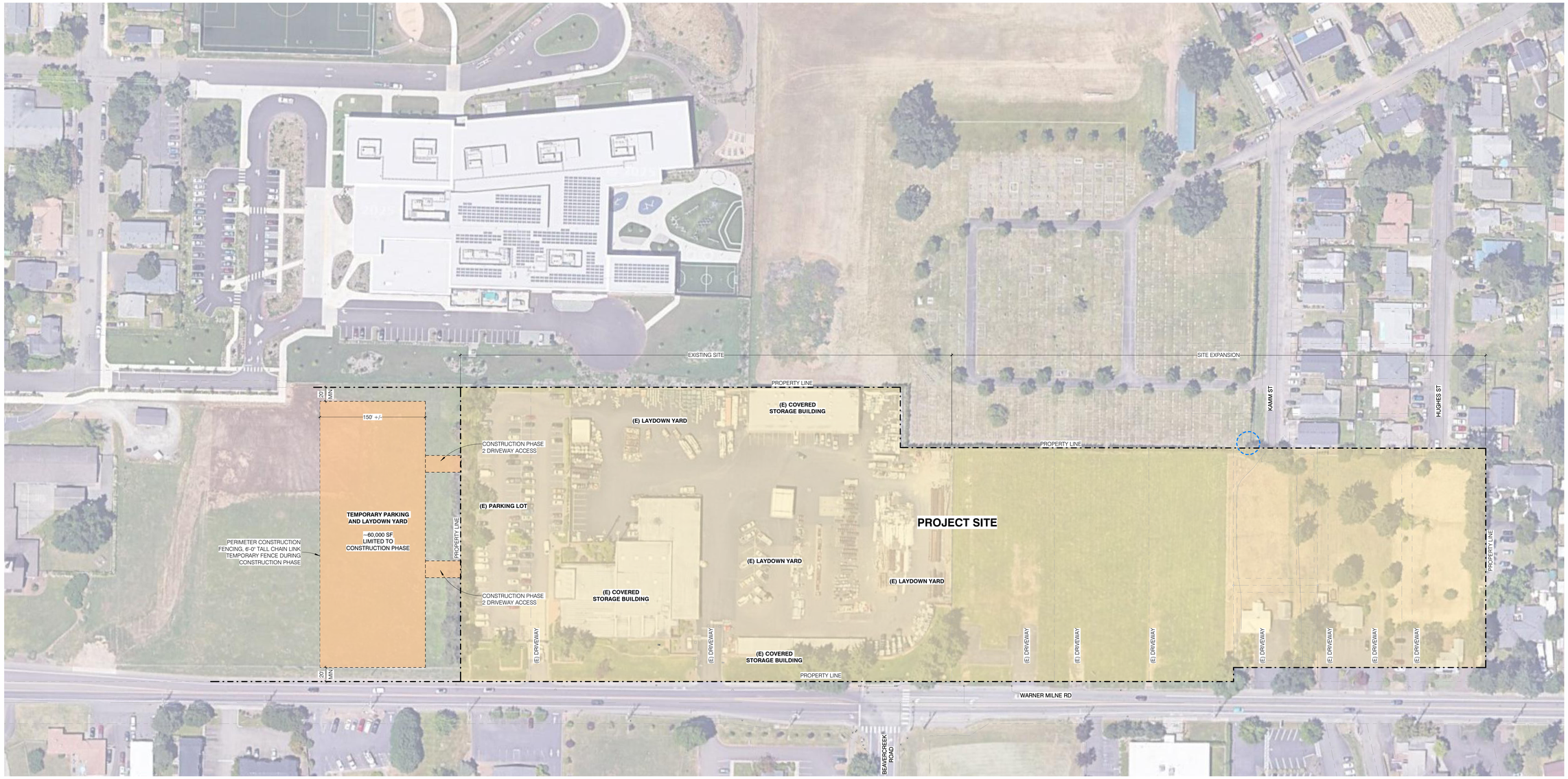

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1" = 60'-0"

0' 12.5' 25' 50' 100'

PROJECT NORTH TRUE NORTH

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PGE Oregon City Operations Center
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Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

Drawn by: DP
Checked by: KW
Sheet:
LU SITE DIAGRAM -TEMPORARY CONSTRUCTION PHASE

LAND USE

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THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE LOTS ARE VISIBLE. THIS GUIDANCE IS FOR REFERENCE ONLY.

Memorandum

DATE: December 18, 2025

PROJECT: 2500065 – PGE Oregon City Operations Center

SUBJECT: Warner Milne Road Section

TO: City of Oregon City

FROM: Ryan Stroud
KPFF Consulting Engineers
PHONE: 503.354.1099
EMAIL: ryan.stroud@kpff.com

For the public improvements along Warner Milne Road that are required as part of the new PGE Oregon City Operations Center improvements, KPFF is proposing a modification from the standard maximum street section for a Minor "Arterial" per Oregon City Municipal Code section 16.12.013. Per the requirements outlined in this section of the code, we will demonstrate that the proposed street section modification meets the code requirements and should be approved by the City for this project.

The existing half-street condition of Warner Milne Road is shown in Table 1 below. This existing condition occurs along the Warner Milne Road from the western side of the project. It extends into a three-lane road (two 12-foot travel lanes and one 12-foot turn lane) at the intersection of Warner Milne Road and Beaver Creek Road. The existing bike lane does not continue through this intersection. The existing street's typical section, shown below, extends from Linn Avenue to Molalla Avenue and is critical because it demonstrates how the proposed street section preserves the character of the existing street.

Table 1 - Existing Half Street Section

R.O.W Width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street Parking	Travel Lanes	Median
33.00'	17.00'	1.00'	0.00'	0.00'	6.00'	0.00'	11.00'	0.00'

As part of the improvements to the PGE Line Center, public improvements must be constructed as a condition of the project along the Warner Milne Road frontage. The maximum street sections are defined by Oregon City Standard Detail OC502 and PA 25-00031 and listed below in Table 2.

Table 2 - Maximum Half Street Section per City Code

R.O.W Width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street Parking	Travel Lanes	Median
58.00'	47.00'	0.50'	10.00'	0.00'	8.00'	6.00'	(2.5) 12.00'	(0.5) 3.00'

If this street section were to be required for this project, it would expand the existing 2-lane road into a 5-lane road, with half constructed on the project's side of the roadway. These improvements would not be complementary to the surrounding street design, as the 2- to 3-lane road at this location would expand to a five-lane arterial. This is further evidenced by the fact that, at its maximum, Warner Milne Road is only a 4-lane road when it intersects Leland Road, with two westbound turn lanes, one westbound travel lane, and

one eastbound travel lane. After this intersection, the road reverts to two lanes and remains two lanes as it enters Lawton Road. To the east of the project location, Warner Milne Road transitions to a 3-lane road (two travel lanes and one turn lane) at the intersection of Molalla Ave. After this intersection, the roadway returns to a 2-lane road that terminates at the Newall Creek Canyon Nature Park Entrance. This demonstrates that creating a full 5-lane arterial at this location will not match the character of the existing street and a modification to this section would be acceptable under code section 16.12.013. Thus, it is acceptable to propose an alternative street section for this roadway to preserve the street character and still provide public improvements for the project.

To provide the full section and accommodate all proposed turn lanes, a transition along the roadway would be required. Two separate 390-foot transitions across the project frontage to transition to a complete 5-lane arterial roadway across the frontage of the project. These tapers would then need to be reversed for the roadway to tie back into its 2-lane state at either side of the project frontage. Thus, 1,580 feet of transitions would be required across the 1,460 feet of frontage to provide a 5-lane arterial. This section is not possible without modifying additional roadways beyond the frontage extents of the project property and the alternative street section should be used.

Following collaboration and discussions with City staff, the section below is proposed for improvements along Warner Milne Road to meet City requirements for public improvements while maintaining the roadway character and community needs.

Table 3 - Proposed Street Section

R.O.W Width	Road Width	Public Access	Sidewalk	Landscape Strip & Curb	Bike Lane	Street Parking	Travel Lanes	Median
50.00’	18.00’	0.50’ (10.00’-20.00’ Public Utility Corridor)	10.00’	0.50’	6.00’	0.00’	12.00’	0.00’

This will be the typical section along the site frontage. The whole sidewalk section will include street trees and stormwater treatment facilities in accordance with Oregon City roadway design standards. This will enhance the pedestrian experience along the roadway frontage. This also aligns better with the existing street section, where parking is not provided, as there will be no commercial buildings requiring street parking along this frontage. The intersection of Warner Milne Road and Beaver Creek Road will be rebuilt and signaled, with a 12-foot travel lane and a 12-foot turn lane to provide access to the site and Beaver Creek Road. The westbound bike lane will continue through the intersection. This will use the existing turn lanes shown to maintain the road character and meet the intent of the public improvement requirements. The 50-foot right-of-way aligns with the current property lines of the three existing lots to the east and provides a corridor of 20 to 10 feet for future public and franchise utility installations along Warner Milne Road. This proposed typical section also allows preservation of the existing NROD along the frontage. A full street section would require extending the roadway pavement into the existing NROD and destroying it, whereas the proposed section would minimize NROD disturbance by reducing the sidewalk section.

This proposed section meets the requirements for road modifications outlined in the Oregon City Code and should be accepted, as it preserves the existing street character while accommodating the City's required improvements.

Preliminary Stormwater Management Report

PGE Oregon City Operations Center

Prepared for: Hennebery Eddy Architects, Inc.
Prepared by: Taylor Liserre, EIT
Project Engineer: Mischa van Buuren, PE

KPFF Consulting Engineers
111 SW 5th Avenue, Suite 2600
Portland, OR 97204
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December 2025 | KPFF Project #2500065

KPFF'S COMMITMENT TO SUSTAINABILITY

As a member of the US Green Building Council, KPFF is committed to the practice of sustainable design and the use of sustainable materials in our work.

When hardcopy reports are provided by KPFF, they are prepared using recycled and recyclable materials, reflecting KPFF's commitment to using sustainable practices and methods in all of our products.

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Appendix A – Geotechnical Information

Exhibit A1 – Geotechnical Report

Exhibit A2 – Geotechnical Report Addendum

Exhibit A3 – Soil Group Discussion Email with Geotechnical Engineer

Appendix B - Maps

Exhibit B1 – NRCS Web Soil Survey Report

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Appendix C – Stormwater Modeling and Analysis

Exhibit C1 – BMP Sizing Tool Report

Exhibit C2 – Upstream Conveyance Analysis

Appendix D – Downstream Drainage Basin Analysis

Exhibit D1 – Downstream Drainage Basin Analysis

Appendix E – Site Assessment and Preliminary Design Checklist

Exhibit E1 – Site Assessment and Preliminary Design Checklist

Project Description

This development proposes the expansion of the existing 6.59-acre PGE Line Center to include the seven (7) lots directly east of the site, totaling 5.66 acres. After the right-of-way dedication, the total site area will be approximately 11.74 acres. The site is located at 209 Warner Milne Road in Oregon City, Oregon.

A majority of the existing site is paved with employee parking areas, equipment storage areas and vehicle storage and maneuvering areas for PGE's fleet of line service trucks. The site contains an office building, a garage, a storage bay, a communication tower and a covered fuel island with underground fuel tanks. The seven (7) lots adjacent to the existing line center are largely undeveloped. Some of the lots previously contained small buildings, which have been demolished and parking lots that remain.

The development proposes to construct a new office and storeroom building totaling approximately 35,190 square feet and a new covered storage building totaling approximately 7,980 square feet. The existing garage and fuel island will remain and a new 20,540 square foot covered parking area will be constructed north of the new office building. The remainder of the site will be paved for equipment storage and vehicle maneuvering areas.

FIGURE 1: Vicinity Map

Existing Conditions

The site drains gradually from northwest to southeast, with slopes generally ranging from 3% to 5%. Elevations across the site range from 481-feet to 444-feet. The high point is at the northwest corner of the site and the low point is at an existing drainage ditch that runs north to south through the property from Kamm Street to the Warner Milne Road. At the southern property boundary, the drainage ditch feeds into a 30-inch x 54-inch concrete culvert that runs across Warner Milne Road. At the entrance of the culvert is a small Natural Resource Overlay District (NROD). The drainage ditch continues on the south side of Warner Milne Road where the culvert outfalls.

On-site, surface runoff from paved areas is collected by a network of catch basins and pipes that drain south and connect to a public catch basin on the north side of Warner Milne Road, just east of the intersection of Beavercreek Road and Warner Milne Road. From there, a public storm main in the right-of-way conveys the runoff to the drainage ditch on the south side of Warner Milne Road. Runoff generated from the undeveloped areas of the site drains to the existing drainage ditch and eventually reaches the existing culvert. Ultimately, all runoff generated by the site flows to the drainage ditch on the south side of Warner Milne Road, then to Newell Creek about one mile downstream.

Site Soils

The Natural Resources Conservation Service's (NRCS) Web Soil Survey identifies the soils onsite as Bornstedt Silt Loams. It lists these soils as part of Hydrologic Soil Group (HSG) C, which are typically moderately well drained and have a moderately low to moderately high capacity to transmit water. These characteristics do not match the soil characteristics observed onsite.

A geotechnical site investigation was completed by Carlson Geotechnical in February 2022, and a supplementary investigation and report were completed in July 2025. These reports are in Appendix A. The investigations found that the soils were fat clay soils, with perched groundwater and no infiltration. These findings are more consistent with HSG D soils. Group D soils are defined as soils composed of clays, with a high-water table and little to no infiltration when thoroughly wetted. The Geotechnical Engineer agreed with this assessment in an email, which is also included in Appendix A.

Groundwater

Perched groundwater was observed at depths ranging from 7.5-feet to 16-feet below ground surface within some of the borings. Groundwater was not encountered within the depths explored in the remaining borings in late January 2022. Well logs indicate that regional groundwater levels in the area generally range from 4.5-feet to 14-feet below ground surface. The email from the Geotechnical Engineer also hypothesizes that some of the perched groundwater could be attributed to a portion of Newell Creek being buried or altered between 1945 and 1956. See the email correspondence in Appendix A for more information.

Fuel Tanks

There is an existing covered fuel island and underground fuel tank on the site. This area is still in operation and will remain untouched by this development.

Proposed Stormwater Improvements

As previously mentioned, the development is proposing to construct a new office/storeroom building and a new covered parking area, including paving the majority of the site to be used for employee parking, equipment storage and vehicle maneuvering areas.

The proposed grading and drainage systems have been coordinated with the site improvements to collect and convey site runoff from new impervious surfaces to stormwater management facilities. The proposed facilities will provide stormwater management in terms of runoff quantity and quality.

As previously mentioned, the site has two existing discharge points. After development, the entire site will drain to the new public manhole and 30-inch storm main that outfalls north of the NROD into the existing culvert under Warner Milne Road. While this adjusts the existing discharge point for the area already developed, it maintains the existing drainage pattern, as both discharge points converge at the drainage ditch on the other side of Warner Milne Road.

The existing drainage ditch across the site will be filled in to provide employee parking in that area. A ditch inlet will be installed at the north property boundary and runoff that previously would have used the ditch will be piped south to the culvert entrance via a new storm main. The public storm infrastructure onsite will include a ditch inlet, two manholes and approximately 330 lineal feet of 24-inch and 19 lineal feet of 30-inch public storm main. The main will outfall just north of the 15-foot NROD setback boundary. It should be noted that city mapping shows an outdated NROD boundary. A relatively recent staff report (NROD 21-0018) investigated this overlay and reduced its size to what is shown in the Basin Map in Appendix B and in the Land Use plans.

The entire site's runoff drains into the Newell Creek Basin, a tributary of the Willamette River.

Private Stormwater Improvements

The onsite improvements are split into four subbasins. The entire site, with the exception of the employee parking area, will drain to a series of catch basins that will convey runoff generated from the proposed improvements to a large detention pond located north of the new office building. The other three subbasins are in the employee parking lot area. These three subbasins each drain to a different stormwater planter located in the landscape area at the southern property boundary.

The project results in a net increase of impervious area as summarized in Table 1 below. It should be noted that the total areas shown do not match. This is due to the right-of-way dedication described below in the discussion of public improvements.

TABLE 1: Summary of impervious areas

Site Condition	Impervious Area (SF)	Pervious Area (SF)	Total Area (SF)
Existing	266,706	266,736	533,442
Proposed	404,739	106,597	511,336
Net	**+138,033**	**-160,139**	**-22,106**

Public Stormwater Improvements

Along with the onsite improvements, this development is proposing frontage improvements for Warner Milne Road. The development will dedicate 20-feet of right-of-way on the north side of Warner Milne Road for the developed western parcel in order to make the right-of-way width match for the entire site.

The frontage improvements include widening the paved section to include a bike lane in the areas that did not already have one and adding or replacing existing sidewalks. It will also require retrofitting the existing intersection of Beavercreek Road and Warner Milne with access to the site, new traffic signals and pedestrian ramps and crossings on all four corners of the intersection.

The public improvements are split into three subbasins. Each drains to a catch basin on the north side of Warner Milne Road between the sidewalk and the curb. See the basin map in Appendix B for more information.

Each of these stormwater facilities will enhance water quality and be equipped with a flow control structure to reduce peak flows to those matching the pre-developed condition. Each of the facilities will also be equipped with an overflow structure and will drain to the existing culvert to maintain existing drainage patterns.

Stormwater Management Methodology

Surface runoff from the new impervious areas will be managed and conveyed in accordance with the latest Oregon City Stormwater and Grading Design Standards. This will be accomplished by verifying the proposed facility sizing with the Best Management Practices Sizing Tool created by Clackamas County Water Environment Services (WES). This tool confirms proper facility sizing with input of the site parameters and drainage basin sizes. See Exhibit E in Appendix C for the BMP Sizing Tool Report. The storm facility names match those found throughout this report and on the Basin Map in Appendix B.

Treatment

All facilities onsite will be sized to provide water quality treatment. Water quality facilities are designed to capture and treat 80% of the average annual runoff volume to the maximum extent possible, with the goal of 70% of the total suspended solids removed. The BMP Sizing Tool factors in the outputted minimum facility sizes.

Flow Control/Detention

All facilities will be designed to provide flow control prior to conveying stormwater runoff offsite. These facilities will be designed so that the duration of peak flow rates from post-development conditions shall be less than or equal to the duration of the peak flow rates from pre-development conditions for all peak flows between 42% of the 2-year flow rate up to the 10-year peak flow rate. The BMP Sizing Tool addresses these flow control requirements to size stormwater management facilities.

Stormwater Management Facility Types

There are two stormwater management facility types that will be used:

1. Detention Pond – A single detention pond will be used to provide water quality treatment and flow control for stormwater in the western and central portions of the site. The detention pond system includes an overflow inlet structure and a flow control manhole prior to conveying stormwater to the existing discharge. Refer to the land use plans and the Stormwater and Grading Design Standards Figures C-11, C-12, and C13 for more information.
2. Stormwater Planters – Three stormwater planters will be used to provide water quality treatment as well as flow control for stormwater in the eastern employee parking portion of the site. The planters will also include overflow inlet structures and flow control structures prior to conveying stormwater to the existing discharge location. Three streetside stormwater planters will also be used to manage the stormwater runoff generated from the proposed impervious improvements in the public right-of-way associated with the frontage improvements to the site. Refer to the Stormwater and Grading Design Standards Figures C-2 and C-3 for the private planters and Oregon City Standard Drawings OC619-OC624 & OC626-OC630 for the roadside stormwater planters.

All facilities have been modeled as lined facilities since infiltration testing near perched groundwater yielded an infiltration rate of 0 in/hr. However, these facilities will be constructed as infiltration facilities to promote infiltration where it is possible. Since the groundwater is perched, there is no risk of groundwater mounding.

Table 2 summarizes the stormwater management basins used in design and the required treatment areas. The required areas for planters are based on a 3% sizing ratio for impervious area per the BMP Sizing Tool, in addition to an undisclosed sizing ratio for pervious area, which appears to be close to 2%. The sizing of the Detention Pond is determined through a continuous simulation of peak flow rates for the design storms listed above using the BMP Sizing Tool. Exhibit D in Appendix B provides a map of the basins and facilities to supplement the information presented in this table.

Some of the onsite area on the basin map could not feasibly drain any of the stormwater facilities. These areas are listed as X1, X2, X3, and X4. X1 drains directly to the existing culvert, and the others drain back to Warner Milne Road. These areas have been accounted for in the BMP Sizing Tool when sizing the public streetside planters to provide stormwater management for runoff generated from an equivalent area.

TABLE 2: Proposed Basins

Facility Name	Basin/Area	Tributary Impervious Area	Runoff Type	Minimum Facility Area (sq ft)	Proposed Minimum Facility Size
Detention Pond A	A	341,903	Parking Lot, Roofs	12,000 sq ft (Top of Pond) 4.81 ft Deep	12,347
Storm Planter B	B	27,397	Parking Lot	871.0	901
Storm Planter C	C	33,937	Parking Lot	1,240.8	1,251
Storm Planter D	D	9,819	Parking Lot	575.4	592
Storm Planter E (Public)	E	18,940	Roadway	1,011.7	1,012
Storm Planter F (Public)	F	22,563	Roadway	1,075.3	1,076
Storm Planter G (Public)	G	8,051	Roadway	418.5	419

Conveyance

Conveyance calculations will be prepared with the final permit application and will be based on computer modeling of the storm sewer network and storm events outlined by the city code. Pipes will be sized to meet conveyance requirements outlined in the Stormwater and Grading Standards. The Rational Method will be used to determine runoff for the design storm. Since the project is less than 40 acres, the design storm is the 10-year, 24-hour storm event. Manning's Equation will be utilized for determining pipe size.

Public Storm Pipe Conveyance Design

An upstream analysis was performed to ensure that the pipe proposed to replace the drainage ditch running north to south through the project site will be adequately sized. Figure 2 shows the upstream drainage area that was included in this analysis.

FIGURE 2: Upstream Drainage Basin

Autodesk Storm and Sanitary Analysis (SSA) was used to model the upstream drainage basin. The upstream area was broken up into three main areas to more accurately model the time of concentration and CN numbers. Each of the areas was modeled as HSG C based on NRCS Web Soil Survey Data.

The first area is the recently developed Gardiner Middle School. This 18.4-acre basin was modeled as forested since it is a recent development required to match pre-development flow control standards. It has a CN of 70 and a calculated time of concentration of 117.85 minutes.

The second area modeled is the adjacent graveyard that appears to sheet flow into the drainage ditch along Kamm Street. It was modeled as pasture/grassland in good condition, with a CN value of 74 and a calculated time of concentration of 69.79 minutes.

The final area comprises the remainder of the surrounding residential area. This is an additional 50.2 acres with a CN value of 80 based on residential districts with average lot sizes of 0.5 acres, and it had a calculated TOC of 47.62 minutes.

1-Jun in the SSA model represents the inlet location at the north end of the site where runoff generated from these basins collects. The pipe from that inlet is 24-inches in diameter and has a slope of 0.87% and is modeled in SSA as conveyance link 24SD. The analysis shows that at the peak of the 10-year storm, this pipe flows at approximately two-thirds capacity (0.65 max/design flow ratio).

At the southern boundary of the site, before this pipe outfalls to the culvert entrance, the stormwater from all the PGE site stormwater facilities join it in a manhole. The PGE site assumes a pervious CN value of 80 to represent grassland in good condition, HSG D, and 5 minutes for the time of concentration to be conservative.

This manhole, where all the basins converge, is represented in SSA as 2-Jun. The outfall pipe is modeled in SSA as conveyance link 30SD and represents a pipe with a 30-inch diameter and a slope of 0.87%. The modeling shows that at the peak of the 10-year storm, this pipe flows at approximately half capacity (0.53 max/design flow ratio).

Both pipes are adequately sized per the Oregon City Stormwater and Grading Design Standards. See the Upstream Conveyance Analysis in Appendix C for more information.

Downstream Analysis

As required by the Oregon City Stormwater and Grading Design Standards, a downstream analysis has been completed and included with the final permit application. The analysis looked at a total drainage basin of approximately 112.5 acres and followed the drainage path approximately 1,867 feet downstream of the site discharge point. The site contributes roughly 10% of the total basin area.

There are currently no known issues or constraints with the downstream system and the improvements outlined in this project should not create any deficiencies. The site was visited on December 12, 2025, after a week of moderate rainfall. Rain logs show approximately 3.5- to 4-inches of rain in the week leading up to the site visit. The entirety of the downstream drainage path contained some amount of flowing water, as shown in the pictures in the downstream drainage analysis in Appendix D.

The site visit determined that a 24-inch corrugated plastic culvert under an unpaved path between Embold Credit Union and the Willow Spring Apartment complex was the critical portion of the downstream conveyance system. A picture of this culvert is shown as Figure 6 on page 2 of the downstream analysis. The calculations shown in Appendix D show that this constraining culvert is still able to convey peak flows for the entire upstream drainage basin during the 25-year 24-hour storm event.

The project results in a net increase of impervious area and through the use of filtration planters and a detention pond, the conveyance demands on the downstream system should not increase.

2500065-pm

Appendix A – Geotechnical Information

Exhibit A1 – Geotechnical Report

Exhibit A2 – Geotechnical Report Addendum

Exhibit A3 – Soil Group Discussion Email with Geotechnical Engineer

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Report of
Geotechnical Investigation
Oregon City Line Center Expansion
209 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2105613

Prepared for

Tina Tippin
Portland General Electric
121 SW Salmon Street
Portland, Oregon 97204

February 18, 2022

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Tina Tippin
Portland General Electric
121 SW Salmon Street
Portland, Oregon 97204

Report of
Geotechnical Investigation
Oregon City Line Center Expansion
209 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2105613

Dear Tina Tippin:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation for the proposed Oregon City Line Center Expansion project. The site is located at 209 Warner Milne Road in Oregon City, Oregon. We performed our work in general accordance with CGT Proposal GP9510R3, dated January 4, 2022. Written authorization for our services was received on January 14, 2022, in the form of PGE Purchase Order 0000007649.

We appreciate the opportunity to work with you on this project. Please contact us at (503) 601-8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

EXPIRES: 6/30/2022

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1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation for the proposed Oregon City Line Center Expansion project. The site is located at 209 Warner Milne Road in Oregon City, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Information

CGT developed an understanding of the proposed project based on correspondence with our client and aerial photographs provided to us on January 3, 2022, depicting proposed infiltration testing locations and a conceptual layout of the proposed expansion. Based on our review, we understand the project is in the preliminary stage of planning but is anticipated to include:

- Possible demolition of the existing call center building, storage building, and garage.
- Construction of several new buildings at the site, including a 27,000 square-foot office building, a 12,000 square-foot storeroom, and various sized storage and garage structures. Although no architectural plans have been provided, we anticipate the buildings will be one- or two-stories and incorporate slab-on-grade ground floors. We understand the new office building may have a partial sub-grade level. For the purposes of this report, we have assumed maximum column, continuous wall, and uniform floor slab loads associated with the buildings will be on the order of 100 kips, 3 kips per lineal foot (klf), and 250 pounds per square foot (psf), respectively.
- Expansion of paved passenger car parking areas, loading areas, and storage areas for large vehicles, equipment, and materials. We assume new pavements will be surfaced with asphalt concrete (AC). If conditions allow, we understand some areas may include pervious pavers and/or gravel surfacing.
- If conditions allow, stormwater collected from new impervious areas at the site will be disposed of, at least in part, via onsite infiltration. The client requested four infiltration tests be performed at depths of up to 20 feet below existing grades. Design of infiltration facilities will rest with others.
- Although no grading plans have been provided, we anticipate permanent grade changes at the site may include maximum cuts and fills on the order of 8 feet in depth.

1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 20-foot radius of our explorations at the site. CGT also subcontracted a private utility locator service to mark the locations of detectable private utilities within the same radius.
- Explore subsurface conditions at the site by advancing twelve drilled borings to depths of up to about 21½ feet below ground surface (bgs). Details of the subsurface investigation are presented in Appendix A.
- Conduct infiltration testing in one of the drilled borings. Infiltration testing within the other three proposed infiltration test boring locations was not performed due to the presence of perched groundwater encountered at depths ranging from 7½ to 16 feet bgs. Results of the infiltration testing are presented in Appendix B.
- Classify the soils encountered in the explorations in general accordance with ASTM D2488 (Visual-Manual Procedure).

- Provide a technical narrative describing surface and subsurface deposits, and local geology of the site, based on the results of our explorations and published geologic mapping.
- Provide recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.
- Provide a qualitative evaluation of seismic hazards at the site, including earthquake-induced liquefaction, landsliding, and surface rupture due to faulting or lateral spread.
- Provide geotechnical recommendations for site preparation and earthwork.
- Provide geotechnical engineering recommendations for use in design and construction of shallow foundations, floor slabs, retaining walls, and pavements.
- Provide this written report summarizing the results of our geotechnical investigation and recommendations for the project.

2.0 SITE DESCRIPTION

2.1 Site Geology

Based on available geologic mapping[1] of the area, the site is underlain by Basalt of Canemah (Pleistocene), a fine to medium grained, dark gray basalt that contains olivine, plagioclase and traces of black glass. Forming rough columns 2 to 5 feet in diameter the weathered exposures degrade into reddish clay, often containing boulders. The basalt unit ranges from 50 to 130 feet thick. The basalt is generally overlain by up to 10 feet red-brown to brown sandy silty clay. Underlying the basalt of Canemah is the Miocene-Pliocene Troutdale Formation, which consists of layers of poorly lithified sediments, including silt, clay, sand, gravel, cobbles, and boulders deposited by ancestral rivers draining off the western Cascades and reworked by later streams and rivers. Mapped units within the Troutdale Formation include conglomerate, sandstone, and siltstone, each ranging in maximum thickness from approximately 300 to over 1,100 feet[2].

2.2 Site Surface Conditions

The approximate 9.51-acre site is bordered by Oregon City Health Care and St. John the Apostle Cemetery to the north, Warner Milne Road to the south, a residential property to the east, and a grass field to the west. At the time of our investigation, the western two-thirds of the site (approximate) was occupied by the existing Line Center building, a covered parking/storage area, a garage, and an asphalt-paved parking lot. The eastern-third of the site (approximate) was undeveloped and vegetated with short grasses. A chain link fence separated the developed and undeveloped areas. The site descended gently to the east, exhibiting about 25 feet of vertical relief. Site layout and surface conditions at the time of our field investigation are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

2.3 Subsurface Conditions

2.3.1 Subsurface Investigation & Laboratory Testing

Our subsurface investigation consisted of twelve borings (B-1 through B-12) completed between January 24 through January 26, 2022. The approximate exploration locations are shown on the Site Plan, attached as

[1] O'Connor, J.E., Cannon, C.M., Mangano, J.F., and Evarts, R.C., 2016. Geologic map of the Vancouver and Orchards quadrangles and parts of the Portland and Mount Tabor quadrangles, Clark County, Washington, and Multnomah County, Oregon: U.S. Geological Survey, Scientific Investigations Map SIM-3357, scale 1:24,000.

[2] Ma, L., Madin, I.P., Duplantis, S., and Williams, K.J., 2012. Lidar-based surficial geologic map and database of the greater Portland, Oregon, area, Clackamas, Columbia, Marion, Multnomah, Washington, and Yamhill Counties, Oregon, and Clark County, Washington: Oregon Department of Geology and Mineral Industries, Open-File Report 0-2012-02, scale 1:8,000.

Figure 2. In summary, the borings were advanced to depths ranging from about 9 to 21½ feet bgs. Details regarding the subsurface investigation, logs of the explorations, and results of laboratory testing are presented in Appendix A. Subsurface conditions encountered during our investigation are summarized below.

2.3.2 Subsurface Materials

Logs of the explorations are presented in Appendix A. The following describes each of the subsurface materials encountered at the site.

Asphalt Concrete Pavement
Asphalt concrete (AC) pavement was encountered at the surface of borings B-1 through B-5, and was about 3 inches thick.

Undocumented Poorly Graded Gravel Fill (GP Fill)
Undocumented poorly graded gravel fill (base rock) was encountered below the AC pavement in borings B-1 through B-5. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The poorly graded gravel fill was typically gray, moist, subangular to angular, up to about ¾-inch in diameter, and with some fine- to medium-grained sand and silts. This material extended to depths of about 1 to 3 feet bgs in those borings.

Organic Soil (OL)
Organic soil was encountered at the surface of borings B-6 through B-12. This material was typically very soft, dark brown, moist, exhibited low plasticity, contained abundant rootlets, and extended to a depth of about ¼-foot bgs within those borings.

Fat Clay (CH)
Underlying the gravel fill in borings B-1 through B-5, and the organic soil in borings B-6 and B-8 through B-12 was native, fat clay. This soil was typically soft to very stiff, brown or red/brown, moist, exhibited high plasticity, and contained variable amounts of fine-grained sand. The fat clay extended to depths of about 2½ to 8½ feet bgs in those borings.

Elastic Silt (MH)
Underlying the organic soil in boring B-7 was native, elastic silt. This soil was typically soft, brown with red/black mottling, moist, exhibited high plasticity, and contained some fine-grained sand and weathered gravel particles. This material extended to a depth of about 2¾ feet bgs in B-7.

Residual Soils (CL, GP, SC, SP)
Underlying the fat clay in borings B-1 through B-6, and B-8 through B-12, and the elastic silt in boring B-7, were layers of clayey sand (SC), clayey sand with gravel (SC), poorly graded gravel (GP), and poorly graded sand, sand with clay, sand with gravel (SP). Individual layers varied from 2 to 14½ feet thick and did not appear to be laterally continuous between borings. These materials were grouped together as they were classified as residual soils (fully decomposed rock). The residual soils extended to the full depths explored, about 9 to 21½ feet bgs. The specific types of residual soils observed at the site are described in the following paragraphs:

Sandy Lean Clay, Lean Clay with Sand, Fat Clay with Sand (CL, CH): Layers of sandy lean clay were typically medium stiff to hard, light brown/gray, moist, exhibited medium to high plasticity, and contained variable amounts of fine- to medium-grained sand,

Poorly Graded Gravel (GP): Layers of poorly graded gravel were typically very dense, light gray, moist, up to 1-inch diameter, and contained coarse-grained sand.

Clayey Sand, Clayey Sand with Gravel (SC): Layers of clayey sand were typically medium stiff to hard, light brown/gray, moist, exhibited medium plasticity and contained variable amounts of fine- to medium-grained sand.

Poorly Graded Sand, Sand with Clay, Sand with Gravel (SP): Layers of poorly graded sand were typically loose to dense, light to dark gray, moist, fine- to medium-grained, and contained trace clay fines.

2.3.3 Groundwater

Groundwater seepage (perched groundwater) was observed at depths ranging from 7½ to 16 feet bgs within borings B-5 through B-8, and B-11. Groundwater was not encountered within the depths explored in the remaining borings in late January 2022. To determine approximate regional groundwater levels in the area, we researched well logs available on the Oregon Water Resources Department (OWRD)[3] website for wells located within Section 05, Township 03 South, Range 02 East, Willamette Meridian. Our review indicated that groundwater levels in the area generally ranged from about 4½ to 14 feet bgs. It should be noted groundwater levels vary with local topography. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental borings will often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. Additionally, as evidenced in several borings, the on-site fine-grained (clayey, silty) soils are conducive to formation of perched groundwater.

3.0 SEISMIC CONSIDERATIONS

3.1 Seismic Site Class

Section 1613.2.2 of the 2019 Oregon Structural Specialty Code (2019 OSSC) requires that the determination of the seismic site class be in accordance with Chapter 20 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-16). We have assigned the site as Site Class D (“Stiff Soil”) based on geologic mapping and subsurface conditions encountered during our investigation.

[3] Oregon Water Resources Department, 2022. Well Log Records, *accessed December 2021*, from OWRD web site: http://apps.wrd.state.or.us/apps/gw/well_log/.

3.2 Seismic Ground Motion Values

3.2.1 2019 OSSC / ASCE 7-16

Earthquake ground motion parameters for the site were obtained in accordance with the 2019 OSSC using the Seismic Hazards by Location calculator on the ATC website[4]. The site Latitude 45.337076° North and Longitude 122.598759° West were input as the site location. The following table shows the recommended seismic design parameters for the site relative to ASCE 7-16.

Table 1 Seismic Ground Motion Values (2019 OSSC / ASCE 7-16)

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.818g
	Spectral Acceleration, 1.0 second (S_1)	0.369g
Coefficients (Site Class D)	Site Coefficient, 0.2 second (F_A)	1.173
	Site Coefficient, 1.0 second (F_V)[1]	1.931
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 second (S_{MS})	0.959g
	MCE Spectral Acceleration, 1.0 second (S_{M1})	0.713g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 second (S_{DS})	0.639g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.475g
Seismic Design Category (Risk Category II)		D

[1] Value determined from 2019 OSSC Table 1613.2.3(2).

3.2.2 ASCE 41-17

Based on our correspondence, we understand ASCE 41-17 may be utilized for design for selected building(s) at the site. Earthquake ground motion parameters for the site were obtained in accordance with the ASCE 41-17 using the Seismic Hazards by Location calculator on the ATC website referenced above. The same latitude and longitude were input as the site location. The following table shows the recommended seismic design parameters for the site relative to ASCE 41-17.

Table 2 Seismic Ground Motion Values (ASCE 41-17)

Parameter		Value
Custom Probability / Custom Hazard Level		0*
Mapped Acceleration Parameters	MCE_R ground motion, 0.2 second (S_s)	5.412g
	MCE_R ground motion, 1.0 second (S_1)	2.880g
Amplification Factors (Site Class D)	Site Amplification Factor, 0.2 second (F_A)	1.000
	Site Amplification Factor, 1.0 second (F_V)	1.700
Site Modified Spectral Response Parameters	Site Modified Spectral Response, 0.2 second (S_{XS})	5.412g
	Site Modified Spectral Response, 1.0 second (S_{X1})	4.896g
**If this is incorrect, please contact the undersigned.*		

[4] Applied Technology Council (ATC), 2022. USGS seismic design parameters determined using "Seismic Hazards by Location," *accessed February 2022*, from the ATC website https://hazards.atcouncil.org/.

3.3 Seismic Hazards

3.3.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil approaches zero, and the soil can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice to identify non-liquefiable, fine-grained soils is based on moisture content and plasticity characteristics of the soils[5,6,7]. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

Based on their plasticity characteristics, lack of fully saturated conditions, static groundwater, etc., the soils encountered within our explorations are considered non-liquefiable. Based on review of geologic mapping and our previous experience in the area, we do not anticipate liquefiable conditions are present at depths below those explored as part of this assignment. This judgment is supported by the Oregon Department of Geology and Mineral Industries' Oregon Statewide Geohazards Viewer (HazVu)[8], which shows a *negligible* hazard for liquefaction at the site. The Oregon Hazard Explorer for Lifelines Program (O-HELP)[9] show a *very low* hazard for liquefaction for the site or immediate vicinity due to a M9.0 Cascadia Subduction Zone earthquake.

3.3.2 Slope Instability

Due to the relatively level to gently sloping topography at and surrounding the site, the risk of slope instability at the site is considered low. Provided the recommendations presented later in this report regarding grading and drainage are incorporated into design and construction, the proposed development is not anticipated to increase the hazard associated with seismically-induced slope instability at the site.

---

5 Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

6 Bray, Jonathan D., Sancio, Rodolfo B., et al., 2006. Liquefaction Susceptibility of Fine-Grained Soils, Journal of Geotechnical and Geoenvironmental Engineering, Volume 132, Issue 9, September 2006.

7 Idriss, I.M., Boulanger, R.W., 2008. Soil Liquefaction During Earthquakes, Earthquakes Engineering Research Institute Monograph MNO-12.

8 Oregon Department of Geology and Mineral Industries, 2022. Oregon Statewide Geohazards Viewer, *accessed February 2022*, from DOGAMI web site: http://www.oregongeology.org/sub/hazvu/index.htm.

9 Oregon State University College of Engineering, 2022. Oregon Hazard Explorer for Lifelines Program (O-HELP), *accessed February 2022*, from O-HELP web site: http://ohelp.oregonstate.edu/#&ui-state=dialog.

3.3.3 Surface Rupture

3.3.3.1 Faulting

Although the site is situated in a region of the country with known active faults and historic seismic activity, no known faults exist on or immediately adjacent to the site. Therefore, the risk of surface rupture at the site due to faulting is considered low.

3.3.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Based on the relatively level topography at the site and the non-liquefiable nature of the soils at the site, the risk of damage associated with lateral spread is negligible.

4.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the site may be developed as described in Section 1.1 of this report, provided the recommendations presented in this report are incorporated into the design and development. The primary geotechnical considerations for the project are summarized in the following sections.

4.1 Expansion Potential

High plasticity, fine grained (clayey, silty) were encountered near-surface within borings B-1 through B-6, and B-8 through B-12. Depending on finalized grading plans, we anticipate these soils will be encountered at design subgrade elevations for the majority of shallow foundations, floor slabs, and pavements. These soils exhibited generally high plasticity, with plasticity indices of 29 and 39 percent, and have a high expansive potential[10]. Foundations, floor slabs, and pavements founded directly on expansive soils may be subject to cyclic shrink-swell movements that can result in differential movements and distress. In the absence of further laboratory testing of those soils, we recommend measures be taken to protect foundations, floor slabs, and pavements from the potentially damaging effects of shrink-swell movements of the high plasticity subgrade soils. Geotechnical recommendations for foundation, retaining wall, floor slab, and pavement subgrade preparation are presented in Sections 5.5, 5.6, 5.7, and 5.8, respectively.

4.2 Undocumented Fill

As indicated in Section 2.3 of this report, we encountered undocumented fill materials (gravel fill) in borings B-1 through B-5. The depth of existing fill encountered in the borings varied from about 1 to 3 feet bgs. To the best of our knowledge, there is no documentation available related to the placement and compaction of the existing fill materials at the site. We anticipate the fill materials were placed during previous grading activities as part of past site development. Earthwork records could be sought to confirm these assumptions and provide more information. In the absence of review of earthwork/construction records, the borings showed the existing fill materials were generally free of organic and compressible materials. Based on the results of our explorations, we conclude the following with regard to the existing fill materials at the site:

[10] Day, Robert W. 2005. Table 9.1 – Typical Soil Properties versus Expansion Potential *in* Foundation Engineering Handbook: Design and Construction with the 2006 International Building Code. Published by McGraw-Hill Companies, Inc.

- Shallow Foundations: Where existing fill materials are encountered at design foundation subgrade elevation, we recommend they be completely over-excavated and replaced with imported granular structural fill in conformance with the recommendations presented later in this report.
- Floor Slabs and Pavements: The existing, near-surface, granular fill materials may be relied upon for subgrade support of relatively lightly-loaded floor slabs and pavements planned at this site. Proof roll testing is recommended to confirm the existing gravel fill is stable and non-yielding and suitable for placement and compaction of floor slab and pavement base rock. Specific recommendations for subgrade preparation of floor slabs and pavements are presented in Sections 5.7 and 5.8 of this report, respectively.

4.3 Moisture Sensitive Soils

The near surface fine-grained soils (CH, MH, SC) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to the subgrade could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. In the event that construction occurs during wet weather, CGT recommends that measures be implemented to protect the fine-grained subgrade in areas of repeated construction traffic. Geotechnical recommendations for wet weather construction are presented in Section 5.3 of this report.

5.0 RECOMMENDATIONS

The recommendations presented in this report are based on the information provided to us, results of our field investigation and analyses, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumptions that the subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should be consulted for further recommendations if the design of the proposed development changes and/or variations or undesirable geotechnical conditions are encountered during site development.

5.1 Site Preparation

5.1.1 Demolition

Demolition of existing buildings and appurtenant structures should include complete removal of all structural elements, including foundations and concrete slabs. Abandoned buried utilities should similarly be removed or grouted full. Concrete or asphalt concrete debris resulting from demolition activities may be re-used as structural fill, provided it is processed in accordance with the recommendations presented in Section 5.4.1 of this report. Alternatively, demolition debris should be hauled off site for disposal.

5.1.2 Stripping & Grubbing

Existing pavements, vegetation, topsoil, and rooted soils (OL) should be removed from within, and for a minimum 5-foot margin around, proposed building pad, structural fill, and pavement areas. Based on the results of our borings, topsoil stripping depths within the eastern one-third of the site are anticipated to be on the order of ¼- to ½-foot. Based on the results of our borings, AC pavement stripping depths are anticipated to be on the order of ¼-foot thick. These materials may be deeper or shallower at locations away from the completed explorations. The geotechnical engineer's representative should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal, or stockpiled for later use in landscaped areas. Stripped,

pavement materials and inorganic fill materials should be transported off-site for disposal, or may be stockpiled for later use as structural fill as described in Section 5.4.1 of this report.

Grubbing of trees should include the removal of the root mass and roots greater than ½ inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from larger trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.3 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath the new buildings, pavements, and hardscaping features should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill in conformance with Section 5.4 this report. Buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 5.4 of this report.

5.1.4 Subgrade Preparation – Building Pads & Pavement Areas

After site preparation as recommended above, but prior to placement of structural fill and/or aggregate base, the geotechnical engineer's representative should observe the exposed subgrade soils in order to identify areas of excessive yielding through either proof rolling or probing. Proof rolling of subgrade soils is typically conducted during dry weather using a fully-loaded, 10- to 12-cubic-yard, tandem-axle, tire-mounted, dump truck or equivalent weighted water truck. Areas of limited access or that appear too soft or wet to support proof rolling equipment should be evaluated by probing. During wet weather, subgrade preparation should be performed in general accordance with the recommendations presented in Section 5.3 of this report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

The fat clay (CH) and elastic silt (MH) soils should be kept moist, near optimum moisture content, and not allowed to dry out. If allowed to dry below optimum moisture content, to a point where surface cracking appears in the subgrade, the affected material should be over-excavated and replaced with imported granular structural fill.

5.1.5 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations.

5.2 Temporary Excavations

5.2.1 Overview

Conventional earthmoving equipment in proper working condition should be capable of making necessary excavations for the anticipated site cuts as described earlier in this report. All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A "competent person," as defined by OR-OSHA, should be on-site

during construction in accordance with regulations presented by OR-OSHA. CGT's current role on the project does not include review or oversight of excavation safety.

5.2.2 OSHA Soil Type

For use in the planning and construction of temporary excavations up to 10 feet in depth, an OSHA soil type "A" may be used for the native fine-grained (CH, CL, MH) encountered near the surface of the site. Similarly, an OSHA soil type of "C" should be used for the coarse-grained soils (SP, SC, GP) encountered at depth in the borings.

5.2.3 Utility Trenches

Temporary trench cuts should stand near vertical to depths of approximately 4 feet in the native soils encountered near the surface of the site. If groundwater seepage undermines the stability of the trench, or if sidewall caving is observed during excavation, the sidewalls should be flattened or shored. Depending on the time of year trench excavations occur, trench dewatering may be required in order to maintain dry working conditions. Pumping from sumps located within the trench will likely be effective in removing water resulting from seepage. If groundwater is encountered, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 5.4.3.

5.2.4 Excavations Near Foundations

Excavations near footings should not extend within a 1 horizontal to 1 vertical (1H:1V) plane projected out and down from the outside, bottom edge of the footings. In the event excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

5.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and mid-September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer's representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

5.3.1 Overview

Due to their fines content, the on-site fine-grained soils (CH, CL, MH) and clayey sand (SC) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. For wet weather construction, site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. The geotechnical engineer's representative should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2.

5.3.2 Geotextile Separation Fabric

We recommend a geotextile separation fabric be placed to serve as a barrier between the prepared subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile fabric should meet the requirements presented in the current Oregon Department of Transportation (ODOT) Standard Specification for Construction (ODOT SSC), Section 02320.

5.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. For light staging areas, 12 inches of imported granular material is typically sufficient. Additional granular material, geo-grid reinforcement, or cement amendment may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 5.4.2 and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric (Section 5.3.2) prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

5.3.4 Cement Amendment

It is sometimes less costly to amend near-surface, moisture-sensitive, fine-grained soils with Portland cement than to remove and replace those soils with imported granular material. Successful use of soil cement amendment depends on use of correct techniques and equipment, soil moisture content, and the amount of cement added to the subgrade (mix design). We anticipate the on-site fine-grained soils (CH, CL, MH) and clayey sand (SC) soils are conducive for cement amendment based on experience with similar soils in this region.

The recommended percentage of cement is based on soil moisture contents at the time the work is performed. Based on our experience, 3 percent cement by weight of dry soil can generally be used when the soil moisture content does not exceed approximately 20 percent. If the soil moisture content is in the range of 25 to 35 percent, 4 to 6 percent by weight of dry soil is recommended. It is difficult to accurately predict field performance due to the variability in soil response to cement amendment. The amount of cement added to the soil may need to be adjusted based on field observations and performance.

If cement amendment is considered, we recommend additional sampling, laboratory testing, and a mix design be performed to determine the level of improvement in engineering properties (strength, stiffness) of the on-site soils when blended with Portland cement. We recommend project scheduling allow for a minimum of 4 weeks for this testing and design to be completed, prior to initiating cement amendment.

5.3.5 Footing Subgrade Protection

A minimum of 3 inches of imported granular material (crushed rock) is recommended to protect fine-grained (clayey, silty), footing subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 5.4.2. The maximum particle size should be limited to 1 inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

Surface water should not be allowed to collect in footing excavations. The excavations should be draped and/or provided with sumps to preclude water accumulation during inclement weather.

5.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill (prior to placement). Samples of the proposed fill materials should be submitted to the geotechnical engineer a minimum of 5 business days prior their use on site[11]. The geotechnical engineer's representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof roll tests with suitable equipment. Structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

5.4.1 On-Site Soils – General Use

5.4.1.1 Asphalt Concrete Debris

Debris resulting from the demolition of existing AC pavements can be re-used as structural fill if processed/crushed into material that is fairly well graded between coarse and fine. The processed/crushed concrete should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 5.4.2.

5.4.1.2 Concrete Debris

Concrete debris resulting from the demolition of existing rigid pavements and other features (foundations, floor slabs, sidewalks, driveways, etc.) can be re-used as structural fill if processed/crushed into material that is fairly well-graded between coarse and fine. The processed/crushed concrete should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 5.4.2.

5.4.1.3 Poorly Graded Gravel (GP), Poorly Graded Gravel Fill (GP Fill)

Re-use of the on-site, gravelly soils as structural fill is feasible, provided the materials are kept clean of organics, debris, and particles larger than 4 inches in diameter. If reused as structural fill, these materials should be prepared in general accordance with Section 5.4.2.

5.4.1.4 Fat Clay (CH), Lean Clay (CL), Elastic Silt (MH), Clayey Sand (SC)

Re-use of these soils as structural fill may be difficult because these soils are sensitive to small changes in moisture content and are difficult, if not impossible, to adequately compact during wet weather. We anticipate the moisture content of these soils will be higher than the optimum moisture content for satisfactory compaction. Therefore, moisture conditioning (drying) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be free of organic matter, debris, and particles larger than 4 inches. When used as structural fill, these soils should be placed in lifts with a maximum pre-compaction thickness of about 8 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 92 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

[11] Laboratory testing for moisture density relationship (Proctor) is required. Tests for gradation may be required.

In addition, where used as structural fill, the fat clay and elastic silt should be "capped" with a minimum of 1 foot of structural fill fitting the description of low plasticity material. Examples of low plasticity fill include those discussed in Sections 5.4.1.1 through 5.4.1.3 and imported granular fill presented in Section 5.4.2 of this report.

If the on-site materials cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

5.4.2 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½ inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Imported granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of these materials.

Granular fill materials with high percentages of particle sizes in excess of 1½ inches are considered non-moisture-density testable materials. As an alternative to conventional density testing, compaction of these materials should be evaluated by proof roll test observation (deflection tests), where accepted by the geotechnical engineer.

5.4.3 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

5.4.4 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 3 Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	85% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	88% ASTM D1557
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557

[1] Includes proposed building, pavement areas, structural fill areas, exterior hardscaping, etc.

5.4.5 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as "controlled density fill" or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, ODOT SSC. The geotechnical engineer's representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day's placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength. If CLSM is considered for use on this site, please contact the geotechnical engineer for site-specific and application-specific recommendations.

5.5 Shallow Foundations

5.5.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations can be obtained from:

- A minimum of 12 inches of imported granular structural fill ("granular pad") that is properly placed and compacted on the native, medium stiff to better, fat clay (CH) or elastic silt (MH). Once over excavations are made, these subgrade soils should not be exposed to periods of wetting or drying, but should be backfilled as soon as possible.
- The native, medium stiff/dense to better, residual soils (CL, SC, GP, SP), or imported granular structural fill that is properly placed and compacted on these materials during construction.

The geotechnical engineer's representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

5.5.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the current OSSC. As a guideline, CGT recommends individual spread footings have a minimum width of 24 inches. For one- to two-story, light-framed buildings,

we recommend continuous wall footings have a minimum width of 12 and 15 inches, respectively. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade to develop lateral capacity and for frost protection.

5.5.3 Bearing Pressure & Settlement

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 2,000 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½ inch. If an increased allowable soil bearing pressure is desired, the geotechnical engineer should be consulted.

5.5.4 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 150 pounds per cubic foot (pcf) is recommended for design of footings cast neat into excavations in suitable native soil or confined by granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
2. The adjacent grade must be level,
3. The static ground water level must remain below the base of the footings throughout the year.
4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.35 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

5.5.5 Subsurface Drainage

Recognizing the predominately fine-grained (silty, clayey) soils encountered at this site, we recommend placing foundation drains at the exterior, base elevations of perimeter continuous wall footings. Foundation drains should consist of a minimum 4-inch diameter, perforated, PVC drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should also be encased in a geotextile fabric in order to provide separation from the surrounding fine-grained soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer's representative should observe the drains prior to backfilling. Roof drains should not be tied into foundation drains.

5.6 Rigid Retaining Walls

5.6.1 Footings

Retaining wall footings should be designed and constructed in conformance with the recommendations presented in Section 5.5, as applicable.

5.6.2 Wall Drains

We recommend placing retaining wall drains at the base elevation of the heel of retaining wall footings. Retaining wall drains should consist of a minimum 4-inch-diameter, perforated, HDPE (High Density Polyethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile fabric in order to provide separation from the surrounding soils. Retaining wall drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer's representative should be contacted to observe the drains prior to backfilling. Roof or area drains should not be tied into retaining wall drains.

5.6.3 Wall Backfill

Retaining walls should be backfilled with imported granular structural fill in conformance with Section 5.4.2 and contain less than 5 percent passing the U.S. Standard No. 200 Sieve. The backfill should be compacted to a minimum of 90 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). When placing fill behind walls, care must be taken to minimize undue lateral loads on the walls. Heavy compaction equipment should be kept at least "H" feet from the back of the walls, where "H" is the height of the wall. Light mechanical or hand tamping equipment should be used for compaction of backfill materials within "H" feet of the back of the walls.

5.6.4 Design Parameters & Limitations

For rigid retaining walls founded, backfilled, and drained as recommended above, the following table presents parameters recommended for design.

Table 4 Design Parameters for Rigid Retaining Walls

Retaining Wall Condition	Modeled Backfill Condition	Static Equivalent Fluid Pressure (S_A)[1]	Seismic Equivalent Fluid Pressure (S_{AE})[1,2]	Surcharge from Uniform Load, q, Acting on Backfill Behind Retaining Wall
Not Restrained from Rotation	Level (i=0)	28 pcf	38 pcf	0.22*q
Restrained from Rotation	Level (i=0)	50 pcf	51 pcf	0.38*q

[1] Refer to the attached Figure 4 for a graphical representation of static and seismic loading conditions. Seismic resultant force acts at 0.6H above the base of the wall.

[2] Seismic (dynamic) lateral loads were computed using the Mononobe-Okabe Equation as presented in the 1997 Federal Highway Administration (FHWA) design manual. Static and seismic equivalent fluid pressures are not additive.

The above design recommendations are based on the assumptions that:

- The walls consist of concrete cantilevered retaining walls (β = 0 and δ = 24 degrees, see Figure 4).
- The walls are 15 feet or less in height.
- The backfill is drained and consists of imported granular structural fill (ϕ = 38 degrees).
- No point load, line load, or strip load surcharges are imposed behind the walls.
- The grade behind the wall is level, or sloping down and away from the wall, for a distance of 15 feet or more from the wall.
- The grade in front of the walls is level or ascending for a distance of at least 5 feet from the wall.

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

5.7 Floor Slabs

5.7.1 Subgrade Preparation

Satisfactory subgrade support for slabs constructed on grade, supporting up to 250 psf area loading, can be obtained from:

- A minimum of 12 inches of imported granular structural fill (granular sub-base) that is properly placed and compacted on the native, medium stiff to better, fat clay (CH) or elastic silt (MH). Once over excavations are made, these subgrade soils should not be exposed to periods of wetting or drying, but should be backfilled as soon as possible.
- The native medium stiff/dense to better residual soils (CL, SC, GP, SP), or imported granular structural fill that is properly placed and compacted on these materials during construction.

The geotechnical engineer's representative should be contacted to observe subgrade conditions prior to placement of structural fill or aggregate base. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2.

5.7.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock). Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). We recommend "choking" the surface of the base rock with sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing. Choking the base rock also reduces punctures in vapor retarding membranes due to foot traffic where such membranes are used.

5.7.3 Design Considerations

For floor slabs constructed with a minimum 6-inch thick base rock layer as recommended, an effective modulus of subgrade reaction of 150 pounds per cubic inch (pci) is recommended for the design of the floor

slab. A higher effective modulus of subgrade reaction can be obtained by increasing the base rock thickness. Please contact the geotechnical engineer for additional recommendations if a higher modulus is desired. Floor slabs constructed as recommended will likely settle less than ½ inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

5.7.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

5.8 Pavements

5.8.1 Subgrade Preparation

Satisfactory subgrade support for pavements can be obtained from:

- A minimum of 12 inches of imported granular structural fill (granular sub-base) that is properly placed and compacted on the native, medium stiff to better, fat clay (CH) or elastic silt (MH). Once over excavations are made, these subgrade soils should not be exposed to periods of wetting or drying, but should be backfilled as soon as possible.
- The native medium stiff/dense to better residual soils (CL, SC, GP, SP), or imported granular structural fill that is properly placed and compacted on these materials during construction.

The geotechnical engineer's representative should be contacted to observe pavement subgrade conditions prior to placement of structural fill or aggregate base. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. Pavement subgrade surfaces should be crowned (or sloped) for proper drainage in accordance with specifications provided by the project civil engineer.

5.8.2 Traffic Classifications

Recognizing that traffic data has not been provided, CGT has considered four levels of traffic demand for review and design of pavement sections. We modeled the following four design cases (traffic levels) developed from the Asphalt Pavement Association of Oregon (APAO):

- *APAO Level I (Very Light):* This design case considers typical average daily truck traffic (ADTT) of 1 per day over 20 years. Among others, examples under this loading consist of passenger car parking stalls, residential driveways, and seasonal recreational roads.
- *APAO Level II (Light):* This design case considers typical ADTT of 2 to 7 per day over 20 years. Examples under this loading consist of residential streets and parking lots of less than 500 stalls.
- *APAO Level III (Low Moderate):* This design case considers typical ADTT of 7 to 14 per day over 20 years. Among others, examples under this loading consist of urban minor collector streets and parking lots with more than 500 stalls.
- *APAO Level IV (Moderate):* This design case considers typical ADTT of 14 to 35 per day over 20 years. Among others, examples under this loading consist of urban minor arterial streets and residential streets with bus routes.

We recommend the owner and design team review the traffic levels presented above and select those that most accurately represent anticipated daily truck traffic for select new pavements.

5.8.3 Asphalt Concrete Pavements

5.8.3.1 Input Parameters

Design of the asphalt concrete (AC) pavement sections presented below were based on the parameters presented in the following table, the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual, and pavement design manuals presented by APAO and ODOT[12]. If any of the items listed need revision, please contact us and we will reassess the provided design sections.

Table 5 Input Parameters Used in AC Pavement Design

Input Parameter	Design Value[1]
Pavement Design Life	20 years
Annual Percent Growth	0 percent
Initial Serviceability	4.2
Terminal Serviceability[2]	2.5
Reliability[2]	75 percent
Standard Deviation[2]	0.49
Drainage Factor[3]	1.0
---	---
---	---
---	---

Input Parameter		Design Value[1]
Resilient Modulus	Subgrade (Native Soils)[4]	5,000 psi
	Granular Sub-Base	15,000 psi
	Crushed Aggregate Base[2]	20,000 psi
Structural Coefficient[2]	Granular Sub-Base	0.08
	Crushed Aggregate Base	0.10
	Asphalt	0.42
Vehicle Traffic[4] (range in ESAL[5])	APAO Level I (Very Light)	Less than 10,000
	APAO Level II (Light)	Less than 50,000
	APAO Level III (Low Moderate)	Less than 100,000
	APAO Level IV (Moderate)	Less than 250,000

1 If any of the above parameters are incorrect, please contact us so that we may revise our recommendations, if warranted.

2 Value based on guidelines presented in the ODOT Pavement Design Guide.

3 Assumes good drainage away from pavement, base, and subgrade is achieved by proper crowning of subgrades.

4 Values based on experience with similar soils in the region.

5 ESAL = Total 18-Kip equivalent single axle load. Traffic levels taken from Table 3.1 of APAO manual. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

5.8.3.2 Recommended Minimum Sections

The following table presents the minimum AC pavement sections for various traffic loads indicated in the preceding table, based on the referenced AASHTO procedures.

12 Oregon Department of Transportation (ODOT) Pavement Design Guide, January 2019.

Table 6 Recommended Minimum Asphalt Concrete Pavement Sections

Material	APAO Traffic Loading			
	Level I	Level II	Level III	Level IV
Asphalt Pavement (inches)	3	3½	4	4½
Crushed Aggregate Base (inches)	4	4	4	4
Granular Sub-base (inches)[1,2]	12	12	12	12
Subgrade Soils	Prepared in conformance with Section 5.8.1 of this report.			

1 Thickness shown assumes dry weather construction. A thicker granular sub-base section and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 5.3 for additional discussion.

2 As an alternative to placement of the granular sub-base section, the subgrade soils may be amended with Portland cement in general accordance with Section 5.3.4 of this report. As indicated therein, a soil-cement mix design is recommended to assess the soils' response to Portland cement and ascertain strength properties. A minimum compressive strength of 100 psi is recommended for the soil-cement blended material where used as structural layer below pavements.

5.8.3.3 AC Pavement Materials

Aggregate Sub-Base: We recommend pavement aggregate sub-base consist of durable, relatively well-graded, granular fill in conformance with Section 00641.10.b of the most recent ODOT SSC, with the following considerations. We recommend the material have a maximum particle size of 4 inches and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate sub-base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor), or visual equivalent as identified by deflection (proof roll) testing.

Aggregate Base: We recommend pavement aggregate base consist of dense-graded aggregate in conformance with Section 02630.10 of the most recent ODOT SSC, with the following additional considerations. We recommend the material consist of crushed rock or gravel, have a maximum particle size of 1½ inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

Asphalt Concrete: We recommend asphalt pavement consist of Level 2, ½-inch, dense-graded AC in conformance with the most recent ODOT SSC. Asphalt pavement should be compacted to at least 91 percent of the material's theoretical maximum density as determined in general accordance with ASTM D2041 (Rice Specific Gravity).

5.8.4 Rigid (Concrete) Pavements

5.8.4.1 Input Parameters

Design of the rigid (Portland Cement Concrete, PCC) pavement sections presented below was based on the parameters presented in the following table and the referenced AASHTO design manual. If any of the items listed need revision, please contact us and we will reassess the provided design sections. Jointing, reinforcement, and surface finish should be performed in accordance with the project civil engineer, architect, and owner requirements.

Table 7 Input Parameters Used in PCC Pavement Design

Parameter / Discussion		Design Value
Subgrade Modulus (k-value)		150 psi
Standard Deviation[1]		0.39
Load Transfer Devices incorporated?		Yes; Load Transfer Coefficient = 3.2
Minimum Concrete Modulus of Rupture		600 psi
Concrete Elastic Modulus		5.0 x 10^6 psi
Minimum Air-Entrained Concrete Compressive Strength		4,000 psi
Vehicle Traffic[2] (range in ESAL)	APAO Level I (Very Light)	Less than 10,000
	APAO Level II (Light)	Less than 50,000
	APAO Level III (Low Moderate)	Less than 100,000
	APAO Level IV (Moderate)	Less than 250,000

1 Value based on guidelines presented in the ODOT Pavement Design Guide.

2 ESAL = Total 18-Kip equivalent single axle load. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

5.8.4.2 Recommended Minimum Sections

The following table presents the recommended minimum concrete pavement sections based on the referenced AASHTO procedures.

Table 8 Recommended Minimum PCC Pavement Sections

Material	APAO Traffic Loading			
	Level I	Level II	Level III	Level IV
Portland Cement Concrete, PCC[1] (inches)	5	5½	6	7
All-Weather Base[2] (inches)	4	4	4	4
Granular Sub-base[3,4]	12	12	12	12
Subgrade Soils	Prepared in conformance with Section 5.8.1 of this report			

1 Concrete strength and other properties should be in conformance with Table 7 above.

2 All-weather base (base rock) should be a minimum of 4 inches thick.

3 Thickness shown assumes dry weather construction. A thicker granular sub-base section and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 5.3 for additional discussion.

4 As an alternative to placement of the granular sub-base section, the subgrade soils may be amended with Portland cement in general accordance with Section 5.3.4 of this report. As indicated therein, a soil-cement mix design is recommended to assess the soils' response to Portland cement and ascertain strength properties. A minimum compressive strength of 100 psi is recommended for the soil-cement blended material where used as structural layer below pavements.

5.8.4.3 PCC Pavement Materials

Aggregate Sub-Base: We recommend pavement aggregate sub-base consist of durable, relatively well-graded, granular fill in conformance with Section 00641.10.b of the most recent ODOT SSC, with the following considerations. We recommend the material have a maximum particle size of 4 inches and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate sub-base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor), or visual equivalent as identified by deflection (proof roll) testing.

All-Weather Base: We recommend all-weather base consist of dense-graded aggregate in conformance with Section 02630.10 of the most recent ODOT SSC, with the following additional considerations. We recommend the material consist have a maximum particle size of ¾-inch and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

PCC Pavement: Portland cement concrete (PCC) pavement should be in conformance with Section 02001 of the most recent ODOT SSC and meet the properties detailed in Table 7 above.

5.9 Additional Drainage Considerations

Subsurface drains should be connected to the nearest storm drain or other suitable discharge point. Paved surfaces and grading near or adjacent to the buildings should be sloped to drain away from the buildings. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed into foundation drains, retaining wall drains, or onto site slopes.

6.0 RECOMMENDED ADDITIONAL SERVICES

6.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors.

6.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend geotechnical engineer's representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer's representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping, grubbing, and Demolition
- Subgrade Preparation for Shallow Foundations, Retaining Walls, Structural Fills, Floor Slabs, and Pavements
- Compaction of Structural Fill, Retaining Wall Backfill, and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs and Pavements
- Compaction of Asphalt Concrete for Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

7.0 LIMITATIONS

We have prepared this report for use by PGE and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

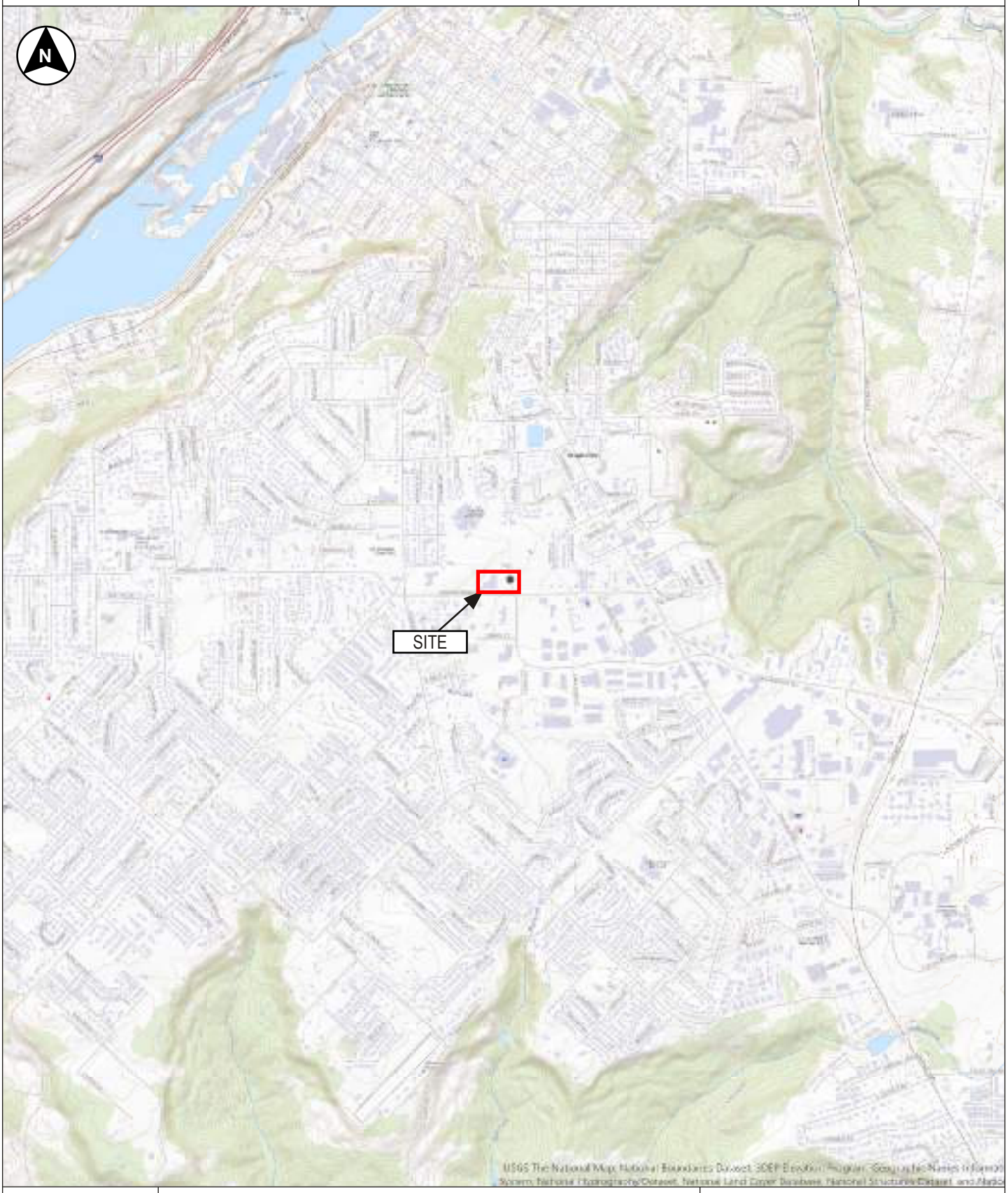
The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

PGE OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2105613

FIGURE 1
Site Location



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Drafted by: MDI

USGS Topographic base map created with The National Map, 2020, at https://viewer.nationalmap.gov/advanced-viewer/

Township 3 South, Range 2 East, Section 5, Willamette Meridian

Latitude: 45.337076° North
Longitude: 122.598759° West

1 Inch = 2,000 feet
0 2000 4000

PGE OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2105613

Figure 2

CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: BJC

LEGEND

B-1 Drilled boring location

B-12/IT-1 Drilled boring and infiltration test location

1 Orientation of site photographs shown on Figure 3

1 Inch = 100 Feet

0 100 200

NOTES: 2020 aerial photograph from City of Oregon City Mapping System http://maps.orcity.org/. All locations are approximate.

FIGURE 3
Site Photographs

Photograph 1

Photograph 2

Photograph 3

Photograph 4

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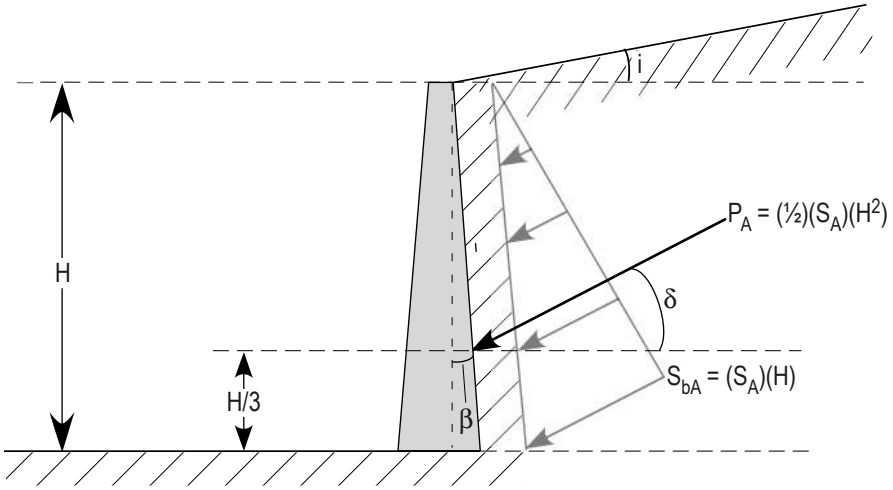
Drafted by: MDI

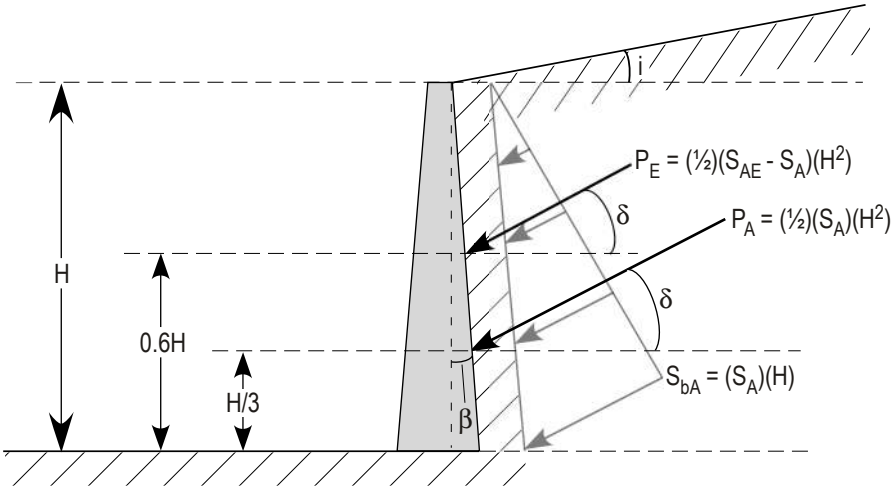
See Figure 2 for approximate photograph locations and directions. Photographs were taken at the time of our fieldwork.

ACTIVE LATERAL PRESSURE DISTRIBUTION

STATIC LOADING CONDITIONS



SEISMIC LOADING CONDITIONS



LEGEND

S_A = Active lateral equivalent fluid pressure (lb/ft^3)*

S_{bA} = Active lateral earth pressure (static) at the bottom of wall (lb/ft^3)

S_{AE} = Active total (static + seismic) equivalent fluid pressure (lb/ft^3)*

i = Slope of backfill, relative to horizontal (degrees)**

β = Slope of back of wall, relative to vertical (degrees)**

P_A = Static active thrust force acting at H/3 from bottom of retaining wall (lb/ft)

P_E = Dynamic active thrust force acting at 0.6H from bottom of retaining wall (lb/ft)

δ = Angle from normal of back of wall (degrees). Based on friction developing between wall and backfill**

*Refer to report text for calculated values **Refer to report text for modeled/assumed values

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Notes

1. Uniform pressure distribution of seismic loading is based on empirical evaluations [Sherif et al, 1982 and Whitman, 1990].
2. Placement of seismic resultant force at 0.6H is based on wall behavior and model test results [Whitman, 1990].

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Appendix A: Subsurface Investigation and Laboratory Testing

Oregon City Line Center Expansion
209 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2105613

February 18, 2022

Prepared For:

Tina Tippin
Portland General Electric
121 SW Salmon Street
Portland, Oregon 97204

Prepared by
Carlson Geotechnical

Exploration Key ..... Figure A1
Soil Classification ..... Figure A2
Exploration Logs ..... Figures A3 – A14

A.1.0 SUBSURFACE INVESTIGATION

Our field investigation consisted of twelve drilled borings completed in late January 2022. The exploration locations are shown on the Site Plan, attached to the geotechnical report as Figure 2. The exploration locations shown therein were determined based on measurements from existing site features (buildings, fencing, pavement, etc.) and are approximate. Surface elevations indicated on the logs were estimated based on the topographic contours (by others) shown on the referenced Site Plan and are approximate. The attached figures detail the exploration methods (Figure A1), soil classification criteria (Figure A2), and present detailed logs of the explorations (Figures A3 through A14), as discussed below.

A.1.1 Drilled Borings

CGT observed the advancement of twelve drilled borings (B-1 through B-12) at the site on January 24 through January 26, 2022, using a CME 55 track-mounted drill rig provided and operated by our subcontractor, Western States Soil Conservation of Hubbard, Oregon. The borings were advanced using the hollow-stem auger and/or mud rotary drilling techniques to depths ranging from approximately 9 to 21½ feet bgs. Upon completion, the borings were backfilled with granular bentonite and the pavement areas were patched with cold-patch asphalt. Drilling wastes (cuttings and drilling fluids) were left onsite.

A.1.2 In-Situ Testing

A.1.2.1 Standard Penetration Tests (SPTs)

SPTs were conducted within the borings using a split-spoon sampler in general accordance with ASTM D1586. The SPTs were conducted at 2½- to 5-foot intervals to the termination depths of the borings. The SPT is described on the attached Exploration Key, Figure A1.

A.1.2.2 Infiltration Tests

CGT performed one infiltration test at the site, within a hollow-stem auger boring. Details regarding the test procedure and results of the test are presented in Appendix B.

A.1.3 Material Classification & Sampling

Soil samples were obtained at selected intervals in the borings using the referenced split-spoon (SPT) sampler and thin-walled, steel (Shelby) tube samplers, detailed on Figure A1. A qualified member of CGT's geotechncial staff collected the samples and logged the soils in general accordance with the Visual-Manual Procedure (ASTM D2488). An explanation of this classification system is attached as Figure A2. The SPT samples were stored in sealable plastic bags and the Shelby tube samples were sealed with caps and tape and transported to our soils laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

A.1.4 Subsurface Conditions

Subsurface conditions are summarized in Section 2.3 of the geotechnical report. Detailed logs of the explorations are presented on the attached exploration logs, Figures A3 through A14.

A.2.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included the following:

- Eighteen moisture content determinations (ASTM D2216).
- Six percentage passing the U.S. Standard No. 200 Sieve tests (ASTM D1140).
- Two Atterberg limits (plasticity) tests (ASTM D4318).
- Two Shelby tube unit weight tests (weight-volume measurement).

Results of the laboratory tests are shown on the exploration logs.

PGE OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON Project Number G2105613	FIGURE A1 Exploration Key

PL — LL MC	Atterberg limits (plasticity) test results (ASTM D4318): PL = Plastic Limit, LL = Liquid Limit, and MC= Moisture Content (ASTM D2216)
☐ FINES CONTENT (%)	Percentage passing the U.S. Standard No. 200 Sieve (ASTM D1140)

SAMPLING

GRAB	Grab sample
BULK	Bulk sample
SPT	**Standard Penetration Test** (SPT) consists of driving a 2-inch, outside-diameter, split-spoon sampler into the undisturbed formation with repeated blows of a 140-pound, hammer falling a vertical distance of 30 inches (ASTM D1586). The number of blows (N-value) required to drive the sampler the last 12 inches of an 18-inch sample interval is used to characterize the soil consistency or relative density. The drill rig was equipped with an cat-head or automatic hammer to conduct the SPTs. The observed N-values, hammer efficiency, and N_{60} are noted on the boring logs.
MC	**Modified California** sampling consists of 3-inch, outside-diameter, split-spoon sampler (ASTM G3550) driven similarly to the SPT sampling method described above. A sampler diameter correction factor of 0.44 is applied to calculate the equivalent SPT N_{60} value per Lacroix and Horn, 1973.
CORE	**Rock Coring** interval
SH	**Shelby Tube** is a 3-inch, inner-diameter, thin-walled, steel tube push sampler (ASTM D1587) used to collect relatively undisturbed samples of fine-grained soils.
WDCP	**Wildcat Dynamic Cone Penetrometer** (WDCP) test consists of driving 1.1-inch diameter, steel rods with a 1.4-inch diameter, cone tip into the ground using a 35-pound drop hammer with a 15-inch free-fall height. The number of blows required to drive the steel rods is recorded for each 10 centimeters (3.94 inches) of penetration. The blow count for each interval is then converted to the corresponding SPT N_{60} values.
DCP	**Dynamic Cone Penetrometer** (DCP) test consists of driving a 20-millimeter diameter, hardened steel cone on 16-millimeter diameter steel rods into the ground using a 10-kilogram drop hammer with a 460-millimeter free-fall height. The depth of penetration in millimeters is recorded for each drop of the hammer.
POCKET PEN. (tsf)	**Pocket Penetrometer** test is a hand-held instrument that provides an approximation of the unconfined compressive strength in tons per square foot (tsf) of cohesive, fine-grained soils.

CONTACTS

	Observed (measured) contact between soil or rock units.
	Inferred (approximate) contact between soil or rock units.
	Transitional (gradational) contact between soil or rock units.

ADDITIONAL NOTATIONS

Italics	Notes drilling action or digging effort
{ Braces }	Interpretation of material origin/geologic formation (e.g. { Base Rock } or { Columbia River Basalt })

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All measurements are approximate.

PGE OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2105613

FIGURE A2
Soil Classification

Classification of Terms and Content

NAME: Group Name and Symbol
Relative Density or Consistency
Color
Moisture Content
Plasticity
Other Constituents
Other: Grain Shape, Approximate Gradation
Organics, Cement, Structure, Odor, etc.
Geologic Name or Formation

Grain Size

		U.S. Standard Sieve
Fines		<#200 (0.075 mm)
Sand	Fine	#200 - #40 (0.425 mm)
	Medium	#40 - #10 (2 mm)
	Coarse	#10 - #4 (4.75 mm)
Gravel	Fine	#4 - 0.75 inch
	Coarse	0.75 inch - 3 inches
Cobbles		3 to 12 inches
Boulders		> 12 inches

Coarse-Grained (Granular) Soils

Relative Density

SPT N_{60}-Value	Density
0 - 4	Very Loose
4 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
>50	Very Dense

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace silt"
5 - 15%	"With" as part of group name	"**POORLY GRADED SAND WITH SILT**"
15 - 49%	Modifier to group name	"**SILTY SAND**"

Fine-Grained (Cohesive) Soils

SPT N_{60}-Value	Torvane tsf Shear Strength	Pocket Pen tsf Unconfined	Consistency	Manual Penetration Test
<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
2 - 4	0.13 - 0.25	0.25 - 0.50	Soft	Thumb penetrates about 1 inch
4 - 8	0.25 - 0.50	0.50 - 1.00	Medium Stiff	Thumb penetrates about ¼ inch
8 - 15	0.50 - 1.00	1.00 - 2.00	Stiff	Thumb penetrates less than ¼ inch
15 - 30	1.00 - 2.00	2.00 - 4.00	Very Stiff	Readily indented by thumbnail
>30	>2.00	>4.00	Hard	Difficult to indent by thumbnail

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace fine-grained sand"
5 - 15%	"Some" as part of soil description	"some fine-grained sand"
15 - 30%	"With" as part of group name	"**SILT WITH SAND**"
30 - 49%	Modifier to group name	"**SANDY SILT**"

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch

Moist: Leaves moisture on hand

Wet: Visible free water, likely from below water table

	Plasticity	Dry Strength	Dilatancy	Toughness
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to High	None to Slow	Medium
MH	Medium to High	Low to Medium	None to Slow	Low to Medium
CH	Medium to High	High to Very High	None	High

Structure

Stratified: Alternating layers of material or color >6 mm thick

Laminated: Alternating layers < 6 mm thick

Fissured: Breaks along definite fracture planes

Slickensided: Striated, polished, or glossy fracture planes

Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown

Lenses: Has small pockets of different soils, note thickness

Homogeneous: Same color and appearance throughout

Visual-Manual Classification

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel/sand mixtures, little or no fines
			GP	Poorly-graded gravels and gravel/sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel/sand/silt mixtures
			GC	Clayey gravels, gravel/sand/clay mixtures
	Sands: More than 50% *passing* the No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand/silt mixtures
			SC	Clayey sands, sand/clay mixtures
Fine-Grained Soils: 50% or more Passes No. 200 Sieve	Silt and Clays Low Plasticity Fines		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic soil of low plasticity
	Silt and Clays High Plasticity Fines		MH	Inorganic silts, clayey silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic soil of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

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References:

ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
Terzaghi, K., and Peck, R.B., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons.

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FIGURE A3
Boring B-1

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/25/22 **GROUND ELEVATION** 476 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 40° **SURFACE** Asphalt **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
475		GP-GM FILL	**ASPHALT CONCRETE**: 3 inches thick **POORLY GRADED GRAVEL FILL**: Gray, moist, subangular to angular gravel up to ¾-inch in diameter, some fine- to medium-grained sand, and some silt fines. {Base Rock}		0					
		CH	**FAT CLAY**: Stiff, brown, moist, high plasticity, trace black flecks, and trace fine-grained sand.			SPT 1	100	5-6-7 (13)	12	
470			Very stiff with gray mottling, some fine-grained sand, trace red mottling below 5 feet bgs.		5	SPT 2	89	5-8-11 (19)	18	
		SC	**CLAYEY SAND**: Medium dense, brown/gray, moist, low plasticity fines, fine- to coarse-grained sand, and some black/white/tan mottling. {Decomposed rock}			SPT 3	89	6-5-7 (12)	11	
465			Loose and highly mottled below 10 feet bgs.		10	SPT 4	89	2-3-3 (6)	6	
						SPT 5	100	2-2-3 (5)	5	
460			Red with some black/gray/white mottling below 15 feet bgs. Gray with some red mottling below 15½ feet bgs. Red with some black/gray/white mottling below 16 feet bgs.		15	SPT 6	100	2-3-3 (6)	6	
455			Medium dense and brown with gray/red mottling below 20 feet bgs.		20	SPT 7	100	4-6-5 (11)	13	
450			• Boring terminated at 21½ feet bgs. • No groundwater or caving observed. • Boring backfilled with granular bentonite and surface patched with cold-patch asphalt.							

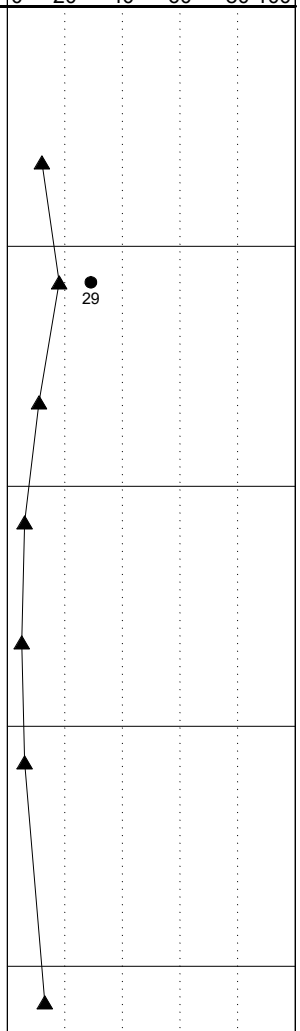

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FIGURE A4

Boring B-2

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/25/22 **GROUND ELEVATION** 468 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 40° **SURFACE** Asphalt **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		GP-GM FILL	**ASPHALT CONCRETE**: 3 inches thick **POORLY GRADED GRAVEL FILL**: Gray, moist, subangular to angular gravel up to ¾-inch in diameter, some fine-to medium-grained sand, and some silt fines. {Base Rock}		0					
465		CH	**FAT CLAY**: Stiff, brown, moist, high plasticity, some black flecks, and trace fine-grained sand.			SPT 1	100	3-5-5 (10)	9	
			Light brown/gray mottling and trace pockets of medium- to coarse-grained sand (degraded rock) below 5 feet bgs.		5	SPT 2	100	3-5-5 (10)	9	
460			**CLAYEY SAND**: Loose to medium dense, brown/gray, fine- to coarse-grained sand, low plasticity fines, some black/white/tan mottling. {Decomposed rock}			SPT 3	100	2-3-4 (7)	7	
			Gray/brown with friable gravel up to ½-inch in diameter.		10	SPT 4	100	5-12-7 (19)	19	
			Uneven drilling from 11½ to 12 feet bgs.							
455		SC	Loose, dark gray, moist, low plasticity, medium- to coarse-grained, and some red mottling below 13 feet bgs.			SPT 5	100	2-3-4 (7)	7	
			Loose, fine- to coarse-grained, some black/white/gray mottling below 15 feet bgs.		15	SPT 6	100	3-2-1 (3)	3	
450										
			Dense, some clay fines below 20 feet bgs.		20	SPT 7	89	2-18-19 (37)	44	
		SP	**POORLY GRADED SAND**: Dense, light gray with white/dark gray mottling, moist, non-plastic, and fine- to medium-grained. {Decomposed rock}							
445			• Boring terminated at 21½ feet bgs. • No groundwater or caving observed. • Boring backfilled with granular bentonite and surface patched with cold-patch asphalt.							
440										

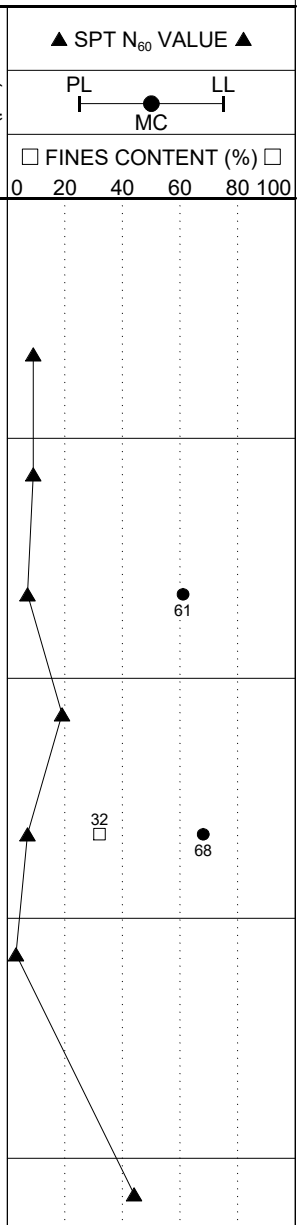

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FIGURE A5
Boring B-3

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/25/22 **GROUND ELEVATION** 464 ft
ELEVATION DATUM See Figure 2.
WEATHER Sunny, 50° **SURFACE** Asphalt
LOGGED BY AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation
SEEPAGE ---
EQUIPMENT CME 55 Track Rig #2
GROUNDWATER DURING DRILLING ---
DRILLING METHOD Mud Rotary
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		GP-GM FILL	**ASPHALT CONCRETE**: 3 inches thick **POORLY GRADED GRAVEL FILL**: Gray, moist, subangular to angular gravel up to ¾-inch in diameter, some fine- to medium-grained sand, and some silt fines. {Base Rock}		0					
460		CH	**FAT CLAY**: Medium stiff, brown, moist, high plasticity, some fine- to coarse-grained sand, and trace black flecks.			SPT 1	33	3-3-3 (6)	6	
			Very stiff, some black flecks, trace gray mottling below 5 feet bgs.		5	SPT 2	89	4-7-10 (17)	16	
455			**SANDY FAT CLAY**: Medium stiff, dark gray with white/black/yellow mottling, moist, high plasticity, fine- to coarse-grained sand. {Decomposed rock}			SPT 3	100	3-4-4 (8)	8	
			Gray with black/red/white mottling and very low plasticity below 10 feet bgs.		10	SPT 4	100	1-3-4 (7)	7	
450		CH	Red/brown with black/white/tan mottling below 13 feet bgs.			SPT 5	100	2-3-3 (6)	6	
			Stiff and fine- to medium-grained below 15 feet bgs.		15	SPT 6	22	4-6-8 (14)	15	
445		SP	**POORLY GRADED SAND**: Loose, gray with black/white mottling, moist, very low plasticity fines, fine- to medium-grained, trace clay fines. {Decomposed rock}		20	SPT 7	56	1-5-3 (8)	10	
		CL	**LEAN CLAY WITH SAND**: Medium stiff, light brown with brown mottling, moist, medium plasticity, with fine-grained sand. {Decomposed rock}							
440			• Boring terminated at 21½ feet bgs. • No groundwater or caving observed. • Boring backfilled with granular bentonite and surface patched with cold-patch asphalt.							

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100

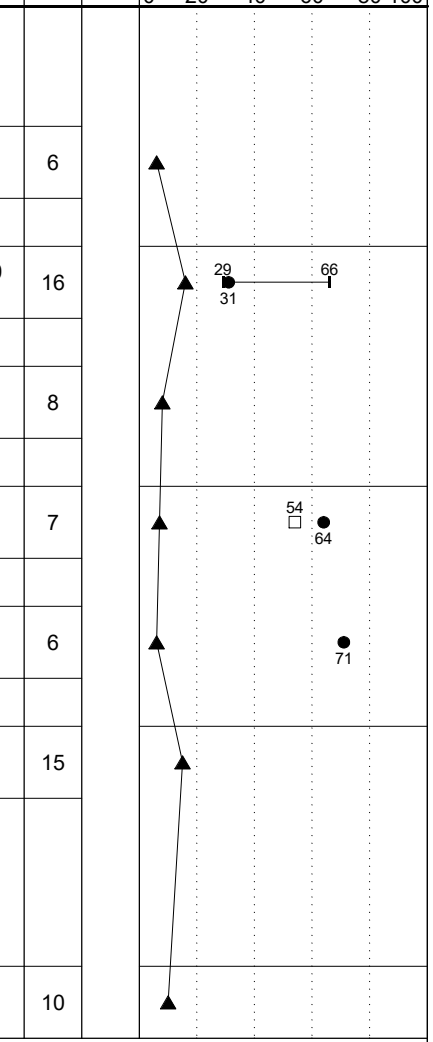

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FIGURE A6
Boring B-4

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/25/22 **GROUND ELEVATION** 459 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 40° **SURFACE** Asphalt **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		GP-GM FILL	**ASPHALT CONCRETE**: 3 inches thick **POORLY GRADED GRAVEL FILL**: Gray, moist, subangular to angular gravel up to ¾-inch in diameter, some fine- to medium-grained sand, and some silt fines. {Base Rock}		0	SPT 1	44	5-6-6 (12)	11	
455		CH	**FAT CLAY**: Stiff, dark brown, moist, high plasticity, trace orange mottling, and trace coarse-grained sand.		5	SPT 2	56	2-6-6 (12)	11	
			Brown with red mottling, some black flecks, trace fine-grained sand below 6 feet bgs.			SPT 3	89	3-3-3 (6)	6	
450		SC	**CLAYEY SAND**: Loose, brown with dark gray/red/white mottling, moist, low plasticity, fine- to medium-grained sand, and friable gravel up to ½-inch in diameter. {Decomposed rock}		10	SPT 4	89	1-1-2 (3)	3	
			Black mottling and coarse-grained sand below 6 feet bgs.			SPT 5	100	1-2-4 (6)	6	
445		SP	**POORLY GRADED SAND**: Loose to medium dense, light gray with black/white mottling, moist, non-plastic fines, fine- to medium-grained, and trace clay fines. {Decomposed rock}		15	SPT 6	100	2-3-6 (9)	10	
440		CL	**LEAN CLAY WITH SAND**: Very stiff, light brown with brown mottling, moist, medium plasticity, and with fine-grained sand. {Decomposed rock}		20	SPT 7	100	3-9-7 (16)	19	
435			• Boring terminated at 21½ feet bgs. • No groundwater or caving observed. • Boring backfilled with granular bentonite and surface patched with cold-patch asphalt.							

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100

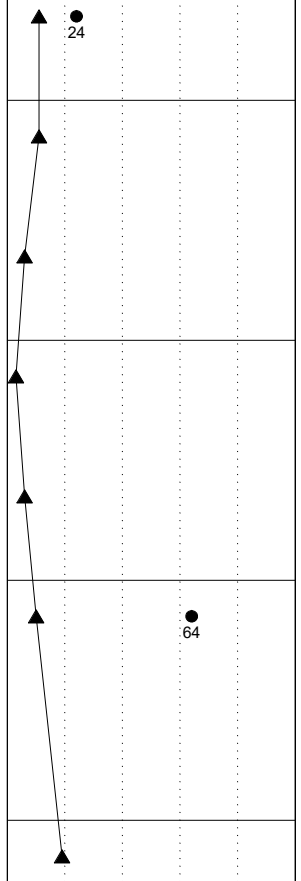

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FIGURE A7
Boring B-5

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/25/22 **GROUND ELEVATION** 462 ft
ELEVATION DATUM See Figure 2.
WEATHER Sunny, 40° **SURFACE** Asphalt
LOGGED BY AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation
SEEPAGE 10.0 ft / El. 452.0 ft
EQUIPMENT CME 55 Track Rig #2
GROUNDWATER DURING DRILLING ---
DRILLING METHOD Hollow Stem Auger & Mud Rotary
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GROUP SYMBOL	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
460	GP-GM FILL	**ASPHALT CONCRETE**: 3 inches thick **POORLY GRADED GRAVEL FILL**: Gray, moist, subangular to angular gravel up to ¾-inch in diameter, some fine- to medium-grained sand, and some silt fines. {Base Rock}	0					
	CH	**FAT CLAY**: Stiff, red/brown, moist, high plasticity, some black/gray mottling, and trace fine-grained sand.		SPT 1	100	5-7-9 (16)	15	
455	SC	**CLAYEY SAND**: Loose, gray/brown with red mottling, moist, low plasticity fines, fine- to coarse-grained sand. {Decomposed rock}	5	SPT 2	100	3-3-5 (8)	8	
				SPT 3	100	2-4-6 (10)	9	
			10					
450				SH 4	100			56
			15	SPT 5	100	3-2-3 (5)	5	
445								
	SP SC	**POORLY GRADED SAND:** Loose, brown, moist, non-plastic fines, medium- to coarse-grained, and some clay fines. {Decomposed rock}	20	SPT 6	100	3-6-7 (13)	15	
440		**CLAYEY SAND**: Medium dense, brown with light brown mottling, moist, low plasticity fines, fine- to medium-grained sand. {Decomposed rock}						
435		• Boring terminated at 21½ feet bgs. • Drilling halted on 1/25/22, restarted on 1/26/22 - hollow stem auger removed and mud rotary used for rest of boring. • Perched groundwater observed at 10 feet bgs. • No caving observed. • Boring backfilled with granular bentonite and surface patched with cold-patch asphalt.						

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100
60
78
40
59

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FIGURE A8
Boring B-6

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/24/22 **GROUND ELEVATION** 459 ft
ELEVATION DATUM See Figure 2.
WEATHER Sunny, 50° **SURFACE** Grass
LOGGED BY AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation
SEEPAGE 15.0 ft / El. 444.0 ft
EQUIPMENT CME 55 Track Rig #2
GROUNDWATER DURING DRILLING ---
DRILLING METHOD Hollow Stem 6-inch Auger
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Very soft, dark brown, moist, low plasticity, abundant rootlets.		0	SPT 1	33	0-1-1 (2)	2	
		ML	**SILT**: Very soft, dark brown, moist, medium plasticity, trace red/black mottling, some fine-grained sand.							
455		CH	**FAT CLAY WITH GRAVEL**: Stiff, brown, moist, high plasticity, with friable weathered gravel particles up to ½-inch in diameter, and some fine-grained sand.			SPT 2	44	1-6-7 (13)	12	
					5	SPT 3	100	3-5-8 (13)	12	
			CLAYEY SAND: Medium dense, blue/black with red mottling, moist, low plasticity fines, and fine- to medium-grained sand. {Decomposed rock}			SPT 4	100	3-5-7 (12)	11	
450					10	SPT 5	100	3-5-5 (10)	10	
		SC				SPT 6	100	2-3-4 (7)	7	
445				≈	15	SPT 7	100	1-2-7 (9)	10	
		SP	**POORLY GRADED SAND WITH GRAVEL**: Loose, dark gray, moist, non-plastic fines, fine- to coarse-grained sand, and weathered gravel up to ½-inch in diameter. {Decomposed rock}							
440					20					
		CL	**LEAN CLAY WITH SAND**: Very stiff, light brown with brown mottling, moist, medium plasticity, and fine-grained sand. {Decomposed rock}			SPT 8	100	7-9-12 (21)	25	
435			• Boring terminated at 21½ feet bgs. • Perched groundwater observed at 15 feet bgs. • No caving observed. • Boring backfilled with granular bentonite.							

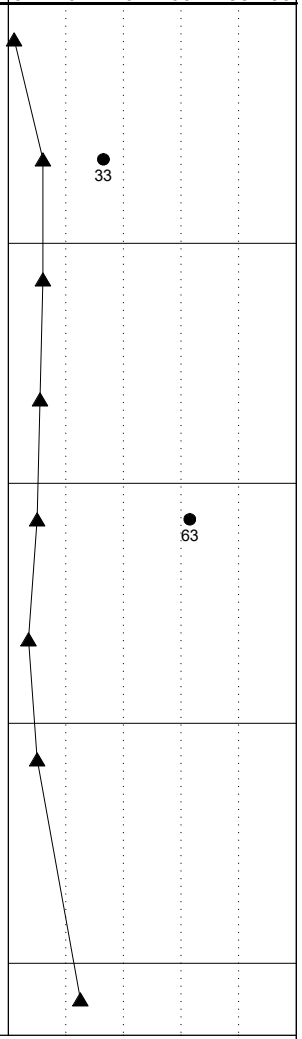

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FIGURE A9

Boring B-7

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/26/22 **GROUND ELEVATION** 453 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 50° **SURFACE** Grass **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** 10.0 ft / El. 443.0 ft
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** *Very soft*, dark brown, moist, low plasticity, abundant rootlets.		0					
		MH	**ELASTIC SILT**: *Soft*, brown with red/black mottling, moist, high plasticity, some fine-grained sand, and trace friable gravel particles up to ¼-inch in diameter.							
450			**CLAYEY SAND**: Medium dense, brown/black/gray mottled, moist, low plasticity fines, and fine- to coarse-grained sand. {Decomposed rock} Non-plastic fines, trace weathered gravel up to ½-inch in diameter below 5 feet bgs.			SPT 1	100	3-8-8 (16)	15	
			Cemented gravel layer from 6½ to 7½ feet bgs per driller.		5	SPT 2	100	13-9-8 (17)	16	
445		SC	Loose and highly mottled below 7½ feet bgs.			SPT 3	100	2-4-4 (8)	8	
			Medium dense below 10 feet bgs.	≈	10	SPT 4	6	4-6-7 (13)	13	
440			Brown with black/white mottling below 12½ feet bgs.			SPT 5	100	9-9-7 (16)	16	
					15					
		CL	**LEAN CLAY WITH SAND**: Very stiff, light brown/gray, moist, medium plasticity, and with fine-grained sand. {Decomposed rock}			SPT 6	100	8-10-14 (24)	26	
435										
					20					
			Light gray with some white mottling below 20¾ feet bgs.			SPT 7	100	7-8-15 (23)	27	
430			• Boring terminated at 21½ feet bgs. • Perched groundwater observed at 10 feet bgs. • No caving observed. • Boring backfilled with granular bentonite.							
425										

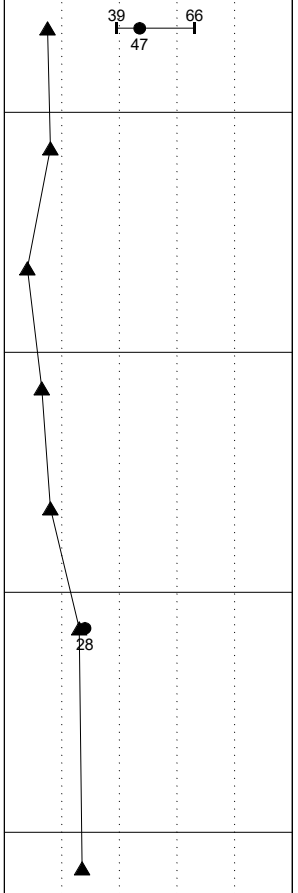

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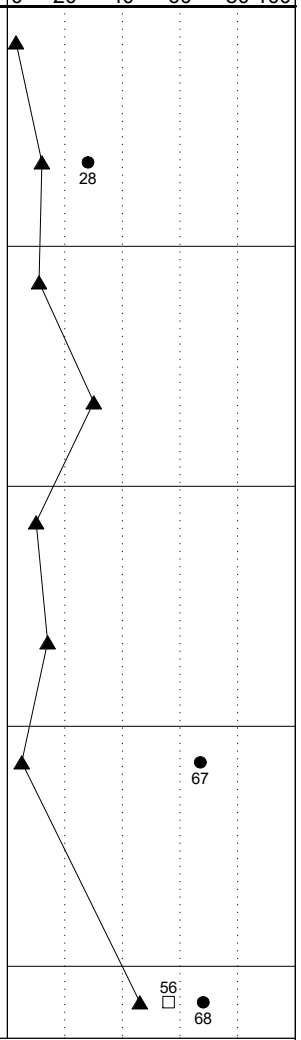
FIGURE A10
Boring B-8

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/24/22 **GROUND ELEVATION** 448 ft **ELEVATION DATUM** See Figure 2.
WEATHER Fog, 40° **SURFACE** Grass **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** 16.0 ft / El. 432.0 ft
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Hollow Stem 6-inch Auger **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Very soft, dark brown, moist, low plasticity, abundant rootlets.		0	SPT 1	67	1-1-2 (3)	3	
445		CH	**FAT CLAY**: Soft, brown, moist, high plasticity, trace black flecks, and trace rootlets. Light brown, some fine-grained sand below 1¼ feet bgs. Stiff below 2½ feet bgs.			SPT 2	67	3-6-7 (13)	12	
		SC	**CLAYEY SAND**: Medium dense, brown with black/gray/white mottling, moist, low plasticity, fine- to coarse-grained sand, and some friable gravel fragments up to ½-inch in diameter. {Decomposed rock}		5	SPT 3	100	2-6-6 (12)	11	
440		CL	**SANDY LEAN CLAY**: Hard, brown with orange/brown mottling, moist, low plasticity, fine-grained sand, and trace gravel lenses. {Decomposed rock}			SPT 4	100	10-17-15 (32)	30	
		CL	**LEAN CLAY WITH SAND**: Very stiff, light brown with orange mottling, moist, medium plasticity, and fine-grained sand. {Decomposed rock}		10	SPT 5	100	2-4-6 (10)	10	
435			Purple mottling below 13¾ feet bgs.			SPT 6	100	5-5-9 (14)	14	
		CH	**SANDY FAT CLAY**: Medium stiff, brown with gray mottling, moist, high plasticity, and fine-to medium-grained sand. {Decomposed rock}	≈	15	SPT 7	100	1-1-4 (5)	5	
430			Hard below 20 feet bgs.		20	SPT 8	100	14-19-20 (39)	46	
425										
420										



- Boring terminated at 21½ feet bgs.
- Perched groundwater observed at 16 feet bgs.
- No caving observed.
- Boring backfilled with granular bentonite.

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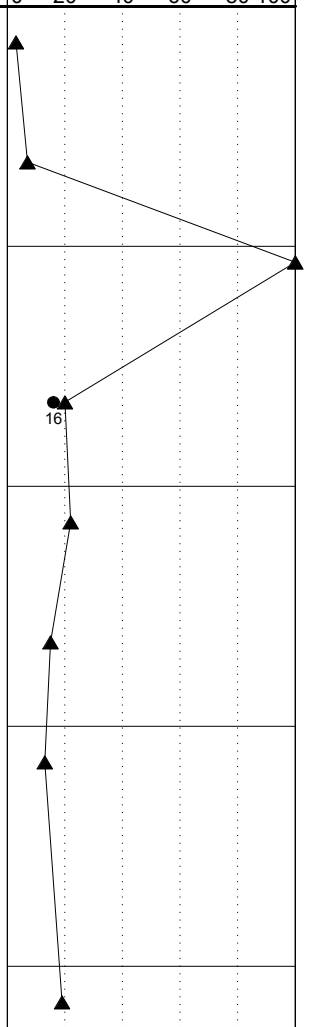
FIGURE A11
Boring B-9

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/26/22 **GROUND ELEVATION** 452 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 45° **SURFACE** Grass **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Very soft, dark brown, moist, low plasticity, abundant rootlets.		0	SPT 1	44	1-1-2 (3)	3	
450		CH	**FAT CLAY**: Soft, brown, moist, high plasticity, trace black/orange mottling, and trace rootlets.							
		SC	**CLAYEY SAND**: Loose, brown with black/dark brown/white mottling, moist, low plasticity, and fine- to coarse-grained sand. {Decomposed rock} Drill rig chatter below 3 feet bgs.			SPT 2	100	3-4-3 (7)	7	
			Very dense with weathered gravel fragments up to ½-inch in diameter below 5 feet bgs.		5	SPT 3	75	13-50/2"	100	
445		GP	**POORLY GRADED GRAVEL**: Very dense, cemented, light gray, moist, fragments in sampler up to 1-inch in diameter, and some medium-grained sand. {Decomposed rock}			SPT 4	44	26-16-5 (21)	20	
		SP	**POORLY GRADED SAND WITH GRAVEL**: Medium dense, gray, moist, non-plastic, with weathered gravel up to ½-inch in diameter, and some brown mottling. {Decomposed rock}		10	SPT 5	100	3-10-12 (22)	22	
440			**LEAN CLAY WITH SAND**: Very stiff, brown with dark brown mottling, moist, medium plasticity, and fine-grained sand. {Decomposed rock} Stiff, orange/black mottling below 12½ feet bgs. Light brown with some brown mottling below 13½ feet bgs.			SPT 6	100	3-7-8 (15)	15	
		CL	Brown with dark brown/orange/black mottling below 15½ feet bgs.		15	SPT 7	100	4-6-6 (12)	13	
435										
			Increase in sand content below about 21 feet bgs.		20	SPT 8	100	3-7-9 (16)	19	
430										
425										



- Boring terminated at 21½ feet bgs.
- No groundwater or caving observed.
- Boring backfilled with granular bentonite.

CGT BOREHOLE DRAFT LOGS.GPJ 2/15/22 DRAFTED BY: AET

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FIGURE A12
Boring B-10

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/26/22 **GROUND ELEVATION** 454 ft **ELEVATION DATUM** See Figure 2.
WEATHER Sunny, 45° **SURFACE** Grass **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Mud Rotary **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Very soft, dark brown, moist, low plasticity, abundant rootlets.		0	SPT 1	56	0-1-2 (3)	3	
		CH	**FAT CLAY**: Soft, dark brown, moist, high plasticity, trace black mottling, and trace fine-grained sand.							
450		SC	**CLAYEY SAND WITH GRAVEL**: Loose, brown with dark gray/red/white mottling, moist, low plasticity, medium-grained sand, and friable gravel up to ½-inch in diameter. {Decomposed rock} Medium dense with orange mottling below 5 feet bgs.		5	SPT 2	100	2-4-3 (7)	7	
						SPT 3	100	2-7-6 (13)	12	
445			Loose, medium- to coarse-grained with red/black/gray mottling below 9 feet bgs.			SH 4	75			56
					10	SPT 5	100	3-3-4 (7)	7	
						SPT 6	100	1-3-6 (9)	9	
440			Medium-grained below 13¼ feet bgs.							
		CL	**LEAN CLAY WITH SAND**: Very stiff, light brown with brown mottling, moist, medium plasticity, and fine-grained sand. {Decomposed rock} Light brown/gray mottled with trace black flecks below 15 feet bgs.		15	SPT 7	100	5-6-11 (17)	18	
435			No black flecks seen below 20 feet bgs.		20	SPT 8	100	7-7-10 (17)	20	
430										

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100
60
72

- Boring terminated at 21½ feet bgs.
- No groundwater or caving observed.
- Boring backfilled with granular bentonite.

CGT BOREHOLE DRAFT LOGS.GPJ 2/15/22 DRAFTED BY: AET

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FIGURE A13
Boring B-11

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/24/22 **GROUND ELEVATION** 451 ft
ELEVATION DATUM See Figure 2.
WEATHER Fog, 40° **SURFACE** Grass
LOGGED BY AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation
SEEPAGE 7.5 ft / El. 443.5 ft
EQUIPMENT CME 55 Track Rig #2
GROUNDWATER DURING DRILLING ---
DRILLING METHOD Hollow Stem 6-inch Auger
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)	▲ SPT N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐
					0						0 20 40 60 80 100
450		OL	**ORGANIC SOIL:** Very soft, dark brown, moist, low plasticity, abundant rootlets.			SPT 1	44	1-3-2 (5)	5		
		CH	**FAT CLAY**: Soft, brown, moist, high plasticity, trace orange mottling, and trace black flecks.								
			Stiff, some friable rock fragments below 2¾ feet bgs.			SPT 2	44	3-5-9 (14)	13		
					5						
445		SC	**CLAYEY SAND**: Loose, brown with black/white/orange mottling, moist, fine-to coarse-grained sand, and medium plasticity fines. {Decomposed rock}			SPT 3	100	1-4-4 (8)	8		
			Uneven drilling below 6¾ feet bgs.								
			Some gravel fragments up to ½-inch in diameter below 7½ feet bgs.			SPT 4	100	4-6-8 (14)	13		
440											
435											
430											
425											

- Boring terminated at 9 feet bgs.
- Perched groundwater observed at 7½ feet bgs.
- No caving observed.
- Boring backfilled with granular bentonite.

CGT BOREHOLE DRAFT LOGS.GPJ 2/15/22 DRAFTED BY: AET

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FIGURE A14
Boring B-12

CLIENT Tina Tippin - Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2105613
PROJECT LOCATION 209 Warner Milne Road - Oregon City, Oregon
DATE STARTED 1/24/22 **GROUND ELEVATION** 456 ft **ELEVATION DATUM** See Figure 2.
WEATHER Fog, 35° **SURFACE** Grass **LOGGED BY** AET **REVIEWED BY** MDI
DRILLING CONTRACTOR Western State Soil Conservation **SEEPAGE** ---
EQUIPMENT CME 55 Track Rig #2 **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Hollow Stem 6-inch Auger **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 75.1%	DRY UNIT WT. (pcf)
455		OL	**ORGANIC SOIL:** Very soft, brown, moist, low plasticity, abundant rootlets.		0	SPT 1	44	1-1-2 (3)	3	
		CH	**FAT CLAY**: Soft, brown, moist, high plasticity, trace orange mottling, trace black flecks, and trace rounded gravel up to ¼-inch in diameter. Medium stiff below 2½ feet bgs.			SPT 2	56	1-2-5 (7)	7	
450		SC	**CLAYEY SAND**: Loose, brown with black/white/orange mottling, moist, fine- to coarse-grained sand, and low plasticity. {Decomposed rock} Very dense with increased moisture below 7½ feet bgs. Weathered gravel or cobbles at 8½ feet bgs.		5	SPT 3	100	3-3-4 (7)	7	
						SPT 4	100	4-33-20 (53)	50	
445			Loose to medium dense below 10 feet bgs.		10	SPT 5	100	1-3-4 (7)	7	
						SPT 6	100	1-6-9 (15)	15	

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100
49 ☐ 59

- Boring terminated at 14 feet bgs.
- Infiltration test IT-1 performed in boring at 12½ feet bgs. See Appendix B for results.
- SPT 6 conducted folowing completion of infiltration testing.
- No groundwater or caving observed.
- Boring backfilled with granular bentonite.

440
435
430

CGT BOREHOLE DRAFT LOGS.GPJ 2/15/22 DRAFTED BY: AET

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Salem Office **(503) 589-1252**
Tigard Office **(503) 684-3460**

Appendix B: Results of Infiltration Testing

Oregon City Line Center Expansion
209 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2105613

February 18, 2022

Prepared For:

Tina Tippin
Portland General Electric
121 SW Salmon Street
Portland, Oregon 97204

Prepared by
Carlson Geotechnical

B.1.0 INTRODUCTION

Our client requested infiltration testing at four locations on a site map provided to CGT. Our client requested the tests be conducted at depths of about 10 to 20 feet below ground surface (bgs). Perched groundwater was encountered at depths ranging from about 7½ to 16 feet bgs within three of the proposed infiltration test locations, designated as borings B-5, B-8, and B-11 on the Site Plan which is attached to the main report as Figure 2. We conveyed the presence of perched groundwater at those locations to our client during the fieldwork. No infiltration tests were performed at those locations. Infiltration testing was performed in boring B-12 at a depth of 12½ feet bgs within the hollow stem auger.

B.2.0 TEST PROCEDURE

The infiltration test (IT-1) was performed in general accordance with the Professional Method described in Appendix D of the 2015 City of Oregon City Stormwater and Grading Design Standards. Once the drilled boring was advanced to the test depth, a thin layer of clean gravel was placed within the auger to prevent scouring the soil with water during testing.

The test was performed within a 6¼-inch diameter hollow stem auger, as allowed by the referenced method. The bottom of the auger was filled with approximately 12 inches of water, and the soil was allowed to soak overnight in accordance with the test method. After the soaking period, the drop in water level was recorded at 10-minute intervals for three hours (total of 1 hour for each trial). Measurements were taken with a tape measure and recorded to the nearest one-eighth of an inch. A total of three trials were performed

B.3.0 INFILTRATION TEST RESULTS

The following tables present the details, raw data, and calculated infiltration rates observed during testing. Please note that the calculated infiltration rates do not include any safety or correction factors.

Table B1 Results of Infiltration Test IT-1

	Location:	PGE Oregon City Line Center Expansion		Date:	1/25/2022	Exploration Number:	B-12
	Test Method:	Oregon City Encased Falling Head		Inner Diameter of Pipe:	6¼ inches	Infiltration Test Depth:	12½ feet
	Soil at infiltration test depth:		Clayey Sand (SC)		see exploration log for detail		
	Presaturation Start Time:		10:00 a.m. 1/24/22	Presaturation Notes:	No measurable water drop during presaturation period was observed.		
	Presaturation End Time:		8:45 a.m. 1/25/22				
	Time	Time Interval (Minutes)	Measurement (inches)*	Drop in Water level (inches)	Infiltration Rate** (inches per hour)	Remarks	
Trial 1	8:45 AM	0	138½	---	---	Trial 1 initiated	
	8:55 AM	10	61¼	0	---		
	9:05 AM	10	138½	0	---		
	9:15 AM	10	138½	0	---		
	9:25 AM	10	138½	0	---		
	9:35 AM	10	138½	0	---		
	9:45 AM	10	138½	0	0		
Trial 2	10:00 AM	10	138½	---	---	Trial 2 initiated	
	10:10 AM	10	138½	0	---		
	10:20 AM	10	138½	0	---		
	10:30 AM	10	138½	0	---		
	10:40 AM	10	138½	0	---		
	10:50 AM	10	138½	0	---		
	11:00 AM	10	138½	0	0		
Trial 3	11:10 AM	10	138½	---	---	Trial 3 initiated	
	11:20 AM	10	138½	0	---		
	11:30 AM	10	138½	0	---		
	11:40 AM	10	138½	0	---		
	11:50 AM	10	138½	0	---		
	12:00 PM	10	138½	0	---		
	12:10 PM	10	138½	0	0		

* Measured to nearest 1/8 inch using a measuring tape

** Values calculated are raw (unfactored) rates.

B.4.0 GEOTECHNICAL REVIEW & DISCUSSION

As detailed above, negligible (zero) infiltration was observed at the tested location and depth. The negligible infiltration rate is anticipated to be attributable to the presence of medium dense clayey sand soils at the test location and depth. Based on the findings, and our encountering perched groundwater elsewhere at the site, infiltration of stormwater is anticipated to be challenging at this site. In the event supplemental infiltration testing is desired, CGT would be pleased to provide additional testing services, upon request, for an additional fee.

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Report of
Supplemental Geotechnical Investigation & Infiltration Testing
Oregon City Line Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426

Prepared for

Jenny Laphanh
Portland General Electric (PGE)
209 Warner Milne Road
Oregon City, Oregon 97045

July 11, 2025

Carlson Geotechnical

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July 11, 2025

Jenny Laphanh
Portland General Electric (PGE)
209 Warner Milne Road
Oregon City, Oregon 97045

Report of
Supplemental Geotechnical Investigation
Oregon City Line Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426

Dear Jenny Laphanh:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our supplemental geotechnical investigation and infiltration testing for the proposed Oregon City Line Center Expansion project. The site is located at 299 Warner Milne Road in Oregon City, Oregon. We performed our work in general accordance with CGT Proposal GP25-182, dated April 30, 2025. Written authorization for our services was received on May 2, 2025, in the form of PGE Purchase Order 0000061340. Field work was delayed until mid-June due to scheduling of our drilling subcontractor.

We appreciate the opportunity to work with you on this project. Please contact us at (503) 601-8250 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

M. David Irish, CESCL
Geotechnical Project Manager
dirish@carlsontesting.com

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Principal Geotechnical Engineer
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ATTACHMENTS

Site Location ..... Figure 1
Site Plan ..... Figure 2
Site Photographs ..... Figure 3

Subsurface Investigation and Laboratory Testing ..... Appendix A
Results of Infiltration Testing ..... Appendix B

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1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our supplemental geotechnical investigation and infiltration testing for the proposed Oregon City Line Center Expansion project. The site is located at 299 Warner Milne Road in Oregon City, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Background & Information

CGT previously performed a geotechnical investigation and a Site-Specific Seismic Hazards Study for the project, the results of which were presented in our "Report of Geotechnical Investigation," dated February 18, 2022 (CGT Project Number G2105613), and our "Site-Specific Seismic Hazards Study," dated May 18, 2022 (CGT Project Number G2105613.B).

Based on information provided by our client, we understand the overall project design remains consistent with that described in the referenced geotechnical report. Based on recent correspondence with our client and the project civil engineer Mischa van Buuren, P.E. of KPFF, additional infiltration testing was requested to assist in design of stormwater infiltration facilities at the site. Infiltration testing was requested at five locations at depths of about 15 feet bgs. Desired locations of the infiltration tests were provided to us on a marked up site plan via email on April 23, 2025.

In addition, updated geotechnical recommendations for design and construction of flexible (asphalt concrete) and rigid (Portland Cement Concrete, PCC) were also requested.

1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 20-foot radius of our explorations at the site. CGT also subcontracted a private utility locator service to mark the locations of detectable private utilities within the same radius.
- Explore subsurface conditions at the site by advancing five drilled borings to depths of up to about 16½ feet below ground surface (bgs). Details of the subsurface investigation are presented in Appendix A.
- Conduct infiltration testing in three of the drilled borings. Infiltration testing within the other two proposed infiltration test boring locations was not performed due to the presence of perched groundwater encountered at depths ranging from 7½ to 14½ feet bgs. Results of the infiltration testing are presented in Appendix B.
- Classify the soils encountered in the explorations in general accordance with ASTM D2488 (Visual-Manual Procedure).
- Provide updated geotechnical recommendations for design and construction of flexible (asphalt concrete) and rigid (Portland Cement Concrete) pavements.

2.0 SITE DESCRIPTION

2.1 Site Surface Conditions

The approximate 9.51-acre site is bordered by Oregon City Health Care, St. John the Apostle Cemetery, and a residential properties to the north, Warner Milne Road to the south, residential properties to the east, and a

grass field to the west. At the time of our field investigation, the western-half of the site (approximate) was occupied by the existing Line Center building, a covered parking/storage area, a garage, and an asphalt-paved parking lot. The eastern-half of the site (approximate) was covered with short grasses, scattered trees, and asphalt driveways (within the southeast portion). The previous residential structures located in the southeast portion had been removed. The site descended gently to the east, exhibiting about 25 feet of vertical relief. Site layout and surface conditions at the time of our field investigation are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

2.2 Subsurface Conditions

2.2.1 Supplemental Subsurface Investigation & Laboratory Testing

Our subsurface investigation consisted of five borings (B-13 through B-17) completed on June 18 through June 19, 2025. The approximate exploration locations are shown on the Site Plan, attached as Figure 2. In summary, the borings were advanced to depths ranging from about 15 to 16½ feet bgs. Details regarding the subsurface investigation, logs of the explorations, and results of laboratory testing are presented in Appendix A. Subsurface conditions encountered during our investigation are summarized below.

2.2.2 Subsurface Materials

Logs of the explorations are presented in Appendix A. The following describes each of the subsurface materials encountered at the site.

Asphalt Concrete Pavement
Asphalt concrete (AC) pavement was encountered at the surface of boring B-13, and was about 3 inches thick.

Undocumented Poorly Graded Gravel Fill (GP Fill)
Undocumented poorly graded gravel fill (base rock) was encountered below the AC pavement in boring B-13. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The poorly graded gravel fill was typically gray, moist, subangular to angular, and up to about ¾-inch in diameter. This material extended to a depth of about 1-foot bgs in that boring.

Organic Soil (OL)
Organic soil was encountered at the surface of borings B-14 through B-17. This material was typically brown, dry, exhibited low plasticity, and contained abundant rootlets. This soil extended to depths of about ½-foot bgs in those borings.

Lean to Fat Clay (CL-CH), Lean to Fat Clay with Sand (CL-CH), Sandy Lean to Fat Clay (CL-CH)
Underlying the gravel fill in boring B-13 and the organic soil in borings B-14 through B-17 was native, lean to fat clay. This soil was typically stiff to very stiff, brown or red/brown to gray, moist to wet, exhibited high plasticity, and contained variable amounts of fine-grained sand. This soils extended to the full depths explored in the borings, about 15 to 16 ½ feet bgs.

Poorly Graded Gravel (GP)
A layer of poorly graded gravel was encountered between about 6 to 7½ feet bgs in boring B-14. This soil was typically dense, gray, moist, sub-angular to sub-rounded, up to 1-inch in diameter, and contained trace, fine-grained sand.

2.2.3 Groundwater

Groundwater seepage (perched groundwater) was observed at depths ranging from 7½ to 14½ feet bgs within borings B-13 and B-14, advanced at the site in mid-June 2025. Groundwater was not encountered within the depths explored in the remaining borings advanced in mid-June 2025. To determine approximate regional groundwater levels in the area, we researched well logs available on the Oregon Water Resources Department (OWRD)[1] website for wells located within Section 05, Township 03 South, Range 02 East, Willamette Meridian. Our review indicated that groundwater levels in the area generally ranged from about 4½ to 14 feet bgs. It should be noted groundwater levels vary with local topography. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental borings will often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. Additionally, as evidenced in several borings, the on-site fine-grained (clayey, silty) soils are conducive to formation of perched groundwater.

3.0 GEOTECHNICAL REVIEW & DISCUSSION

3.1 Infiltration Testing

As detailed in Appendix B, the water level in the prepared boreholes increased at each test location and depth during the infiltration testing. The increase in water level is anticipated to be attributable to the presence of perched groundwater encountered intermittently across the site. The subsurface water likely migrated and infiltrated into each borehole during the soaking period and during the subsequent testing. The presence of perched groundwater is typically an indicator of poor-draining soils. Accordingly, we conclude infiltrating stormwater at this site will be very challenging at this site.

3.2 Pavement Sections

Recognizing subsurface conditions encountered in our borings were relatively consistent with those encountered previously, the geotechnical recommendations for design and construction of flexible (asphalt concrete) and rigid (Portland Cement Concrete) pavements presented in Section 5.8 of the above referenced 2022 geotechnical report remain valid for the project. In the event traffic levels will be above those indicated in Section 5.8.2 of that report, the geotechnical engineer should be contacted.

4.0 RECOMMENDED ADDITIONAL SERVICES

4.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors.

4.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the

[1] Oregon Water Resources Department, 2025. Well Log Records, *accessed July 2025*, from OWRD web site: http://apps.wrd.state.or.us/apps/gw/well_log/.

work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend geotechnical engineer's representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer's representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping, Grubbing, and Demolition
- Subgrade Preparation for Shallow Foundations, Retaining Walls, Structural Fills, Floor Slabs, and Pavements
- Compaction of Structural Fill, Retaining Wall Backfill, and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs and Pavements
- Compaction of Asphalt Concrete for Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

5.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

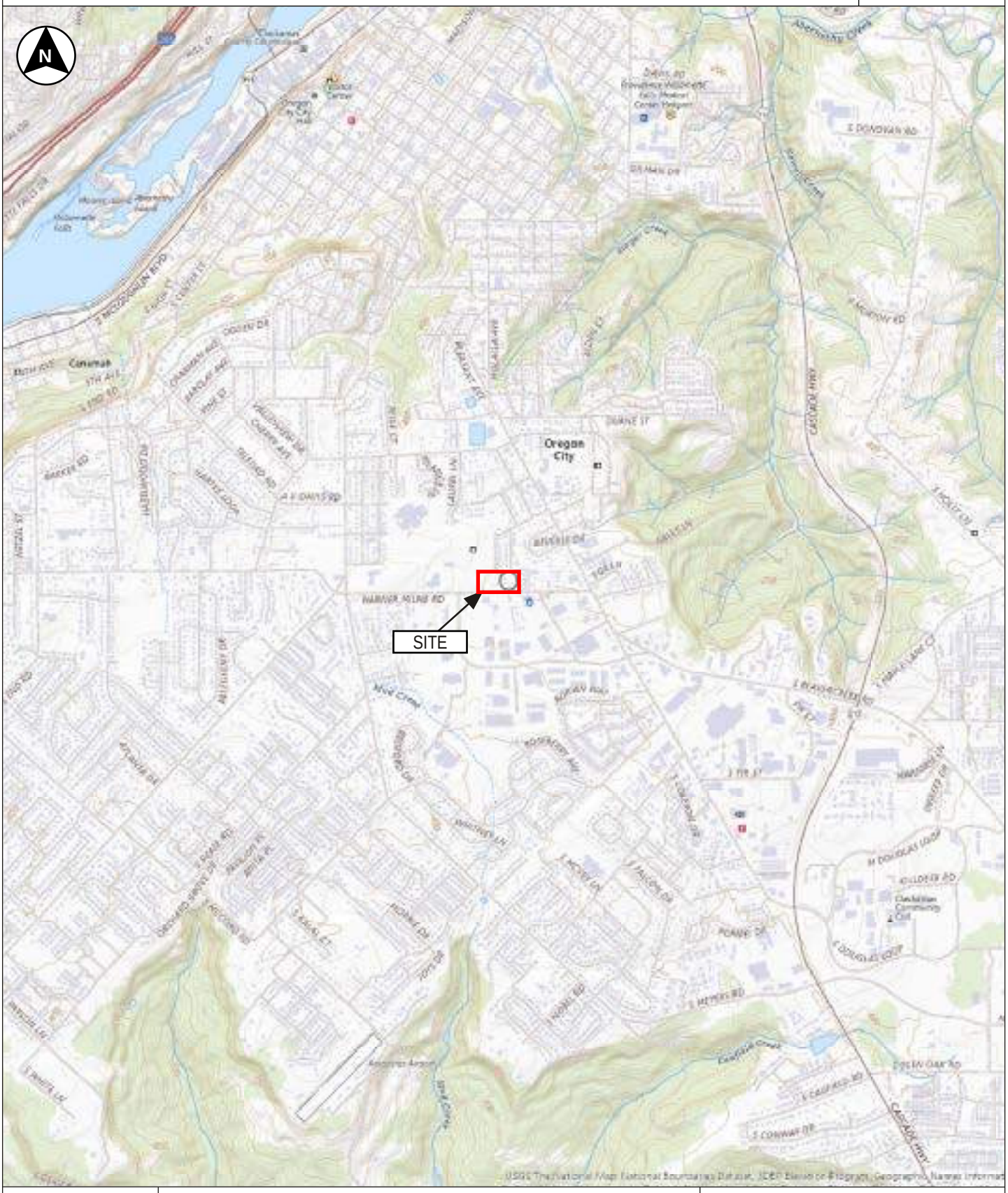
The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2506426

FIGURE 1
Site Location



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USGS Topographic base map created with The National Map, 2025, at https://viewer.nationalmap.gov/advanced-viewer/

Township 3 South, Range 2 East, Section 5, Willamette Meridian

Latitude: 45.336968° North
Longitude: 122.595471° West

1 Inch = 2,000 feet

0 2000 4000

OREGON CITY OPERATIONS CENTER - OREGON CITY, OREGON
Project Number G2506426

FIGURE 2
Site Plan

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503-601-8250

Drafted by: MDL

LEGEND

B-1 Drilled borings advanced in late January 2022

B-12 IT-1 Drilled boring and infiltration test performed in late January 2022

1 Orientation of site photographs shown on Figure 3

B-13 Drilled borings advanced in mid-June 2025

B-15 IT-2 Drilled borings and infiltration tests performed in mid-June 2025

1 Inch = 125 Feet

0 125 250

NOTES: 2024 aerial photograph from City of Oregon City Mapping System http://maps.orcity.org/. All locations are approximate.

Photograph 1

Photograph 2

Photograph 3

Photograph 4

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See Figure 2 for approximate photograph locations and directions. Photographs were taken at the time of our fieldwork.

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Appendix A: Subsurface Investigation and Laboratory Testing

Oregon City Line Center Expansion
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426

July 11, 2025

Prepared For:

Jenny Laphanh
Portland General Electric (PGE)
209 Warner Milne Road
Oregon City, Oregon 97045

Prepared by
Carlson Geotechnical

Exploration Key ..... Figure A1
Soil Classification ..... Figure A2
Exploration Logs ..... Figures A3 – A7

A.1.0 SUBSURFACE INVESTIGATION

Our supplemental field investigation consisted of five drilled borings completed in mid-June 2025. The exploration locations are shown on the Site Plan, attached to the geotechnical report as Figure 2. The exploration locations shown therein were determined based on measurements from existing site features (buildings, fencing, pavement, etc.) and are approximate. Surface elevations indicated on the logs were estimated based on the topographic contours (by others) shown on the referenced Site Plan and are approximate. The attached figures detail the exploration methods (Figure A1), soil classification criteria (Figure A2), and present detailed logs of the explorations (Figures A3 through A7), as discussed below.

A.1.1 Drilled Borings

CGT observed the advancement of five drilled borings (B-13 through B-17) at the site using a Mobile B-57 track-mounted drill rig provided and operated by our subcontractor, Holt Services, Inc. of Vancouver, Washington. The borings were advanced using the hollow-stem auger drilling technique to depths ranging from approximately 15 to 16½ feet bgs. Upon completion, the borings were backfilled with granular bentonite and the pavement areas were patched with cold-patch asphalt (where previously present). Drilling wastes (cuttings and drilling fluids) were left onsite.

CGT attempted three infiltration tests at the site within hollow-stem auger borings. Details regarding the test procedure and results of the tests are presented in Appendix B.

A.1.2 Material Classification & Sampling

Soil samples were obtained at selected intervals in the borings using the referenced split-spoon (SPT) sampler detailed on Figure A1. A qualified member of CGT's geotechnical staff collected the samples and logged the soils in general accordance with the Visual-Manual Procedure (ASTM D2488). An explanation of this classification system is attached as Figure A2. The SPT samples were stored in sealable plastic bags and transported to our soils laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

A.1.3 Subsurface Conditions

Subsurface conditions are summarized in Section 2.3 of the geotechnical report. Detailed logs of the explorations are presented on the attached exploration logs, Figures A3 through A7.

A.2.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included the following:

- Ten moisture content determinations (ASTM D2216).
- Four percentage passing the U.S. Standard No. 200 Sieve tests (ASTM D1140).
- Two Atterberg limits (plasticity) tests (ASTM D4318).

Results of the laboratory tests are shown on the exploration logs.

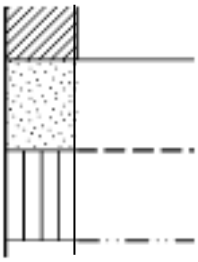
OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON Project Number G2506426	FIGURE A1 Exploration Key

PL — LL MC	Atterberg limits (plasticity) test results (ASTM D4318): PL = Plastic Limit, LL = Liquid Limit, and MC= Moisture Content (ASTM D2216)
☐ FINES CONTENT (%)	Percentage passing the U.S. Standard No. 200 Sieve (ASTM D1140)

SAMPLING

GRAB	Grab sample
BULK	Bulk sample
SPT	**Standard Penetration Test** (SPT) consists of driving a 2-inch, outside-diameter, split-spoon sampler into the undisturbed formation with repeated blows of a 140-pound, hammer falling a vertical distance of 30 inches (ASTM D1586). The number of blows (N-value) required to drive the sampler the last 12 inches of an 18-inch sample interval is used to characterize the soil consistency or relative density. The drill rig was equipped with an cat-head or automatic hammer to conduct the SPTs. The observed N-values, hammer efficiency, and N_{60} are noted on the boring logs.
MC	**Modified California** sampling consists of 3-inch, outside-diameter, split-spoon sampler (ASTM G3550) driven similarly to the SPT sampling method described above. A sampler diameter correction factor of 0.44 is applied to calculate the equivalent SPT N_{60} value per Lacroix and Horn, 1973.
CORE	**Rock Coring** interval
SH	**Shelby Tube** is a 3-inch, inner-diameter, thin-walled, steel tube push sampler (ASTM D1587) used to collect relatively undisturbed samples of fine-grained soils.
WDCP	**Wildcat Dynamic Cone Penetrometer** (WDCP) test consists of driving 1.1-inch diameter, steel rods with a 1.4-inch diameter, cone tip into the ground using a 35-pound drop hammer with a 15-inch free-fall height. The number of blows required to drive the steel rods is recorded for each 10 centimeters (3.94 inches) of penetration. The blow count for each interval is then converted to the corresponding SPT N_{60} values.
DCP	**Dynamic Cone Penetrometer** (DCP) test consists of driving a 20-millimeter diameter, hardened steel cone on 16-millimeter diameter steel rods into the ground using a 10-kilogram drop hammer with a 460-millimeter free-fall height. The depth of penetration in millimeters is recorded for each drop of the hammer.
POCKET PEN. (tsf)	**Pocket Penetrometer** test is a hand-held instrument that provides an approximation of the unconfined compressive strength in tons per square foot (tsf) of cohesive, fine-grained soils.

CONTACTS



Observed (measured) contact between soil or rock units.

Inferred (approximate) contact between soil or rock units.

Transitional (gradational) contact between soil or rock units.

ADDITIONAL NOTATIONS

Italics	Notes drilling action or digging effort
{ Braces }	Interpretation of material origin/geologic formation (e.g. { Base Rock } or { Columbia River Basalt })

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All measurements are approximate.

OREGON CITY LINE CENTER EXPANSION - OREGON CITY, OREGON
Project Number G2506426

FIGURE A2
Soil Classification

Classification of Terms and Content

NAME: Group Name and Symbol
Relative Density or Consistency
Color
Moisture Content
Plasticity
Other Constituents
Other: Grain Shape, Approximate Gradation
Organics, Cement, Structure, Odor, etc.
Geologic Name or Formation

Grain Size

		U.S. Standard Sieve
Fines		<#200 (0.075 mm)
Sand	Fine	#200 - #40 (0.425 mm)
	Medium	#40 - #10 (2 mm)
	Coarse	#10 - #4 (4.75 mm)
Gravel	Fine	#4 - 0.75 inch
	Coarse	0.75 inch - 3 inches
Cobbles		3 to 12 inches
Boulders		> 12 inches

Coarse-Grained (Granular) Soils

Relative Density

SPT N_{60}-Value	Density
0 - 4	Very Loose
4 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
>50	Very Dense

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace silt"
5 - 15%	"With" as part of group name	"**POORLY GRADED SAND WITH SILT**"
15 - 49%	Modifier to group name	"**SILTY SAND**"

Fine-Grained (Cohesive) Soils

SPT N_{60}-Value	Torvane tsf Shear Strength	Pocket Pen tsf Unconfined	Consistency	Manual Penetration Test
<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
2 - 4	0.13 - 0.25	0.25 - 0.50	Soft	Thumb penetrates about 1 inch
4 - 8	0.25 - 0.50	0.50 - 1.00	Medium Stiff	Thumb penetrates about ¼ inch
8 - 15	0.50 - 1.00	1.00 - 2.00	Stiff	Thumb penetrates less than ¼ inch
15 - 30	1.00 - 2.00	2.00 - 4.00	Very Stiff	Readily indented by thumbnail
>30	>2.00	>4.00	Hard	Difficult to indent by thumbnail

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace fine-grained sand"
5 - 15%	"Some" as part of soil description	"some fine-grained sand"
15 - 30%	"With" as part of group name	"**SILT WITH SAND**"
30 - 49%	Modifier to group name	"**SANDY SILT**"

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch

Moist: Leaves moisture on hand

Wet: Visible free water, likely from below water table

	Plasticity	Dry Strength	Dilatancy	Toughness
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to High	None to Slow	Medium
MH	Medium to High	Low to Medium	None to Slow	Low to Medium
CH	Medium to High	High to Very High	None	High

Structure

Stratified: Alternating layers of material or color >6 mm thick

Laminated: Alternating layers < 6 mm thick

Fissured: Breaks along definite fracture planes

Slickensided: Striated, polished, or glossy fracture planes

Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown

Lenses: Has small pockets of different soils, note thickness

Homogeneous: Same color and appearance throughout

Visual-Manual Classification

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel/sand mixtures, little or no fines
			GP	Poorly-graded gravels and gravel/sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel/sand/silt mixtures
			GC	Clayey gravels, gravel/sand/clay mixtures
	Sands: More than 50% *passing* the No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand/silt mixtures
			SC	Clayey sands, sand/clay mixtures
Fine-Grained Soils: 50% or more Passes No. 200 Sieve	Silt and Clays Low Plasticity Fines		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic soil of low plasticity
	Silt and Clays High Plasticity Fines		MH	Inorganic silts, clayey silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic soil of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

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References:

ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

Terzaghi, K., and Peck, R.B., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons.

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FIGURE A3

Boring B-13

CLIENT Jenny Laphanh -Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2506426
PROJECT LOCATION 299 Warner Milne Road - Oregon City, Oregon
DATE STARTED 6/18/25 **GROUND ELEVATION** 460 ft
ELEVATION DATUM See Figure 2.
WEATHER Cloudy, 60° **SURFACE** Asphalt
LOGGED BY MDL **REVIEWED BY** AET
DRILLING CONTRACTOR Holt Services, Inc.
SEEPAGE ---
EQUIPMENT Mobile B-57 Track-Mount
GROUNDWATER DURING DRILLING 14.5 ft / El. 445.5 ft
DRILLING METHOD Hollow Stem 6-inch ID Auger
GROUNDWATER .5 HOURS AFTER DRILLING 14.4 ft / El. 445.6 ft

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 86.4%	DRY UNIT WT. (pcf)	▲ SPT N_{60} VALUE ▲ PL LL MC ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
		GP FILL	**ASPHALT CONCRETE:** 3 inches thick. **POORLY GRADED GRAVEL FILL:** Gray, moist, sub-angular to angular, up to ¾-inch in diameter. {Base Rock}		0						
455		CL-CH	**LEAN TO FAT CLAY:** Brown, moist, high plasticity.		5						
450					10						
445				▼	15						
440			• Boring terminated at 15 feet bgs. • Groundwater initially encountered at about 14½ feet bgs. • No caving encountered. • Boring backfilled with granular bentonite upon completion.								

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FIGURE A4
Boring B-14

CLIENT Jenny Laphanh -Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2506426
PROJECT LOCATION 299 Warner Milne Road - Oregon City, Oregon
DATE STARTED 6/19/25 **GROUND ELEVATION** 448 ft
ELEVATION DATUM See Figure 2.
WEATHER Sunny, 55° **SURFACE** Grass
LOGGED BY MDL **REVIEWED BY** AET
DRILLING CONTRACTOR Holt Services, Inc.
SEEPAGE 7.5 ft / El. 440.5 ft
EQUIPMENT Mobile B-57 Track-Mount
GROUNDWATER DURING DRILLING 9.8 ft / El. 438.3 ft
DRILLING METHOD Hollow Stem 6-inch ID Auger
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 86.4%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Brown, dry, low plasticiy, abundant rootlets.		0	SPT 1	33	2-4-7 (11)	12	
			LEAN TO FAT CLAY: Stiff, brown, moist, high plasticity, trace fine grained sand.							
445		CL-CH	Brown with black mottling, some sand below 2½ feet bgs.			SPT 2	100	3-4-10 (14)	15	
			Isolated sub-angular gravel up to 1-inch in diameter at about 4 feet bgs.		5	SPT 3	56	7-14-24 (38)	41	
		GP	**POORLY GRADED GRAVEL:** Dense, gray, moist, sub-anguler to sub-rounded, up to 1-inch in diameter, some fine grained sand.							
440		CL-CH	**LEAN TO FAT CLAY:** Very stiff, brown, moist, high plasticity, trace fine grained sand.			SPT 4	83	3-3-17 (20)	22	
			LEAN TO FAT CLAY: Stiff, tan/orange with red mottling, moist, medium plasticity, some fine grained sand. Black mottling and wet below 10 feet bgs		10	SPT 5	100	2-5-6 (11)	13	
435		CL-CH	Tan to brown with orange and light gray mottling below 12½ feet bgs.			SPT 6	100	3-3-5 (8)	9	
					15	SPT 7	100	3-5-5 (10)	12	
430										

▲ SPT N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100

36
52
89 ☐

- Boring terminated at 16½ feet bgs.
- Groundwater encountered at about 9¾ feet bgs.
- No caving observed.
- Boring backfilled with granular bentonite upon completion.

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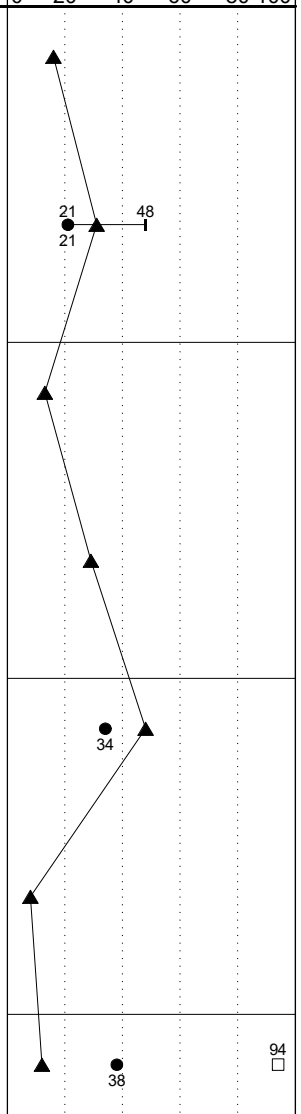
FIGURE A5
Boring B-15

CLIENT Jenny Laphanh -Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2506426
PROJECT LOCATION 299 Warner Milne Road - Oregon City, Oregon
DATE STARTED 6/18/25 **GROUND ELEVATION** 450 ft
ELEVATION DATUM See Figure 2.
WEATHER Cloudy, 60° **SURFACE** Grass
LOGGED BY MDL **REVIEWED BY** AET
DRILLING CONTRACTOR Holt Services, Inc.
SEEPAGE ---
EQUIPMENT Mobile B-57 Track-Mount
GROUNDWATER DURING DRILLING ---
DRILLING METHOD Hollow Stem 6-inch ID Auger
GROUNDWATER AFTER DRILLING ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 86.4%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Brown, dry, low plasticiy, abundant rootlets.		0	SPT 1	33	5-7-8 (15)	16	
			LEAN TO FAT CLAY: Very stiff, brown, moist, high plasticity, trace fine grained sand.							
			Hard below 2½ feet bgs.			SPT 2	100	8-13-16 (29)	31	
		CL-CH								
445			Stiff below 5 feet bgs.		5	SPT 3	100	3-4-8 (12)	13	
			LEAN TO FAT CLAY: Very stiff, brown with dark gray, light gray, and orange mottling, moist, high plasticity, trace fine-to medium-grained sand, trace friable rock fragments up to ½-inch in diameter.			SPT 4	100	11-17-10 (27)	29	
440			Hard, red with light gray and tan mottling below 10 feet bgs.		10	SPT 5	100	11-24-18 (42)	48	
			Light gray with black mottling below 11 feet bgs.							
		CL-CH								
			Stiff below 12½ feet bgs.			SPT 6	83	3-3-4 (7)	8	
435			Dark gray to brown with light gray and orange mottling, moist to wet below 15 feet bgs.		15	SPT 7	100	3-4-6 (10)	12	
430										



- Boring terminated at 16½ feet bgs.
- No caving or groundwater encountered.
- Infiltration test IT-2 performed in boring at 15 feet bgs. See Appendix B for results.
- SPT-7 conducted following completion of infiltration testing.
- Boring backfilled with granular bentonite upon completion.

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FIGURE A6
Boring B-16

CLIENT Jenny Laphanh -Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2506426
PROJECT LOCATION 299 Warner Milne Road - Oregon City, Oregon
DATE STARTED 6/18/25 **GROUND ELEVATION** 453 ft **ELEVATION DATUM** See Figure 2.
WEATHER Partly Cloudy, 65° **SURFACE** Grass **LOGGED BY** MDL **REVIEWED BY** AET
DRILLING CONTRACTOR Holt Services, Inc. **SEEPAGE** ---
EQUIPMENT Mobile B-57 Track-Mount **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Hollow Stem 6-inch ID Auger **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 86.4%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Brown, dry, low plasticiy, abundant rootlets.		0					
			LEAN TO FAT CLAY: Stiff, brown, moist, high plasticity, trace fine grained sand.			SPT 1	44	1-6-7 (13)	14	
450		CL-CH	Brown with black and orange mottling below 2½ feet bgs.			SPT 2	67	4-5-9 (14)	15	
			Very stiff, brown to orange with black mottling and trace light gray mottling below 5 feet bgs.		5	SPT 3	100	6-7-12 (19)	21	
			Isolated sub-angluar to sub-rounded gravel up to ¾-inch in diameter at about 8 feet bgs.							
445			**LEAN TO FAT CLAY WITH SAND:** Stiff, brown with dark gray, light gray, and orange mottling, moist, medium to high plasticity, with fine-to medium-grained sand, with friable rock fragments up to ½-inch in diameter.			SPT 4	44	5-5-8 (13)	14	
			Very stiff below 10 feet bgs.		10	SPT 5	100	7-8-14 (22)	25	
440		CL-CH	Red with black mottling below 13½ feet bgs.			SPT 6	100	4-8-10 (18)	21	
			Dark gray to brown with light gray and orange mottling, moist to wet below 15 feet bgs.		15	SPT 7	83	10-10-13 (23)	28	
			Some light gray mottling below 16 feet bgs.							
435			• Boring terminated at 16½ feet bgs. • No caving or groundwater encountered. • Infiltration test IT-2 performed in boring at 15 feet bgs. See Appendix B for results. • SPT-7 conducted following completion of infiltration testing. • Boring backfilled with granular bentonite upon completion.							

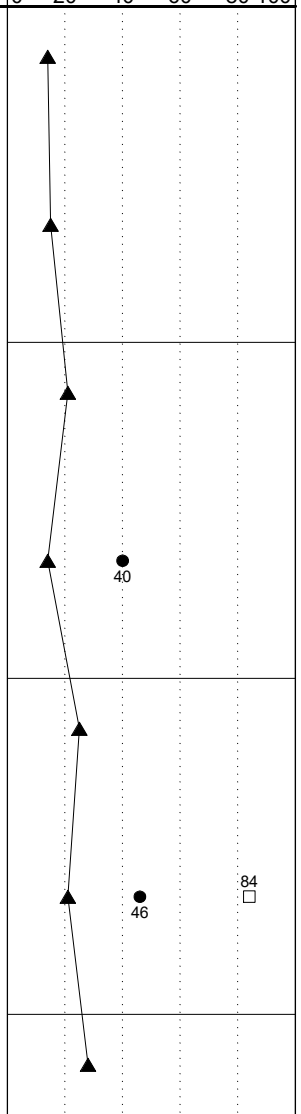

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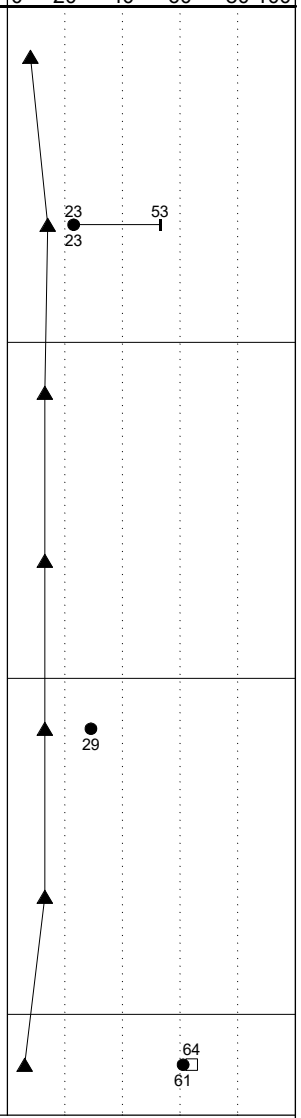
FIGURE A7
Boring B-17

CLIENT Jenny Laphanh -Portland General Electric
PROJECT NAME Oregon City Line Center Expansion
PROJECT NUMBER G2506426
PROJECT LOCATION 299 Warner Milne Road - Oregon City, Oregon
DATE STARTED 6/18/25 **GROUND ELEVATION** 453 ft **ELEVATION DATUM** See Figure 2.
WEATHER Partly Sunny, 69° **SURFACE** Grass **LOGGED BY** MDL **REVIEWED BY** AET
DRILLING CONTRACTOR Holt Services, Inc. **SEEPAGE** ---
EQUIPMENT Mobile B-57 Track-Mount **GROUNDWATER DURING DRILLING** ---
DRILLING METHOD Hollow Stem 6-inch ID Auger **GROUNDWATER AFTER DRILLING** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N_{SPT} VALUE)	N_{60} VALUE ETR_{Hammer} = 86.4%	DRY UNIT WT. (pcf)
		OL	**ORGANIC SOIL:** Brown, dry, low plasticiy, abundant rootlets.		0	SPT 1	44	3-4-3 (7)	8	
			LEAN TO FAT CLAY: Stiff, brown with trace orange mottling, moist, high plasticity, trace fine grained sand.							
450			Brown with black and orange mottling, trace to some fine grained sand below 2½ feet bgs.			SPT 2	67	4-6-7 (13)	14	
					5					
		CL-CH	Very stiff, orange to brown with black mottling, with fine-to medium-grained sand below 5 feet bgs.			SPT 3	100	5-5-7 (12)	13	
445			Orange with red, black, and light gray mottling, friable rock fragments up to ½-inch in diameter below 8 feet bgs.			SPT 4	100	2-5-7 (12)	13	
					10					
			Brown with red, light gray, and black mottling below 10 feet bgs.			SPT 5	100	2-4-7 (11)	13	
			With sand below 11½ feet bgs.							
440						SPT 6	100	2-4-7 (11)	13	
		CL-CH	**SANDY LEAN TO FAT CLAY:** Stiff, orange with light gray mottling, moist, medium plasticity, with fine-to medium-grained sand.							
			Medium stiff below 15 feet bgs.		15	SPT 7	100	1-1-4 (5)	6	
435										



- Boring terminated at 16½ feet bgs.
- No caving or groundwater encountered.
- Infiltration test IT-4 performed in boring at 15 feet bgs. See Appendix B for results.
- SPT-7 conducted following completion of infiltration testing.
- Boring backfilled with granular bentonite upon completion.

CGT BOREHOLE G2506426.GPJ 7/9/25 DRAFTED BY: MDL

Carlson Geotechnical

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Appendix B: Results of Supplemental Infiltration Testing

Oregon City Operations Center
299 Warner Milne Road
Oregon City, Oregon

CGT Project Number G2506426

July 11, 2025

Prepared For:

Jenny Laphanh
Portland General Electric (PGE)
209 Warner Milne Road
Oregon City, Oregon 97045

Prepared by
Carlson Geotechnical

B.1.0 INTRODUCTION

The project civil engineer, Mischa van Buuren, P.E., of KPFF., requested infiltration testing at five locations on a site map provided to CGT. Perched groundwater was encountered at depths ranging from about 7½ to 14½ feet bgs within two of the borings advanced at the proposed infiltration test locations, designated as borings B-13 and B-14 on the Site Plan which is attached to the main report as Figure 2. No infiltration tests were performed at those locations. Infiltration testing was attempted in borings B-15 through B-17 within hollow stem augers as described below.

B.2.0 TEST PROCEDURE

The infiltration tests (IT-2 through IT-4) were performed in general accordance with the Professional Method described in Appendix D of the Professional Method described in Appendix D of the 2020 City of Oregon City Stormwater and Grading Design Standards. Once the drilled borings were advanced to the test depths, a thin layer of clean gravel was placed within the augers to prevent scouring the soil with water during testing.

The tests were performed within a 6¼-inch diameter hollow stem augers, as allowed by the referenced method. The bottom of the augers was filled with approximately 12 inches of water, and the soil was allowed to soak overnight in accordance with the test method. After the soaking period, the water level was adjusted to a depth of 6 inches above the gravel, and the water level was recorded after 10 minutes. The water level increased at each test location, water level readings were taken after 1 hour and the tests were abandoned. Measurements were taken with a tape measure and recorded to the nearest one-eighth of an inch.

B.3.0 TEST RESULTS

The following tables present the details, raw data, and calculated infiltration rates observed during testing. Please note that the calculated infiltration rates do not include any safety or correction factors.

Table B1 Results of Infiltration Test IT-2

Location:	See Figure 2		Date:	6-19-25	Exploration Number:	B-15
Test Method:	Oregon City Encased Falling Head		Inner Diameter of Pipe:	6¼ inches	Infiltration Test Depth:	15 feet
Soil at infiltration test depth:		Lean to Fat Clay (CL-CH)		see exploration log for detail		
Presaturation Start Time:		3:35 p.m. 6/18/25	Presaturation Notes:	Water level increased 33⅝ inches overnight		
Presaturation End Time:		10:50 a.m. 6/19/25				

	Time	Time Interval (Minutes)	Measurement (inches)*	Drop in Water level (inches)	Infiltration Rate** (inches per hour)	Remarks
Trial 1	11:10 AM	0	163½	---	---	Water level adjusted to 6 inches above gravel - Trial 1 initiated
	12:10 PM	60	161¾	+1¾	---	Water level increased – test abandoned

* Measured to nearest 1/8 inch using a measuring tape

** Values calculated are raw (unfactored) rates.

Table B2 Results of Infiltration Test IT-3

Location:	See Figure 2		Date:	6-19-25	Exploration Number:	B-16
Test Method:	Oregon City Encased Falling Head		Inner Diameter of Pipe:	6¼ inches	Infiltration Test Depth:	12¼ feet
Soil at infiltration test depth:		Lean to Fat Clay with Sand (CL-CH)		see exploration log for detail		
Presaturation Start Time:		3:30 p.m. 6/18/25	Presaturation Notes:	Water level increased 9 inches overnight		
Presaturation End Time:		10:30 a.m. 6/19/25				

	Time	Time Interval (Minutes)	Measurement (inches)*	Drop in Water level (inches)	Infiltration Rate** (inches per hour)	Remarks
Trial 1	10:40 AM	0	180⅛	---	---	Water level adjusted to 6 inches above gravel - Trial 1 initiated
	11:40 AM	60	179	**+1⅛**	---	Water level increased – test abandoned

* Measured to nearest 1/8 inch using a measuring tape

** Values calculated are raw (unfactored) rates.

Table B3 Results of Infiltration Test IT-4

	Location:	See Figure 2		Date:	6-19-25	Exploration Number:	B-17
	Test Method:	Oregon City Encased Falling Head		Inner Diameter of Pipe:	6¼ inches	Infiltration Test Depth:	15 feet
	Soil at infiltration test depth:		Sandy Fat Clay (CH)		see exploration log for detail		
	Presaturation Start Time:		3:45 p.m. 6/18/25	Presaturation Notes:	Water level increased 19⅜ inches overnight		
	Presaturation End Time:		10:40 a.m. 6/19/25				
	Time	Time Interval (Minutes)	Measurement (inches)*	Drop in Water level (inches)	Infiltration Rate** (inches per hour)	Remarks	
Trial 1	11:50 AM	0	175½	---	---	Water level adjusted to 6 inches above gravel - Trial 1 initiated	
	12:50 PM	60	174	+1½	---	Water level increased – test abandoned	
	* Measured to nearest 1/8 inch using a measuring tape ** Values calculated are raw (unfactored) rates.						

B.4.0 GEOTECHNICAL REVIEW & DISCUSSION

As detailed above, the water level increased at each test location and depth. The increase in water level is anticipated to be attributable to the presence of perched groundwater encountered intermittently across the site, which may have resulted in infiltration into each borehole during the soaking period and during the testing completed on June 19, 2025. The presence of perched groundwater is typically an indicator of poor-draining soils. Accordingly, we conclude infiltrating stormwater at this site will be very challenging at this site. In the event supplemental infiltration testing is desired, CGT would be pleased to provide additional testing services, upon request, for an additional fee.

Outlook

RE: PGE Line Center

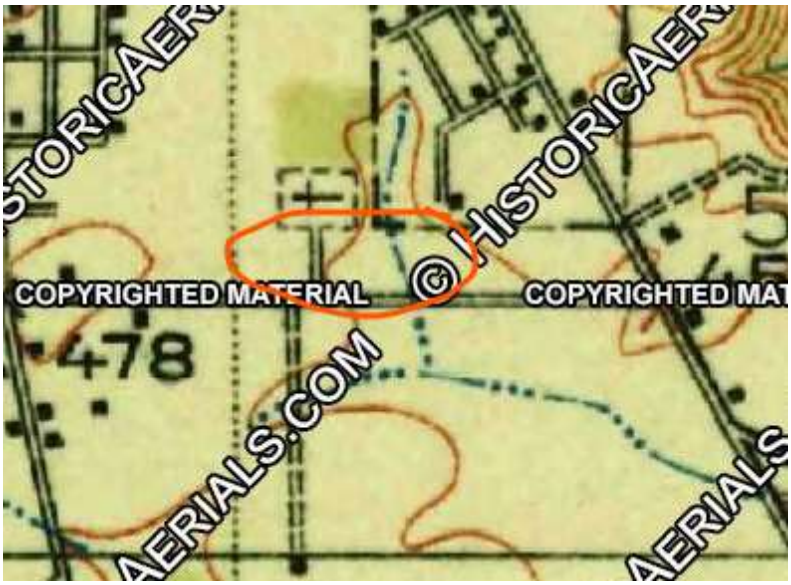
From Ariana Tenold <atenold@carlsontesting.com>
Date Mon 12/8/2025 4:15 PM
To Taylor Liserre <taylor.liserre@kpff.com>; Bento Nimo <bnimo3@carlsontesting.com>
Cc David Irish <dirish@carlsontesting.com>; Mischa van Buuren <mischa.vanbuuren@kpff.com>

Hi Taylor, thank you for taking my call just now. Bento and I compared the definition of the HSG C vs HSG D soils and are in agreement that the soils onsite are more in line with HSG D soils. The soils encountered were fat clay's with a varying amount of sand, and the onsite soils had a 0 infiltration rate at varying depths in 2022, and recently in 2025, which support the onsite soils are fat clays.

As an aside – the shallow/perched groundwater that was encountered in varying locations during the investigations may be attributed to a portion of Newell Creek having been either buried or altered sometime between 1945 and 1956. Snips of the two topo's are below for reference.

Hydrological Soil Group	Type of Soil	Runoff Potential	Infiltration Rate (mm/h)
A	Sand, loamy sand, or sandy loam	Low	>7.5
B	Loam, silt loam, or silt	Moderate	3.8–7.5
C	Sandy clay loam	Moderate	1.3–3.8
D	Clay loam, silty clay loam, sandy clay, silty clay, or clay	High	<1.3

USDA Hydrologic Soil Group (HSG) classification according to soil properties.



Ariana Tenold, R.G.
Project Geologist

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From: Taylor Liserre <taylor.liserre@kpff.com>
Sent: Monday, December 8, 2025 3:18 PM
To: Ariana Tenold <atenold@carlsontesting.com>; Bento Nimo <bnimo3@carlsontesting.com>
Cc: David Irish <dirish@carlsontesting.com>; Mischa van Buuren <mischa.vanbuuren@kpff.com>
Subject: PGE Line Center

Hi Ariana and Bento,

I was hoping to have a quick discussion with one of you about the soils out at the PGE Line Center (Project Numbers G2105613 & G2506426). Ariana, I left you a voicemail about this an hour or so ago but I wanted to follow up with an email to give you any information I may have missed in that message.

I am struggling with the stormwater management aspect of this development, and I think the main issue is that I am modeling the soils as Hydrologic Soil Group C as they are described in NRCS's Web Soil Survey for Bornstedt silt loam. I think it is easy to argue that the onsite soils share more characteristics with HSG D than HSG C. The onsite soils have a high clay content and perched groundwater, which is causing infiltration testing to be impossible. Group D soils are defined as soils being composed of clays, soils with a high water table, and soils with little to no infiltration when thoroughly wetted. I am curious if you would agree, or if there are additional elements that I have not considered that would rule it out.

I am kind of in a crunch. I am trying to get to the bottom of this to design the storm facilities, and the land use submittal date is rapidly approaching. I should have reached out sooner, but I would really appreciate it if we could hop on a phone call to briefly discuss this sometime today or tomorrow. Let me know what you guys think.

Thanks,

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Appendix B - Maps

Exhibit B1 – NRCS Web Soil Survey Report

Exhibit B2 – Existing Site Conditions Map

Exhibit B3 – Basin Map

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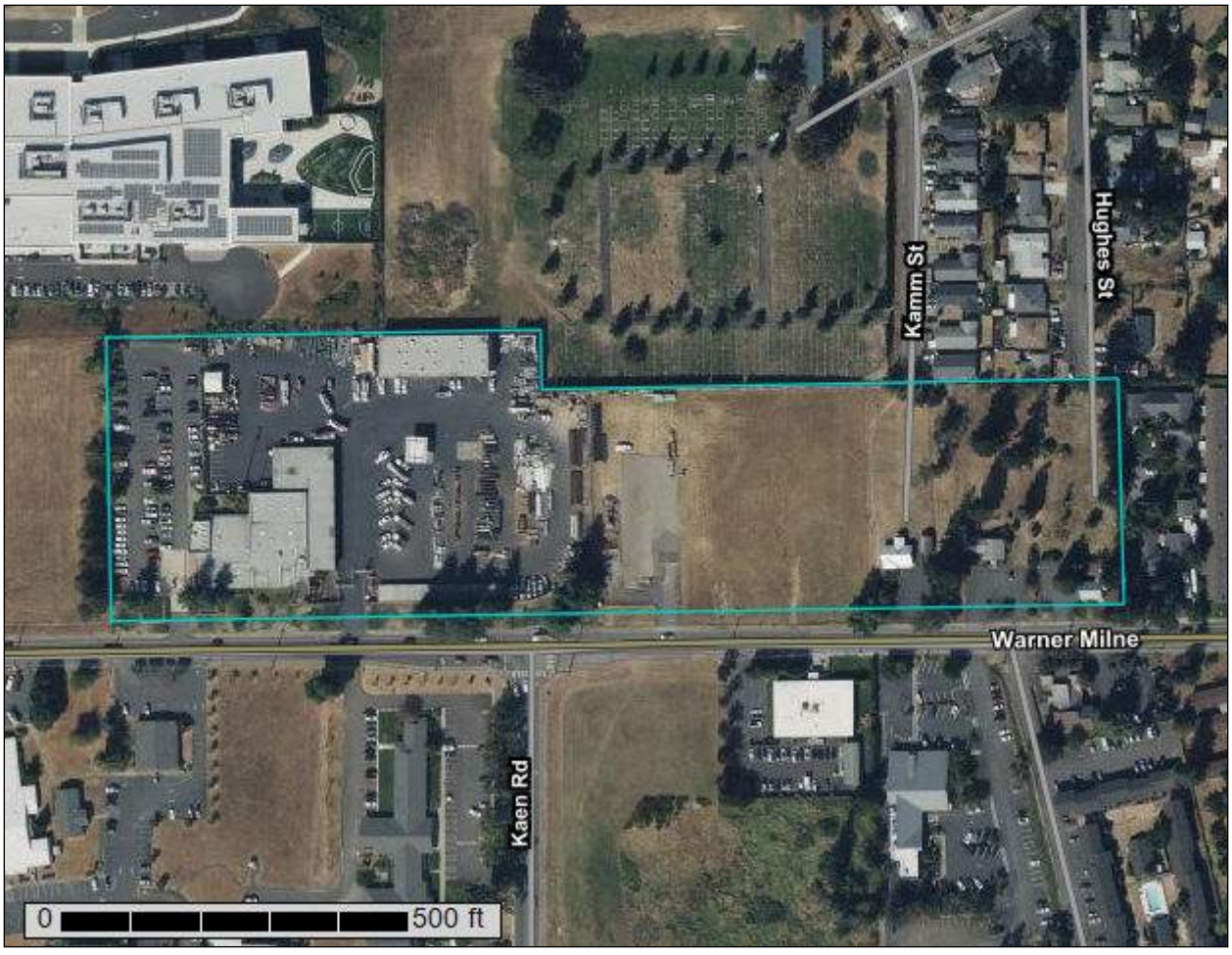
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Clackamas County Area, Oregon



December 15, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:2,460 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 22, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 26, 2022—Oct 11, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (PGE Oregon City Operation Center)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8B	Bornstedt silt loam, 0 to 8 percent slopes	12.2	100.0%
Totals for Area of Interest		**12.2**	**100.0%**

Map Unit Descriptions (PGE Oregon City Operation Center)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clackamas County Area, Oregon

8B—Bornstedt silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 227t
Elevation: 300 to 650 feet
Mean annual precipitation: 48 to 65 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bornstedt and similar soils: 85 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bornstedt

Setting

Landform: Hillslopes, terraces
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed old alluvium

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 33 inches: silty clay loam
H3 - 33 to 71 inches: silty clay

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F002XB006OR - Foothill Group
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Borges

Percent of map unit: 5 percent
Landform: Hillslopes, depressions on terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Aquults

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

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LEGEND

- BOLLARD
- FIRE HYDRANT
- GM GAS METER
- GAS VALVE
- POWER GUY ANCHOR
- E POWER JUNCTION BOX
- POWER LIGHT POLE
- EM POWER METER
- POWER POLE
- TFR POWER TRANSFORMER
- PVT POWER VAULT
- ROAD SIGNPOST
- CO SANITARY CLEANOUT
- S SANITARY MANHOLE
- STORM AREA DRAIN
- STORM CATCH BASIN
- STORM CURB INLET
- STORM MANHOLE
- UVLT UTILITY VAULT
- W WATER MANHOLE
- WM WATER METER
- WATER VALVE
- FF FINISHED FLOOR
- T TRAFFIC SIGNAL BOX
- TREE DECIDUOUS
- TREE EVERGREEN
- FOUND MONUMENT

- TRAFFIC SIGNAL POLE
- UNK UNDERGROUND UNKNOWN UTILITY
- COM UNDERGROUND COMMUNICATIONS
- FO UNDERGROUND FIBER OPTIC LINE
- GAS UNDERGROUND GAS LINE
- PWR UNDERGROUND POWER LINE
- SAN UNDERGROUND SANITARY LINE
- STM UNDERGROUND STORM LINE
- WTR UNDERGROUND WATER LINE
- OHC OVERHEAD COMMUNICATIONS LINE
- OHP OVERHEAD POWER LINE
- UNDERGROUND TRAFFIC SIGNAL LINE
- FENCE LINE
- ROAD CENTERLINE
- RIGHT-OF-WAY
- EASEMENT
- PROPERTY LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- BUILDING FOOTPRINT
- CONCRETE SURFACE
- ASPHALTIC CONCRETE
- CONCRETE CURBLINE

SURVEY NOTES

1. THE PURPOSE OF THIS SURVEY IS TO SHOW EXISTING FEATURES AT PORTLAND GENERAL ELECTRIC OREGON CITY OPERATIONS CENTER AND THE LAND TO THE EAST.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION PROVIDED BY LOCATE TICKET NUMBER 20263350, 21098712 , 23263648 AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
3. INITIAL FIELD WORK COMPLETED APRIL 26, 2021. UPDATED AND ADDITIONAL FIELDWORK COMPLETED MAY 05, 2025.
4. THIS MAP DOES NOT CONSTITUTE A BOUNDARY SURVEY.
5. HORIZONTAL DATUM: OREGON COORDINATE REFERENCE SYSTEM, PORTLAND ZONE.
6. VERTICAL DATUM: ELEVATIONS ARE NAVD88 DERIVED FROM THE OREGON REAL-TIME NETWORK. NETWORK ELEVATIONS WERE CHECKED AGAINST PUBLISHED DATASHEET ELEVATIONS AT NGS BENCHMARK NO. RD1498.
7. CONTOUR INTERVAL IS 1 FOOT.
8. BOUNDARY, EASEMENT AND RIGHT-OF-WAY LINES SHOWN HEREON WERE DEVELOPED FROM RECORDED SURVEY NUMBERS 6788, 27671, 28960, 2010-176, PARTITION PLAT 1996-24, PLAT OF "GRAND VIEW ACRES" PLAT NO. 651 AND DEED DOC. NO. 92-11512, 98-046279, 2002-078952, DEED BOOK 435 PAGE 704-705 AND DEED VOLUME 171, PAGE 528-529, CLACKAMAS COUNTY RECORDS. THIS MAP MAY NOT REFLECT ALL POTENTIAL EASEMENTS OF RECORD. FOR ADDITIONAL EASEMENT INFORMATION/ RESEARCH PLEASE CONTACT THE REGIONAL P.G.E. PROPERTY SERVICES AGENT.

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10' PGE EASEMENT
DOC. NO. 2004-027578

PARKING STRIPING (TYP)

EX STM AD (1895)

STORAGE SHED

TAX LOT 201
TAX MAP 3 2E 06DA

EX STM AD (1739)

PP CELL TOWER

EX STM AD (2180)

PP CELL TOWER

FF=469'

OREGON CITY SERVICE CENTER
SINGLE STORY
OFFICE SPACE / LINE CREWS

EX STM AD (1301)

FF=466.2'

EX STM AD (1297)

OIL WASTE TANK

EX STM AD (2075)

SINGLE STORY
MECHANICS BAYS
FF=460.3'

EX STM AD (2270)

EX STM AD (2062)

EX STM MH
RIM: 459.07

EX STM MH
RIM: 459.03

EX STM MH
RIM: 459.04

EX STM AD (2108)

**EXISTING PGE STORM LINES SHOWN PER "OFFICE ADDITION & REMODEL DRAWING" AND PRIVATE LOCATES

EX STM AD (2033)

FUEL ISLAND

FUEL TANK LIDS

EX STM AD (2023)

PORTLAND GENERAL ELECTRIC
OREGON CITY LINE CENTER
TAX LOT 100
TAX MAP 3 2E 06DA

EX STM AD (2444)

EX STM AD (2538)

EX STM AD (2368)

EX STM AD (2478)

EX STM AD (5417)
FULL OF DEBRIS

EX STM AD
GRATE: 451.60
IE IN: 449.84 (8"W)
IE IN: 449.90 (12"N)
IE OUT: 449.785 (12"S)

EX SAN MH
RIM: 453.82
IE IN: 442.82 (8"W)
IE IN: 443.89 (8"S)
IE OUT: 442.82 (8"E)

EX STM CB
GRATE: 452.95
IE OUT: 451.15 (12"E)

EX STM DI
GRATE: 451.174
IE IN: 449.50 (8"N)
IE OUT: 449.72 (12"S)

SINGLE STORY
STORAGE BAY

EX STM AD
GRATE: 464.00
IE IN: 461.55 (12"N)
IE OUT: 460.86 (10"S)

EX STM CB
GRATE: 467.57
IE IN: 466.30 (8"W)
IE OUT: 465.29 (10" S)

EX STM AD
GRATE: 469.96
IE IN: 466.00 (12"S)
IE OUT: 465.97 (12"E)

WARNER MILNE ROAD
(COUNTY ROAD NO. 20)

NWN 4-1/2" STEEL

14" UNKN

8" CONC

12" OC

16" DI

6' TALL CHAIN LINK FENCE
(S00° 42' 06"W 332.88') S3 (363' TO CENTERLINE) D5

(363' TO CENTERLINE) D1, D4, D5

MATCH LINE - SEE CONTINUATION ON SHEET 2-

MATCH LINE - SEE CONTINUATION ON SHEET 3-

PP 1565

PP 16

PP 59

PP 123

PP 44

PP 43

EX SAN MH
RIM: 463.55
IE IN: 458.09 (8"E)
IE OUT: 458.09 (8"W)

EX STM MH
RIM: 460.28
IE IN: 457.96 (12"E)
IE IN: 458.36 (6"SW)
IE OUT: 457.96 (12"W)

EX STM CB
GRATE: 459.95
IE OUT: 459.05 (6"N)

EX STM CI
RIM: 455.257
IE OUT: 451.93 (12"NE)

EX STM MH
RIM: 453.95
IE IN: 451.13 (12"W)
IE IN: 451.10 (12"S)
IE OUT: 450.77 (12"E)

EX STM MH
RIM: 453.83
**NO DIP INFO

EX STM AD
GRATE: 452.06
IE IN: 449.58 (12"W)
IE IN: 449.39 (15"15)
IE OUT: 449.293 (12"S)

EX STM MH
RIM: 451.96
IE IN: 449.06 (10"SE)
IE IN: 449.06 (10"N)
IE IN: 448.85 (18"E)
IE OUT: 448.85 (18"W)

EX STM CB
GRATE: 451.28
IE OUT: 449.43 (10"NW)

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DRAWN BY: AK
CHECKED BY: JLD
CLIENT: KPFF
WORK ORDER: M2908124
REGION/PLANT: EASTERN
SURVEY NO.: 2025-01

0 15' 30'
SCALE: 1" = 30'

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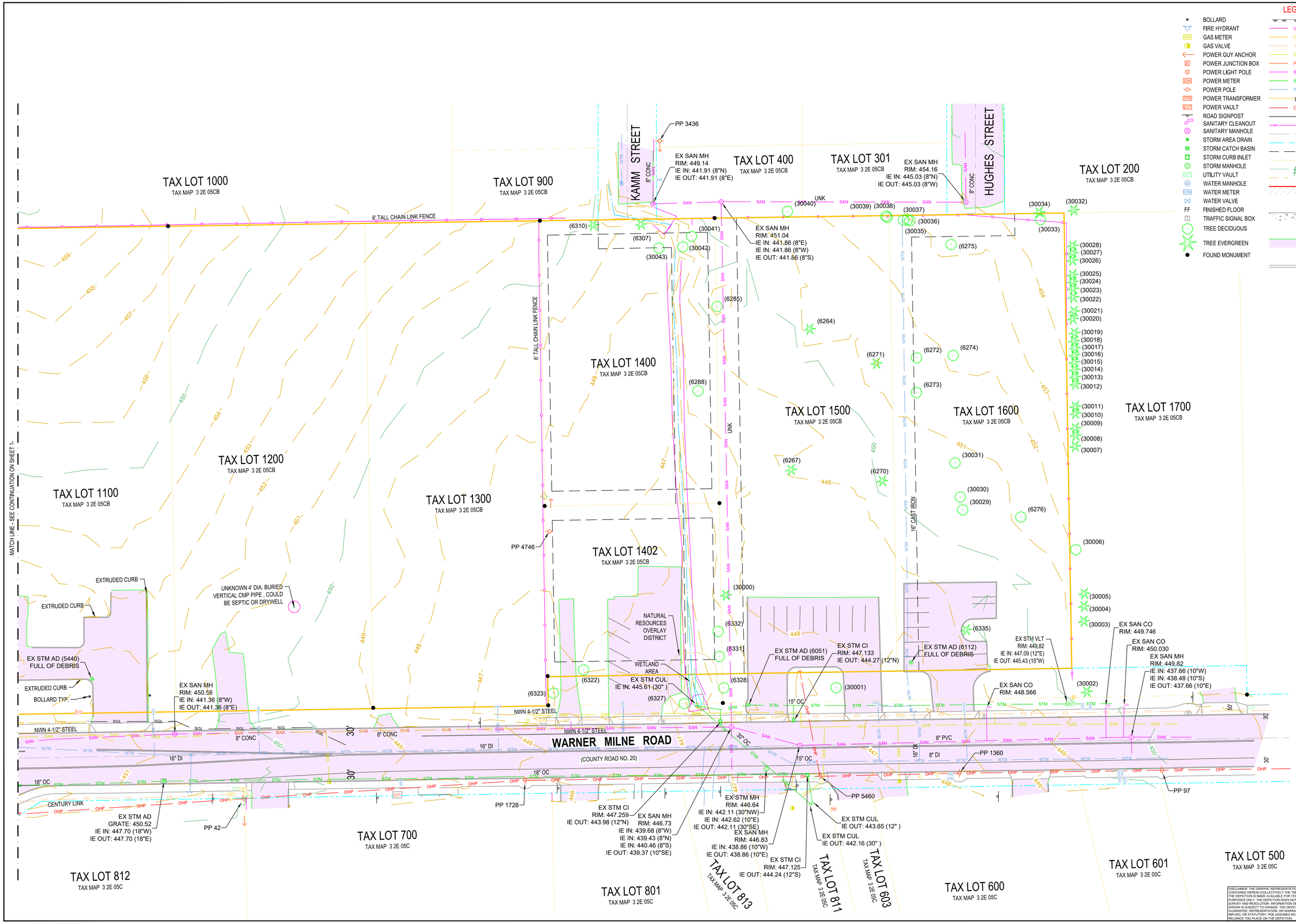
OREGON CITY OPERATIONS CENTER

EXISTING CONDITIONS PLAN
279-289-301 WARNER MILNE ROAD
PART. PLAT 1996-24, LOTS 3-4, GRAND VIEW ACRES
SECTION 05, TOWNSHIP 3 SOUTH, RANGE 2 EAST, W.M.
CITY OF OREGON CITY, CLACKAMAS COUNTY, OR

DATE: 9/4/2025
DRAWING NO.-SHEET NO.:
M2908124-01



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CLIENT: KPFF
WORK ORDER: M2908124
REGION/PLANT: EASTERN
SURVEY NO.: 2025-01

0 15' 30'
SCALE: 1" = 30'

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SECTION 05, TOWNSHIP 3 SOUTH, RANGE 2 EAST, W.M.
CITY OF OREGON CITY, CLACKAMAS COUNTY, OR

DATE: 09/04/2025
DRAWING NO.-SHEET NO.:
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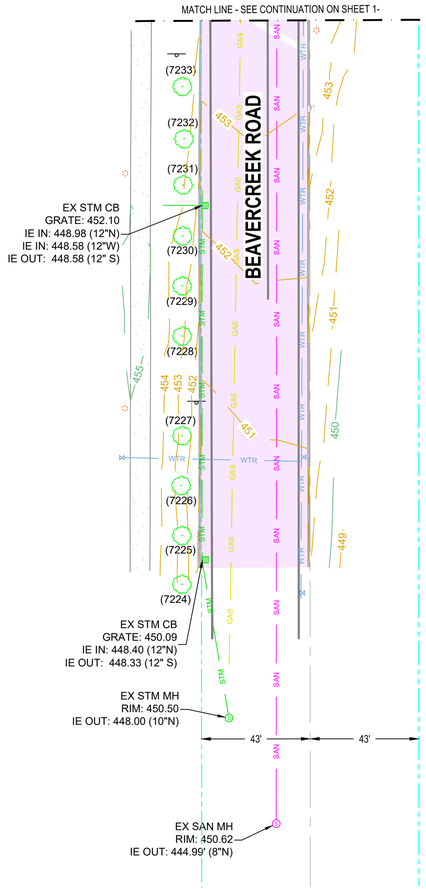
TAX LOT 812
TAX MAP 3 2E 05C



TAX LOT 812
TAX MAP 3 2E 05C

Tree Number	Survey Number	Common Name	DBH
1	7773	red oak	26
2	7774	red oak	19
3	7775	red oak	24
4	7776	red oak	17
5	7777	red oak	13
6	7778	cherry	15
7	7779	cherry	12
8	7780	cherry	21
9	7782	western-red-cedar	34
10	7781	deodora-cedar	25
11	30046	dogwood	2
12	7784	deodora-cedar	33
13	7785	deodora-cedar	33
14	7786	Japanese-maple	14
15	7148	deodora-cedar	39
16	7147	deodora-cedar	30
17	7146	deodora-cedar	31
18	7145	deodora-cedar	37
19	7144	deodora-cedar	30
20	7143	deodora-cedar	34
21	30044	dogwood	2
22	7142	deodora-cedar	37
23	7141	deodora-cedar	26
24	7140	deodora-cedar	30
25	7139	deodora-cedar	29
26	7138	deodora-cedar	28
27	7137	deodora-cedar	33
28	6310	western-red-cedar	16
29	6307	ponderosa-pine	24
30	30043	pear	14
31	30042	sweet cherry	6
32	30041	sweet cherry	7
33	6285	sweet cherry	21
34	6288	black cottonwood	22
35	30040	cherry	12
36	6264	Douglas-fir	40
37	6271	Douglas-fir	39
38	6273	Pear	6
39	6272	apple	9
40	6274	apple	10
41	30039	sweet cherry	13
42	30038	sweet cherry	10
43	30037	sweet cherry	8
44	30036	sweet cherry	6
45	30035	sweet cherry	15
46	6275	pear	12
47	30033	bigleaf-maple	8
48	30034	Douglas-fir	36
49	30032	Douglas-fir	36
50	30028	Norway-spruce	10
51	30027	Norway-spruce	12
52	30026	Norway-spruce	8
53	30025	Norway-spruce	18
54	30024	Norway-spruce	14
55	30023	Norway-spruce	14
56	30022	Norway-spruce	16
57	30021	Norway-spruce	22
58	30020	Norway-spruce	12
59	30019	Norway-spruce	16
60	30018	Norway-spruce	10
61	30017	Norway-spruce	16
62	30016	Norway-spruce	8
63	30015	Norway-spruce	12
64	30014	Norway-spruce	16
65	30013	Norway-spruce	14
66	30012	Norway-spruce	10
67	30011	Norway-spruce	18
68	30010	Norway-spruce	12
69	30009	Norway-spruce	12
70	30008	Scots-pine	16
71	30007	Scots-pine	28
72	30031	Plum	9
73	30030	Plum	6
74	30029	Plum	6
75	6276	apple	17
76	30006	weeping-willow	8
77	30005	Douglas-fir	24
78	30004	Douglas-fir	26
79	30003	Douglas-fir	28
80	30002	Douglas-fir	26
81	6335	western-red-cedar	31
82	6270	Port-Orford-cedar	25
83	6267	ponderosa-pine	28
84	30001	Japanese-maple	11
85	30000	Douglas-fir	45
86	6332	one-seed-hawthorn	18
87	6331	one-seed-hawthorn	14
88	6328	one-seed-hawthorn	15
89	6327	Oregon-white-oak	41
90	6322	European-birch	14
91	6323	hickory	23

LEGEND

BOLLARD	TRAFFIC SIGNAL POLE
FIRE HYDRANT	UNDERGROUND UNKNOWN UTILITY
GAS METER	UNDERGROUND COMMUNICATIONS
GAS VALVE	UNDERGROUND FIBER OPTIC LINE
POWER GUY ANCHOR	UNDERGROUND GAS LINE
POWER JUNCTION BOX	UNDERGROUND POWER LINE
POWER LIGHT POLE	UNDERGROUND SANITARY LINE
POWER METER	UNDERGROUND STORM LINE
POWER POLE	UNDERGROUND WATER LINE
POWER TRANSFORMER	OVERHEAD COMMUNICATIONS LINE
POWER VAULT	OVERHEAD POWER LINE
ROAD SIGNPOST	UNDERGROUND TRAFFIC SIGNAL LINE
SANITARY CLEANOUT	FENCE LINE
SANITARY MANHOLE	ROAD CENTERLINE
STORM AREA DRAIN	RIGHT-OF-WAY
STORM CATCH BASIN	EASEMENT
STORM CURB INLET	PROPERTY LINE
STORM MANHOLE	MAJOR CONTOUR
UTILITY VAULT	MINOR CONTOUR
WATER MANHOLE	BUILDING FOOTPRINT
WATER METER	
WATER VALVE	
FINISHED FLOOR	CONCRETE SURFACE
TRAFFIC SIGNAL BOX	
TREE DECIDUOUS	ASPHALTIC CONCRETE
TREE EVERGREEN	
FOUND MONUMENT	CONCRETE CURBLINE

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DRAWN BY: AK
CHECKED BY: JLD
CLIENT: KPFF
WORK ORDER: M2908124
REGION/PLANT: EASTERN
SURVEY NO.: 2025-01

0 15' 30'
SCALE: 1" = 30'

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EXISTING CONDITIONS PLAN
279-289-301 WARNER MILNE ROAD
PART. PLAT 1996-24, LOTS 3-4, GRAND VIEW ACRES
SECTION 05, TOWNSHIP 3 SOUTH, RANGE 2 EAST, W.M.
CITY OF OREGON CITY, CLACKAMAS COUNTY, OR

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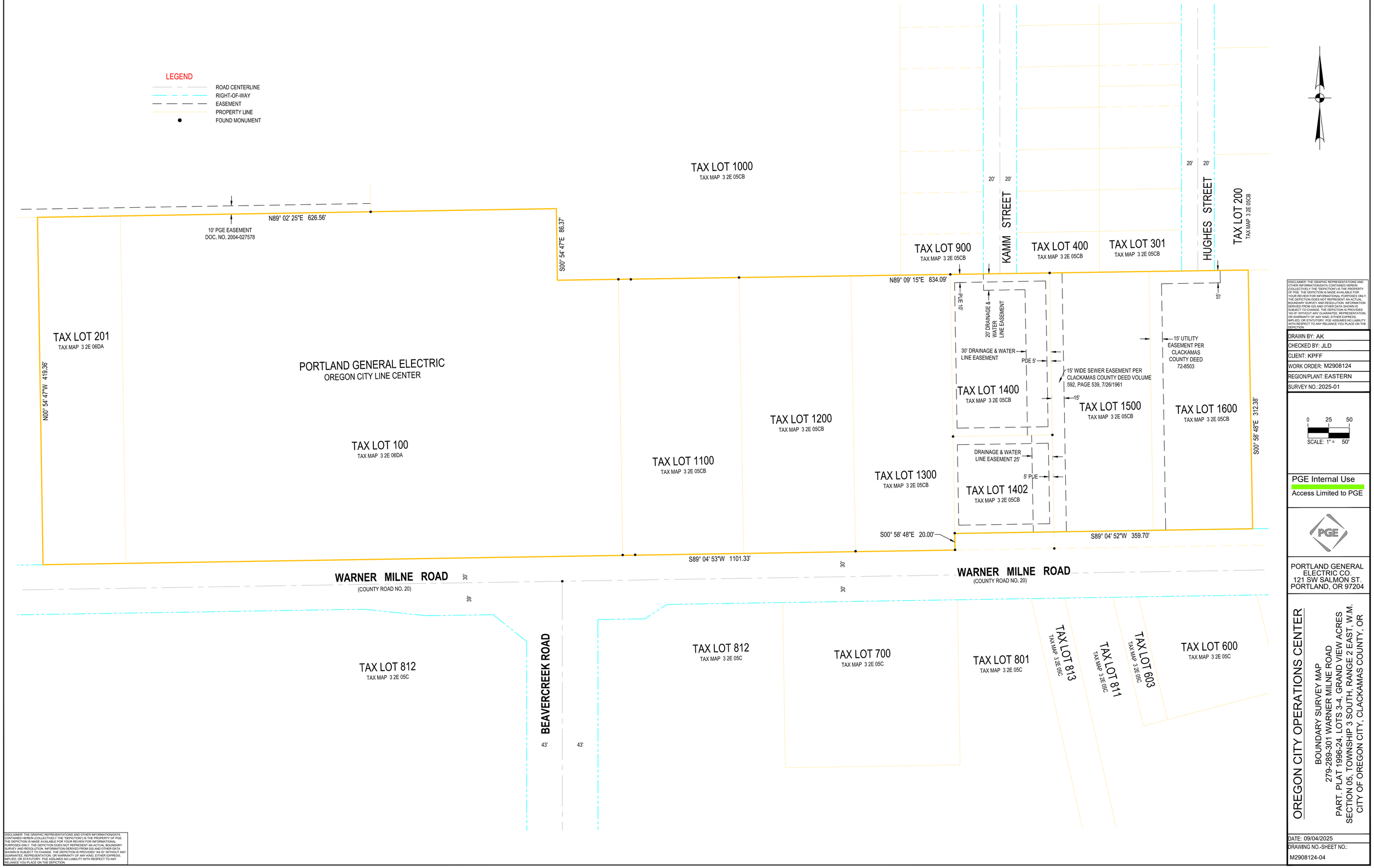
DATE: 09/04/2025
DRAWING NO.-SHEET NO.:
M2908124-03



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DRAWN BY: AK
CHECKED BY: JLD
CLIENT: KPFF
WORK ORDER: M2908124
REGION/PLANT: EASTERN
SURVEY NO.: 2025-01

0 25 50
SCALE: 1" = 50'

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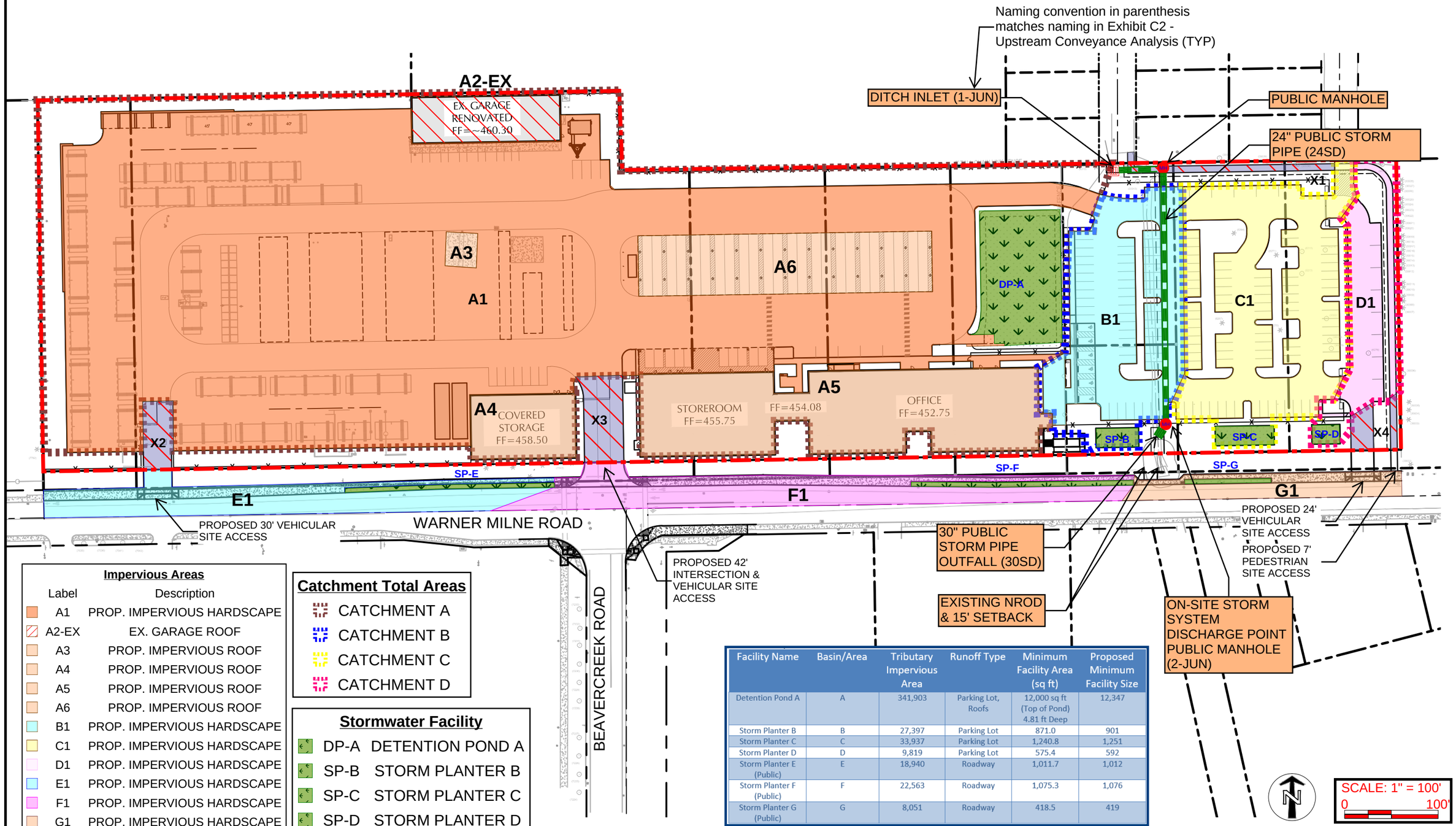
BOUNDARY SURVEY MAP
279-289-301 WARNER MILNE ROAD
PART: PLAT 1996-24, LOTS 3-4, GRAND VIEW ACRES
SECTION 05, TOWNSHIP 3 SOUTH, RANGE 2 EAST, W.M.
CITY OF OREGON CITY, CLACKAMAS COUNTY, OR

DATE: 09/04/2025
DRAWING NO.-SHEET NO.:
M2908124-04



Impervious Areas

Label	Description
A1	PROP. IMPERVIOUS HARDSCAPE
A2-EX	EX. GARAGE ROOF
A3	PROP. IMPERVIOUS ROOF
A4	PROP. IMPERVIOUS ROOF
A5	PROP. IMPERVIOUS ROOF
A6	PROP. IMPERVIOUS ROOF
B1	PROP. IMPERVIOUS HARDSCAPE
C1	PROP. IMPERVIOUS HARDSCAPE
D1	PROP. IMPERVIOUS HARDSCAPE
E1	PROP. IMPERVIOUS HARDSCAPE
F1	PROP. IMPERVIOUS HARDSCAPE
G1	PROP. IMPERVIOUS HARDSCAPE
X1	PROP. IMPERVIOUS HARDSCAPE
X2	PROP. IMPERVIOUS HARDSCAPE
X3	PROP. IMPERVIOUS HARDSCAPE
X4	PROP. IMPERVIOUS HARDSCAPE

Catchment Total Areas

- CATCHMENT A
- CATCHMENT B
- CATCHMENT C
- CATCHMENT D

Stormwater Facility

DP-A	DETENTION POND A
SP-B	STORM PLANTER B
SP-C	STORM PLANTER C
SP-D	STORM PLANTER D
SP-E	STORM PLANTER E
SP-F	STORM PLANTER F
SP-G	STORM PLANTER G

Facility Name	Basin/Area	Tributary Impervious Area	Runoff Type	Minimum Facility Area (sq ft)	Proposed Minimum Facility Size
Detention Pond A	A	341,903	Parking Lot, Roofs	12,000 sq ft (Top of Pond) 4.81 ft Deep	12,347
Storm Planter B	B	27,397	Parking Lot	871.0	901
Storm Planter C	C	33,937	Parking Lot	1,240.8	1,251
Storm Planter D	D	9,819	Parking Lot	575.4	592
Storm Planter E (Public)	E	18,940	Roadway	1,011.7	1,012
Storm Planter F (Public)	F	22,563	Roadway	1,075.3	1,076
Storm Planter G (Public)	G	8,051	Roadway	418.5	419

kpff

PGE OREGON CITY OPERATING CENTER

BASIN MAP

#2500065

EXHIBIT B3

12/11/2025

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Appendix C – Stormwater Modeling and Analysis

Exhibit C1 – BMP Sizing Tool Report

Exhibit C2 – Upstream Conveyance Analysis

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WES BMP Sizing Report

Project Information

Project Name	PGE Line Center
Project Type	Commercial
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
Pond Impervious	341,903	Forested	ConventionalConcrete	D	Detention Pond A
Pond Pervious	16,947	Forested	LandscapeDsoil	D	Detention Pond A
Parking West Impervious	27,397	Forested	ConventionalConcrete	D	Storm Planter B
Parking West Pervious	2,335	Forested	LandscapeDsoil	D	Storm Planter B
Parking Central Impervious	33,937	Forested	ConventionalConcrete	D	Storm Planter C
Parking Central Pervious	10,603	Forested	LandscapeDsoil	D	Storm Planter C
Parking East Impervious	9,819	Forested	ConventionalConcrete	D	Storm Planter D
Parking East Pervious	13,372	Forested	LandscapeDsoil	D	Storm Planter D

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Storm Planter B	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	870.9	900.0	1.9
Storm Planter C	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	1,240.8	1,250.0	2.3
Storm Planter D	FlowControlAndTreatment	Stormwater Planter -	Lined	575.4	590.0	1.7

		Filtration				

Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Detention Pond A	FCWQT	Lined	4.81	12,000.0	3	43,848.8	29,322.3	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

Simple Pond Geometry Configuration

Pond ID: Detention Pond A
Design: FlowControlAndTreatment

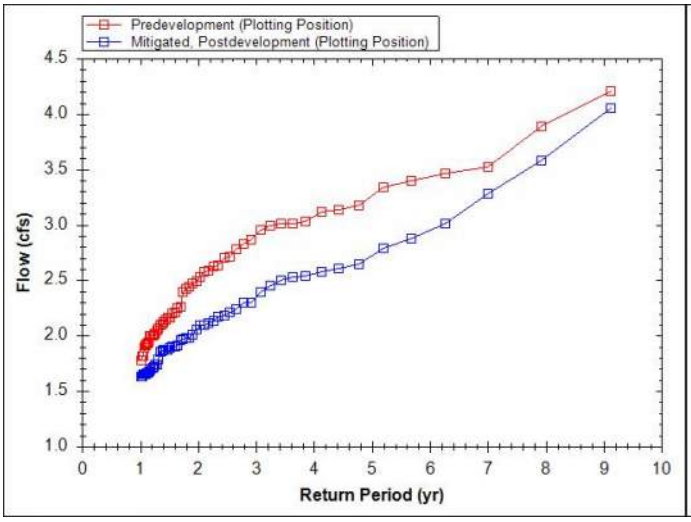
Shape Curve

Depth (ft)	Area (sq ft)
4.8	12,000.0

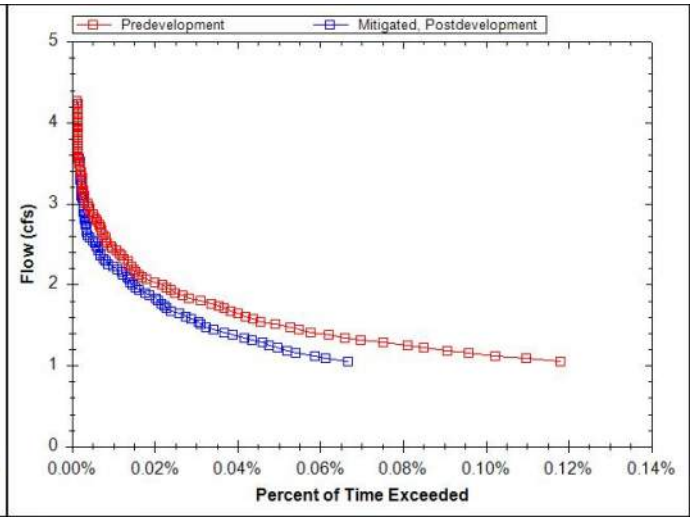
Outlet Structure Details

Lower Orifice Invert (ft)	0.0
Lower Orifice Dia (in)	4.3
Upper Orifice Invert(ft)	3.2
Upper Orifice Dia (in)	9.9
Overflow Weir Invert(ft)	3.8
Overflow Weir Length (ft)	6.3

Flow Frequency Chart



Flow Duration Chart



WES BMP Sizing Report

Project Information

Project Name	PGE Line Center
Project Type	Commercial
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
Public West - Impervious	18,940	Forested	ConventionalConcrete	D	Storm Planter E
Public West - Pervious	21,119	Forested	LandscapeDsoil	D	Storm Planter E
Public Center - Impervious	22,563	Forested	ConventionalConcrete	D	Storm Planter F
Public Center - Pervious	18,973	Forested	LandscapeDsoil	D	Storm Planter F
Public East - Impervious	8,051	Forested	ConventionalConcrete	D	Storm Planter G
Public East - Pervious	8,428	Forested	LandscapeDsoil	D	Storm Planter G

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Storm Planter E	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	1,011.7	1,012.0	2.2
Storm Planter F	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	1,075.3	1,076.0	2.3
Storm Planter G	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	418.5	419.0	1.4

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

Project Description

File Name 2500065-Ditch.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... Santa Barbara UH
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ..... NO

Analysis Options

Start Analysis On	00:00:00	0:00:00
End Analysis On	00:00:00	0:00:00
Start Reporting On	00:00:00	0:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins.....	4
Nodes.....	4
Junctions	2
Outfalls	2
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links.....	2
Channels	0
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period	Rainfall Depth	Rair Dist

Subbasin Summary

SN	Subbasin ID	Area (ac)	Impervious Area (%)	Impervious Area Curve Number	Pervious Area Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Graveyard	10.00	0.00	98.00	74.00	3.99	1.52	15.24	1.52	0 01:09:47
2	MiddleSchoolArea	18.40	0.00	98.00	70.00	3.99	1.22	22.37	1.68	0 01:57:51
3	PGE Site	11.74	79.00	98.00	80.00	3.99	3.39	39.83	9.85	0 00:05:00
4	ResidentialArea	50.20	0.00	98.00	80.00	3.99	1.99	99.70	13.46	0 00:47:37

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft^2)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	(da
1	1-Jun	Junction	446.43	455.00	0.00	0.00	0.00	16.23	448.67	0.00	6.33	
2	2-Jun	Junction	0.00	6.00	0.00	6.00	0.00	24.23	446.59	0.00	0.69	
3	Out-02	Outfall	0.00					24.22	0.00			
4	Out-03	Outfall	0.00					0.00	0.00			

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Tota Surch
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		
1	24SD	Pipe	1-Jun	2-Jun	294.00	447.34	444.78	0.8700	24.000	0.0110	16.22	24.95	0.65	6.50	1.53	0.77	
2	30SD	Pipe	2-Jun	Out-02	55.00	444.78	444.30	0.8700	30.000	0.0110	24.22	45.29	0.53	7.54	1.56	0.62	

Subbasin Hydrology

Subbasin : Graveyard

Input Data

Area (ac)	10
Impervious Area (%)	0
Impervious Area Curve Number	98
Pervious Area Curve Number	74
Rain Gage ID	Rain Gage-01

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Composite Area & Weighted CN	10		74

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0	0
Flow Length (ft) :	600	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	2.65	0	0
Velocity (ft/sec) :	0.19	0	0
Computed Flow Time (min) :	53.13	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	700	0	0
Slope (%) :	1	0	0
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.7	0	0
Computed Flow Time (min) :	16.67	0	0

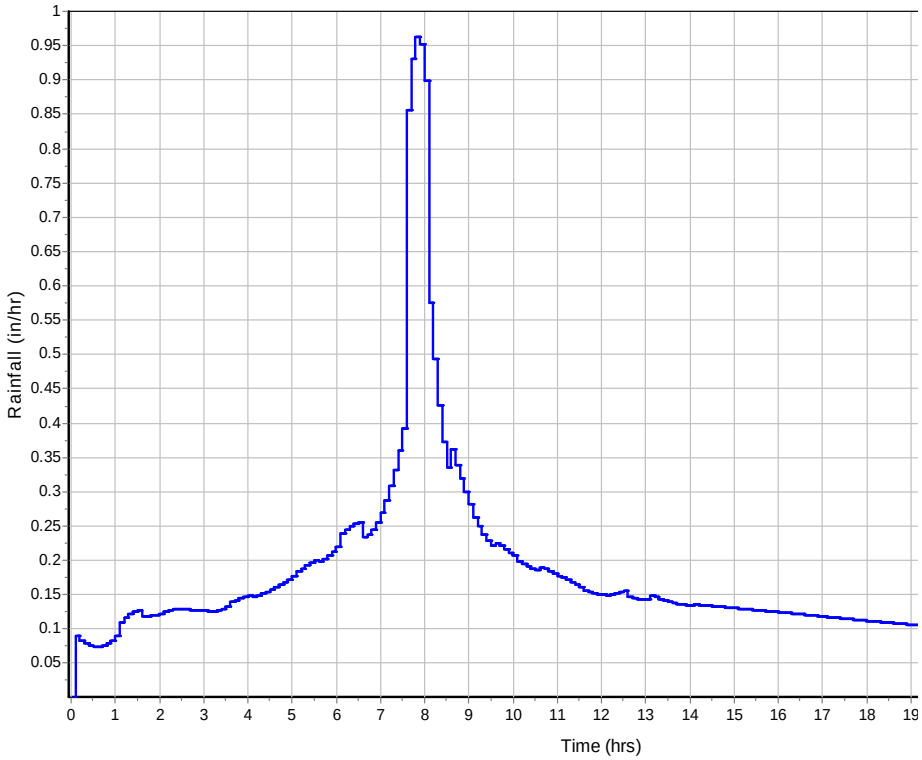
Total TOC (min) 69.79

Subbasin Runoff Results

Total Rainfall (in)	3.99
Total Runoff (in)	1.52
Peak Runoff (cfs)	1.52
Weighted Curve Number	74
Time of Concentration (days hh:mm:ss)	0 01:09:47

Subbasin : Graveyard

Rainfall Intensity Graph



Runoff Hydrograph

Subbasin : MiddleSchoolArea

Input Data

Area (ac)	18.4
Impervious Area (%)	0
Impervious Area Curve Number	98
Pervious Area Curve Number	70
Rain Gage ID	Rain Gage-01

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Composite Area & Weighted CN	18.4		70

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.13	0	0
Flow Length (ft) :	900	0	0
Slope (%) :	1	0	0
2 yr, 24 hr Rainfall (in) :	2.65	0	0
Velocity (ft/sec) :	0.2	0	0
Computed Flow Time (min) :	73.48	0	0

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	1300	0	0
Slope (%) :	1	0	0
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.7	0	0
Computed Flow Time (min) :	30.95	0	0

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0	0.13	0
Flow Length (ft) :	0	1300	0
Channel Slope (%) :	0	5	0
Cross Section Area (ft^2) :	0	10	0
Wetted Perimeter (ft) :	0	20	0
Velocity (ft/sec) :	0	1.61	0
Computed Flow Time (min) :	0	13.42	0

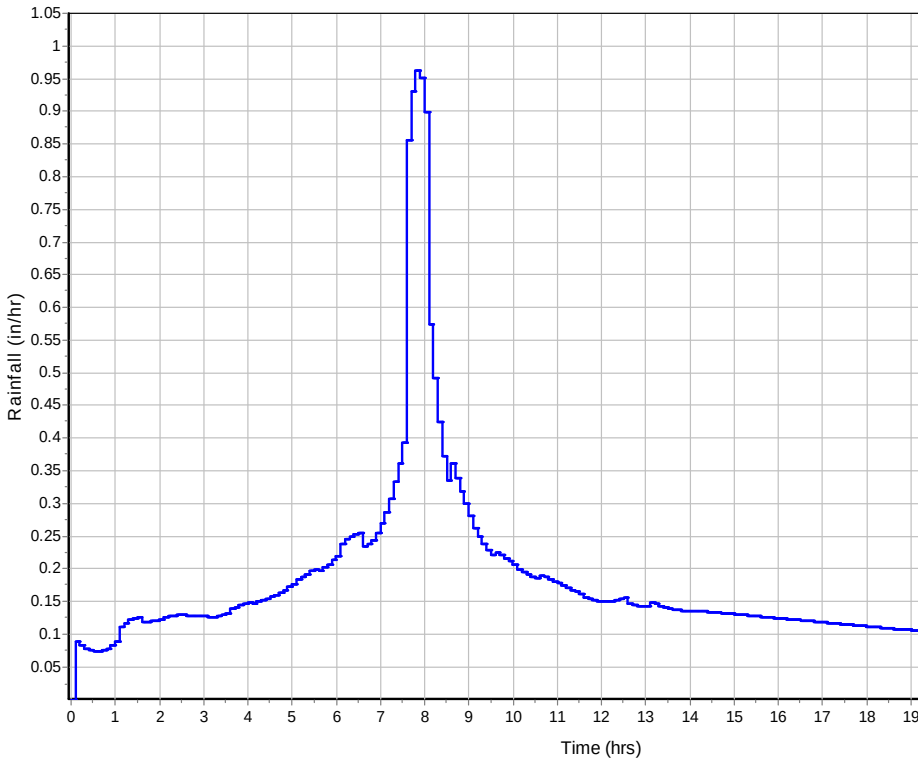
Total TOC (min) 117.85

Subbasin Runoff Results

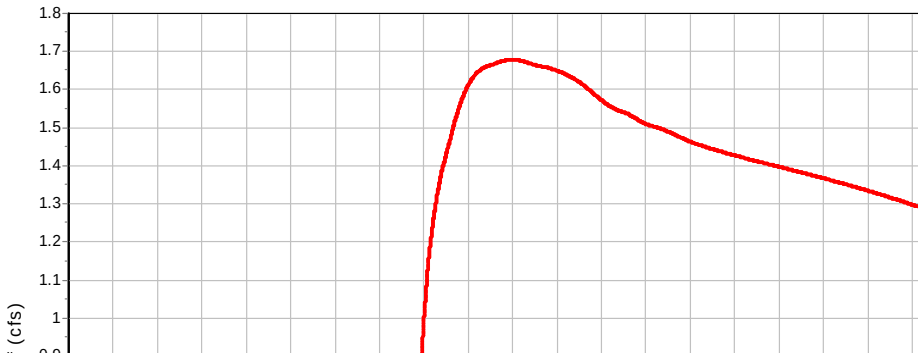
Total Rainfall (in)	3.99
Total Runoff (in)	1.22

Subbasin : MiddleSchoolArea

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : PGE Site

Input Data

Area (ac)	11.74
Impervious Area (%)	79
Impervious Area Curve Number	98
Pervious Area Curve Number	80
Rain Gage ID	Rain Gage-01

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Composite Area & Weighted CN	11.74		94.22

Time of Concentration

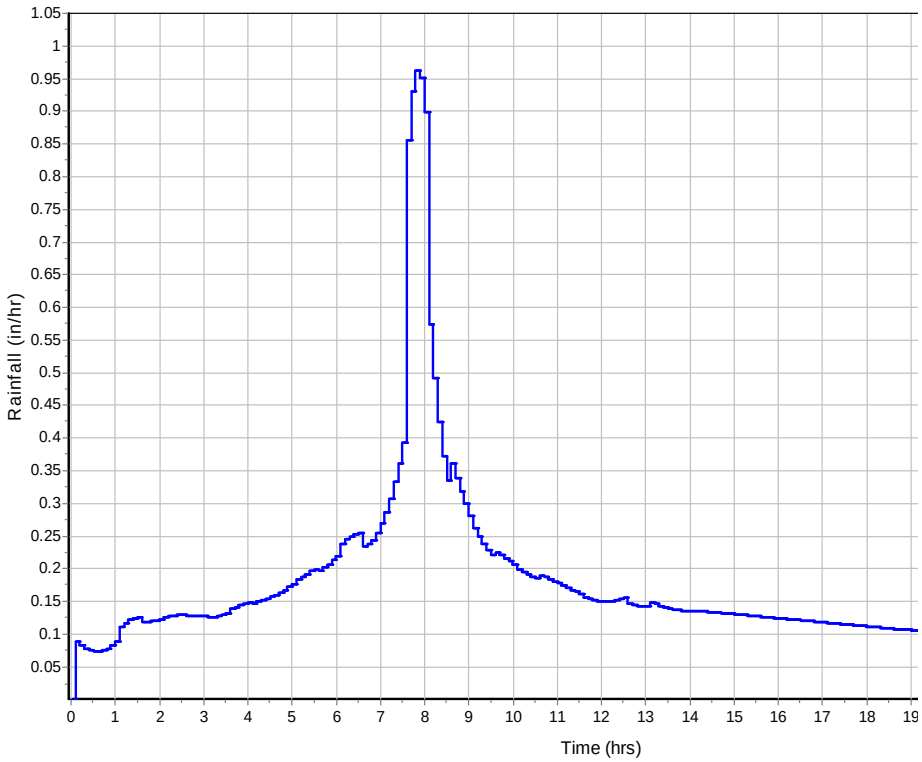
User-Defined TOC override (minutes): 5

Subbasin Runoff Results

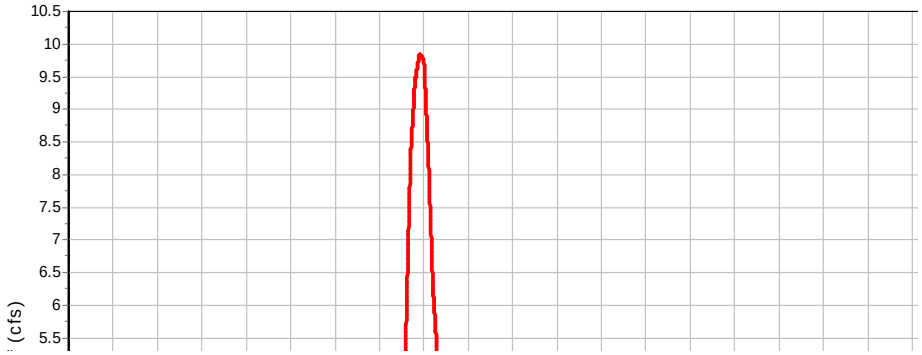
Total Rainfall (in)	3.99
Total Runoff (in)	3.39
Peak Runoff (cfs)	9.85
Weighted Curve Number	94.22
Time of Concentration (days hh:mm:ss)	0 00:05:00

Subbasin : PGE Site

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : ResidentialArea

Input Data

Area (ac)	50.2
Impervious Area (%)	0
Impervious Area Curve Number	98
Pervious Area Curve Number	80
Rain Gage ID	Rain Gage-01

Composite Curve Number

32 Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Composite Area & Weighted CN	50.2		80

Time of Concentration

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2000	0	0
Slope (%) :	1	0	0
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.7	0	0
Computed Flow Time (min) :	47.62	0	0

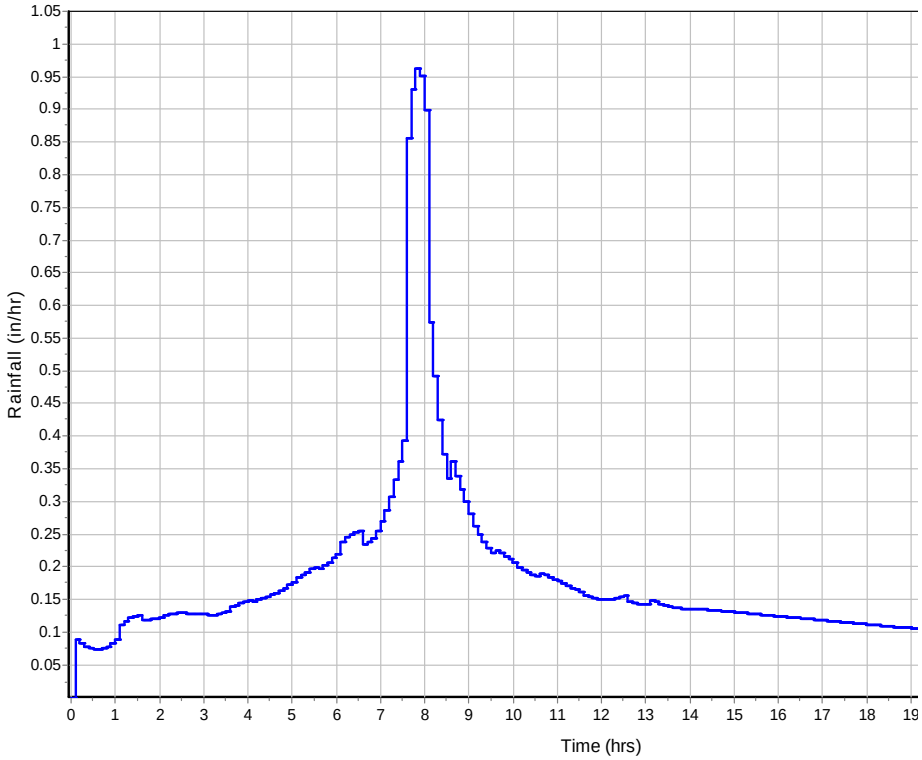
Total TOC (min) 47.62

Subbasin Runoff Results

Total Rainfall (in)	3.99
Total Runoff (in)	1.99
Peak Runoff (cfs)	13.46
Weighted Curve Number	80
Time of Concentration (days hh:mm:ss)	0 00:47:37

Subbasin : ResidentialArea

Rainfall Intensity Graph



Runoff Hydrograph

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft^2)	Minimum Pipe Cover (in)
1	1-Jun	446.43	455.00	8.57	0.00	-446.43	0.00	-455.00	0.00	0.00
2	2-Jun	0.00	6.00	6.00	0.00	0.00	6.00	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Fl Occu (days h
1	1-Jun	16.23	16.23	448.67	2.24	0.00	6.33	447.98	1.55	0 08:18	0
2	2-Jun	24.23	9.85	446.59	446.59	0.00	0.69	426.88	426.88	0 08:00	0

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	E
1	24SD	294.00	447.34	0.91	444.78	444.78	2.56	0.8700	CIRCULAR	24.000	24.000	0.0110	
2	30SD	55.00	444.78	444.78	444.30	444.30	0.48	0.8700	CIRCULAR	30.000	30.000	0.0110	

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Fro Num
1	24SD	16.22	0 08:18	24.95	0.65	6.50	0.75	1.53	0.77	0.00	
2	30SD	24.22	0 08:00	45.29	0.53	7.54	0.12	1.56	0.62	0.00	

Appendix D – Downstream Drainage Basin Analysis

Exhibit D1 – Downstream Drainage Basin Analysis

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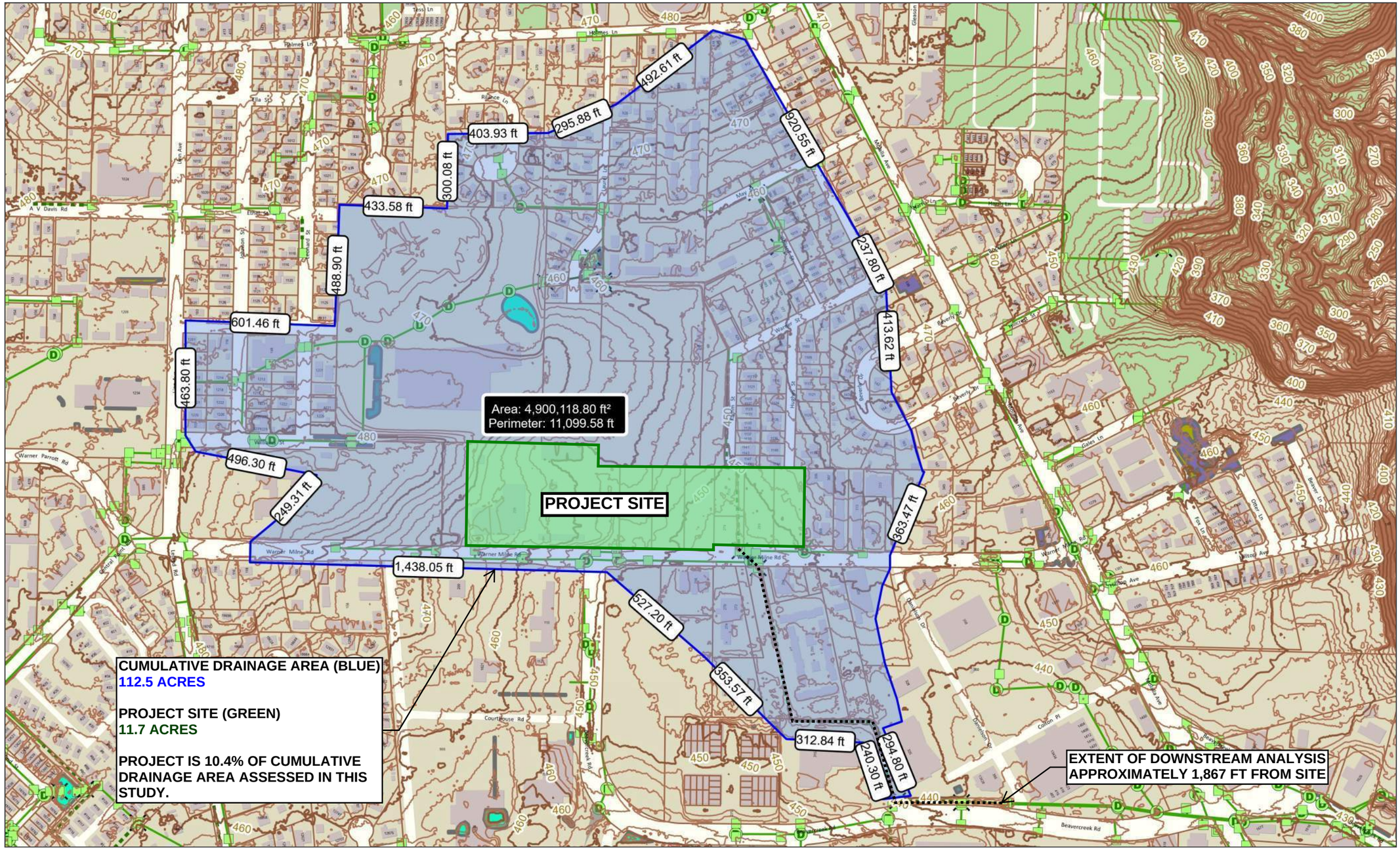
PGE Oregon City Operating Center

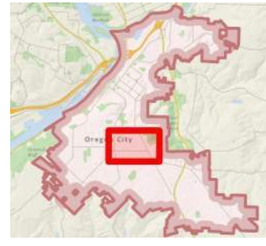


Legend

- Street Names
- Contours (2 ft)
  - 10 foot
  - 2 foot
- Taxlots
- Unimproved ROW
- Storm Structures (City Owned)
  - Manhole
  - Inlet
  - Outlet
- Storm Conduits (City Owned)
  - Pipe
  - Culvert
  - Ditch
  - Detention Tank
- Storm Ponds
  - Pond
  - Swale
  - Man-Made Wetland
  - Soaker Trench Infiltrator
  - Rain Garden
  - Porous Pavement
  - Roadside Planter

Notes

Overview Map



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

0 800 1,600 Feet

1: 4,800

Map created 12/12/2025

Downstream Drainage Basin Analysis

12/12/2025 SITE VISIT

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

PGE Oregon City Operating Center

Legend

- Street Names
- Taxlots
- Unimproved ROW
- Storm Structures (City Owned)
  - Manhole
  - Inlet
  - Outlet
- Storm Conduits (City Owned)
  - Pipe
  - Culvert
  - Ditch
  - Detention Tank
- Flow Arrows
- Storm Ponds
  - Pond
  - Swale
  - Man-Made Wetland
  - Soaker Trench Infiltrator
  - Rain Garden
  - Porous Pavement
  - Roadside Planter
- City Limits
- UGB

Notes

Overview Map

The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 12/12/2025

N

0 400 800 Feet

1: 2,400

PHOTO KEY

XX Photo # and Direction

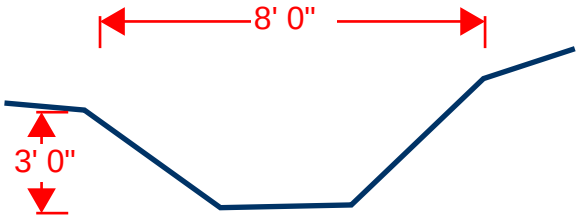
City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

Downstream Analysis Photo Map

APPROX 30"H x 54"W CONCRETE OVAL PIPE CULVERT UNDER WARNER MILNE ROAD (NORTH SIDE)

DOWNSTREAM END OF CULVERT UNDER WARNER MILNE ROAD (SOUTH SIDE)

CONVEYANCE DITCH RUNNING SOUTH ADJACENT TO WILLOW SPRINGS APARTMENTS PROPERTY. DIMENSIONS SHOWN BELOW.



A CONVEYANCE DITCH TYPICAL CROSS SECTION

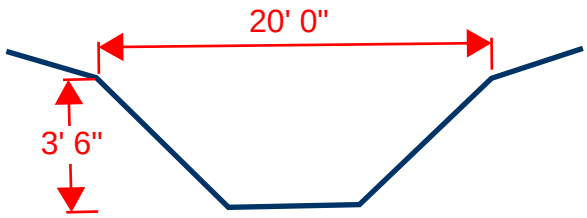
36" CORRUGATED METAL CULVERT UNDER SMALL PAVED PATHWAY BETWEEN PROPERTIES.

DOWNSTERAM OF 36" CULVERT LOOKING NORTH. CONVEYANCE SWALE HAS THE SAME DIMENSIONS AS SHOWN IN SECTION A ON PREVIOUS PAGE.

24" CORRUGATED PLASTIC PIPE CULVERT MOSTLY EXPOSED AT TOP. CULVERT UNDER UNPAVED PATH BETWEEN PROPERTIES.

CONVEYANCE SWALE TURNS EAST AT STUB OF APARTMENT ACCESS ROAD. DIMENSIONS SIMILAR TO SECTION A.

CONVEYANCE SWALE CONTINUING EAST BETWEEN WILLOW SPRINGS APARTMENTS AND DHS BUILDING. DIMENSIONS SHOWN BELOW



B CONVEYANCE DITCH TYPICAL CROSS SECTION

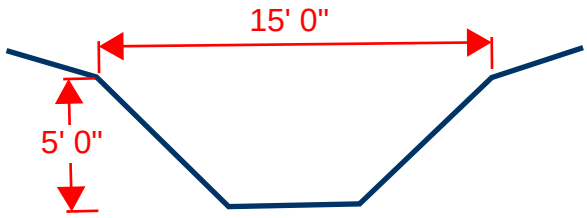
CONVEYANCE SWALE CONTINUING EAST AT SOUTHEAST PROPERTY CORNER OF WILLOW SPRINGS APARTMENTS. DIMENSIONS SIMILAR TO SECTION B.

CONVEYANCE SWALE TURNS SOUTH BETWEEN DHS BUILDING AND REGAL MOVIE THEATRE. DIMENSIONS SIMILAR TO SECTION B.

CONVEYANCE SWALE CONTINUES SOUTH TOWARDS BEAVERCREEK ROAD. DIMENSIONS SIMILAR TO SECTION B.

CONVEYANCE SWALE TURNS EAST ALONG THE NORTH SIDE OF BEAVERCREEK ROAD. OUTLET SHOWN IN PHOTO FROM PUBLIC STORM SYSTEM IN BEAVERCREEK ROAD.

CONVEYANCE SWALE HEADING EAST ALONG NORTH SIDE OF BEAVERCREEK ROAD. DIMENSIONS SHOWN BELOW.



C CONVEYANCE DITCH TYPICAL CROSS SECTION

DITCH INLET AT END OF CONVEYANCE SWALE AT INTERSECTION OF BEAVERCREEK ROAD AND ENTRANCE TO SAFEWAY PARKING AREA. END OF ANALYSIS

TWO 42" CONCRETE PIPES LEAVING DITCH INLET HEADING EAST TO NEWELL CREEK.

CONCLUSIONS:

The downstream conditions of the site were determined to be adequate for the PGE Oregon City Operations Center development project.

The downstream conveyance systems analyzed in this report extended to the point where the project site contributed less than 15% of the cumulative tributary drainage area and exceeded 1,500 feet downstream of the site. See the Downstream Drainage Basin Analysis Map at the beginning of this report for extents of analysis.

Although the project will be adding impervious area, proposed onsite detention facilities will be added to provide flow control. These facilities are designed so that the duration of peak flow rates from post-development conditions shall be less than the duration of peak flow rates from pre-development conditions for all peak flows between 42 percent of the 2-year peak flow rate up to the 10-year peak flow rate per section 4.2 of the Oregon City Stormwater and Grading Design Standards. Therefore, the proposed development should not materially increase the peak flows of the downstream drainage basin.

It was determined that the critical portion of the downstream conveyance system was the 24" corrugated plastic culvert (Figure 6, page 2). See calculations below that show the 24" constraining pipe is still able to convey peak flows for the entire drainage basin during 25-year 24-hour storm event.

SN	Element ID	Description	Average Slope	Pipe Shape	Pipe Diameter or Height	Manning's Roughness	Peak Flow	Time of Peak Flow Occurrence	Max Flow Velocity	Design Flow Capacity	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Max Flow Depth
			(%)		(inches)		(cfs)	(days hh:mm)	(ft/sec)	(cfs)			(ft)
1	EXIST-24-CULV	24" HDPE CUVLERT	1.0000	CIRCULAR	24.000	0.0110	18.46	0 07:46	6.89	26.74	0.69	0.81	1.61

Appendix E – Site Assessment and Preliminary Design Checklist

Exhibit E1 – Site Assessment and Preliminary Design Checklist

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SITE ASSESSMENT AND PRELIMINARY DESIGN CHECKLIST

✓	Information needed	Attach supporting materials as needed
2.2.1 Site Information		
	Applicant contact information	Applicant name: Mischa van Buuren Business name: KPFF Consulting Engineers Contact address, phone number, and e-mail: 111 SW Fifth Avenue, Suite 2400, Portland, OR 97204 mischa.vanbuuren@kpff.com (503) 542-3860
	Project location	Site address: 209 Warner Milne Road, Oregon City, OR 97045 Site description: The site is a PGE Operating Center that includes storage areas for equipment and fleet vehicles along with some office space. Major drainage basin: Newell Creek Is the project site located with the NROD as defined in OCMC 17.49? Y (Y/N) *Include a vicinity map of the site (including location of property in relation to adjacent properties, roads, and pedestrian/bike facilities).* See Appendix B2
	Project type	Identify types of development planned for the site such as commercial, industrial, single-family residential, multi-family residential, or other (describe): Commercial
	Size of site	Size of site: _____ (acres) OR 511,336 (SF) Number of lots: Existing: 8 Proposed: 1 Amount of new and replaced impervious area: 404,739 (SF)
2.2.2 Site Assessment *Note: Site assessment information may be available from the OCMaps online tool available through the City's website.*		
	Site Assessment Map	*Attach engineered scale Site Assessment Map, showing items below.*
	Topography Evaluate site and map slopes: *Flat: 0-10%* *Moderate: 10-25%* *Steep: 25% and greater*	*Surveyed or aerial-based mapping with 2-foot intervals for slopes 0-25% slope and 10-foot intervals for steeper.* Is the project site located within a *Geologic Hazard Areas*? N (Y/N) *Indicate Geologic Hazard Areas as defined by OCMC 17.04.510 and Geologic Hazards Overlay Zone as defined by OCMC 17.04.515.*
	Soils and Groundwater NRCS Soil Report of site area	NRCS Hydrologic Soil Type (provide map if more than one type present): Hydrologic Soil Group D* *Attach seasonal groundwater depth evaluation if available or required (for site with floodplain and/or wetland). Include depth to water table information from* NRCS. *NRCS characterizes the soil as Soil Group C, however Appendix A3 of the storm report includes a geotechnical discussion that recharacterizes the soil as Soil Group D.
	Infiltration Assessment Determine soil capacity for onsite infiltration	Infiltration rates from NRCS Soil Report ("Ksat" in report) 0.06 to 0.2 (inches/hour) OR See Appendix B1 of Storm Report for NRCS Soil Report. If an infiltration test is performed, provide the documentation and factored infiltration rate. See **Appendix D** for the approved infiltration testing methods. Test type: Perched Groundwater Made Infiltration Testing Impossible 0 (inches/hour)

See Geotechnical Reports in Appendix A of Storm Report for infiltration testing discussion.

SITE ASSESSMENT AND PRELIMINARY DESIGN CHECKLIST

	Hydrology – Conditions and Natural Features Map site floodplains, wetlands, streams, and location of outfalls	Clearly label on map all intermittent and perennial creeks/streams/rivers and wetlands, FEMA floodplains, and existing drainage systems (pipes, ditches, outfalls). Types of sensitive area(s) (wetlands, streams, etc.) Natural Resource Overlay District Floodplain N (Y/N) NROD is shown on sheet C01 Grading & Storm Drainage Plan, and in Appendix B3 of the storm report.
	Downstream Conveyance	Indicate the proposed point of discharge on the site plan. *Prepare and attach a Downstream Analysis as required by **Chapter 5**.* Adequate downstream capacity is available: Y (Y/N) See Appendix D of the Storm Report. If downstream capacity is not available, proposed remedy (upsize pipes, additional on-site storm detention, etc.): _____
	Existing Vegetation Map trees and vegetation	Using aerial photos or survey, map all trees and vegetation. Note all existing trees 6-inch caliper and greater (DBH) on map. Delineate and identify other areas and types of existing vegetation. The local planning authority may require a formal tree survey. Tree Inventory is included in Land Use Submittal. See Sheets L01-L03 for more info.
	Required Vegetated Buffers and Setbacks Assess and map buffers	Identify required vegetated buffer areas and other setback limits as defined by OCMC Title 17.
	Land Use and Zoning	Existing Land Use Zoning designation(s): MUC-1 (Mixed Use Corridor District)
	Access and Parking	Map proposed access points for all modes of transportation. Proposed access points shown in Appendix B3
	Utilities to Site and Surrounding Area	Map existing utilities including stormwater facilities, storm conveyance, sewer, water, electricity, phone/cable, gas, and any public storm system/facility downstream. Appendix B2
2.2.3 Site Preliminary Design Objectives *(attach engineered scale Preliminary Site Plan)*		
	1. Preserve existing resources	**Required:** Show sensitive areas and buffers on site plan. Denote buffer areas that require enhancement. Show any proposed areas of encroachment and associated buffer mitigation areas.
	2. Minimize site disturbance	**Required:** Delineate protection areas on site plan for areas to remain undisturbed during construction.
	3. Minimize soil compaction	**Required:** Delineate and note temporary fencing on site plan for proposed infiltration facilities, vegetated stormwater management facilities, and re-vegetation areas.
	4. Minimize imperviousness	**Required:** Delineate proposed impervious areas and proposed impervious area reduction methods on the site plan. A. Total proposed new/replaced impervious area: 404,739 (SF) B. Area of proposed Green Roofs: 0 (SF) C. Area of proposed pervious pavements: 0 (SF) Describe type of pavers or pavement proposed: _____ D. Impervious area requiring management [A-(B+C)]: 404,739 (SF)

SITE ASSESSMENT AND PRELIMINARY DESIGN CHECKLIST

2.2.4 Proposed Stormwater Management Strategy

	Proposed Stormwater Management Strategy	**Level 1 – Onsite retention of the 10-year design storm** _____ Full onsite retention/infiltration using LID facilities where there are infiltration rates of 2.0 inches per hour or greater (choose one or more applicable strategies from the next section): **Level 2 – Onsite stormwater management using LID facilities** *(include documentation for the following applicable limiting condition(s) and choose one or more applicable strategies from the next section):* X Low infiltration rates of less than 2.0 inches per hour X Location for stormwater management facilities limited to areas with fill _____ Steep slopes X High groundwater _____ Contaminated soils _____ Conflict with required Source Controls (**Chapter 6**) _____ **Level 3 - Offsite stormwater management facilities/regional facilities** _____ **Level 4 - Fee in Lieu, as determined by the City**
	Preliminary Facility Selection	Check all that apply, *attach output from BMP Sizing Tool*, and show proposed Stormwater Management Facilities on Preliminary Site Plan. LID facilities: X Stormwater Planter (infiltration or filtration) _____ Rain Garden (infiltration or filtration) _____ Vegetated Swale (infiltration or filtration) X Detention Pond (infiltration or filtration) _____ Other* _____ **Modifications must be approved by City per Section 1.6*
	Minimum Facility Size 12,000 sq ft Detention Pond 2,687 sq ft Planters	A. Level 1 - Required surface area of onsite surface infiltration facilities: As determined by BMP sizing tool or engineered method: _____ (SF) OR storm facility which can infiltrate the full 10-year design storm: _____ (SF) B. Level 2 - Calculate required surface area of onsite LID facilities: As determined by BMP sizing tool or engineered method: 14,687 (SF) *Or 10% of total impervious area (new and replaced): _____ (SF) C. Level 3 - Calculate required surface area of offsite/regional facilities: As determined by BMP sizing tool or engineered method: _____ (SF) D. **Level 4 - Fee in Lieu, as determined by the City _____ **10 % sizing factor only applicable for sites entirely within a Geologic Hazard Area (Section 2.2.4)*

SITE ASSESSMENT AND PRELIMINARY DESIGN CHECKLIST

2.2.5 Other Project Requirements

	Grading Permit	A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities (Review OCMC 15.48 for requirements): *Fill and grading activities proposed to be undertaken in conjunction with a land use application, do not require a separate grading permit but are subject to the standards OCMC 15.48 and Chapter 3 of the Stormwater and Grading Design Standards. Approval of the construction plans submitted through the land use application process shall fulfill grading permit requirements.* A separate permit is not required. _____ (Y/N) Grading activities in excess of ten cubic yards of earth. Y_____ (Y/N) Grading activities divert existing drainage courses, (natural or man-made). N_____ (Y/N) Creation of impervious surfaces greater than two thousand square feet. Y_____ (Y/N) Excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure. Y_____ (Y/N) Grading activities involving the clearing or disturbance of one-half acre or more. Y_____ (Y/N)
	Erosion Prevention and Sediment Control	Identify the required permits: X_____ ESC Permit from the City *(sites that include 1,000+ SF new or replaced impervious area)* X_____ 1200-C Permit from DEQ *(sites that disturb 1 acre or more land surface)*
	Source Control for High Use Sites	Identify whether the proposed development will include any of the following: X*_____ Fuel Dispensing Facilities and Surrounding Traffic Areas *Existing Fuel Island to remain. (Untouched by proposed development) _____ Above-Ground Storage of Liquid Materials X_____ Solid Waste Storage Areas, Containers, and Trash Compactors X_____ Exterior Storage of Bulk Materials X_____ Material Transfer Areas/Loading Docks _____ Equipment and/or Vehicle Washing Facilities _____ Development on Land With Suspected or Known Contamination X_____ Covered Vehicle Parking Areas X_____ Industrial and Commercial High Traffic Areas _____ Other land uses subject to the ODEQ 1200-Z Industrial Stormwater Permit
	Other Permits	Identify other natural resources related permits from local, state, or federal agencies that may be required as part of the proposed development activity. It is the responsibility of the applicant to identify and obtain required permits prior to project approval. List other anticipated permits: N/A

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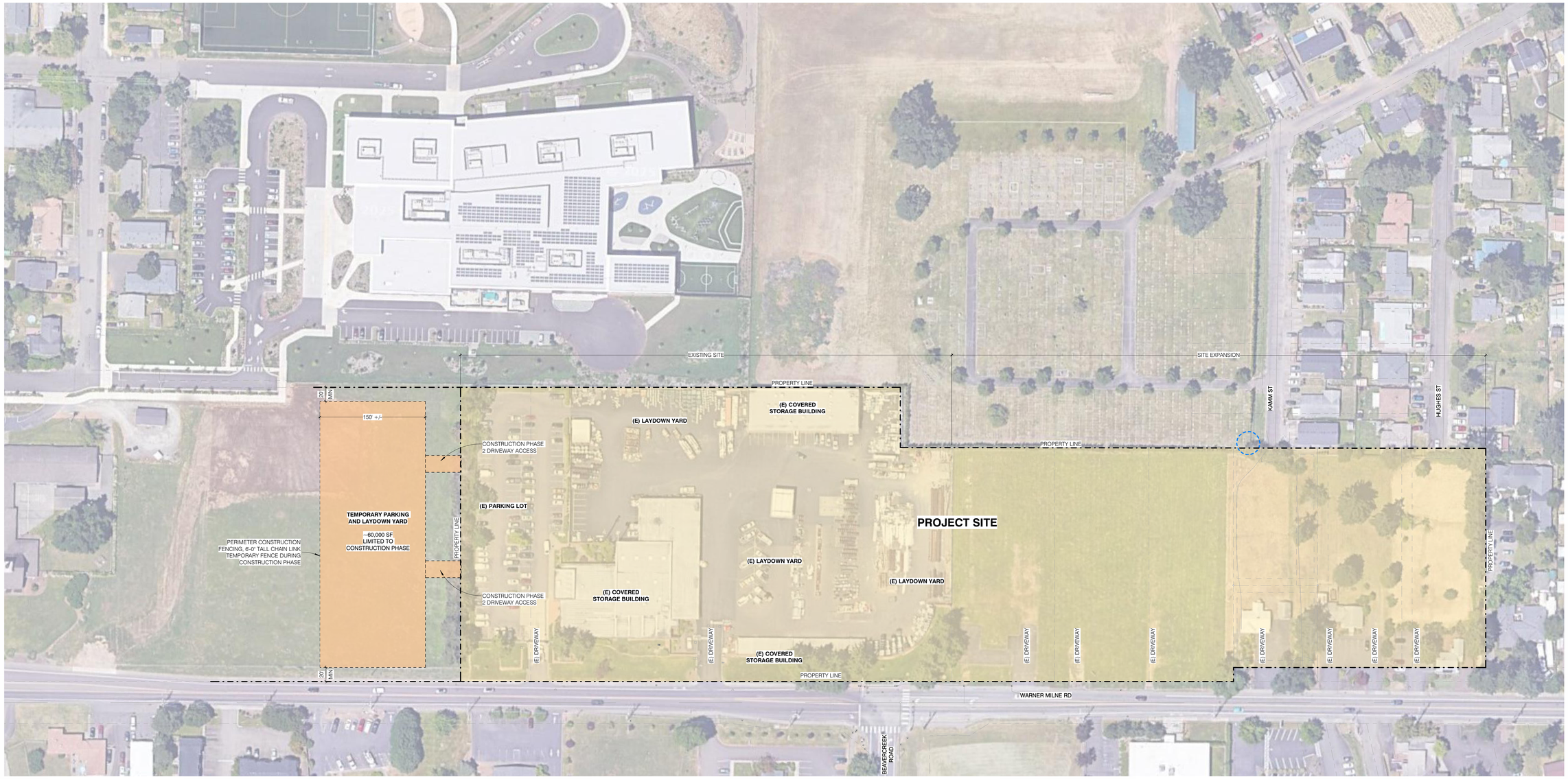


1 T01 LU -SITE PLAN DIAGRAM - TEMPORARY CONSTRUCTION PHASE -PARKING AND STAGING
1" = 60'-0"

0' 12.5' 25' 50' 100'

PROJECT NORTH TRUE NORTH

PRELIMINARY, NOT FOR CONSTRUCTION

Hennebery Eddy
HENNEBERY EDDY ARCHITECTS, INC.
PORTLAND OFFICE
921 SW WASHINGTON ST, SUITE 250
PORTLAND OREGON 97205
503 227 4860 TEL
503 227 4920 FAX
www.henneberyeddy.com

PGE

PGE Oregon City Operations Center
209 Warner Milne Road
Oregon City, OR 97045

HEA Project no. 25005-01T
Date: 12.18.25
LAND USE
Revisions:

Drawn by: DP
Checked by: KW
Sheet:
LU SITE DIAGRAM -TEMPORARY CONSTRUCTION PHASE

LAND USE

T01

Copyright 2025 Hennebery Eddy Architects, Inc.

Autodesk Docs://25_005 - PGE - OCOC/25_005_PGE OCOC_Site.rvt
12/18/2025 11:02:03 AM
THE ADJACENT SAMPLES SHOW THREE LEVELS OF SHADING. SETTINGS FOR VIEWING AND PRINTING CONTENT ARE OPTIMIZED WHEN ALL THREE LOTS ARE VISIBLE. THIS GUIDANCE IS FOR REFERENCE ONLY.

Antenna Structure Registration

TOWAIR Determination Results

HELP

New Search Printable Page

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates	
Latitude	45-20-15.1 north
Longitude	122-35-54.5 west
Measurements (Meters)	
Overall Structure Height (AGL)	32
Support Structure Height (AGL)	30.5
Site Elevation (AMSL)	133.2
Structure Type	
LTOWER - Lattice Tower	

Tower Construction Notifications
Notify Tribes and Historic Preservation Officers of your plans to build a tower.

ASR Help	FAQ - Online Help - Documentation - Technical Support
ASR Online Systems	TOWAIR- CORES - ASR Online Filing - Application Search - Registration Search
About ASR	Privacy Statement - About ASR - ASR Home

Federal Communications Commission
45 L Street NE
Washington, DC 20554

Phone: 1-877-480-3201
ASL Videophone:1-844-432-2275
Submit Help Request

From: PIKE Brandon
To: mikebigham@comcast.net
Subject: RE: PGE New Tower in Oregon City
Date: Tuesday, December 9, 2025 3:06:22 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

Hi Mike,

Thanks for reaching out. I've been in a conference call all afternoon. A 95' tower at this site (I found an address of 183 Warner Milne Rd, Oregon City—is that right?) doesn't sound like it would trigger notice of construction to ODAV. That said, the FAA has a slightly different set of standards when it comes to the notice criteria than we do at ODAV. It appears than their Pre-Screening Tool may identify *any* antenna tower as a structure which requires notice of construction. But if you have something from the FAA that states that notice is *not* required for this specific project, I would believe that would supersede what the pre-screening website says.

Best,

BRANDON PIKE
OREGON DEPARTMENT OF AVIATION (ODAV)
AVIATION PLANNER

PHONE 971-372-1339
EMAIL brandon.pike@odav.oregon.gov
3040 25TH STREET SE, SALEM, OR 97302
WWW.OREGON.GOV/AVIATION

Alternative Contacts:
COAR Grants: Grants@ODAV.Oregon.Gov
Procurement / Contracts: Contracts@ODAV.Oregon.Gov
Pavement (PEP/PMP): Pavement@ODAV.Oregon.Gov
Land Use / Tall Structures: LandUse@ODAV.Oregon.Gov

*****CONFIDENTIALITY NOTICE*****
This e-mail may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. If you are not the addressee or it appears from the context or otherwise that you have received this e-mail in error, please advise me immediately by reply e-mail, keep the contents confidential, and immediately delete the message and any attachments from your system.

From: mikebigham@comcast.net <mikebigham@comcast.net>
Sent: Tuesday, December 9, 2025 1:39 PM
To: PIKE Brandon <Brandon.PIKE@odav.oregon.gov>
Subject: PGE New Tower in Oregon City

You don't often get email from mikebigham@comcast.net. Learn why this is important

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hi Brandon,

I left you a voice mail.

Portland General Electric (PGE) is planning to build a new 95’ communications tower at there Oregon City Operations Center as the center is be upgraded and remodeled.

PGE recently contacted the FAA, via the FCC TOWAIR site, about this proposed tower. The results of the inquiry said that PGE did not have to file with the FAA as the tower site is not within 5 miles of an airport. However, the OE/AAA Pre-screening Results stated that PGE does have to file with the FAA.

So I guess I’m am a little confused. This issue is causing some problems with the local planning agency. Any help would be appreciated.

Thanks!

Portland General Electric
121 SW Salmon Street • Portland, OR 97204
portlandgeneral.com

Dear Oregon City Planning Department,

I am writing on behalf of Portland General Electric (PGE) regarding our application for a new 95' 3-leg lattice communications tower at our Operations Center in Oregon City. We would like to emphasize the critical importance of this infrastructure to public safety and reliable electrical service in our region.

Portland General Electric provides distribution and transmission services to approximately 40% of Oregon. As such, PGE is considered a public safety entity tasked with providing essential services while implementing measures to protect the community from potential hazards. Additionally, PGE is held to certain reliability and security standards. These security standards dictate that PGE's assets, both physical and cyber, must remain inaccessible to unauthorized persons or entities that could physically damage or access our cyber network.

In the case of our communications tower site at the Oregon City Operations Center, only authorized PGE personnel will be allowed in the communications site, and no non-PGE communications equipment will be permitted on the tower. Allowing such access would violate security standards and potentially expose PGE's communications network to harmful actions. This is also why PGE isn't considering co-locating on other local private or commercial towers.

The proposed communications tower is essential for:
- Maintaining reliable electrical service during emergencies
- Supporting rapid response to power outages
- Enabling secure communications for grid operations
- Enhancing our ability to protect critical infrastructure

Additionally, the two existing antenna support structures (steel monopole & wood pole) on-site today will be removed. Those wireless services will be consolidated onto the new tower. These services are all existing and licensed by PGE from the Federal Communications Commission (FCC) with no additional services planned at this time. Removal of the existing structures is necessary because the building housing the communications equipment is being demolished and area repurposed for storage yard operations.

We respectfully request your consideration of our application with these public safety factors in mind. We are happy to provide any additional information needed to support this important project.

Thank you for your consideration.

Sincerely,

Ryan Wisness
Principal Communications Engineer
Portland General Electric

December 4, 2025
PGE

Attn: To Whom It May Concern

SUBJECT: Project Number: 656681
Site Name: OCOC PGE Tower
Structure Designed with a Theoretical Fall Radius of 0-ft

Communications structures designed by Valmont are sized in accordance with the latest governing revision of the ANSI/TIA 222 standard unless otherwise requested by our customer. This standard has been approved by ANSI/ASCE, which has dealt with the design of antenna support structures for over 50 years. The TIA standard, based on provisions of this nationally known specification, has a long history of reliability. Its core philosophy is first and foremost to safeguard and maintain the health and welfare of the public.

Valmont's communication structures have proven to be very reliable products. To our knowledge Valmont has never experienced an in-service failure of a communication structure due to weather induced overloading. We use the latest standards, wind speed information, and sophisticated analytical tools to ensure that we maintain our unblemished record for quality.

This structure is designed to the following criteria:

- Exposure Category C
- Topographical Category 1
- Risk Category IV
- Site Elevation 458 feet
- 109 MPH Ultimate Wind Speed (no ice) per ASCE 7-16 and 222 OSSC
- 30 MPH with 1.5 inch ice per ANSI/TIA-222-H

The theoretical failure point is at the structure midpoint or above by purposely over designing the structural components below this point. The predicted mode of wind induced failure would be local buckling of the tower legs at or above the midpoint with the upper tower legs folding over onto the intact lower tower legs. The result, if it were to fail, would be a theoretical "zero fall zone" at ground level.

I hope these comments address any issues that you might encounter relative to the anticipated performance of this structure.

Sincerely,

Jeffrey E. Grassman, PE
Senior Professional Engineer, Salem

Valmont Microflect
3575 25th Street SE
Salem, OR 97302 USA

KITTELSON & ASSOCIATES
851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

Transportation Impact Study

December 15, 2025 Project# 31549

To: Erik Nichols & Josh Wheeler, PE; City of Oregon City

From: Chris Brehmer, PE, Julia Kuhn, PE & Edward Guo

CC: Josh Fromm & Tina Tippin, Portland General Electric
Tereza Wiest, AIA, Kyle Womack, AIA & Dan Petrescu, AIA; Hennebery Eddy Architects, Inc.
Ben Schonberger, AICP & Larissa Gladding; Winter Brook Planning
Mischa van Buuren PE, DBIA; KPFF

RE: PGE Oregon City Operations Center (City of Oregon City PA-25-031)

Executive Summary

Portland General Electric (PGE) proposes a reconfiguration and expansion to its existing Operations Center located along Warner Milne Road in Oregon City. This report documents Transportation Impact Study (TIS) analysis, findings, and recommendations developed per the *City of Oregon City's Guidelines for Transportation Impact Analyses* (Reference 1).

Based on the analysis provided and documented herein, the proposed PGE facility expansion can be constructed while complying with applicable City of Oregon City standards. Subject to City review and direction, the following recommendations were identified to be implemented in conjunction with the proposed facility expansion:

- Modify the Beavercreek Road/Warner Milne Road intersection to provide the following:
  - A new southbound approach (private access to PGE) with a separate left-turn lane and a shared through/right lane;
  - A new eastbound left-turn lane with at least 150 feet of storage;
  - Restripe the northbound approach to provide a separate left-turn lane and a shared through/right turn lane with the existing storage available today;
  - Provide protected/permissive left-turn signal heads on all approaches to allow the City flexibility as multi-modal traffic volumes grow at the intersection (it is presumed that permissive phasing will be used upon opening for the north-south movements and protected/permissive phasing for east-west movements consistent with current operations).
  - Replace the existing eastbound and northbound right-turn permissive and overlap phases with permissive only phasing (due to the new north approach, the eastbound right-turn movement will no longer overlap with an exclusive northbound phase and the northbound right-turn movement will no longer have an exclusive turn lane).

- Post a new STOP (R1-1) sign southbound on the new private east and west access approaches to Warner Milne Road in accordance with applicable City standards and the *Manual on Uniform Traffic Control Devices* (MUTCD, Reference 2).
- Locate and maintain site landscaping, above-ground utilities, and site signage along the site frontage and internal drive aisles to provide adequate intersection sight distance per applicable City requirements.

Introduction

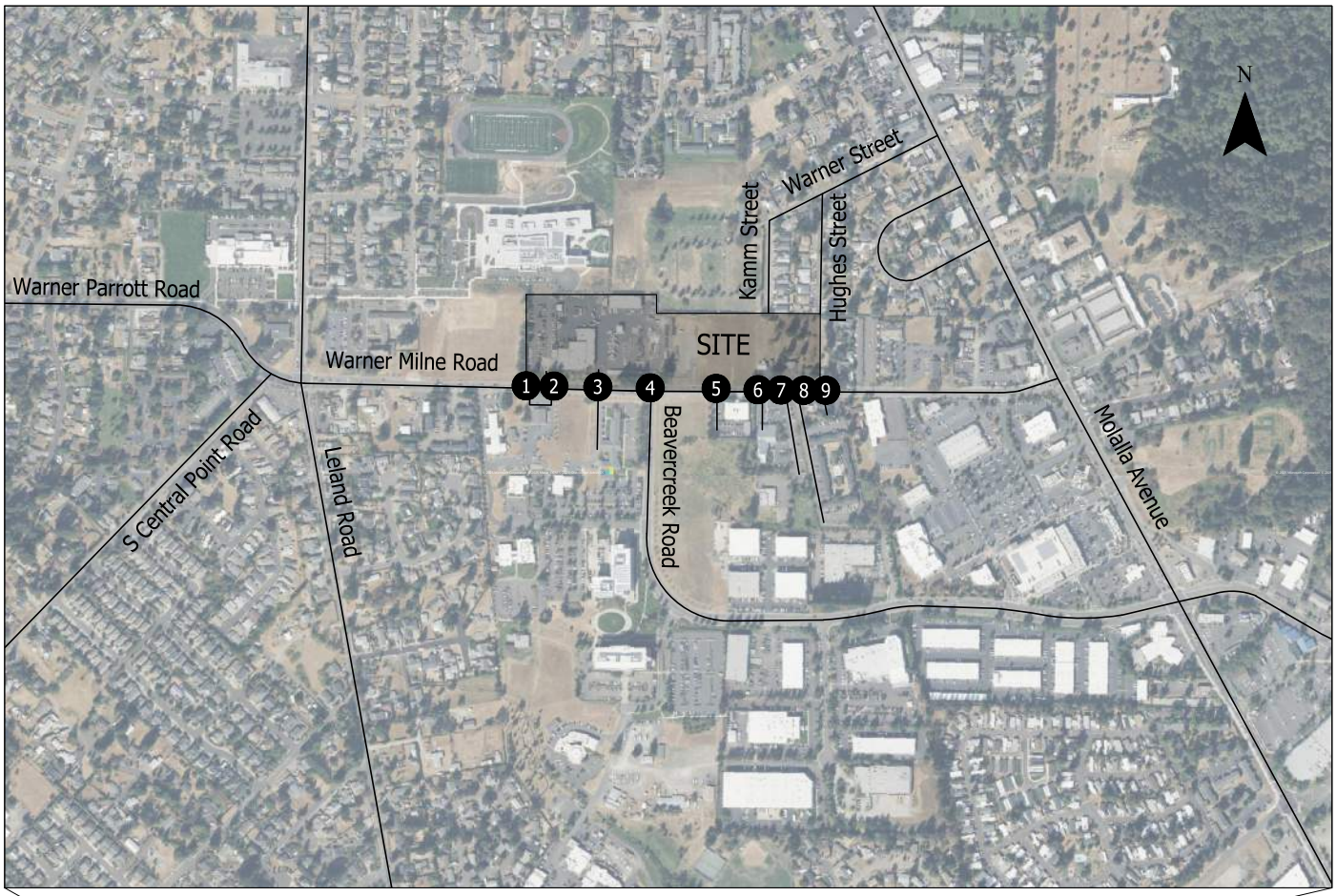
Figure 1 provides the site vicinity map and Figure 2 illustrates the current site plan. As shown, the proposed reconfiguration and expansion of the PGE facility will add approximately 17,730 square feet of administration, storeroom, and garage space to the existing PGE facility, increasing the total building square footage from approximately 29,070 today to as much as 46,800 when the facility is fully expanded. The proposed expansion will aid the maintenance of PGE's power infrastructure and improve the reliability of PGE's service. There is no public/customer access provided today to the facility and none proposed as part of the expansion.

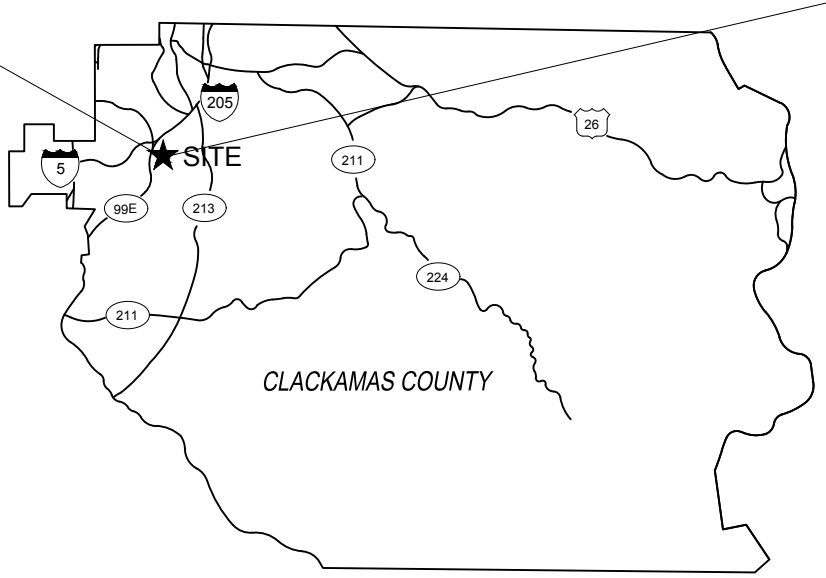
The proposed reconfigured and expanded Operations Center is expected to serve similar functions as the existing facility including administrative office space, line service crew work areas, storage and garage space, and a service yard equipment laydown area. While the office building component is a permitted use, the remainder of the project includes outdoor storage and maintenance activities that necessitate a conditional use approval. No zone change is required with the proposed new facility.

Construction is anticipated to begin in 2026 with completion planned by 2029. During construction, the existing operations of PGE will remain on-site. Access to the secured facility will only be provided to PGE employees and contractors consistent with current operations. No PGE customer or public services are proposed.

All existing Warner Milne Road vehicle access locations that will serve the site once its expanded are proposed to be closed and vacated. A total of nine accesses will be closed of which two are actively used by PGE today and seven are associated with prior land uses that were in the area of the campus expansion. Three new accesses are proposed for the expanded facility as follows:

- A secure gated entrance for PGE line service vehicles, contractor line service vehicles, and equipment deliveries is proposed as a new north approach to the signalized intersection of Warner Milne Road and Beavercreek Road.
- A new employee parking area is proposed on the east side of the campus and will be accessible via a new north-south private access corridor aligned with Hughes Street and connected to Warner Milne Road.
  - The new north-south private access corridor will provide a public easement for emergency access to Hughes Street. The north end of the corridor will include an emergency gate with a KNOX box that will allow for emergency vehicle access to Hughes Street north of the PGE site but will not allow for public vehicle connectivity to Hughes Street through the PGE site.



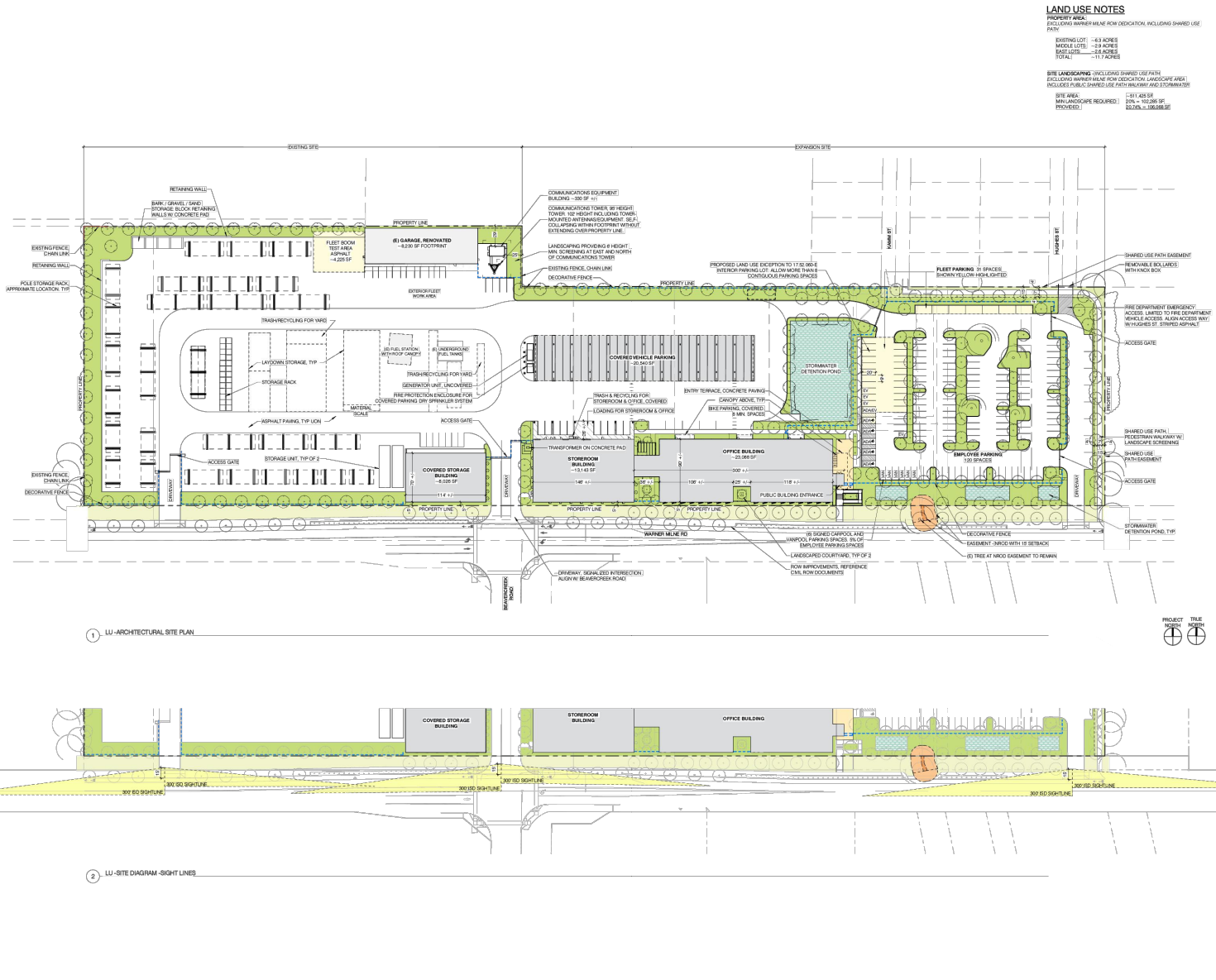


Site Vicinity Map
Oregon City, OR

Figure
1

H:\31\31549 - PGE Operations Center\report\figs\31549 Figures.dwg Dec 15, 2025 - 1:46pm - eguo Layout Tab: 1 Site Vicinity Map

KITTELSON & ASSOCIATES



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RECEIVED FROM HENNEBERY EDDY ARCHITECTS (DECEMBER 2025)

Proposed Site Plan
Oregon City, OR

Figure
2

KITTELSON & ASSOCIATES

- A pedestrian corridor is proposed along the east side of the new private access linking Warner Milne Road to homes along Hughes Street and Kamm Street as well as to a walking route along the northside of the street that is identified in the City of Oregon City Transportation System Plan (TSP).
- A new gated emergency vehicle access is proposed on Warner Milne Road near the west end of the PGE campus.

Report Overview

The study scope and overall study area for this project were determined based on Oregon City Municipal Code (OCMC) requirements, the *City of Oregon City's Guidelines for Transportation Impact Analyses,* as well as direction provided by City staff and the City's on-call transportation consultant.

This report includes the following topics:

- Existing land use and transportation system conditions within the site vicinity, including facilities for people walking, bicycles or taking transit, as well as traffic safety and intersection operations;
- Planned developments and transportation improvements in the study area;
- Future year 2029 background traffic peak hour conditions (without site expansion);
- Trip generation and distribution estimates for the proposed PGE facility expansion;
- Future year 2029 total traffic conditions (with full buildout and occupancy of the proposed expansion), including traffic control needs;
- Site access, circulation, and sight distance; and,
- Conclusions and recommendations.

ANALYSIS SCENARIOS

Typical weekday commuter peak hour conditions (1-hour peak during adjacent street peak hour periods between 7 - 9 AM and 4 - 6 PM) were assessed for the following horizon scenarios:

- Year 2025 existing traffic conditions;
- Buildout Year 2029 background traffic conditions (including background growth and identified in-process developments, but prior to the proposed expansion); and,
- Buildout Year 2029 total traffic conditions (with the proposed PGE site changes).

STUDY INTERSECTIONS

The study intersection locations are shown in Figure 1 and include the following:

1. OSU Extension West Driveway/Warner Milne Road;
2. PGE West Driveway/OSU Extension East Driveway/Warner Milne Road;
3. PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road;
4. Beavercreek Road/Warner Milne Road;

5. A Safe Place Driveway/Warner Milne Road;
6. Embold Credit Union West Driveway/Warner Milne Road;
7. Embold Credit Union East Driveway/Warner Milne Road;
8. Willow Springs Apartment Driveway/Warner Milne Road; and,
9. 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access.

Analysis Methodology

All intersection operational analyses described in this report were conducted using the *Highway Capacity Manual, 7th Edition* (Reference 3) procedures using the Vistro 2025 software.

The Vistro 2025 software was used to identify 95th percentile queues for the peak 15-minute analysis.

INTERSECTION MOBILITY STANDARDS

The City of Oregon City's intersection mobility standards are documented in the City's *Guidelines for Transportation Impact Analyses*) and are predicated on volume-to-capacity (V/C) ratio.

Warner Milne Road is designated a Minor Arterial on the Metro 2023 Regional Transportation Plan (RTP) Policy Map[1]. For intersections outside of the regional center but designated on the arterial and throughway network, as defined in the RTP, the following mobility standards apply:

- During the first hour, a maximum V/C ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
- During the second hour, a maximum V/C ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

The operations analyses results presented in this report focus on the first hour. As will be discussed, the mobility standards are fully satisfied during the first hour so the second hour performance is not evaluated.

Existing Conditions

The existing conditions analysis identifies site conditions and the current operational and geometric characteristics of streets within the study area. The purpose of this section is to set the stage for a basis of comparison to future conditions. The study intersections were inventoried in September 2025.

[1] Source: 2023 Metro RTP

SITE CONDITION AND ADJACENT LAND USES

The approximately 6-acre site is located at 209 Warner Milne Road. The proposed project site is currently zoned Mixed Use Corridor 1 (MUC-1) and is located in a Natural Resource Overlay District.

PGE's Oregon City Operations Center is located on the west portion of the property today and has two access driveways on Warner Milne Road. The western gated access provides surface parking for PGE employees and smaller PGE fleet vehicles. The eastern gated access serves the secure yard area and is accessed by PGE line service vehicles as well as by PGE contractor line service vehicles and equipment delivery vehicles. Five additional paved access driveways plus curb cuts used by others are in place along the expansion property frontage to the east of the existing Operations Center.

A church property borders the PGE site to the west, Gardiner Middle School is located along the northwest portion of the site, St John the Apostle Cemetery is located along the central portion of the PGE north property line, and residential homes are located along the northeast portion of the site frontage including Kamm Street and Hughes Street. Residential housing is located to the east and Warner Milne Road is located directly to the south. Land uses south of Warner Milne Road reflect a mix commercial and government space (some of which is within the Clackamas County Red Soils campus) along with some multifamily housing.

ROADWAY CHARACTERISTICS OF TRANSPORTATION FACILITIES

Table 1 summarizes the attributes of key roadway facilities within the study area. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersection.

Table 1. Roadway Characteristics

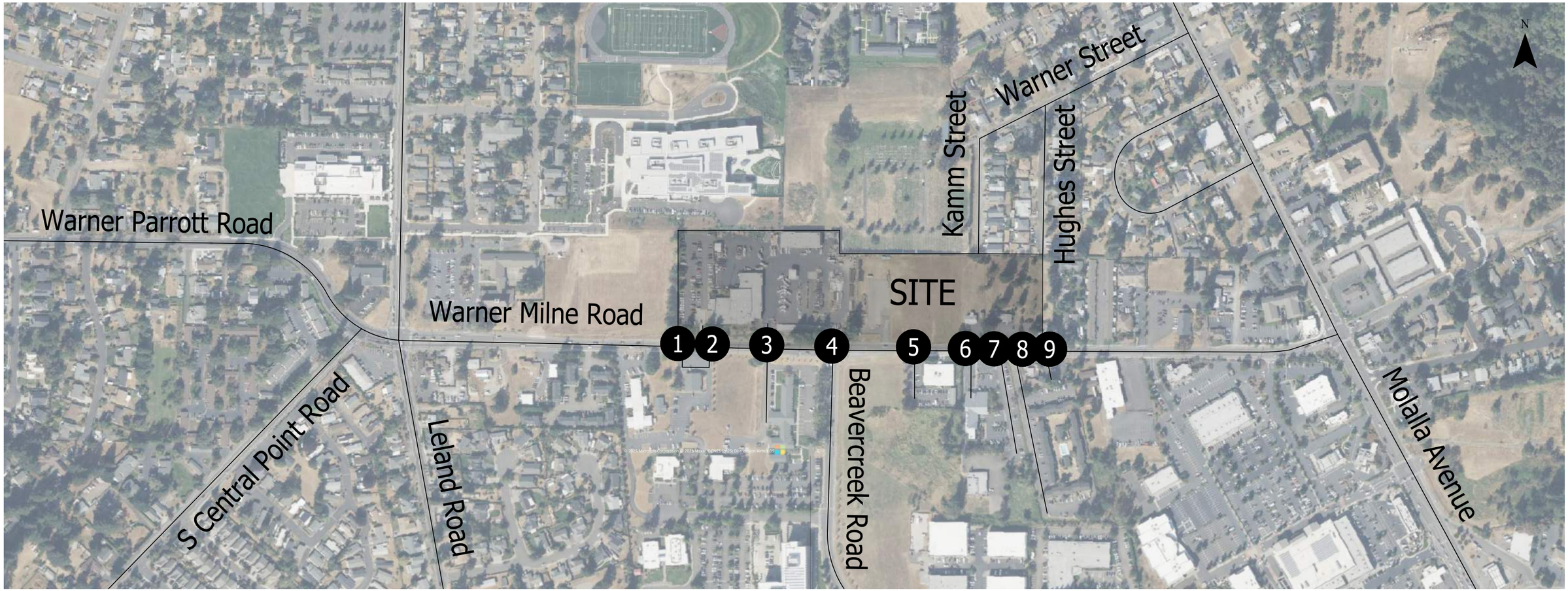
Roadway	Classification	Motor Vehicle Lanes	Posted Speed (mph)	Sidewalk Present?	Striped Bicycle Lanes Present?	On-Street Parking Allowed?
Warner Milne Road	Minor Arterial[1]	2-3	30	Partial[2]	Partial[4]	No
Beavercreek Road	Minor Arterial[1]	3	35	Partial[3]	Yes	No

[1] Per Oregon City TSP Figure 8. (Reference 4)

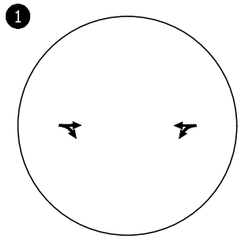
[2] Sidewalks are provided on both sides of Warner Milne Road within the study area west of its intersection with Beavercreek Road. The sidewalk on the northern side of Warner Milne Road ends about 200 feet east of the Beavercreek Road. After a gap of around 250 feet, the northern sidewalk continues. The sidewalk along the southern side of Warner Milne Road remains continuous within the study area east of the intersection.

[3] Beavercreek Road has sidewalk within the study area on the western side starting from its intersection with Warner Milne Road. It does not have sidewalk on the eastern side south of the intersection.

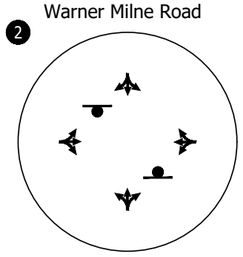
[4] Warner Milne Road has marked bicycle lanes on both sides of the road, except for within approximately 350 feet of its intersection with Beavercreek Road, where the bicycle lanes merge with the general traffic lanes.



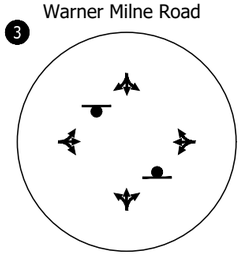
1 OSU Extension West Driveway/ Warner Milne Road



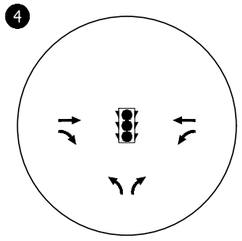
2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road



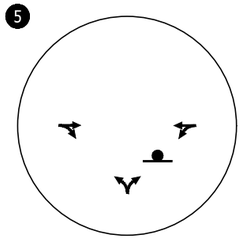
3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road



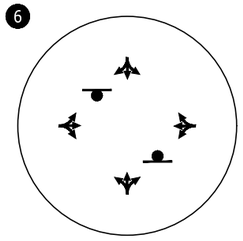
4 Beavercreek Road/ Warner Milne Road



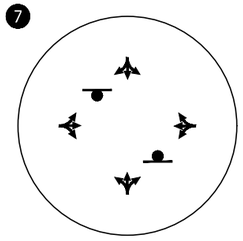
5 A Safe Place Driveway/ Warner Milne Road



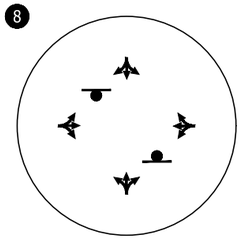
6 Embold Credit Union West Driveway/ Warner Milne Road



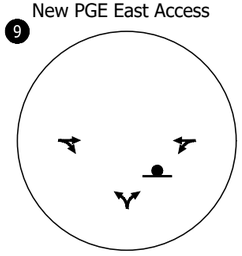
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations and Traffic Control Devices
Oregon City, OR

Figure 3

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Transit Facilities

TriMet (Reference 5) provides fixed route bus service along the western half of Warner Milne Road and along Beavercreek Road through the study area via Line 33, McLoughlin/King Rd. Line 33 is a designated frequent service line with 15-minute frequency during daytime hours. The line provides service to downtown Oregon City, Milwaukie and Clackamas Town Center Transit Center north of the site, and to Clackamas Community College south of the site, connecting the site with the broader regional transit network. The existing bus stops nearest the PGE site are located at the southwestern corner of Warner Milne Road's intersection with Beavercreek Road (Eastbound/Southbound stop, Warner-Milne & Beavercreek) as well as just west of the existing western PGE access gate, opposite the driveways of the OSU Extension Service at Clackamas County (Westbound/Northbound stop, 200 Block Warner-Milne). Both locations are marked with bus stop signs only and feature no benches or shelters.

Clackamas County Connects Shuttle Service (Reference 6) also provides transit connectivity to the site. The free shuttle service aims to provide connections to rural parts of the county that are difficult to access with transit. The shuttle service operates as a "deviated fixed-route" service. Passengers can call in advance and schedule pick-up and drop-off within ¾ mile from the route, and can signal and flag the bus to get on and off between stops. The system's Oregon City shuttle traverses the project site from west to east and offers connectivity to downtown Oregon City from the Clackamas Community College. It stops at the TriMet 200 Block Warner-Milne stop and operates 12 trips on weekdays between 6:30 AM and 9 PM.

Bicycle and Pedestrian Facilities

As noted in Table 1, there are continuous, curb-tight sidewalks along both sides of Warner Milne Road within the study except a segment of the PGE expansion site frontage. The current Warner Milne Road eastbound and westbound striped bicycle lanes are also incomplete along the project site frontage.

The City's TSP, adopted in 2013, identifies several bike and pedestrian projects near the project site. On the list of "likely to be funded transportation system" projects, project W41 includes filling sidewalk gaps on both sides of Warner Milne Road, and project W42 includes completing sidewalk on the east side of Beavercreek Road. Project S41 is to provide a shared use path connecting Beaver Creek Road to Laurel Lane and is depicted through the PGE site.

On the list of "not likely to be funded transportation system" projects, project C19 describes installing crosswalk and pedestrian activated flashers on Warner Milne Road near Leonard Street in service of the Hillendale Park-Leonard Street Shared-Use Path.

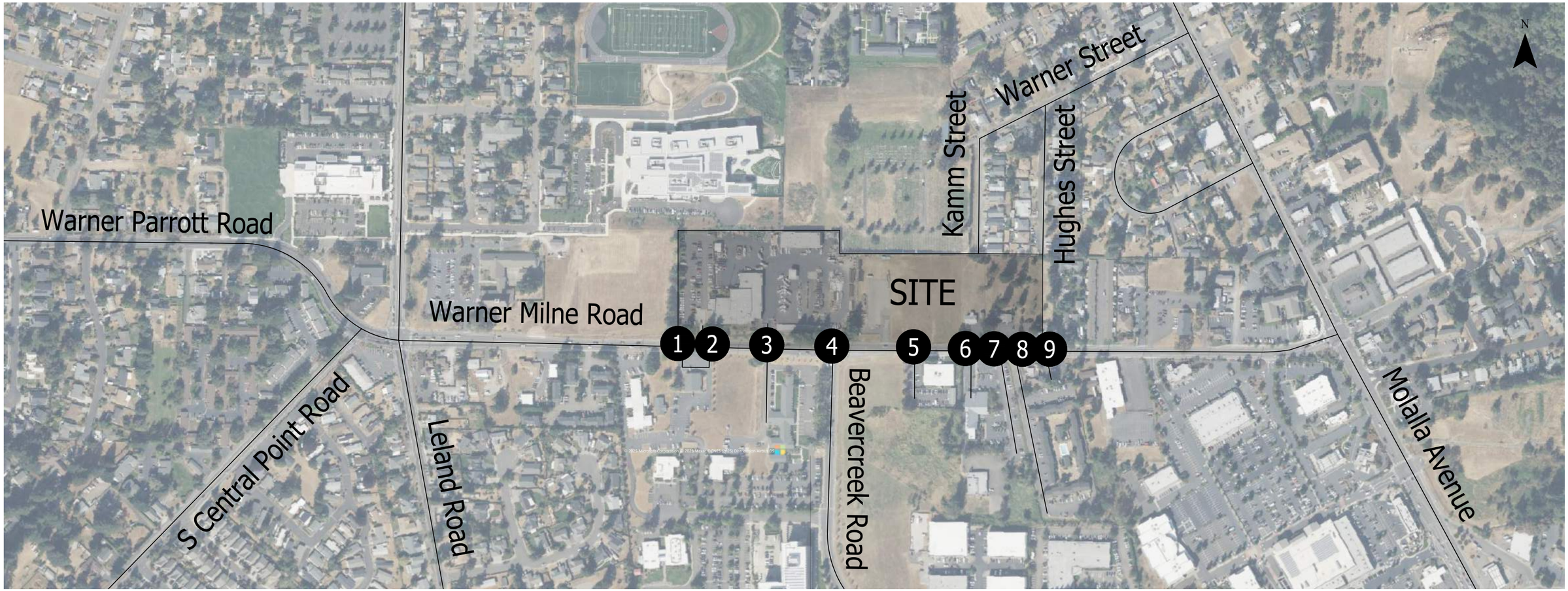
TRAFFIC VOLUMES AND PEAK HOUR OPERATIONS ANALYSIS

Vehicle turning movement, pedestrian and bicycle counts were collected at the study intersections on a mid-week day in May 2025. The counts were conducted during the weekday morning (7:00AM - 9:00 AM) and evening (4:00PM – 6:00 PM) hours and there we no adverse weather conditions. Local schools were in session at the time of the traffic count and the new Clackamas County Courthouse was open for business.

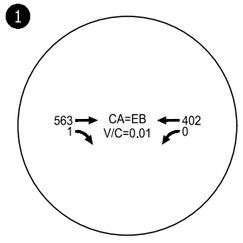
On the day of the counts, the morning peak hour occurred from 7:35 – 8:35 AM at the intersection of Warner Milne Road and Beavercreek Road. The evening peak hour occurred from 4:15 – 5:15 PM. These two time periods were analyzed at all the study intersections to evaluate operations and queues. *Appendix A contains the traffic count worksheets.*

Current traffic signal phasing and signal cycle length information for the signalized study intersection were obtained from Clackamas County, which operates the traffic signals on behalf of the City.

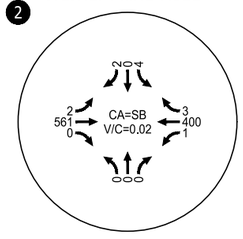
Figures 4 and 5 summarize the existing traffic conditions at the study intersection during the weekday AM and PM peak hours, respectively. The study intersection operations satisfy the V/C ratio ≤0.99 mobility standard during both the AM and PM peak hours. While not required by the City of Oregon City, the V/C results shown at the unsignalized intersections reflect the highest V/C ratio among the minor street STOP controlled movements. The major street V/C ratio results reflect even lower values and thus the City's V/C standard for movements on the major street are satisfied (as noted previously, the City has no performance standard for the minor street approaches). *Existing conditions operations analysis worksheets are provided in Appendix B.*



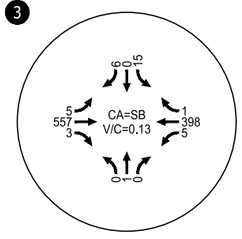
1 OSU Extension West Driveway/ Warner Milne Road



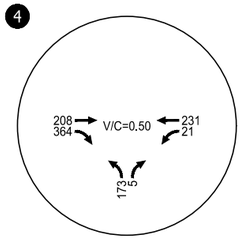
2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road



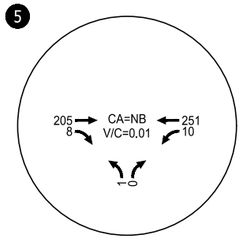
3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road



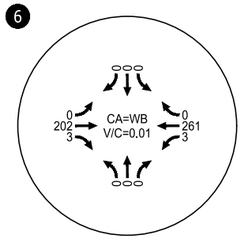
4 Beavercreek Road/ Warner Milne Road



5 A Safe Place Driveway/ Warner Milne Road



6 Embold Credit Union West Driveway/ Warner Milne Road



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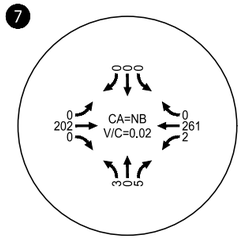
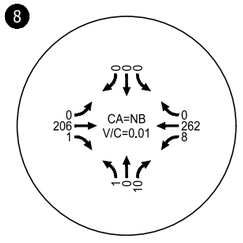
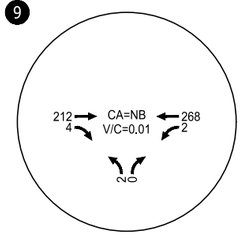


8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



CA = CRITICAL APPROACH (TWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) / CA VOLUME-TO-CAPACITY RATIO (TWSC)
TWSC = TWO-WAY STOP CONTROL

Existing Traffic Conditions
Weekday AM Peak Hour
Oregon City, OR

Figure
4

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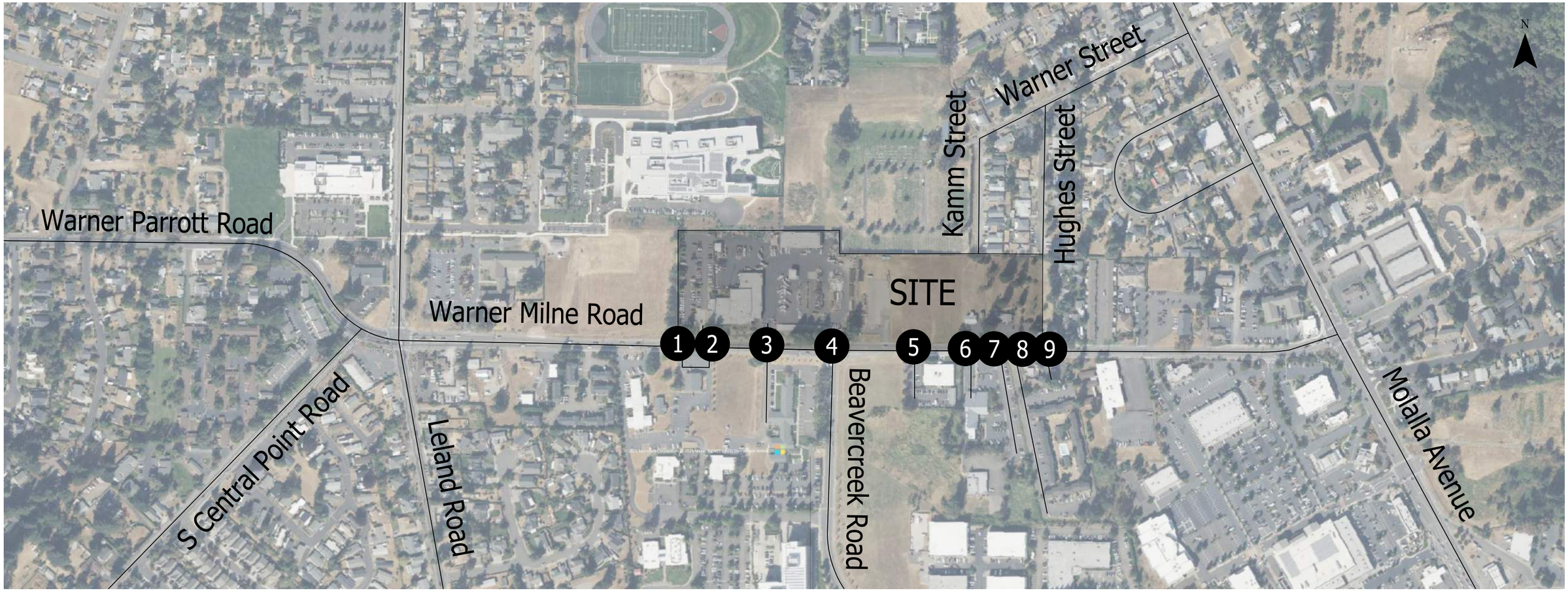
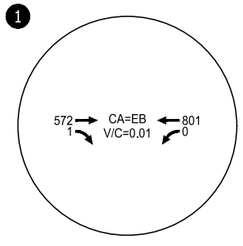
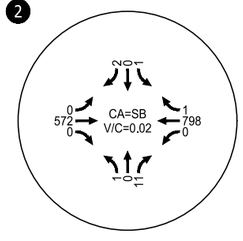


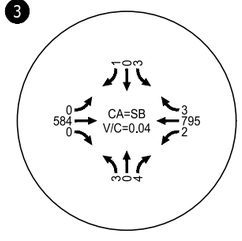
1 OSU Extension West Driveway/ Warner Milne Road



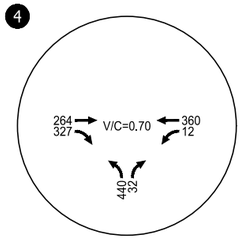
2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road



3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road



4 Beavercreek Road/ Warner Milne Road



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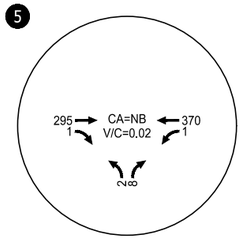
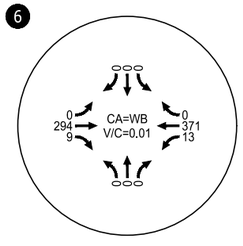


6 Embold Credit Union West Driveway/ Warner Milne Road



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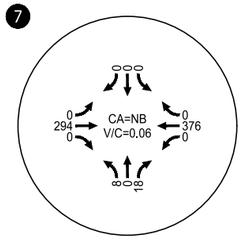
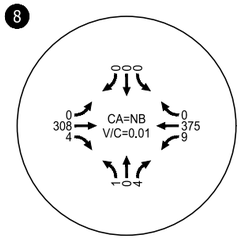


8 Willow Springs Apartments Driveway/ Warner Milne Road



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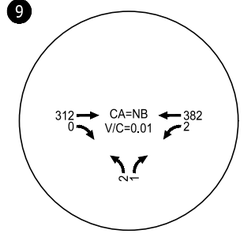

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Existing Traffic Conditions
Weekday PM Peak Hour
Oregon City, OR

Figure
5

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CRASH HISTORY ANALYSIS

The Oregon Department of Transportation (ODOT) Crash Data System was queried to obtain crash records at the study intersections for the five-year period from January 1, 2019, to December 31, 2023 (we note that the 2024 data provided by ODOT was deemed preliminary at the time this report was prepared so was not considered). The crash type classifications at each intersection were reviewed to assess whether crash patterns might be identifiable. Table 2 summarizes the reported crashes by type and severity. No fatal crashes were reported. *Appendix C provides the detailed crash summaries.*

Table 2. Study Area Crash Type and Severity Summary, 2019-2023

#	Intersection	Crash Type							Total	Severity				Crash Rate[1]
		Rear-End	Turning	Backing	Side Swipe	Fixed Object	Angle	Pedestrian/ Bike		PDO	Injury A	Injury B&C	Fatality	
1	OSU Extension West Driveway/Warner Milne Road	0	0	0	0	0	0	0	0	0	0	0	0	0.0
2	PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road	0	0	1	0	0	0	0	1	0	0	1	0	0.04
3	PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road	0	0	0	0	1	0	0	1	1	0	0	0	0.04
4	Beavercreek Road / Warner Milne Road	3	9	0	0	0	0	0	12	4	3	5	0	0.46
5	A Safe Place Driveway/ Warner Milne Road	1	0	0	0	0	0	0	1	0	0	1	0	0.08
6	Embold Credit Union West Driveway/Warner Milne Road	0	0	0	0	0	0	0	0	0	0	0	0	0.0
7	Embold Credit Union East Driveway/Warner Milne Road	0	0	0	0	0	0	0	0	0	0	0	0	0.0
8	Willow Springs Apartment Driveway/Warner Milne Road	0	0	0	0	0	0	0	0	0	0	0	0	0.0
9	294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access	0	0	0	0	0	0	0	0	0	0	0	0	0.0

[1] Crash rates for intersections are calculated as Crashes per million entering vehicles (MEV).

Three serious injury crashes (i.e., Injury A) were reported at the signalized Beavercreek Road/Warner Milne Road intersection. A summary of these reported crashes is provided below:

- On June 9, 2023, a distracted driver traveling south to north on Beavercreek Road during a wet and cloudy afternoon failed to avoid stopped vehicles ahead and rear-ended one vehicle that collided with another stopped vehicle. Two passengers in an impacted stopped vehicle suffered serious injuries.
- On November 4, 2021, during a rainy morning, a passenger interfering with the driver of a passenger vehicle traveling from eastbound on Warner Milne Road caused the driver to become careless and disregard the signal, colliding with a bus making a left turn onto Warner Milne Road from Beavercreek Road. The driver and the passenger of the passenger vehicle suffered serious injuries.
- On July 25, 2022, during a clear and dry morning, a passenger car traveling from eastbound on Warner Milne Road collided with another passenger car making a northbound left-turn onto Beavercreek Road. The cause of the crash was listed as driver disregarding traffic control devices, but investigators were unable to determine which driver disregarded the traffic control device. Both drivers involved in the crash suffered serious injuries.

Intersection crash rates were calculated and compared to statewide crash rate performance thresholds. For this analysis, the critical crash rate was calculated and compared to the 90th percentile crash rates summarized in ODOT's *Analysis Procedures Manual* (APM) for urban intersections by traffic control and 3 versus 4-legged configurations (as appropriate). The critical crash rate for each intersection is calculated based on the average crash rate for each facility and serves as a threshold for further analysis. Per the APM, intersections with crash rates that exceed the 90th percentile values shown in APM Exhibit 4-1 or with a crash rate that exceeds its critical crash rate should be flagged for further analysis. Table 3 summarizes the crash rate assessment for each intersection and compares those values to the observed crash rate.

Table 3. Intersection Critical Crash Rate Assessment

#	Intersection	90th Percentile Rate[1,2]	Observed Crash Rate[1]	Observed Crash Rate > 90th Percentile Rate
1	OSU Extension West Driveway/Warner Milne Road	0.293	0.0	No
2	PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road	0.293	0.04	No
3	PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road	0.408	0.04	No
4	Beavercreek Road / Warner Milne Road	0.509	0.46	No
5	A Safe Place Driveway/ Warner Milne Road	0.293	0.08	No
6	Embold Credit Union West Driveway/Warner Milne Road	0.408	0.0	No
7	Embold Credit Union East Driveway/Warner Milne Road	0.408	0.0	No
8	Willow Springs Apartment Driveway/Warner Milne Road	0.408	0.0	No
9	294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access	0.293	0.0	No

[1] Crash Rate reported as crashes per million entering vehicles (crashes/MEV)

[2] Values shown were obtained from APM Exhibit 4-1, Intersection Crash Rates per MEV by Land Type and Traffic Control

As shown in Table 3, no intersection within the study area has a crash rate exceeding ODOT's 90th percentile observed crash rate.

No specific safety-based mitigations were identified for implementation at the study intersections in conjunction with the proposed PGE project as a function of the crash data review findings.

The proposed PGE project will provide standard half-street frontage improvements along the Warner Milne Road site frontage that will complete sidewalk facilities and the westbound bicycle lane along the site frontage, completing segments of both facilities that are absent today.

Background Conditions

The year 2029 background traffic conditions analysis identifies how the study intersections are projected to operate without the construction of the proposed PGE expansion.

APPROVED IN-PROCESS DEVELOPMENTS AND FUNDED TRANSPORTATION IMPROVEMENTS

City staff provided a list of in-process developments within the city that have received land use approvals but are not yet constructed. These included:

- White Lane Subdivision
- Canemah Road Subdivision
- Central Point Subdivision
- 770 Pleasant townhomes
- 421 Warner cottage homes
- A Caring Place, homeless services

A summary of the trips associated with the "in-process" development traffic at the study intersections can be found in *Appendix D*.

No funded transportation improvements have been identified at the study intersections that will be completed by the horizon year 2029.

TRAFFIC GROWTH ASSUMPTIONS

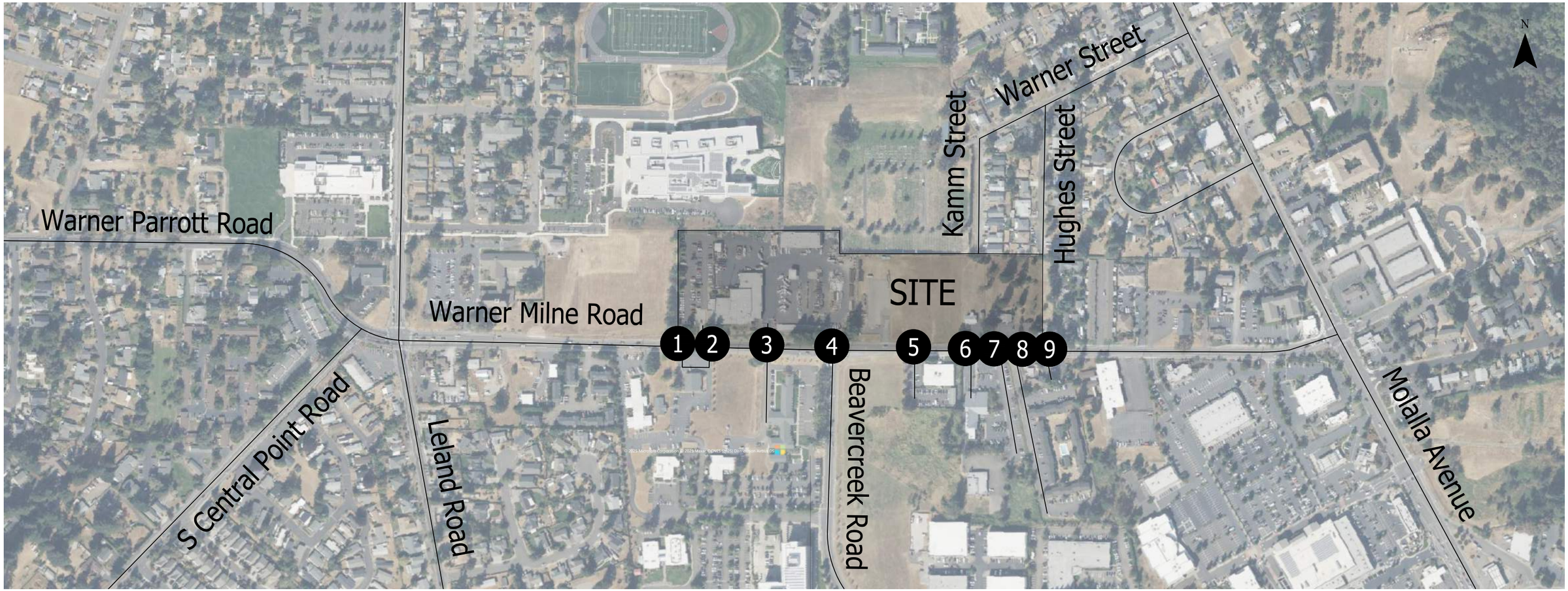
A one-percent annual growth rate was applied to the existing traffic volumes to reflect near-term growth for background traffic per City staff direction.

BACKGROUND TRAFFIC VOLUMES AND OPERATIONAL ANALYSIS

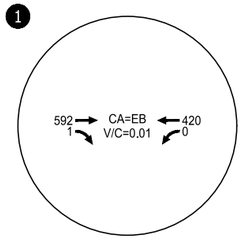
The 2025 weekday AM and PM peak hour existing traffic volumes were increased by the one percent and the traffic associated with the approved but not yet constructed developments were added to the study intersections. The resultant year 2029 Background weekday AM and PM peak hour traffic volumes are shown in Figure 6 and Figure 7. These figures also illustrate intersection operations.

All intersections are projected to satisfy the V/C ratio ≤0.99 mobility standard during both the AM and PM peak hours[2]. *Appendix E contains the year 2029 background traffic conditions worksheets*.

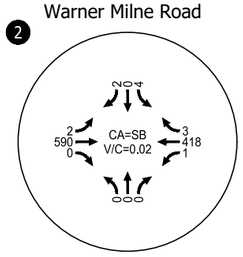
[2] While not required by the City of Oregon City, the V/C results shown at the unsignalized intersections reflect the highest V/C ratio among the minor street STOP controlled movements. The major street V/C ratio results reflect even lower values and thus the City's V/C standard for movements on the major street are satisfied.



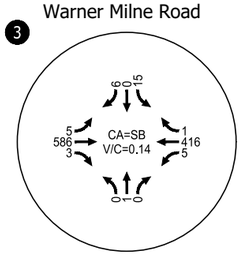
1 OSU Extension West Driveway/ Warner Milne Road



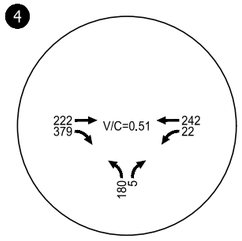
2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road



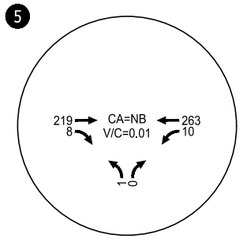
3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road



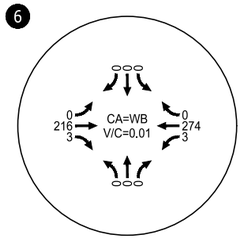
4 Beavercreek Road/ Warner Milne Road



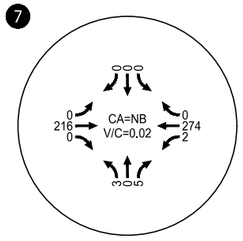
5 A Safe Place Driveway/ Warner Milne Road



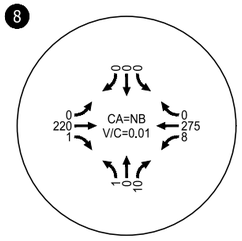
6 Embold Credit Union West Driveway/ Warner Milne Road



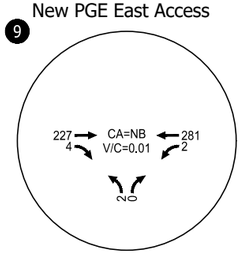
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



CA = CRITICAL APPROACH (TWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) / CA VOLUME-TO-CAPACITY RATIO (TWSC)
TWSC = TWO-WAY STOP CONTROL

Background 2029 Traffic Conditions
Weekday AM Peak Hour
Oregon City, OR

Figure
6

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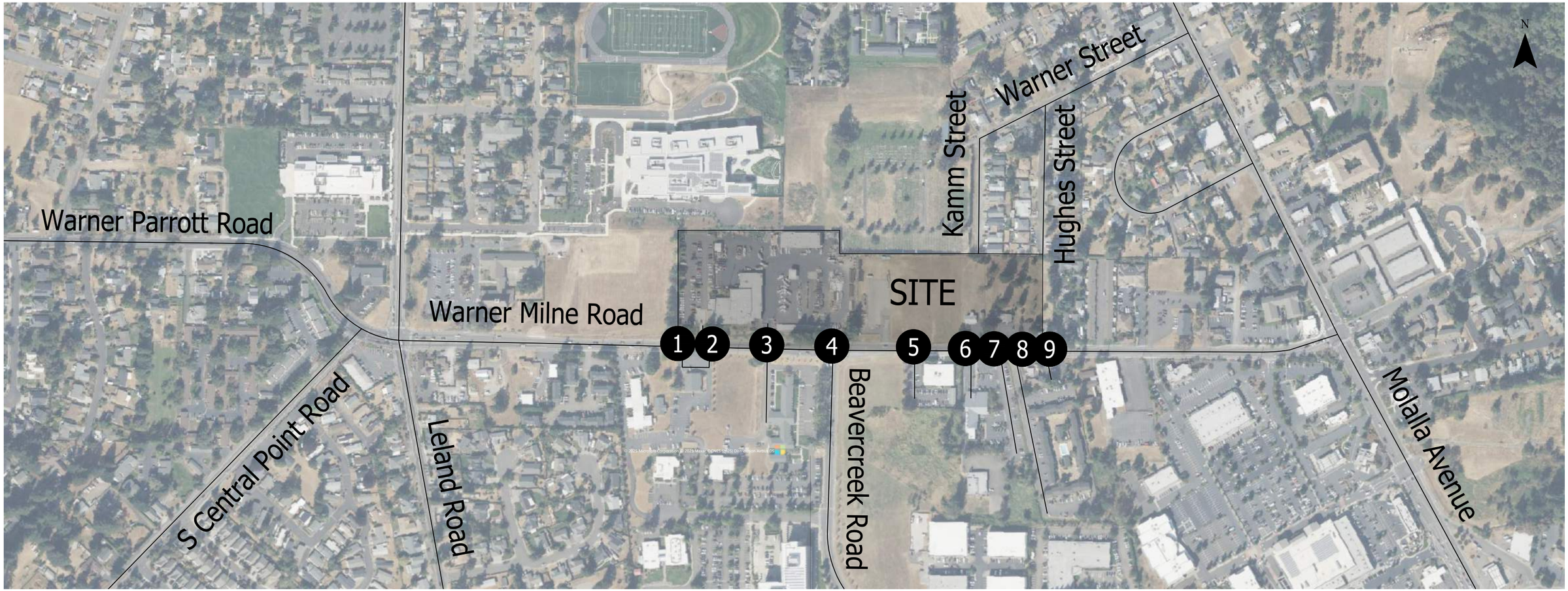
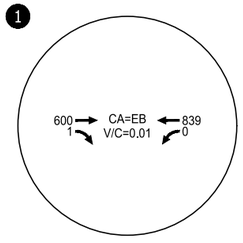
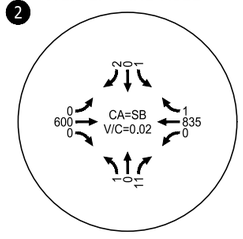


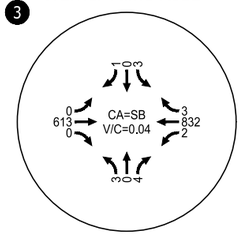
1 OSU Extension West Driveway/ Warner Milne Road



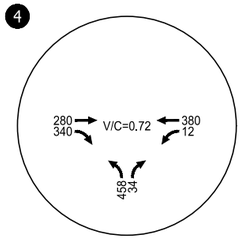
2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road



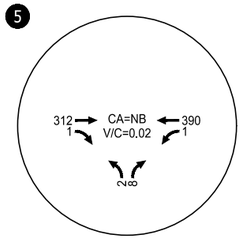
3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road



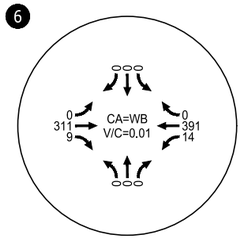
4 Beavercreek Road/ Warner Milne Road



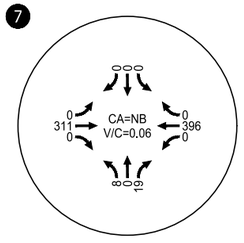
5 A Safe Place Driveway/ Warner Milne Road



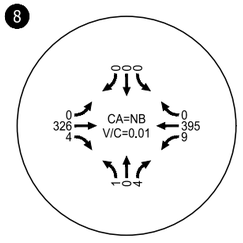
6 Embold Credit Union West Driveway/ Warner Milne Road



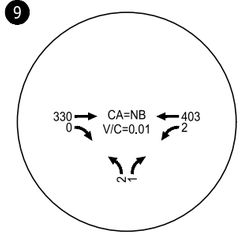
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



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TWSC = TWO-WAY STOP CONTROL

Background 2029 Traffic Conditions
Weekday PM Peak Hour
Oregon City, OR

Figure
7

KITTELSON & ASSOCIATES

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Full Buildout Traffic Conditions

This section forecasts how the study intersections will operate with the traffic associated with full occupancy of the expanded PGE Operations Center.

DESCRIPTION OF THE PROPOSED EXPANSION

The proposed reconfiguration and expansion of the PGE facility will add up to approximately 17,730 square feet of administration, storeroom, and garage space to the existing PGE facility, increasing the total building square footage from 29,070 to 46,800. Phased construction is anticipated to begin in 2026 with occupancy anticipated by 2029. No on-site public parking is proposed because facility access will continue to be restricted to PGE employees and contractors only.

Site Access

The existing employee vehicle surface parking area will be replaced by a new parking area situated on the eastern portion of the expanded campus to allow for phased construction while maintaining PGE operations. The central service yard area will be expanded and reconfigured.

Upon completion, three primary access connections to the public street are proposed. These include:

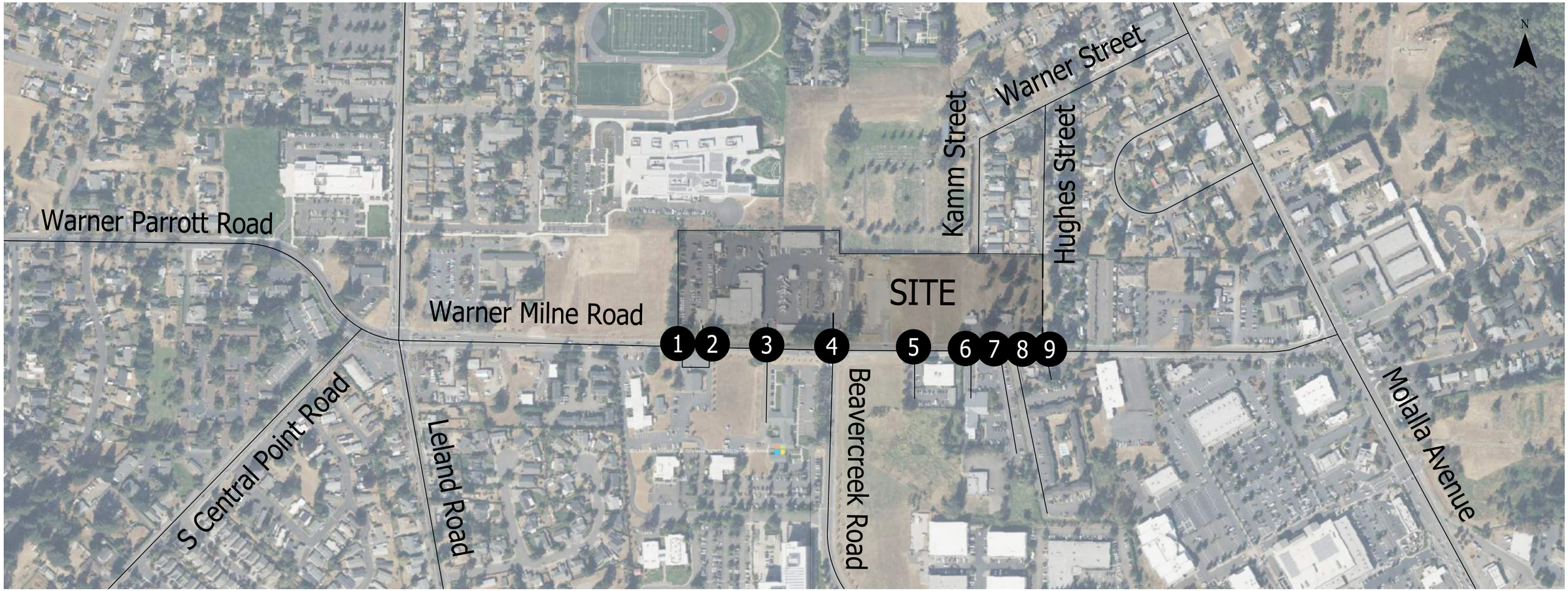
- A secure gated entrance for PGE line service vehicles, contractor line service vehicles, and equipment deliveries is proposed as a new north approach to the signalized intersection of Warner Milne Road and Beavercreek Road. The proposed intersection reconfiguration will:
  - Provide a new southbound approach (private access to PGE) with a separate left-turn lane and a shared through/right lane;
  - Provide a new eastbound left-turn lane with at least 150 feet of storage;
  - Restripe the northbound approach to provide a separate left-turn lane and a shared through/right turn lane with the existing storage available today;
  - Provide protected/permissive left-turn traffic signal heads on all approaches to allow the City flexibility as multi-modal traffic volumes grow at the intersection (upon project completion it is presumed that permissive phasing will be used for the north-south movements and protected/permissive phasing for east-west movements consistent with current operations).
  - Replace the existing eastbound and northbound right-turn permissive and overlap phases with permissive only phasing.
    - These changes reflect the new northern intersection approach. The eastbound right-turn movement will no longer overlap with an exclusive northbound phase after the introduction of a permissive southbound through movement at the intersection. Further, the new shared through/right northbound lane will replace the existing exclusive northbound right-turn movement and thus will no longer accommodate an overlap phase for the exclusive turn lane.

- A new employee parking area is proposed on the east side of the campus and will be accessible via a new north-south private access corridor aligned with Hughes Street and connected to Warner Milne Road.
  - The new north-south private access corridor will provide a public easement for emergency access to Hughes Street. The north end of the corridor will include an emergency gate with a KNOX box that will allow for emergency vehicle access to Hughes Street north of the PGE site but will not allow for public vehicle connectivity to Hughes Street north of the PGE site.
  - A pedestrian corridor is proposed along the east side of the new private access linking Warner Milne Road to homes along Hughes Street and Kamm Street as well as to a walking route identified in the City of Oregon City Transportation System Plan (TSP).
- A new gated emergency vehicle access is proposed on Warner Milne Road near the west end of the PGE campus.

The two existing gated access driveways serving the PGE facility will be closed and vacated in conjunction with site development. In addition, all the other existing curb cuts and accesses along the Warner Milne Road PGE expansion site frontage will be vacated and closed.

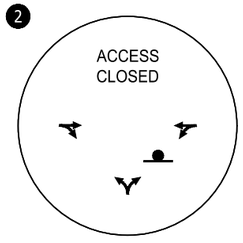
Figure 8 illustrates the assumed future lane configurations and traffic control devices at the study intersections.

Beyond vehicle access, the proposed site plan facilitates pedestrian connectivity between Warner Milne Road, Hughes Street, and Hamm Street via a new on-site shared use path. The new connectivity provided by the site partially fulfills TSP Project S41 that seeks to provide a shared use path connecting Beaver Creek Road to Laurel Lane through the PGE site.

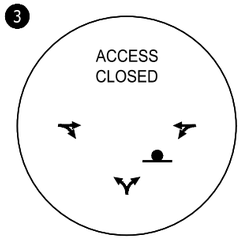


1 OSU Extension West Driveway/ Warner Milne Road

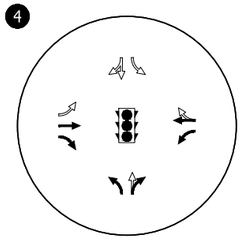
2 OSU Extension East Driveway/ Warner Milne Road



3 Beavercreek Health Clinic Driveway/ Warner Milne Road

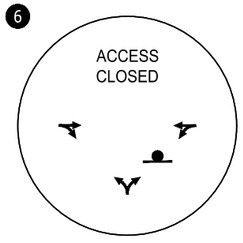


4 Beavercreek Road/ Warner Milne Road

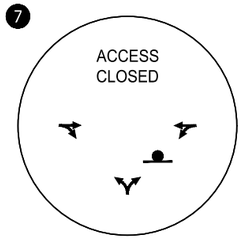


5 A Safe Place Driveway/ Warner Milne Road

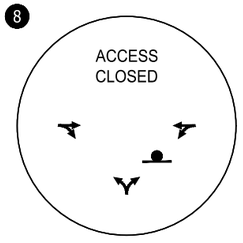
6 Embold Credit Union West Driveway/ Warner Milne Road



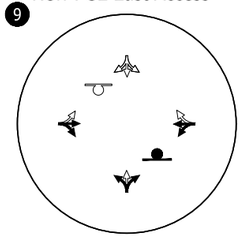
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



- STOP SIGN
- TRAFFIC SIGNAL
- FUTURE PROPOSED MOVEMENT
- FUTURE PROPOSED STOP SIGN

Assumed 2029 Lane Configurations and Traffic Control Devices
Oregon City, OR

Figure 8

KITTELSON & ASSOCIATES

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TRIP GENERATION CHARACTERISTICS OF PROPOSED EXPANSION

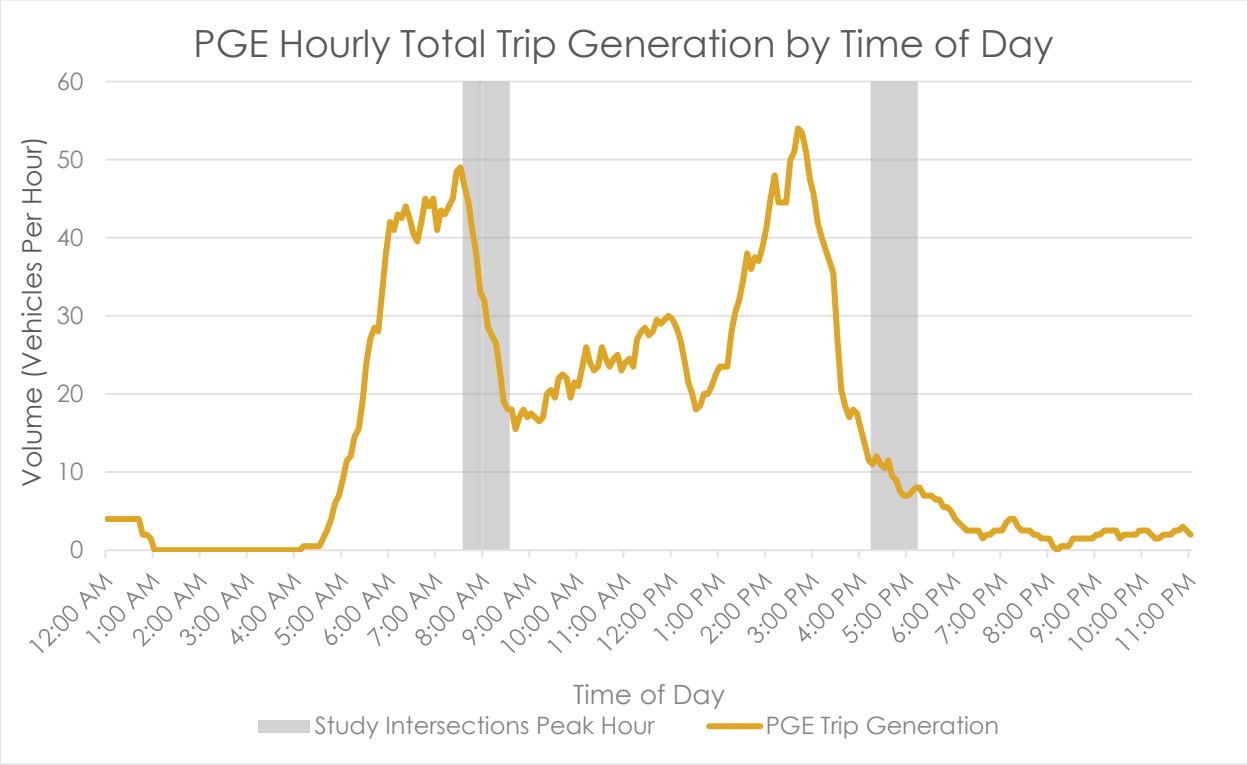
Review of trip data available within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition* (Reference 7) determined there are no representative land uses for the proposed expansion of the PGE facility that can inform the TIA (this is also true of the *12th Edition* released in 2025).

Lacking available national trip rates for a similar facility, trip generation estimates for the proposed facility expansion were derived based on traffic counts completed at the existing PGE facility.

Current PGE Facility Trips

Vehicle counts were collected for a 48-hour mid-week period at the two existing site access driveways in May 2025 (refer to *Appendix F*). The traffic counts were summarized to create a two-day average trip profile for the new project site as shown in Exhibit 1.

Exhibit 1: Existing PGE Facilities Combined Average 24-Hour Trip Profile
(Combined Western Site Access Driveway and Eastern Site Access Driveway Site Trips)



Source: Kittelson & Associates, Inc. using count data collected by Quality Counts, May 2025

The traffic counts were used to identify the average daily as well as peak hour site trip generation between the typical roadway commuter peak periods of 7 – 9 AM and 4 – 6 PM. As shown in Exhibit 1, many of the staff commute to/from the facility for work outside the AM and PM peak periods, reducing traffic volumes to/from the facility during typical commuter peak periods. Further, the site trip generation is comparatively higher during the commuter AM peak hour than the commuter PM peak hour due to the

number of PGE vehicles that leave the campus to complete their daily service in the morning (hence why the AM trips leaving the facility are higher than the number entering). These trends are expected to continue with the proposed expanded facility.

Proposed Site Trip Estimates

The trip generation of the proposed facility is expected to encompass all the existing site trips measured at the two site access driveways today plus trips associated with the expansion.

Table 4 shows the existing daily, AM peak hour and PM peak hour site trip generation per the traffic counts completed at PGE as well as the corresponding trip rate per 1,000 square feet of building area.

Trips associated with the proposed expansion were estimated by applying the existing campus trip rates to the proposed expansion area. Table 4 summarizes the resultant average daily, weekday AM and weekday PM peak hour trips, as well as the proposed net increase in average daily, weekday AM and weekday PM peak hour trips. We note the proposed square footage of the new facility represents an approximately 61 percent increase from the existing building square footage; however, a portion of the expansion will allow for existing building functions to operate in the space needed to meet modern building and safety requirements. The anticipated increase in PGE site employment is relatively small (approximately 23 percent/25 or fewer persons) and suggests the site trip estimates in Table 4 may overstate the trip increase that will be realized upon completion of the proposed expansion.

Table 4: Existing and Proposed PGE Facility Trip Generation (2-Day Average)

Size (Square Feet, SF)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
		Total	In	Out	Total	In	Out
Existing PGE Facility							
29,070	368	49	21	28	16	3	13
Existing trip rate/1,000 SF	**12.66**	**1.69**	**0.75**	**0.96**	**0.55**	**0.10**	**0.45**
Expanded PGE Facility							
46,800	592	79	34	45	26	5	21
Net New Trips (Proposed–Existing)	**224**	**30**	**13**	**17**	**10**	**2**	**8**

TRIP DISTRIBUTION AND ASSIGNMENT

An estimated trip distribution pattern was developed based on review of turn movement patterns at the two existing PGE site driveways and considering the available travel paths to the south (via Beavercreek Road or Molalla Avenue) relative to the reconfigured site access. Figures 9 and 10 show the estimated trip distribution pattern for both employees and for service vehicles (no customer/public access is provided today nor is any proposed upon facility expansion).

Existing PGE Trip Re-assignment

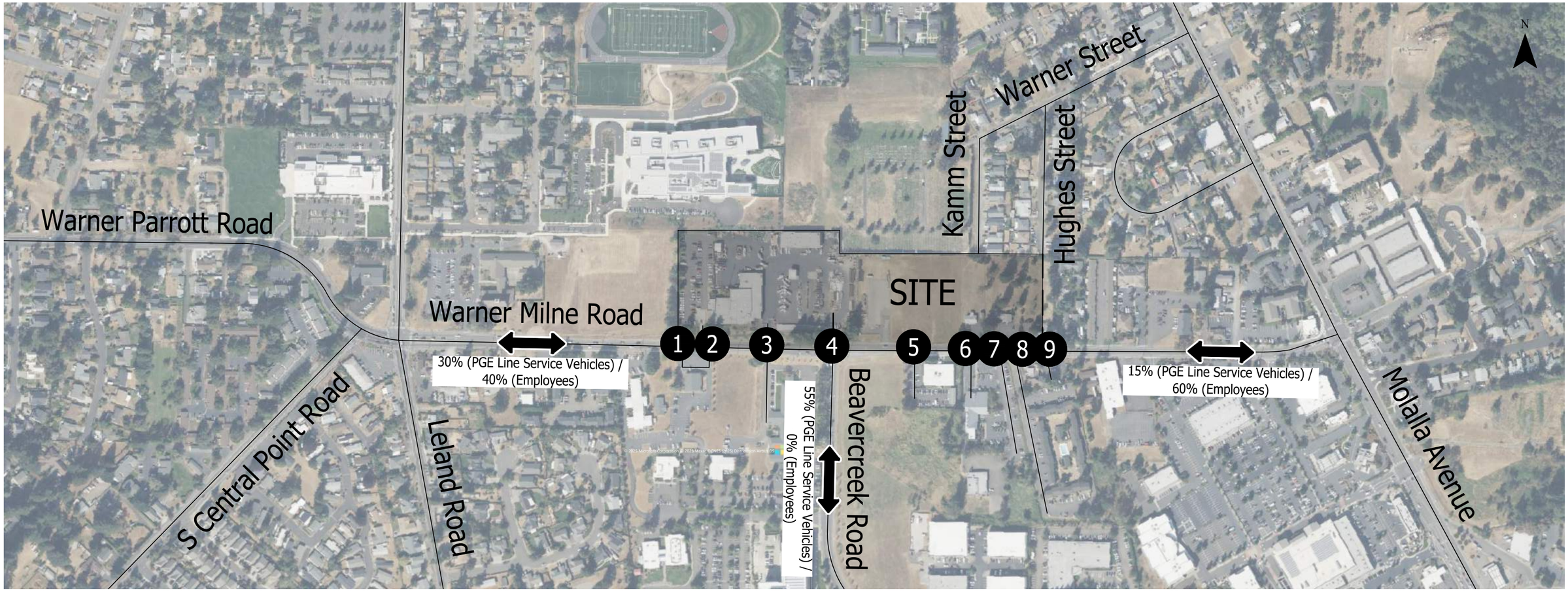
To develop the future total traffic volumes, existing trips associated with the current western employee access driveway/fleet vehicle access driveway were reassigned to the new east surface parking lot access. Similarly, trips associated with the existing eastern gated access that the secure yard area (used by PGE line service vehicles as well as by PGE contractor line service vehicles) were re-assigned to the new signalized site access. Trips that traveled to or from a given direction were assumed to continue to travel towards or from their original direction. The majority of the PGE line service vehicles traveling to and from the new signalized access from the east were assigned north-south through the traffic signal to reach Molalla Avenue. *Appendix G shows the assumed PGE trip re-assignment*[3].

New PGE Trip Assignment

The increase in site-generated trips associated with the PGE expansion (shown in Table 4) were assigned to the study intersections based on the estimated trip distribution pattern shown in Figures 9 and 10 and in proportion to the trips counted at the two PGE access points (approximately 30 percent of the peak hour site-generated traffic enter or exit the site through the PGE employee/fleet parking access while the remainder (approximately 70 percent) enter or exit through the signalized PGE line service vehicle access point.

Figure 9 and Figure 10 illustrate the estimated trip assignment for the proposed increase in site-generated trips during the AM and PM peak hours, respectively.

[3] The existing conditions traffic counts at the study intersections were collected on a date after the PGE trip generation study was completed and reflect a slightly lower number of trips entering and exiting PGE compared to the previously measured PGE trip generation rates. To reconcile the difference and align the total driveway trips in and out of PGE with the values Table 4, additional PGE trips were added to the study intersections for total traffic conditions.



1 OSU Extension West Driveway/ Warner Milne Road

2 OSU Extension East Driveway/ Warner Milne Road

3 Beavercreek Health Clinic Driveway/ Warner Milne Road

4 Beavercreek Road/ Warner Milne Road

5 A Safe Place Driveway/ Warner Milne Road

6 Embold Credit Union West Driveway/ Warner Milne Road

7 Embold Credit Union East Driveway/ Warner Milne Road

8 Willow Springs Apartments Driveway/ Warner Milne Road

9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access

XX% - Trip Distribution Percentage

Site-Generated Trips
Weekday AM Peak Hour
Oregon City, OR

Figure
9

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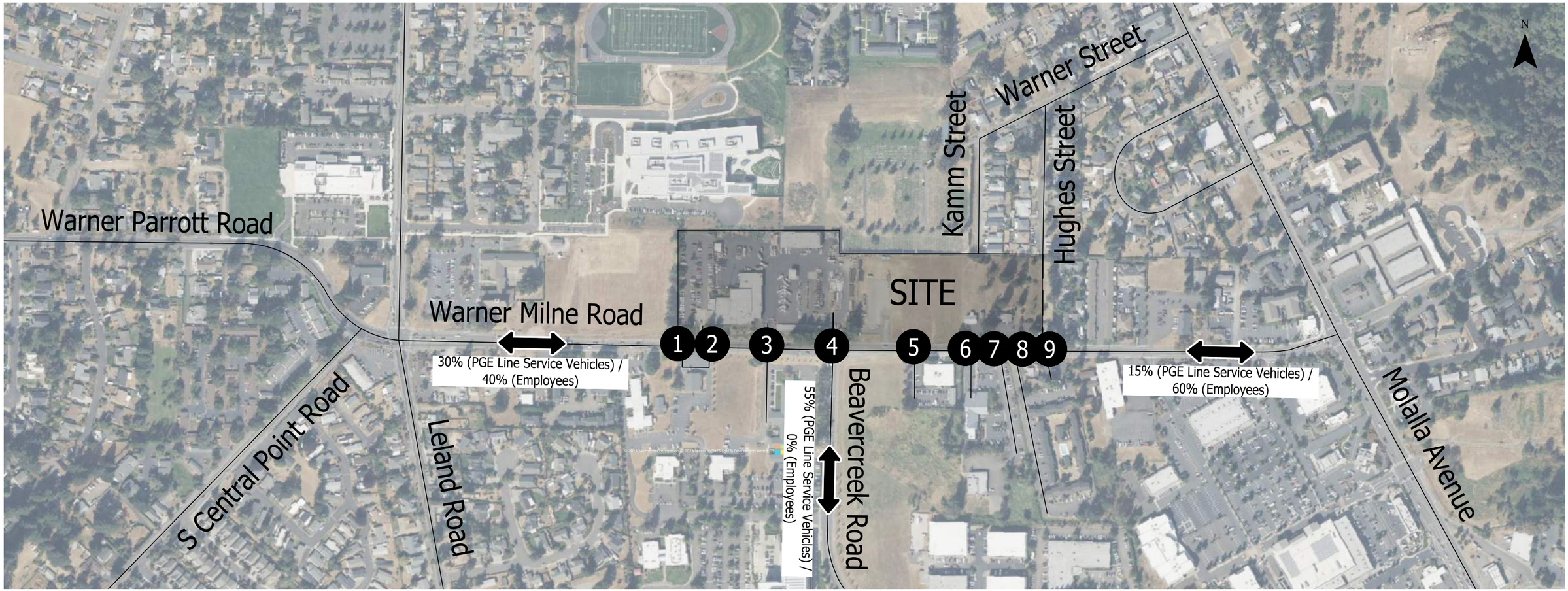

1 OSU Extension West Driveway/ Warner Milne Road

2 OSU Extension East Driveway/ Warner Milne Road

3 Beavercreek Health Clinic Driveway/ Warner Milne Road

4 Beavercreek Road/ Warner Milne Road

5 A Safe Place Driveway/ Warner Milne Road

6 Embold Credit Union West Driveway/ Warner Milne Road

7 Embold Credit Union East Driveway/ Warner Milne Road

8 Willow Springs Apartments Driveway/ Warner Milne Road

9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access

XX% - Trip Distribution Percentage

Site-Generated Trips
Weekday PM Peak Hour
Oregon City, OR

Figure
10

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FULL BUILDOUT TRAFFIC VOLUMES AND INTERSECTION OPERATIONAL ANALYSIS

The total traffic conditions analysis forecasts how the study intersections will operate with the traffic associated with full occupancy of the proposed reconfigured and expanded PGE facility. The site-generated trips shown in Figures 9 and 10 were added to the 2029 background traffic volumes reflected in Figures 6 and 7 to arrive at the 2029 total traffic volumes shown in Figures 11 and 12. Figures 11 and 12 also include the resulting intersection operations under total traffic conditions.

As shown, all intersections are projected to satisfy the V/C ratio ≤0.99 mobility standard during both the AM and PM peak hours[4].

Appendix H contains the year 2029 total traffic analysis worksheets.

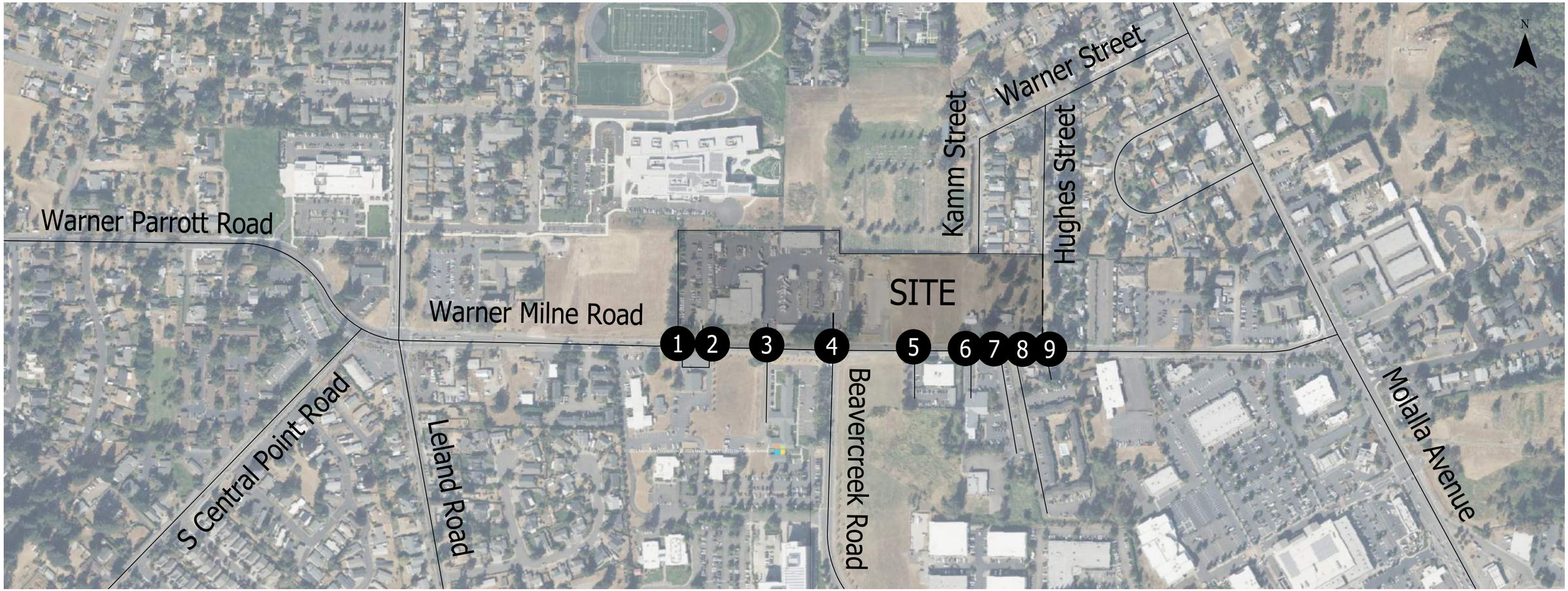
QUEUING ANALYSIS

A 95th-percentile queuing analysis was performed in Vistro for the signalized Warner Milne Road/Beavercreek Road intersection and the proposed new eastern site access. The site plan has configured the new signalized access approach to accommodate two full length PGE line service trucks between the site access gates and the crosswalk along the northern site frontage of Warner Milne Road.

Table 5 shows that the existing and future weekday AM and PM peak hour 95th-percentile queues can be accommodated assuming a peak 15-minute flow rate. Queues are rounded up to the nearest vehicle length. Each vehicle was assumed to occupy approximately 25 feet except for PGE line service vehicle movements into and out of the signalized PGE access. PGE line service trucks were estimated to occupy 35 feet and PGE line service trucks with trailers were estimated to occupy 50 feet. Delivery vehicles to the PGE site may extend longer, particularly for the tallest pole deliveries (up to 85-foot lone poles may be delivered on occasion).

We note that the northbound left-turn movement from Beavercreek Road onto Warner Milne Road extends past the existing designated left-turn lane storage into the two-way left-turn lane on Beavercreek Road today. The northbound left-turn lane can be expected to continue to experience relatively long queues that extend into the two-way left-turn lane in the future with PGE expansion complete; however, the northbound through and right-turn volumes are relatively small.

[4] While not required by the City of Oregon City, the V/C results shown at the unsignalized intersections reflect the highest V/C ratio among the minor street STOP controlled movements. The major street V/C ratio results reflect even lower values and thus the City's V/C standard for movements on the major street are satisfied.



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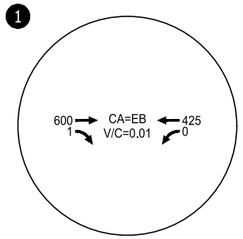
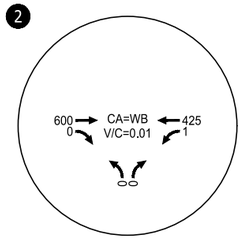


2 OSU Extension East Driveway/ Warner Milne Road



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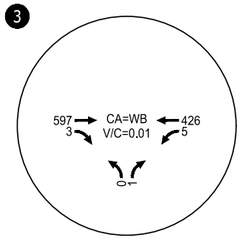
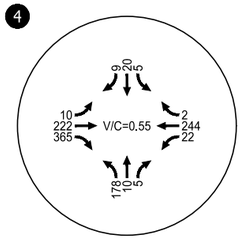
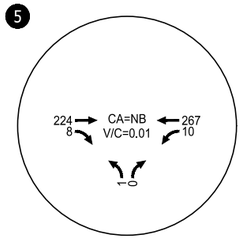


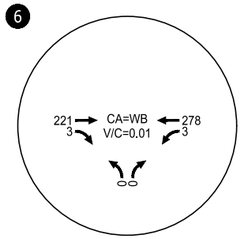
4 Beavercreek Road/ Warner Milne Road



5 A Safe Place Driveway/ Warner Milne Road



6 Embold Credit Union West Driveway/ Warner Milne Road



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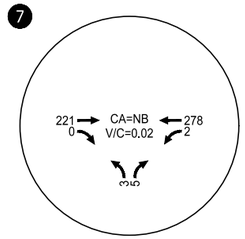
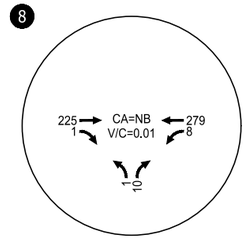
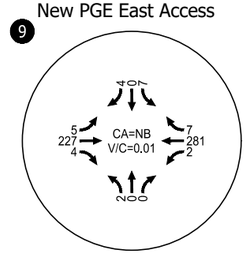


8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



CA = CRITICAL APPROACH (TWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) / CA VOLUME-TO-CAPACITY RATIO (TWSC)
TWSC = TWO-WAY STOP CONTROL

Total 2029 Traffic Conditions
Weekday AM Peak Hour
Oregon City, OR

Figure
11

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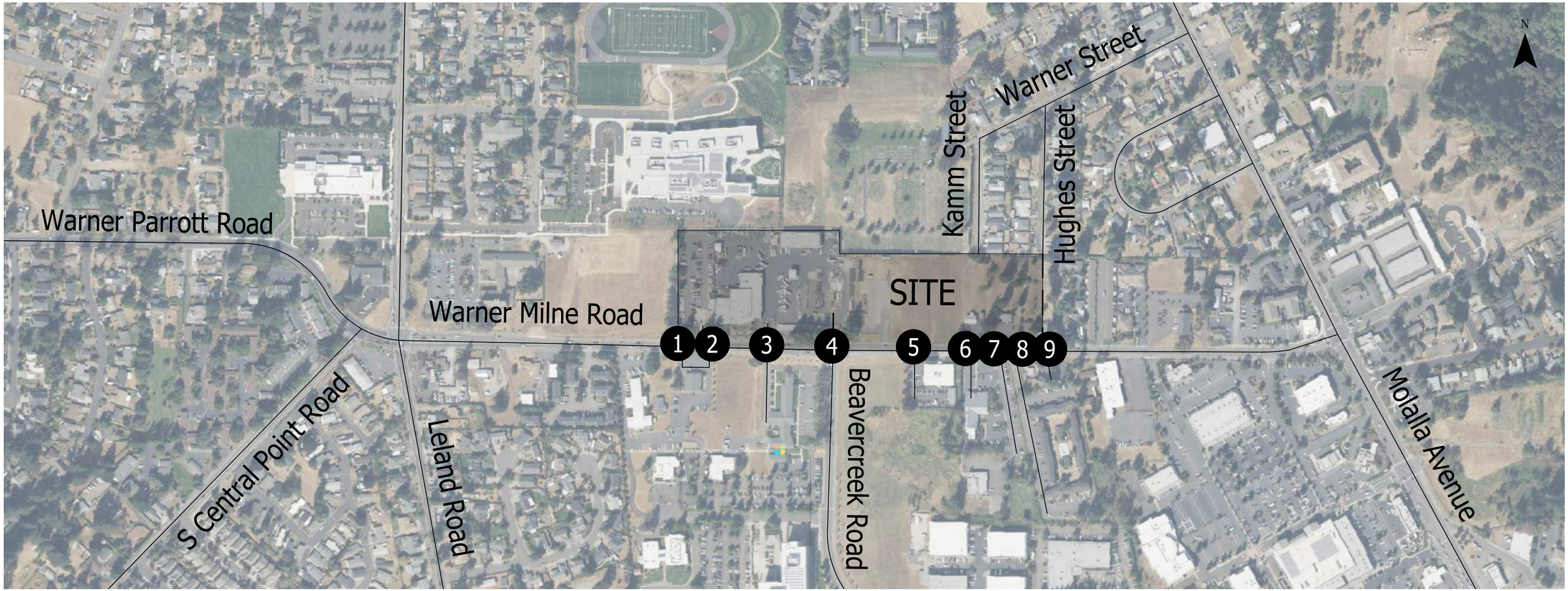

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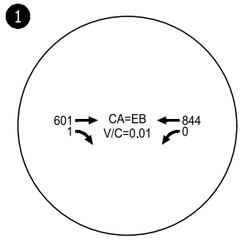

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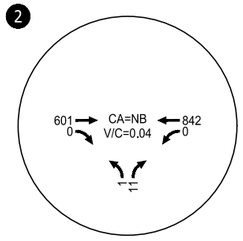
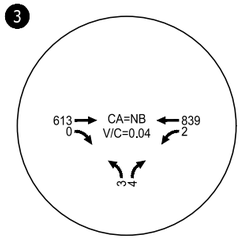
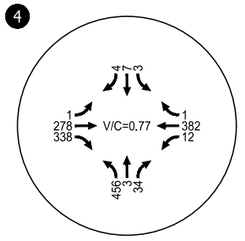


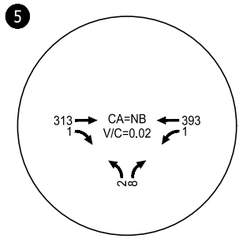
3 Beavercreek Health Clinic Driveway/ Warner Milne Road



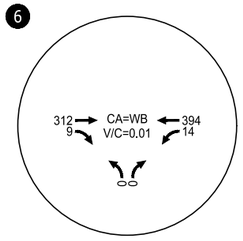
4 Beavercreek Road/ Warner Milne Road



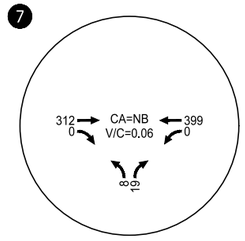
5 A Safe Place Driveway/ Warner Milne Road



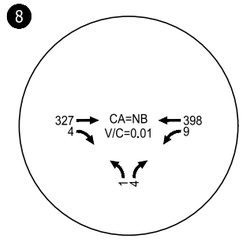
6 Embold Credit Union West Driveway/ Warner Milne Road



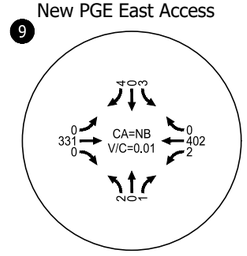
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



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Total 2029 Traffic Conditions
Weekday PM Peak Hour
Oregon City, OR

Figure
12

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Table 5. 95th-Percentile Queue Summary

Intersection	Movement	Storage (feet)	95th-Percentile Queue (feet)						Adequate Storage Provided?
			AM Peak Hour			PM Peak Hour			
			EX	BK	TT	EX	BK	TT	
Warner Milne Road/ Beavercreek Road	EBL	150[1]	N/A	N/A	50	N/A	N/A	100	Yes
	EBT[2]	>500	50	50	75	100	100	150	Yes
	EBR	100	25	25	100	25	25	100	Yes
	WBTR[3]	>500	25	25	75	100	100	200	Yes
	WBL	100	25	25	25	25	25	25	Yes
	NBL	150[4]	50	50	75	175	200	275	Yes
	NBTR	>500	25	25	25	25	25	25	Yes
	SBL	70[5]	N/A	N/A	50	N/A	N/A	50	Yes
	SBTR	70[5]	N/A	N/A	50	N/A	N/A	50	Yes
Warner Milne Road/ Proposed Access (Kamm Street)	SB	>50[1]	N/A	N/A	25	N/A	N/A	25	Yes

Where: EB=Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, L = left-turn lane, R = right-turn lane, TL = shared through/left, TR = shared through/right lane, N/A = Not applicable (does not exist)

[1] Proposed storage length.

[2] The next closest public street intersection to the west is over 500 feet away. There are private site accesses located on the south side of Warner Milne Road beginning approximately 200 feet to the west of Beavercreek Road.

[3] The next closest public street intersection to the east is over 500 feet away. There are private site accesses located on the south side of Warner Milne Road beginning approximately 250 feet to the east of Beavercreek Road.

[4] The striped northbound left-turn lane length is approximately 150 feet followed by a two-way center left-turn lane to the south. A private access is located on the west side of Beavercreek Road approximately 265 feet south of Warner Milne Road. A raised median is located in the center left-turn lane on Beavercreek Road approximately 565 feet south of Warner Milne Road.

[5] Approximately 70 feet of storage is available between the proposed on-site exit gate and the crosswalk at the signalized intersection. Additional storage is available on the PGE site.

Gated Line Service Vehicle Entry Queues

The proposed secured service yard area will be accessed via the Warner Milne Road/Beavercreek Road signalized intersection. An entry gate is proposed on-site approximately 90 feet north of the sidewalk along Warner Milne Road (approximately 110 from the Warner Milne Road north curb) as shown in Figure 2. The proposed access throat depth can accommodate up to three PGE line service vehicles in queue without impacting Warner Milne Road vehicle movements (or two PGE line service trucks with trailers).

The access control gates will be equipped with a radio-frequency identification (RFID) system. RFID is a wireless technology that uses radio waves to automatically identify individual RFID tags that can in turn activate entry on approach, expediting the entry gate process (the exit gate will open automatically for all vehicles). The technology requires issuance of an individual RFID that must be present in the vehicle to function.

PGE line service vehicles assigned to the Oregon City Operations Center will be equipped with RFID tags that activate the entry gate upon approach such that inbound movements can flow from Warner Milne Road into the secure yard area without stopping at a gate.

Vehicles entering the PGE site without an RFID tag (for example, a non-PGE vendor delivery vehicle or a contractor vehicle) will be required to stop at the entry gate and communicate with on-site personnel through a call box. The on-site personnel will then raise the gate electronically from a monitoring station.

PGE anticipates that pole deliveries will require an inbound vendor vehicle to stop at the entry gate to communicate with PGE Staff for entry approval. One to two pole deliveries are anticipated every other week with deliveries usually scheduled for mid-morning hours on weekdays. For the largest pole size anticipated on site (85 feet, necessitating a 98-feet long delivery vehicle), one pole delivery vehicle can be accommodated between the entry gate and Warner Milne Road within the proposed driveway throat.

ACCESS CONSIDERATIONS

Figure 13 shows the existing and proposed site access points as well as other nearby accesses along both sides of Warner Milne Road. As shown, the properties that comprise the existing PGE campus include two gated accesses to PGE, and seven other accesses on the expansion site to the east (including two curb cuts with unpaved accesses and five curb cuts with paved accesses).

PGE proposes to consolidate and close all of the existing site accesses along Warner Milne Road and replace them with the three accesses including:

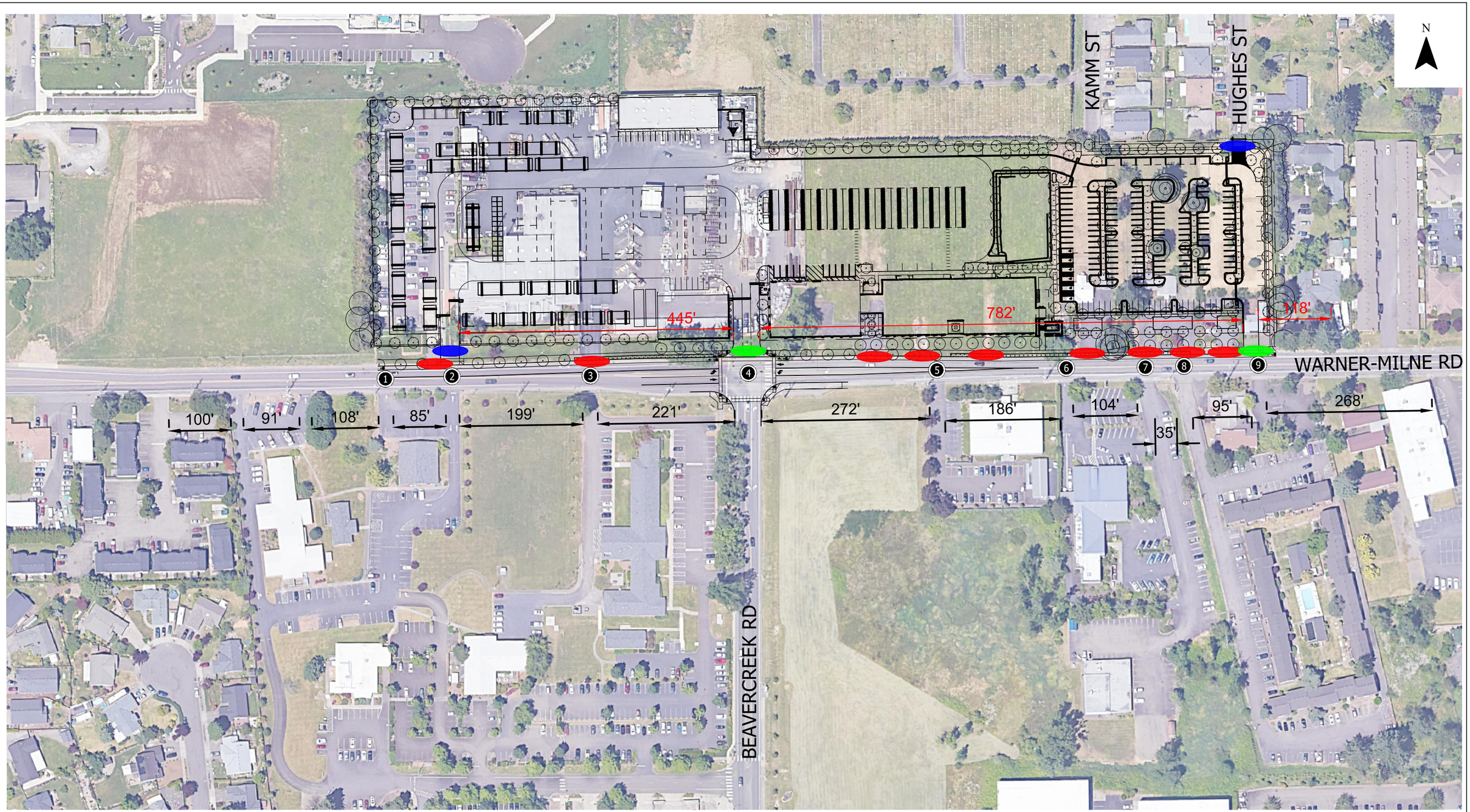
- A secure gated entrance for PGE line service vehicles, contractor line service vehicles, and equipment deliveries proposed as a new north approach to the signalized intersection of Warner Milne Road and Beavercreek Road.
- A new employee parking area proposed on the east side of the campus accessible via a new north-south private access corridor aligned with Hughes Street and connected to Warner Milne Road. The private access corridor will provide a public easement for emergency access to Hughes Street.
- A new gated emergency vehicle access is proposed on Warner Milne Road near the west end of the PGE campus.

From a systemic perspective, the proposed access arrangement:

- Consolidates site driveways on Warner Milne Road from nine existing to three proposed (all of which will be gated and one of which will not be used on a regular basis);
- Provides for heavy vehicle (PGE line service vehicles, contractor line service vehicles, and equipment deliveries) movements at the signalized Warner Milne Road/Beavercreek Road intersection; and
- Facilitates emergency vehicle access to Hughes Street north of the PGE site from Warner Milne Road via a public easement for emergency access, offering an important secondary emergency response route.

Separation of the employee/fleet surface parking access and the signalized PGE line service vehicle access is proposed because:

- PGE has a safety-based operational requirement to separate employee/fleet vehicle movements from the on-site service yard (separation of on-site circulation vehicle streams with exclusion of all but services vehicle within the lay down yard); and
- Routing all PGE line vehicles, fleet vehicles and employee vehicles through the signalized access would concentrate site-generated trips in one vehicle stream with the likely outcome of multiple vehicles arriving at the on-site secure gate area simultaneously (when they receive a green signal). The secured gate processing time and volume of inbound traffic combined with the short site depth in the north-south direction would presumably result in inbound vehicles queued into the signalized intersection, potentially impacting traffic on Warner Milne Road and/or Beavercreek Road.



Vacated Existing Warner Milne Road Access
Proposed New Warner Milne Road Access
Proposed New Gated Emergency Access

Warner Milne Road Access Spacing
Oregon City, Oregon

Figure
13

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Warner Milne Road Access Spacing

OCMC Section 16.12.035 requires that all new development, redevelopment, and capital improvement projects meet the minimum driveway spacing standards identified in Table 16.12.035.A. The minimum spacing standard for Minor Arterial Streets like Warner Milne Road is a distance of 175 feet measured from edge to edge of access points.

As shown in Figure 13:

- The proposed western gated emergency access satisfies the minimum spacing standard with respect to the other PGE site access point and aligns with an existing access on the south side of Warner Milne Road;
- The signalized center gated access aligns with Beavercreek Road and satisfies the minimum spacing standard with respect to other PGE site access points; and
- The proposed eastern access satisfies the minimum spacing standard with respect to other PGE site access points and roughly aligns with an existing access on the south side of Beavercreek Road but is within approximately 118 feet of an off-site residential access to the east (approximately 57 feet short of the standard).
  - The proposed access is aligned with an existing access on the south side of Warner Milne Road and creates a north-south emergency vehicle connection to Hughes Street.
  - Shifting the proposed access west to satisfy the 175-foot minimum spacing with respect to the access to the east would result in a misalignment with the access to the south.
  - The existing access to the east appears to serve a limited number of residential homes and is estimated to serve less than 10 vehicle trips per hour.

For the reasons listed above, we conclude the proposed PGE site access is appropriate, moves in the direction of meeting the City's access spacing requirements given the existing spacing of other off-site access points to the east and south (many of the off-site access points also do not satisfy the 175-foot minimum spacing standard), and will not adversely impact the existing transportation system.

Access Width

OCMC Table 16.12.035.D states the minimum driveway approach width for commercial, industrial, institutional, and other uses is 12 feet for one-way approaches and 20 feet for two-way approaches. The maximum driveway approach width is shown to be 40 feet.

The proposed site access driveways meet the city's minimum private access driveway width standards as follows:

- the proposed western gated emergency access is 30 feet wide;
- The proposed fleet vehicle access driveway at the signalized Warner Milne Road/Beavercreek Road intersection is 42 feet wide to match the curb-to-curb section on Beavercreek Road to the south; and
- The proposed PGE east side access is 24 feet wide.

Intersection Sight Distance

Intersection sight distance documentation at the site access points and along the site frontage will be documented on the civil engineering plans provided through the site plan application process.

We recommend that on-site landscaping, signage, and any new above-ground utilities be appropriately located and maintained to provide adequate intersection sight distance per applicable City requirements.

Turn Lane Considerations

Based on the projected traffic volumes upon site buildout, provision of an eastbound left-turn lane is proposed at the new signalized PGE line service vehicle access at the Warner Milne Road/Beavercreek Road intersection. An eastbound left-turn lane is not proposed at the new PGE east access given the relatively low anticipated left-turn volumes (fewer than 10 left-turn vehicles per hour).

Westbound right-turn lanes are not recommended at the proposed access points based on the relatively low turning volumes and understanding most PGE line service vehicles can be routed straight into the signalized access via Beavercreek Road.

SITE CIRCULATION AND PARKING

The proposed site is expected to have two accesses for daily use. The new north approach at the Warner Milne Road/Beavercreek Road intersection is proposed to serve the PGE line service vehicles and equipment deliveries such as power poles. The eastern site access is proposed to serve the employee parking lot. The secure PGE site will feature gated access as previously described to limit access to employees and authorized personnel. No public parking is proposed on site.

The equipment laydown and covered PGE line service vehicle storage areas accessed via the main signalized intersection have been designed to facilitate vehicle entry and exit to Warner Milne Road as well as on-site circulation to the various work areas of the yard.

The employee parking area will have gated access west of the new PGE east access to Warner Milne Road, allowing for access control without queues impacting operations of Warner Milne Road. A vehicle connection is provided on the northern portion of the site between the yard laydown area and the employee parking area; however, PGE employees will not be allowed to drive personal vehicles into the laydown area from the employee parking area for safety reasons. The employee parking area has been designed to accommodate circulation and parking by PGE line service trucks as well as contractor service trucks so that vehicles can be staged in this area during power emergency situations.

The proposed western access on Warner Milne Road will be gated for emergency access.

The civil engineering plans further document pedestrian and bicycle infrastructure improvements around the southern and eastern perimeter of the site. In alignment with projects identified in the City's TSP, full sidewalk and bicycle lane is proposed on the southern perimeter of the site along Warner Milne Road.

Sidewalk construction is also proposed on the eastern boundaries of the site to connect to both Hughes Street and Kamm Street.

Conclusions and Recommendations

Based on the transportation impact analysis results, the proposed expansion of the PGE Operations Center can be provided while maintaining acceptable operations at the study intersections assuming implementation of the recommended mitigation measures in conjunction with site development.

FINDINGS

- All of the study intersections are projected to satisfy the City of Oregon City's V/C ratio ≤0.99 mobility standard during both the AM and PM peak hours today and in the future with the proposed PGE expansion.
- The proposed site plan involves the closure of nine existing accesses along Warner Milne Road including two are actively used by PGE today and seven are associated with prior land uses that were on the east side of the expanded campus. Three new gated accesses are proposed, two of which will be used daily and one of which will be dedicated for emergency use.
- The proposed site plan facilitates pedestrian connectivity between Warner Milne Road, Hughes Street, and Hamm Street via a new on-site shared use path. The new connectivity provided by the site partially fulfills TSP Project S41 that seeks to provide a shared use path connecting Beaver Creek Road to Laurel Lane through the PGE site.
- The proposed access points satisfy the OCMC minimum/maximum width criteria.
- The proposed access points satisfy the OCMC access spacing requirements with the exception of the proposed east access that aligns with an existing off-site access on the south side of Warner Milne Road but is within approximately 118 feet of an off-site residential access to the east.
- This study finds the proposed PGE site access is appropriate, moves in the direction of meeting the City's access spacing requirements given the existing spacing of other off-site access points to the east and south (many of the off-site access points also do not satisfy the 175-foot minimum spacing standard), and will not adversely impact the existing transportation system.
- Based on the projected traffic volumes upon site buildout, provision of an eastbound left-turn lane is proposed at the new signalized PGE line service vehicle access at the Warner Milne Road/Beavercreek Road intersection. An eastbound left-turn lane is not proposed at the new PGE east access given the relatively low anticipated left-turn volumes (fewer than 10 left-turn vehicles per hour).
- Westbound right-turn lanes are not recommended at the proposed access points based on the relatively low turning volumes and understanding most PGE line service vehicles can be routed straight into the signalized access via Beavercreek Road.

RECOMMENDATIONS

- Modify the Beavercreek Road/Warner Milne Road intersection to provide the following:
  - A new southbound approach (private access to PGE) with a separate left-turn lane and a shared through/right lane;
  - A new eastbound left-turn lane with at least 150 feet of storage;
  - Restripe the northbound approach to provide a separate left-turn lane and a shared through/right turn lane with the existing storage available today;
  - Provide protected/permissive left-turn signal heads on all approaches to allow the City flexibility as multi-modal traffic volumes grow at the intersection (it is presumed that permissive phasing will be used upon opening for the north-south movements and protected/permissive phasing for east-west movements consistent with current operations).
  - Replace the existing eastbound and northbound right-turn permissive and overlap phases with permissive only phasing (due to the new north approach, the eastbound right-turn movement will no longer overlap with an exclusive northbound phase and the northbound right-turn movement will no longer have an exclusive turn lane).
- Post a new STOP (R1-1) sign southbound on the new private east and west access approaches to Warner Milne Road in accordance with applicable City standards and the *Manual on Uniform Traffic Control Devices* (MUTCD, Reference 2).
- Locate and maintain site landscaping, above-ground utilities, and site signage along the site frontage and internal drive aisles to provide adequate intersection sight distance per applicable City requirements.

References

1. City of Oregon City. *City of Oregon City's Guidelines for Transportation Impact Analyses.* Effective July 16, 2021.

2. Federal Highway Administration. *Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition.*

3. Transportation Research Board. *Highway Capacity Manual, 7th Edition*. 2022.

4. City of Oregon City. *Oregon City Transportation System Plan*. June 2013.

5. TriMet. https://trimet.org/home/ Accessed October 2025.

6. Clackamas County Connects Shuttle Service. https://www.clackamas.us/h3s/connects-shuttle Accessed October 2025.

7. Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition.* 2021.

Appendix

A. Study Intersection Traffic Count Data
B. Existing Traffic Conditions Analysis Worksheets
C. ODOT Crash Data
D. In-Process Trips
E. Year 2029 Background Traffic Conditions Analysis Worksheets
F. PGE Site Traffic Count Data
G. Existing PGE Site Trip Re-assignment
H. Year 2029 Total Traffic Conditions Analysis Worksheets

Appendix A
Study Intersection Traffic Count Data

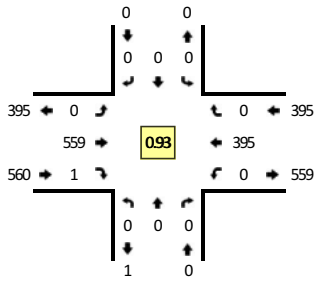
Type of peak hour being reported: User-Defined

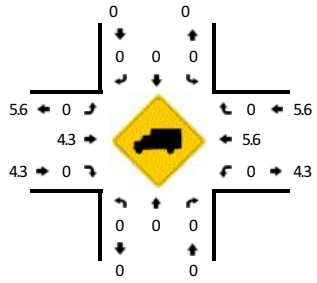
Method for determining peak hour: Total Entering Volume

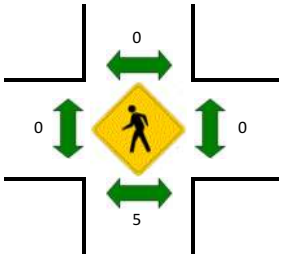
LOCATION: OSU Extension West Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

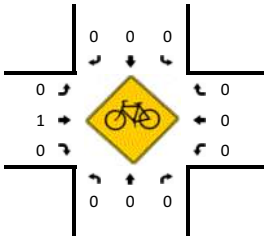
QC JOB #: 17024705
DATE: Thu, May 22 2025

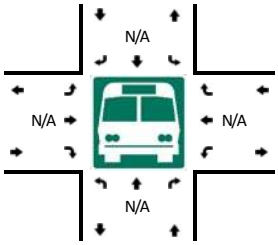
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

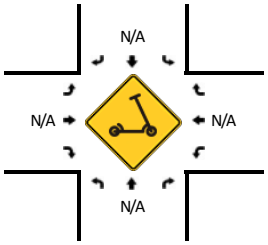












R* = RTOR

5-Min Count Period Beginning At	OSU Extension West Dwy (Northbound)					OSU Extension West Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	38	1	0	0	0	12	0	0	0	51	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	16	0	0	0	45	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	28	0	0	0	53	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	24	0	0	0	55	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	22	0	0	0	63	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	46	1	0	0	0	26	0	0	0	73	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0	20	0	0	0	67	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	25	0	0	0	77	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	36	0	0	0	80	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	46	0	0	0	91	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	51	1	0	0	0	19	0	0	0	71	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	28	0	0	0	74	800
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	61	0	0	0	0	30	0	0	0	91	840
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	32	0	0	0	81	876
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8:30 AM	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	40	0	0	0	81	955
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	38	0	0	0	72	950
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	1	24	0	0	0	62	932
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	28	0	0	0	68	909
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	29	0	0	0	67	905
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0	39	0	0	0	74	905

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	660	0	0	0	0	364	0	0	0	1024
Heavy Trucks	0	0	0			0	0	0			0	32	0			0	20	0			52
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: PGE West/OSU Extension East Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

QC JOB #: 17024707
DATE: Thu, May 22 2025

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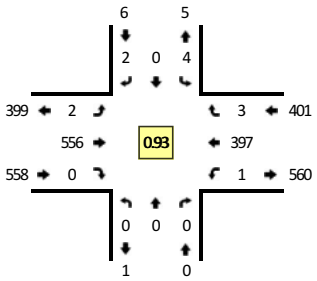
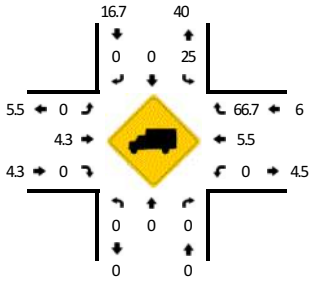
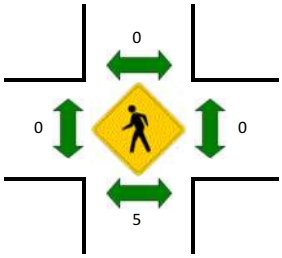
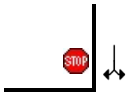
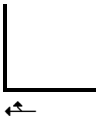
Peak 15-Min: 8:00 AM -- 8:15 AM

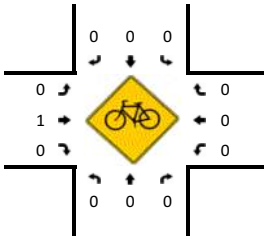


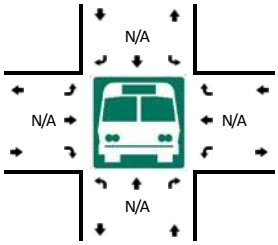


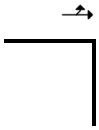


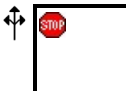


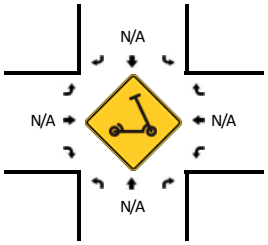












R* = RTOR

5-Min Count Period Beginning At	PGE West/OSU Extension East Dwys (Northbound)					PGE West/OSU Extension East Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	12	1	0	0	50	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	16	0	0	0	46	
7:10 AM	0	0	1	0	0	0	0	1	0	0	1	23	0	0	0	0	27	1	0	0	54	
7:15 AM	0	0	0	0	0	1	0	0	0	0	1	31	0	0	0	0	24	2	0	0	59	
7:20 AM	0	0	0	0	0	0	0	2	0	0	1	41	0	0	0	1	20	2	0	0	67	
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7:55 AM	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	28	0	0	0	72	811
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	63	0	0	0	0	30	0	0	0	93	854
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	32	1	0	0	82	890
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	55	0	0	0	0	30	0	0	0	85	921
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	24	0	0	0	53	915
8:20 AM	0	0	0	0	0	0	0	0	0	0	2	39	0	0	0	1	45	1	0	0	88	936
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Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	668	0	0	0	0	368	4	0	0	1040
Heavy Trucks	0	0	0			0	0	0			0	36	0			0	16	4			56
Buses																					
Pedestrians		4					0					0					0				4
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

LOCATION: PGE East/P Parking Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

QC JOB #: 17024711
DATE: Thu, May 22 2025

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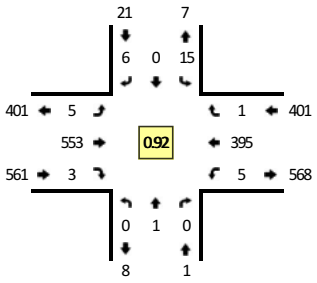
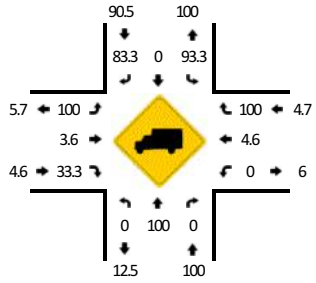
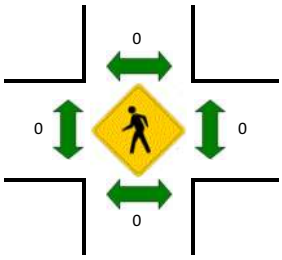
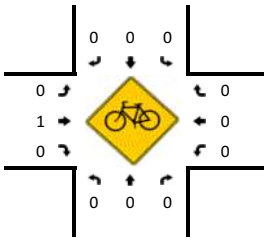
Peak 15-Min: 8:00 AM -- 8:15 AM

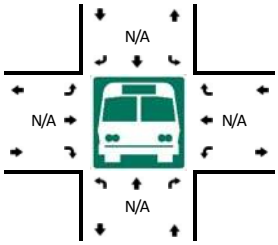


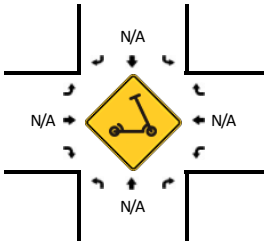


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	PGE East/P Parking Dwys (Northbound)					PGE East/P Parking Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	36	0	0	0	0	13	0	0	0	50	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	19	0	0	0	50	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	25	0	0	0	48	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	27	0	0	0	61	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	23	0	0	0	61	
7:25 AM	0	0	0	0	0	1	0	0	0	0	0	46	2	0	0	0	27	0	0	0	76	
7:30 AM	1	0	0	0	0	0	0	0	0	0	6	39	0	0	0	0	20	0	0	0	66	
7:35 AM	0	0	0	0	0	0	0	0	0	0	1	53	0	0	0	0	25	0	0	0	79	
7:40 AM	0	1	0	0	0	0	0	0	0	0	1	43	1	0	0	0	36	0	0	0	82	
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	40	0	0	0	1	46	0	0	0	89	
7:50 AM	0	0	0	0	0	1	0	1	0	0	1	52	0	0	0	1	20	1	0	0	77	
7:55 AM	0	0	0	0	0	4	0	0	0	0	0	43	0	0	0	0	27	0	0	0	74	813
8:00 AM	0	0	0	0	0	2	0	0	0	0	0	63	1	0	0	0	32	0	0	0	98	861
8:05 AM	0	0	0	0	0	2	0	0	0	0	0	49	0	0	0	0	31	0	0	0	82	893
8:10 AM	0	0	0	0	0	4	0	0	0	0	0	53	0	0	0	1	29	0	0	0	87	932
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	2	24	0	0	0	57	928
8:20 AM	0	0	0	0	0	0	0	4	0	0	0	39	0	0	0	0	44	0	0	0	87	954
8:25 AM	0	0	0	0	0	1	0	1	0	0	0	45	1	0	0	0	41	0	0	0	89	967
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	42	0	0	0	0	40	0	0	0	83	984
8:35 AM	0	0	0	0	0	4	0	0	0	0	0	32	0	0	0	0	36	0	0	0	72	977
8:40 AM	0	0	1	0	0	1	0	0	0	0	0	35	1	0	0	0	25	0	0	0	63	958
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	42	0	0	0	0	28	0	0	0	71	940
8:50 AM	0	0	0	0	0	0	0	1	0	0	0	35	0	0	0	0	28	0	0	0	64	927
8:55 AM	0	0	0	0	0	2	0	0	0	0	0	38	0	0	0	0	39	0	0	0	79	932

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	32	0	0	0	0	0	660	4	0	0	4	368	0	0	0	1068
Heavy Trucks	0	0	0			32	0	0			0	36	0			0	20	0			88
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

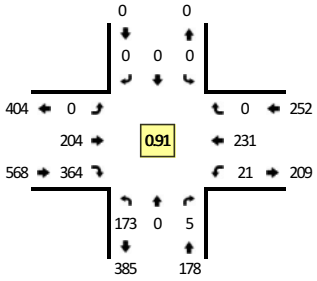
Type of peak hour being reported: User-Defined

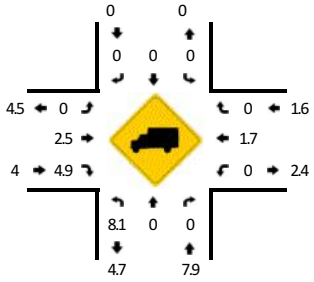
Method for determining peak hour: Total Entering Volume

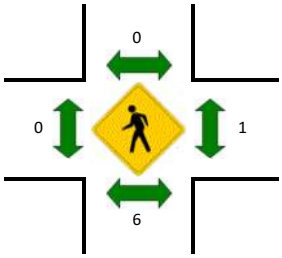
LOCATION: Beavercreek Rd -- Warner Milne Rd
CITY/STATE: Oregon City, OR

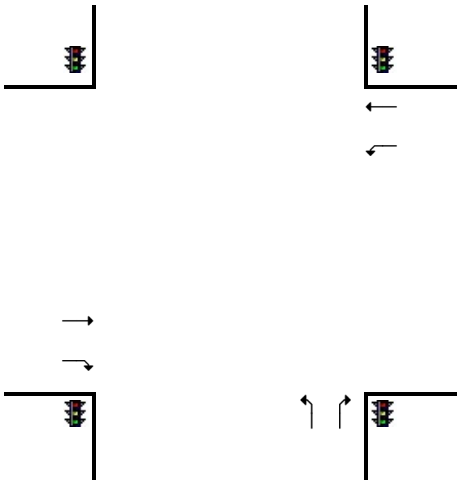
QC JOB #: 17024713
DATE: Thu, May 22 2025

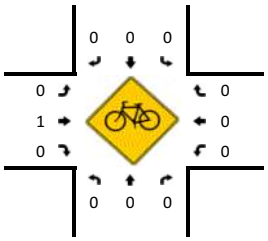
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

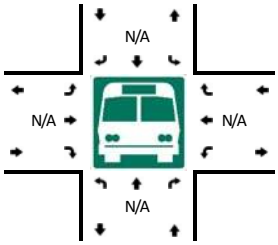


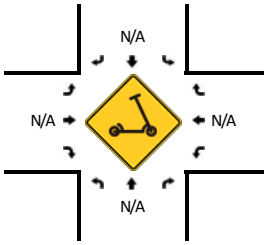












R* = RTOR

5-Min Count Period Beginning At	Beavercreek Rd (Northbound)					Beavercreek Rd (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	8	0	0	0	0	0	0	0	0	0	0	15	20	0	3	1	5	0	0	0	52	
7:05 AM	12	0	0	0	0	0	0	0	0	0	0	11	18	0	3	2	8	0	0	0	54	
7:10 AM	13	0	1	0	0	0	0	0	0	0	0	10	12	0	1	5	11	0	0	0	53	
7:15 AM	9	0	0	0	0	0	0	0	0	0	0	11	20	0	2	2	20	0	0	0	64	
7:20 AM	9	0	1	0	1	0	0	0	0	0	0	18	18	0	2	2	13	0	0	0	64	
7:25 AM	18	0	0	0	0	0	0	0	0	0	0	18	20	0	5	2	10	0	0	0	73	
7:30 AM	7	0	0	0	0	0	0	0	0	0	0	15	18	0	7	3	12	0	0	0	62	
7:35 AM	8	0	0	0	1	0	0	0	0	0	0	15	29	0	9	2	17	0	0	0	81	
7:40 AM	14	0	0	0	0	0	0	0	0	0	0	21	21	0	3	3	26	0	0	0	88	
7:45 AM	19	0	0	0	0	0	0	0	0	0	0	12	24	0	3	0	25	0	0	0	83	
7:50 AM	13	0	0	0	0	0	0	0	0	0	0	18	28	0	9	1	9	0	0	0	78	
7:55 AM	10	0	0	0	0	0	0	0	0	0	0	15	25	0	6	5	19	0	0	0	80	832
8:00 AM	18	0	1	0	0	0	0	0	0	0	0	20	26	0	12	1	16	0	0	0	94	874
8:05 AM	11	0	0	0	1	0	0	0	0	0	0	18	32	0	6	2	20	0	0	0	90	910
8:10 AM	14	0	0	0	1	0	0	0	0	0	0	22	29	0	7	4	14	0	0	0	91	948
8:15 AM	9	0	0	0	0	0	0	0	0	0	0	12	11	0	9	1	16	0	0	0	58	942
8:20 AM	22	0	0	0	0	0	0	0	0	0	0	18	15	0	5	1	24	0	0	0	85	963
8:25 AM	21	0	0	0	0	0	0	0	0	0	0	13	23	0	7	0	22	0	0	0	86	976
8:30 AM	14	0	0	0	1	0	0	0	0	0	0	20	17	0	8	1	23	0	0	0	84	998
8:35 AM	15	0	0	0	0	0	0	0	0	0	0	18	14	0	6	3	20	0	0	0	76	993
8:40 AM	16	0	2	0	0	0	0	0	0	0	0	14	19	0	4	1	12	0	0	0	68	973
8:45 AM	17	0	0	0	0	0	0	0	0	0	0	17	19	0	5	1	8	0	0	0	67	957
8:50 AM	12	0	1	0	0	0	0	0	0	0	0	8	21	0	6	1	18	0	0	0	67	946
8:55 AM	13	0	0	0	0	0	0	0	0	0	0	15	21	0	3	1	25	0	0	0	78	944

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	172	0	12	0	8	0	0	0	0	0	0	240	448	0	100	28	200	0	0	0	1208
Heavy Trucks	12	0	0			0	0	0			0	16	28			0	8	0			64
Buses																					
Pedestrians		12					0					0					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: A Safe Place Dwy -- Warner Milne Rd

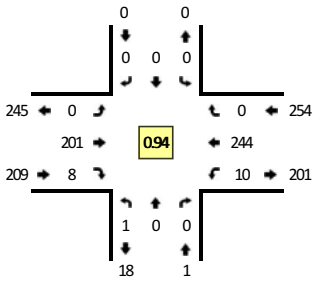
CITY/STATE: Oregon City, OR

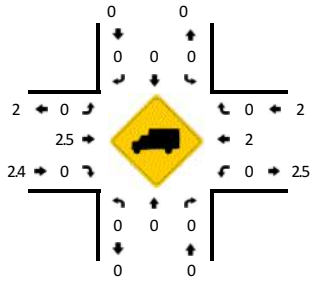
QC JOB #: 17024715

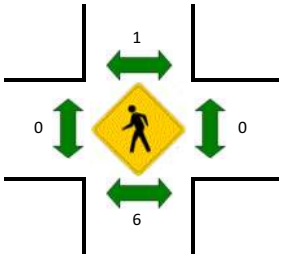
DATE: Thu, May 22 2025

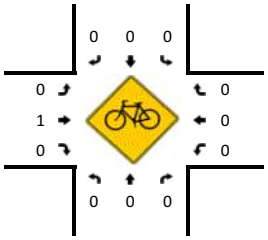
Peak-Hour: 7:35 AM -- 8:35 AM

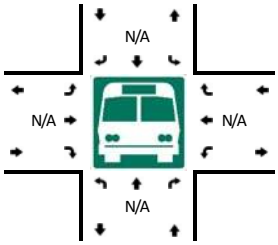
Peak 15-Min: 8:00 AM -- 8:15 AM

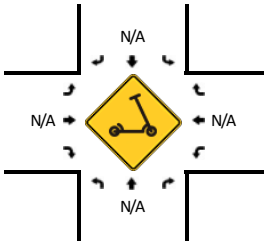












R* = RTOR

5-Min Count Period Beginning At	A Safe Place Dwy (Northbound)					A Safe Place Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	9	0	0	0	26	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	9	0	0	0	20	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	15	0	0	0	27	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	2	18	0	0	0	31	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	1	16	0	0	0	37	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	13	0	0	0	30	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	0	0	0	30	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	19	0	0	0	34	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	23	0	0	0	43	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	1	29	0	0	0	44	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	1	11	0	0	0	26	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	17	1	0	0	3	21	0	0	0	42	390
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	1	21	0	0	0	42	406
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	20	3	0	0	1	13	0	0	0	37	423
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	2	25	0	0	0	45	441
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	12	0	0	0	29	439
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	25	0	0	0	41	443
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	25	0	0	0	37	450
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	22	1	0	0	1	20	0	0	0	44	464
8:35 AM	1	0	0	0	0	0	0	0	0	0	0	16	0	0	0	1	27	0	0	0	45	475
8:40 AM	1	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	11	0	0	0	26	458
8:45 AM	0	0	3	0	0	0	0	0	0	0	0	19	0	0	0	0	9	0	0	0	31	445
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	12	0	0	0	24	443
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	2	28	0	0	0	42	443

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	228	16	0	0	16	236	0	0	0	496
Heavy Trucks	0	0	0			0	0	0			0	16	0			0	8	0			24
Buses																					
Pedestrians		12					0					0					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Embold Credit Union West Dwy -- Warner Milne Rd

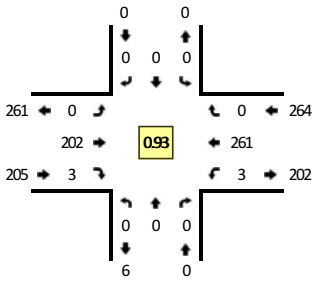
CITY/STATE: Oregon City, OR

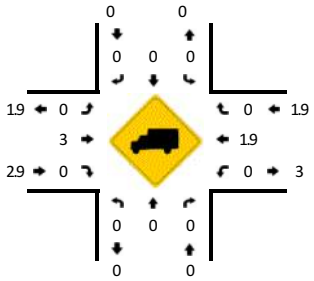
QC JOB #: 17024717

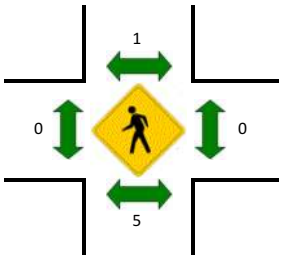
DATE: Thu, May 22 2025

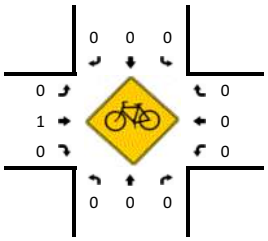
Peak-Hour: 7:35 AM -- 8:35 AM

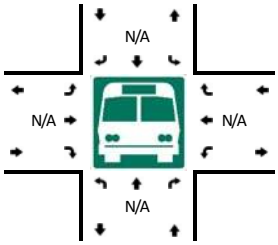
Peak 15-Min: 8:00 AM -- 8:15 AM

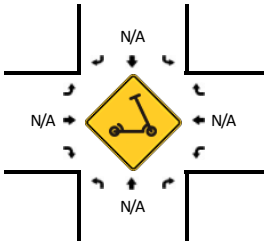












R* = RTOR

5-Min Count Period Beginning At	Embold Credit Union West Dwy (Northbound)					Embold Credit Union West Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	6	0	0	0	21	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	0	0	0	22	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	17	0	0	0	28	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	1	23	0	0	0	34	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	14	0	0	0	34	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	11	0	0	0	31	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	17	0	0	0	33	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	0	17	0	0	0	34	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	29	0	0	0	51	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	0	25	0	0	0	36	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	12	0	0	0	31	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	25	0	0	0	40	395
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	2	22	0	0	0	43	417
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	0	23	0	0	0	40	435
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	1	19	0	0	0	43	450
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	14	0	0	0	26	442
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	28	0	0	0	47	455
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	20	0	0	0	32	456
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	27	0	0	0	46	469
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	1	21	0	0	0	41	476
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	15	1	0	0	0	12	0	0	0	28	453
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	17	1	0	0	0	7	0	0	0	25	442
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	1	22	0	0	0	33	444
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	26	0	0	0	41	445

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	232	4	0	0	12	256	0	0	0	504
Heavy Trucks	0	0	0			0	0	0			0	16	0			0	8	0			24
Buses																					
Pedestrians		12					0					0					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Embold Credit Union East/CPA West Dwys -- Warner Milne Rd

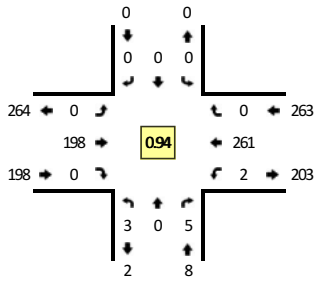
CITY/STATE: Oregon City, OR

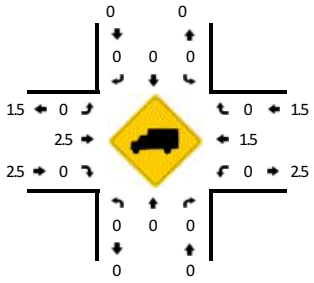
QC JOB #: 17024719

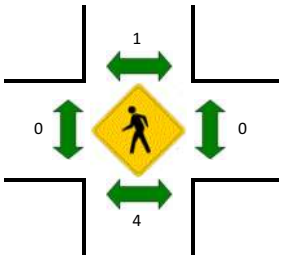
DATE: Thu, May 22 2025

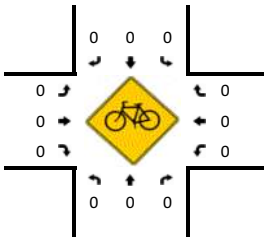
Peak-Hour: 7:35 AM -- 8:35 AM

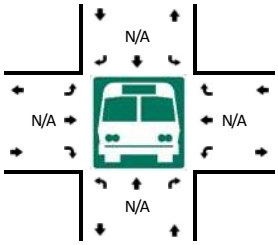
Peak 15-Min: 8:00 AM -- 8:15 AM

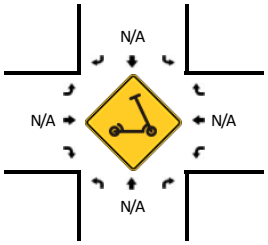












R* = RTOR

5-Min Count Period Beginning At	Embold Credit Union East/CPA West Dwys (Northbound)					Embold Credit Union East/CPA West Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	6	0	0	0	22	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	0	0	0	22	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	18	0	0	0	29	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	23	0	0	0	33	
7:20 AM	1	0	1	0	0	0	0	0	0	0	0	18	0	0	0	0	13	0	0	0	33	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	11	0	0	0	29	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	18	0	0	0	33	
7:35 AM	0	0	1	0	0	0	0	0	0	0	0	15	0	0	0	0	18	0	0	0	34	
7:40 AM	1	0	0	0	0	0	0	0	0	0	0	22	0	0	0	1	28	0	0	0	52	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	25	0	0	0	35	
7:50 AM	0	0	1	0	0	0	0	0	0	0	0	18	0	0	0	0	11	0	0	0	30	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	26	0	0	0	41	393
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	22	0	0	0	42	413
8:05 AM	1	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	22	0	0	0	39	430
8:10 AM	0	0	2	0	0	0	0	0	0	0	0	22	0	0	0	0	20	0	0	0	44	445
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	15	0	0	0	27	439
8:20 AM	0	0	1	0	0	0	0	0	0	0	0	18	0	0	0	0	28	0	0	0	47	453
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	1	19	0	0	0	32	456
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	27	0	0	0	46	469
8:35 AM	0	0	1	0	0	0	0	0	0	0	0	19	0	0	0	0	22	0	0	0	42	477
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	2	12	0	0	0	28	453
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	19	0	0	0	0	8	0	0	0	28	446
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	23	0	0	0	33	449
8:55 AM	0	0	2	0	0	0	0	0	0	0	0	15	0	0	0	1	27	0	0	0	45	453

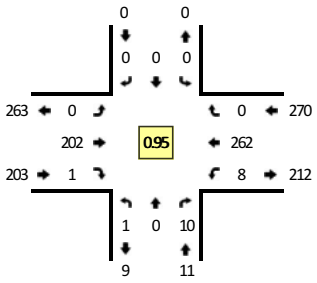
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	8	0	8	0	0	0	0	0	0	0	0	228	0	0	0	0	256	0	0	0	500
Heavy Trucks	0	0	0			0	0	0			0	16	0			0	8	0			24
Buses																					
Pedestrians		8					0					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

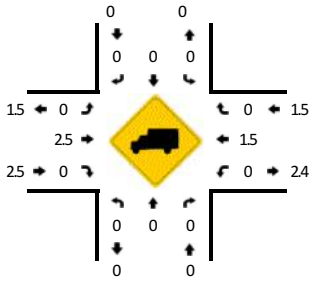
Comments:

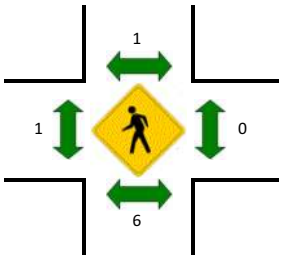
LOCATION: Willow Springs Apts/CPA East Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

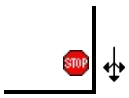
QC JOB #: 17024721
DATE: Thu, May 22 2025

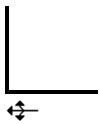
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

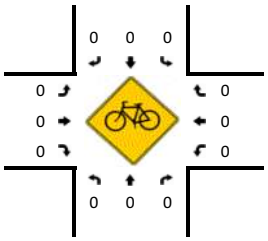


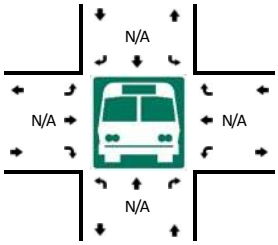


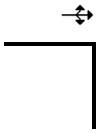


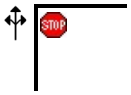


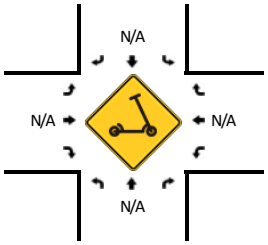












R* = RTOR

5-Min Count Period Beginning At	Willow Springs Apts/CPA East Dwys (Northbound)					Willow Springs Apts/CPA East Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	2	0	0	0	0	0	0	0	0	16	0	0	0	0	6	0	0	0	24	
7:05 AM	0	0	2	0	0	0	0	0	0	0	0	10	1	0	0	0	11	0	0	0	24	
7:10 AM	0	0	1	0	0	0	0	0	0	0	0	10	1	0	0	0	18	0	0	0	30	
7:15 AM	1	0	3	0	0	0	0	0	0	0	0	9	1	0	0	2	22	0	0	0	38	
7:20 AM	1	0	2	0	0	0	0	0	0	0	0	19	0	0	0	1	12	0	0	0	35	
7:25 AM	1	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	10	0	0	0	29	
7:30 AM	2	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	16	0	0	0	33	
7:35 AM	0	0	2	0	0	0	0	0	0	0	0	16	0	0	0	0	18	0	0	0	36	
7:40 AM	0	0	1	0	0	0	0	0	0	0	0	22	0	0	0	3	29	0	0	0	55	
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	10	0	0	0	0	25	0	0	0	36	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	1	11	0	0	0	31	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	2	26	0	0	0	43	414
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	19	0	0	0	1	22	0	0	0	43	433
8:05 AM	0	0	2	0	0	0	0	0	0	0	0	16	0	0	0	0	23	0	0	0	41	450
8:10 AM	0	0	1	0	0	0	0	0	0	0	0	23	1	0	0	0	19	0	0	0	44	464
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	12	0	0	0	0	15	0	0	0	28	454
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	28	0	0	0	47	466
8:25 AM	1	0	1	0	0	0	0	0	0	0	0	12	0	0	0	1	19	0	0	0	34	471
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	27	0	0	0	46	484
8:35 AM	0	0	1	0	0	0	0	0	0	0	0	20	0	0	0	1	22	0	0	0	44	492
8:40 AM	0	0	1	0	0	0	0	0	0	0	0	14	0	0	0	0	14	0	0	0	29	466
8:45 AM	1	0	2	0	0	0	0	0	0	0	0	20	0	0	0	0	7	0	0	0	30	460
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	2	23	0	0	0	35	464
8:55 AM	2	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	26	0	0	0	45	466

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	16	0	0	0	0	0	0	0	0	232	4	0	0	4	256	0	0	0	512
Heavy Trucks	0	0	0			0	0	0			0	16	0			0	8	0			24
Buses																					
Pedestrians		8					0					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Diorio Forest Products Dwy -- Warner Milne Rd

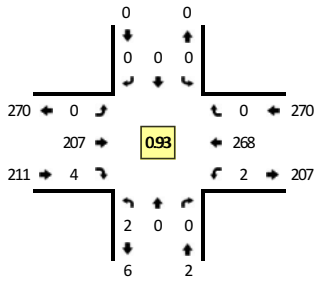
CITY/STATE: Oregon City, OR

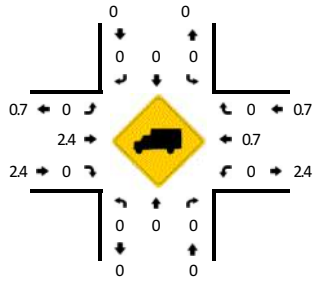
QC JOB #: 17024723

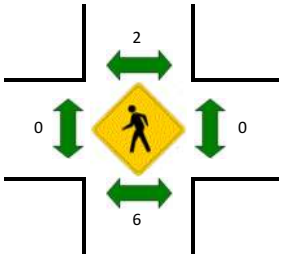
DATE: Thu, May 22 2025

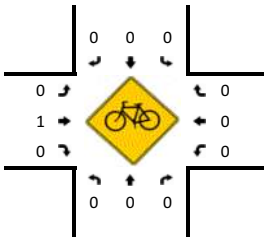
Peak-Hour: 7:35 AM -- 8:35 AM

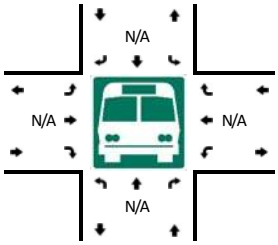
Peak 15-Min: 7:55 AM -- 8:10 AM

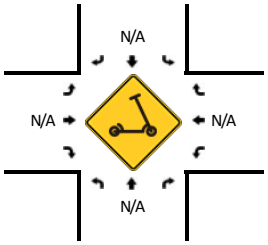












R* = RTOR

5-Min Count Period Beginning At	Diorio Forest Products Dwy (Northbound)					Diorio Forest Products Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	6	0	0	0	25	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	11	0	0	0	23	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	18	0	0	0	29	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	23	0	0	0	34	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	13	0	0	0	34	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	10	0	0	0	28	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	17	0	0	0	32	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	0	17	0	0	0	34	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	23	1	0	0	0	32	0	0	0	56	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	25	0	0	0	36	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	12	0	0	0	30	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	28	0	0	0	44	405
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	23	0	0	0	43	423
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	2	23	0	0	0	43	443
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	22	1	0	0	0	21	0	0	0	44	458
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	14	0	0	0	28	452
8:20 AM	2	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	26	0	0	0	47	465
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	21	0	0	0	34	471
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	26	0	0	0	44	483
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	23	0	0	0	44	493
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14	0	0	0	28	465
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	7	0	0	0	30	459
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	26	0	0	0	36	465
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	26	0	0	0	43	464

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	216	0	0	0	8	296	0	0	0	520
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	4	0			8
Buses																					
Pedestrians		0					0					0					0				0
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

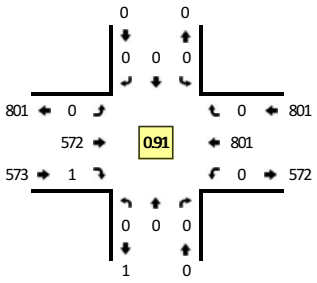
Type of peak hour being reported: User-Defined

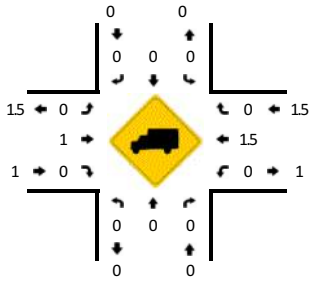
Method for determining peak hour: Total Entering Volume

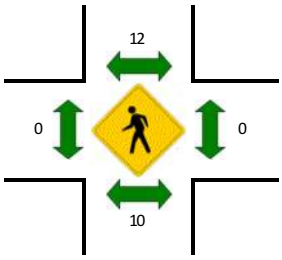
LOCATION: OSU Extension West Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

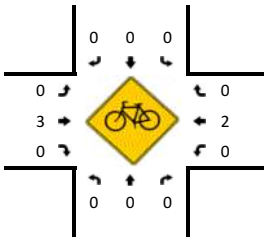
QC JOB #: 17024706
DATE: Thu, May 22 2025

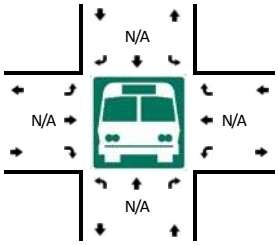
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

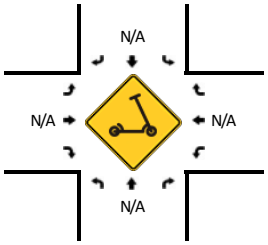












R* = RTOR

5-Min Count Period Beginning At	OSU Extension West Dwy (Northbound)					OSU Extension West Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	48	0	0	0	0	65	0	0	0	113	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	0	62	0	0	0	109	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	1	63	0	0	0	98	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0	0	68	0	0	0	121	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	53	0	0	0	105	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	68	0	0	0	0	52	0	0	0	120	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0	68	0	0	0	117	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	62	0	0	0	0	78	0	0	0	140	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	48	0	0	0	0	65	0	0	0	113	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	68	0	0	0	97	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	54	0	0	0	0	50	0	0	0	104	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	82	0	0	0	122	1359
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	73	0	0	0	107	1353
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	47	1	0	0	0	67	0	0	0	115	1359
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	77	0	0	0	113	1374
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	75	0	0	0	113	1366
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	54	0	0	0	0	57	0	0	0	111	1372
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	57	0	0	0	93	1345
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	64	0	0	0	102	1330
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	62	0	0	0	103	1293
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	66	0	0	0	110	1290
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	71	0	0	0	99	1292
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0	46	0	0	0	92	1280
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	42	0	0	0	82	1240

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	716	0	0	0	0	792	0	0	0	1508
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	12	0			16
Buses																					
Pedestrians		4					4					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:08 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

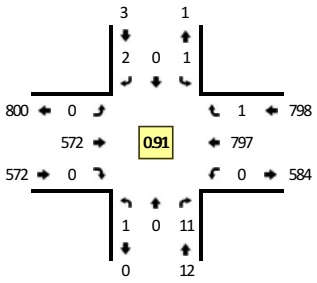
Type of peak hour being reported: User-Defined

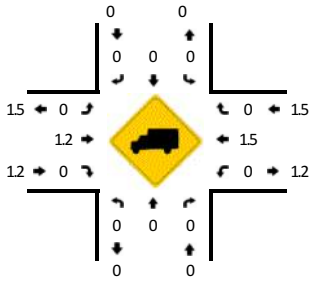
Method for determining peak hour: Total Entering Volume

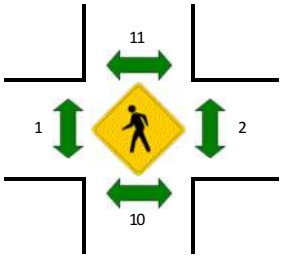
LOCATION: PGE West/OSU Extension East Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

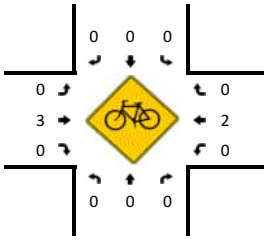
QC JOB #: 17024708
DATE: Thu, May 22 2025

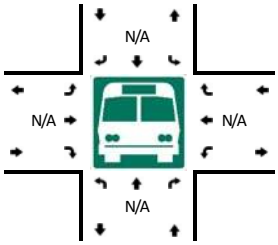
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

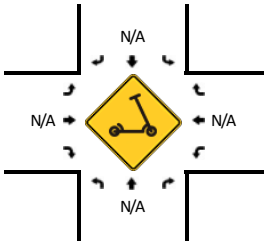












R* = RTOR

5-Min Count Period Beginning At	PGE West/OSU Extension East Dwys (Northbound)					PGE West/OSU Extension East Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	3	0	0	0	0	0	48	0	0	0	0	64	0	0	0	115	
4:05 PM	0	0	0	0	0	1	0	1	0	0	0	47	0	0	0	0	62	0	0	0	111	
4:10 PM	1	0	0	0	0	1	0	2	0	0	0	34	0	0	0	0	64	0	0	0	102	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0	0	66	0	0	0	119	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	53	0	0	0	105	
4:25 PM	0	0	2	0	0	0	0	0	0	0	0	67	0	0	0	0	52	0	0	0	121	
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	50	0	0	0	0	68	0	0	0	119	
4:35 PM	0	0	0	0	0	1	0	0	0	0	0	60	0	0	0	0	79	0	0	0	140	
4:40 PM	0	0	3	0	0	0	0	1	0	0	0	50	0	0	0	0	64	0	0	0	118	
4:45 PM	0	0	1	0	0	0	0	1	0	0	0	29	0	0	0	0	67	0	0	0	98	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	52	0	0	0	0	50	0	0	0	102	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	82	0	0	0	124	1374
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	34	0	0	0	0	73	0	0	0	110	1369
5:05 PM	1	0	1	0	0	0	0	0	0	0	0	47	0	0	0	0	66	1	0	0	116	1374
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	77	0	0	0	113	1385
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	38	0	0	0	0	75	0	0	0	114	1380
5:20 PM	0	0	0	0	0	1	0	0	0	0	0	54	0	0	0	0	58	0	0	0	113	1388
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	57	0	0	0	93	1360
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	64	1	0	0	103	1344
5:35 PM	0	0	0	0	0	0	0	1	0	0	0	42	0	0	0	0	64	0	0	0	107	1311
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	43	0	0	0	0	66	0	0	0	109	1302
5:45 PM	1	0	0	0	0	1	0	0	0	0	0	29	0	0	0	0	70	0	0	0	101	1305
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	46	0	0	0	91	1294
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	42	0	0	0	83	1253

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	12	0	0	4	0	0	0	0	0	708	0	0	0	0	796	0	0	0	1520
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	12	0			16
Buses																					
Pedestrians		4					4					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

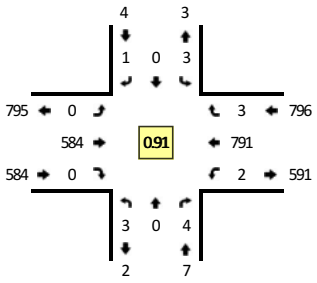
Type of peak hour being reported: User-Defined

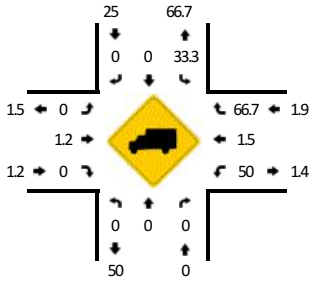
Method for determining peak hour: Total Entering Volume

LOCATION: PGE East/P Parking Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

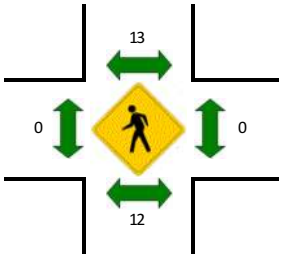
QC JOB #: 17024712
DATE: Thu, May 22 2025

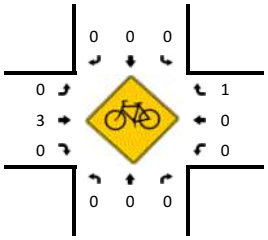
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

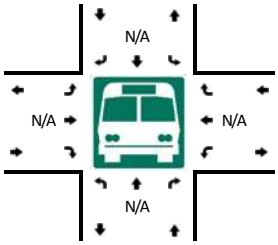


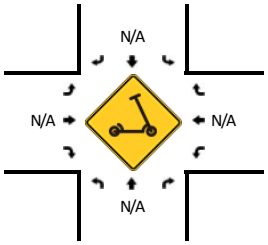


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	PGE East/P Parking Dwys (Northbound)					PGE East/P Parking Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	49	0	0	0	0	62	0	0	0	112	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	65	0	0	0	115	
4:10 PM	0	0	0	0	0	1	0	1	0	0	0	35	0	0	0	0	64	1	0	0	102	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	53	0	0	0	0	61	1	0	0	115	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0	1	56	1	0	0	109	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	51	0	0	0	120	
4:30 PM	0	0	1	0	0	1	0	0	0	0	0	52	0	0	0	0	69	1	0	0	124	
4:35 PM	1	0	0	0	0	0	0	1	0	0	0	60	0	0	0	1	74	0	0	0	137	
4:40 PM	0	0	0	0	0	1	0	0	0	0	0	52	0	0	0	0	67	0	0	0	120	
4:45 PM	1	0	0	0	0	1	0	0	0	0	0	32	0	0	0	0	64	0	0	0	98	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0	0	51	0	0	0	102	
4:55 PM	0	0	2	0	0	0	0	0	0	0	0	43	0	0	0	0	80	0	0	0	125	1379
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	37	0	0	0	0	74	0	0	0	112	1379
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	48	0	0	0	0	66	0	0	0	114	1378
5:10 PM	1	0	0	0	0	0	0	0	0	0	0	36	0	0	0	0	78	0	0	0	115	1391
5:15 PM	0	0	0	1	0	0	0	0	0	0	0	39	0	0	0	0	73	0	0	0	113	1389
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	55	0	0	0	0	58	0	0	0	113	1393
5:25 PM	0	0	0	0	0	1	0	0	0	0	0	36	0	0	0	0	60	0	0	0	97	1370
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	63	1	0	0	102	1348
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	64	0	0	0	105	1316
5:40 PM	0	0	0	0	0	1	0	0	0	0	0	43	0	0	0	0	68	2	0	0	114	1310
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	70	0	0	0	100	1312
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	45	0	0	0	90	1300
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	43	0	0	0	85	1260

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	0	4	0	0	4	0	4	0	0	0	724	0	0	0	4	776	4	0	0	1524
Heavy Trucks	0	0	0			4	0	0			0	4	0			0	12	4			24
Buses																					
Pedestrians		4					4					0					0				8
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

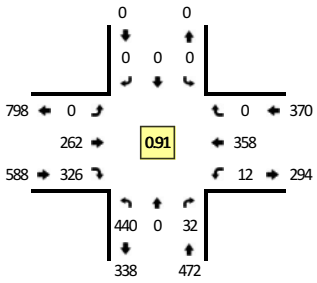
Report generated on 10/16/2025 10:08 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

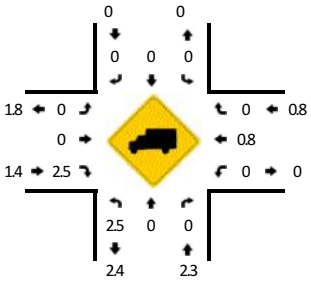
LOCATION: Beavercreek Rd -- Warner Milne Rd
CITY/STATE: Oregon City, OR

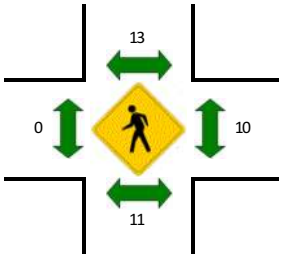
QC JOB #: 17024714
DATE: Thu, May 22 2025

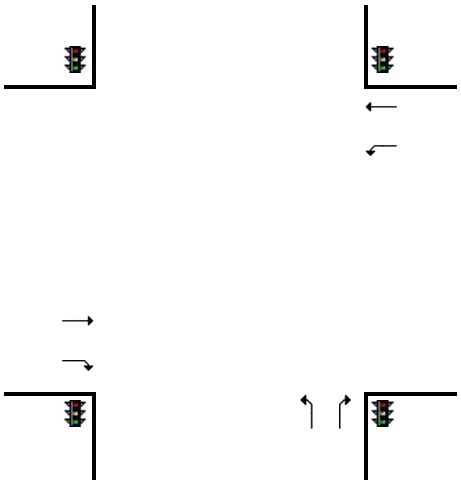
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

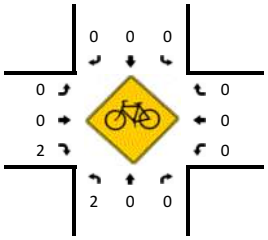


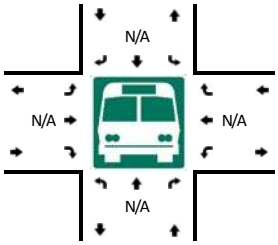
TRUE DATA TO IMPROVE MOBILITY

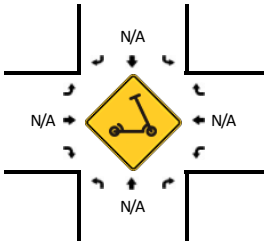












R* = RTOR

5-Min Count Period Beginning At	Beavercreek Rd (Northbound)					Beavercreek Rd (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	34	0	2	0	0	0	0	0	0	0	0	21	16	0	11	1	30	0	0	0	115	
4:05 PM	41	0	2	0	1	0	0	0	0	0	0	21	19	0	9	1	24	0	0	0	118	
4:10 PM	29	0	0	0	0	0	0	0	0	0	0	15	13	0	8	2	37	0	0	0	104	
4:15 PM	34	0	1	0	3	0	0	0	0	0	0	23	21	0	9	2	26	0	0	0	119	
4:20 PM	37	0	2	0	0	0	0	0	0	0	0	25	18	0	8	2	23	0	0	0	115	
4:25 PM	27	0	1	0	1	0	0	0	0	0	0	38	20	0	12	4	21	0	0	0	124	
4:30 PM	44	0	3	0	1	0	0	0	0	0	0	23	18	0	13	0	28	0	0	0	130	
4:35 PM	38	0	1	0	2	0	0	0	0	0	0	29	19	0	12	0	39	0	0	0	140	
4:40 PM	37	0	0	0	2	0	0	0	0	0	0	20	22	0	9	1	28	0	0	0	119	
4:45 PM	33	0	1	0	2	0	0	0	0	0	0	16	15	0	4	0	31	0	0	0	102	
4:50 PM	31	0	1	0	1	0	0	0	0	0	0	18	19	0	9	2	22	0	0	0	103	
4:55 PM	37	0	1	0	0	0	0	0	0	0	0	16	21	0	12	0	40	0	0	0	127	1416
5:00 PM	42	0	3	0	0	0	0	0	0	0	0	11	22	0	5	0	37	0	0	0	120	1421
5:05 PM	36	0	2	0	0	0	0	0	0	0	0	25	14	0	8	0	27	0	0	0	112	1415
5:10 PM	44	0	1	0	3	0	0	0	0	0	0	18	9	0	7	1	36	0	0	0	119	1430
5:15 PM	54	0	2	0	1	0	0	0	0	0	0	23	8	0	11	0	17	0	0	0	116	1427
5:20 PM	23	0	0	0	0	0	0	0	0	0	0	31	20	0	4	0	33	0	0	0	111	1423
5:25 PM	43	0	0	0	0	0	0	0	0	0	0	17	9	0	9	0	18	0	0	0	96	1395
5:30 PM	32	0	2	0	1	0	0	0	0	0	0	25	10	0	5	2	32	0	0	0	109	1374
5:35 PM	36	0	1	0	0	0	0	0	0	0	0	20	13	0	6	0	27	0	0	0	103	1337
5:40 PM	37	0	0	0	0	0	0	0	0	0	0	15	20	0	6	0	33	0	0	0	111	1329
5:45 PM	31	0	0	0	0	0	0	0	0	0	0	20	13	0	2	0	38	0	0	0	104	1331
5:50 PM	23	0	0	0	0	0	0	0	0	0	0	24	15	0	5	0	21	0	0	0	88	1316
5:55 PM	28	0	1	0	0	0	0	0	0	0	0	16	18	0	9	2	17	0	0	0	91	1280

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	436	0	36	0	16	0	0	0	0	0	0	360	376	0	148	16	352	0	0	0	1740
Heavy Trucks	12	0	0			0	0	0			0	0	8			0	8	0			28
Buses																					
Pedestrians		8					4					0					4				16
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

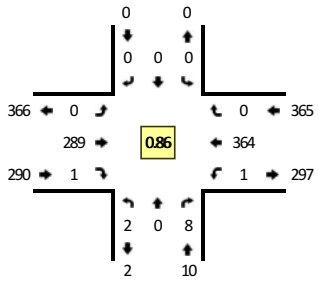
Report generated on 10/16/2025 10:08 PM

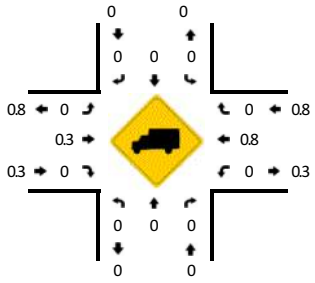
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

LOCATION: A Safe Place Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

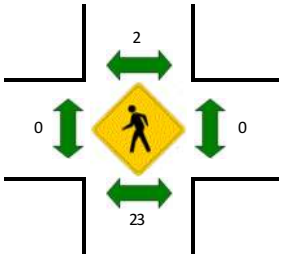
QC JOB #: 17024716
DATE: Thu, May 22 2025

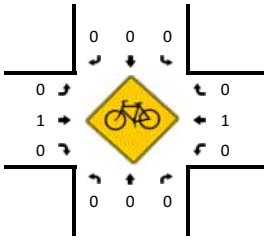
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

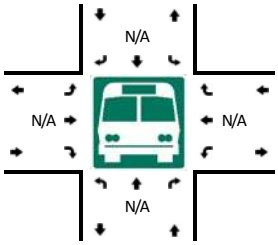


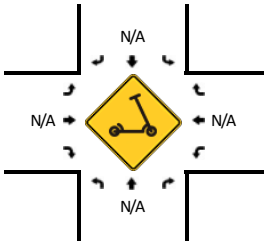


TRUE DATA TO IMPROVE MOBILITY









R* = RTOR

5-Min Count Period Beginning At	A Safe Place Dwy (Northbound)					A Safe Place Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	15	0	0	0	1	30	0	0	0	47	
4:05 PM	1	0	6	0	0	0	0	0	0	0	0	26	0	0	0	0	25	0	0	0	58	
4:10 PM	1	0	1	0	0	0	0	0	0	0	0	23	0	0	0	0	35	0	0	0	60	
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	18	0	0	0	0	32	0	0	0	52	
4:20 PM	0	0	1	0	0	0	0	0	0	0	0	29	0	0	0	0	25	0	0	0	55	
4:25 PM	1	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	23	0	0	0	53	
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	30	0	0	0	0	27	0	0	0	59	
4:35 PM	1	0	1	0	0	0	0	0	0	0	0	37	1	0	0	0	34	0	0	0	74	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	1	34	0	0	0	60	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	30	0	0	0	49	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	28	0	0	0	48	
4:55 PM	0	0	1	0	0	0	0	0	0	0	0	23	0	0	0	0	29	0	0	0	53	668
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	37	0	0	0	48	669
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	35	0	0	0	53	664
5:10 PM	0	0	1	0	0	0	0	0	0	0	0	30	0	0	0	0	30	0	0	0	61	665
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	31	0	0	0	52	665
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	26	0	0	0	50	660
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	27	0	0	0	52	659
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	24	0	0	0	49	649
5:35 PM	1	0	1	0	0	0	0	0	0	0	0	24	0	0	0	0	25	0	0	0	51	626
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	28	0	0	0	49	615
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	39	0	0	0	56	622
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	1	32	0	0	0	57	631
5:55 PM	1	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	17	0	0	0	36	614

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	4	0	12	0	0	0	0	0	0	0	0	368	4	0	0	4	380	0	0	0	772
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	8	0			12
Buses																					
Pedestrians		12					4					0					0				16
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

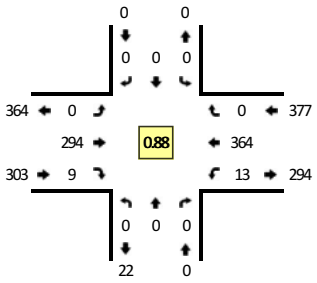
Type of peak hour being reported: User-Defined

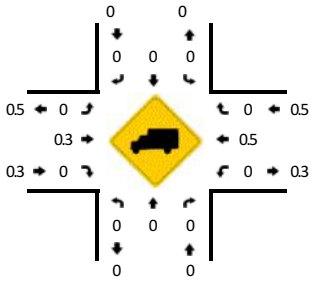
Method for determining peak hour: Total Entering Volume

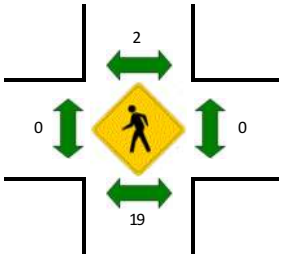
LOCATION: Embold Credit Union West Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

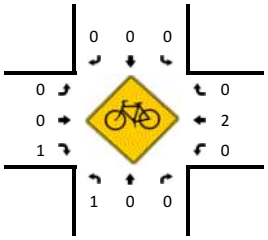
QC JOB #: 17024718
DATE: Thu, May 22 2025

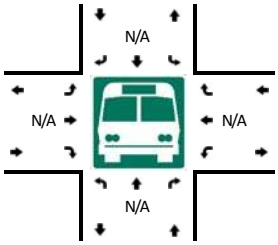
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

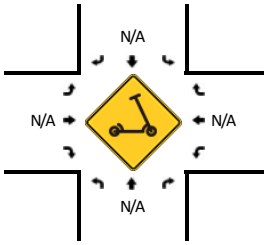












R* = RTOR

5-Min Count Period Beginning At	Embold Credit Union West Dwy (Northbound)					Embold Credit Union West Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	28	0	0	0	53	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	29	2	0	0	0	31	0	0	0	62	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	1	35	0	0	0	53	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	28	1	0	0	3	29	0	0	0	61	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	22	0	0	0	49	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	37	3	0	0	1	24	0	0	0	65	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	25	1	0	0	1	27	0	0	0	54	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	1	38	0	0	0	75	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	21	1	0	0	1	28	0	0	0	51	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	2	31	0	0	0	52	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	25	0	0	0	47	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	40	0	0	0	57	679
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	35	0	0	0	49	675
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	26	1	0	0	2	29	0	0	0	58	671
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	23	1	0	0	2	36	0	0	0	62	680
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	17	0	0	0	42	661
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	27	1	0	0	0	33	0	0	0	61	673
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	24	0	0	0	44	652
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	28	1	0	0	0	27	0	0	0	56	654
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	27	0	0	0	47	626
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	33	0	0	0	49	624
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	38	0	0	0	57	629
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	21	0	0	0	48	630
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	16	1	0	0	0	18	0	0	0	35	608

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	392	16	0	0	12	356	0	0	0	776
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	8	0			12
Buses																					
Pedestrians		8					4					0					0				12
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

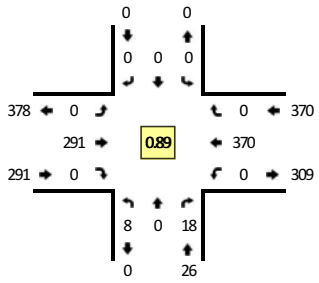
Type of peak hour being reported: User-Defined

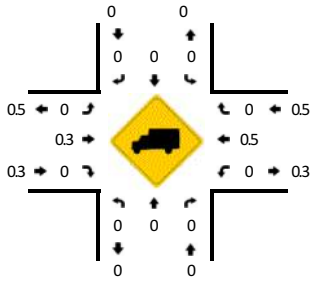
Method for determining peak hour: Total Entering Volume

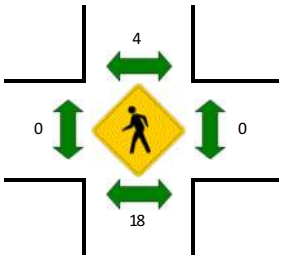
LOCATION: Embold Credit Union East/CPA West Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

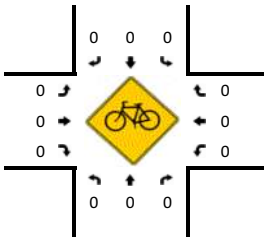
QC JOB #: 17024720
DATE: Thu, May 22 2025

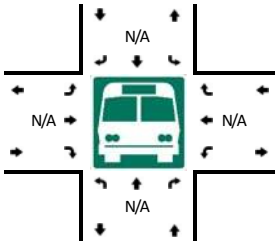
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

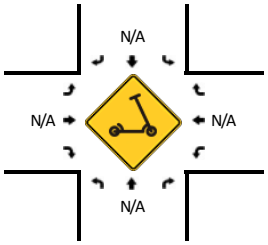












R* = RTOR

5-Min Count Period Beginning At	Embold Credit Union East/CPA West Dwys (Northbound)					Embold Credit Union East/CPA West Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	24	0	0	0	1	28	0	0	0	55	
4:05 PM	0	0	1	0	0	0	0	0	0	0	0	29	0	0	0	0	30	0	0	0	60	
4:10 PM	0	0	3	0	0	0	0	0	0	0	0	16	0	0	0	0	37	0	0	0	56	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	27	0	0	0	0	31	0	0	0	59	
4:20 PM	1	0	3	0	0	0	0	0	0	0	0	27	0	0	0	0	22	0	0	0	53	
4:25 PM	1	0	1	0	0	0	0	0	0	0	0	36	0	0	0	0	23	0	0	0	61	
4:30 PM	1	0	2	0	0	0	0	0	0	0	0	26	0	0	0	0	27	0	0	0	56	
4:35 PM	2	0	1	0	0	0	0	0	0	0	0	36	0	0	0	0	37	0	0	0	76	
4:40 PM	1	0	2	0	0	0	0	0	0	0	0	21	0	0	0	0	28	0	0	0	52	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	33	0	0	0	52	
4:50 PM	1	0	2	0	0	0	0	0	0	0	0	21	0	0	0	0	26	0	0	0	50	
4:55 PM	1	0	1	0	0	0	0	0	0	0	0	17	0	0	0	0	37	0	0	0	56	686
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	13	0	0	0	0	36	0	0	0	50	681
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	32	0	0	0	56	677
5:10 PM	0	0	4	0	0	0	0	0	0	0	0	24	0	0	0	0	38	0	0	0	66	687
5:15 PM	0	0	2	0	0	0	0	0	0	0	0	25	0	0	0	0	16	0	0	0	43	671
5:20 PM	0	0	1	0	0	0	0	0	0	0	0	27	0	0	0	1	33	0	0	0	62	680
5:25 PM	0	0	2	0	0	0	0	0	0	0	0	19	0	0	0	0	24	0	0	0	45	664
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	27	0	0	0	54	662
5:35 PM	1	0	1	0	0	0	0	0	0	0	0	21	0	0	0	0	26	0	0	0	49	635
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	34	0	0	0	50	633
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	37	0	0	0	56	637
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	22	0	0	0	47	634
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	18	0	0	0	34	612

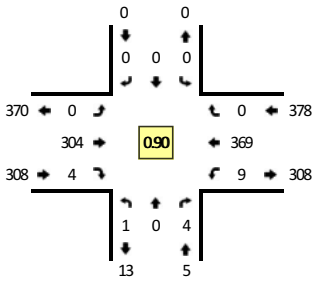
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	16	0	16	0	0	0	0	0	0	0	0	392	0	0	0	0	348	0	0	0	772
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	8	0			12
Buses																					
Pedestrians		12					8					0					0				20
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

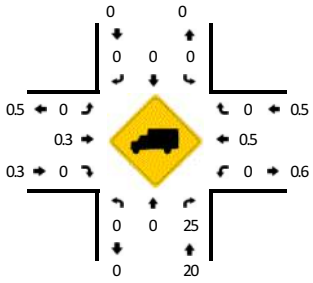
Comments:

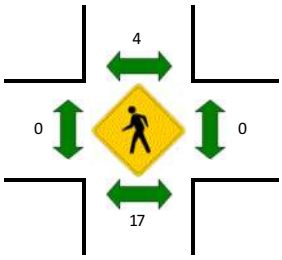
LOCATION: Willow Springs Apts/CPA East Dwys -- Warner Milne Rd
CITY/STATE: Oregon City, OR

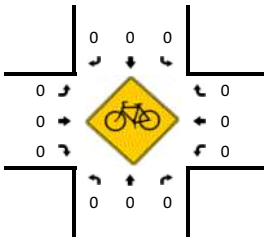
QC JOB #: 17024722
DATE: Thu, May 22 2025

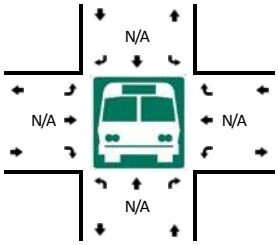
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

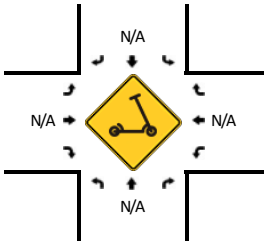












R* = RTOR

5-Min Count Period Beginning At	Willow Springs Apts/CPA East Dwys (Northbound)					Willow Springs Apts/CPA East Dwys (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	25	0	0	0	0	28	0	0	0	55	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	30	0	0	0	60	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	18	1	0	0	0	37	0	0	0	56	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	27	1	0	0	0	31	0	0	0	60	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	22	0	0	0	52	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	36	1	0	0	1	23	0	0	0	61	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	1	27	0	0	0	55	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	36	0	0	0	1	38	0	0	0	75	
4:40 PM	0	0	1	0	0	0	0	0	0	0	0	23	1	0	0	0	27	0	0	0	52	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	33	0	0	0	52	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	2	26	0	0	0	51	
4:55 PM	0	0	1	0	0	0	0	0	0	0	0	17	0	0	0	0	37	0	0	0	55	684
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	35	0	0	0	52	681
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	2	32	0	0	0	57	678
5:10 PM	0	0	1	0	0	0	0	0	0	0	0	28	1	0	0	1	38	0	0	0	69	691
5:15 PM	1	0	1	0	0	0	0	0	0	0	0	26	1	0	0	1	16	0	0	0	46	677
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	26	2	0	0	0	33	0	0	0	61	686
5:25 PM	0	0	1	0	0	0	0	0	0	0	0	20	1	0	0	2	24	0	0	0	48	673
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	27	0	0	0	1	27	0	0	0	56	674
5:35 PM	0	0	1	0	0	0	0	0	0	0	0	22	0	0	0	1	26	0	0	0	50	649
5:40 PM	3	0	0	0	0	0	0	0	0	0	0	16	0	0	0	1	31	0	0	0	51	648
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	19	0	0	0	2	37	0	0	0	59	655
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0	2	22	0	0	0	49	653
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	18	0	0	0	34	632

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	396	4	0	0	12	352	0	0	0	764
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	8	0			12
Buses																					
Pedestrians		12					8					0					0				20
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Diorio Forest Products Dwy -- Warner Milne Rd

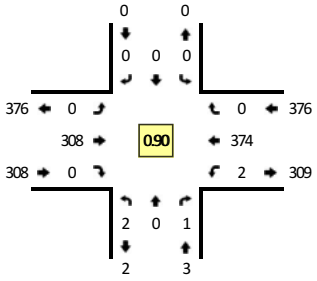
QC JOB #: 17024724

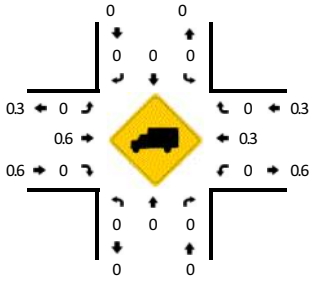
CITY/STATE: Oregon City, OR

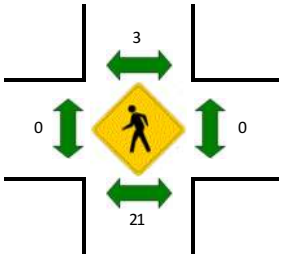
DATE: Thu, May 22 2025

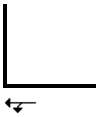
Peak-Hour: 4:15 PM -- 5:15 PM

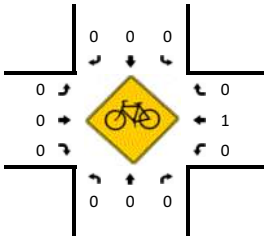
Peak 15-Min: 4:25 PM -- 4:40 PM

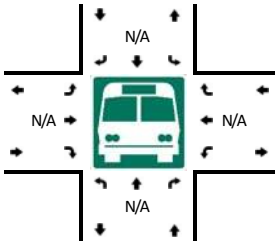


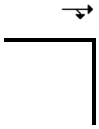


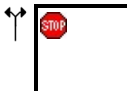


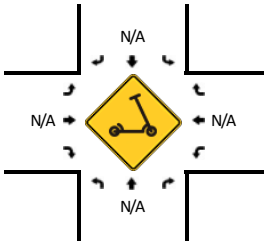












R* = RTOR

5-Min Count Period Beginning At	Diorio Forest Products Dwy (Northbound)					Diorio Forest Products Dwy (Southbound)					Warner Milne Rd (Eastbound)					Warner Milne Rd (Westbound)					Total	Hourly Totals
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	28	0	0	0	53	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	30	0	0	0	61	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	38	0	0	0	56	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	30	0	0	0	57	
4:20 PM	0	0	1	0	0	0	0	0	0	0	0	31	0	0	0	1	22	0	0	0	55	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	24	0	0	0	58	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	1	29	0	0	0	58	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	38	0	0	0	75	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	27	0	0	0	51	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	33	0	0	0	52	
4:50 PM	1	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	28	0	0	0	52	
4:55 PM	1	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	35	0	0	0	54	682
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	35	0	0	0	50	679
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	35	0	0	0	58	676
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	38	0	0	0	67	687
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	17	0	0	0	43	673
5:20 PM	0	0	1	0	0	0	0	0	0	0	0	27	0	0	0	0	33	0	0	0	61	679
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	26	0	0	0	47	668
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	28	0	0	0	56	666
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	27	0	0	0	50	641
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	32	0	0	0	48	638
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	39	0	0	0	59	645
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	24	0	0	0	48	641
5:55 PM	1	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	19	0	0	0	34	621

Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total
	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	Left	Thru	Right	U	R*	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	396	0	0	0	4	364	0	0	0	764
Heavy Trucks	0	0	0			0	0	0			0	4	0			0	4	0			8
Buses																					
Pedestrians		16					4					0					0				20
Bicycles	0	0	0			0	0	0			0	0	0			0	0	0			0
Scooters																					

Comments:

Report generated on 10/16/2025 10:08 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B
Existing Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report

Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	563	1	0	402
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	563	1	0	402
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	151	0	0	108
Total Analysis Volume [veh/h]	0	0	605	1	0	432
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.94	12.19	0.00	0.00	8.67	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.56		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	24.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	4	0	2	2	561	0	1	400	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	25.00	0.00	0.00	0.00	4.00	0.00	0.00	6.00	67.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	4	0	2	2	561	0	1	400	3
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	1	1	151	0	0	108	1
Total Analysis Volume [veh/h]	0	0	0	4	0	2	2	603	0	1	430	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	22.29	20.61	12.16	24.53	20.95	11.10	8.17	0.00	0.00	8.66	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1.88	1.88	1.88	0.08	0.08	0.08	0.04	0.04	0.04
d_A, Approach Delay [s/veh]	18.35			20.05			0.03			0.02		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.14											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	34.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.119

Intersection Setup

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	1	0	15	0	6	5	557	3	5	398	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	100.00	0.00	93.00	0.00	83.00	100.00	4.00	33.00	0.00	5.00	100.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	0	15	0	6	5	557	3	5	398	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	4	0	2	1	151	1	1	108	0
Total Analysis Volume [veh/h]	0	1	0	16	0	7	5	605	3	5	433	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.12	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.50	29.19	12.36	34.87	24.41	15.64	9.79	0.00	0.00	8.68	0.00	0.00
Movement LOS	C	D	B	D	C	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.45	0.45	0.45	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.50	0.50	0.50	11.25	11.25	11.25	0.21	0.21	0.21	0.21	0.21	0.21
d_A, Approach Delay [s/veh]	29.19			29.02			0.08			0.10		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	0.73											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	5.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	150.00	100.00	100.00	126.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

Volumes

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	173	5	208	364	21	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	0.00	2.00	6.00	0.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	0	0	0
Total Hourly Volume [veh/h]	173	1	208	364	21	231
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	0	57	100	6	63
Total Analysis Volume [veh/h]	190	1	229	400	23	254
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		1	
v_di, Inbound Pedestrian Volume crossing m	1		0		0	
v_co, Outbound Pedestrian Volume crossing	3		3		0	
v_ci, Inbound Pedestrian Volume crossing mi	3		3		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Overlap	Permissive	Overlap	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups		1,8		2,8		
Maximum Green [s]	25	25	40	40	25	70
Amber [s]	3.5	3.5	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	1.0	0.5
Walk [s]	7.0	7.0	8.0	8.0	0.0	0.0
Pedestrian Clearance [s]	12.0	12.0	14.0	14.0	0.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	9.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	10	10	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	No	Yes	Yes	No	Yes
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00
g_i, Effective Green Time [s]	7.1	13.1	10.8	22.0	16.8	16.8
g / C, Green / Cycle	0.22	0.41	0.34	0.69	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.11	0.00	0.12	0.26	0.02	0.14
s, saturation flow rate [veh/h]	1695	1614	1870	1516	1046	1870
c, Capacity [veh/h]	382	614	633	1041	814	982
d1, Uniform Delay [s]	11.94	7.58	7.99	2.10	4.04	4.18
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	0.00	0.35	0.23	0.01	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.00	0.36	0.38	0.03	0.26
d, Delay for Lane Group [s/veh]	12.95	7.58	8.34	2.33	4.05	4.32
Lane Group LOS	B	A	A	A	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.00	0.00	0.84	0.07	0.04	0.43
50th-Percentile Queue Length [ft/ln]	25.03	0.08	20.95	1.68	0.93	10.67
95th-Percentile Queue Length [veh/ln]	1.80	0.01	1.51	0.12	0.07	0.77
95th-Percentile Queue Length [ft/ln]	45.05	0.14	37.71	3.03	1.67	19.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.95	7.58	8.34	2.33	4.05	4.32
Movement LOS	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	12.92		4.52		4.30	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.93					
Intersection LOS	A					
Intersection V/C	0.497					

Emissions

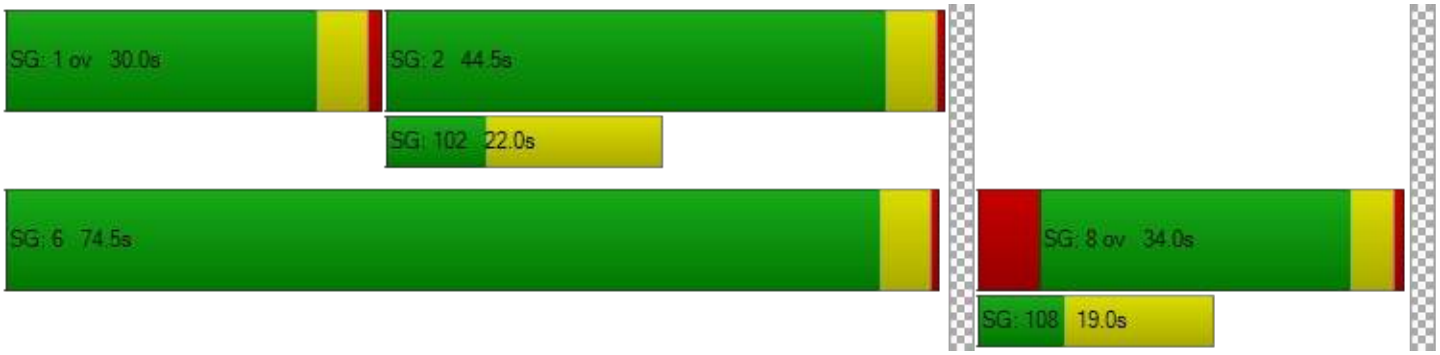
Vehicle Miles Traveled [mph]	10.46	0.06	10.84	18.94	1.38	15.26
Stops [stops/h]	112.96	0.35	94.54	7.59	4.20	48.14
Fuel consumption [US gal/h]	1.75	0.01	1.36	1.01	0.10	1.12
CO [g/h]	122.26	0.44	94.86	70.70	6.92	78.10
NOx [g/h]	23.79	0.09	18.46	13.75	1.35	15.20
VOC [g/h]	28.34	0.10	21.99	16.38	1.60	18.10

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	446.67	521.12	3141.44
M_CW, Crosswalk Circulation Area [ft²/ped]	3999.20	0.00	33096.17
d_p, Pedestrian Delay [s]	6.21	0.00	6.85
l_p,int, Pedestrian LOS Score for Intersectio	2.124	0.000	2.041
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1567	2507	4388
d_b, Bicycle Delay [s]	0.75	1.03	22.74
l_b,int, Bicycle LOS Score for Intersection	1.560	2.597	2.017
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	0	205	8	10	251
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	205	8	10	251
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	55	2	3	67
Total Analysis Volume [veh/h]	1	0	218	9	11	267
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.93	9.39	0.00	0.00	7.67	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.14	0.14	0.00	0.00	0.46	0.46
d_A, Approach Delay [s/veh]	11.93		0.00		0.30	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.19					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	202	3	3	261	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	202	3	3	261	0
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	54	1	1	70	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	217	3	3	281	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.51	12.64	9.36	12.51	12.66	9.72	7.78	0.00	0.00	7.65	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.13
d_A, Approach Delay [s/veh]	11.50			11.63			0.00			0.08		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.05											
Intersection LOS	A											

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	3	0	5	0	0	0	0	202	0	2	261	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	5	0	0	0	0	202	0	2	261	0
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	0	0	0	0	54	0	1	69	0
Total Analysis Volume [veh/h]	3	0	5	0	0	0	0	215	0	2	278	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.48	12.62	9.41	12.48	12.55	9.70	7.78	0.00	0.00	7.64	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.93	0.93	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	10.56			11.58			0.00			0.05		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.20											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	10	0	0	0	0	206	1	8	262	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	10	0	0	0	0	206	1	8	262	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	3	0	0	0	0	54	0	2	69	0
Total Analysis Volume [veh/h]	1	0	11	0	0	0	0	217	1	8	276	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	12.66	12.79	9.42	12.76	12.72	9.69	7.77	0.00	0.00	7.65	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.17	1.17	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	9.69			11.72			0.00			0.22		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	0	212	4	2	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	212	4	2	268
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	57	1	1	72
Total Analysis Volume [veh/h]	2	0	228	4	2	288
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.98	9.45	0.00	0.00	7.67	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.29	0.29	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	11.98		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	572	1	0	801
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	572	1	0	801
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	157	0	0	220
Total Analysis Volume [veh/h]	0	0	629	1	0	880
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	31.86	12.41	0.00	0.00	8.74	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	22.14		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	42.4
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	11	1	0	2	0	572	0	0	798	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	11	1	0	2	0	572	0	0	798	1
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	3	0	0	1	0	157	0	0	219	0
Total Analysis Volume [veh/h]	1	0	12	1	0	2	0	629	0	0	877	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	41.46	34.84	12.75	42.43	34.79	15.59	9.63	0.00	0.00	8.74	0.00	0.00
Movement LOS	E	D	B	E	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.11	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.69	2.69	2.69	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.96			24.54			0.00			0.00		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	0.18											
Intersection LOS	E											

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	50.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	3	0	4	3	0	1	0	584	0	2	795	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	33.00	0.00	0.00	0.00	1.00	0.00	50.00	2.00	67.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	4	3	0	1	0	584	0	2	795	3
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	1	0	0	0	160	0	1	218	1
Total Analysis Volume [veh/h]	3	0	4	3	0	1	0	642	0	2	874	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.01	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	42.87	36.14	13.36	50.92	36.74	16.73	9.62	0.00	0.00	9.80	0.00	0.00
Movement LOS	E	E	B	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.12	0.12	0.12	0.12	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.05	3.05	3.05	3.08	3.08	3.08	0.00	0.00	0.00	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	26.01			42.38			0.00			0.02		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	0.24											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.697

Intersection Setup

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	150.00	100.00	100.00	126.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

Volumes

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	440	32	264	327	12	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	4.00	0.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	15	0	0	0	0
Total Hourly Volume [veh/h]	440	17	264	327	12	360
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	5	73	90	3	99
Total Analysis Volume [veh/h]	484	19	290	359	13	396
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	5		0		5	
v_di, Inbound Pedestrian Volume crossing m	5		0		5	
v_co, Outbound Pedestrian Volume crossing	6		5		0	
v_ci, Inbound Pedestrian Volume crossing mi	5		6		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Overlap	Permissive	Overlap	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups		1,8		2,8		
Maximum Green [s]	25	25	40	40	25	70
Amber [s]	3.5	3.5	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	1.0	0.5
Walk [s]	7.0	7.0	8.0	8.0	0.0	0.0
Pedestrian Clearance [s]	12.0	12.0	14.0	14.0	0.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	9.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	10	10	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	No	Yes	Yes	No	Yes
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	39	39	39	39	39	39
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00
g_i, Effective Green Time [s]	14.0	19.7	11.2	29.2	16.9	16.9
g / C, Green / Cycle	0.36	0.51	0.29	0.75	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.27	0.01	0.15	0.23	0.01	0.21
s, saturation flow rate [veh/h]	1781	1574	1900	1544	1015	1885
c, Capacity [veh/h]	644	754	547	1159	615	817
d1, Uniform Delay [s]	13.18	7.16	11.67	1.56	6.92	7.93
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.80	0.01	0.80	0.15	0.01	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.03	0.53	0.31	0.02	0.48
d, Delay for Lane Group [s/veh]	14.98	7.17	12.47	1.71	6.94	8.37
Lane Group LOS	B	A	B	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.55	0.07	1.77	0.05	0.05	1.72
50th-Percentile Queue Length [ft/ln]	88.72	1.69	44.19	1.21	1.16	43.10
95th-Percentile Queue Length [veh/ln]	6.39	0.12	3.18	0.09	0.08	3.10
95th-Percentile Queue Length [ft/ln]	159.69	3.04	79.54	2.18	2.09	77.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.98	7.17	12.47	1.71	6.94	8.37
Movement LOS	B	A	B	A	A	A
d_A, Approach Delay [s/veh]	14.68		6.52		8.33	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	9.62					
Intersection LOS	A					
Intersection V/C	0.697					

Emissions

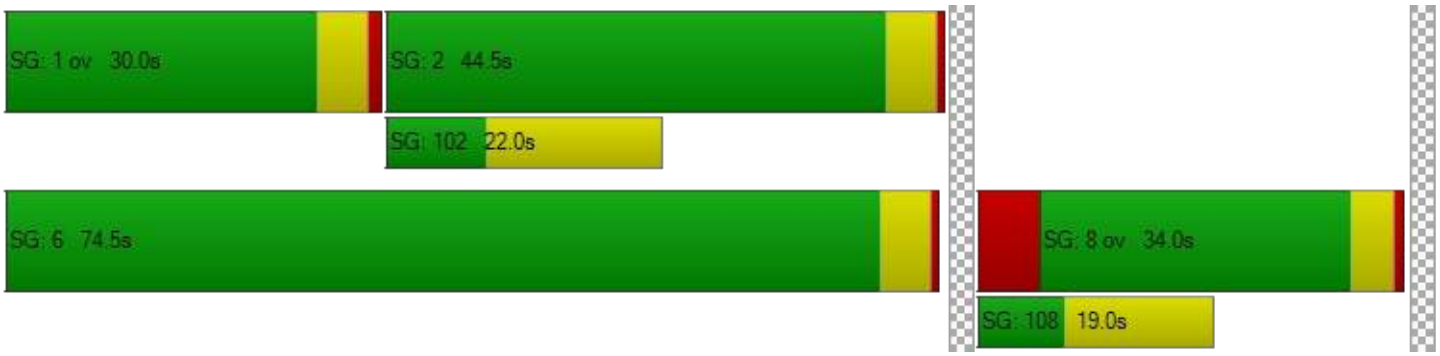
Vehicle Miles Traveled [mph]	26.65	1.05	13.73	17.00	0.78	23.79
Stops [stops/h]	328.31	6.26	163.54	4.48	4.30	159.49
Fuel consumption [US gal/h]	4.96	0.11	2.20	0.85	0.07	2.54
CO [g/h]	346.73	8.02	154.11	59.36	5.19	177.22
NOx [g/h]	67.46	1.56	29.98	11.55	1.01	34.48
VOC [g/h]	80.36	1.86	35.72	13.76	1.20	41.07

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	143.70	281.08	308.74
M_CW, Crosswalk Circulation Area [ft²/ped]	2419.67	0.00	2907.65
d_p, Pedestrian Delay [s]	9.31	0.00	10.01
l_p,int, Pedestrian LOS Score for Intersectio	2.252	0.000	2.128
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1285	2056	3598
d_b, Bicycle Delay [s]	2.49	0.02	12.42
l_b,int, Bicycle LOS Score for Intersection	1.560	2.630	2.234
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	8	295	1	1	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	295	1	1	370
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	86	0	0	108
Total Analysis Volume [veh/h]	2	9	343	1	1	430
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.88	10.23	0.00	0.00	7.94	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.39	1.39	0.00	0.00	0.04	0.04
d_A, Approach Delay [s/veh]	11.07		0.00		0.02	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	8.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	294	9	13	371	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	294	9	13	371	0
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	84	3	4	105	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	334	10	15	422	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.81	16.28	10.09	16.81	16.36	10.66	8.14	0.00	0.00	7.95	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.63
d_A, Approach Delay [s/veh]	14.39			14.61			0.00			0.27		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.15											
Intersection LOS	A											

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	8	0	18	0	0	0	0	294	0	0	376	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	18	0	0	0	0	294	0	0	376	0
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	5	0	0	0	0	83	0	0	106	0
Total Analysis Volume [veh/h]	9	0	20	0	0	0	0	330	0	0	422	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.34	15.94	10.43	16.43	15.54	10.66	8.14	0.00	0.00	7.90	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.38	4.38	4.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.26			14.21			0.00			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	4	0	0	0	0	308	4	9	375	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	4	0	0	0	0	308	4	9	375	0
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	0	0	0	0	86	1	3	104	0
Total Analysis Volume [veh/h]	1	0	4	0	0	0	0	342	4	10	417	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	16.63	16.14	10.61	16.67	16.10	10.62	8.12	0.00	0.00	7.95	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.71	0.71	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	11.81			14.47			0.00			0.19		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.18											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	1	312	0	2	382
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	312	0	2	382
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	87	0	1	106
Total Analysis Volume [veh/h]	2	1	347	0	2	424
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.83	10.19	0.00	0.00	7.95	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.52	0.52	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	13.28		0.00		0.04	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	B					

Appendix C
ODOT Crash Data

CITY OF OREGON CITY, CLACKAMAS COUNTY

WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 4 of 38 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	S H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / TYPE / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES / LICNS LOC	PED ERROR	ACT	EVENT	CAUSE
02062	N	N	N	N			06/20/2019	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE							TH	0	WARNER-MILNE RD	E		TRF SIGNAL	N	DRY	REAR		N/A	E -W								000		00
N							6P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 20 11.28	-122 35 54.21																UNK				
																02	NONE 9	STOP										
																	N/A	E -W								011		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
																								UNK				
01026	N	Y	N	N	N	N	03/27/2020	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-STP	01	NONE 9	TURN-R										08
CITY							FR	0	WARNER-MILNE RD	S		TRF SIGNAL	N	DRY	TURN		N/A	W -S								000		00
N							8P			06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 20 11.28	-122 35 54.21																UNK				
																02	NONE 9	STOP										
																	N/A	S -N								012		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
																								UNK				
04075	Y	N	N	N			12/27/2021	16	BEAVERCREEK RD	INTER	3-LEG	N	N	SNOW	ANGL-OTH	01	NONE 9	TURN-R									124	08,01
NONE							MO	0	WARNER-MILNE RD	S		TRF SIGNAL	N	ICE	TURN		N/A	W -S								000		00
N							9P			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 20 11.28	-122 35 54.21																UNK				
																02	NONE 9	STOP										
																	N/A	S -N								012		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
																								UNK				
04117	Y	N	N	N			12/28/2021	16	BEAVERCREEK RD	INTER	3-LEG	N	N	SNOW	ANGL-STP	01	NONE 9	TURN-R										01,08
NONE							TU	0	WARNER-MILNE RD	S		TRF SIGNAL	N	SNO	TURN		N/A	W -S								001		00
N							6A			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
N							45 20 11.28	-122 35 54.21																UNK				
																02	NONE 9	STOP										
																	N/A	S -N								011		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
																								UNK				
01878	N	N	N	N	N	N	06/09/2023	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT									013	27,29
CITY							FR	0	WARNER-MILNE RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N								000		00
N							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OTH-Y	016,026	038		27,29
N							45 20 11.28	-122 35 54.21																N-RES				
																02	NONE 0	STOP										
																	PRVTE	S -N								011	013	00
																	PSNGR CAR		01	DRVR	INJB	69	M	OR-Y	000	000		00
																								OR>25				

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

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CITY OF OREGON CITY, CLACKAMAS COUNTY **WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023**

5 - 8 of 38 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 0	STOP											
																	PRVTE	S -N									011	013	00
																	PSNGR CAR		02	PSNG	INJA	69	F			000	000		00
																02	NONE 0	STOP											
																	PRVTE	S -N									011	013	00
																	PSNGR CAR		03	PSNG	INJA	52	F			000	000		00
																03	NONE 0	STOP											
																	PRVTE	S -N									022		00
																	PSNGR CAR		01	DRVR	NONE	42	M	OTH-Y OR<25		000	000		00
00071	N	N	N N N N				01/02/2019	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
STATE							WE	0	WARNER-MILNE RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000		00
N							12P			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y OR<25		020	000		04
N							45 20 11.29	-122 35 54.22																						
																02	NONE 0	TURN-L											
																	PRVTE	E -S									000		00
																	PSNGR CAR		01	DRVR	INJB	58	M	SUSP OR<25		000	000		00
03337	N	N	N N N N				11/04/2021	16	BEAVERCREEK RD	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										002		27,04,32
CITY							TH	0	WARNER-MILNE RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W -E									000		00
N							8A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	26	M	OR-Y OR<25	040,052	038	002		27,04,32
N							45 20 11.24	-122 35 54.2																						
																01	NONE 0	STRGHT											
																	PRVTE	W -E									000		00
																	PSNGR CAR		02	PSNG	INJC	29	M		000	000			00
																01	NONE 0	STRGHT											
																	PRVTE	W -E									000		00
																	PSNGR CAR		03	PSNG	INJA	30	F		000	000			00
																02	NONE 0	TURN-L											
																	PUBLC	S -W									000		00
																	OTH BUS		01	DRVR	INJC	49	F	OR-Y OR<25	000	000			00
02233	N	N	N N N N				07/25/2022	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY							MO	0	WARNER-MILNE RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W -E									000		00
N							9A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	37	M	OTH-Y N-RES	097	000			04
N							45 20 11.28	-122 35 54.21																						
																02	NONE 0	TURN-L											
																	PRVTE	S -W									000		00
																	PSNGR CAR		01	DRVR	INJA	84	M	OR-Y OR<25	097	000			04

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

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CITY OF OREGON CITY, CLACKAMAS COUNTY **WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023**

9 - 10 of 38 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02245	N	N	N N N	N	N	N	07/26/2022	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY			TU				0	WARNER-MILNE RD	CN		TRF SIGNAL	N	DRY	TURN			PRVTE	W -E									000		00
N			1P							04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	F	OR-Y		020	000		04
N			45 20 11.28				-122 35 54.21											OR<25										
																02	NONE 0	TURN-L										
																	PRVTE	S -W									000	00
																	PSNGR CAR		01	DRVR	INJB	77	M	OR-Y		000	000	00
																								OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	S -W									000	00
																	PSNGR CAR		02	PSNG	INJB	62	F			000	000	00
																03	NONE 0	STOP										
																	PRVTE	E -W									011	00
																	PSNGR CAR		01	DRVR	INJB	63	F	OR-Y		000	000	00
																								OR<25				
03108	N	N	N N N	N	N	N	10/02/2022	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE			SU				0	WARNER-MILNE RD	CN		STOP SIGN	N	DRY	TURN			PRVTE	S -W									000		00
N			1P							04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	F	OR-Y		028	000		02
N			45 20 11.28				-122 35 54.21											OR<25										
																02	NONE 0	STRGHT										
																	PRVTE	W -E									000	00
																	PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		000	000	00
																								OR<25				
																02	NONE 0	STRGHT										
																	PRVTE	W -E									000	00
																	PSNGR CAR		02	PSNG	INJC	26	M			000	000	00
																02	NONE 0	STRGHT										
																	PRVTE	W -E									000	00
																	PSNGR CAR		03	PSNG	INJC	16	M			000	000	00
																02	NONE 0	STRGHT										
																	PRVTE	W -E									000	00
																	PSNGR CAR		04	PSNG	INJC	18	F			000	000	00
01653	N	N	N N N	N	N	N	05/23/2023	16	BEAVERCREEK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											27,04
CITY			TU				0	WARNER-MILNE RD	CN		TRF SIGNAL	N	DRY	TURN			PRVTE	W -E									000		00
N			6P							04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	35	F	OR-Y		016,020	038		27,04
N			45 20 11.28				-122 35 54.21											OR<25										
																01	NONE 0	STRGHT										
																	PRVTE	W -E									000	00
																	PSNGR CAR		02	PSNG	INJB	10	M			000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

11 - 14 of 38 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D / A L C / D R U G S / M J I N V / S C H / W O R L / K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
											01	NONE 0	STRGHT											
												PRVTE	W -E									000		00
												PSNGR CAR		03	PSNG	INJB	08	F			000	000		00
											01	NONE 0	STRGHT											
												PRVTE	W -E									000		00
												PSNGR CAR		04	PSNG	INJB	06	F			000	000		00
											02	NONE 0	TURN-L											
												PRVTE	S -W									000		00
												PSNGR CAR		01	DRVR	INJB	46	M	OR-Y		000	000		00
																			OR<25					
02599	N N N N	07/31/2019	16	WARNER-MILNE RD	STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		WE	70	BEAVERCREEK RD	E	(NONE)	NONE	N	DRY	REAR		PRVTE	W -E									000		00
N		5P			07			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		026	000		29
N		45 20 11.3	-122 35 53.24			(02)													OR<25					
											02	NONE 0	STOP											
												PRVTE	W -E									011		00
												PSNGR CAR		01	DRVR	INJC	61	F	OR-Y		000	000		00
																			OR<25					
01204	N N N N N N	04/19/2023	16	WARNER-MILNE RD	STRGHT		N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											27
NO RPT		WE	288	BEAVERCREEK RD	E	(NONE)	UNKNOWN	N	WET	REAR		PRVTE	E -W									000		00
N		10A			08			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		016	038		27
N		45 20 11.33	-122 35 49.99			(02)													OR<25					
											02	NONE 0	STOP											
												PRVTE	E -W									011		00
												PSNGR CAR		01	DRVR	INJC	19	F	OR-Y		000	000		00
																			OR<25					
00723	N N N N N N	02/24/2020	16	WARNER-MILNE RD	STRGHT		N	N	CLR	O-OTHER	01	NONE 0	BACK											10
CITY		MO	500	BEAVERCREEK RD	W	(NONE)	NONE	N	DRY	BACK		PRVTE	E -W									000		00
N		8P			08			N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	64	F	OR-Y		011	000		10
N		45 20 11.21	-122 36 1.26			(02)													OR<25					
											01	NONE 0	BACK											
												PRVTE	E -W									000		00
												PSNGR CAR		02	PSNG	INJB	69	M			000	000		00
											02	NONE 0	STRGHT											
												PRVTE	W -E									000		00
												PSNGR CAR		01	DRVR	INJB	32	M	OR-Y		000	000		00
																			OR<25					

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15 - 18 of 38 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S H V	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / TYPE / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00115	N	N	N N		01/12/2019	16	WARNER-MILNE RD	STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE					SA	800	BEAVERCREEK RD	W	(NONE)	NONE	N	DRY	REAR		PRVTE	E -W									000		00
N					5P			07			N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		026	000		29
N					45 20 11.19	-122 36 5.52			(02)													OR<25					
														02	NONE 0	STOP											
															PRVTE	E -W									011		00
															PSNGR CAR		01	DRVR	INJC	28	M	OR-Y		000	000		00
																						OR<25					
														02	NONE 0	STOP											
															PRVTE	E -W									011		00
															PSNGR CAR		02	PSNG	INJC	26	F			000	000		00
03510	N	N	N N	N N	10/14/2023	16	LINN AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	29
NONE					SA	0	WARNER-MILNE RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000		00
N					8A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	F	OR-Y		026	000		29
N					45 20 11.1	-122 36 17.81																OR<25					
														02	NONE 0	STOP											
															PRVTE	W -E									011	013	00
															PSNGR CAR		01	DRVR	INJC	57	F	OR-Y		000	000		00
																						OR<25					
														03	NONE 0	STOP											
															PRVTE	W -E									022		00
															PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		000	000		00
																						OR<25					
02341	N	N	N N	N N	07/13/2023	16	WARNER-MILNE RD	STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT											32,27,29
CITY					TH	100	LINN AVE	E	(NONE)	TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
N					12P			08			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		052,016,026	038		32,27,29
N					45 20 11.07	-122 36 16.03			(04)													OR<25					
														02	NONE 0	STOP											
															PUBLC	E -W									011		00
															PSNGR CAR		01	DRVR	INJB	49	M	OR-Y		000	000		00
																						OR<25					
01729	N	Y	N N	N N	06/13/2022	16	WARNER-MILNE RD	STRGHT		N	Y	CLD	FIX OBJ	01	NONE 0	STRGHT										053	10
CITY					MO	763	LINN AVE	E	(RSDMD)	UNKNOWN	N	DRY	FIX		PRVTE	W -E									000	053	00
Y					12A			07			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	64	F	OR-Y		081	000		10
N					45 20 11.16	-122 36 6.84			(02)													OR<25					
01415	N	N	N N	N N	05/13/2022	16	LELAND RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											29
NONE					FR	0	WARNER-MILNE RD	E		TRF SIGNAL	N	WET	REAR		N/A	E -W									000		00
N					5P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N					45 20 11.1	-122 36 17.81																UNK					

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF OREGON CITY, CLACKAMAS COUNTY

WARNER-MILNE RD and Intersectional Crashes at WARNER-MILNE RD, City of Oregon City, Clackamas County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
040	AUTO. FLAG	AUTOMATED FLAGGER ASSISTANCE DEVICE
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS

099 UNKNOWN UNKNOWN OR NOT DEFINITE

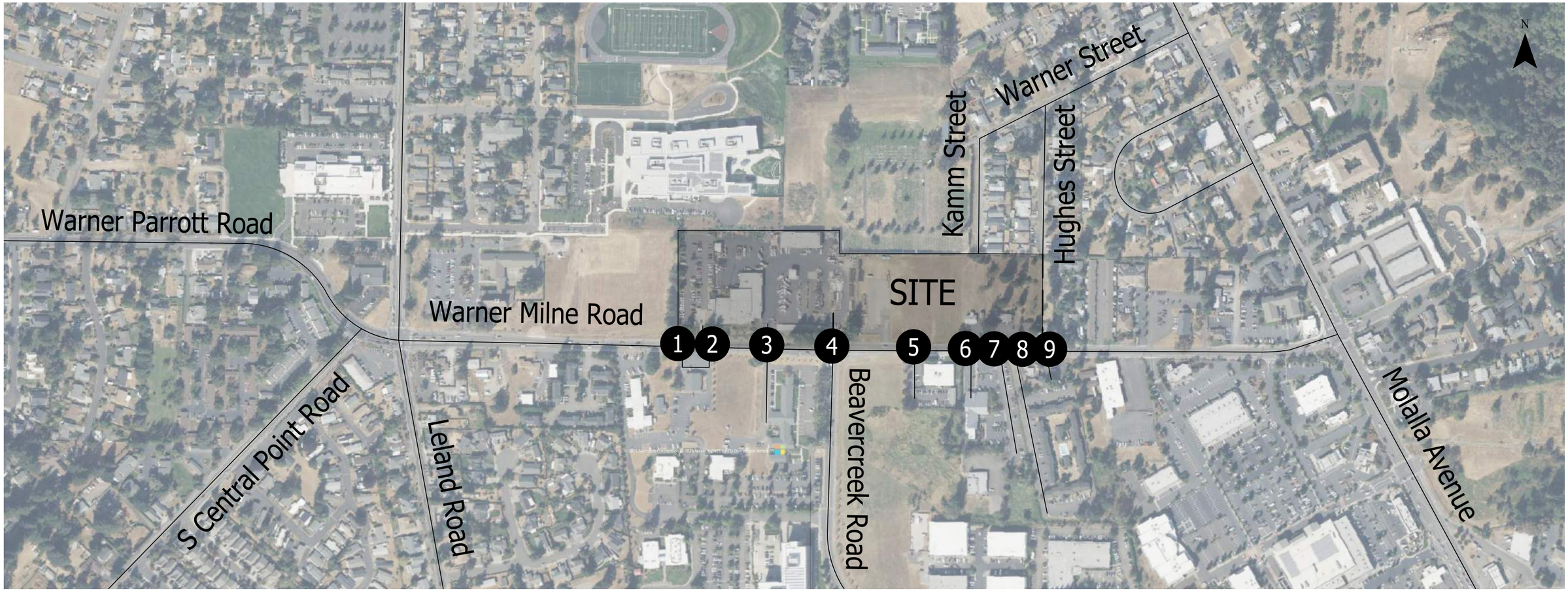
VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER (REV. 2022)
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
16	MTRZ/EBIKE	MOTORIZED OR ELECTRIC BICYCLE (E-BIKE) (EFF.2022)
17	UTV	UTV SIDE BY SIDE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix D
In-Process Trips



1 OSU Extension West Driveway/ Warner Milne Road

2 PGE West Driveway/ OSU Extension East Driveway/ Warner Milne Road

3 PGE East Driveway/ Beavercreek Health Clinic Driveway/ Warner Milne Road

4 Beavercreek Road/ Warner Milne Road

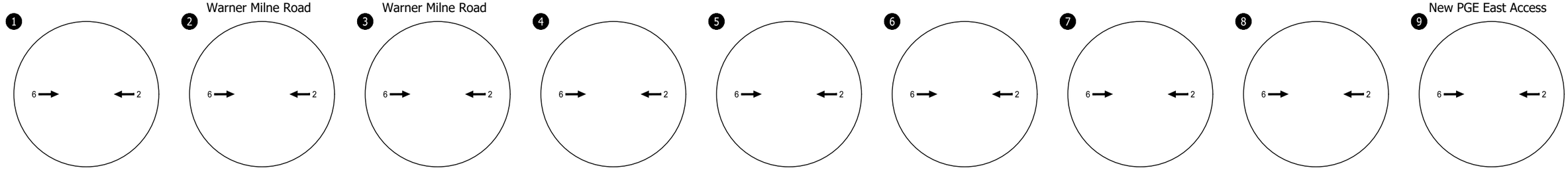
5 A Safe Place Driveway/ Warner Milne Road

6 Embold Credit Union West Driveway/ Warner Milne Road

7 Embold Credit Union East Driveway/ Warner Milne Road

8 Willow Springs Apartments Driveway/ Warner Milne Road

9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



In-Process Trips
Weekday AM Peak Hour
Oregon City, OR

Figure
D-1

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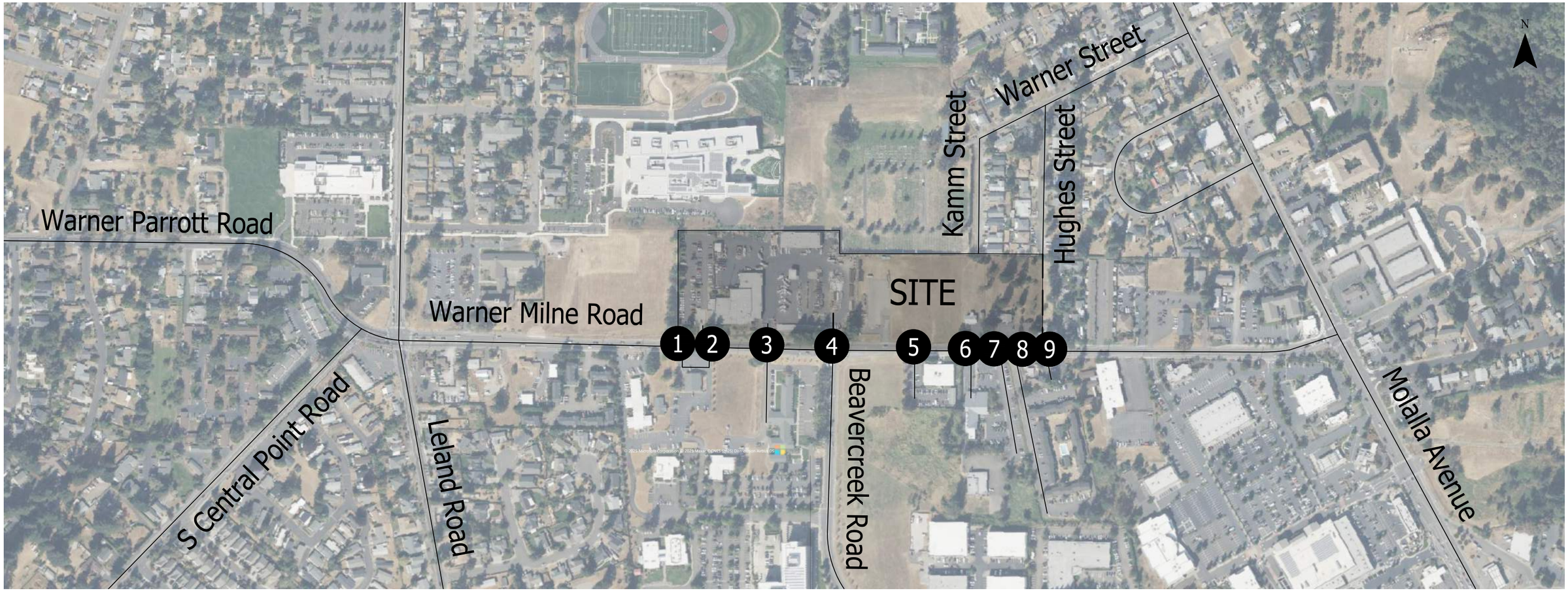
KITTELSON & ASSOCIATES



1 OSU Extension West Driveway/ Warner Milne Road

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4 Beavercreek Road/ Warner Milne Road

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6 Embold Credit Union West Driveway/ Warner Milne Road

7 Embold Credit Union East Driveway/ Warner Milne Road

8 Willow Springs Apartments Driveway/ Warner Milne Road

9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access

In-Process Trips
Weekday PM Peak Hour
Oregon City, OR

Figure
D-2

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Appendix E
Year 2029 Background Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	592	1	0	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	592	1	0	420
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	159	0	0	113
Total Analysis Volume [veh/h]	0	0	637	1	0	452
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.97	12.49	0.00	0.00	8.77	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.23		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	26.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	4	0	2	2	590	0	1	418	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	25.00	0.00	0.00	0.00	4.00	0.00	0.00	6.00	67.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	4	0	2	2	590	0	1	418	3
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	1	0	1	1	159	0	0	112	1
Total Analysis Volume [veh/h]	0	0	0	4	0	2	2	634	0	1	449	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.70	21.71	12.46	26.21	22.10	11.30	8.22	0.00	0.00	8.76	0.00	0.00
Movement LOS	C	C	B	D	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	2.02	2.02	2.02	0.08	0.08	0.08	0.04	0.04	0.04
d_A, Approach Delay [s/veh]	19.29			21.24			0.03			0.02		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.14											
Intersection LOS	D											

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	38.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.130

Intersection Setup

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	1	0	15	0	6	5	586	3	5	416	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	100.00	0.00	93.00	0.00	83.00	100.00	4.00	33.00	0.00	5.00	100.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	0	15	0	6	5	586	3	5	416	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	4	0	2	1	159	1	1	113	0
Total Analysis Volume [veh/h]	0	1	0	16	0	7	5	637	3	5	452	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.13	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.08	31.23	12.69	38.04	26.22	16.48	9.88	0.00	0.00	8.78	0.00	0.00
Movement LOS	D	D	B	E	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.49	0.49	0.49	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.55	0.55	0.55	12.34	12.34	12.34	0.21	0.21	0.21	0.21	0.21	0.21
d_A, Approach Delay [s/veh]	31.23			31.47			0.08			0.10		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	0.75											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	6.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	150.00	100.00	100.00	126.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

Volumes

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	180	5	222	379	22	242
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	0.00	2.00	6.00	0.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	4	0	0	0	0
Total Hourly Volume [veh/h]	180	1	222	379	22	242
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	0	61	104	6	66
Total Analysis Volume [veh/h]	198	1	244	416	24	266
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		1	
v_di, Inbound Pedestrian Volume crossing m	1		0		0	
v_co, Outbound Pedestrian Volume crossing	3		3		0	
v_ci, Inbound Pedestrian Volume crossing mi	3		3		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Overlap	Permissive	Overlap	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups		1,8		2,8		
Maximum Green [s]	25	25	40	40	25	70
Amber [s]	3.5	3.5	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	1.0	0.5
Walk [s]	7.0	7.0	8.0	8.0	0.0	0.0
Pedestrian Clearance [s]	12.0	12.0	14.0	14.0	0.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	9.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	10	10	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	No	Yes	Yes	No	Yes
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00
g_i, Effective Green Time [s]	7.4	13.4	10.8	22.3	16.8	16.8
g / C, Green / Cycle	0.23	0.42	0.34	0.69	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.12	0.00	0.13	0.27	0.02	0.14
s, saturation flow rate [veh/h]	1695	1614	1870	1517	1031	1870
c, Capacity [veh/h]	393	624	627	1045	794	974
d1, Uniform Delay [s]	11.98	7.55	8.23	2.13	4.17	4.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	0.00	0.40	0.25	0.02	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.00	0.39	0.40	0.03	0.27
d, Delay for Lane Group [s/veh]	12.98	7.55	8.63	2.37	4.19	4.48
Lane Group LOS	B	A	A	A	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.05	0.00	0.93	0.07	0.04	0.48
50th-Percentile Queue Length [ft/ln]	26.37	0.08	23.27	1.79	1.02	11.91
95th-Percentile Queue Length [veh/ln]	1.90	0.01	1.68	0.13	0.07	0.86
95th-Percentile Queue Length [ft/ln]	47.47	0.14	41.88	3.21	1.84	21.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.98	7.55	8.63	2.37	4.19	4.48
Movement LOS	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	12.95		4.69		4.45	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.06					
Intersection LOS	A					
Intersection V/C	0.511					

Emissions

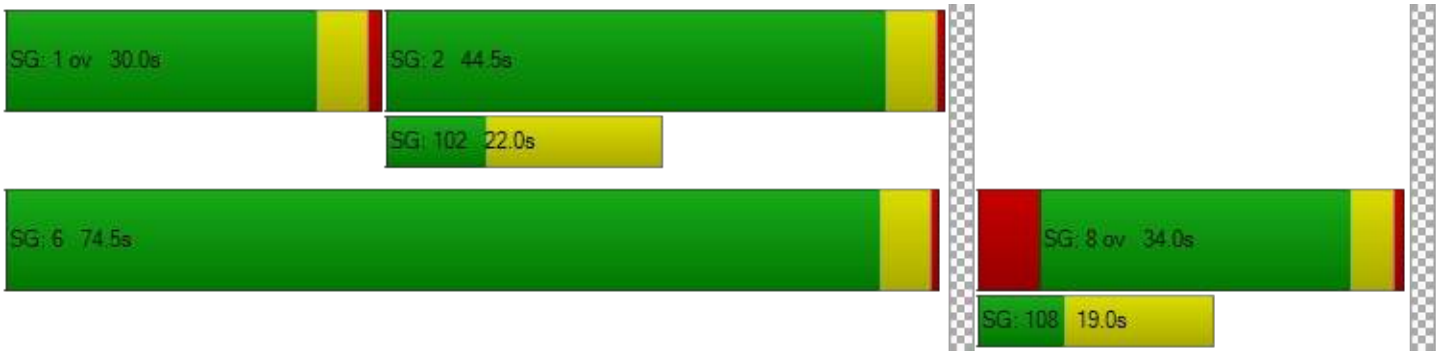
Vehicle Miles Traveled [mph]	10.90	0.06	11.55	19.69	1.44	15.98
Stops [stops/h]	117.70	0.35	103.84	7.97	4.57	53.15
Fuel consumption [US gal/h]	1.82	0.01	1.48	1.06	0.11	1.19
CO [g/h]	127.49	0.44	103.30	73.79	7.34	83.46
NOx [g/h]	24.80	0.09	20.10	14.36	1.43	16.24
VOC [g/h]	29.55	0.10	23.94	17.10	1.70	19.34

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	446.59	521.02	3141.24
M_CW, Crosswalk Circulation Area [ft²/ped]	3852.06	0.00	32730.06
d_p, Pedestrian Delay [s]	6.36	0.00	7.01
l_p,int, Pedestrian LOS Score for Intersectio	2.135	0.000	2.051
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1550	2479	4339
d_b, Bicycle Delay [s]	0.82	0.93	22.07
l_b,int, Bicycle LOS Score for Intersection	1.560	2.649	2.038
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	0	219	8	10	263
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	219	8	10	263
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	58	2	3	70
Total Analysis Volume [veh/h]	1	0	233	9	11	280
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.19	9.48	0.00	0.00	7.71	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.00	0.00	0.46	0.46
d_A, Approach Delay [s/veh]	12.19		0.00		0.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	216	3	3	274	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	216	3	3	274	0
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	58	1	1	74	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	232	3	3	295	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.85	12.94	9.44	12.85	12.95	9.81	7.82	0.00	0.00	7.68	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.13
d_A, Approach Delay [s/veh]	11.74			11.87			0.00			0.08		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.04											
Intersection LOS	A											

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	3	0	5	0	0	0	0	216	0	2	274	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	5	0	0	0	0	216	0	2	274	0
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	0	0	0	0	57	0	1	73	0
Total Analysis Volume [veh/h]	3	0	5	0	0	0	0	230	0	2	291	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.81	12.91	9.49	12.81	12.83	9.78	7.81	0.00	0.00	7.67	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.96	0.96	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	10.74			11.81			0.00			0.05		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.19											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	10	0	0	0	0	220	1	8	275	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	10	0	0	0	0	220	1	8	275	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	3	0	0	0	0	58	0	2	72	0
Total Analysis Volume [veh/h]	1	0	11	0	0	0	0	232	1	8	289	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	13.00	13.08	9.51	13.10	13.01	9.77	7.80	0.00	0.00	7.68	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.20	1.20	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33	0.33
d_A, Approach Delay [s/veh]	9.80			11.96			0.00			0.21		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	0.33											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	0	227	4	2	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	227	4	2	281
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	61	1	1	76
Total Analysis Volume [veh/h]	2	0	244	4	2	302
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.27	9.54	0.00	0.00	7.71	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.30	0.30	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	12.27		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	600	1	0	839
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	600	1	0	839
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	165	0	0	230
Total Analysis Volume [veh/h]	0	0	659	1	0	922
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	34.73	12.71	0.00	0.00	8.84	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	23.72		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	47.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	OSU Extension East Dwys			PGE West			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	11	1	0	2	0	600	0	0	835	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	11	1	0	2	0	600	0	0	835	1
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	3	0	0	1	0	165	0	0	229	0
Total Analysis Volume [veh/h]	1	0	12	1	0	2	0	659	0	0	918	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	45.88	37.97	13.10	47.01	37.94	16.23	9.79	0.00	0.00	8.84	0.00	0.00
Movement LOS	E	E	B	E	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.11	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.87	2.87	2.87	1.34	1.34	1.34	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.62			26.49			0.00			0.00		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	0.18											
Intersection LOS	E											

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	57.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

Intersection Setup

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	P Parking Dwys			PGE East			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	3	0	4	3	0	1	0	613	0	2	832	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	33.00	0.00	0.00	0.00	1.00	0.00	50.00	2.00	67.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	0	4	3	0	1	0	613	0	2	832	3
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	1	0	0	0	168	0	1	229	1
Total Analysis Volume [veh/h]	3	0	4	3	0	1	0	674	0	2	914	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.01	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	47.62	39.57	13.87	57.06	40.37	17.69	9.79	0.00	0.00	9.95	0.00	0.00
Movement LOS	E	E	B	F	E	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.38	3.38	3.38	3.47	3.47	3.47	0.00	0.00	0.00	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	28.34			47.21			0.00			0.02		
Approach LOS	D			E			A			A		
d_I, Intersection Delay [s/veh]	0.25											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	150.00	100.00	100.00	126.00	150.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	Yes		Yes		Yes	
Crosswalk	Yes		No		Yes	

Volumes

Name	Beavercreek Rd		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	458	34	280	340	12	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	4.00	0.00	1.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	15	0	0	0	0
Total Hourly Volume [veh/h]	458	19	280	340	12	380
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	5	77	93	3	104
Total Analysis Volume [veh/h]	503	21	308	374	13	418
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	5		0		5	
v_di, Inbound Pedestrian Volume crossing m	5		0		5	
v_co, Outbound Pedestrian Volume crossing	6		5		0	
v_ci, Inbound Pedestrian Volume crossing mi	5		6		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permissive	Overlap	Permissive	Overlap	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	8	2	2	1	6
Auxiliary Signal Groups		1,8		2,8		
Maximum Green [s]	25	25	40	40	25	70
Amber [s]	3.5	3.5	4.0	4.0	4.0	4.0
All red [s]	0.5	0.5	0.5	0.5	1.0	0.5
Walk [s]	7.0	7.0	8.0	8.0	0.0	0.0
Pedestrian Clearance [s]	12.0	12.0	14.0	14.0	0.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	9.0	14.0	14.0	9.0	9.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	10	10	5	5
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Recall	No	No	Yes	Yes	No	Yes
Maximum Recall	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	40	40	40	40	40	40
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00
g_i, Effective Green Time [s]	14.7	20.4	11.2	29.9	16.9	16.9
g / C, Green / Cycle	0.37	0.51	0.28	0.76	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.28	0.01	0.16	0.24	0.01	0.22
s, saturation flow rate [veh/h]	1781	1574	1900	1545	997	1885
c, Capacity [veh/h]	663	768	538	1166	591	804
d1, Uniform Delay [s]	13.28	7.12	12.17	1.55	7.26	8.39
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.82	0.01	0.96	0.16	0.01	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.03	0.57	0.32	0.02	0.52
d, Delay for Lane Group [s/veh]	15.10	7.13	13.13	1.71	7.27	8.91
Lane Group LOS	B	A	B	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.80	0.08	1.98	0.05	0.05	1.95
50th-Percentile Queue Length [ft/ln]	94.95	1.89	49.51	1.28	1.23	48.83
95th-Percentile Queue Length [veh/ln]	6.84	0.14	3.56	0.09	0.09	3.52
95th-Percentile Queue Length [ft/ln]	170.91	3.40	89.12	2.30	2.21	87.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.10	7.13	13.13	1.71	7.27	8.91
Movement LOS	B	A	B	A	A	A
d_A, Approach Delay [s/veh]	14.78		6.87		8.86	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	9.93					
Intersection LOS	A					
Intersection V/C	0.723					

Emissions

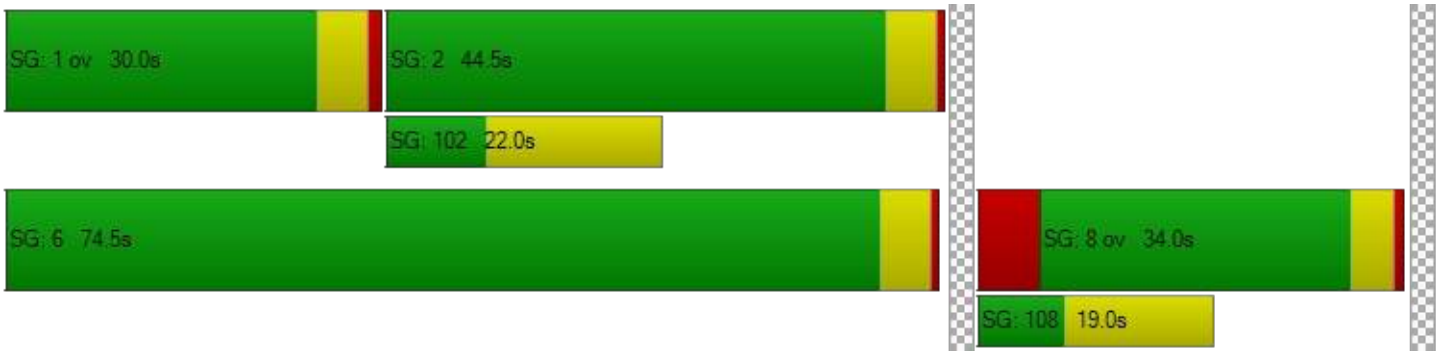
Vehicle Miles Traveled [mph]	27.69	1.16	14.58	17.71	0.78	25.11
Stops [stops/h]	345.23	6.87	180.02	4.64	4.46	177.56
Fuel consumption [US gal/h]	5.20	0.13	2.42	0.88	0.08	2.77
CO [g/h]	363.37	8.83	169.02	61.84	5.31	193.84
NOx [g/h]	70.70	1.72	32.89	12.03	1.03	37.71
VOC [g/h]	84.21	2.05	39.17	14.33	1.23	44.92

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	143.49	280.90	308.54
M_CW, Crosswalk Circulation Area [ft²/ped]	2342.21	0.00	2851.71
d_p, Pedestrian Delay [s]	9.62	0.00	10.33
l_p,int, Pedestrian LOS Score for Intersectio	2.267	0.000	2.143
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1262	2020	3535
d_b, Bicycle Delay [s]	2.70	0.00	11.66
l_b,int, Bicycle LOS Score for Intersection	1.560	2.685	2.271
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	8	312	1	1	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	312	1	1	390
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	91	0	0	113
Total Analysis Volume [veh/h]	2	9	363	1	1	453
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.47	10.37	0.00	0.00	7.99	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.44	1.44	0.00	0.00	0.04	0.04
d_A, Approach Delay [s/veh]	11.30		0.00		0.02	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.16					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	8.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	311	9	14	391	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	311	9	14	391	0
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	88	3	4	111	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	353	10	16	444	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	17.64	16.97	10.21	17.64	17.05	10.82	8.19	0.00	0.00	8.00	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.67	0.67
d_A, Approach Delay [s/veh]	14.94			15.17			0.00			0.28		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	0.16											
Intersection LOS	A											

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Em Cr						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	8	0	19	0	0	0	0	311	0	0	396	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	19	0	0	0	0	311	0	0	396	0
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	5	0	0	0	0	87	0	0	111	0
Total Analysis Volume [veh/h]	9	0	21	0	0	0	0	349	0	0	445	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.12	16.59	10.60	17.23	16.15	10.83	8.20	0.00	0.00	7.95	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.71	4.71	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.56			14.74			0.00			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Willow Springs Apts Dwy						Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	1	0	4	0	0	0	0	326	4	9	395	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	4	0	0	0	0	326	4	9	395	0
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	0	0	0	0	91	1	3	110	0
Total Analysis Volume [veh/h]	1	0	4	0	0	0	0	362	4	10	439	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	17.42	16.78	10.76	17.46	16.74	10.79	8.18	0.00	0.00	8.00	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.74	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.42	0.42
d_A, Approach Delay [s/veh]	12.09			15.00			0.00			0.18		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.17											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Business Driveway		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	1	330	0	2	403
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	330	0	2	403
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	92	0	1	112
Total Analysis Volume [veh/h]	2	1	367	0	2	448
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

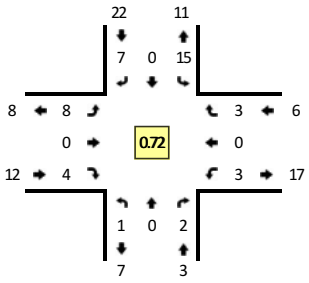
V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.44	10.34	0.00	0.00	8.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.55	0.55	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	13.74		0.00		0.04	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	C					

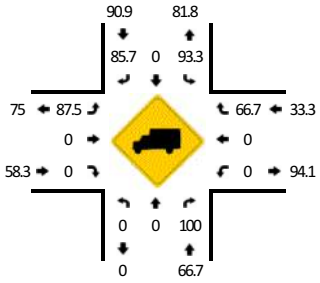
Appendix F
PGE Site Traffic Count Data

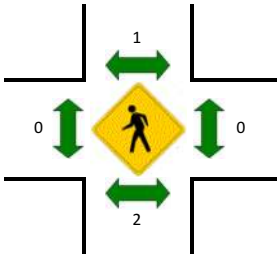
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

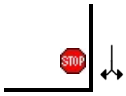
LOCATION: PGE East Dwy -- Warner Milne Rd | **QC JOB #:** 17000113
CITY/STATE: Oregon City, OR | **DATE:** Tue, May 6 2025

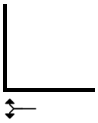
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

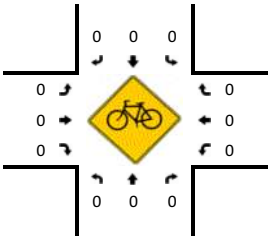


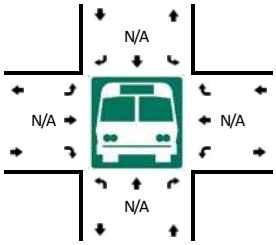


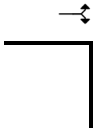


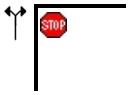


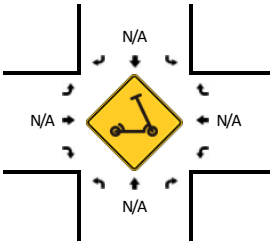












5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:05 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
12:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:50 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
12:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	7
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
1:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
1:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:40 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
5:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	5
6:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
6:35 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	7
6:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	8
6:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	8
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7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	8
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	9
7:25 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3	12
7:30 AM	0	0	0	0	1	0	0	0	2	0	2	0	0	0	0	0	5	16
7:35 AM	1	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	5	19
7:40 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	22
7:45 AM	0	0	0	0	4	0	0	0	0	0	0	0	1	0	1	0	6	26
7:50 AM	0	0	0	0	2	0	1	0	1	0	0	0	1	0	1	0	6	32
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
8:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	34
8:05 AM	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	3	36
8:10 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	37
8:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	38
8:20 AM	0	0	0	0	3	0	2	0	0	0	0	0	1	0	0	0	6	43
8:25 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	42
8:30 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	39
8:35 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	35
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	29
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
8:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	24
9:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	24
9:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
9:10 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	21
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	20
9:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
9:25 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
9:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
9:40 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	12
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
9:50 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	10
9:55 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
10:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	9
10:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	9
10:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3	11
10:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
10:25 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	12

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
10:30 AM	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	4	16
10:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
10:40 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	15
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
10:50 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	16
10:55 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	18
11:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	4	22
11:05 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	25
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	24
11:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	23
11:20 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	3	26
11:25 AM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	5	29
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	27
11:35 AM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	30
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
11:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30
11:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	29
11:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	27
12:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	25
12:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	22
12:10 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	4	25
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24
12:20 PM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	4	25
12:25 PM	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	4	24
12:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	24
12:35 PM	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3	24
12:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25
12:45 PM	1	0	1	0	1	0	0	0	0	0	1	0	2	0	0	0	6	30
12:50 PM	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	3	32
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	32
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	31
1:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	31
1:10 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	3	30
1:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	30
1:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	27
1:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24
1:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	24
1:35 PM	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	4	25
1:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	21
1:50 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	21
1:55 PM	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3	23
2:00 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	24
2:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	25
2:10 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	26
2:15 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	27
2:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	28
2:25 PM	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	5	32
2:30 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	5	35
2:35 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	33
2:40 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	35
2:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	33
2:50 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	32
2:55 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	30
3:00 PM	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4	32
3:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	31
3:10 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	29
3:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	28
3:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
3:25 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	23
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
3:40 PM	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	4	18
3:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18
3:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	17
3:55 PM	1	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	5	21
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	19
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
4:10 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3	19
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	20
4:20 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	22
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	21
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	22
4:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	3	21
4:50 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	21
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
5:05 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
5:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	16
5:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	16
5:20 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	15
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:55 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3	12
6:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
6:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:10 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:20 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	8
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	6
7:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
7:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	8
7:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:20 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
7:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:35 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	7
7:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	8
7:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9
7:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
8:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
8:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
9:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:25 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	3
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:55 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	4
10:10 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
10:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
10:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	4
10:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:20 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
11:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
11:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	8	0	12	0	0	0	8	0	8	0	60
Heavy Trucks	0	0	0		24	0	8		12	0	0		0	0	4		48
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments: Seeking 2 days of data at this location

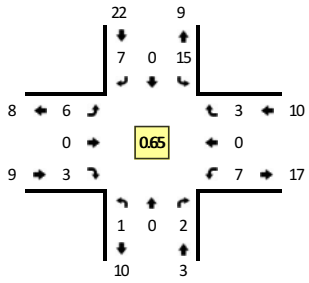
Report generated on 10/16/2025 10:03 PM

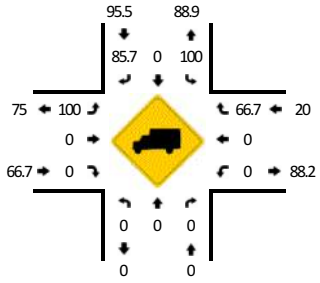
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

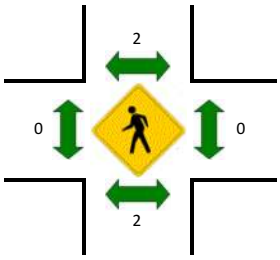
LOCATION: PGE East Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

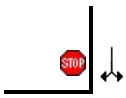
QC JOB #: 17000114
DATE: Wed, May 7 2025

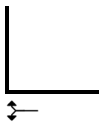
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

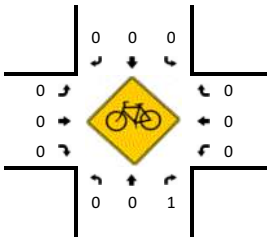


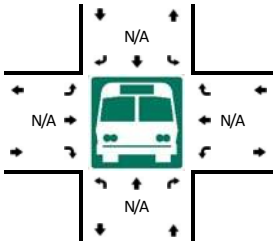


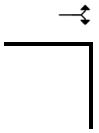


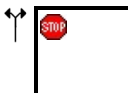


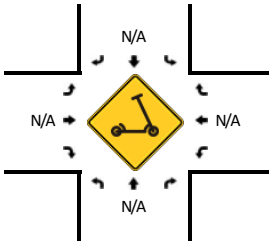












5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:05 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
12:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
12:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
5:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4
5:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	5
6:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:10 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	6
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5
6:35 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	7
6:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	8
6:50 AM	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	4	12
6:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	13
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	11
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	12
7:20 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	14
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	12
7:40 AM	0	0	0	0	3	0	1	0	0	0	0	0	1	0	0	0	5	17
7:45 AM	0	0	0	0	1	0	1	0	0	0	1	0	2	0	0	0	5	20
7:50 AM	0	0	0	0	2	0	0	0	3	0	0	0	1	0	1	0	7	23
7:55 AM	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	4	26
8:00 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	29
8:05 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	31
8:10 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	32
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	34
8:20 AM	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	4	36
8:25 AM	0	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	4	40
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	42
8:35 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	44
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	35
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	29
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	23
9:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	24
9:10 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	24
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
9:20 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	20
9:25 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	18
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	17
9:35 AM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3	17
9:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	19
9:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	19
9:50 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20
9:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
10:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	17
10:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
10:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
10:20 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	15
10:25 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	15

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
10:30 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	16
10:35 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	14
10:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	13
10:50 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	12
10:55 AM	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	16
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
11:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	16
11:20 AM	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	17
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
11:30 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	3	16
11:35 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	17
11:45 AM	1	0	3	0	0	0	0	0	1	0	1	0	0	0	0	0	6	21
11:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	22
11:55 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	20
12:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	22
12:05 PM	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	24
12:10 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	26
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	27
12:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25
12:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	26
12:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	3	26
12:35 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	28
12:40 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3	30
12:45 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	4	28
12:50 PM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3	29
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
1:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	23
1:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
1:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
1:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1:30 PM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	16
1:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14
1:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	10
1:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	9
1:55 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	11
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	13
2:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
2:10 PM	0	0	0	0	2	0	4	0	0	0	0	0	0	0	3	0	9	21
2:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	4	25
2:20 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	3	28
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	29
2:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	4	31
2:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	32
2:40 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	34
2:45 PM	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	34
2:50 PM	1	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	5	37
2:55 PM	0	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	5	40
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	40
3:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	42
3:10 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	36
3:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	34
3:20 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	33
3:25 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	33
3:30 PM	0	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	4	33
3:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	33
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
3:55 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	20
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	19
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	15
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	14
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
4:25 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	13
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
4:35 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	11
4:40 PM	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	4	15
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	16
4:50 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
4:55 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	18
5:05 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	21
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	21
5:15 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	22
5:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
5:25 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	23
5:30 PM	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3	24
5:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	20
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17

5-Min Count Period Beginning At	PGE East Dwy (Northbound)				PGE East Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:55 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
6:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
6:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
6:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	14
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
6:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:55 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	6
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
7:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
7:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
7:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
7:55 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	6
8:00 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	4	9
8:05 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
8:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
8:20 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
8:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:50 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9
8:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
9:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
9:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:10 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
9:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
9:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:55 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	4
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:05 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
10:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
11:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
11:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:35 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3
11:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4
11:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
11:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	8	0	12	0	4	0	16	0	4	0	68
Heavy Trucks	0	0	0		24	0	8		12	0	0		0	0	4		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments: Seeking 2 days of data at this location

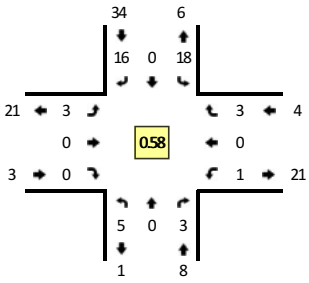
Report generated on 10/16/2025 10:03 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

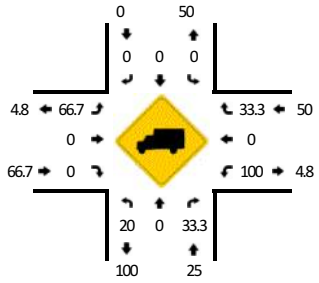
LOCATION: PGE West Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

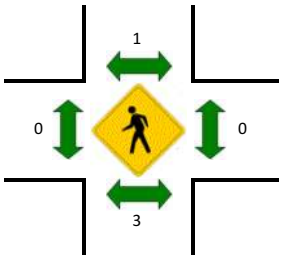
QC JOB #: 17000115
DATE: Tue, May 6 2025

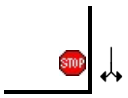
Peak-Hour: 2:40 PM -- 3:40 PM
Peak 15-Min: 3:25 PM -- 3:40 PM

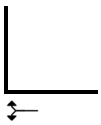


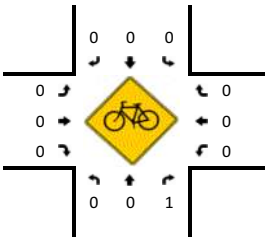
TRUE DATA TO IMPROVE MOBILITY

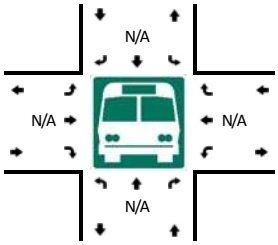


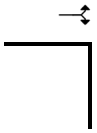


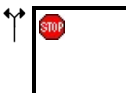


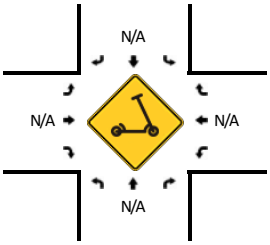












5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:55 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	2
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
5:40 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
5:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3
5:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
5:55 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	4	8
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9
6:05 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	11
6:10 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	13
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	14
6:20 AM	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1	0	4	18
6:25 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	7	25
6:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	4	29
6:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
6:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	29
6:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	1	0	6	0	9	37
6:50 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	4	40
6:55 AM	0	0	0	0	0	0	0	0	4	0	0	0	1	0	4	0	9	45
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	45
7:05 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	3	46
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	47
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	48
7:20 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	46
7:25 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	3	42
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	40
7:35 AM	0	0	0	0	2	0	1	0	1	0	0	0	0	0	1	0	5	45
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	44
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	37
7:50 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	35
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	26
8:05 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	25
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	23
8:15 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3	24
8:20 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	24
8:25 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	23
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	22
8:35 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	19
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	17
8:50 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	17
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
9:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	18
9:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
9:10 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3	18
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
9:20 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	14
9:25 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3	15
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
9:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
9:40 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	13
9:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	3	15
9:50 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	15
9:55 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3	18
10:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
10:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
10:10 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	15
10:15 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	17
10:20 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	18
10:25 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	17
10:30 AM	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	4	21

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
10:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
10:40 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	22
10:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	21
10:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	21
10:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
11:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	19
11:05 AM	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	3	22
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	20
11:20 AM	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	21
11:25 AM	0	0	1	0	1	0	0	0	1	0	0	0	0	0	2	0	5	24
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
11:40 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	3	21
11:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	21
11:50 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	20
11:55 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	21
12:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	22
12:05 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	21
12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
12:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	2	0	5	25
12:20 PM	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	4	26
12:25 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	3	24
12:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	26
12:35 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	28
12:40 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	26
12:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	26
12:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
12:55 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	27
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	25
1:05 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3	26
1:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	28
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
1:20 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	21
1:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	19
1:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	18
1:35 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	19
1:40 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	4	22
1:45 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	22
1:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	3	25
1:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
2:05 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20
2:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
2:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	17
2:25 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	17
2:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	17
2:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
2:40 PM	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	3	13
2:45 PM	1	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	4	15
2:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
2:55 PM	0	0	0	0	1	0	1	0	2	0	0	0	1	0	0	0	5	17
3:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	20
3:05 PM	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	5	23
3:10 PM	2	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	27
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	28
3:20 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	30
3:25 PM	0	0	0	0	4	0	5	0	0	0	0	0	0	0	0	0	9	38
3:30 PM	0	0	0	0	4	0	3	0	0	0	0	0	0	0	0	0	7	44
3:35 PM	1	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	5	49
3:40 PM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3	49
3:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	47
3:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	48
3:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
4:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	42
4:05 PM	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3	40
4:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	37
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
4:20 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	35
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
4:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21
4:35 PM	0	0	2	0	2	0	0	0	0	0	0	0	1	0	0	0	5	21
4:40 PM	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	22
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	22
4:50 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	22
4:55 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	24
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
5:05 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	22
5:10 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	22
5:15 PM	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	4	26
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
5:25 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	25
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:50 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	15
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	13
6:05 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	12
6:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
6:35 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
6:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	6
7:20 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7
7:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
8:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:10 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:50 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
10:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	4	0	36	0	40	0	0	0	0	0	0	0	0	0	84
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments: Seeking 2 days of data at this location

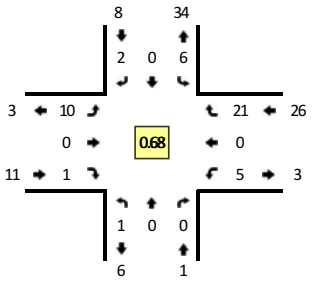
Report generated on 10/16/2025 10:03 PM

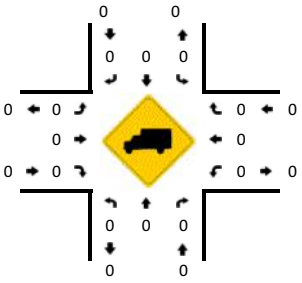
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

LOCATION: PGE West Dwy -- Warner Milne Rd
CITY/STATE: Oregon City, OR

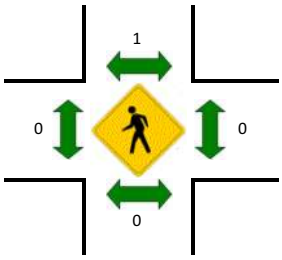
QC JOB #: 17000116
DATE: Wed, May 7 2025

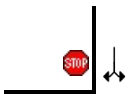
Peak-Hour: 6:10 AM -- 7:10 AM
Peak 15-Min: 6:45 AM -- 7:00 AM

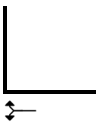


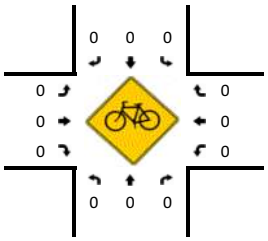


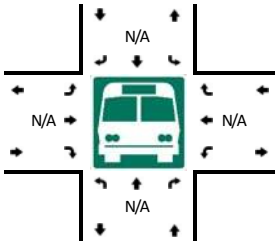
TRUE DATA TO IMPROVE MOBILITY

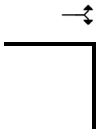


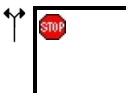


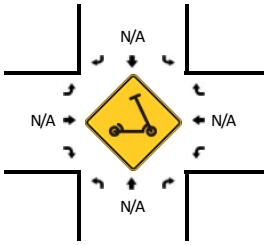












5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:35 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
5:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
5:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	5
5:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:55 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	6
6:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3	9
6:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
6:10 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0	4	12
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
6:20 AM	0	0	0	0	0	0	1	1	1	0	0	0	0	0	2	0	5	17
6:25 AM	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	4	21
6:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	23
6:35 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	5	27
6:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	28
6:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	29
6:50 AM	1	0	0	0	0	0	0	1	2	0	0	0	0	0	5	0	9	38
6:55 AM	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	5	42
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	42
7:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	4	46
7:10 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	44
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	45
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	42
7:25 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	39
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	38
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
7:45 AM	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	4	32
7:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	25
7:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	21
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	20
8:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	18
8:10 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	18
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	18
8:20 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	18
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	18
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:40 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	20
8:45 AM	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	5	21
8:50 AM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3	22
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	22
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
9:05 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	19
9:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
9:20 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
9:25 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	15
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
9:35 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
9:40 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14
9:45 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	13
9:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
9:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
10:10 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	10
10:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	12
10:20 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	13
10:25 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
10:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	15
10:35 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	16
10:40 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	16
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
10:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	14
10:55 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	15
11:00 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	17
11:05 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	19
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
11:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
11:20 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
11:25 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	17
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	14
11:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	16
11:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
11:55 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	15
12:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	14
12:05 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
12:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	16
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	15
12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	15
12:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	15
12:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
12:35 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	15
12:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	14
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	15
1:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
1:10 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	13
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
1:20 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	13
1:25 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	12
1:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	13
1:35 PM	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3	15
1:40 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	17
1:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16
1:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
1:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	16
2:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	16
2:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17
2:10 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	17
2:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	19
2:20 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3	20
2:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
2:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	19
2:35 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	18
2:40 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	17
2:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17
2:50 PM	0	0	1	0	0	0	2	0	1	0	0	0	0	0	1	0	5	22
2:55 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	23
3:00 PM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	0	4	25
3:05 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	26
3:10 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	25
3:15 PM	0	0	1	0	0	0	2	0	1	0	0	0	0	0	0	0	4	27
3:20 PM	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3	27
3:25 PM	0	0	1	0	2	0	5	0	0	0	0	0	0	0	0	0	8	35
3:30 PM	0	0	0	0	4	0	1	0	0	0	0	0	0	0	1	0	6	39
3:35 PM	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	5	42
3:40 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	43
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
3:50 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	40
3:55 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	39
4:00 PM	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	3	38
4:05 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	37
4:10 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	37
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	34
4:20 PM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	33
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
4:30 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	23
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
4:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	18
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
4:55 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	16
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:40 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

5-Min Count Period Beginning At	PGE West Dwy (Northbound)				PGE West Dwy (Southbound)				Warner Milne Rd (Eastbound)				Warner Milne Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:55 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	7
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6:05 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
6:10 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
6:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	9
6:20 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
6:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	11
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
6:40 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
7:05 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
7:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
7:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:40 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3
7:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	5
7:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
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8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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9:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

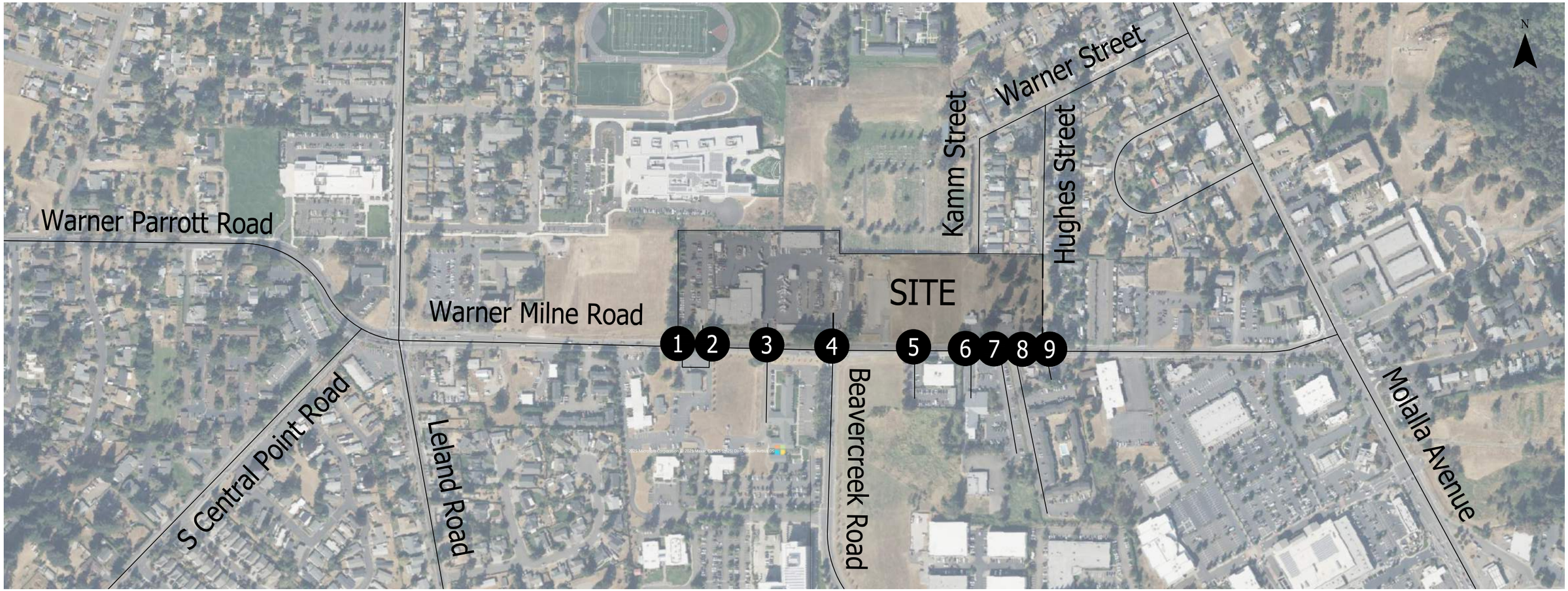
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	0	4	24	0	0	0	8	0	28	0	68
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments: Seeking 2 days of data at this location

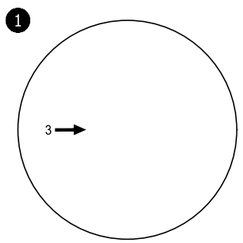
Report generated on 10/16/2025 10:03 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

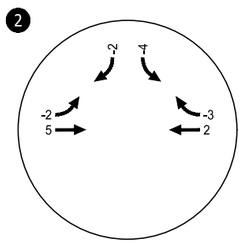
Appendix G
Existing PGE Site Trip Re-assignment



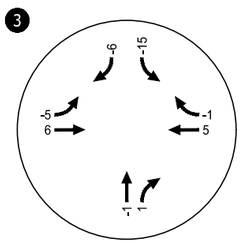
1 OSU Extension West Driveway/ Warner Milne Road



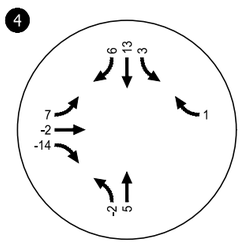
2 OSU Extension East Driveway/ Warner Milne Road



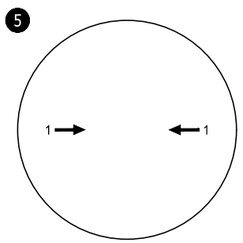
3 Beavercreek Health Clinic Driveway/ Warner Milne Road



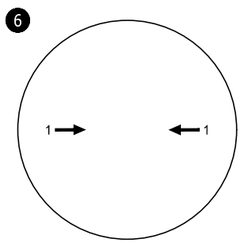
4 Beavercreek Road/ Warner Milne Road



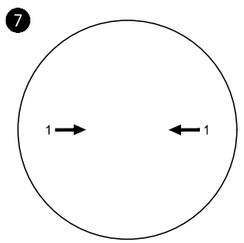
5 A Safe Place Driveway/ Warner Milne Road



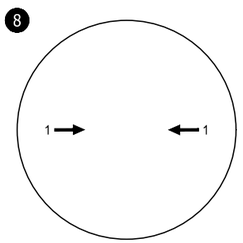
6 Embold Credit Union West Driveway/ Warner Milne Road



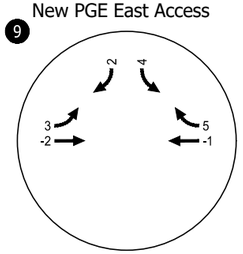
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



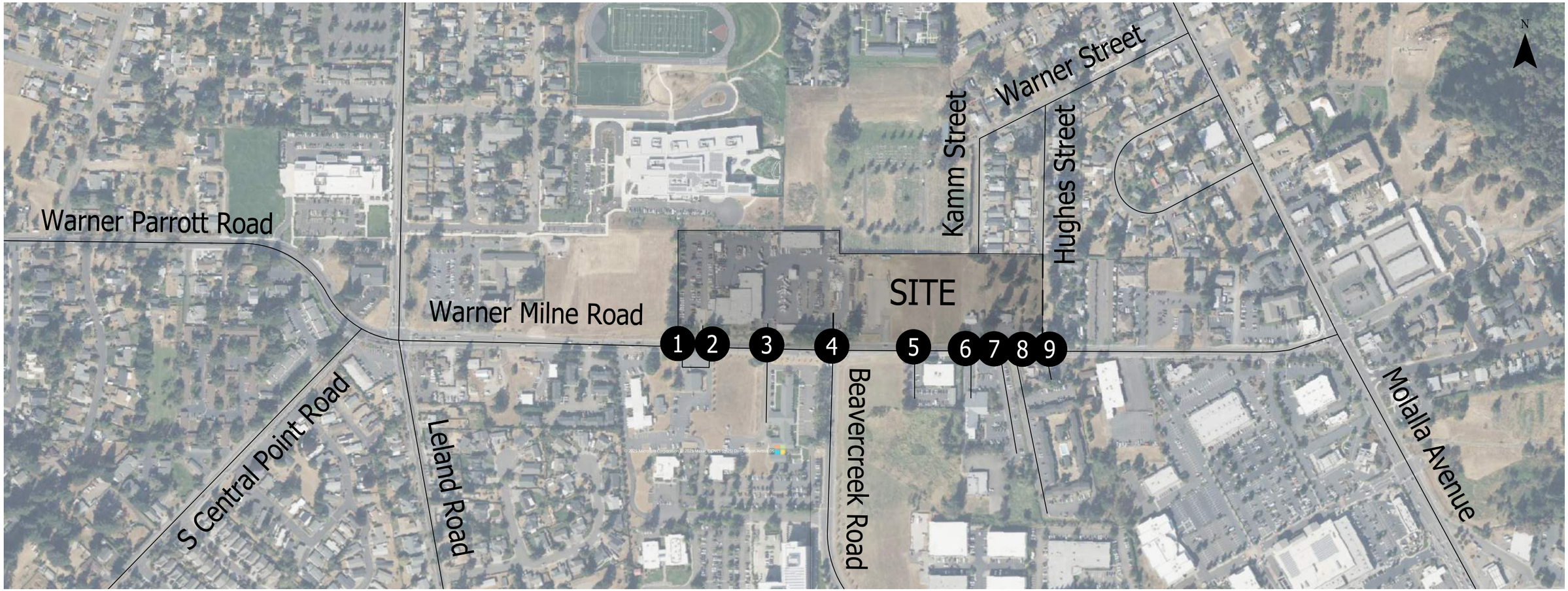
9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



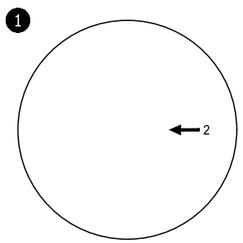
Existing PGE Trip Re-assignment
Weekday AM Peak Hour
Oregon City, OR

Figure
G-1

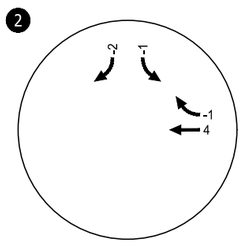
H:\31\31549 - PGE Operations Center\report\figs\31549 Figures.dwg Dec 15, 2025 - 1:46pm - eguo Layout Tab: G-1 AM Reassignment



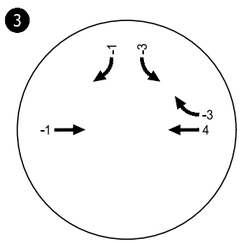
1 OSU Extension West Driveway/ Warner Milne Road



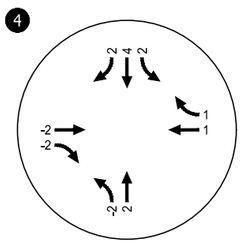
2 OSU Extension East Driveway/ Warner Milne Road



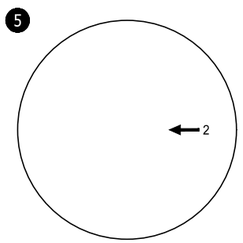
3 Beavercreek Health Clinic Driveway/ Warner Milne Road



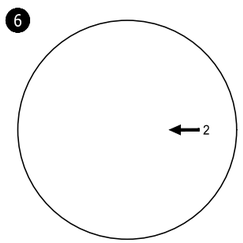
4 Beavercreek Road/ Warner Milne Road



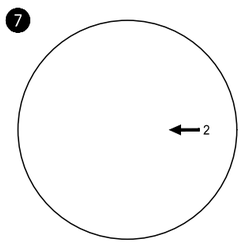
5 A Safe Place Driveway/ Warner Milne Road



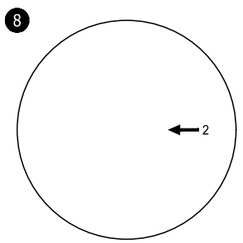
6 Embold Credit Union West Driveway/ Warner Milne Road



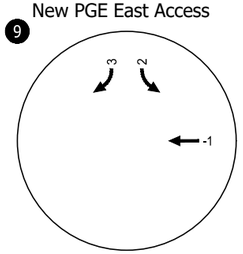
7 Embold Credit Union East Driveway/ Warner Milne Road



8 Willow Springs Apartments Driveway/ Warner Milne Road



9 294 Warner Milne Road Driveway/ Warner Milne Road/ New PGE East Access



Existing PGE Trip Re-assignment
Weekday PM Peak Hour
Oregon City, OR

Figure
G-2

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Appendix H
Year 2029 Total Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	600	1	0	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	600	1	0	425
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	161	0	0	114
Total Analysis Volume [veh/h]	0	0	645	1	0	457
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.24	12.57	0.00	0.00	8.79	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.41		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	OSU Extension East Dwys		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension East Dwys		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	600	0	1	425
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	0.00	0.00	6.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	600	0	1	425
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	161	0	0	114
Total Analysis Volume [veh/h]	0	0	645	0	1	457
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.30	12.57	0.00	0.00	8.79	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.04	0.04
d_A, Approach Delay [s/veh]	16.43		0.00		0.02	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	P Parking Dwys		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	P Parking Dwys		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	1	597	3	5	426
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.00	33.00	0.00	5.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1	597	3	5	426
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	162	1	1	116
Total Analysis Volume [veh/h]	0	1	649	3	5	463
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	20.82	12.64	0.00	0.00	8.82	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.16	0.16	0.00	0.00	0.21	0.21
d_A, Approach Delay [s/veh]	12.64		0.00		0.09	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name	Beavercreek Rd			Ne PG			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	126.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			No			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Ne PG			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	178	10	5	5	20	9	10	222	365	22	244	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	100.00	0.00	100.00	100.00	100.00	100.00	2.00	6.00	0.00	2.00	100.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	4	0	0	0	0	0	88	0	0	0
Total Hourly Volume [veh/h]	178	10	1	5	20	9	10	222	277	22	244	2
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	3	0	1	5	2	3	61	76	6	67	1
Total Analysis Volume [veh/h]	196	11	1	5	22	10	11	244	304	24	268	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	5			5			5			5		
v_di, Inbound Pedestrian Volume crossing m	5			5			5			5		
v_co, Outbound Pedestrian Volume crossing	5			5			5			5		
v_ci, Inbound Pedestrian Volume crossing mi	5			5			5			5		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Flashing Yellow Arrow	No			No			No			No		
Signal Group	8	8	8	0	4	0	5	2	2	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	25	25	25	0	25	0	25	40	40	25	40	0
Amber [s]	3.5	3.5	3.5	0.0	3.5	0.0	4.0	4.0	4.0	4.0	4.0	0.0
All red [s]	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.5	0.5	1.0	0.5	0.0
Walk [s]	7.0	7.0	7.0	0.0	7.0	0.0	0.0	8.0	8.0	0.0	8.0	0.0
Pedestrian Clearance [s]	18.0	18.0	18.0	0.0	18.0	0.0	0.0	14.0	14.0	0.0	14.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead / Lag	Lead	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	5	5	0	5	0	5	10	10	5	10	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	36	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	11.1	11.1	11.1	11.1	17.2	11.1	11.1	17.2	11.7
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.47	0.31	0.31	0.47	0.32
(v / s)_i Volume / Saturation Flow Rate	0.15	0.03	0.02	0.09	0.04	0.13	0.21	0.02	0.14
s, saturation flow rate [veh/h]	1294	393	295	376	266	1870	1481	1096	1867
c, Capacity [veh/h]	446	120	266	115	319	575	456	732	604
d1, Uniform Delay [s]	15.86	10.46	10.90	9.63	5.66	10.05	10.89	5.53	9.76
k, delay calibration	0.11	0.11	0.04	0.04	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	0.36	0.01	0.49	0.04	0.50	1.69	0.02	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.10	0.02	0.28	0.03	0.42	0.67	0.03	0.45
d, Delay for Lane Group [s/veh]	16.54	10.82	10.91	10.11	5.70	10.55	12.58	5.54	10.28
Lane Group LOS	B	B	B	B	A	B	B	A	B
Critical Lane Group	Yes	No	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.46	0.07	0.03	0.16	0.03	1.24	1.78	0.07	1.34
50th-Percentile Queue Length [ft/ln]	36.41	1.69	0.64	4.00	0.82	30.95	44.45	1.66	33.53
95th-Percentile Queue Length [veh/ln]	2.62	0.12	0.05	0.29	0.06	2.23	3.20	0.12	2.41
95th-Percentile Queue Length [ft/ln]	65.55	3.05	1.15	7.19	1.48	55.70	80.02	2.98	60.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.54	10.82	10.82	10.91	10.11	10.11	5.70	10.55	12.58	5.54	10.28	10.28
Movement LOS	B	B	B	B	B	B	A	B	B	A	B	B
d_A, Approach Delay [s/veh]	16.21			10.22			11.56			9.89		
Approach LOS	B			B			B			A		
d_I, Intersection Delay [s/veh]	11.95											
Intersection LOS	B											
Intersection V/C	0.545											

Emissions

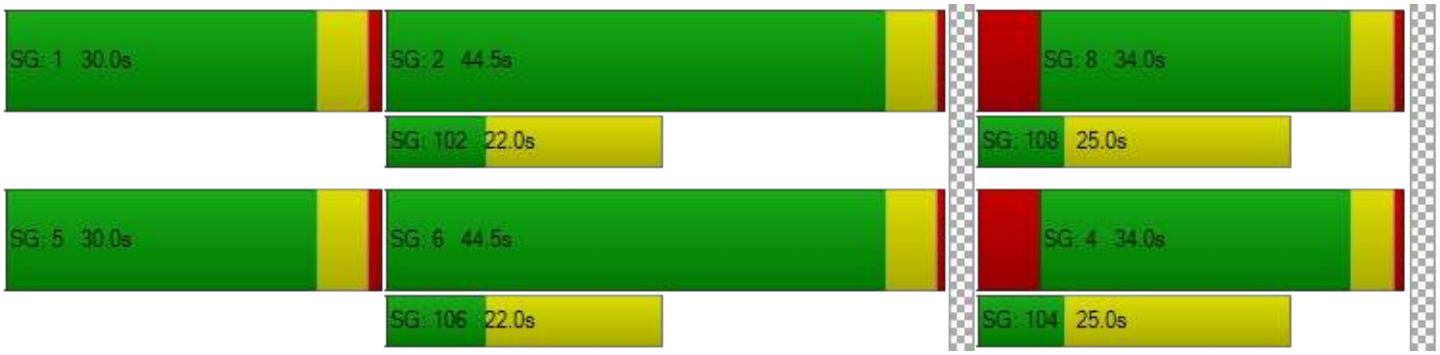
Vehicle Miles Traveled [mph]	10.79	0.66	0.21	1.32	0.52	11.55	14.39	1.44	16.22
Stops [stops/h]	144.12	6.70	2.52	15.82	3.26	122.48	175.94	6.55	132.70
Fuel consumption [US gal/h]	2.16	0.10	0.03	0.21	0.05	1.68	2.34	0.12	1.97
CO [g/h]	150.64	7.13	2.34	14.52	3.65	117.15	163.78	8.57	137.41
NOx [g/h]	29.31	1.39	0.46	2.82	0.71	22.79	31.87	1.67	26.74
VOC [g/h]	34.91	1.65	0.54	3.36	0.85	27.15	37.96	1.99	31.85

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	152.18	0.00	152.18	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	2769.18	2741.63	2080.11	2885.70
d_p, Pedestrian Delay [s]	8.17	8.17	8.85	8.85
l_p,int, Pedestrian LOS Score for Intersectio	2.146	1.907	2.753	2.070
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1374	1374	2199	2199
d_b, Bicycle Delay [s]	1.78	1.78	0.18	0.18
l_b,int, Bicycle LOS Score for Intersection	1.909	1.621	2.627	2.045
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	0	224	8	10	267
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	224	8	10	267
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	60	2	3	71
Total Analysis Volume [veh/h]	1	0	238	9	11	284
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.28	9.51	0.00	0.00	7.72	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.15	0.15	0.00	0.00	0.46	0.46
d_A, Approach Delay [s/veh]	12.28		0.00		0.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Embold Credit Union West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Embold Credit Union West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	221	3	3	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	221	3	3	278
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	59	1	1	75
Total Analysis Volume [veh/h]	0	0	238	3	3	299
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.17	9.48	0.00	0.00	7.70	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.13	0.13
d_A, Approach Delay [s/veh]	10.82		0.00		0.08	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.04					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Embold Credit Union East Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Embold Credit Union East Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	3	5	221	0	2	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	3.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	5	221	0	2	278
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	59	0	1	74
Total Analysis Volume [veh/h]	3	5	235	0	2	296
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.14	9.52	0.00	0.00	7.68	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.92	0.92	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	10.50		0.00		0.05	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.18					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Willow Springs Apts Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Willow Springs Apts Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	10	225	1	8	279
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	10	225	1	8	279
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	59	0	2	73
Total Analysis Volume [veh/h]	1	11	237	1	8	294
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.31	9.54	0.00	0.00	7.69	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.19	1.19	0.00	0.00	0.33	0.33
d_A, Approach Delay [s/veh]	9.77		0.00		0.20	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Business Driveway			Hu St			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Business Driveway			Hu St			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	2	0	0	7	0	4	5	227	4	2	281	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	0	7	0	4	5	227	4	2	281	7
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	2	0	1	1	61	1	1	76	2
Total Analysis Volume [veh/h]	2	0	0	8	0	4	5	244	4	2	302	8
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.38	13.39	9.55	13.45	13.50	10.05	7.86	0.00	0.00	7.71	0.00	0.00
Movement LOS	B	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.07	0.07	0.07	0.01	0.01	0.01	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.35	0.35	0.35	1.83	1.83	1.83	0.21	0.21	0.21	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	13.38			12.31			0.16			0.05		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	0.40											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 1: OSU Extension West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	601	1	0	844
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	601	1	0	844
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	165	0	0	232
Total Analysis Volume [veh/h]	0	0	660	1	0	927
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane	No					
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	34.98	12.72	0.00	0.00	8.84	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	23.85		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 2: PGE West Driveway/OSU Extension East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	35.2
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	OSU Extension East Dwys		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	OSU Extension East Dwys		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	11	601	0	0	842
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	0.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	11	601	0	0	842
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	165	0	0	231
Total Analysis Volume [veh/h]	1	12	660	0	0	925
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	35.21	13.05	0.00	0.00	8.84	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.64	2.64	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.75		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.12					
Intersection LOS	E					

Intersection Level Of Service Report

Intersection 3: PGE East Driveway/Beavercreek Health Clinic Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	36.3
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	P Parking Dwys		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	P Parking Dwys		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	3	4	613	0	2	839
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	0.00	50.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	4	613	0	2	839
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	168	0	1	230
Total Analysis Volume [veh/h]	3	4	674	0	2	922
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	36.32	13.48	0.00	0.00	9.95	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.65	2.65	0.00	0.00	0.08	0.08
d_A, Approach Delay [s/veh]	23.27		0.00		0.02	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 4: Beavercreek Road/Warner Milne Road

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	Beavercreek Rd			Ne PG			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	126.00	150.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			No			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Ne PG			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	456	3	34	3	7	4	1	278	338	12	382	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	100.00	100.00	100.00	100.00	0.00	4.00	0.00	1.00	100.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	15	0	0	0	0	0	129	0	0	0
Total Hourly Volume [veh/h]	456	3	19	3	7	4	1	278	209	12	382	1
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	1	5	1	2	1	0	76	57	3	105	0
Total Analysis Volume [veh/h]	501	3	21	3	8	4	1	305	230	13	420	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	5			5			5			5		
v_di, Inbound Pedestrian Volume crossing m	5			5			5			5		
v_co, Outbound Pedestrian Volume crossing	6			7			5			6		
v_ci, Inbound Pedestrian Volume crossing mi	5			6			6			7		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			0			102			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Active Pattern	Free Running (No Pattern)
Coordination Type	*Free Running*
Actuation Type	*Fully actuated*
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing (Basic)

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Flashing Yellow Arrow	No			No			No			No		
Signal Group	8	8	8	0	4	0	5	2	2	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	25	25	25	0	25	0	25	40	40	25	40	0
Amber [s]	3.5	3.5	3.5	0.0	3.5	0.0	4.0	4.0	4.0	4.0	4.0	0.0
All red [s]	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.5	0.5	1.0	0.5	0.0
Walk [s]	7.0	7.0	7.0	0.0	7.0	0.0	0.0	8.0	8.0	0.0	8.0	0.0
Pedestrian Clearance [s]	18.0	18.0	18.0	0.0	18.0	0.0	0.0	14.0	14.0	0.0	14.0	0.0
Delayed Vehicle Green [s]	5.0	5.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lead / Lag	Lead	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	5	5	0	5	0	5	10	10	5	10	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Calculated Cycle Length [s]	51	51	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	23.2	23.2	23.2	23.2	19.8	14.0	14.0	19.8	14.8
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.39	0.27	0.27	0.39	0.29
(v / s)_i Volume / Saturation Flow Rate	0.36	0.02	0.01	0.03	0.00	0.16	0.18	0.01	0.22
s, saturation flow rate [veh/h]	1388	1598	293	375	233	1900	1291	1063	1884
c, Capacity [veh/h]	697	726	260	170	204	522	355	504	547
d1, Uniform Delay [s]	18.20	9.92	9.04	7.87	10.94	16.02	15.77	10.41	16.60
k, delay calibration	0.25	0.11	0.04	0.04	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.24	0.02	0.01	0.06	0.01	1.04	2.00	0.02	2.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.03	0.01	0.07	0.00	0.58	0.65	0.03	0.77
d, Delay for Lane Group [s/veh]	21.45	9.94	9.05	7.93	10.95	17.06	17.76	10.43	18.93
Lane Group LOS	C	A	A	A	B	B	B	B	B
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.11	0.15	0.02	0.06	0.01	2.84	2.19	0.08	4.25
50th-Percentile Queue Length [ft/ln]	152.72	3.70	0.43	1.58	0.16	70.96	54.78	2.01	106.19
95th-Percentile Queue Length [veh/ln]	10.16	0.27	0.03	0.11	0.01	5.11	3.94	0.14	7.63
95th-Percentile Queue Length [ft/ln]	254.06	6.67	0.77	2.84	0.29	127.73	98.61	3.61	190.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.45	9.94	9.94	9.05	7.93	7.93	10.95	17.06	17.76	10.43	18.93	18.93
Movement LOS	C	A	A	A	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	20.92			8.16			17.35			18.68		
Approach LOS	C			A			B			B		
d_I, Intersection Delay [s/veh]	18.88											
Intersection LOS	B											
Intersection V/C	0.767											

Emissions

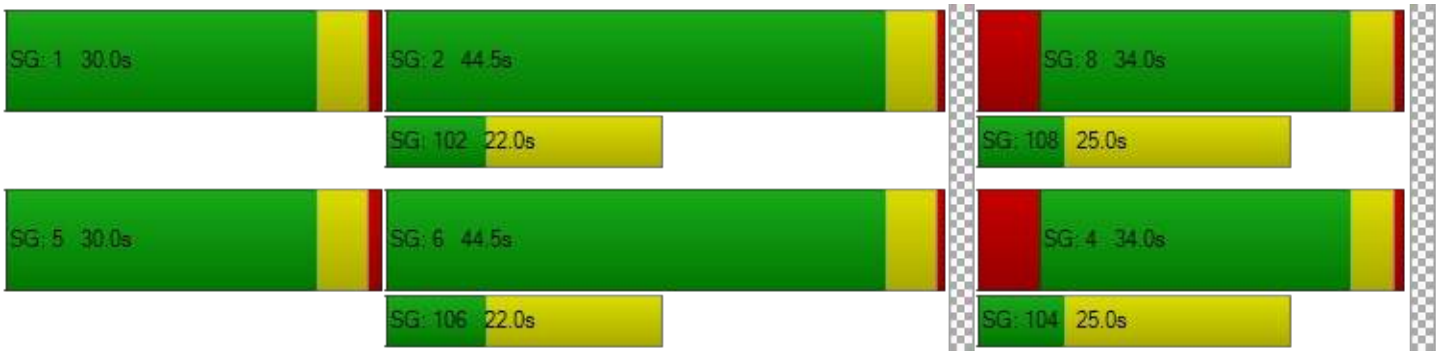
Vehicle Miles Traveled [mph]	27.58	1.32	0.12	0.50	0.05	14.44	10.89	0.78	25.29
Stops [stops/h]	431.25	10.46	1.21	4.46	0.46	200.38	154.69	5.67	299.84
Fuel consumption [US gal/h]	6.48	0.18	0.02	0.06	0.01	2.76	2.13	0.09	4.32
CO [g/h]	453.06	12.41	1.21	4.50	0.47	192.97	149.20	6.36	301.95
NOx [g/h]	88.15	2.41	0.24	0.88	0.09	37.55	29.03	1.24	58.75
VOC [g/h]	105.00	2.88	0.28	1.04	0.11	44.72	34.58	1.47	69.98

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	140.01	0.00	140.89	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1773.91	1507.84	806.81	1999.52
d_p, Pedestrian Delay [s]	14.91	14.91	15.68	15.68
l_p,int, Pedestrian LOS Score for Intersectio	2.282	1.913	3.383	2.165
Crosswalk LOS	B	A	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	980	980	1569	1569
d_b, Bicycle Delay [s]	6.63	6.63	1.25	1.19
l_b,int, Bicycle LOS Score for Intersection	2.451	1.584	2.657	2.276
Bicycle LOS	B	A	B	B

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: A Safe Place Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	A Safe Place Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	2	8	313	1	1	393
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	313	1	1	393
Peak Hour Factor	0.8600	0.8600	0.8600	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	91	0	0	114
Total Analysis Volume [veh/h]	2	9	364	1	1	457
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.54	10.37	0.00	0.00	7.99	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.45	1.45	0.00	0.00	0.04	0.04
d_A, Approach Delay [s/veh]	11.31		0.00		0.02	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.16					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 6: Embold Credit Union West Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	8.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Embold Credit Union West Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Embold Credit Union West Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	0	0	312	9	14	394
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	312	9	14	394
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	89	3	4	112
Total Analysis Volume [veh/h]	0	0	355	10	16	448
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.84	10.23	0.00	0.00	8.01	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.67	0.67
d_A, Approach Delay [s/veh]	13.03		0.00		0.28	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.15					
Intersection LOS	A					

Intersection Level Of Service Report

Intersection 7: Embold Credit Union East Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Embold Credit Union East Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Embold Credit Union East Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	8	19	312	0	0	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	19	312	0	0	399
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	88	0	0	112
Total Analysis Volume [veh/h]	9	21	351	0	0	448
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.46	10.55	0.00	0.00	7.95	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.38	4.38	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.03		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 8: Willow Springs Apartment Driveway/Warner Milne Road

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Willow Springs Apts Dwy		Warner Milne Rd		Warner Milne Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Willow Springs Apts Dwy		Warner Milne Rd		Warner Milne Rd	
Base Volume Input [veh/h]	1	4	327	4	9	398
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	25.00	0.00	0.00	0.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	4	327	4	9	398
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	91	1	3	111
Total Analysis Volume [veh/h]	1	4	363	4	10	442
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	15.64	10.76	0.00	0.00	8.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.70	0.70	0.00	0.00	0.42	0.42
d_A, Approach Delay [s/veh]	11.74		0.00		0.18	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 9: 294 Warner Milne Road Driveway/Warner Milne Road/New PGE East Access

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Business Driveway			Hu St			Warner Milne Rd			Warner Milne Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Business Driveway			Hu St			Warner Milne Rd			Warner Milne Rd		
Base Volume Input [veh/h]	2	0	1	3	0	4	0	331	0	2	402	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	0	1	3	0	4	0	331	0	2	402	0
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	0	1	0	1	0	92	0	1	112	0
Total Analysis Volume [veh/h]	2	0	1	3	0	4	0	368	0	2	447	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.36	16.63	10.36	17.34	16.69	10.99	8.20	0.00	0.00	8.00	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.63	0.63	0.63	1.27	1.27	1.27	0.00	0.00	0.00	0.08	0.08	0.08
d_A, Approach Delay [s/veh]	15.03			13.71			0.00			0.04		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.19											
Intersection LOS	C											

625 Center Street
Oregon City, OR 97045
503-657-0891

CITY OF OREGON CITY

Staff Report

To:	Planning Commission	**Agenda Date:**	April 27, 2026
From:	Jude Thaddaeus, Planner		

SUBJECT:
GLUA-26-002 / SP-26-003 / VAR-26-001 / VAR-26-002 / VAR-26-003: John McLoughlin Elementary School Modular Structures

STAFF RECOMMENDATION:
Based on the findings in this report, staff recommend that the Planning Commission approve with conditions the three requested Major Variances for the John McLoughlin Elementary School modular structure project.

EXECUTIVE SUMMARY:
Oregon City School District is proposing temporary modular buildings on the John McLoughlin Elementary School Campus in order to facilitate building and site renovations to the existing school building, set to begin in Summer 2026. The proposed temporary buildings include four classroom buildings, one library building, and one restroom building. The proposed classroom and library buildings will be approximately 1,800 square feet for each building, and the restroom building will be approximately 500 square feet. The proposed temporary modulars will be placed between the primary building and the right-of-way on South End Road, in the front yard setback of the base R-10 Low-Density Residential District. At least two of the buildings are proposed to use T1-11 siding, and all are to remain on the site throughout the entire construction period, exceeding the City's requirement for temporary buildings (7 days). The location of these buildings in the front yard setback, the use of T1-11 siding on buildings visible from the right of way, and their proposed duration on the site exceeding the 7-day limitation on temporary structures over 800 square feet each require a Major Variance review by the Planning Commission.

BACKGROUND:
John McLoughlin Elementary School is located at 19230 South End Road within the Hazel Grove/Westling Farm Neighborhood Association area. The site consists of a single tax lot 31E12AC 04500 and is approximately 11.77 acres in size. The property was annexed to the City under Proposal No. 2682, which passed in November 1989. The site is zoned R-10 Low Density Residential District and is developed with a pre-existing single-story elementary school approximately 66,000 square feet in floor area. The main school building is located in the western half of the site, fronting South End Road. The main parking lot and bus drop-off loop is located on the southern side of the building. The site has a total of 76 parking spaces, including four accessible spaces. Hardscape and softscape play areas are located on the north and south sides of the main school building. Athletic fields are located to the east of the building. The properties to the north and west are zoned R-8 Single-Family

Dwelling District. The properties to the east are zoned R-10 Low-Density Residential District. The properties to the south are located in the county and are zoned FU-10. The site is abutted by single-family homes on all sides. A small portion of the lot located well outside the development area is impacted by the Natural Resource Overlay District buffer due to the presence of an unnamed stream located just offsite to the south that acts as a tributary to the Beaver Creek watershed. A Conditional Use review for this property was completed in 2013 under file # CU-13-0003.

NEXT STEPS:

Provide direction to staff on the Staff Report findings and recommended Conditions of Approval and render a decision based on the approval criteria in the Oregon City Municpal Code that are relevant to the request.

OPTIONS:

1. Approve GLUA-26-00002 / SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003 with the recommended findings and conditions of approval.
2. Approve GLUA-26-00002 / SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003 - in whole or in part - with revised findings and conditions of approval.
3. Deny GLUA-26-00002 / SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003 - in whole or in part - and provide further direction to staff and/or the applicant.
4. Continue the hearing for GLUA-26-00002 / SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003 - in whole or in part - to a date certain of and keep the record open until then.

OREGON CITY

Community Development – Planning

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

TYPE III STAFF RECOMMENDATION
Date

FILE NUMBER: GLUA-26-00002 / SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003

APPLICANT: Mercedes Serra
3J Consulting
9600 SW Nimbus Ave Ste 100
Beaverton, OR 97008

OWNER: Oregon City School District
14551 Meyers Rd
Oregon City, OR 97045

Submitted: 1/27/2026
Paid: 1/28/2026
Complete: 2/27/2026
Hearing Date: 4/27/2026
120 Day Deadline: 6/27/2026

REQUEST: Type II Minor Site Plan & Design Review with 3 Variances for the placement of modular classroom, library, and restroom buildings with T1-11 siding, in the front setback of the R-10 zone, as temporary structures.

LOCATION: 19230 South End Rd
Oregon City, OR 97045
Map and Taxlot Number: 3-1E-12AC-04500

REVIEWER: Jude Thaddaeus | Planner

ZONING: R-10 Low-Density Residential District
Natural Resource Overlay District

RECOMMENDATION: Approval with Conditions

PROCESS: Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. Applications evaluated through this process include conditional use permits. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission hearing is published and mailed to the applicant, recognized neighborhood association and property owners within three hundred feet of the subject property. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission, all issues are addressed. The decision is final unless appealed and description of the requirements for perfecting an appeal. The decision of the planning commission is appealable to the city commission within fourteen days of the issuance of the final decision. The city commission hearing on appeal is on the record and no new evidence shall be allowed. Only those persons or a city-recognized neighborhood association who have participated either orally or in writing have standing to appeal

the decision of the planning commission. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. The city commission decision on appeal from the planning commission is the city's final decision and is appealable to the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

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RECOMMENDATION: 35

EXHIBITS: 35

CONDITIONS OF APPROVAL

Planning Files SP-26-00003 / VAR-26-00001 / VAR-26-00002 / VAR-26-00003

(P) = Verify that condition of approval has been met with the Planning Division.
(DS) = Verify that condition of approval has been met with the Development Services Division.
(B) = Verify that condition of approval has been met with the Building Division.

1. The applicant shall apply for all required Building and Public Works permits related to site modifications for this project. (B/DS)

2. All front yard fencing modifications shall comply with the Conditions of Approval under GLUA-21-00008 / SP-21-00019 / VAR-21-00001. (P)

3. The temporary structures shall be removed from the site no later than August 31, 2028 or, if construction proceeds to where the structures are no longer needed prior to that date, they

shall be removed from the site at the earliest practicable opportunity after occupancy of the renovated school building is granted. (P)

4. For grading and erosion control measures, the applicant shall apply for all relevant permits and observe the tree protection measures in OCMC 17.41.130 before and during construction. (P)

BACKGROUND:

Existing Conditions – *taken in part from the applicant's narrative*
John McLoughlin Elementary School is located at 19230 South End Road within the City of Oregon City. The site consists of a single tax lot 31E12AC 04500 and is approximately 11.77 acres in size. The site is zoned Low Density Residential R-10. The existing single-story elementary school is approximately 66,000 square feet in floor area. The main school building is located on the western boundary of the site, fronting South End Road. The main parking lot and bus drop-off loop is located on the southern side of the building. The site has a total of 76 parking spaces, including four accessible spaces. Hardscape and softscape play areas are located on the north and south sides of the main school building. Athletic fields are located to the east of the building. The properties to the north and west are zoned R-8 Single-Family Dwelling District. The properties to the east are zoned R-10 Low-Density Residential District. The properties to the south are located in the county and are zoned FU-10. The site is abutted by single-family homes on all sides.

Figure 1. Vicinity Map

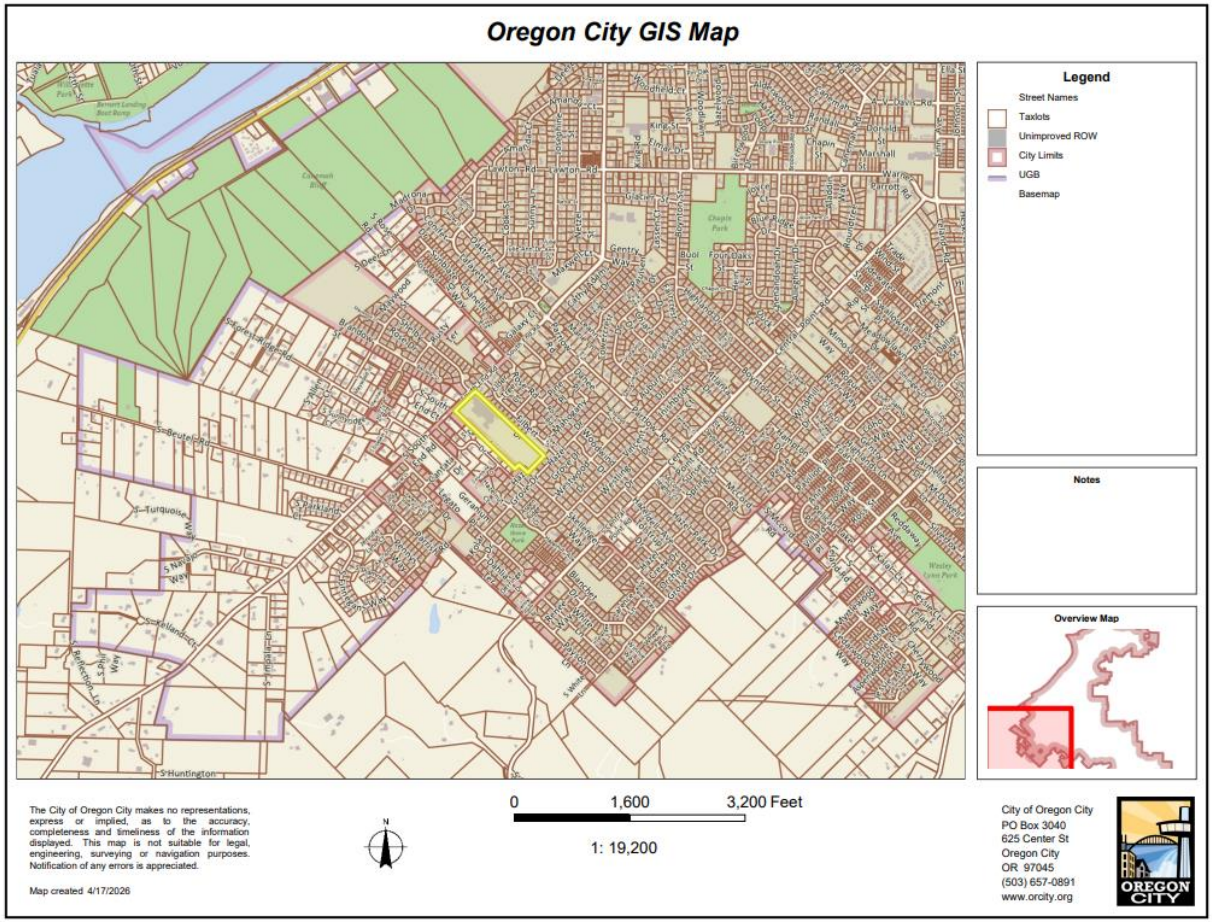
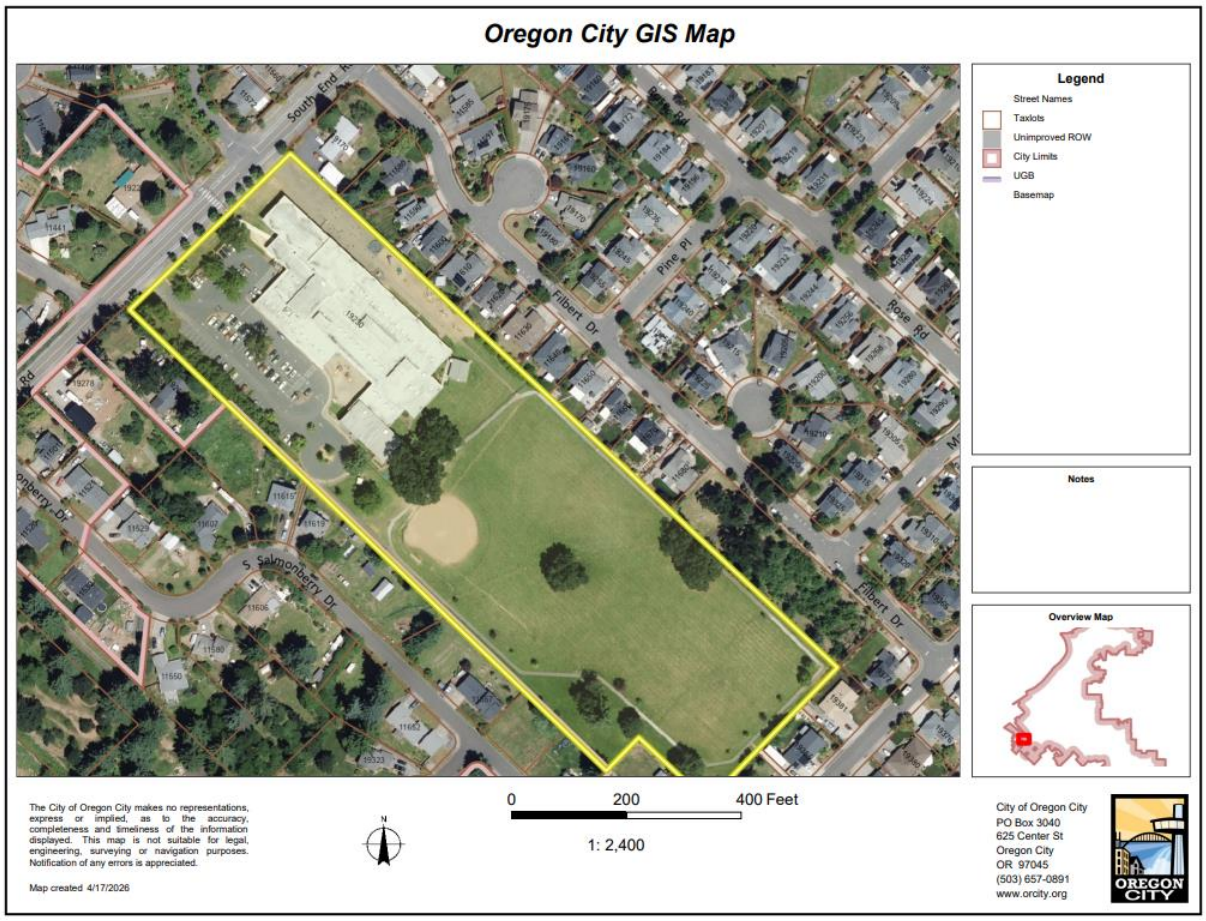


Figure 2: Existing Conditions – Aerial Image



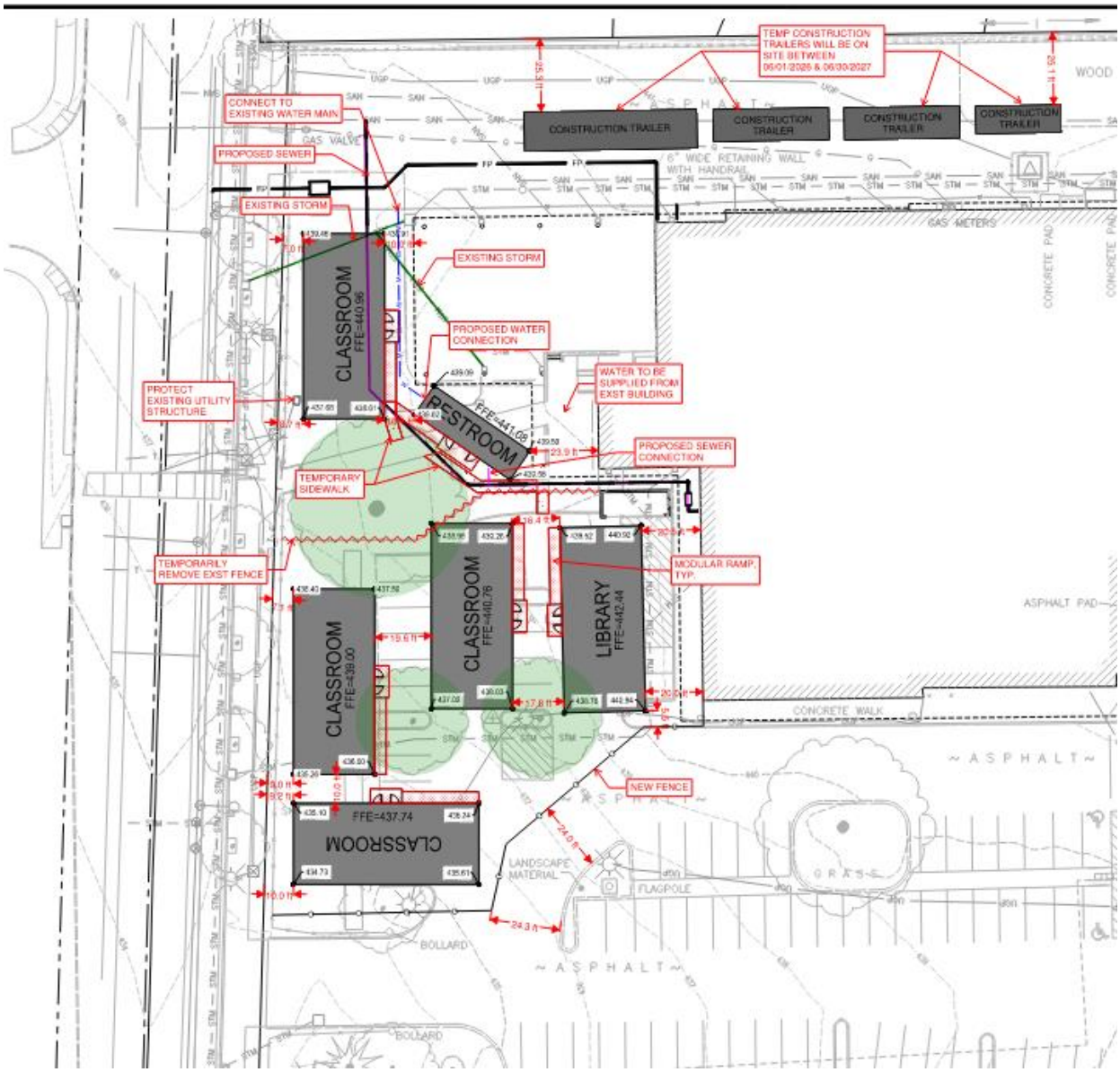
A small portion of the lot located well outside the development area is impacted by the Natural Resource Overlay District buffer due to the presence of an unnamed stream located just offsite to the south that acts as a tributary to the Beaver Creek watershed.

Project Description – *taken in part from the applicant's narrative*
The Oregon City School District (hereby "The District") is proposing four temporary modular classroom buildings, one modular library, and a modular restroom building a at John McLoughlin Elementary School and seeks approval of a Type II Minor Site Plan and Design Review application and three Type III Variances. This narrative describes the proposed development and demonstrates compliance with the relevant approval standards of the Oregon City Municipal Code Title 17 ("OCMC").

Because this Minor Site Plan and Design Review application is being submitted with three Major Variance applications, the District has elected that the applications be reviewed as a consolidated application through the Type III process, where the Oregon City Planning Commission will render a decision after a public hearing on the application is held.

The District is proposing temporary modular buildings on the John McLoughlin Elementary School Campus in order to facilitate building and site renovations to the existing school building. The proposed temporary buildings include four classroom buildings, one library building, and one

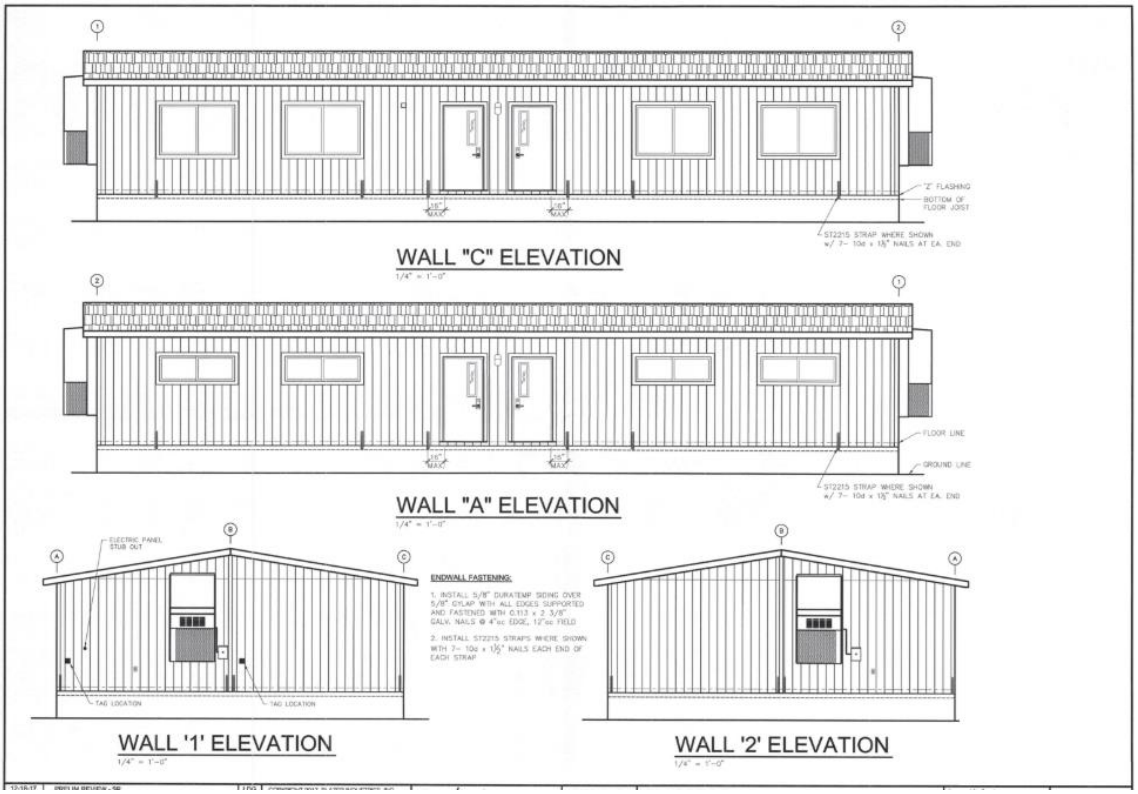
Figure 3: Proposed Site Plan



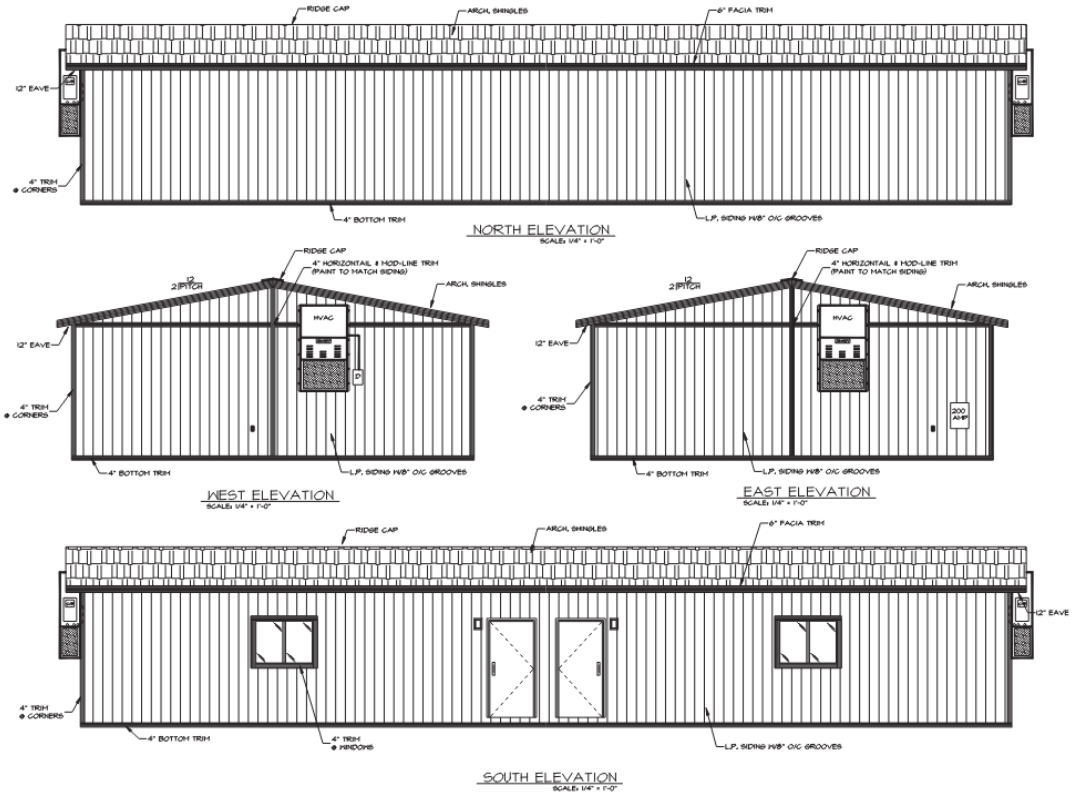
restroom building. The proposed classroom and library buildings will be approximately 1,800 square feet for each building, and the restroom building will be approximately 500 square feet. The proposed temporary modulars will be placed near the existing elementary school between the primary building and the right-of-way on South End Road. The buildings are proposed to remain on the site throughout the entire construction period, exceeding the City's requirement for temporary buildings (7 days), requiring a variance. Additional variances have been requested for the proposed building materials, and the location of the buildings in the front yard setback.

Permits and Approvals: The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

Figure 4: Proposed Building Elevations: Classrooms & Library



Firgure 5: Proposed Building Elevations: Restrooms



Public Comment
No public comments have been received by Planning Staff at the time of this writing. Any comments that are submitted to Planning by 4:00pm on Monday April 27, 2026 will be distributed to members of the Planning Commission and added to the public record.

ANALYSIS & FINDINGS:

Municipal Code Standards and Requirements: The following sections of the Oregon City Municipal Code are applicable to this land use approval:

CHAPTER 17.08: LOW-DENSITY RESIDENTIAL DISTRICTS

17.08.010 - Designated.
The R-10, R-8 and R-6 residential districts are designed for low density residential development.

Finding: Applicable. The subject site is zoned R-10 Low-Density Residential District.

17.08.025 - Conditional uses.
The following uses are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.56:
A. Golf courses, except miniature golf courses, driving ranges or similar commercial enterprises;
B. Bed and breakfast inns/boarding houses;
C. Cemeteries, crematories, mausoleums and columbariums;
D. Child care centers and nursery schools;
E. Emergency service facilities (police and fire), excluding correctional facilities;
F. Residential care facilities;
G. Private and/or public educational or training facilities;
H. Public utilities, including sub-stations (such as buildings, plants and other structures);
I. Religious institutions;
J. Assisted living facilities; nursing homes and group homes for over fifteen patients;

Finding: Applicable. The land use on the subject site is a public elementary school. All revisions to the site under consideration for this review are to support the same conditional use. A Conditional Use permit for the subject site was issued in 2013 under CU-13-0003. See the findings in 17.56.

17.08.040 - Dimensional standards.
Dimensional standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.040

Standard	***R-10***
Minimum lot size *Single-family detached, Duplex & Triplex* *Quadplex and Cottage cluster*	 *10,000 sq. ft.* *10,000 sq. ft.*
Finding: Not appliable. No new lots proposed.	
Maximum height: All	*35 ft.*

Finding: Complies as Proposed. Tallest structure proposed: 12 feet	
Maximum building lot coverage, All	*40%*
Finding: Complies as Proposed. Lot coverage proposed: Less than 15%	
Minimum lot width, All	*65 ft.*
Finding: Not appliable. No new lots proposed.	
Minimum lot depth, All	*80 ft.*
Finding: Not appliable. No new lots proposed.	
Minimum front yard setback, All, except	*20 ft.*
Finding: Complies with Condition. Smallest setback proposed: 7 feet	
Minimum interior side yard setback, All	*8 ft.*
Finding: Complies as Proposed. Smallest side setback proposed: 25ft	
Minimum corner side yard setback	*10 ft.*
Finding: Complies as Proposed. Not applicable. Not a corner lot.	
Minimum rear yard setback, All	*20 ft.*
Finding: Complies as Proposed. No change over existing	
Garage setbacks	*20 ft. from ROW*
Finding: Not applicable. No garage onsite.	

17.08.045 - Exceptions to setbacks.
A. *Projections from buildings. Ordinary building projections such as cornices, eaves, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features may project into the required yards up to twenty-four inches.*

Finding: Complies as Proposed.

B. Through lot setbacks. Through lots having a frontage on two streets shall provide the required front yard on each street. The required rear yard is not necessary.

Finding: Not applicable. Not a through lot.

17.08.050 - Density standards.
A. Density standards in the R-10, R-8 and R-6 districts are as follows:

Finding: Not applicable. No dwelling units are proposed.

CHAPTER 17.41: TREE PROTECTION, PRESERVATION, REMOVAL & REPLANTING STANDARDS

17.41.020 - Tree protection—Applicability.
A. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.

Finding: Applicable. This application includes a Site Plan & Design Review and is not exempted from the government-owned property provisions for temporary structures in OCMC 17.62.050.I.

17.41.030 - Tree protection—Conflicting code provisions.
Except as otherwise specified in this section, where these standards conflict with adopted city development codes or policies, the provision which provides the greater protection for regulated trees or groves, as defined in OCMC 17.04, shall govern.

Finding: Applicable.

17.41.040 - Exemptions.
These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the natural resource overlay district (NROD) of OCMC 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930, for farm or forestlands. These regulations to not apply to the removal of trees that are considered invasive species. An applicant for development may claim exemption from compliance with these standards if the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The Community Development Director has the authority to modify or waive compliance in this case.

Finding: Complies as proposed. The applicant is proposing to prune and maintain the existing private property trees in compliance with this section.

17.41.050 - Compliance options.
Applicants for review shall comply with these requirements through one or a combination of the following procedures:
A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to OCMC 17.41.060.
B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to OCMC 17.41.080; or
C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to OCMC 17.41.110; or
D. Option 4—Cash-in-lieu of planting pursuant to OCMC 17.41.120.

Finding: Not applicable. The applicant is not proposing to remove existing trees on the subject site.

17.41.130 - Regulated tree protection procedures during construction.

A. No permit for any grading or construction of public or private improvements may be released prior to verification by the Community Development Director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the Community Development Director.

B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:

1. Except as otherwise determined by the Community Development Director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including, but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

2. Approved construction fencing, a minimum of four feet tall with steel posts placed no farther than ten feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative may be used with the approval of the Community Development Director.

3. Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the Community Development Director.

4. No construction activity shall occur within the tree protection zone, including, but not limited to; dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

5. The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

6. No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on site and approved by the Community Development Director.

7. No machinery repair or cleaning shall be performed within ten feet of the dripline of any trees identified for protection.

8. Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the Community Development Director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.

9. The Community Development Director may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.

10. The Community Development Director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection.

Finding: Complies with condition. The applicant has retained the services of Teragan & Associates arboricultural consultants to produce a Tree Protection and Mitigation Plan that meets these requirements. However, for grading and erosion control measures, the applicant shall apply for all relevant permits and observe OCMC 17.41.130 before and during construction. **See conditions of approval.**

CHAPTER 17.49: NATURAL RESOURCE OVERLAY DISTRICT

17.49.040 - NROD permit and review process.
An NROD permit is required for those uses regulated under OCMC 17.49.090, Uses Allowed under Prescribed Conditions. An NROD permit shall be processed under the Type II development permit procedure unless an adjustment of standards pursuant to OCMC 17.49.200 is requested or the application is being processed in conjunction with a concurrent application or action requiring a Type III or Type IV development permit.

Finding: Not applicable. No work is proposed to be done in the NROD buffer area on the subject site.

17.49.060 - Consistency and relationship to other regulations.
A. Where the provisions of the NROD are less restrictive or conflict with comparable provisions of the OCMC, other City requirements, regional, state or federal law, the provisions that provides the greater protection of the resource shall govern.

Finding: Applicable.

17.49.070 - Prohibited uses.
The following development and activities are not allowed within the NROD:
A. Any new gardens, lawns, structures, development, other than those allowed outright (exempted) by the NROD or that is part of a regulated use that is approved under prescribed conditions. Note: Gardens and lawns within the NROD that existed prior to the time the overlay district was applied to a subject property are allowed to continue but cannot expand further into the overlay district.
B. New lots that would have their buildable areas for new development within the NROD are prohibited.
C. The dumping of materials of any kind is prohibited except for placement of fill as provided in subsection D. below. The outside storage of materials of any kind is prohibited unless they existed before the overlay district was applied to a subject property. Uncontained areas of hazardous materials as defined by the Oregon Department of Environmental Quality (ORS 466.005) are also prohibited.
D. Grading, the placement of fill in amounts greater than ten cubic yards, or any other activity that results in the removal of more than ten percent of the existing native vegetation on any lot within the NROD is prohibited, unless part of an approved development activity.

Finding: Not applicable. No such work is proposed in the NROD buffer area on the subject site.

17.49.080 - Uses allowed outright (exempted).
The following uses are allowed within the NROD and do not require the issuance of an NROD permit:

H. Site plan and design review applications where all new construction is located outside of the NROD boundary shown on the City's adopted NROD map, and the NROD area is protected by a conservation easement approved in form by the City.

Finding: Applicable. All proposed work is to be done fully outside the NROD buffer on the subject site.

CHAPTER 17.50: ADMINISTRATION & PROCEDURES

17.50.010 Purpose.
This chapter provides the procedures by which Oregon City reviews and decides upon applications for all
permits relating to the use of land authorized by ORS 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City Comprehensive Plan and Titles 16 and 17 of this code. Pursuant to ORS 227.175, any applicant may elect to consolidate applications for two or more related permits needed for a single development project. Any grading activity associated with development shall be subject to preliminary review as part of the review process for the underlying development. It is the express policy of the City of Oregon City that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

17.50.030 Summary of the City's decision-making processes.
The following decision-making processes chart shall control the City's review of the indicated permits:

Table 17.50.030 – Permit Approval Process

Permit Type	***I***	***II***	***III***	***IV***	***Expedited Land Division***
Site plan and design review	*X*	*X*			
Variance		*X*	*X*		

B. Type II decisions involve the exercise of limited interpretation and discretion in evaluating approval criteria, similar to the limited land use decision-making process under state law. Applications evaluated through this process are assumed to be allowable in the underlying zone, and the inquiry typically focuses on what form the use will take or how it will look. Notice of application and an invitation to comment is mailed to the applicant, recognized active neighborhood association(s) and property owners within three hundred feet. The Community Development Director accepts comments for a minimum of fourteen days and renders a decision. The Community Development Director's decision is appealable to the City Commission, by any party who submitted comments in writing before the expiration of the comment period. Review by the City Commission shall be on the record pursuant to OCMC 17.50.190 under ORS 197.195(5). The City Commission decision is the City's final decision and is subject to review by the land use board of appeals (LUBA) within twenty-one days of when it becomes final.

C. Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the City Commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the Planning Commission or the Historic Review Board hearing is published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice shall be issued at least twenty days pre-hearing, and the staff report shall be available at least seven days pre-hearing. At the evidentiary hearing held before the Planning Commission or the Historic Review Board, all issues are addressed. The decision of the Planning Commission or Historic Review Board is appealable to the City Commission, on the record pursuant to OCMC 17.50.190. The City Commission decision on appeal from is the City's final decision and is subject to review by LUBA within twenty-one days of when it becomes final, unless otherwise provided by state law.

Finding: Applicable. The Site Plan & Design Review criteria not subject to Variances are reviewed through a Type II process, while the Variances themselves are subject to a Type III process.

17.50.040 Development review in overlay districts and for erosion control.
For any development subject to regulation of geologic hazards overlay district under OCMC 17.44; natural resource overlay district under OCMC 17.49; Willamette River Greenway Overlay District under OCMC 17.48; historic overlay district under OCMC 17.40, and construction site runoff controls under OCMC 17.47, compliance with the requirements of these chapters shall be reviewed as part of the review process required for the underlying development for the site.

Finding: Not applicable. No development is proposed in overlay districts. No development requiring construction site runoff controls is proposed.

17.50.050 – Pre-application conference.
A. Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.
1. To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.
2. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.
3. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.
B. A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have

not been significantly amended. In no case shall a pre-application conference be valid for more than one year.
C. Notwithstanding any representations by City staff at a pre-application conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

Finding: Complies as proposed. The applicant attended a pre-application conference in compliance with this section on 1/13/2026.

17.50.055 - Neighborhood association meeting.
Neighborhood Association Meeting. The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.
A. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.
B. The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the citizen involvement committee.
C. A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, citizen involvement committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a city facility.
D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the citizen involvement committee.
E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.

Finding: Complies as proposed. The applicant presented at the Hazel Grove/Westling Farm Neighborhood Association Meeting on 1/8/2026 in compliance with this section.

17.50.060 Application requirements.
A permit application may only be initiated by the record property owner or contract purchaser, the City Commission or Planning Commission. If there is more than one record owner, then the City will

not complete a Type II—IV application without signed authorization from all record owners. All permit applications shall be submitted on the form provided by the City, along with the appropriate fee and all necessary supporting documentation and information, sufficient to demonstrate compliance with all applicable approval criteria. The applicant has the burden of demonstrating, with evidence, that all applicable approval criteria are, or can be, met.

Finding: Complies as proposed.

17.50.070 Completeness review and one hundred twenty-day rule.

A. Upon submission, the Community Development Director shall date stamp the application form and verify that all of the appropriate application review fee(s) have been submitted. Upon receipt of all review fees and an application form, the Community Development Director will then review the application and all information submitted with it and evaluate whether the application is complete enough to process. Within thirty days of receipt of the application and all applicable review fees, the Community Development Director shall complete this initial review and issue to the applicant a written statement indicating whether the application is complete enough to process, and if not, what information shall be submitted to make the application complete.

B. The applicant has one hundred eighty days from the date the application was made to submit the missing information or the application shall be rejected and the unused portion of the application fee returned to the applicant. If the applicant submits the requested information within the one hundred eighty-day period, the Community Development Director shall again verify whether the application, as augmented, is complete. Each such review and verification shall follow the procedure in subsection A of this section.

The application will be deemed complete for the purpose of this section upon receipt by the Community Development Director of:

1. All the missing information;

2. Some of the missing information and written notice from the applicant that no other information will be provided; or

3. Written notice from the applicant that none of the missing information will be provided.

C. Once the Community Development Director determines the application is complete enough to process, or the applicant refuses to submit any more information, the City shall declare the application complete. Pursuant to ORS 227.178, the City will reach a final decision on an application within one hundred twenty calendar days from the date that the application is determined to be or deemed complete unless the applicant agrees to suspend the one hundred twenty-calendar-day timeline or unless state law provides otherwise. The one hundred twenty-day period, however, does not apply in the following situations:

1. Any hearing continuance or other process delay requested by the applicant shall be deemed an extension or waiver, as appropriate, of the one hundred twenty-day period.

2. Any delay in the decision-making process necessitated because the applicant provided an incomplete set of mailing labels for the record property owners within three hundred feet of the subject property shall extend the one hundred twenty-day period for the amount of time required to correct the notice defect.

3. The one hundred twenty-day period does not apply to any application for a permit that is not wholly within the City's authority and control.

4. The one hundred twenty-day period does not apply to any application for an amendment to the City's comprehensive plan or land use regulations nor to any application for a permit, the approval of which depends upon a plan amendment.

D. A one hundred day-period applies in place of the one hundred twenty-day period for affordable housing projects where:
1. The project includes five or more residential units, including assisted living facilities or group homes;
2. At least fifty percent of the residential units will be sold or rented to households with incomes equal to or less than sixty percent of the median family income for Clackamas County or for the state, whichever is greater; and
3. Development is subject to a covenant restricting the owner and successive owner from selling or renting any of the affordable units as housing that is not affordable for a period of sixty years from the date of the certificate of occupancy.
E. The one hundred twenty-day period specified in OCMC 17.50.070.C or D may be extended for a specified period of time at the written request of the applicant. The total of all extensions may not exceed two hundred forty-five calendar days.
F. The approval standards that control the City's review and decision on a complete application are those which were in effect on the date the application was first submitted.

Finding: Applicable.

17.50.080 Complete application—Required information.
Unless stated elsewhere in OCMC 16 or 17, a complete application includes all the materials listed in this subsection. The Community Development Director may waive the submission of any of these materials if not deemed to be applicable to the specific review sought. Likewise, within thirty days of when the application is first submitted, the Community Development Director may require additional information, beyond that listed in this subsection or elsewhere in Titles 12, 14, 15, 16, or 17, such as a traffic study or other report prepared by an appropriate expert. In any event, the applicant is responsible for the completeness and accuracy of the application and all of the supporting documentation, and the City will not deem the application complete until all information required by the Community Development Director is submitted. At a minimum, the applicant shall submit the following:
A. One copy of a completed application form that includes the following information:
1. An accurate address and tax map and location of all properties that are the subject of the application;
2. Name, address, telephone number and authorization signature of all record property owners or contract owners, and the name, address and telephone number of the applicant, if different from the property owner(s);
B. A complete list of the permit approvals sought by the applicant;
C. A complete and detailed narrative description of the proposed development;
D. A discussion of the approval criteria for all permits required for approval of the development proposal that explains how the criteria are or can be met or are not applicable, and any other information indicated by staff at the pre-application conference as being required;
E. One copy of all architectural drawings and site plans shall be submitted for Type II—IV applications.
One paper copy of all application materials shall be submitted for Type I applications;
F. For all Type II—IV applications, the following is required:
1. An electronic copy of all materials.
2. Mailing labels or associated fee for notice to all parties entitled under OCMC 17.50.090 to receive mailed notice of the application. The applicant shall use the names and addresses of property owners within the notice area indicated on the most recent property tax rolls.

3. Documentation indicating there are no liens favoring the City on the subject site.
4. A receipt from the county assessor's office indicating that all taxes for the lot or parcels involved are paid in full for the preceding tax year.
5. A current preliminary title report or trio for the subject property(ies);
G. All required application fees;
H. Annexation agreements, traffic or technical studies (if applicable);
I. Additional documentation, as needed and identified by the Community Development Director.

Finding: Complies as proposed. This land use application was deemed Complete on 2/27/2026.

17.50.090 - Public notices.
All public notices issued by the City announcing applications or public hearings of quasi-judicial or legislative actions, shall comply with the requirements of this section.
B. Notice of Public Hearing on a Type III or IV Quasi-Judicial Application. Notice for all public hearings concerning a quasi-judicial application shall conform to the requirements of this subsection. At least twenty days prior to the hearing, the City shall prepare and send, by first class mail, notice of the hearing to all record owners of property within three hundred feet of the subject property and to any city-recognized neighborhood association whose territory includes the subject property. The City shall also publish the notice on the City website within the City at least twenty days prior to the hearing. Pursuant to OCMC 17.50.080.H, the applicant is responsible for providing an accurate and complete set of mailing labels for these property owners and for posting the subject property with the City-prepared notice in accordance with OCMC 17.50.100. Notice of the application hearing shall include the following information:
1. The time, date and location of the public hearing;
2. Street address or other easily understood location of the subject property and city-assigned planning file number;
3. A description of the applicant's proposal, along with a list of citations of the approval criteria that the City will use to evaluate the proposal;
4. A statement that any interested party may testify at the hearing or submit written comments on the proposal at or prior to the hearing and that a staff report will be prepared and made available to the public at least seven days prior to the hearing;
5. A statement that any issue which is intended to provide a basis for an appeal to the City Commission shall be raised before the close of the public record. Issues must be raised and accompanied by statements or evidence sufficient to afford the City and all parties to respond to the issue;
6. The notice shall state that a city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal;
7. A statement that the application and all supporting materials and evidence submitted in support of the application may be inspected at no charge and that copies may be obtained at reasonable cost at the planning division offices during normal business hours; and
8. The name and telephone number of the planning staff person responsible for the application or is otherwise available to answer questions about the application.

Finding: Complies as proposed. Public notices were generated and mailed on 4/6/2026 in compliance with this section.

17.50.100 - Notice posting requirements.

Where this chapter requires notice of a pending or proposed permit application or hearing to be posted on the subject property, the requirements of this section shall apply.
A. City Guidance and the Applicant's Responsibility. The City shall supply all of the notices which the applicant is required to post on the subject property and shall specify the dates the notices are to be posted and the earliest date on which they may be removed. The City shall also provide a statement to be signed and returned by the applicant certifying that the notice(s) were posted at the correct time and that if there is any delay in the City's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the applicable decision-making time limit in a timely manner.
B. Number and Location. The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and motorists. Notices shall not be posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

Finding: Complies as proposed. Public notices were created and posted to the subject site on 4/6/2026 in compliance with this section.

17.50.110 Assignment of decision-makers.
The following City entity or official shall decide the following types of applications:
C. Type III Decisions. The Planning Commission or Historic Review Board, as applicable, shall render all Type III decisions. Such decision is appealable to the City Commission, on the record. The City Commission 's decision is the city's final decision and is subject to review by LUBA within twenty-one days of when it becomes final.

Finding: Complies as proposed. The public hearing before the Planning Commission is scheduled to take place on April 27, 2026 in compliance with this section.

17.50.120 Quasi-judicial hearing process.
All public hearings pertaining to quasi-judicial permits, whether before the Planning Commission, Historic Review Board, or City Commission, shall comply with the procedures of this section. In addition, all public hearings held pursuant to this chapter shall comply with the Oregon Public Meetings Law, the applicable provisions of ORS 197.763 and any other applicable law.
A. Once the Community Development Director determines that an application for a Type III or IV decision is complete, the planning division shall schedule a hearing before the Planning Commission or Historic Review Board, as applicable. Once the Community Development Director determines that an appeal of a Type II, Type III or Type IV decision has been properly filed under OCMC 17.50.190, the planning division shall schedule a hearing pursuant to OCMC 17.50.190.
B. Notice of the Type III or IV hearing shall be issued at least twenty days prior to the hearing in accordance with OCMC 17.50.090.B.
C. Written notice of an appeal hearing shall be sent by regular mail no later than fourteen days prior to the date of the hearing to the appellant, the applicant if different from the appellant, the property owner(s) of the subject site, all persons who testified either orally or in writing before the hearing body and all persons that requested in writing to be notified.

D. The Community Development Director shall prepare a staff report on the application which lists the applicable approval criteria, describes the application and the applicant's development proposal, summarizes all relevant city department, agency and public comments, describes all other pertinent facts as they relate to the application and the approval criteria and makes a recommendation as to whether each of the approval criteria are met.
E. At the beginning of the initial public hearing at which any quasi-judicial application or appeal is reviewed, a statement describing the following shall be announced to those in attendance:
1. That the hearing will proceed in the following general order: Staff report, applicant's presentation, testimony in favor of the application, testimony in opposition to the application, rebuttal, record closes, commission deliberation and decision;
2. That all testimony and evidence submitted, orally or in writing, shall be directed toward the applicable approval criteria. If any person believes that other criteria apply in addition to those addressed in the staff report, those criteria shall be listed and discussed on the record. The meeting chairperson may reasonably limit oral presentations in length or content depending upon time constraints. Any party may submit written materials of any length while the public record is open;
3. Failure to raise an issue on the record with sufficient specificity and accompanied by statements or evidence sufficient to afford the City and all parties to respond to the issue, will preclude appeal on that issue to the land use board of appeals;
4. Any party wishing a continuance or to keep open the record shall make that request while the record is still open;
5. That the commission chair shall call for any ex-parte contacts, conflicts of interest or bias before the beginning of each hearing item; and
6. For appeal hearings, only those persons who participated either orally or in writing in the decision or review will be allowed to participate either orally or in writing on the appeal.
F. Requests for continuance and to keep open the record: The hearing may be continued to allow the submission of additional information or for deliberation without additional information. New notice of a continued hearing need not be given so long as a time-certain and location is established for the continued hearing. Similarly, hearing may be closed but the record kept open for the submission of additional written material or other documents and exhibits. The chairperson may limit the factual and legal issues that may be addressed in any continued hearing or open record period.

Finding: Complies as proposed. The public hearing before the Planning Commission is scheduled to take place on April 27, 2026 in compliance with this section.

17.50.130 Conditions of approval and notice of decision.
A. All City decision-makers have the authority to impose reasonable conditions of approval designed to ensure that all applicable approval standards, including standards set out in city overlay districts, the City's master plans, and City public works design standards, are, or can be met.
B. Failure to comply with any condition of approval shall be grounds for revocation of the permit(s) and grounds for instituting code enforcement proceedings pursuant to OCMC 1.20 of this code and ORS 30.315.
C. Notice of Decision. The City shall send, by first class mail, a notice of all decisions rendered under this chapter to all persons with standing, i.e., the applicant, all others who participated either orally or in writing before the close of the public record and those who specifically requested notice of the decision. The notice of decision shall include the following information:

1. The file number and date of decision;
2. The name of the applicant, owner and appellant (if different);
3. The street address or other easily understood location of the subject property;
4. A brief summary of the decision, and if an approval, a description of the permit approved;
5. A statement that the decision is final unless appealed and description of the requirements for perfecting an appeal;
6. The contact person, address and a telephone number whereby a copy of the final decision may be inspected or copies obtained.
D. Modification of Conditions. Any request to modify a condition of permit approval is to be considered either minor modification or a major modification, unless otherwise authorized. A minor modification shall be processed as a Type I. A major modification shall be processed in the same manner and shall be subject to the same standards as was the original application. However, the decision-maker may at their sole discretion, consider a modification request and limit its review of the approval criteria to those issues or aspects of the application that are proposed to be changed from what was originally approved.

Finding: Applicable.

17.50.140 – Financial guarantees.
When conditions of permit approval require a permitee to construct certain public improvements, the City shall require the permitee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.
A. Form of Guarantee. Guarantees shall be in a form approved by the City attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.
B. Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.
1. After Final Approved Design by the City. The City may request the permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
2. Before Complete Design Approval and Established Engineered Cost Estimate. The City may request a permittee to submit a performance guarantee for construction of certain public improvements. A permitee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer.
C. Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City

engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.

D. Fee-in-lieu. When conditions of approval or the City engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City attorney.

Finding: Not applicable. No public improvements are required as a result of this land use application.

17.50.141 – Public improvements – Warranty

All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.

A. Duration of Warranty. Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.

B. Financial Guarantee. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City attorney. The guarantee shall be filed with the City engineer.

C. Amount of Warranty. The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two-year maintenance period), and shall be supported by a verified engineering estimate and approved by the City engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.

D. Transfer of Maintenance. The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public

improvements shall occur when the City accepts the improvements at the end of the two-year warranty period.

Finding: Not applicable. No public improvements are required as a result of this land use application.

CHAPTER 17.54: SUPPLEMENTAL ZONING REGULATIONS & EXCEPTIONS

17.54.010 - Accessory structures and uses.

Accessory structures and uses shall comply with all requirements for the principal use except where specifically modified by this title and shall comply with the following standards:

A. Signs. Signs shall be permitted as provided in Chapter 15.28.
B. Residential Accessory Structures, Not Including Accessory Dwellings Units. The section applies to all accessory structures within the R-10, R-8, R-6, R-5 and R-3.5 zoning districts and accessory structures on properties with a residential use with less than five units within a zoning designation not listed above.
1. Accessory Structures with a Footprint Less than Two Hundred Square Feet:
a. Shall be located behind the front line of the primary structure;
b. Shall comply with the dimensional standards of the zoning designation including height, lot coverage and setbacks unless modified pursuant to subsection c herein; and
c. Side and rear setbacks may be reduced to not less than three feet for the accessory structure and its projections if the height does not exceed seventeen feet as defined in OCMC 17.04.550.

Finding: Not applicable. No residential accessory structures are proposed with this application.

17.54.020 - Projections from buildings.
Residential building projections that are cantilevered so that they do not touch the ground (such as cornices, eaves, bay windows, fireplaces, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features) may project into the required setbacks up to twenty-four inches. The projection may be limited by easement restrictions, etc.

Finding: Not applicable. No residential buildings exist onsite or are proposed with this application.

17.54.100 Fences, Hedges, Walls, and Retaining Walls.
A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:
1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5-feet in total height as measured from the finished grade at any point on the fence.
2. A fence, hedge, wall, located next to, or behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:
a. Six feet in total height for residential properties with less than five units as measured from the finished grade at any point on the fence; or
b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.

3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.
4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.
5. Property owners shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.
6. Retaining walls completely below the elevation of the right-of-way may be up to six feet in height.
7. Minimum fall protection required by the Building Official, such as railings, is not included in the height of a retaining wall but must comply with the fence height requirements.

Finding: Complies with Condition. The applicant was previously approved to construct a 6-foot-tall metal ornamental fence in the front yard under GLUA-21-00008 / SP-21-00019 / VAR-21-00001 and the conditions of approval for that Variance apply to any new permanent fencing in the front yard. For temporary construction fencing, see the findings in section 17.62.050.H. This land use application does not request a new variance or modifications to the request that was approved in 2021. **Staff have determined that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.56: CONDITIONAL USES

17.56.010 - Permit—Authorization—Standards—Conditions.
A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the Planning Commission in accordance with the standards and procedures of this title. A conditional use permit listed in this section may be permitted, enlarged or altered upon authorization of the Planning Commission or City Commission in accordance with the standards and procedures of this section. Any expansion to, alteration of, or accessory use to a conditional use shall require Planning Commission or City Commission approval of a modification to the original conditional use permit unless authorized in this chapter.

Finding: Applicable. The applicant was granted a Conditional Use permit related to the subject site under file # CU-13-0003.

17.56.025 - Minor modifications to legal conditional uses.
Minor modifications to an approved conditional use permit may be permitted. If permitted, the modification shall be reviewed as a minor site plan and design review. A minor modification to an approved conditional use permit is considered one of the following:

A. Modification to a structure for the purpose of enhancing the aesthetics of the building and there is no increase in the interior usable space;
B. Except for shelters, a maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage; or
C. Revisions to parking alignment and/or related vehicle circulation patterns.

Finding: Applicable. The applicant proposes to locate the temporary modular structures in an existing parking and vehicular circulation area. The modular buildings to be located onsite will be in place temporarily to accommodate existing classroom, library, and restroom facilities that will be

temporarily out of service during the renovation phase of the main building. The proposed changes all constitute minor modifications and are therefore not subject to the remaining sections of this chapter.

CHAPTER 17.60: VARIANCES

17.60.010 Authority.
According to procedures set forth in OCMC 17.60.030, the planning commission or the Community Development Director may authorize variances from the requirements of this title. In granting a variance, the Planning Commission or Community Development Director may attach conditions to protect the best interests of the surrounding property or neighborhood and otherwise achieve the purposes of this title. No variances shall be granted to allow the use of property for a purpose not authorized within the zone in which the proposed use would be located.

17.60.020 - Variances—Procedures.
A. A request for a variance shall be initiated by a property owner or authorized agent by filing an application with the City Recorder. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. When relevant to the request, building plans may also be required. The application shall note the zoning requirement and the extent of the variance requested. Procedures shall thereafter be held under Chapter 17.50. In addition, the procedures set forth in subsection D of this section shall apply when applicable.

Finding: Complies as proposed. See the applicant's Narrative.

B. A nonrefundable filing fee, as listed in OCMC 17.50.080, shall accompany the application for a variance to defray the costs.

Finding: Complies as proposed. All filing fees have been paid according to OCMC 17.50.080.

C. Before the Planning Commission may act on a variance, it shall hold a public hearing thereon following procedures as established in Chapter 17.50. A variance shall address the criteria identified in OCMC 17.60.030, Variances—Grounds

Finding: Applicable. The public hearing before the Planning Commission is set for April 27, 2026.

D. Minor variances, as defined in subsection E of this section, shall be processed as a Type II decision, shall be reviewed pursuant to the requirements in OCMC 17.50.030.B, and shall address the criteria identified in OCMC 17.60.030, Variance—Grounds.
E. For the purposes of this section, minor variances shall be defined as follows:
1. Variances to setback and yard requirements to allow additions to existing buildings so that the additions follow existing building lines;
2. Variances to width, depth and frontage requirements of up to twenty percent;
3. Variances to residential yard/setback requirements of up to twenty-five percent;
4. Variances to nonresidential yard/setback requirements of up to ten percent;
5. Variances to lot area requirements of up to five percent;
6. Variance to lot coverage requirements of up to twenty-five percent;
7. Variances to the minimum required parking stalls of up to five percent; and

8. Variances to the floor area requirements and minimum required building height in the mixed-use districts.
9. Variances to design and/or architectural standards for single-family dwellings, duplexes, townhomes, accessory dwelling units, triplex, quadplexes, and cluster housing in OCMC 17.14, 17.16, 17.20, 17.21 and 17.22.

Finding: Applicable. The applicant is requesting three variances:

1. To the minimum front yard setback in OCMC 17.08.040 of 65%,
2. Use of T1-11 siding on the modular structures, a prohibited commercial building material viewable from the right of way in OCMC 17.62.050.H.1.a, and
3. The maximum 7 day allowable duration that temporary structure of more than 800 square feet in floor area may be located on a subject site under OCMC 17.62.050.I.2.b.i. The degree of front setback reduction request is greater than the 25% allowed under this section. Neither the building material nor temporary structure standards are eligible for Type II Minor Variance or modification process.

Therefore, all three Variances are being processed as Major Variances through the requisite Type III Land Use Application and Public Hearings process.

17.60.030 - Variance—Grounds.
A variance may be granted only in the event that all of the following conditions exist:
A. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;

Finding: Complies as proposed. The 65% Variance in front yard setback reduction is requested for temporary single-story modular structures to be located more than 50 feet from adjacent property lines, and will not impact safe access, light, or air to adjacent properties as proposed.

B. That the request is the minimum variance that would alleviate the hardship;

Finding: Complies with conditions.

65% setback reduction:
The applicant is requesting a minimum front yard setback reduction of 65% in order to accommodate the width of the proposed classroom modular buildings, accessible pathways between buildings, and existing trees onsite. The applicant would have to remove trees in order to locate the buildings further from the front lot line. New permanent structures for institutional uses are subject to Site Plan & Design Review standards in OCMC 17.62, including the requirement for permanent buildings to be located no further than 5 feet from the front lot line. Planning Staff support a temporary front yard setback reduction of 65% to accommodate the temporary structures, accessways for students and teachers, and to protect existing trees onsite. The variance is reasonable if the conditions of approval for the temporary structure duration are followed, as well.

Building Materials
The applicant's narrative explains that the construction phase for the project is set to begin in June 2026, and that modular buildings need to be ordered from the manufacturer quite soon in order for them to arrive in time for the 2026-27 academic year. Locating and transporting structures with lap siding rather than T1-11 will add significant cost, weight, and time to the construction phase of the project and may cause delays that would require the modular buildings to be in place for longer than would otherwise be necessary. Existing fencing, street trees, a school bus queuing area, and a traffic signal gantry would partially obscure the view of T1-11 siding from the right of way along South End Rd.

Given the temporary nature of the structures, and the preference to have them onsite for a minimum amount of time, Staff support the use of T1-11 siding for the modular structure if a condition of approval in item D below can be met.

Temporary Structures
The applicant is requesting that the temporary modular structures be located on the site, in the front setback, as temporary structures for a maximum of two years, through the anticipated construction phase of the school remodeling project, from June 2026 to August 2028. The applicant anticipates that, if the construction schedule proceeds as planned, the modulars will only need to be in place through late summer of 2027. However, the applicant also wishes to reserve the right to retain the structures for an additional year should the construction phase encounter delays that would make the modulars' removal logistically difficult if done before the end of the 2027-28 academic year.

Planning staff agree with the applicant's determination that the proposed structures are temporary in nature, and are needed to accommodate existing classroom, library, and restroom facilities that will be out of commission during the renovation of the interior of the building. The existing Temporary Structures code does not seem to realistically accommodate the needs of modular educational structures like these, or temporary construction staging areas, but Staff support the application of all requirements of OCMC 17.62.050.I to such projects, except the maximum 7-day allowed duration.

However, as a Condition of Approval under this section, Staff recommends that the applicant ensures that the structures remain onsite no later than August 31, 2028 and, if construction proceeds on schedule, to have these modular buildings removed at the earliest possible

opportunity once occupancy of the renovated school building is granted. **Staff have determined that the applicant can meet this standard through the Conditions of Approval.**

C. Granting the variance will equal or exceed the purpose of the regulation to be modified.

Finding: Complies as proposed.

65% Setback reduction: OCMC 17.08.040, the dimensional standards of the R-10 Low-Density Residential District, require a 20-foot front yard setback so that residential-scale developments are placed far enough from the right of way to effect a low-density character. However, Site Plan & Design Review criteria for permanent non-residential structures like school buildings, which are conditionally permitted in this zone, require a 5-foot maximum front yard setback. Given the temporary nature of the modular structures in question, Staff support the interpretation that a temporary setback reduction to accommodate modular buildings on an approved conditional use in this zone equal or exceed the purposes of OCMC 17.080.40.

Building Materials and Temporary Structures: The purpose of OCMC 17.62 is to encourage site planning in advance of construction, assure that development is supported with necessary public facilities and services, and ensure that structures are properly related to their sites. Given that these structures are needed to accommodate existing educational facilities during the construction phase of the main building, and given that T1-11 siding on modular structures like these is industry standard and that accommodating the siding will help reduce the likelihood of construction delays, and given that the structures are to be in place on a temporary basis and subject to the condition of approval for their duration onsite, Staff support the interpretation that T1-11 as a temporary visible element equals the purpose of the Site Plan & Design Review building material and temporary structures regulations in OCMC 17.62.050.H and I.

D. Any impacts resulting from the adjustment are mitigated;

Finding: Complies as proposed.

The setback reduction and building materials requests are being mitigated through the applicant's proposal to locate the 2 T1-11 sided proposed structures so their view is largely obscured from the right of way behind other buildings with compliant siding types. Given that the modulars are proposed to be located where they are so that existing trees are protected and maintained, Staff support the interpretation that this requirement is met through the proposal if the Condition of Approval related to the duration that the structures remain onsite is followed.

E. No practical alternatives have been identified which would accomplish the same purpose and not require a variance; and

Finding: Complies with condition.

65% setback reduction:
The applicant has proposed that the modular structures be located in the front yard setback so that they can be more reasonably served by public and franchise utilities like electricity and water, which are necessities for their uses as educational, library, and restroom facilities. Located the structures in the main parking area would disrupt school bus and emergency vehicle access, take

athletic fields off line, and require additional hardscaping to accommodate access paths to these buildings, particularly for people with disabilities. Locating the modular buildings in the front setback with pedestrian circulation space is the most practical configuration of the site.

Building Materials:
As outlined under section B above, allowing some of the modulars to be ordered with T1-11 siding will reduce the likelihood of construction delays, reduce lead times and transportation costs, and may therefore facilitate their being onsite for less time.

Temporary Structures:
The applicant is requesting the minimum amount of time for these structures to be in place onsite given the expected building renovation timelines.

However, as a Condition of Approval under this section, Staff recommends that the applicant ensures that the structures remain onsite no later than August 31, 2028 and, if construction proceeds on schedule, to have these modular building removed at the earliest possible opportunity once occupancy of the renovated school building is granted. **Staff have determined that the applicant can meet this standard through the Conditions of Approval.**

F. The variance conforms to the comprehensive plan and the intent of the ordinance being varied.

Finding: Complies as proposed. As stated in the applicant's narrative, "The temporary modulars are consistent with the goals and policies of the Oregon City Comprehensive Plan, which support the provision and enhancement of public facilities, including educational institutions, to serve the community. The project aligns with City policies promoting safe, accessible, and well-maintained school facilities."

"The proposed modular classrooms will allow John McLoughlin Elementary school to remain operational while they are being renovated. Keeping students at their neighborhood school is consistent with Goal 3 as it provides a necessary service that is convenient to residents within the school boundary. Remodeling the existing school building and utilizing temporary modular classrooms is consistent with Policy 3.1, which promotes efficient use of land and public infrastructure. Keeping students at their existing campus reduces the impact of the school on transportation and utility infrastructure which is consistent with Policy 3.2 to promote walkable neighborhoods."

Planning Staff support this interpretation that the variance requests, as conditioned in section B, will conform to the Comprehensive Plan and the zoning ordinances cited in this section.

CHAPTER 17.62: SITE PLAN & DESIGN REVIEW

17.62.010 Purpose.
The purposes of site plan and design review are to: Encourage site planning in advance of construction; protect lives and property from potential adverse impacts of development; consider natural or man-made hazards which may impose limitations on development; conserve the City's natural beauty and visual character and minimize adverse impacts of development on the natural environment as much as is reasonably practicable; assure that development is supported with necessary public facilities and services; ensure that structures and other improvements are

properly related to their sites and to surrounding sites and structure; and implement the City's comprehensive plan and land use regulations with respect to development standards and policies.

17.62.030 - When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-family uses, manufactured home parks, and non-residential uses in all zones. Site Plan and Design Review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80. Site plan and design review is required for a change in use between the uses in Table 17.62.030:

Table 17.62.030

Existing Use	***Proposed Use***
Residential	*Nonresidential use, including but not limited to: commercial, office, industrial, retail, or institutional*
Single-family or duplex	*3 or more dwellings*

Site plan and design review shall not alter the type and category of uses permitted in the underlying zoning districts. Only the standards of OCMC 17.62.035 apply to duplex, triplex, quadplex, cottage cluster, townhouse, single-family detached residential unit, live/work dwelling and accessory dwelling unit Type I applications

Finding: Applicable. The applicant has proposed development of temporary structures to serve a conditional use in the Low-Density Residential District.

B. Type II Minor Site Plan and Design Review.
1. Type II minor site plan and design review applies to the following uses and activities unless those uses and activities qualify for Type I review per OCMC 17.62.035.A:
a. Modification of an office, commercial, industrial, institutional, public or multi-family structure that does not increase the interior usable space (for example covered walkways or entryways, addition of unoccupied features such as clock tower, etc.).
b. Modification to parking lot layout and landscaping, or the addition of up to five parking spaces.
c. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage.
d. Mobile food units in OCMC 17.54.115.
e. Other land uses and activities may be added if the Community Development Director makes written findings that the activity/use will not increase off-site impacts and is consistent with the type and/or scale of activities/uses listed above.
2. Application. The application for the Type II minor site plan and design review shall contain the following elements:
a. The submittal requirements of OCMC 17.50.
b. A narrative explaining all aspects of the proposal in detail and addressing each of the applicable criteria listed in OCMC 17.62.
c. Site plan drawings showing existing conditions/uses and proposed conditions/uses.
d. Architectural drawings, including building elevations and envelopes, if architectural work is proposed.

e. Additional submittal material may be required by the Community Development Director on a case-by-case basis.

Finding: Applicable. The applicant is proposing to add new temporary structures that add interior useable space to offset existing interior space during the school remodeling project.

17.62.040 – Items required.
A complete application for site plan and design review shall be submitted. Except as otherwise in subsection I of this section, the application shall include the following:
A. A site plan or plans, to scale, containing the following:
1. Vicinity information showing streets and access points, pedestrian and bicycle pathways, transit stops and utility locations;
2. The site size, dimensions, and zoning, including dimensions and gross area of each lot or parcel and tax lot and assessor map designations for the proposed site and immediately adjoining properties;
3. Contour lines at two-foot contour intervals for grades zero to ten percent, and five-foot intervals for grades over ten percent;
4. The location of natural hazard areas on and within one hundred feet of the boundaries of the site, including:
a. Areas indicated on floodplain maps as being within the one hundred-year floodplain,
b. Unstable slopes, as defined in OCMC 17.44.020,
c. Areas identified on the seismic conditions map in the comprehensive plan as subject to earthquake and seismic conditions;
5. The location of natural resource areas on and within one hundred feet of the boundaries of the site, including fish and wildlife habitat, existing trees (six inches or greater in caliper measured four feet above ground level), wetlands, streams, natural areas, wooded areas, areas of significant trees or vegetation, and areas designated as being within the natural resources overlay district;
6. The location of inventoried historic or cultural resources on and within one hundred feet of the boundaries of the site;
7. The location, dimensions, and setback distances of all existing permanent structures, improvements and utilities on or within twenty five feet of the site, and the current or proposed uses of the structures;
8. The location, dimensions, square footage, building orientation and setback distances of proposed structures, improvements and utilities, and the proposed uses of the structures by square footage;
9. The location, dimension and names, as appropriate, of all existing and platted streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other pedestrian and bicycle ways, transit street and facilities, neighborhood activity centers, and easements on and within two hundred fifty feet of the boundaries of the site;
10. The location, dimension and names, as appropriate, of all proposed streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other pedestrian and bicycle ways, transit streets and facilities, neighborhood activity centers, and easements on and within two hundred feet of the boundaries of the site;
11. All parking, circulation, loading and servicing areas, including the locations of all carpool, vanpool and bicycle parking spaces as required in OCMC 17.52;
12. Site access points for automobiles, pedestrians, bicycles and transit;
13. On-site pedestrian and bicycle circulation;
14. Outdoor common areas proposed as open space;

15. Total impervious surface created (including buildings and hard ground surfaces);
16. The proposed location, dimensions and materials of fences and walls.
B. A landscaping plan, drawn to scale, showing the location and types of existing trees (six inches or greater in caliper measured four feet above ground level) and vegetation proposed to be removed and to be retained on the site, the location and design of landscaped areas, the varieties, sizes and spacings of trees and plant materials to be planted on the site, other pertinent landscape features, and irrigation systems required to maintain plant materials.
C. Architectural drawings or sketches, drawn to scale and showing floor plans, elevations accurately reflected to grade, and exterior materials of all proposed structures and other improvements as they will appear on completion of construction. The name of the adjacent street shall be identified on each applicable building elevation.
D. An electronic materials board clearly depicting all building materials with specifications as to type, color and texture of exterior materials of proposed structures.
E. An erosion/sedimentation control plan, in accordance with the requirements of OCMC 17.47 and the public works erosion and sediment control standards, and a drainage plan developed in accordance with city drainage master plan requirements, OCMC 13.12 and the public works stormwater and grading design standards. The drainage plan shall identify the location of drainage patterns and drainage courses on and within one hundred feet of the boundaries of the site. Where development is proposed within an identified hazard area, these plans shall reflect concerns identified in the hydrological/geological/geotechnical development impact statement.
F. An exterior lighting plan, drawn to scale, showing type, height, and area of illumination.
G. Archeological Monitoring Recommendation. For all projects that will involve ground disturbance, the applicant shall provide:
1. A letter or email from the Oregon State Historic Preservation Office Archaeological Division indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the Oregon State Historic Preservation Office and that the Oregon State Historic Preservation Office had not commented within forty-five days of notification by the applicant; and
2. A letter or email from the applicable tribal cultural resource representative of the Confederated Tribes of the Grand Ronde, Confederated Tribes of the Siletz, Confederated Tribes of the Umatilla, Confederated Tribes of the Warm Springs and the Confederated Tribes of the Yakama Nation indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the applicable tribal cultural resource representative and that the applicable tribal cultural resource representative had not commented within forty-five days of notification by the applicant.
If, after forty-five days' notice from the applicant, the Oregon State Historic Preservation Office or the applicable tribal cultural resource representative fails to provide comment, the City will not require the letter or email as part of the completeness review. For the purpose of this section, ground disturbance is defined as the movement of native soils.

H. Such special studies or reports as the Community Development Director may require to obtain information to ensure that the proposed development does not adversely affect the surrounding community or identified natural resource areas or create hazardous conditions for persons or improvements on the site. The Community Development Director shall require an applicant to submit one or more development impact evaluations as may be necessary to establish that the City's traffic safety or capacity standards, natural resource, including geologic hazard and flood plain overlay districts, will be satisfied.

I. The Community Development Director may waive the submission of information for specific requirements of this section or may require information in addition to that required by a specific provision of this section, as follows:
1. The Community Development Director may waive the submission of information for a specific requirement upon determination either that specific information is not necessary to evaluate the application properly, or that a specific approval standard is not applicable to the application. If submission of information is waived, the Community Development Director shall, in the decision, identify the waived requirements, explain the reasons for the waiver, and state that the waiver may be challenged on appeal and may be denied by a subsequent review authority. If the matter is forwarded to the planning commission for initial review, the information required by this paragraph shall be included in the staff report;
2. The Community Development Director may require information in addition to that required by a specific provision of this section upon determination that the information is needed to evaluate the application properly and that the need can be justified on the basis of a special or unforeseen circumstance as necessary to comply with the applicable standards. If additional information is required, the Community Development Director shall, in the decision, explain the reasons for requiring the additional information.
J. All new utilities shall be placed underground.
1. Service poles may be allowed on private property when undergrounding service is technically or physically infeasible.
K. One full-sized copy of all architectural and site plans.

Finding: Complies as proposed. The applicant submitted the required items on this list and received a Letter of Completeness on February 27, 2026.

17.62.050 - General Standards
All development shall comply with the following standards:
A. Landscaping.

Finding: Not applicable. See findings under section 17.62.050.I.3.

B. Vehicular Access and Connectivity.
1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.

Finding: Not applicable. See findings under section 17.62.050.I.3.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:
1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.

Finding: Not applicable. See findings under section 17.62.050.I.3.

D. All development shall maintain continuous compliance with applicable federal, state, and City standards.

Finding: Complies as Proposed.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to City standards as set out in the City's facility master plans and public works design standards. A development may be required to modify or replace existing off-site systems if necessary to provide adequate public facilities. The City may require over sizing of facilities where necessary to meet standards in the City's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the City for over sizing based on the City's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Finding: Complies as proposed.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the City's transportation system plan.

Finding: Not applicable. See findings under section 17.62.050.I.3.

G. Screening of Mechanical Equipment. Commercial, mixed-use, institutional, and multi-family buildings shall include the following measures to screen or block views of mechanical equipment from adjacent streets according to the following requirements:

Finding: Not applicable. See findings under section 17.62.050.I.3.

H. Building Materials.
1. Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the Community Development Director based on the integration of the material into the overall design of the structure:
a. Vinyl or plywood siding (including T-111 or similar plywood).

Finding: Complies with Condition. See findings under section 17.60.

I. Temporary Structures. Temporary structures are permitted pursuant to the following standards:

2. Temporary structures larger than two hundred square feet may be permitted up to two times per year; and:
a. Structures larger than two hundred square feet up to eight hundred square feet:
i. Shall not be on a property for more than thirty consecutive days;
ii. Shall comply with the minimum dimensional standards of the zoning designation;
iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;
iv. Shall not disturb ingress or egress to the site; and
v. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.
b. Structures larger than eight hundred square feet:
i. Shall not be on a property for more than seven consecutive days;
ii. Shall comply with the minimum dimensional standards of the zoning designation;
iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;
iv. Shall not disturb ingress or egress to the site; and
v. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

Finding: Complies with Condition. See findings under section 17.60.

3. Government owned properties are exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.H and I and the dimensional standards of the zoning designation.

Finding: Complies with Condition. John McLoughlin Elementary School is a government-owned property and is seeking to qualify the addition of the modular structures to the site under this section of the code, which also exempts all aspects of OCMC 17.62 except sections H and I. See findings under section 17.60.

17.62.055 –Institutional, office, multi-family, retail, and commercial building standards.
A. Purpose. The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety though informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.
B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures.

Finding: Not applicable. See findings under section 17.62.050.I.3.

17.62.090 Implementation.

A. Applications for site plan and design review shall be reviewed in the manner provided in OCMC 16.12 and 17.50. The building official may issue a certificate of occupancy only after the improvements required by site plan and design review approval have been completed, or a schedule for completion and a bond or other financial guarantee have been accepted by the City.
B. In performing site plan and design review, the review authority shall consider the effect of additional financial burdens imposed by such review on the cost and availability of needed housing types. Consideration of such factors shall not prevent the imposition of conditions of approval found necessary to meet the requirements of this section. The cost of such conditions of approval shall not unduly increase the cost of housing beyond the minimum necessary to achieve the provisions of this title, nor shall such cost prevent the construction of needed housing types.
C. The site plan and design review provisions of this chapter shall not be applied to reduce the density or height of an application for a development project that reserves at least seventy-five percent of the gross floor area for housing where the proposed density or height is at or below what is allowed in the base zone, except in the following situations:
1. Where the reduction in density is required for development subject to historic overlay provision in OCMC 17.40; or
2. Where the reduction in density is necessary to resolve a health, safety or habitability issue, or to comply with the natural resource overlay district regulations of OCMC 17.49, the geologic hazard overlay district regulations of OCMC 17.44, or the floodplain management overlay district regulations of OCMC 17.42 or steep slope regulations.

Finding: Complies as proposed.

RECOMMENDATION:

Based on the analysis and findings as described above, Staff concludes that the proposed development located at 19230 South End Rd, Oregon City, OR 97045, identified as Clackamas County Map 3-1E-12AC-04500, can meet the requirements as described in the Oregon City Municipal Code by complying with the Conditions of Approval provided in this report. Therefore, the Community Development Director recommends approval with conditions, based upon the findings and exhibits contained in this staff report.

EXHIBITS:

1. Applicant's submittal (On File)
2. Vicinity Map (On File)
3. Tree Protection and Mitigation Plan (On File)

OREGON CITY
Community Development – Planning
695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789

LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)	Type II (OCMC 17.50.030.B)	Type III / IV (OCMC 17.50.030.C & D.)
☐ Compatibility Review	☐ Master Plan / PUD / GDP or Amendment	☐ Annexation
☐ Willamette River Greenway	☐ Detailed Development Plan (DDP)	☐ Code Interpretation / Similar Use
☐ Communication Facility / Eligible Modification	☐ Floodplain Review	☐ Master Plan / PUD / GDP Amendment
☐ Lot Line Adjustment	☐ Geologic Hazard Overlay	☐ Conditional Use
☐ Non-Conforming Use Review	☐ Minor Partition (<4 lots)	☐ Comprehensive Plan/Legislative Amendment ☐ Code ☐ Map
☐ Natural Resource (NROD) Verification	☐ Minor Site Plan & Design Review	☐ Detailed Development Plan DDP
☑ Minor Site Plan & Design Review	☐ Non-Conforming Use Review	☐ Historic Review Board
☐ Extension of Approval	☐ Proportional Upgrades	☐ Demolition
☐ Historic Review – Remodel	☐ Site Plan and Design Review / DDP	☐ New Construction
☐ Detailed Dev. Plan (DDP)	☐ Manufactured Home Park	☐ Remodel
☐ LUCS	☐ Compatibility Review	☐ Municipal Code Amendment
	Modifications / Adjustments	☐ Parking Adjustment
	☐ Residential Design	☑ Variance
Expedited Type II (OCMC 17.50.030.B & 16.24)	☐ Site Plan & Design Review	☐ Sign Variance
☐ Middle Housing Land Division	☐ Public Improvement	☐ Natural Resource (NROD) Review
	☐ Tree Mitigation	☐ Zone Change (Text/Map)
	☐ Subdivision (4+ lots)	☐ Willamette River Greenway
	☐ Administrative (Minor) Variance	
	☐ Natural Resource (NROD) Review	**Legislative Action (OCMC 17.50.170)**
	☐ Willamette River Greenway	☐ Legislative
	☐ Phased Subdivision / Site Plan and Design Review Occupancy Plan	
	☐ Expedited Land Division	

File Number(s): PA-25-00055	**Application Date:** 1/14/26
Project Name: John McLoughlin Temporary Modulars	
Proposed Land Use or Activity: Variances and Minor Site Plan Review	**# of Lots Proposed (If Applicable):**
Physical Address(es) of Site: 19230 South End Road Oregon City, OR 97045	
Clackamas County Map and Tax Lot Number(s): 31E12AC04500	

Applicant(s)

Applicant(s) Signature: David Hobbs Digitally signed by David Hobbs Date: 2026.01.20 09:35:28 -08'00'	
Applicant(s) Name Printed: Oregon City School District C/O David Hobbs	Date:
Mailing Address: 1417 12th St. Oregon City, OR 97405	
Phone: 503.785.8531	Email [redacted]

Property Owner(s) – If more than 2 owners, add all information to back of page including signatures.

Property Owner #1	
Property Owner#1 Signature: David Hobbs Digitally signed by David Hobbs Date: 2026.01.20 09:36:01 -08'00'	
Property Owner#1 Name Printed: Oregon City School District	Date:
Mailing Address: 1417 12th St. Oregon City, OR 97405	
Ownership Address: 1417 12th St. Oregon City, OR 97405	
Phone: 503.785.8531	Email [redacted]

Property Owner #2	
Property Owner#2 Signature:	
Property Owner#2 Name Printed:	Date:
Mailing Address:	
Ownership Address:	
Phone:	Email:

Representative(s)

Representative(s) Signature:	Mercedes Serra Digitally signed by Mercedes Serra DN: C=US, E=mercedes.serra@3j-consulting.com, CN=Mercedes Serra Date: 2025.12.19 10:19:31-08'00'	
Representative(s) Name Printed: 3J Consulting, Inc. C/O Mercedes Serra		Date: 1/19/26
Mailing Address: 9600 SW Nimbus Ave. Suite 100. Beaverton, OR 97008		
Phone: 971.253.4217	Email: [redacted]	

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the party's willingness to comply with all code requirements.

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- Documentation Of No Liens Favoring The City
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GENERAL INFORMATION

Property Owner and Applicant:	**Oregon City School District** PO Box 2110 Oregon City, OR 97045 Contact: David Hobbs Phone: (503) 785-8531 Email: [redacted]
Planning Consultant:	**3J Consulting, Inc.** 9600 SW Nimbus Avenue, Suite 100 Beaverton, OR 97008 Contact: Mercedes Serra Phone: (971) 253-4217 Email: [redacted]

SITE INFORMATION

Parcel Number:	31E12AC 04500
Address:	19230 South End Road
Gross Site Area:	11.77 acres
Zoning Designation:	Low Density Residential (R-10)
Existing Use:	Elementary School
Surrounding Zoning:	South End Road is classified as a minor arterial.
Street Classification:	The properties to the north and west are zoned R-8 Single-Family Dwelling District. The properties to the east are zoned R-10 Single-Family Dwelling District. The properties to the south are located in the county and are zoned FU-10. South End Road is classified as a minor arterial.

INTRODUCTION

APPLICANT'S REQUEST

The Oregon City School District (hereby "The District") is proposing four temporary modular classroom buildings, one modular library, and a modular restroom building a at John McLoughlin Elementary School and seeks approval of a Type II Minor Site Plan and Design Review application and three Type III Variances. This narrative describes the proposed development and demonstrates compliance with the relevant approval standards of the Oregon City Municipal Code Title 17 ("OCMC").

Because this Minor Site Plan and Design Review application is being submitted with three Major Variance applications, the District has elected that the applications be reviewed as a consolidated application through the Type III process, where the Oregon City Planning Commission will render a decision after a public hearing on the application is held.

SITE DESCRIPTION/SURROUNDING LAND USE

John McLoughlin Elementary School is located at 19230 South End Road within the City of Oregon City. The site consists of a single tax lot 31E12AC 04500 and is approximately 11.77 acres in size. The site is zoned Low Density Residential R-10. The existing single-story elementary school is approximately 66,000 square feet in floor area. The main school building is located on the western boundary of the site, fronting South End Road. The main parking lot and bus drop-off loop is located on the southern side of the building. The site has a total of 76 parking spaces, including four accessible spaces. Hardscape and softscape play areas are located on the north and south sides of the main school building. Athletic fields are located to the east of the building. The properties to the north and west are zoned R-8 Single-Family Dwelling District. The properties to the east are zoned R-10 Single-Family Dwelling District. The properties to the south are located in the county and are zoned FU-10. The site is abutted by single-family homes on all sides.

PROPOSAL

The District is proposing temporary modular buildings on the John McLoughlin Elementary School Campus in order to facilitate building and site renovations to the existing school building. The proposed temporary buildings include four classroom buildings, one library building, and one restroom building. The proposed classroom and library buildings will be approximately 1,800 square feet for each building, and the restroom building will be approximately 500 square feet. The proposed temporary modulars will be placed near the existing elementary school between the primary building and the right-of-way on South End Road. The buildings are proposed to remain on the site throughout the entire construction period, exceeding the City's requirement for temporary buildings, requiring a variance. Additional variances have been requested for proposed building materials and the location of the buildings in the front yard setback.

NEIGHBORHOOD MEETING

The Applicant conducted a neighborhood meeting on January 5, 2026, to explain the proposal and to answer questions from the surrounding residents. The submitted materials include the required email coordination, sign-in sheet, and a summary of issues discussed at the meeting.

APPLICABLE CRITERIA

The following sections of Oregon City's Municipal Code (OCMC) have been extracted as they have been deemed to be applicable to the proposal. Following each **bold** applicable criteria or design standard, the District has provided a series of findings. The intent of providing code and detailed responses and findings is to document, with absolute certainty, that the proposed development has satisfied the approval criteria for Type III Minor Site Plan and Design Review and Variance applications.

TITLE 17 - ZONING
CHAPTER 17.08 LOW DENSITY RESIDENTIAL DISTRICTS
17.08.025 – Conditional uses
The following uses are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.56:
G. Private and/or public educational or training facilities;

Applicant's Findings: The subject site is currently used as a school facility. The District is proposing the placement of temporary buildings on the site, which may be permitted through a Type II Minor Site Plan Review. The requirements of Chapter 17.62 have been addressed in this narrative. The conditional use permit criteria are not applicable.

17.08.040 - Dimensional standards.
Dimensional standards in the R-10, R-8 and R-6 districts are as follows:

Standard	R-10
Minimum lot size	10,000 square feet
Maximum height	35 feet
Maximum building lot coverage With ADU	40% 45%
Minimum lot width	65 feet
Minimum lot depth	80 feet
Minimum front yard setback	20 feet except 15 feet – Porch
Minimum interior side yard setback	8 feet
Minimum corner side yard setback	10 feet
Minimum rear yard setback	20 feet except 15 feet – Porch 10 feet – ADU
Garage setback	20 feet from ROW, except 5 feet Alley

Applicant's Findings: The campus is an existing lot, therefore the minimum lot size, building width and building depth are not applicable.

The proposed temporary buildings will not permanently add building area or lot coverage to the school. The buildings will not exceed the minimum lot coverage, temporarily.

The proposed modulars will meet the minimum interior and rear yard setback requirements. A variance has been requested to allow the modulars within the front yard setback. The requirements of 17.60 have been addressed in this narrative.

CHAPTER 17.50 – ADMINISTRATION AND PROCEDURES

17.50.010 Purpose.

This chapter provides the procedures by which Oregon City reviews and decides upon applications for all permits relating to the use of land authorized by ORS 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City Comprehensive Plan and Titles 16 and 17 of this code. Pursuant to ORS 227.175, any applicant may elect to consolidate applications for two or more related permits needed for a single development project. Any grading activity associated with development shall be subject to preliminary review as part of the review process for the underlying development. It is the express policy of the City of Oregon City that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

Applicant Response: The District understands that the applications being submitted are considered land use decisions per ORS 197. The District has elected to consolidate the Minor Site Plan and Design Review and Variance Applications for this development project into a consolidated Type III review.

CHAPTER 17.60 – VARIANCES

17.60.020 - Variances—Procedures.

A. A request for a variance shall be initiated by a property owner or authorized agent by filing an application with the city recorder. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. When relevant to the request, building plans may also be required. The application shall note the zoning requirement and the extent of the variance requested. Procedures shall thereafter be held under Chapter 17.50. In addition, the procedures set forth in subsection D of this section shall apply when applicable.

Applicant's Response: The District is requesting three variances. The application includes a site plan showing the dimensions and arrangement of the proposed development. This narrative addresses the zoning requirements and extent of the three variances being requested. This standard is met.

B. A nonrefundable filing fee, as listed in OCMC 17.50.080, shall accompany the application for a variance to defray the costs.

Applicant's Response: The filing fee has been paid with this land use application. This standard is met.

C. Before the planning commission may act on a variance, it shall hold a public hearing thereon following procedures as established in Chapter 17.50. A variance shall address the criteria identified in OCMC 17.60.030, Variances—Grounds.

Applicant's Response: A public hearing will be held on this application in accordance with this standard. This standard is met.

D. Minor variances, as defined in subsection E of this section, shall be processed as a Type II decision, shall be reviewed pursuant to the requirements in OCMC 17.50.030.B, and shall address the criteria identified in OCMC 17.60.030, Variance—Grounds.

E. For the purposes of this section, minor variances shall be defined as follows:

1. **Variances to setback and yard requirements to allow additions to existing buildings so that the additions follow existing building lines;**
2. **Variances to width, depth and frontage requirements of up to twenty percent;**
3. **Variances to residential yard/setback requirements of up to twenty-five percent;**
4. **Variances to nonresidential yard/setback requirements of up to ten percent;**
5. **Variances to lot area requirements of up to five percent;**
6. **Variance to lot coverage requirements of up to twenty-five percent;**
7. **Variances to the minimum required parking stalls of up to five percent; and**
8. **Variances to the floor area requirements and minimum required building height in the mixed-use districts.**
9. **Variances to design and/or architectural standards for single-family dwellings, duplexes, townhomes, accessory dwelling units, triplex and quadplexes, and cluster housing in OCMC 17.14, 17.16, 17.20, 17.21, and 17.22.**

Applicant's Response: The variances requested include the following:

- Variance to the 7-day time constraint for temporary buildings per 17.62.050.I.b.i
- Variance to the minimum setback requirement of the underlying zone per 17.62.050.b.ii and 17.08.040.
- Variance to the prohibited building material requirement of 17.62.050.I.a

All requested variances meet the threshold for major variances and therefore the minor variance standards are not applicable.

17.60.030 - Variance—Grounds.

A variance may be granted only in the event that all of the following conditions exist:

A. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;

Applicant's Response: The requested variances are necessary to allow for the temporary placement of four classroom buildings, one library building, and one restroom building on the John McLoughlin Elementary School campus while the main school building is being renovated. The buildings are single story buildings which will be placed between the existing school building and South End Road and have not been placed next to adjacent property owner's property lines. The buildings will have no impact on neighboring property's ability to have safe access to their properties. The buildings will not cause substantial damage to adjacent property owners by reducing light, air or safe access. This standard is met.

B. That the request is the minimum variance that would alleviate the hardship;

Applicant's Response:

Variance to the 7-day time constraint for temporary buildings per 17.62.050.I.b.i

The District is requesting that the modulars remain on the school site from the beginning of the construction phase in the summer of 2026 until August of 2028. The District anticipates that the construction of the school improvements will span from June 2026 until September 2027, with the school being completed by the start of the school year in 2027 with the modular buildings being removed in the late summer of 2027. The District is requesting that the modulars be allowed to be on the site until August 2028 to allow for any unexpected construction delays that could occur. It is difficult to remove modular buildings while the school building is operational and any delay in the construction schedule could require that the modular buildings remain on the site into the beginning of the 2027-2028 school year. If this were the case, it would be logistically difficult for the District to remove the buildings until students were off campus in the summer of 2028.

Variance to the minimum setback requirement of the underlying zone per 17.62.050.b.ii and 17.08.040:

John McLoughlin Elementary School is located in the R-10 zone, which requires a minimum 20-foot front yard setback. The District is requesting a variance to allow three of the proposed temporary modulars to be placed within the required front yard setback. The buildings have been sited within the parking lot located between the school building and the frontage along South End Road, within 7-10 feet of the property line.

The location of the buildings within the existing parking lot reduces any increased impervious area, minimizing the impact of stormwater on the site. The paving of the existing parking lot allows for accessible circulation by students from the main school building and between the modular buildings. Within the parking lot, the buildings have been placed in order to retain the existing trees, including one Oregon white oak and two red oak trees. The proposed placement will also maintain the current student drop-off circulation pattern and secure main entrance to the building. The District has provided documentation from an arborist on the protection of the existing trees on the site.

Variance to the prohibited building material requirement of 17.62.050.I.a

The District will be placing six temporary modular buildings on site. Based on availability from the manufacturer of the modular buildings who the District will be leasing the buildings from, two classroom buildings available are constructed out of T1-11 plywood siding. Modular buildings are mass produced at a manufacturing facility and sold to equipment companies for leasing purposes. The buildings are designed and built to meet state mandated codes and standards and are required to be light weight for transportation, as they are produced off site. Due to the mass production of the buildings and the need to keep the buildings lightweight, they are typically built with simple single-layer siding for shear strength, such as T1-11. Utilizing a lap siding would add considerable weight to the buildings, which would cause an issue with transport. Replacing the siding once the buildings are transported to the site would add considerable cost to temporary buildings, which would reduce funds available for the permanent improvements planned at the school. Since the buildings will be leased, once the District is done with the buildings, they would require the District to return them to their original materials for transport. Replacing

the siding would require the T1-11 siding to be stored by the District during the construction period and the temporary siding would then be disposed of. Replacing the siding creates a logistical hardship for the District.

In recent years, changes in lap siding materials that are lighter and do not require multiple layers makes it possible for modular units to be constructed with siding other than T1-11. The units that have been constructed recently will be constructed out of LP Smart Side, but these are not readily available for leasing for all of the proposed modulars. The District has reserved two classroom modulars, one library modular and one restroom modular to be constructed out of LP Smart Side. The District has reduced the number of modulars they are leasing which will be constructed of T1-11 to the extent possible based on availability.

C. Granting the variance will equal or exceed the purpose of the regulation to be modified.

Applicant's Response:

Variance to the 7-day time constraint for temporary buildings per 17.62.050.I.b.i

The purpose of the time limit of the site is to avoid long-term storage of temporary buildings on sites within the City which have not been reviewed under the same requirements are permanent buildings. The District has provided a date certain for which the buildings will be removed, avoiding long-term storage of the temporary buildings, while allowing the students at John McLoughlin to continue to utilize the school building while under construction. The variance to allow the buildings to remain on the site during the construction period of the main school building equally meets the regulation to be modified to avoid permanent placement of temporary buildings.

Variance to the minimum setback requirement of the underlying zone per 17.62.050.b.ii and 17.08.040:

Setbacks provide outdoor recreation space, building separation for fire protection/security, building maintenance, and sunlight and air circulation. The proposed reduction in setbacks will preserve existing landscaping on the site during construction and after the temporary buildings are removed. The existing trees include one Oregon white oak and two red oak trees. Because the buildings are temporary, they will not have a long-term impact on the ability to provide maintenance to the existing building or the utility connections from South End Road. The modular buildings have been spaced to provide for sunlight and air circulation between the modular buildings and the existing school building. The proposed location of the modulars at the front of the school is optimal for student security and supervision. The proximity to the front of the school, covered play, and administrative area allows for easier supervision, especially when considered against other more remote parts to the site. The compact layout between existing fence and school building makes it easy to fully enclose/secure the space for student safety. The variance to the minimum setback equals the purpose of the regulation to be modified.

Variance to the prohibited building material requirement of 17.62.050.I.a

T1-11 siding is typically prohibited due to aesthetic, maintenance, and structural concerns of the material, generally relating to exposure to moisture over long periods of time which can cause the material to rot.

The modular buildings will be located on the site until August 2028, which will limit the exposure of the building material to moisture. The buildings will be constructed with proper flashing and roof eave overhangs. Given the temporary nature and the proposed construction techniques, the requested variance to allow T1-11 siding on two temporary buildings the purpose of the regulation to be modified to provide building materials that will not have maintenance and structural concerns while on site.

D. Any impacts resulting from the adjustment are mitigated;

Applicant's Response: The District has provided a date certain of August 2028 for the removal of the modular buildings from the campus to limit the impact of the proposed adjustment. The District has scheduled to remove the buildings prior to the 2027-2028 school year if construction is completed on schedule. Additional time has been requested in order to allow for any construction delays and the safe removal of the buildings during the summer while students are not on campus.

The modular buildings will be placed in the northern parking lot, impacting 18 parking stalls which will not be available to use during the construction period. The southern parking lot with 63 parking spaces and vehicle circulation areas will be available during construction. The available parking exceeds the City's minimum parking requirement of 1 stall per classroom for 27 classrooms. The location of the modulars within the parking area rather than on site in a landscape area reduces any need for on-site grading, does not add impervious area that would require additional stormwater infrastructure and provides ADA accessible routes to all the buildings. The buildings have been located to avoid three trees within the parking lot and adjacent landscape area.

The District has limited the number of buildings constructed out of T1-11 to two modular buildings. The two modular buildings will be located to minimize the visibility of the material from the street. The buildings will be prefabricated with appropriate weather protection methods to reduce any degradation of the material while the modulars are on site for a limited duration. The impact of the requested variance of the building material has been mitigated to the extent practicable.

Additionally, keeping students on the existing school site will reduce the impact on families within the neighborhood who attend the school as they will be able to continue to utilize the campus during construction and will not be required to drive or bus students outside of their neighborhood.

The impacts of the proposed modular buildings have been mitigated to the extent possible.

E. No practical alternatives have been identified which would accomplish the same purpose and not require a variance; and

Applicant's Response: The District has looked at several options to help facilitate the interior remodel of the school while minimizing the impacts on students who attend John McLoughlin Elementary School. Offsite locations have been considered, however with several schools within the District under construction at the same time, there is no property available to locate the students offsite. The District looked at alternatives on site for the location of the modulars, however the southeastern half of the site has grading challenges that make the area unsuitable for the modulars without extensive site work. The District has provided a date certain for the removal of the buildings and will work to remove the buildings at the earliest date possible following the completion of construction and the safety needs of the students while school is in session.

Locating the buildings within the front yard setback allows for the retention of three existing trees on site. The temporary impact on the setbacks will allow for the retention of permanent and established trees on the site.

The District has reserved prefabricated modular buildings. The use of T1-11 siding will be limited to two modular classroom buildings. Four of the modular buildings will be constructed of allowed materials. The District has limited the use of T1-11 siding to the extent possible based on availability and the requirements of the manufacturer to utilize lightweight materials. Because the buildings are prefabricated off site and constructed to meet state requirements and are leased by the District, the District is not able to replace the material and is subject to what is available for lease. No practical alternative exists that would alleviate the need for a variance on site.

F. The variance conforms to the comprehensive plan and the intent of the ordinance being varied.

Applicant's Response: The proposed temporary modulars at John McLoughlin Elementary School are necessary to facilitate the renovation of the existing school building while providing enough classroom space to keep students on the campus minimizing both permanent and temporary impacts on the school campus.

The temporary modulars are consistent with the goals and policies of the Oregon City Comprehensive Plan, which support the provision and enhancement of public facilities, including educational institutions, to serve the community. The project aligns with City policies promoting safe, accessible, and well-maintained school facilities.

The proposed modular classrooms will allow John McLoughlin Elementary school to remain operational while they are being renovated. Keeping students at their neighborhood school is consistent with Goal 3 as it provides a necessary service that is convenient to residents within the school boundary. Remodeling the existing school building and utilizing temporary modular classrooms is consistent with Policy 3.1, which promotes efficient use of land and public infrastructure. Keeping students at their existing campus reduces the impact of the school on transportation and utility infrastructure which is consistent with Policy 3.2 to promote walkable neighborhoods.

CHAPTER 17.62 - SITE PLAN AND DESIGN REVIEW

17.62.35- Minor site plan and design review.

This section provides for a minor site plan and design review process. Minor site plan review is a Type I or Type II decision, as described in OCMC 17.62.035.A, subject to administrative proceedings described in OCMC 17.50 and may be utilized as the appropriate review process only when authorized by the community development director. The purpose of this type of review is to expedite design review standards for uses and activities that require only a minimal amount of review, typical of minor modifications and/or changes to existing uses or buildings.

B. Type II Minor Site Plan and Design Review.

1. Type II minor site plan and design review applies to the following uses and activities unless those uses and activities qualify for Type I review per OCMC 17.62.035.A:

a. Modification of an office, commercial, industrial, institutional, public or multi-family structure that does not increase the interior usable space (for example covered walkways or entryways, addition of unoccupied features such as clock tower, etc.).

b. Modification to parking lot layout and landscaping, or the addition of up to five parking spaces.

c. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage.

d. Mobile food units in OCMC 17.54.115.

e. Other land uses and activities may be added if the community development director makes written findings that the activity/use will not increase off-site impacts and is consistent with the type and/or scale of activities/uses listed above.

2. Application. The application for the Type II minor site plan and design review shall contain the following elements:

a. The submittal requirements of OCMC 17.50.

b. A narrative explaining all aspects of the proposal in detail and addressing each of the applicable criteria listed in OCMC 17.62.

c. Site plan drawings showing existing conditions/uses and proposed conditions/uses.

d. Architectural drawings, including building elevations and envelopes, if architectural work is proposed.

e. Additional submittal material may be required by the community development director on a case-by-case basis.

Applicant's Response: The District is proposing a modification to an institutional campus that will not increase the interior usable space or modify the parking lot layout and landscaping in a permanent way. The proposed modifications are temporary, and the school building and campus will be returned to pre-modular conditions, including interior space and number of parking stalls. This application includes the submittal requirements of 17.50, a narrative explaining the proposal, a site plan drawing, and architectural drawings. This standard is met.

17.62.050 - General standards.

All development shall comply with the following standards:

H. Building Materials.

1. **Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure:**
   a. **Vinyl or plywood siding (including T-111 or similar plywood).**
   b. **Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.**
   c. **Corrugated fiberglass.**
   d. **Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, when excepted by 17.62.050.H.2.g, or when located on properties within the general industrial district).**
   e. **Crushed colored rock/crushed tumbled glass.**
   f. **Non-corrugated and highly reflective sheet metal.**
   g. **Tarps, except for the protection of outside storage.**
2. **Special Material Standards. The following materials are allowed if they comply with the requirements found below:**
   a. **Concrete Block. When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.**
   b. **Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.**
   c. **Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.**
   d. **Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.**

e. Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.

f. Vinyl or powder coated chain link fencing is permitted for city-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the general industrial district.

g. Chain link fencing is permitted in the following circumstances:

1. Within city-owned parks and recreational facilities.

2. On any property when used for a baseball or softball backstop or dugout, track and field facility, or sports court.

Applicant's Response: The District is proposing two modular classroom buildings which will be manufactured out of T1-11, a prohibited material. The applicant is requesting a variance for the proposed material. The requirements of 17.60 have been addressed in this narrative.

In order to facilitate the safety of students, fencing will be added between the existing building and the existing chain link fence along South End Road. The proposed temporary fencing will keep students within the classroom buildings from accessing the parking lot during the school day. The fencing is temporary and associated with construction on the site. A variance is not requested, as the fencing is exempt since it will be utilized for a temporary purpose and will be removed once construction is complete.

I. Temporary Structures. Temporary structures are permitted pursuant to the following standards:

1. Structures up to two hundred square feet:

2. Temporary structures larger than two hundred square feet may be permitted up to two times per year; and:

a. Structures larger than two hundred square feet up to eight hundred square feet:

i. Shall not be on a property for more than thirty consecutive days;

ii. Shall comply with the minimum dimensional standards of the zoning designation;

iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;

iv. Shall not disturb ingress or egress to the site; and

v. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

b. Structures larger than eight hundred square feet:

i. Shall not be on a property for more than seven consecutive days;

Applicant's Response: The District is proposing four modular classrooms, a modular library, and a modular restroom facility on the John McLoughlin Elementary School campus to facilitate the renovation of the school while keeping students on campus. The restroom facility will be approximately 500 square feet and the other five modular buildings will be larger than 800 square feet. The District has requested a variance to subsection b.i. to allow the buildings to remain on the campus until August 2028, to facilitate the full renovation of the school and provide additional time for construction delays. The variance criteria of 17.60 have been addressed within this narrative.

ii. Shall comply with the minimum dimensional standards of the zoning designation;

Applicant's Response: Three of the proposed modular classrooms are proposed to be placed in the 20-foot front yard setback requirement to preserve on-site trees and provide adequate spacing between buildings. A variance to b. ii. has been requested. The variance criteria of 17.60 have been addressed within this narrative.

iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;

Applicant's Response: The proposed modulars will temporarily impact the number of parking spaces on the site, however the minimum number of parking spaces for the primary use is one per classroom, or 27 spaces. The site will have 63 parking spaces available during the construction period. This standard is met.

iv. Shall not disturb ingress or egress to the site; and

Applicant's Response: The primary ingress and egress to the site will not be disturbed by the placement of the modular buildings. This standard is met.

vi. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

Applicant's Response: Subsection 17.62.050.I has been addressed within this narrative. Government buildings are exempt from 17.62.050.J per 17.60.050.I.3.

3. Government owned properties are exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.H and I and the dimensional standards of the zoning designation.

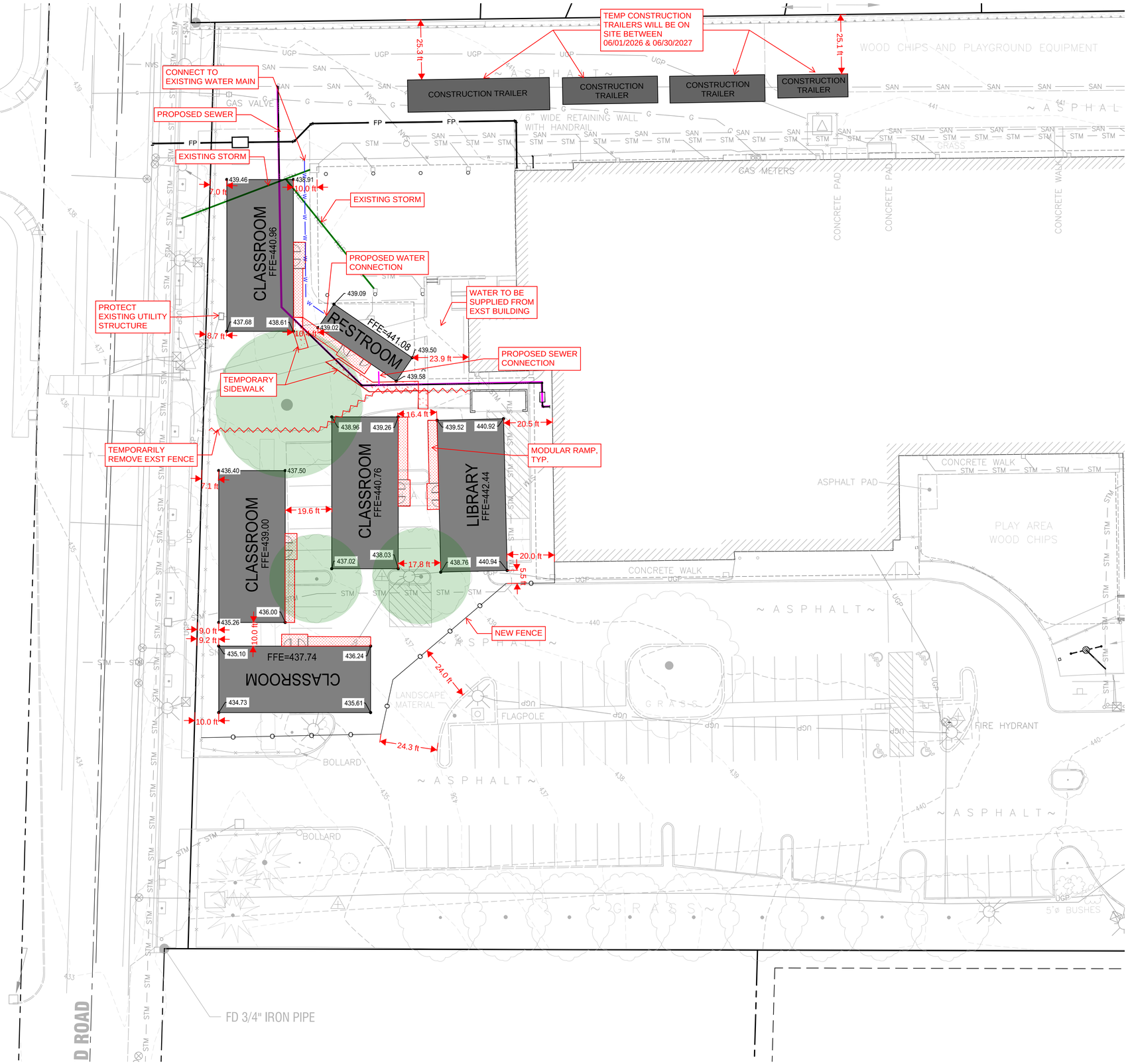
Applicant's Response: Subsections 17.62.050.H and I and the dimensional standards of the R-10 zone have been addressed within this narrative. Government buildings are exempt from 17.62.050.J per 17.60.050.I.3.

SUMMARY AND CONCLUSION

Based upon the materials submitted herein, the Applicant respectfully requests approval from the Oregon City's Planning Department for this Type III Variance and Type II Minor Site Design Review application.

Appendix E - Land Use Plans

- Temporary Modular Site Plan
- Example Modular Classroom Plan
- Example Modular Restroom Plan
- Modular Foundation Plan
- Modular Sample Elevations



kpff
800 Willamette Street, Suite 400
Eugene, OR 97401
O: 541.684.4902
F: 541.684.4909
www.kpff.com

STAMP

FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION

JOB No.:	3006000.00
DESIGNED BY:	MC
DRAWN BY:	SB
CHECKED BY:	AB
PLOT DATE:	1/26/26 3:15pm
PLOTTED BY:	ABrooks
DWG NAME:	0110-xst-JMES-mods.dwg
TAB NAME:	EXH

BRIC ARCHITECTURE

19230 SOUTH END ROAD
OREGON CITY, OR 97045
OREGON CITY SCHOOL DISTRICT 62
T: 503-785-8531

JOHN MCLOUGHLIN ELEMENTARY SCHOOL RENOVATION

SHEET NO.

EXH

SHEET 1 OF 1

RECORD NO. XXXXX-XX

File: N:\cp\2025\250110-OCSD-Phase-2\CAD-JMES\XREF\0110-xst-JMES-mods.dwg TAB:EXH
Plotted: 1/26/26 at 3:15pm By: ABrooks

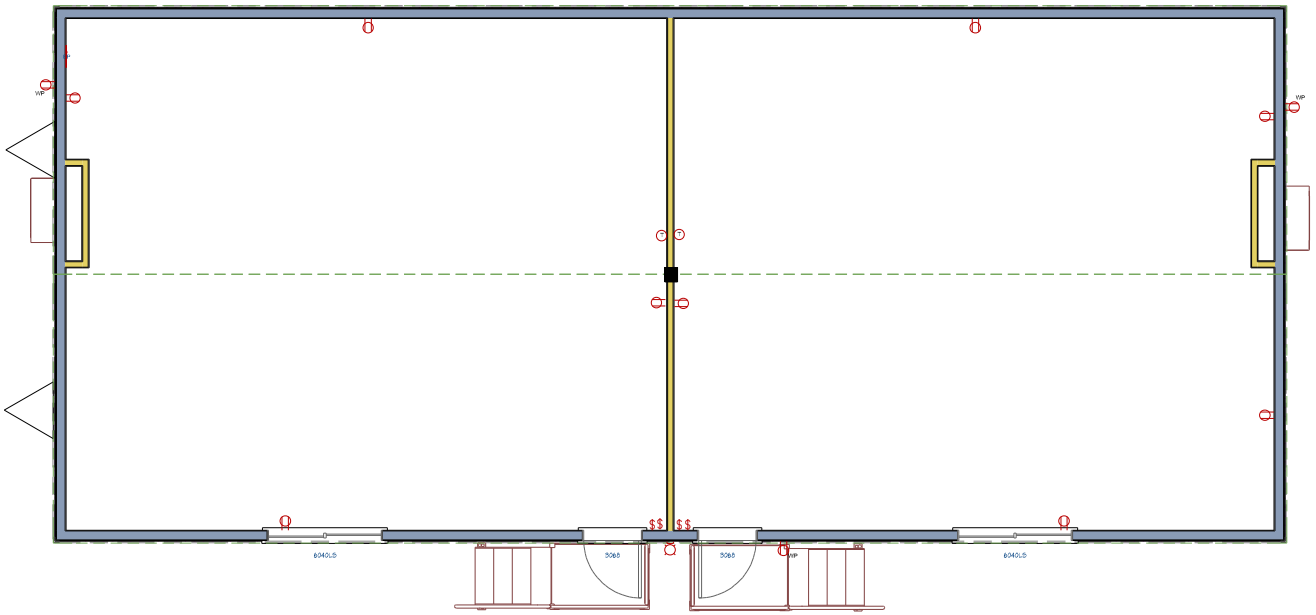
24x36

UNIT #Stock

28' X 64' MOBILE CLASSROOM

PACIFIC MOBILE STRUCTURES

This drawing is the property of Pacific Mobile Structures, Inc. and may not be duplicated without approval. Actual features may vary due to available inventory.



FEATURES

- Outrigger Chassis w/hitch
- Comm. Carpet w/4" vinyl base
- Vinyl wrapped interior wall covering
- 8' suspended ceiling
- 2x4 troffer lights
- Endwall HVAC w/ducted supply
  Plenum wall ducted return
- Asphalt Shingle Roof 2:12 Slope
- LP SmartPanel siding
  Grey siding / Blue trim
- 6040 Horizontal sliding windows
- 3068 Painted steel exterior doors w/closer, passage, and deadbolt
- 3068 Prefinished interior doors w/Timely frame and passage

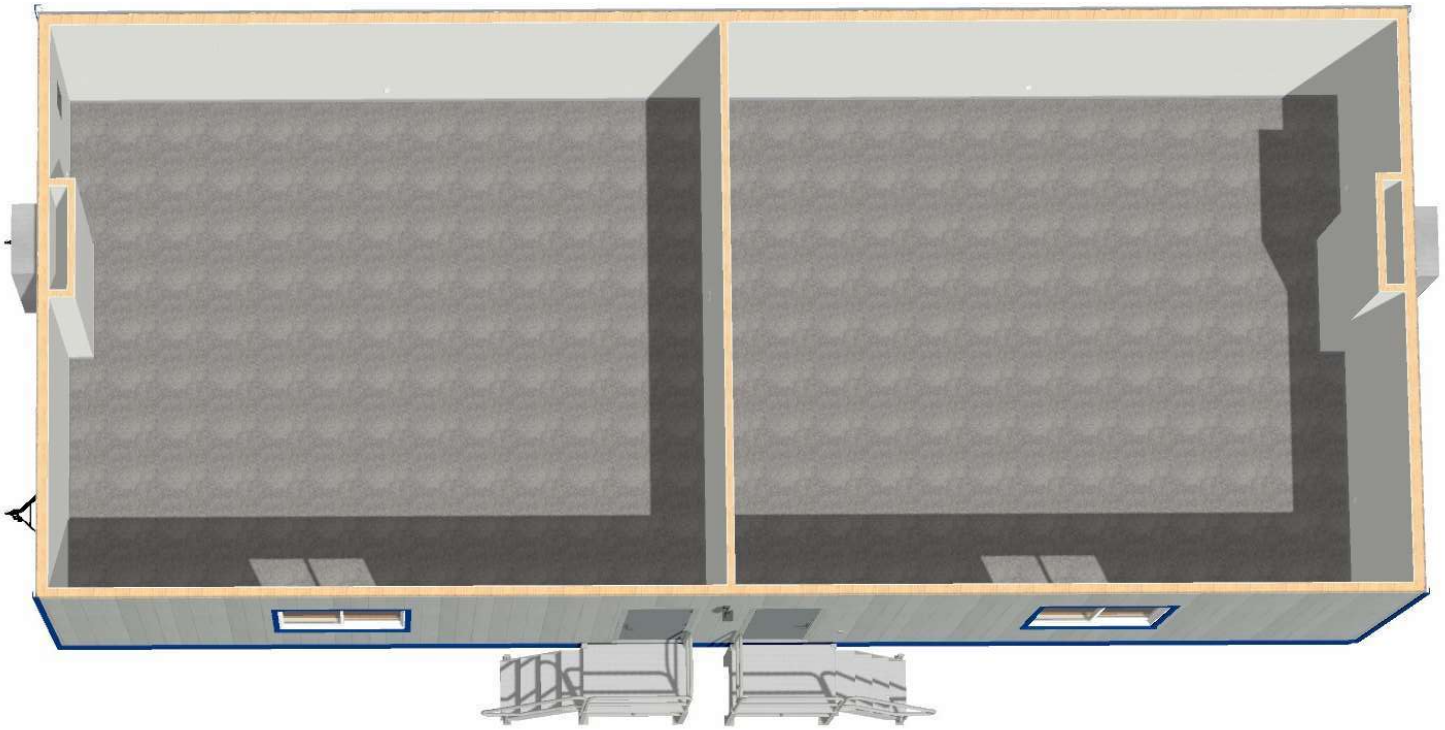
LEGEND EP Panel Box | Porch Light | T Thermostat | Duplex Outlet | $ Light Switch | Perm. Interior wall | Temp. Interior wall | Empty data box

UNIT #Stock

28' x 64' MOBILE CLASSROOM

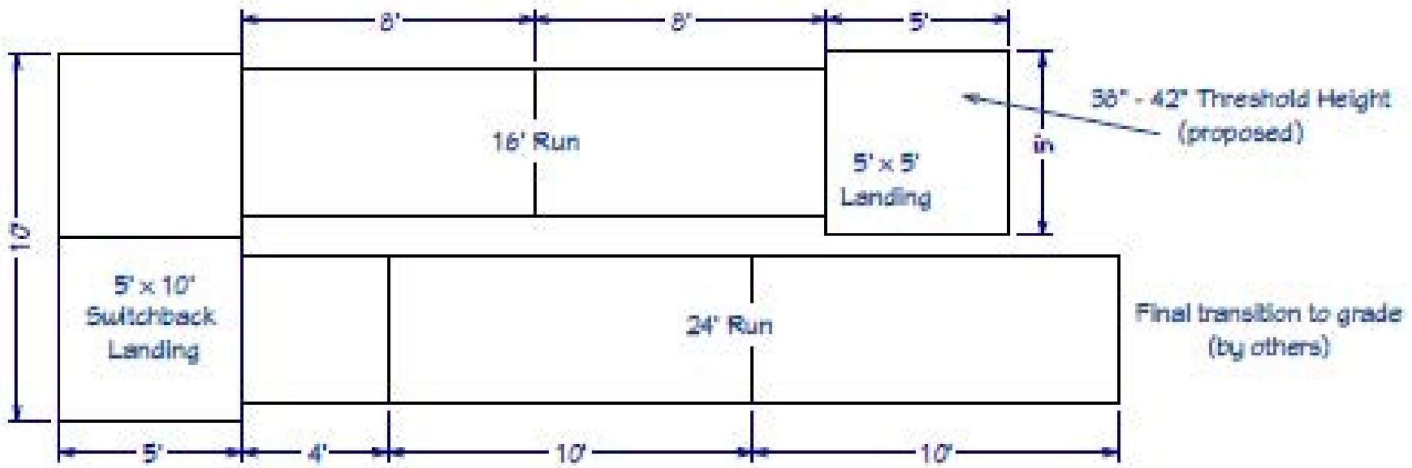
PACIFIC MOBILE STRUCTURES

This drawing is the property of Pacific Mobile Structures, Inc. and may not be duplicated without approval. Actual features may vary due to available inventory.



Optional Skirting

NW - Configuration #5 - 40' Max Run



Lease Quotation #Q065514

Date: 8/30/2025

Company:
Lease Crutcher-Oregon
550 Sw 12th Ave
Portland, OR 97205-2300

Site Location:
John McLoughlin
19230 South End Rd
Oregon City, OR 97045-9753

Kenna Draper
Cell: 208.999.0276
Office: 208.362.6090

Contact:
CA White - 503.314.2722

Site Contact:

Term: 12 Months

Rental Costs Per Month	Qty	Rate	Total
Rental - 12x40 Restroom	1	$2,646.00	$2,646.00
Rental - ADA Ramp 5'x15' with 40' of ramp run and 5x5 rest.	1	$679.00	$679.00
		Total monthly charges	**$3,325.00**

Installation Costs	Qty	Rate	Total
Delivery - Pilot Cars (if needed)	1	$250.00	$250.00
Delivery - Freight	1	$650.00	$650.00
PWR Install - Ramp Labor	1	$0.00	$0.00
PWR Install - Skirting	104	$35.00	$3,640.00
PWR Install - Standard	1	$800.00	$800.00
PWR Install -Tiedown Asphalt	12	$185.00	$2,220.00
		Total startup charges	**$7,560.00**

Estimated Removal Costs*	Qty	Rate	Total
PWR Ramp Removal Labor	1	$0.00	$0.00
PWR Return - Skirting Removal	104	$9.50	$988.00
Return - Standard Teardown	1	$800.00	$800.00
PWR Return - Tiedown Removal (No repair)	12	$75.00	$900.00
Return - Freight	1	$650.00	$650.00
Return - Pilot Cars (if needed)	1	$250.00	$250.00
		Total end of lease charges	**$3,588.00**

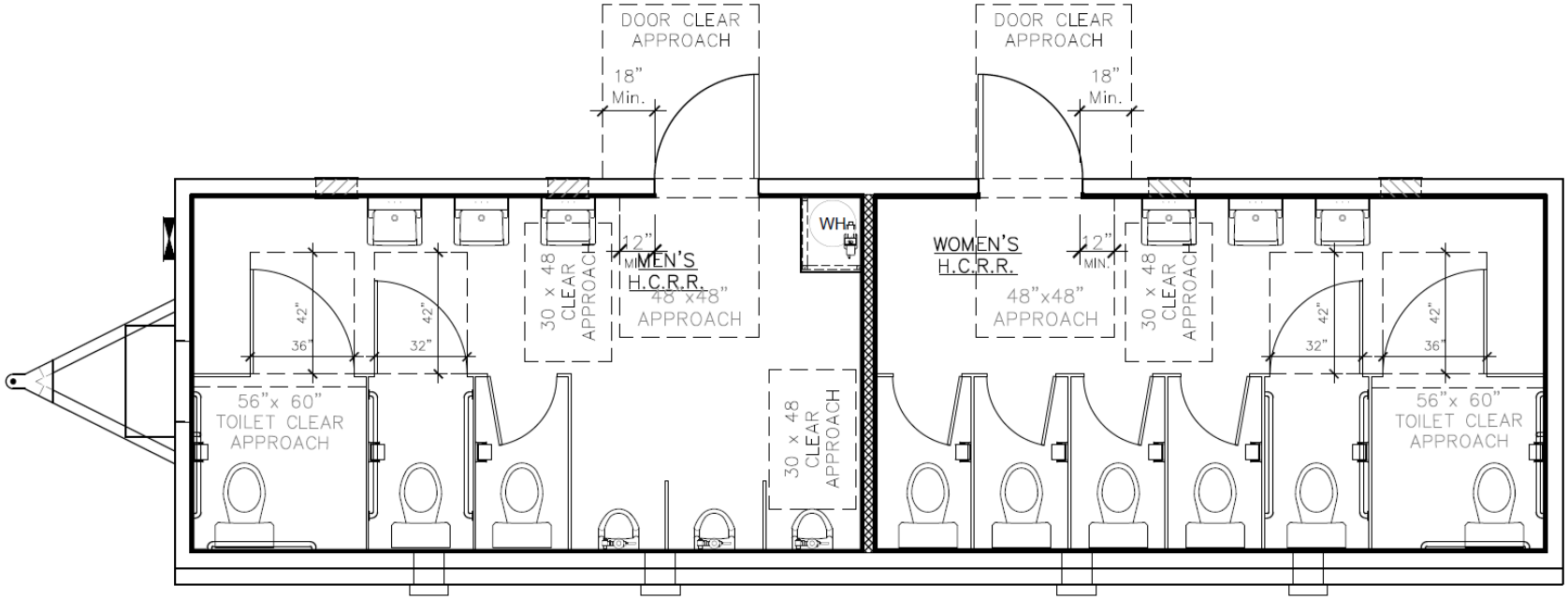
*Calculated at return using current market rates for lease terms greater than 12 mo.

Customer responsibilities: Site preparation, all connection to utilities such as water/sewer, electrical, phone/data, fire alarms/sprinklers, building permits, and permit fees. An insurance certificate that meets general liability and property damage requirements is required before delivery. Please be sure that the site is dry, compacted with minimum 1,500 PSF, level to +/- 6" difference in grade, and accessible by standard truck delivery. If the site is not fully accessible, there may be additional charges. Extra trip charges may occur if the customer decides to stop work in progress. Pricing excludes applicable taxes, ADA ramp access, prevailing wages, removal of axles/hitches, transport pilot cars, and permits (unless noted otherwise). The quote is good for 30-days and is limited to the availability of stock on hand. Please schedule as soon as possible to secure your preferred delivery date.

UNIT #Stock 12' X 40' RESTROOM

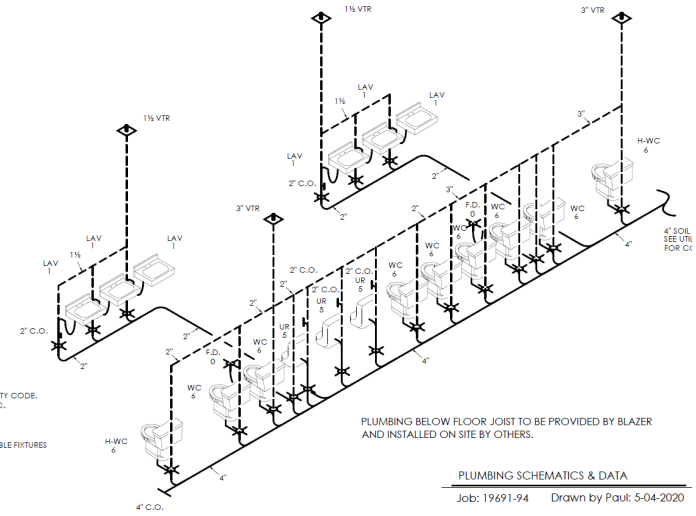
PACIFIC MOBILE STRUCTURES

This drawing is the property of Pacific Mobile Structures, Inc. and may not be duplicated without approval. Actual features may vary due to available inventory.



WATER PIPING:

- FIXTURE UNITS _____ 78
- DEVELOPED LENGTH _____ 80'
- ELEVATION DIFFERENCE _____ 0'
- STREET PRESSURE _____ 46 to 60
- METER SIZE _____ 1"
- BUILDING SUPPLY SIZE _____ 1 1/2"



DRAINAGE AND VENT PIPING:

- FIXTURE UNITS _____ 75.75
- SIZE OF BUILDING DRAIN _____ 4"
- AGGREGATE AREA _____ 17.48

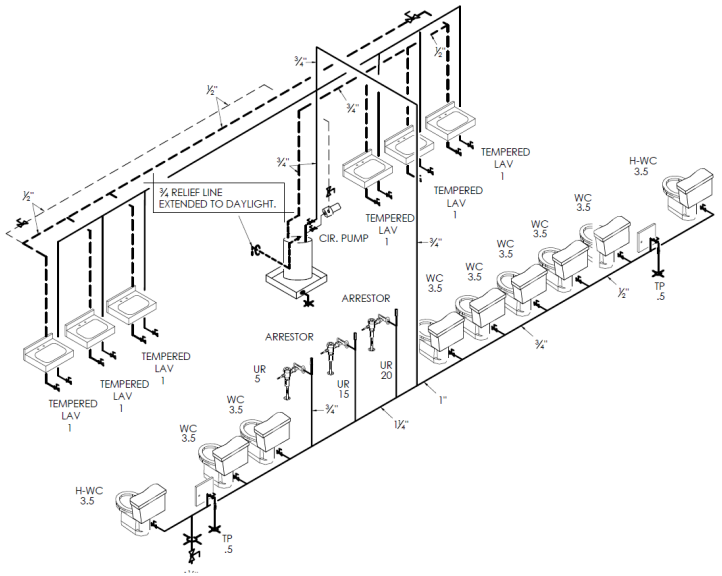
GENERAL NOTES:

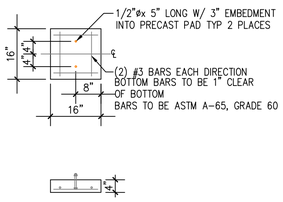
- OREGON: SIZED TO UPC 2017 OREGON PLUMBING SPECIALTY CODE. WASHINGTON: SIZED TO UPC 2015. SIZED TO IDAHO 2015 UPC.
- D.W.V. MATERIAL - P.V.C.
- PER 2009 ANSI A117.1 SECTION 606.6. P-TRAPS ON ACCESSIBLE FIXTURES INSULATED.
- CONTINUATION OF WASTE LINE DONE ON SITE BY OTHERS.
- VENT STUB 10' OFF OF PEAK OF ROOF.

PLUMBING BELOW FLOOR JOIST TO BE PROVIDED BY BLAZER AND INSTALLED ON SITE BY OTHERS.

PLUMBING SCHEMATICS & DATA

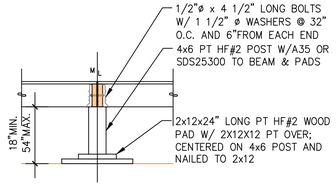
Job: 19691-94 Drawn by Paul: 5-04-2020





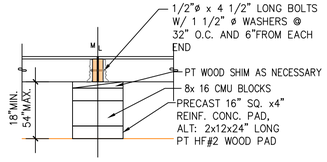
1 F1 PRECAST PAD DETAIL

Scale: 1/2 = 1'-0"



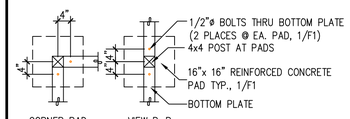
6 F1 M/L SUPPORT, STANDARD

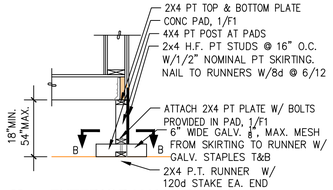
Scale: 1/2 = 1'-0"



6A F1 M/L SUPPORT, OPTIONAL

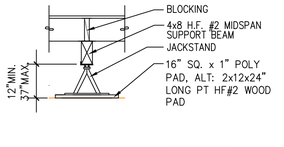
Scale: 1/2 = 1'-0"





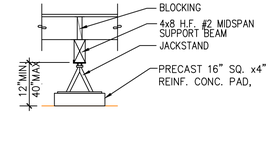
2 F1 EXTERIOR WALL DETAIL

Scale: 1/2 = 1'-0"



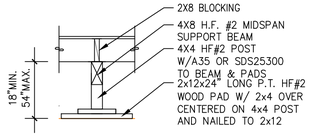
7 F1 MID-SPAN SUPPORT, STANDARD

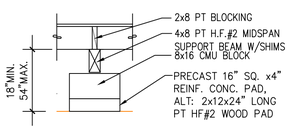
Scale: 1/2 = 1'-0"

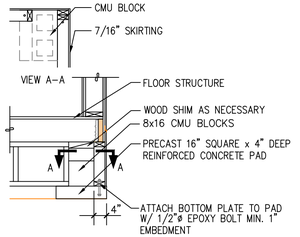


7A F1 MID-SPAN SUPPORT, OPTIONAL

Scale: 1/2 = 1'-0"

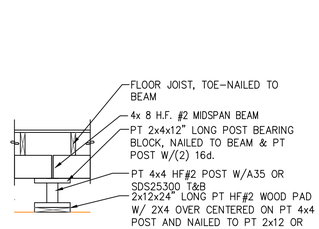






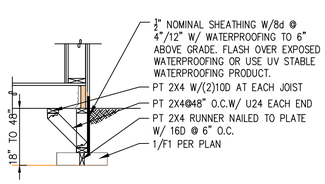
3 F1 OPTIONAL CORNER DETAIL

Scale: 1/2 = 1'-0"



8 F1 MID-SPAN BEAM SPLICE

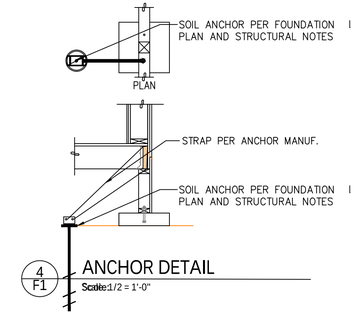
Scale: 1/2" = 1'-0"



9 F1 BACKFILLED WALL DETAIL

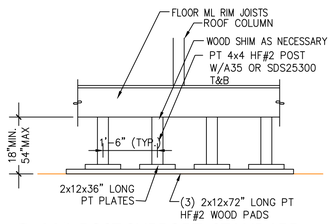
Scale: 1/2 = 1'-0"

NOTES:
1. USE THIS DETAIL WHERE REQUIRED TO MEET GRADE.
2. MAX. SUBGRADE TO GRADE HEIGHT IS 36".



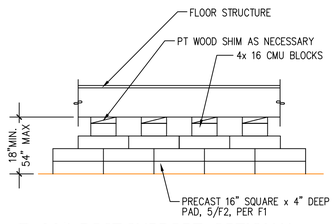
4 F1 ANCHOR DETAIL

Scale: 1/2 = 1'-0"



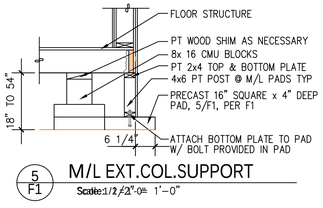
10 F1 M/L POST SUPPORT, STANDARD

Scale: 1/2 = 1'-0"



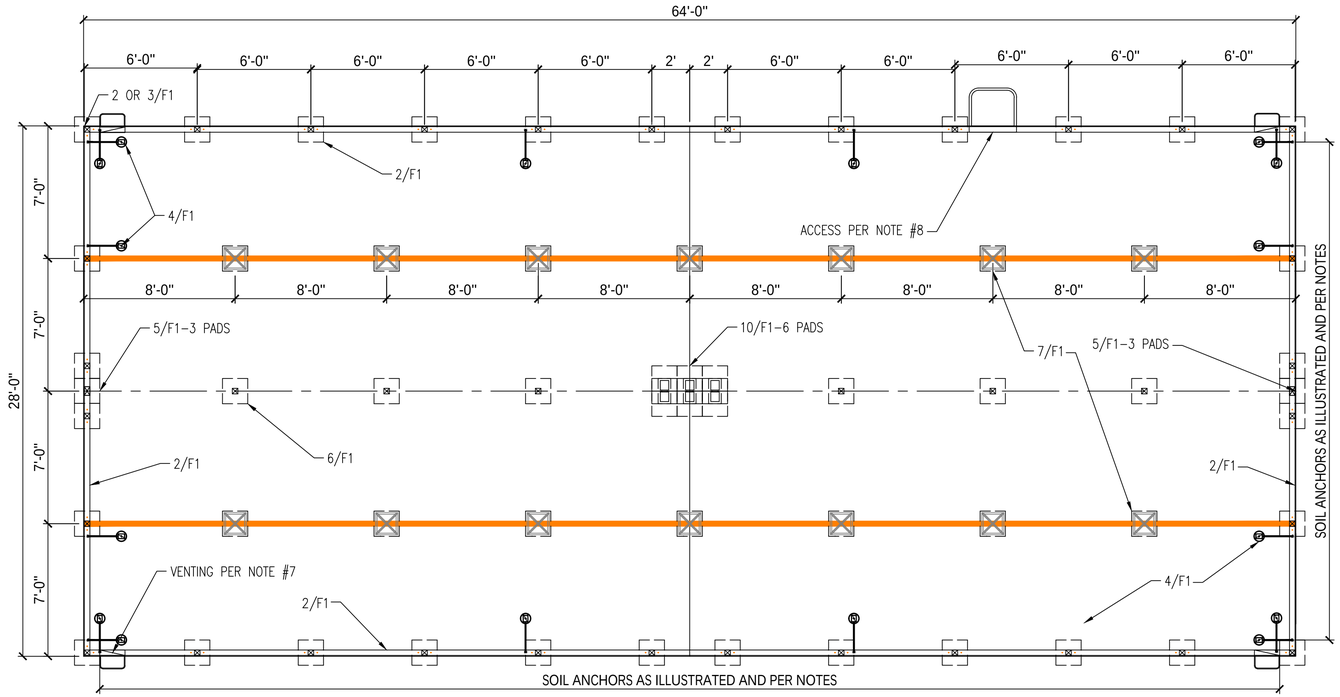
10A F1 M/L POST SUPPORT. OPTIONAL

Scale: 1/2 = 1'-0"



5 F1 M/L EXT.COL.SUPPORT

Scale: 1/2" = 1'-0"



A F1 FOUNDATION PLAN

Scale: 1/4" = 1'-0"

STRUCTURAL NOTES: CLASSROOM

1. GENERAL:
   - 1.1. MODULAR BUILDING MAY VARY BY MANUFACTURER. VERIFY DIMENSIONS AND OTHER CHARACTERISTICS PRIOR TO BEGIN OF FOUNDATION INSTALLATION. MINOR VARIATIONS OF DIMENSION DO NOT CHANGE THE FOUNDATION DESIGN AND INSTALLATION REQUIREMENTS.
   - 1.2. MODULAR BUILDING DESIGN CRITERIA ARE ESTABLISHED FOR GENERAL WORST CASE IN LARGE REGIONS. THESE FOUNDATION PLANS ARE DESIGNED FOR SMALLER MORE SPECIFIC DESIGN AREAS AND MAY NOT MATCH THE BUILDING DESIGN CRITERIA. MATCH THE FOUNDATION TO THE SPECIFIC SITE. BUILDING DESIGN IS TO MATCH OR EXCEED FOUNDATION DESIGN CRITERIA.
   - 1.3. NO GEOTECHNICAL REPORT WAS FURNISHED FOR USE IN DESIGNING THIS FOUNDATION. OWNER IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO FOUNDATION INSTALLATION.
2. DESIGN INFORMATION & LOADING:

2.1.	BUILDING CODE	IBC-2021/2018, ASCE 7-16, OSSC-22
2.2.	RISK CATEGORY	II
2.3.	ROOF LIVE LOAD	25 PSF, SNOW
2.4.	FLOOR LIVE LOAD	40 PSF OR 1,000# CONC.
2.5.	WIND CRITERION	120 MPH, EXP C, Kzt=1.0
2.6.	SEISMIC CRITERION	Sds = 1.20, Ie=1.0, CATEGORY D
2.7.	SOIL BEARING	1,500 PSF, SITE CLASS D

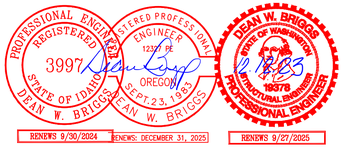
3. CONCRETE:

3.1.	DESIGN COMP.STRENGTH	2,500 PSI
3.2.	REINFORCING BAR YIELD	60 KSI

4. MASONRY:

4.1.	8x16x8 UNITS	ASTM C-90, GRADE N
4.2.	SET UNITS W/CORES VERTICAL & NO MORE THAN 3 HIGH, PER PLAN	

5. WOOD:
   - 5.1. ALL WOOD MEMBERS OF THE FOUNDATION SYSTEM SHALL BE SPF-STD OR BETTER, UNLESS NOTED OTHERWISE.
   - 5.2. ALL WOOD IN CONTACT OR WITHIN 8-INCHES WITH SOIL SHALL BE PRESERVATIVE TREATED.
   - 5.3. CONNECTORS USED IN PRESERVATIVE TREATED WOOD MEMBERS SHALL BE STAINLESS STEEL OR HOT-DIPPED GALVANIZED TO THE GALVANIZING WEIGHT AS SPECIFIED IN IN ASTM A 153.
   - 5.4. SKIRTING IS NOT INTENDED TO BE A 'SHEAR WALL', RATHER A SKIN FOR ENCLOSURE OF THE CRAWLSPACE.
   - 5.5. PROVIDE 18" MIN. CLEARANCE FROM SOIL TO UNDERSIDE OF ANY UNTREATED WOOD MEMBER.
6. SPECIALTY ITEMS: 'MINUTEMAN' OR EQUAL, HTTP://MINUTEMANPRODUCTS.COM/MINUTE-MAN-PRODUCTS/
   - 6.1. METAL PIERS TO BE CAPABLE OF SUPPORTING 6,000#
   - 6.2. SOIL ANCHORS SHALL BE "MINUTE MAN", OR EQUIVALENT, IN CONFORMANCE WITH THE TYPE SPECIFIED BY THE MANUFACTURER FOR THE SITE SPECIFIC SUBGRADE MATERIAL AND SHALL CONFORM TO THE FOLLOWING:
   - 6.3. DESIGN WORKING STRESS LOAD OF 3,150# W/ AN ULTIMATE STRENGTH LOAD OF 4,725#
   - 6.4. INSTALL GROUND PORTION OF THE ANCHOR PRIOR TO SETTING THE BUILDING.
   - 6.5. CONNECT ANCHOR TIES TO BUILDING ONLY AFTER BUILDING IS FULLY BLOCKED AND LEVELED.
   - 6.6. ANCHORS SHALL BE ONE OF THE FOLLOWING AT EACH LOCATION ILLUSTRATED ON A/F1 AS DETERMINED BY THE TYPE OF SUBGRADE PER THE MANUFACTURERS INSTALLATION MANUAL. OWNER IS RESPONSIBLE TO DETERMINE SUBGRADE SOIL CLASS PRIOR TO INSTALLATION.:
     - 6.6.1. SOIL CLASS 1 (ROCK): 36-XDH
     - 6.6.2. SOIL CLASS 2 (ASPHALT W/GRAVEL BASE OR GRANULAR STRUCTURAL FILL): (1) GW2NU OR (2) 36-XDH.
     - 6.6.3. SOIL CLASS 3 (LOOSE SANDS & GRAVELS, STIFF SILTS & CLAYS): 92-4430-DH ¾ OR GW2NU AUGER-ANCHOR SET VERTICAL W/6" STABILIZER HEAD OR (2) 48-XDH DRIVEN ANCHORS, EA W/SD2A STABILIZER PLATE.
     - 6.6.4. SOIL CLASS 4 (LOOSE SANDS, FIRM CLAYS AND SILTS, ALLUVIAL FILLS): 93-4636-DH ¾ AUGER ANCHOR SET VERTICAL W/6" STABILIZER HEAD.
   - 6.7. INSTALL ALL SPECIALTY ITEMS PER THE MANUFACTURER'S RECOMMENDATIONS.
7. VENTING:
   - 7.1. INSTALL A CLASS I VAPOR RETARDER OVER THE CRAWLSPACE AREA TO EXTERIOR OF BUILDING.
   - 7.2. PROVIDE CRAWL SPACE VENTILATION PER IBC CODE AND LOCAL REQUIREMENTS AT 1 NET SF OF VENTILATION PER 1500 SF OF FLOOR AREA.
8. ACCESS:
   - 8.1. PROVIDE 30"x24" ACCESS TO THE UNDER FLOOR AREA PER THE IBC CODE.
   - 8.2. PROVIDE 18" MIN. CLEARANCE UNDER FROM SOIL TO UNDERSIDE OF ALL BUILDING STRUCTURE.
9. SITE CONDITIONS:
   - 9.1. FOUNDATION SUBGRADE TO BE 4-INCHES OF ROAD-MIX GRAVEL, STRUCTURAL FILL OVER UNDISTURBED NATIVE SOILS OR STRUCTURAL FILL,.
   - 9.2. STRUCTURAL FILL TO BE COMPACTED TO 95% OF THE STANDARD PROCTOR DENSITY PER ASTM D-698.
   - 9.3. SLOPE FINISHED GRADE AWAY FROM THE BUILDING FOUNDATION AT A MIN. GRADE OF 2%.
10. SPECIAL STRUCTURAL INSPECTION (IBC CHAPTER 17):
    - 10.1. NO SPECIAL STRUCTURAL INSPECTION IS REQUIRED



Pacific Mobile
Mobile & Modular Buildings

BRIGGS ENGINEERING, INC.
B R I G G S
CIVIL STRUCTURAL LAND SURVEY
5999 W STATE ST. N. GARDEN CITY, ID 83703 - (208) 344-9700

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR OTHERWISE, WITHOUT THE EXPRESS WRITTEN CONSENT OF BRIGGS ENGINEERING, INC.

KCDA STYLE BUILDING
28'x64' MODULAR CLASSROOM
25 PSF-RLL, 120C-WLL, SDS=1.2

SHEARWALL FOUNDATION PLAN - ELEVATION - NOTES

SCALE: AS SHOWN

DWG NO: 2301.01.6.1-F1-2

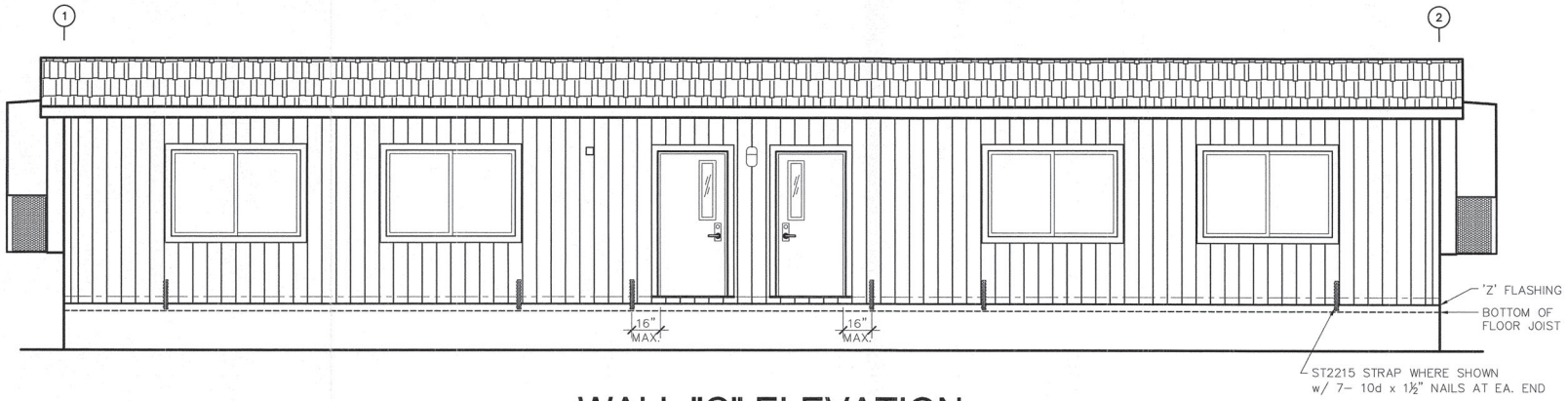
DWG DATE: DECEMBER 2023

REVISION DATE: 12/12/2023

F1

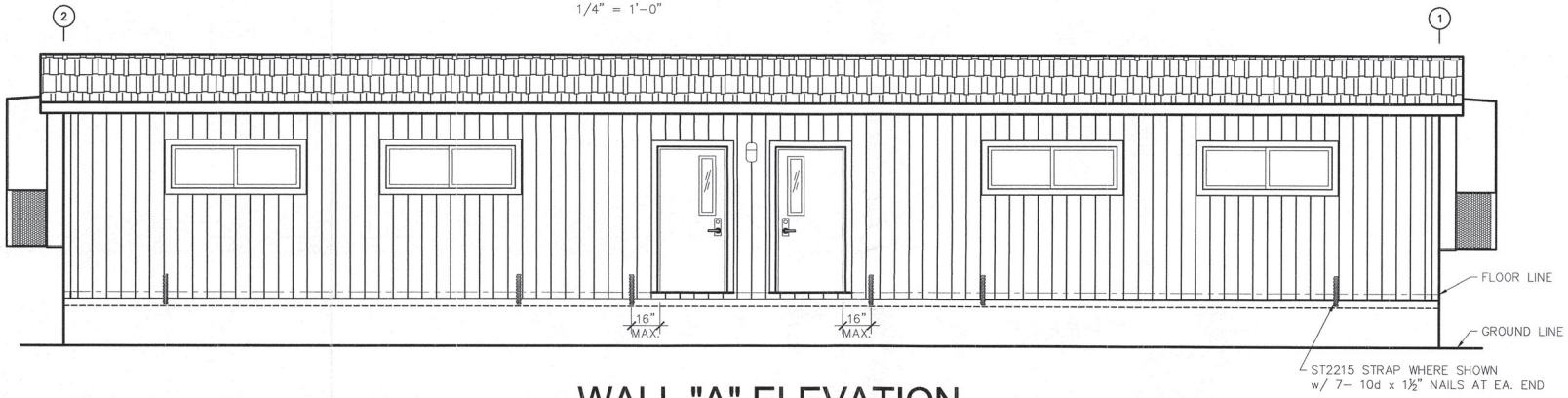
SHEET: 1 OF 1

PMSI-ROBBIE TAYLOR



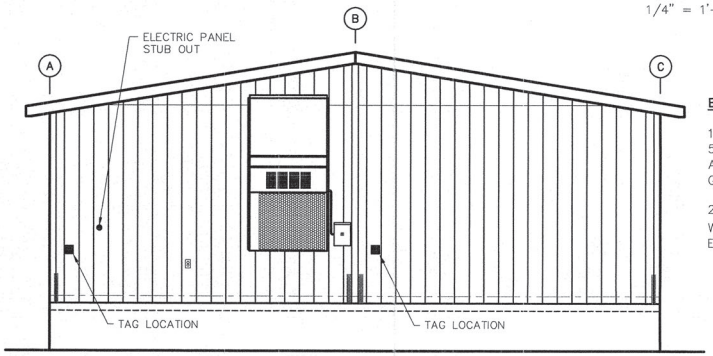
WALL "C" ELEVATION

1/4" = 1'–0"



WALL "A" ELEVATION

1/4" = 1'–0"



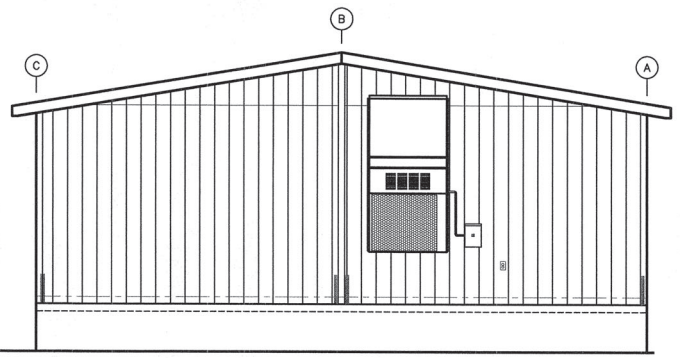
WALL '1' ELEVATION

1/4" = 1'–0"

ENDWALL FASTENING:

1. INSTALL 5/8" DURATEMP SIDING OVER 5/8" GYLAP WITH ALL EDGES SUPPORTED AND FASTENED WITH 0.113 x 2 3/8" GALV. NAILS @ 4"oc EDGE, 12"oc FIELD

2. INSTALL ST2215 STRAPS WHERE SHOWN WITH 7– 10d x 1½" NAILS EACH END OF EACH STRAP



WALL '2' ELEVATION

1/4" = 1'–0"

DATE	REVISION	BY
12-18-17	PRELIM REVIEW - SP	LDG
1-2-18	ENGINEERING	LDG

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Blazer INDUSTRIES, INC.
P.O. BOX 489 ■ AUMSVILLE, OR 97325-0489

MODULAR
28 x 64
OR, WA GOLD

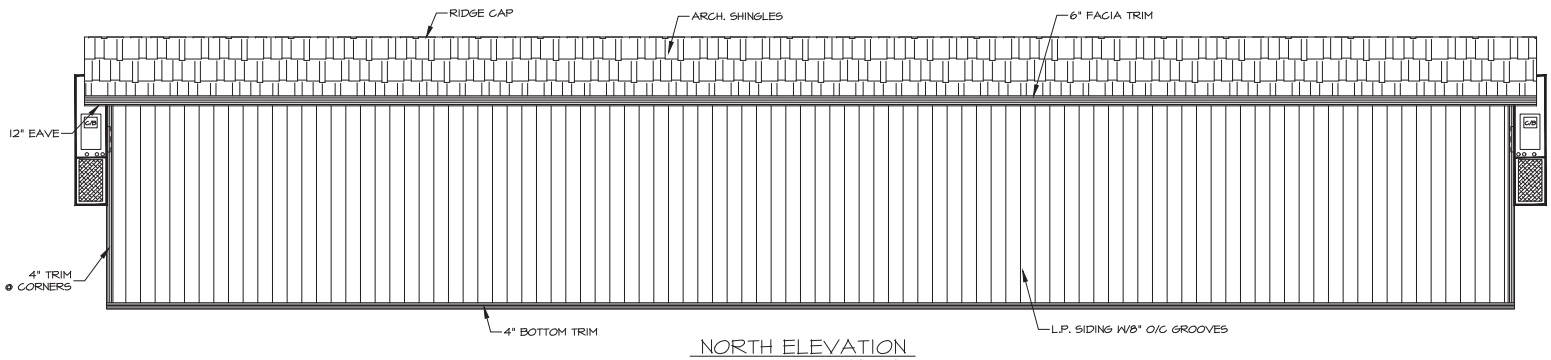
CLASSROOM for:
K.C.D.A. - Lease Unit
Pacific Mobile 18 BLMP-27

Approved for Const: 1-15-18
File Copy: SP 1-4-18
Drawn By: LDG
Issue Date: 1-2-18

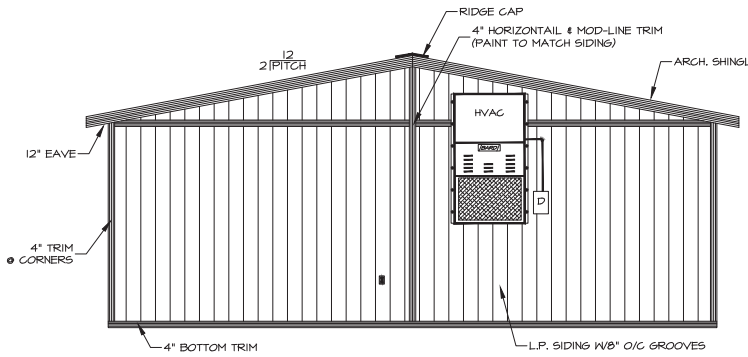
Job No: 19092-19098

A-3

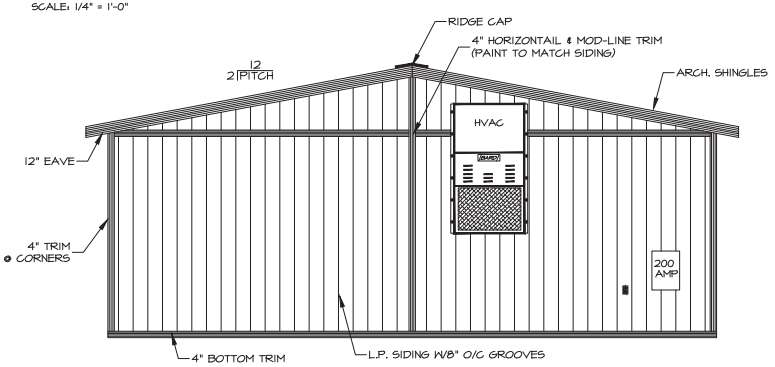
R:\2017 Drawings\Classrooms and Daycares\19092-19098 KCDA Lease Unit Classroom 28x64\19092-19098 Lease Unit Classroom 28x64.dwg, A-3, 1/2/2018 1:15:59 PM



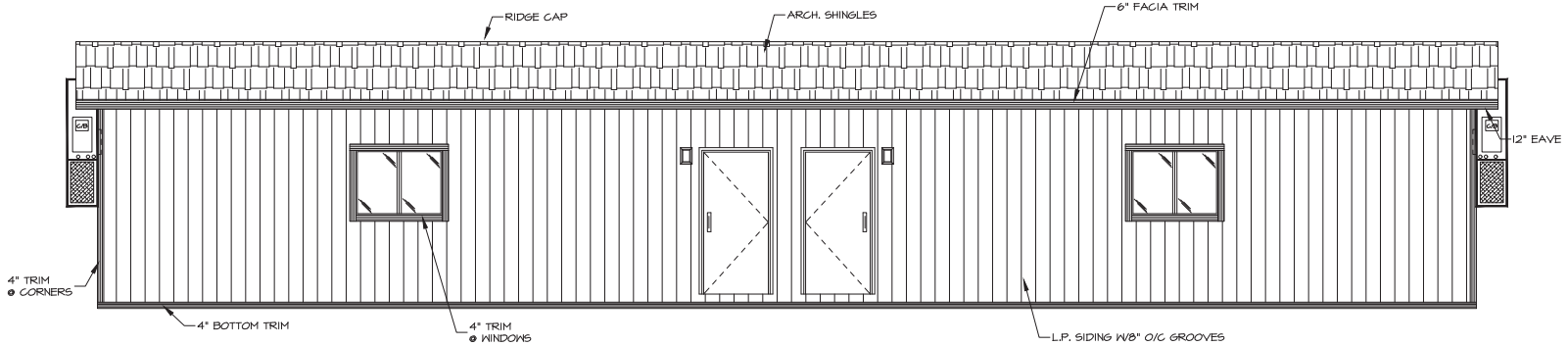
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



WEST ELEVATION
SCALE: 1/4" = 1'-0"



EAST ELEVATION
SCALE: 1/4" = 1'-0"



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

AS BUILT DRAWING

NWBS MODULAR BUILDINGS ARE GOVERNED FOR CODE COMPLIANCE BY THE STATE IN WHICH THE BUILDING IS TO BE PLACED UPON COMPLETION. ALL STATES USE THEIR LATEST STATE ADOPTED CODES FOR THEIR REVIEW OF MODULAR BUILDING PLANS. BUILDING TYPE AND USE DICTATE WHAT THE STATE ALSO REVIEWS. NWBS RELIES ON THE STATE APPROVAL AND CUSTOMER SIGNED DRAWINGS TO PROVIDE INSURANCE OF CODE COMPLIANCE AND CUSTOMER SATISFACTION PRIOR TO CONSTRUCTION OF PROJECTS.

DATE	REVISION	REV. BY

DESIGN & LAYOUT ARE AS REQ'D BY DEALER & CLIENT WITH ENGINEERING CHANGES AS REQ'D TO COMPLY WITH APPLICABLE CODES and PRACTICAL CONSTRUCTION METHODS.
NOTE: SPECIFICATIONS, DESIGN AND DESIGN SUITABILITY ARE THE DEALER / CLIENT RESPONSIBILITY AND ARE INTENDED FOR THEIR EXCLUSIVE USE

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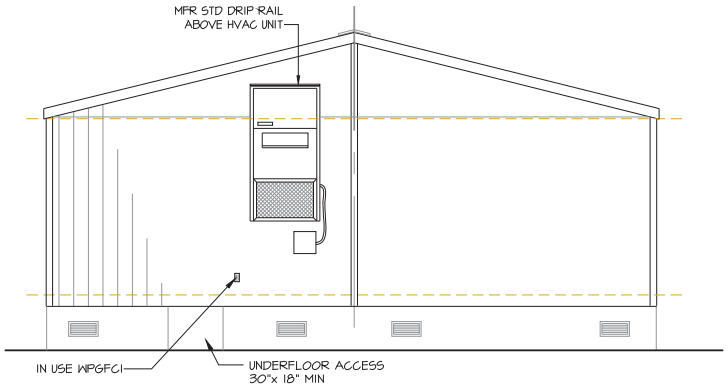
JOB #21281-21285 A&B
DATE: MAY 18, 2021
DRAWN BY: BM APP. BY: BM

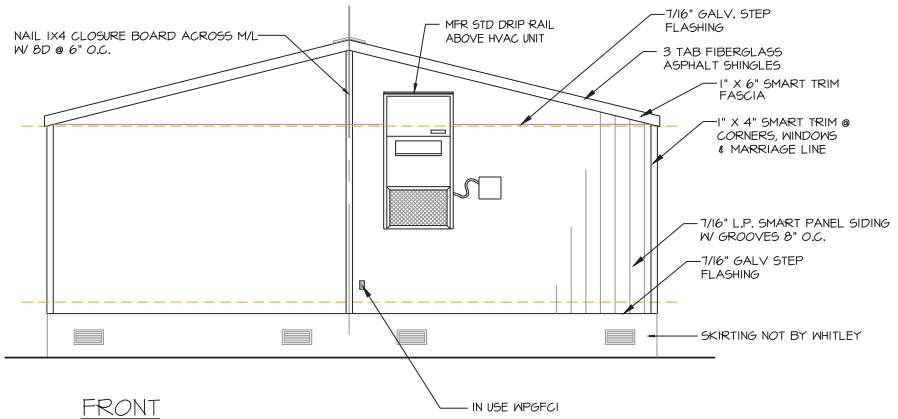
PROJECT: 28' x 64' CLASSROOM (WET)
CUSTOMER: N.W.B.S STOCK - DESIGN MASTER
DEALER: N.W.B.S. - ROSS PARKS
DLR. LOCATION: BOISE, IDAHO - (208) 344-3527

NWBS
405 E. BOEING LANE
BOISE, IDAHO 83716
PH: (208) 344-3527
FAX: (208) 345-0420

SHEET: 4



REAR



FRONT

GABLE END VENTING IN ACCORDANCE W/ 2003 IBC 1203.1
SEE CALCULATION BELOW

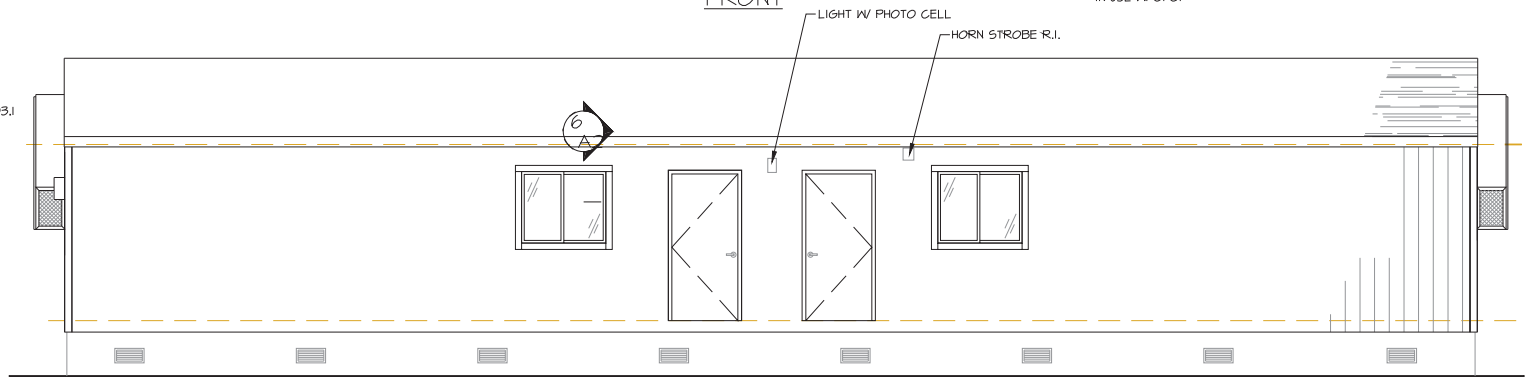
$\frac{28' \times 64' = 1792 \text{ SQ FT}}{300} = 5.97 \text{ SQ FT} \times 144 = 860 \text{ SQ IN}$ VENTING REQUIRED:

96 VENT NOTCHES X 9 SQ IN = 864 SQ IN VENTING PROVIDED:

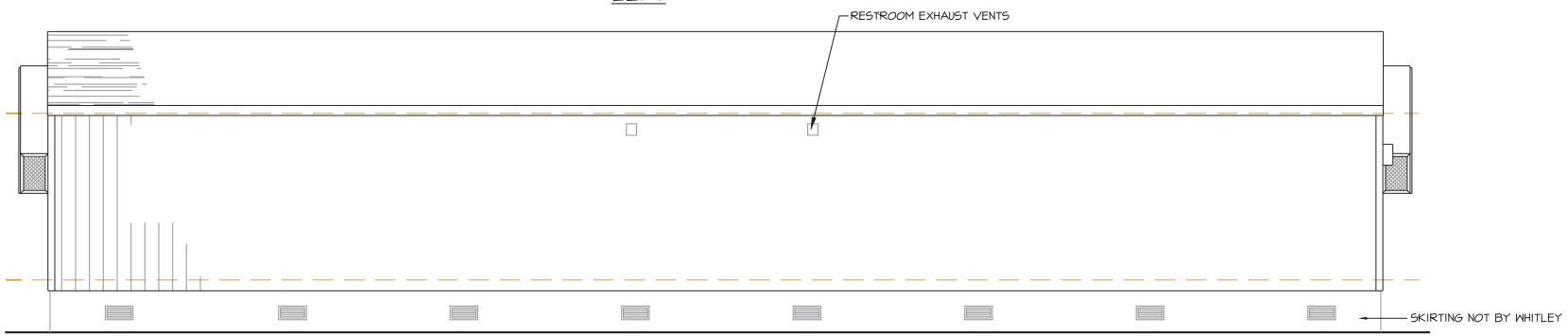
FOUNDATION VENT CALCULATION:

$28'x\ 64' = \frac{1792 \text{ sq ft}}{150} = 11.94 \text{ sq ft} \times 144 = 1720.32 \text{ sq in}$

FOUNDATION VENTS PROVIDED:
24 VENTS AT 75 sq in EACH = 1800 sq in



LEFT



RIGHT

EXTERIOR ELEVATIONS

Scale: 1/4" = 1'-0"

MARK	REVISION	Date
1	CUSTOMER SUBMITTAL	5/17/05
2	L&I/BCD/ID SUBMITTAL -	5/23/05
3	L&I - PLAN RENEWAL & ENERGY CODE UPDATE -	4/10/06

Pacific Mobile
Mobile & Modular Buildings

WHITLEY EVERGREEN INC.
14219 SMOKEY POINT BLVD.
MARYSVILLE, WA 98271
(360) 653-5790 (360) 654-7735 FAX.

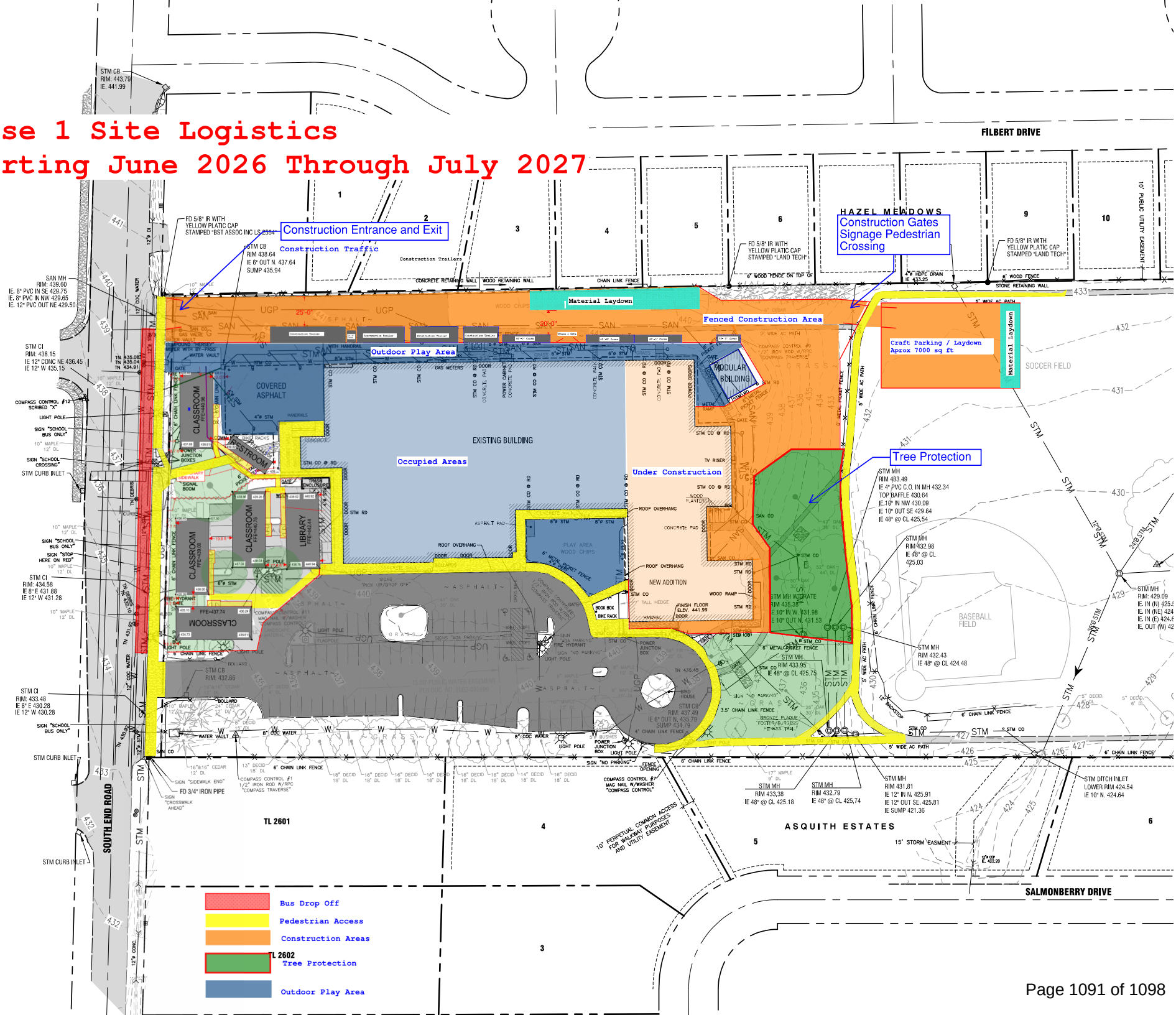
PACIFIC MOBILE LEASE
JOB NAME 28'x 64' MOBILE CLASSROOM
EXTERIOR ELEVATIONS
SHEET TITLE

THIS DRAWING CANNOT BE REPRODUCED WITHOUT THE WRITTEN CONSENT OF WHITLEY EVERGREEN INC.

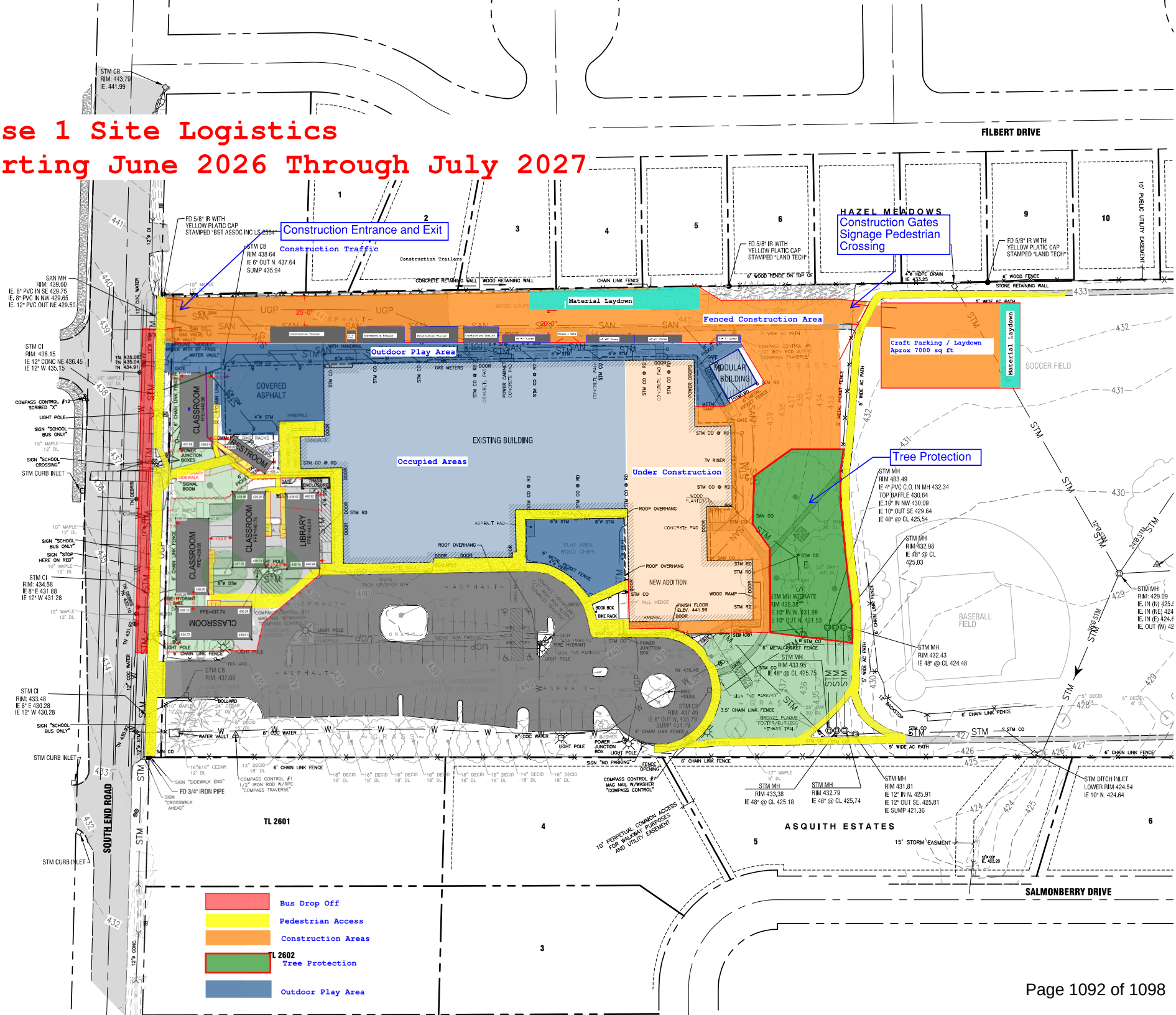
S/N: 0306-126/135-A/B
STD PLAN #: FBS0500075
DRAWN BY: ALV FILE: 3874-A

JOB NO: 3874
SHT. A.3
DATE: 4/04/06

Phase 1 Site Logistics
Starting June 2026 Through July 2027



Phase 1 Site Logistics
Starting June 2026 Through July 2027



Appendix D - Tree Protection Plan

TERAGAN & ASSOCIATES, INC.
ARBORICULTURAL CONSULTANTS

January 26, 2026

Oregon City School District
995 South End Rd.
Oregon City, OR 97045

RE: Tree Protection Recommendations for Modular Classroom Installation at John McLaughlin Elementary School

Summary
The purpose of this memorandum is to outline the recommendations made by our firm regarding the planned installation of modular classroom buildings as John McLaughlin Elementary School in Oregon City, OR 97045. The following recommendations provided below should be implemented prior to the mobilization of of the planned classroom installation (See Appendix C for a site map and planned classroom locations).

Recommendations
There are four trees in direct proximity to the planned modular buildings which should be protected during the installation process. These are trees #3030, a 14-inch red oak (*Quercus rubra*), #3031 a 15-inch red oak, #3032 a 19-inch red oak, and #3059 a 46-inch Oregon white oak (*Quercus garryanna*). I have made the following recommendations to protect the four trees during this process:

- Perform lift pruning to trees #3030, #3031, #3032, and #3059 in collaboration with and under the direction of the project arborist to provide clearance for the new buildings prior to the mobilization of the modular classroom buildings.
- It is recommended to construct the temporary sidewalks located within the root zones of the trees above the existing grade and without the use of excavation. If excavation is necessary to meet the required grading, the excavation shall be limited to the removal of the top organic layer only and this work shall be performed under the supervision of the project arborist. It is recommended that the new temporary sidewalks are constructed on top of a six-inch-thick layer of wood chips placed on top of landscaping fabric to protect the tree roots present below grade.
- It is recommended to install a four to six inch thick layer of course wood chip mulch throughout the undeveloped grass area below tree #1059. The installation of the woodchips will help the tree sustain the additional foot traffic and soil compaction which is likely to occur as a result of the new and additional foot traffic in the tree's rooting area.
- The installation of four to six inches of woodchip mulch is recommended in any additional areas which are not currently paved and which will receive an increase in foot traffic following the installation of the new modular buildings

Conslusion
The large Oregon white oak and three red oak trees in proximity to the planned new modular classrooms must be protected during this construction process. The recommendations provided in the body of the letter above should be adhered to during the completion of this planned work.

No new excavations are to occur within the root protection zones of the four trees without direct collaboration with the project arborist.

Please contact me with any questions or concerns regarding the contents of this memo.

Sincerely,
Tom Feitl

Tom Feitl

ISA Board Certified Master Arborist #MN4772BM
Tree Risk Assessment Qualified

Enclosures:
Appendix A: Certification of Performance
Appendix B: Assumptions and Limiting Conditions
Appendix C: Site Plan with Planned Modular Markups

Appendix A: Assumptions and Limiting Conditions

1. A field examination of the site was made. My observations and conclusions are as of that date.
2. Care has been taken to obtain all information from a reliable source, however the arborist can neither guarantee nor be responsible for accuracy of information provided by others.
3. Unless stated otherwise, information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection. The inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee that problems or deficiencies of the subject tree may not arise in the future.
4. This report and any values/opinions expressed herein represents my opinion as an arborist. Inaction on the part of those receiving the report is not the responsibility of the arborist.
5. Loss or alteration of this report invalidates the entire report.
6. Any legal description provided to the consultant/ appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. All property is appraised or evaluated as free and clear, under responsible ownership and competent management.
7. The consultant/ appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment for such services.
8. Possession of this report does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written consent of the consultant/ appraiser.

Appendix B: Certification of Performance

I, Tom Feitl, certify that:

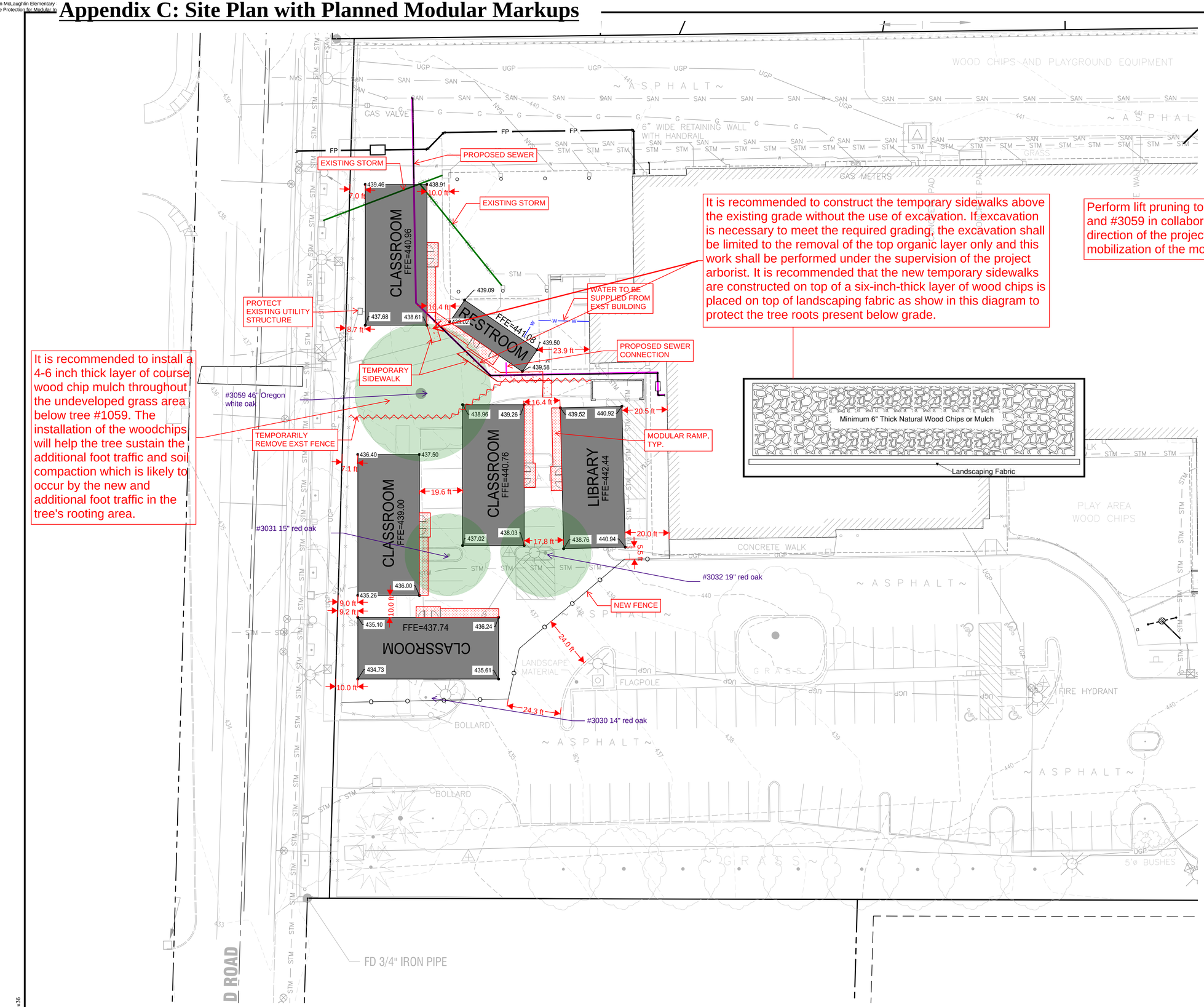
- I have personally inspected the trees, and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report and the Terms of the Assignment.
- I have no current or prospective interest in the vegetation or the property that is subject to this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions and conclusions stated herein are my own and are based on current professional procedures and facts.
- My analysis, opinions and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated in the report.
- My compensation is not contingent upon reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member of, and certified as an arborist by the ISA. I have been involved in the arboricultural field in a full-time capacity for a period of 11 years.

Sincerely,

Tom Feitl | Associate
ISA Board Certified Master Arborist #MN4772BM
ISA Tree Risk Assessment Qualified

Appendix C: Site Plan with Planned Modular Markups



It is recommended to install a 4-6 inch thick layer of course wood chip mulch throughout the undeveloped grass area below tree #1059. The installation of the woodchips will help the tree sustain the additional foot traffic and soil compaction which is likely to occur by the new and additional foot traffic in the tree's rooting area.

It is recommended to construct the temporary sidewalks above the existing grade without the use of excavation. If excavation is necessary to meet the required grading, the excavation shall be limited to the removal of the top organic layer only and this work shall be performed under the supervision of the project arborist. It is recommended that the new temporary sidewalks are constructed on top of a six-inch-thick layer of wood chips is placed on top of landscaping fabric as show in this diagram to protect the tree roots present below grade.

Perform lift pruning to tree #3030, #3031, #3032, and #3059 in collaboration with and under the direction of the project arborist prior to the mobilization of the modular classroom buildings.

SCALE 1 INCH = 20 FEET
20 0 20 40

kpff
800 Willamette Street, Suite 400
Eugene, OR 97401
O: 541.684.4902
F: 541.684.4909
www.kpff.com

STAMP

FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION

JOB No.:	3006000.00
DESIGNED BY:	XXX
DRAWN BY:	XXX
CHECKED BY:	XXX
PLOT DATE:	12/22/25 8:39am
PLOTTED BY:	MBluhm
DWG NAME:	0110-xst-JMES-mods.dwg
TAB NAME:	EXH

Client Address

PROJECT TITLE DESCRIPTION
PROJECT TYPE TITLE
PROJECT SUB-TITLE (OPTIONAL)
SHEET SUB TITLE (OPTIONAL)
SHEET TYPE
SHEET STATION RANGE (OPTIONAL)

SHEET NO.
EXH

SHEET 1 OF XX
RECORD NO. XXXXX-XX

Teragan & Associates, Inc.
3145 Westview Circle, Lake Oswego, OR 97034
Phone : 503.697.1975 • Email : info@teragan.com

File: N:\cop\2025\250110-OCSD-Phase-2\CAD-JMES\XREF\0110-xst-JMES-mods.dwg TAB:EXH
Plotted: 12/22/25 at 8:39am By: MBluhm
24x36