



CITY OF OREGON CITY

CITY COMMISSION REGULAR MEETING

AGENDA

Virtual Meeting
Wednesday, May 19, 2021 at 7:00 PM

VIRTUAL MEETING OF THE CITY COMMISSION

This meeting will be held online via Zoom and streamed on the City's YouTube; please contact recorderteam@orccity.org for assistance.

The public is strongly encouraged to relay concerns and comments to the Commission in one of three ways:

- *Email at any time up to 12 p.m. the day of the meeting to recorderteam@orccity.org.*
- *Phone call (Monday – Friday, 8 am – 5 pm) to 503-496-1505, all messages will be relayed and/or citizens can register to provide over-the-phone testimony during 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. FLAG SALUTE

3. CEREMONIES AND PROCLAMATIONS

[3a.](#) Ruth McBride Powers Preservation Award and Presentation

4. CITIZEN COMMENTS

Citizens are allowed up to 3 minutes to present information relevant to the City but not listed as an item on the agenda. Prior to speaking, citizens shall complete a comment form and deliver it to the City Recorder. The City Commission does not generally engage in dialog with those making comments but may refer the issue to the City Manager. Complaints shall first be addressed at the department level prior to addressing the City Commission.

5. PRESENTATIONS

[5a.](#) Update on Temporary Shower Trailer at Milner Veterinary Hospital

6. ADOPTION OF THE AGENDA

7. CONSENT AGENDA

This section allows the City Commission to consider routine items that require no discussion and can be approved in one comprehensive motion. An item may only be discussed if it is pulled from the consent agenda.

- [7a.](#) Resolution No. 21-24, Extending the State of Emergency Declaration in Oregon City due to the COVID-19 Pandemic
- [7b.](#) Public Improvement Contract with Brown Contracting, Inc. for the Oregon City 2021 Rectangular Rapid Flashing Beacons (RRFB) Project (CI 20-009)
- [7c.](#) Public Improvement Contract with Sierra Santa Fe Corporation for the 2021 Preventive Pavement Maintenance – Chip Seal/Fog Seal and Striping (CI 21-002)
- [7d.](#) Public Improvement Contract with S-2 Contractors for the 2021 Oregon City Roadway Reconstruction Project (CI 20-011)
- [7e.](#) Public Improvement Contract with VSS International for the 2021 Preventive Pavement Maintenance Type II Slurry Seal (CI 21-005)
- [7f.](#) Personal Services Agreement with Nail It! Roofing Company for the Replacement of City Hall Roof Due to Continued Active Leaks
- [7g.](#) Minutes of the April 7, 2021 Special Meeting
- [7h.](#) Minutes of the April 7, 2021 Regular Meeting
- [7i.](#) Minutes of the April 30, 2021 Special Meeting
- [7j.](#) Minutes of the April 29, 2021 Special Meeting

8. PUBLIC HEARINGS

- [8a.](#) AP 21-02 and AP-21-03: Two separate appeals of the March 23, 2021 Historic Review Board approval with conditions of Planning Files GLUA-21-00001/ HR 21-00001 through 21-00005 for five Cottage Homes in the Canemah National Register District
- [8b.](#) Continuation of Public Works Code Amendments Package #3 (GLUA 20-33, LEG 20-01) to June 16, 2021

9. GENERAL BUSINESS

- [9a.](#) Resolution No. 20-37, Update to the Guidelines for Transportation Impact Analyses
- [9b.](#) Resolution No. 21-18, Establishing a Minimum Equivalent Residential Unit Monthly Rate to be Charged for Stormwater Service Provided to Customers Served by Oregon City's Stormwater System
- [9c.](#) Resolution No. 21-26, Adoption of Policy for Naming or Changing Names of Parks,

Recreation/Cemetery Facilities

10. COMMUNICATIONS

City Manager

Commissioners

Mayor

11. ADJOURNMENT

PUBLIC COMMENT GUIDELINES

Complete a Comment Card prior to the meeting and submit it to the City Recorder. When the Mayor/Chair calls your name, proceed to the speaker table, and state your name and city of residence into the microphone. Each speaker is given three (3) minutes to speak. To assist in tracking your speaking time, refer to the timer on the table.

As a general practice, the City Commission does not engage in discussion with those making comments.

Electronic presentations are permitted but shall be delivered to the City Recorder 48 hours in advance of the meeting.

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 at www.orcity.org 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.



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 5/19/2021
From: Community Development Director Laura Terway

SUBJECT:

Ruth McBride Powers Preservation Award and Presentation

STAFF RECOMMENDATION:

Present this year's Ruth McBride Powers Preservation Award

EXECUTIVE SUMMARY:

The Historic Review Board nominates an individual or group for the Ruth McBride Powers Preservation Award yearly during Preservation Month to applaud the efforts of citizens, building/business owners and others who show passion for preservation. This year, the Board nominated two nonprofit groups to share the award:

1. Friends of the Ermatinger House, for their efforts to provide virtual events and programs during COVID-19-related closures
2. Volunteers from the Clackamas county Historical Society for their work in maintaining the grounds of the Stevens Crawford Heritage House.

BACKGROUND:

Ruth McBride was born in Michigan in 1903, graduating from Stanford University in California. According to a 1980 OHS oral history interview, she became interested in history when "as a young bride" she moved to the Coos County lumber town, Powers, Oregon, named after her husband's family.

In the final 25 years of her life Mrs. Powers divided her time between The McCarver House and the Rose Farm. She often opened the latter for fund-raising tours and it was placed on the National Register of Historic Places in 1973.

The McCarver House (Locust Farm) 1852, the 1847 William and Louisa Holmes House ("Rose Farm"), and the Captain John Ainsworth House built in 1852. Are the three remaining settlement-era houses built in the Mt. Pleasant area of Clackamas County. The survival of all three is due to the preservation efforts of a single benefactor, Mrs. Ruth McBride Powers.



Ruth McBride Powers Memorial Award

Preservation Month 2021



Friends of the Ermatinger House
For their coordination of virtual events and exhibits
during pandemic-related closures



Ruth McBride Powers Memorial Award

Preservation Month 2021



*Clackamas County Historical Society volunteers
For their stewardship of the gardens and grounds of the
Stevens-Crawford Heritage House*



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: City Manager Tony Konkol

Agenda Date: 5/19/2021

SUBJECT:

Update on Temporary Shower Trailer at Milner Veterinary Hospital

STAFF RECOMMENDATION:

Staff recommends that LoveOne provide an update to the Commission at the November 17, 2021 meeting.

EXECUTIVE SUMMARY:

Not applicable.

BACKGROUND:

At the September 16, 2020 City Commission meeting the Commission approved the continued use of the Milner Veterinary Hospital property as a temporary shower location through the end of the COVID pandemic and when social service providers are capable of providing pre-COVID shower resources to the homeless community. The Commission also requested that LoveOne provide an update to the Commission on May 19, 2021 on the activities that have occurred. Please find attached LoveOne's update, which includes the monthly breakdown of shower use from December 2020 to May 2021.

At this time, the COVID pandemic has not subsided and LoveOne continues to provide temporary shower services. Staff recommends that LoveOne provide an update to the Commission in six months at the November 17, 2021 meeting.

OPTIONS:

1. Approve an update from LoveOne to the Commission at the November 17, 2021 meeting.
2. Rescind the approval for the use of the site for temporary shower trailers.
3. Approve the use of temporary shower trailers at the site with revisions.

LOVEONE

Updated 05/10/2021



Offering love, respect and dignity, one shower at a time.

Oregon City: Milner Veterinary Hospital

355 SHOWERS PROVIDED

355 showers provided at Milner Vet since we began in August 2020. In addition to showers, we are building our wraparound support network to supply neighbors with hygiene supplies, basic first aid, foot care, haircuts, food, laundry kits, HIV and STD testing, COVID vaccines, and mental health supports. More than 100 individuals came to receive resources without taking a shower. **Every connection we make cultivates trust and community for some of our most marginalized Oregon City neighbors.**

800+ VOLUNTEER HOURS

Each event is run by a team of at least 4 volunteers and two event coordinators. Volunteers invest hours upon hours planning and organizing events and coordinating volunteers. **WE LOVE OUR VOLUNTEERS!**



Shower Report Monthly Breakdown

Updated 05/10//2021

December:

4 shower events
49 showers provided
11 individuals came for resources only
15 volunteers, 68 volunteer hours

January:

5 shower events
68 showers provided
25 individuals came for resources only
33 volunteers, 149 volunteer hours

February:

4 shower events *(During ice storm we provided resources only)*
39 showers provided
18 individuals came for resources only
19 volunteers, 90 volunteer hours

March:

4 shower events
45 showers provided
22 individuals came for resources only
21 volunteers, 95 volunteer hours

April:

4 shower events
25 showers provided
15 individuals came for resources only
16 volunteers, 64 volunteer hours

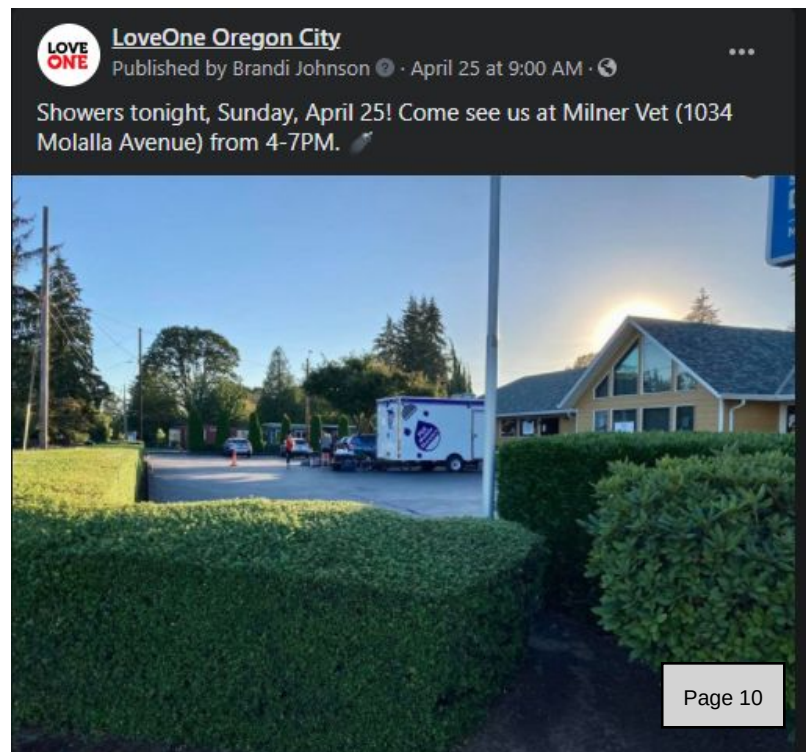
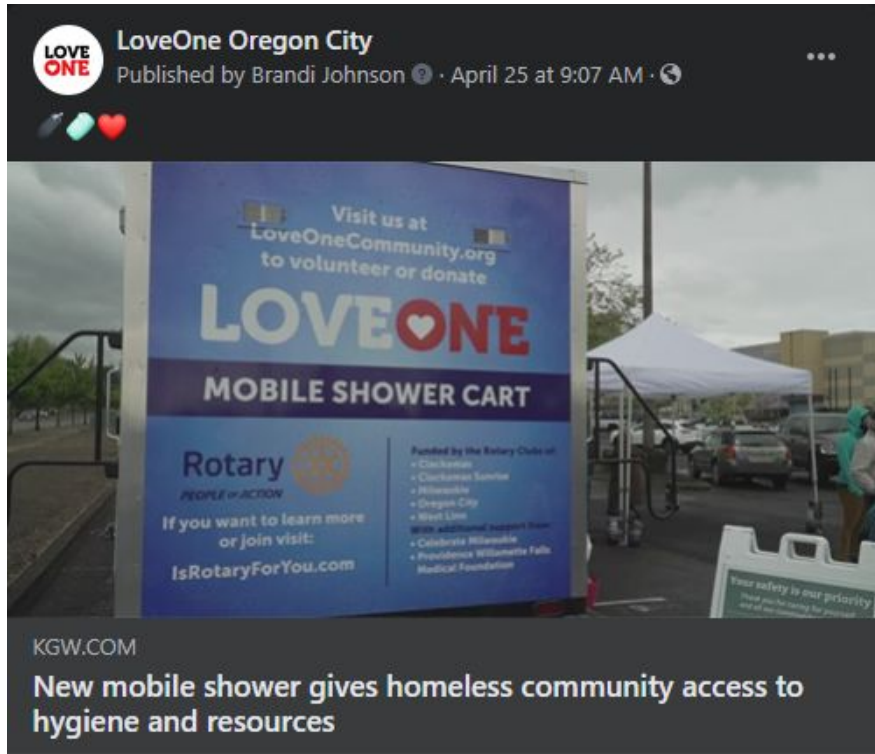
May (month-to-date):

2 shower events
26 showers provided
10 individuals came for resources only
12 volunteers, 50 volunteer hours

Social Media Interaction

Item 5a.

We communicate with the community through our facebook page. Follow us @LoveOneOC for more information on resources and events.



Community Interactions

Updated 05/10/2021

- LoveOne has received no concerns or complaints from surrounding property owners, neighbors, BHNA leaders or others during this most recent reporting period.
- Many neighboring residents have stopped by to donate supplies, volunteer their time, receive resources and say thanks.
- Outreach via social media has resulted in increased community support and donations. The LoveOne shower cart program is quickly becoming as popular and well-supported as our laundry program.
- On April 24, 2021, we celebrated the launch of our new shower cart with the funders of the project: Oregon City Rotary, Clackamas Rotary, Clackamas Sunrise Rotary, Milwaukie Rotary, West Linn Rotary, Providence Willamette Falls Medical Foundation and Celebrate Milwaukie, Inc. Clackamas Review article [HERE](#).





CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: City Manager Tony Konkol

Agenda Date: 5/19/2021

SUBJECT:

Resolution No. 21-24, Extending the State of Emergency Declaration in Oregon City due to the COVID-19 Pandemic

STAFF RECOMMENDATION:

Staff recommends approval of Resolution No. 21-24, which will extend the State of Emergency Declaration to August 19, 2021 due to the COVID-19 Pandemic.

EXECUTIVE SUMMARY:

The rapidly changing COVID-19 event continues to impact the Oregon City community and daily operations of the City. Clackamas County is currently in the “high risk” designation of a four-phase designation system from the State. Oregon City staff is recommending extending the State of Emergency to August 19, 2021 so that staff can continue to work with federal, state and local agencies in a coordinated effort to reduce the spread of the COVID-19 virus in our community and throughout the region. As of May 11, 2021, there have been 17,262 confirmed cases of COVID-19 in Clackamas County and 211 deaths.

BACKGROUND:

The rapidly changing COVID-19 event continues to impact the Oregon City community and daily operations of the City. Clackamas County is currently in the “extreme spread” designation of a four-phase designation system from the State. In response to the pandemic, a limited number of City facilities are partially open while staff continues to work both in the office and remotely.

Oregon City staff is recommending extending the State of Emergency so that staff can continue to work with federal, state and local agencies in a coordinated effort to reduce the spread of the COVID-19 virus in our community and throughout the region. As of May 11, 2021, there have been 17,262 confirmed cases of COVID-19 in Clackamas County and 211 deaths. This is not a “public health emergency” declaration. This

declaration enables the City to streamline resources, staffing and establish emergency policies and procedures to respond to the pandemic.

Staff prepared this resolution with an end date of August 19, 2021, so the Commission can review the emergency declaration at the August 18, 2021 City Commission meeting and choose to extend the declaration again or leave the end-date in place.

OPTIONS:

1. Approve the extension of the State of Emergency to August 19, 2021
2. Deny and do not extend the State of Emergency

RESOLUTION NO. 21-24

A RESOLUTION EXTENDING THE EMERGENCY DECLARATION IN THE CITY OF OREGON CITY

WHEREAS, the outbreak of Coronavirus, also known as COVID-19, threatens the loss of life, human suffering, financial loss, and other harms in the City of Oregon City; and

WHEREAS, the federal government, state of Oregon and Clackamas County have each declared a state of emergency relating to COVID-19 in their respective jurisdictions and since extended these declarations; and

WHEREAS, the City of Oregon has been taking steps to help mitigate and avoid some of the most drastic consequences of COVID-19 through actions that result in the slowing of transmission of the coronavirus in Oregon in order to protect the most vulnerable Oregonians, and to protect the state's health care system capacity; as well as other results; and

WHEREAS, Clackamas County is currently in the "extreme spread" designation from the State of Oregon; and

WHEREAS, on Friday, March 27, 2020, the City Commission adopted Resolution No. 20-08, declaring an emergency for the City with an end date of May 7, 2020; and

WHEREAS, the City Commission has since adopted the following extensions to the emergency declaration:

- On Wednesday, May 6, 2020, adopted Resolution No. 20-13, extending the emergency declaration with an end date of June 18, 2020
- On June 17, 2020, adopted Resolution No. 20-21, extending the emergency declaration with an end date of August 6th, 2020
- On August 5, 2020, adopted Resolution No. 20-24, extending the emergency declaration with an end date of October 8, 2020
- On October 7, 2020, adopted Resolution No. 20-31, extending the emergency declaration with an end date of December 17, 2020
- On December 16, 2020, adopted Resolution No. 20-41, extending the emergency declaration with an end date of February 18, 2021; and
- On February 17, 2021, adopted Resolution No. 21-11, extending the emergency declaration with an end date of May 20, 2021; and

WHEREAS, the situation leading to the declaration of an emergency will extend for a longer period of time and an extension is needed.

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. The emergency declared by the Oregon City Commission on March 27, 2020, is hereby extended until August 19, 2021, in order to allow the City to adequately address the situations caused by the Coronavirus (COVID-19).

Section 2. The emergency declaration issued by the Oregon City Commission on March 27, 2020, Resolution No. 20-08, is otherwise unchanged and remains in full force and effect through the end of the extended emergency period.

Section 3. This declaration is effective on May 19, 2021 and shall remain in effect until August 19, 2021 unless superseded sooner.

Approved and adopted at a regular meeting of the City Commission held on the 19th day of May 2021.

RACHEL LYLES SMITH,
Mayor

Attested to this 19th day of May 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Public Works Director John M. Lewis, PE

Agenda Date: 05/19/2021

SUBJECT:

Public Improvement Contract with Brown Contracting, Inc. for the Oregon City 2021 Rectangular Rapid Flashing Beacons (RRFB) Project (CI 20-009)

STAFF RECOMMENDATION:

Award the bid and authorize the City Manager to execute the Public Improvement Contract with Brown Contracting, Inc. in the amount of \$335,888.00 for construction of the Oregon City 2021 Rectangular Rapid Flashing Beacons (RRFB) Project (CI 20-009).

EXECUTIVE SUMMARY:

Staff received two bids for the construction of the Oregon City 2021 Rectangular Rapid Flashing Beacons (RRFB) Project. Staff and Kittelson & Associates, Inc. reviewed the bids and determined that Brown Contracting, Inc. was the low responsive bidder.

BACKGROUND:

The City of Oregon City's Transportation System Plan (TSP) provides a long-term guide for City transportation investments by incorporating the vision of the community into an equitable and efficient transportation system for pedestrians, bicyclists, and automobiles. The TSP recommends projects around the city to enhance pedestrian safety. This project will construct the following TSP Crossing Improvements, with installation of RRFBs at these locations:

- C3 – Holcomb Boulevard at Front Street
- C4 – Holcomb Boulevard at Swan Avenue
- C30 – Linn Avenue at AV Davis, updated to be located at Williams Street

Project C30 is identified at AV Davis and Linn Avenue, which was part of the primary pedestrian route to Gardiner Middle School. However, Gardiner Middle School is being reconstructed and the new design designates Williams Street to be the primary pedestrian path to the school. Therefore, the majority of street crossings on Linn

Avenue will occur at its intersection with Williams Street. Since pedestrians going to and from Gardiner Middle School will benefit most from this project, the school district was required, through the land use process, to contribute \$49,195 to this project.

On April 12 and 14, 2021, the project was advertised in the *Daily Journal of Commerce* and the City bid site in accordance with City and State contracting procedures. The bid opening was held on April 29, 2021, and two (2) bids were received. Staff reviewed the bids and determined that Brown Contracting, Inc. was the low responsive bidder. The contract award value is three hundred thirty-five thousand, eight hundred and eighty-eight dollars and zero cents (\$335,888.00). The list below includes the bidders and bid amounts received for this project:

<u>Bidder Name</u>	<u>Bid Amount</u>
Brown Contracting, Inc	\$335,888.00
North Star Electrical Contractors	\$345,811.00
Engineer's Estimate	\$315,000.00

OPTIONS:

1. Authorize the City Manager to execute the Contract.
2. Authorize the City Manager to execute the Contract with specific modifications.
3. Deny the Contract. If the Commission chooses to deny the Contract, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$335,888.00

FY(s): 2020/2021 & 2021/2022

Funding Source(s): Transportation Fund, Transportation SDC and fee-in-lieu paid by the Oregon City School District

SECTION III A
CONTRACT AGREEMENT

This Agreement, made and entered into this _____ day of _____, 20____, between the CITY OF OREGON CITY (“CITY”), acting by and through the City Commission and **BROWN CONTRACTING, INC.** (“CONTRACTOR”).

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **Oregon City 2021 Rectangular Rapid Flashing Beacons Project (CI 20-009)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid Scope of Work Instructions to Bidders Bid Proposal and Bid Schedule Compliance with ORS 279C.840 Resident Bidder Status Certification of Drug Testing Program Non-Collusion Statement Asbestos Certification Registrations Certification of Non-Discrimination Certification of Compliance with Tax Law Bidder Responsibility Form Bid Bond First Tier Subcontractor Disclosure Form Customer Service Acknowledgment Form Contract Agreement Oregon City Public Improvement Standard Conditions	Statutory Conditions to Contract Agreement Performance Bond Payment Bond State of Oregon Statutory Public Works Bond General Conditions Prevailing Wage Rates for Public Works Contracts in Oregon, dated January 1, 2021 Amendments to the Prevailing Wage Rates for Public Works Contracts in Oregon dated April 1, 2021 Prevailing Wage Apprenticeship Rates dated April 1, 2021 Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018 Special Provisions Contract Drawings City of Oregon City Standard Details Technical Specifications 2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents All items included within these Contract Documents.
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The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The project shall be complete within **180** days from the Beginning of Contract Time as identified in 00180.50(b) of the Special Provisions, more specifically established as _____.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **three hundred thirty-five thousand, eight hundred eighty-eight and no/100 dollars (\$335,888.00)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect.

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY

BROWN CONTRACTING, INC.

by: _____
Anthony J. Konkol III
City Manager

Printed Name

by: _____
Authorized signature

by: _____
John M. Lewis, P.E.
Public Works Director

Title

Federal Taxpayer ID Number

Approved as to Legal Sufficiency:

Address:

by: _____
City Attorney

City Commission Award Date:

Client City of Oregon City
 Project Oregon City 2021 Rectangular Rapid Flashing Beacons Project - CI 20-009
 Bid Tabulation
 Date: 4/29/21 12:00 AM

Apparent Low

Other Bidders

Item	Description	Units	Quantity	Engineers Estimate		Brown Contracting, Inc		North Star Electrical Contractors	
				Unit Price	Extended	Unit Price	Extended	Unit Price	Extended
1	Mobilization	LS	1	\$ 31,348.68	\$ 31,348.68	\$ 30,000.00	\$ 30,000.00	\$ 7,500.00	\$ 7,500.00
2	Temporary Work Zone Traffic Control, Complete	LS	1	\$ 22,000.00	\$ 22,000.00	\$ 6,550.00	\$ 6,550.00	\$ 18,000.00	\$ 18,000.00
3	Erosion Control	LS	1	\$ 5,500.00	\$ 5,500.00	\$ 1,000.00	\$ 1,000.00	\$ 950.00	\$ 950.00
4	Pollution Control Plan	LS	1	\$ 1,500.00	\$ 1,500.00	\$ 400.00	\$ 400.00	\$ 500.00	\$ 500.00
5	Construction Survey Work	LS	1	\$ 8,500.00	\$ 8,500.00	\$ 7,000.00	\$ 7,000.00	\$ 6,400.00	\$ 6,400.00
6	Removal of Structures and Obstructions	LS	1	\$ 4,000.00	\$ 4,000.00	\$ 9,000.00	\$ 9,000.00	\$ 15,000.00	\$ 15,000.00
7	Clearing and Grubbing	LS	1	\$ 500.00	\$ 500.00	\$ 3,000.00	\$ 3,000.00	\$ 700.00	\$ 700.00
8	General Excavation	CUYD	64	\$ 100.00	\$ 6,400.00	\$ 115.00	\$ 7,360.00	\$ 110.00	\$ 7,040.00
9	Subgrade Geotextile	SQYD	140	\$ 2.00	\$ 280.00	\$ 8.00	\$ 1,120.00	\$ 11.00	\$ 1,540.00
10	Adjusting Boxes	EA	1	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00	\$ 600.00	\$ 600.00
11	Adjusting Inlets	EA	1	\$ 2,000.00	\$ 2,000.00	\$ 1,980.00	\$ 1,980.00	\$ 1,400.00	\$ 1,400.00
12	Aggregate Base	TON	100	\$ 120.00	\$ 10,800.00	\$ 100.00	\$ 10,000.00	\$ 88.00	\$ 8,800.00
13	Level 3, ½-Inch ACP Mixture	TON	25	\$ 150.00	\$ 3,300.00	\$ 425.00	\$ 10,625.00	\$ 660.00	\$ 16,500.00
14	Asphalt Walks	SQFT	100	\$ 8.00	\$ 736.00	\$ 13.00	\$ 1,300.00	\$ 25.00	\$ 2,500.00
15	Concrete Curbs, Curb and Gutter	FT	223	\$ 55.00	\$ 12,265.00	\$ 62.00	\$ 13,826.00	\$ 49.00	\$ 10,927.00
16	Concrete Curbs, Standard Curb	FT	103	\$ 50.00	\$ 5,150.00	\$ 58.00	\$ 5,974.00	\$ 49.00	\$ 5,047.00
17	Concrete Walks	SQFT	1,778	\$ 12.00	\$ 25,016.00	\$ 10.00	\$ 17,780.00	\$ 21.00	\$ 37,338.00
18	Extra for Curb Ramps	EA	10	\$ 1,200.00	\$ 12,000.00	\$ 480.00	\$ 4,800.00	\$ 1,150.00	\$ 11,500.00
19	Truncated Domes on New Surface	SQFT	107	\$ 40.00	\$ 4,280.00	\$ 45.00	\$ 4,815.00	\$ 57.00	\$ 6,099.00
20	Longitudinal Pavement Markings – Paint	FT	1,150	\$ 2.00	\$ 994.00	\$ 5.00	\$ 5,750.00	\$ 0.44	\$ 506.00
21	Pavement Legend, Type B-HS: Bicycle Lane Stencil	EA	4	\$ 400.00	\$ 1,600.00	\$ 900.00	\$ 3,600.00	\$ 350.00	\$ 1,400.00
22	Pavement Bar, Type B-HS	SQFT	214	\$ 12.00	\$ 2,568.00	\$ 30.00	\$ 6,420.00	\$ 16.00	\$ 3,424.00
23	Crosswalk Closure Supports	EA	1	\$ 250.00	\$ 250.00	\$ 900.00	\$ 900.00	\$ 540.00	\$ 540.00
24	Remove and Reinstall Existing Signs	LS	1	\$ 500.00	\$ 500.00	\$ 900.00	\$ 900.00	\$ 900.00	\$ 900.00

Client City of Oregon City
Project Oregon City 2021 Rectangular Rapid Flashing Beacons Project - CI 20-009
Bid Tabulation
Date: 4/29/21 12:00 AM

Apparent Low

Other Bidders

Item	Description	Units	Quantity
25	Signs, Standard Sheeting, Sheet Aluminum	SQFT	3
26	Pole Foundations	LS	1
27	Switching, Conduit, and Wiring	LS	1
28	Flashing Beacon Installation, Front Avenue	LS	1
29	Flashing Beacon Installation, Swan Avenue	LS	1
30	Flashing Beacon Installation, Linn Ave. and Williams Street	LS	1
31	Permanent Seeding	LS	1
32	Topsoil	CUYD	1
33	Mailbox Concrete Collars	EA	1
34	Multiple Mailbox Supports	EA	1
Contingency (for City Engineer estimate only)			
#REF!			

Engineers Estimate	
Unit Price	Extended
\$ 500.00	\$ 2,500.00
\$ 2,000.00	\$ 2,000.00
\$ 4,180.00	\$ 4,180.00
\$ 35,000.00	\$ 35,000.00
\$ 40,000.00	\$ 40,000.00
\$ 45,000.00	\$ 45,000.00
\$ 1,500.00	\$ 1,500.00
\$ 150.00	\$ 150.00
\$ 400.00	\$ 400.00
\$ 250.00	\$ 250.00
	\$ 20,000.00
	\$ 312,867.68

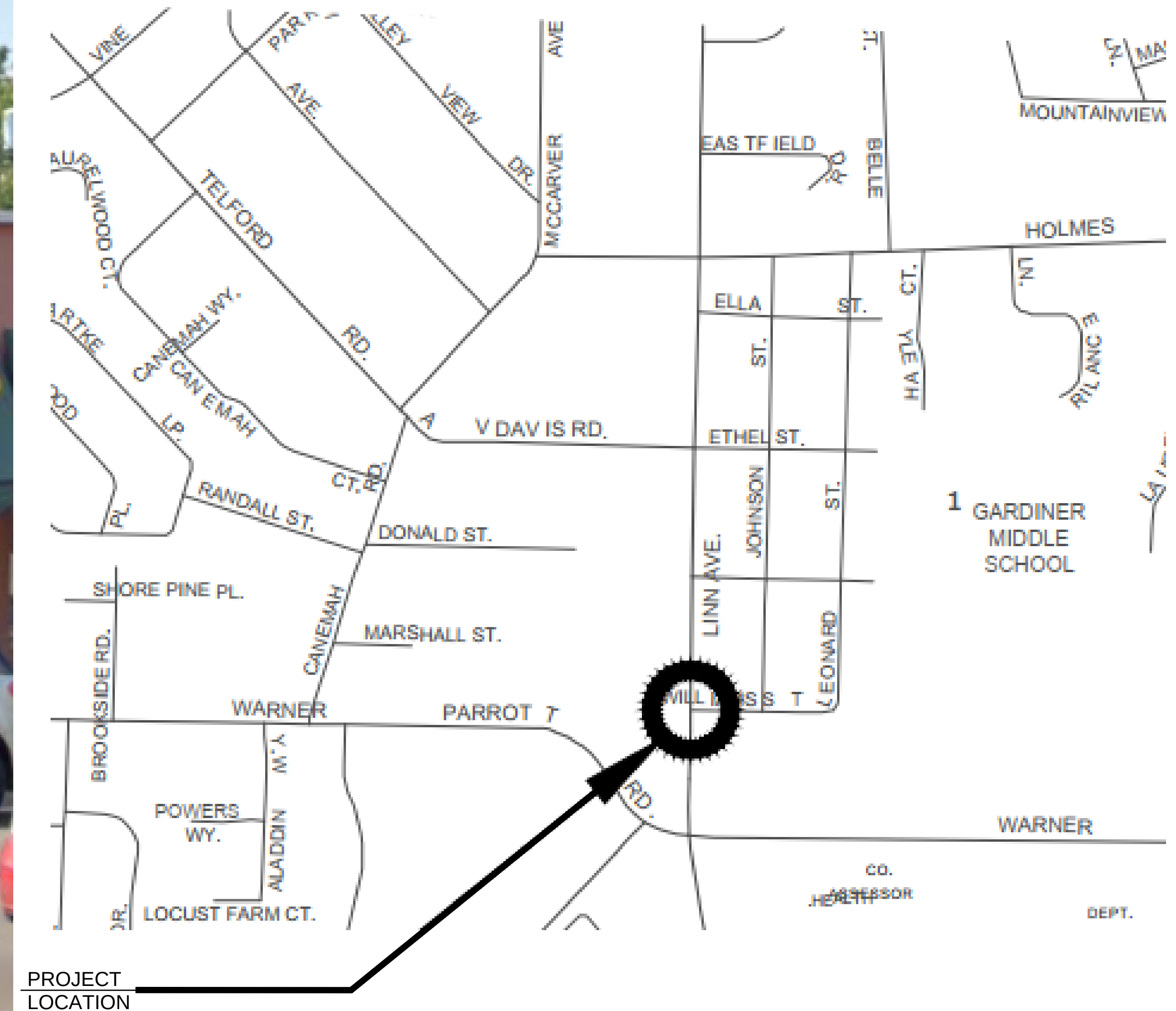
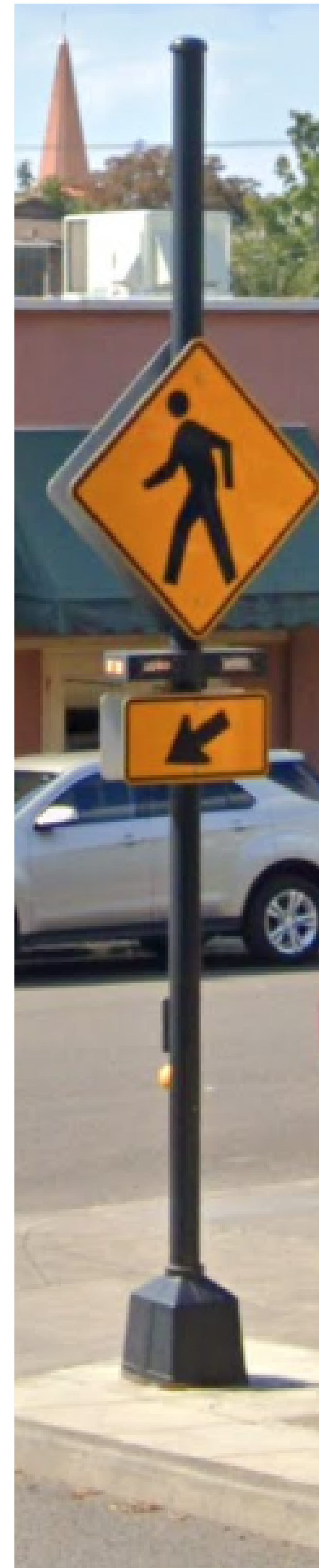
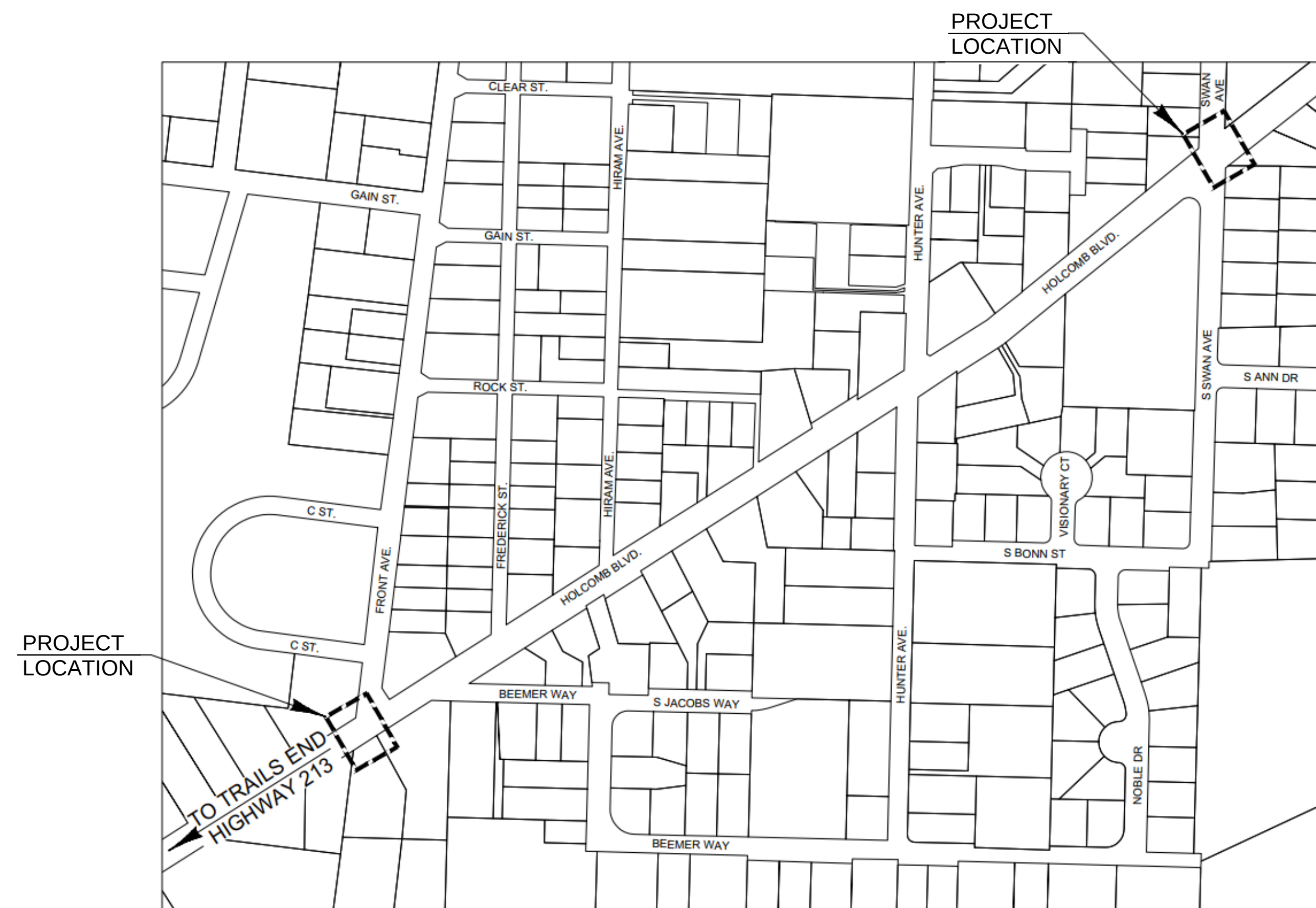
Brown Contracting, Inc	
Unit Price	Extended
\$ 100.00	\$ 300.00
\$ 5,000.00	\$ 5,000.00
\$ 6,500.00	\$ 6,500.00
\$ 50,000.00	\$ 50,000.00
\$ 55,000.00	\$ 55,000.00
\$ 60,000.00	\$ 60,000.00
\$ 2,500.00	\$ 2,500.00
\$ 788.00	\$ 788.00
\$ 700.00	\$ 700.00
\$ 600.00	\$ 600.00
7.4%	\$ 335,888.00

North Star Electrical Contractors	
Unit Price	Extended
\$ 100.00	\$ 300.00
\$ 2,300.00	\$ 2,300.00
\$ 4,000.00	\$ 4,000.00
\$ 55,000.00	\$ 55,000.00
\$ 57,000.00	\$ 57,000.00
\$ 60,000.00	\$ 60,000.00
\$ 200.00	\$ 200.00
\$ 150.00	\$ 150.00
\$ 350.00	\$ 350.00
\$ 1,400.00	\$ 1,400.00
	\$ 345,811.00

Note:

City Project Number: CI 20-009
April, 2021

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HOLCOMB BLVD RRFB PLAN SET
LINN AVE RRFB PLAN SET



OREGON CITY 2021 RECTANGULAR RAPID FLASHING BEACON (RRFB) PROJECT
City Project Number: CI 20-009
April, 2021

[illegible]

CITY OF OREGON CITY
PUBLIC WORKS DEPARTMENT
APPROVAL FOR CONSTRUCTION

☐ APPROVED AS SUBMITTED
☐ APPROVED AS NOTED IN RED

SIGNATURE _____
NAME: _____
DATE: _____

OC RECORD DRAWING#:
XXXXXX.XX

DRAWING NUMBER:

X1



**CITY OF OREGON CITY
PUBLIC WORKS DEPARTMENT**

**CONTRACT DOCUMENTS FOR THE
OREGON CITY 2021 RECTANGULAR RAPID FLASHING BEACONS PROJECT
(CI 20-009)**

April, 2021

**City of Oregon City
P.O. Box 3040
625 Center Street
Oregon City, OR 97045
503-657-0891
www.orcity.org**

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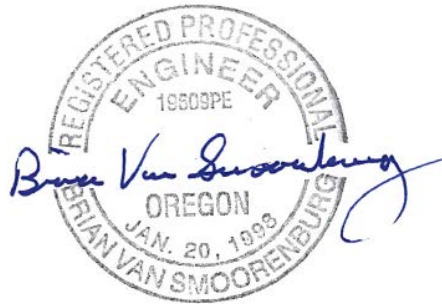


**OREGON CITY 2021 RECTANGULAR RAPID FLASHING
BEACONS PROJECT
(CI 20-009)**

April, 2021

Prepared For:

City of Oregon City
P.O. Box 3040
625 Center Street
Oregon City, OR 97045
503-657-0891
www.orcity.org



Expires: 6/30/22

Date Signed:

April 12, 2021

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INVITATION TO BID
CITY OF OREGON CITY

**OREGON CITY 2021 RECTANGULAR
 RAPID FLASHING BEACONS PROJECT**

Sealed bids for furnishing all materials, equipment, labor, and services for the construction of the **Oregon City 2021 Rectangular Rapid Flashing Beacons Project** for the City of Oregon City (City), Oregon will be received by Dayna Webb, P.E., Public Works Department, 625 Center Street, Oregon City, Oregon until **2:00 PM local time on April 29, 2021**. Bids received after this time will not be considered. All bids received prior to the due date and time will be publicly opened and read on the due date and time in the location identified above.

The project includes:

- Construct and remove temporary traffic control and erosion control measures.
- Perform earthwork.
- Adjust existing storm sewer systems.
- Install aggregate base and asphalt concrete paving.
- Construct concrete curbs, sidewalks, and ramps.
- Install permanent paving markings.
- Remove and reinstall existing signs.
- Construct flashing beacons.
- Perform additional and incidental Work as called for by the Specifications and Plans.

Solicitation documents may be obtained from the City's online plan center free of charge at <http://bids.orcity.org/>. Solicitation documents may be obtained by creating a new user account and registering for the project. General information including the planholder list is available to the public without registering.

Solicitation documents are also available for review at the City of Oregon City, Public Works Department, 625 Center Street, Oregon City, Oregon, 97045 (Telephone: 503-657-0891), between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, except legal holidays.

Addenda, clarifications, and notices will be distributed through the City's online planholder system. Potential bidders are responsible for ensuring contact information is registered correctly and that email updates are being received and not being sent to spam folders. It is in the best interest of potential bidders to check the website periodically to ensure all updates are received. The City is not responsible for failure of bidders to receive notifications of changes or corrections made by the City and posted as stated above.

No bid will be received or considered unless the bid contains a statement by the bidder, as part of their bid, that the provisions of ORS 279C.840 or 40 U.S.C. 276a shall be complied with, a statement as to resident bidder status, and whether the bidder is licensed under ORS 468A.720 (no asbestos removal is contemplated for this project). Prior to submission of its bid, the bidder shall be registered with the Oregon Construction Contractor's Board, and thereafter comply with the requirements of ORS 701.005 to 701.137.

Each proposal must be submitted on forms prescribed by the City and accompanied by a certified check, cashier's check or bid bond in an amount equal to 10 percent (10%) of the total amount bid. The successful bidder will be required to furnish a faithful performance bond and a labor and material payment bond each in the amount of one hundred percent (100%) of the amount of contract. The successful bidder will also be required to furnish a statutory public works bond in the amount of thirty thousand dollars (\$30,000.00). Evidence of workers' compensation insurance will be required before the work shall commence.

The City will investigate and determine the qualifications of the apparent low bidder prior to awarding the contract. The City reserves the right to reject any bid not in compliance with all prescribed public bidding procedures and requirements, and may reject all bids, if it is in the public interest to do so.

PUBLISH: Daily Journal of Commerce
April 12, 2021 and
April 14, 2021

Dayna Webb, P.E.
City Engineer

SECTION I – INSTRUCTIONS TO BIDDERS

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SECTION I

INSTRUCTIONS TO BIDDERS

1. Explanation to Bidders

Prior to submitting a bid, it is the responsibility of each Bidder to:

- A. Examine the contract documents thoroughly.
- B. Visit the site to become familiar with local conditions that may affect cost, progress, or performance of the work.
- C. Consider all federal, state, and local laws, ordinances, rules, and regulations that may affect cost, progress, or performance of the work.
- D. Study and correlate the Bidder's observations with the Contract Documents.
- E. Notify the Contact Person of all conflicts, errors, ambiguities, or discrepancies discovered in the Contract Documents.

Any explanation desired by the bidders regarding the meaning or interpretation of the specifications must be requested in writing, and with sufficient time allowed for a reply to reach them before the submission of their bids. No interpretations will be made less than 72 hours prior to bid opening.

Oral explanations or instructions given before the award of the contract will not be binding. Any interpretation will be made in the form of an addendum to the specification and will be furnished to all bidders that have received original Bid Documents and have provided accurate contact information to the City. The receipt of all addenda by the bidder shall be acknowledged in the bid submittal. The City of Oregon City will distribute Addenda to plan holders via email through its online bid center.

For more information regarding this project, please submit questions through the online plan center at <http://bids.oregoncity.org>.

2. Preparation of Bids

Bids shall be submitted on the form furnished, or copies thereof, and must be naturally signed. If erasures or other changes appear on the form, they shall be initialed by the person who signs the bid. No bid will be received or considered by the City unless the bid contains the Required Bid Forms as listed in Section I, Item 11.

3. Submission of Bids

- A. Bids shall be submitted in sealed envelopes with the inscription below on the outside envelope:
SEALED BID – Due at 2 p.m. on 4/29/21
 Public Works Department
 City of Oregon City
 625 Center Street
 Oregon City, Oregon 97045
 Attention: Dayna Webb, City Engineer
- B. The outside of the transmittal envelope shall also bear the following information:
SEALED BID – Due at 2 p.m. on 4/29/21
 Name of Bidder
 Address
 Title of Project
 Date of opening
- C. If the sealed bid is forwarded by mail or messenger service, the outside (messenger) envelope must be addressed as noted in A above.

4. Bid Bond

All bids must be accompanied by a certified check, or a cashier's check upon a national or state bank, drawn and made payable to the City of Oregon City, or a bid bond from a surety company authorized to do business in the state of Oregon in an amount equal to 10% of the total proposal submitted, including all additive alternates. Failure to execute the contract and return it to the City within 10 days of execution with the required performance bond and certificates of insurance may result in forfeiture of the bid bond as fixed and liquidated damages at the discretion of the City.

When a bond is used for bid security, the bond shall be executed by a surety company authorized to transact business in the State of Oregon. **THE BIDDER SHALL HAVE THE SURETY USE THE BID BOND FORM PROVIDED HEREIN. IF THIS FORM IS NOT USED, THE BID WILL BE DEEMED NON-RESPONSIVE AND SHALL BE REJECTED.** Additional forms, as commonly used by the surety may be affixed to the required form.

All such certified checks or bid bonds will be returned to the respective bidders within 10 calendar days after the bids are opened, except those of the three low bidders. The certified checks or bid bonds of the three low bidders will be held by the City until the selected bidder has accomplished the following:

- A. Executed a formal contract;
- B. Executed and delivered to the City a bond in the amount of the Contract Price for the faithful performance of the contract; and
- C. Furnished the required Certificates of Insurance.

The proposal guarantees that the three low bidders will be released within 10 calendar days after the contract has been entered into and signed by the City.

5. Receipt and Opening of Bids

Bids will be submitted prior to the time fixed in the Invitation to Bid. Bids will be time and date stamped by Public Works personnel upon receipt. Such time and date stamps will govern the determination of on-time submission of bids.

Bids received after the time so fixed are late bids. Late bids will be time and date stamped at the time of receipt by Public Works personnel, marked as "Rejected as Late Bid" and will be returned, unopened, to the submitter.

6. Withdrawal of Bids

A Bidder may withdraw its offer by written notice submitted on the Bidder's letterhead, signed by an authorized representative of the Bidder, delivered to the City of Oregon City Public Works Department, 625 Center Street, Oregon City, Oregon, and received by the City prior to closing. The Bidder or authorized representative of the Bidder may also withdraw its offer in person prior to closing, upon presentation of appropriate identification and satisfactory evidence of authority. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened. The bid will be irrevocable until such time as the City:

- A. Specifically rejects the bid, and
- B. Awards the contract to another bidder and said contract is properly executed.

All bids shall remain subject to acceptance by the City for sixty (60) days after the date of the bid opening.

7. Bidders Present

At the time fixed for the opening of bids, their contents will be made public for the information of bidders and other properly interested parties who may be present either in person or by representation.

8. Award of Contract

The contract will be awarded as soon as practicable within 45 calendar days after the bid opening to the lowest responsible bidder, provided the bid is reasonable and it is in the best interest of the City to accept it.

No contract will be awarded prior to receiving City Commission authority to do so, unless such authority has been previously granted.

9. Rejection of Bids

The City may reject any bid not in compliance with all prescribed public contracting procedures and requirements and reserves the right to reject any or all bids when such

rejection is in the public interest. More than one proposal from an individual, firm or partnership, corporation or association, under the same or different names, may disqualify all such proposals submitted by that entity in Owner's sole discretion. Proposals in which prices bid for individual unit appear intentionally unbalanced so as to leave the total bid competitive, also may be disqualified.

10. Qualification of Bidders

To demonstrate qualifications to perform the work, each bidder must submit written evidence, such as financial data, previous experience, present commitments and other such data as may be called for on QUALIFICATION OF BIDDER form. The City will investigate and determine the qualifications for the apparent low bidder prior to awarding the contract.

11. Required Bid Forms

Each bid must contain the following items on the forms provided in Section II.

- A. The completed Bid Proposal & Bid Schedule form.
- B. Acknowledgement that the bidder has received and reviewed all addenda for the bid.
- C. A statement that provisions of ORS 279C.840 (Prevailing Wages) shall be complied with.
- D. A statement as to whether the bidder is a resident bidder as defined in ORS 279A.120.
- E. A statement certifying that the bidder has an employee drug-testing program in place.
- F. Non-collusion affidavit.
- G. A statement as to whether or not the bidder is licensed under ORS 468.883 for asbestos removal (no asbestos removal is expected for this project).
- H. Certification that Contractor is properly registered.
- I. Business license information.
- J. Certification of non-discrimination.
- K. Certification of compliance with tax laws (ORS 305.385).
- L. First-tier subcontractor disclosure form.
- M. A Bid Bond in the amount of 10 percent of the submitted bid.
- N. Customer service acknowledgement form.
- O. Qualification of Bidder form.

12. Mistakes in Bids

- A. General

Clarification or withdrawal of a bid after bid opening because of an inadvertent, non-judgmental mistake in the bid requires careful consideration to protect the integrity of the competitive bidding system, and to assure fairness. Except as provided in this rule, if the mistake is attributable to an error in judgment, the bid may not be corrected. Bid correction or withdrawal by reason of a

non-judgmental mistake is permissible but only to the extent that it is not contrary to the interest of the City or the fair treatment of other bidders.

B. Mistakes Discovered After Bid Closing but Before Award

This subsection prescribes standards to be applied in situations where mistakes in bids are discovered after the time and date set for bid closing but before award.

- (1) Minor Informalities. Minor informalities are matters of form rather than substance that are evident from the bid documents, or insignificant mistakes that can be waived or corrected promptly without prejudice to other bidders or the City; that is, the informality does not affect price, quantity, quality, delivery, or contractual conditions except in the case of informalities involving unit price.

Examples include, but are not limited to the failure or a bidder to:

- a) Return the number of signed bids or the number of other documents required by the Bid Documents;
- b) Failure to sign the bid form in the designated block so long as a signature appears in the bid documents evidencing an intent to be bound;
- c) Acknowledge receipt of an addendum to the Bid Documents, but only if:
 - (i) it is clear from the bid that the bidder received the addendum and intended to be bound by its terms; or
 - (ii) the addendum involved had a negligible effect on price, quantity, quality, or delivery.

- (2) Mistakes Where Intended Correct Bid is Evident. If the mistake and the intended correct bid are clearly evident on the face of the bid form, or can be substantiated from accompanying documents, the City may accept the bid. Examples of mistakes that may be clearly evident on the face of the bid form are typographical errors, errors in extending unit prices, transposition errors, and mathematical errors. For discrepancies between unit prices and extended prices, unit prices shall prevail.

- (3) Mistakes Where Intended Correct Bid is Not Evident. The City will not accept a bid in which a mistake is clearly evident on the face of the bid form but the intended correct bid is not similarly evident or cannot be substantiated from accompanying documents.

13. Award of Contract

The Owner shall award the contract or reject all proposals within forty-five (45) days after the bid opening. The successful bidder shall execute a contract within ten (10) calendar days from the date of written notification, and if not, the guaranteed amount shall be forfeited to the Owner.

The time of completion of the work contemplated by this contract shall not be extended or changed by the lapse of time between the date the Owner received proposals and

execution of the contract. In specifying the dates for completion, both parties understand that a period of not more than fifty-five (55) days may elapse between the opening of the proposals and submission of the contract for execution. If the Owner finds that the public interest requires a delay in consideration of the bid award beyond the forty-five (45) days contemplated herein, the bidder at its option may be released from its bid bond or may grant an extension of time for the owner to consider award of the contract for his/her execution.

Owner may consider an extension of time to complete the work if Contractor makes application for same to owner no later than five (5) days after Contractor knows or should know of a cause of noncompensable but excusable delay. Such causes of delay shall be deemed to be limited to labor disputes beyond the control of Contractor, acts of God, unusual and unforeseeable severe weather, or any delays caused in whole or part by either parties' non-compensable conduct.

In comparing alternate bids, the Owner in its sole discretion may select a higher cost alternate if the higher alternate will better serve its interests.

14. Required Insurance

The Contractor shall carry, at a minimum, insurance as specified in Section III.

15. Required Bonds

The Contractor shall be required to provide security for payment to suppliers of labor and materials as well as for performance of the contract. Both the Performance Bond and the Payment Bond shall be in an amount equal to the full contract price. The Performance Bond is solely for the protection of the City and any other public agency(ies) for whose benefit the contract was awarded. The Payment Bond is solely for the benefit of claimants under ORS 279C.600. Both the Performance Bond and the Payment Bond shall be provided by a surety licensed to do business as a surety in the State of Oregon, shall be payable to the City and shall be in the form provided in the contract documents. Contractor shall pay the costs of any bond. The Attorney-in-Fact (Registered Agent) who executes any bond must file with each bond a notarized and effectively dated copy of his/her power of attorney. The Performance and Payment Bond shall be issued by a surety company or companies with Best's Rating of A.VII or better.

In addition and before final acceptance of the project, Contractor shall provide a maintenance and warranty bond in an amount equal to the total amount paid on the contract together with any amendments in a form approved by the Owner. Such maintenance and warranty bond shall be conditioned upon the final project being completed and guaranteed against defects in materials and workmanship. Such maintenance and warranty bond shall continue in effect during the full term of any warranty period as well as any extension of said warranty period.

16. Execution of the Contract Agreement and Bonds

The successful bidder shall obtain all necessary bonds and permits at its own initiative and expense, including those within control of Owner, except as the parties may otherwise agree in writing.

The Contractor shall warranty all equipment and materials furnished and work performed by him/her for a period of one (1) year from the date of written acceptance of the project. The Contractor shall provide a performance bond in the amount of 100% of the work to be in effect for that one (1) year maintenance period.

The Certificate(s) of insurance or binders shall be submitted to and approved by the Owner with the City and the Engineer named as additional insureds on an occurrence basis. Contractor's insurance carrier shall be financially responsible and registered in good standing with the Oregon Insurance Commissioner. All policies shall be kept in force until the Contractor's work is accepted by the Owner. Insurance policies (covering all operations under this Contract or if so noted for extended operations) which expire before the Contractor's work is accepted by the Owner (or where noted for extended operations, through the period of guarantee) shall be replaced or renewed immediately and evidence of same submitted to the Owner for its approval.

17. Protest Process

Any protest of Contractor selection or reject proposals will be processed in accordance with OAR 137-049-0450.

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SECTION II – BID SUBMITTAL REQUIREMENTS

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SECTION II A
BID PROPOSAL AND BID SCHEDULE

To: City of Oregon City
 625 Center Street
 Oregon City, Oregon 97045

From: _____
 Bidder (Company Name)

 Address

 City, State & Zip

 Telephone

The undersigned bidder declares that s/he has carefully examined the Instructions to Bidders, Contract Bid Submittal requirements, Contract Agreement, Performance and Payment Bond requirements, General Requirements, Scope of Work, and Other Technical Specifications for the construction of the **Oregon City 2021 Rectangular Rapid Flashing Beacons Project (CI 20-009)**; that s/he has made an examination of the site of the proposed work and has made such investigations as are necessary to determine the conditions to be encountered, and that if this proposal is accepted, s/he will contract with the City of Oregon City, Oregon, in the form similar to that attached; will provide the necessary machinery, tools, apparatus, and other means of construction and will furnish all material and labor as specified in the Contract Agreement and all other contract documents, or necessary to complete the work in the manner herein specified, and according to the requirements of the Engineer.

By signing and returning a bid, bidder acknowledges that it has read and understands the terms and conditions contained in the Invitation to Bid and that it accepts and agrees to be bound by the terms and conditions of the Invitation to Bid.

The undersigned agrees that upon written acceptance of this bid s/he will, within ten working days of receipt of such notice, execute a formal contract agreement with the City. The undersigned further agrees that s/he will provide the following in order to execute the contract:

1. Performance Bond and Corporate Surety Payment Bond, both in the amount equal to 100% of the awarded contract;
2. Certificates of Insurance for Liability and property damage coverage;
3. Certificates of Coverage for Workman Compensation and unemployment insurance;
4. All other bonds, permits, licenses, etc. as required in the contract documents.

The undersigned hereby represents as follows:

1. That no Commissioner, officer, agency or employee of the City of Oregon City is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder and that no representation, statement or statements, oral or in writing, of the

- City, its Commissioners, officers, agents or employees had induced him/her to enter into this Contract, and the papers made a part of its terms;
2. That this bid is made without connection with any person, firm or corporation making a bid for the same material and is, in all respects, fair and without collusion or fraud; and
 3. That the provisions required by ORS 279C.840 relating to prevailing wage rates shall be included in this contract.

The undersigned agrees that, if awarded the contract, s/he will commence work within ten (10) calendar days after the date of receipt of written Notice to Proceed and that the project shall be complete within 180 days from the Beginning of Contract Time as identified in 00180.50(c).

Bidder will complete the work in accordance with the Contract Documents and agrees to accept as full payment for the work proposed under this project, as herein specified and under the provisions included in the Bid, to be expressed in numeric figures only indicated below.

Engineer's Estimate: \$315,000

Lump Sum Base Bid (all work) \$ _____
(numeric figures only)

BASE BID SCHEDULE						
Item No.	Spec Section	Item Description	Qty	Unit	Unit Cost	Total Cost
1	00210	Mobilization	1	LS	\$ --	\$
2	00225	Temporary Work Zone Traffic Control, Complete	1	LS	\$ --	\$
3	00280	Erosion Control	1	LS	\$ --	\$
4	00290	Pollution Control Plan	1	LS	\$ --	\$
5	00305	Construction Survey Work	1	LS	\$ --	\$
6	00310	Removal of Structures and Obstructions	1	LS	\$ --	\$
7	00320	Clearing and Grubbing	1	LS	\$ --	\$
8	00330	General Excavation	64	CUYD	\$	\$
9	00350	Subgrade Geotextile	140	SQYD	\$	\$
10	00490	Adjusting Boxes	1	EA	\$	\$
11	00490	Adjusting Inlets	1	EA	\$	\$
12	00640	Aggregate Base	100	TON	\$	\$
13	00744	Level 3, ½-Inch ACP Mixture	25	TON	\$	\$
14	00749	Asphalt Walks	100	SQFT	\$	\$
15	00759	Concrete Curbs, Curb and Gutter	223	FT	\$	\$

Item No.	Spec Section	Item Description	Qty	Unit	Unit Cost	Total Cost
16	00759	Concrete Curbs, Standard Curb	103	FT	\$	\$
17	00759	Concrete Walks	1,778	SQFT	\$	\$
18	00759	Extra for Curb Ramps	10	EA	\$	\$
19	00759	Truncated Domes on New Surface	107	SQFT	\$	\$
20	00860	Longitudinal Pavement Markings – Paint	1,150	FT	\$	\$
21	00867	Pavement Legend, Type B-HS: Bicycle Lane Stencil	4	EA	\$	\$
22	00867	Pavement Bar, Type B-HS	214	SQFT	\$	\$
23	00902	Crosswalk Closure Supports	1	EA	\$	\$
24	00905	Remove and Reinstall Existing Signs	1	LS	\$ --	\$
25	00940	Signs, Standard Sheeting, Sheet Aluminum	3	SQFT	\$	\$
26	00970	Pole Foundations	1	LS	\$ --	\$
27	00970	Switching, Conduit, and Wiring	1	LS	\$ --	\$
28	00990	Flashing Beacon Installation, Front Avenue	1	LS	\$ --	\$
29	00990	Flashing Beacon Installation, Swan Avenue	1	LS	\$ --	\$
30	00990	Flashing Beacon Installation, Linn Ave. and Williams Street	1	LS	\$ --	\$
31	01030	Permanent Seeding	1	LS	\$ --	\$
32	01040	Topsoil	1	CUYD	\$	\$
33	01070	Mailbox Concrete Collars	1	EA	\$	\$
34	01070	Multiple Mailbox Supports	1	EA	\$	\$
TOTAL BASE BID (numerical value only)					\$	

Accompanying this Proposal is a bid bond, for the sum of _____, payable to the City of Oregon City, Oregon, this being an amount for ten percent (10%) of the total bid based upon the estimate of quantities at the above price according to the conditions of the advertisement. If this Proposal is accepted by the City of Oregon City and the undersigned fails to execute a satisfactory contract and bond as stated in the Advertisement within ten (10) calendar days from the date of notification, then the City may, at its option, determine that the undersigned has abandoned the contract and there upon this Proposal shall be considered null and void, and the bid security accompanying this Proposal shall be forfeited to and become the property of the City of Oregon City. If the bid is not accepted, the bid security accompanying this Proposal shall be returned to the undersigned.

Dated this ____ day of _____, 20____.

Name of Bidder: _____

Address of Bidder: _____

Facsimile Number: _____

Telephone Number: _____

Bidder E-Mail Address: _____

Name of Authorized Agent: _____

Signature of Authorized Agent: _____

Title of Authorized Agent: _____

Bidder's Taxpayer I.D. Number: _____

CCB Number: _____ Expiration Date: _____

SECTION II B
ADDENDA ACKNOWLEDGEMENT

I/We have received the following Addenda:

None _____

1. _____

2. _____

3. _____

4. _____

5. _____

Date _____

Signature of Bidder _____

Title _____

Business Name _____

SECTION II C
COMPLIANCE WITH ORS 279C.840

COMPLIANCE WITH ORS 279C.840 (PREVAILING WAGES)

PREVAILING WAGES

The Contractor agrees to be bound by and will comply with the provisions of ORS 279C.840 (workers on public works projects to be paid not less than the prevailing rate of wage posting of rates) or 40 U.S.C. 276a.

Date _____

Signature of Bidder _____

Title _____

Business Name _____

SECTION II D
RESIDENT BIDDER STATUS (ORS 279A.120)

RESIDENT BIDDER STATUS

The undersigned represents him/herself to be a Resident or Nonresident bidder by checking the appropriate spots below. "Resident Bidder" means a bidder that has paid unemployment taxes or income taxes in Oregon during the 12 calendar months immediately preceding submission of the bid, has a business address in Oregon and has stated in the bid whether the bidder is a "Resident Bidder".

☐ Resident Bidder

☐ Nonresident Bidder

Date _____

Signature of Bidder _____

Title _____

Business Name _____

SECTION II E
CERTIFICATION OF DRUG TESTING PROGRAM

DRUG TESTING PROGRAM

The undersigned confirms that this firm has an employee drug-testing program in place and will demonstrate this prior to award of contract.

Date _____

Signature of Bidder _____

Title _____

Business Name _____

SECTION II F
NON-COLLUSION STATEMENT

I hereby certify that the bid submitted by _____ is genuine and not a sham or collusive bid, or made in the interest or on behalf of any person not therein named; and I further state that we have not directly or indirectly induced or solicited any bidder or supplier on the above work to put in a sham bid, or any other person or corporation to refrain from bidding; and that we have not in any manner sought by collusion to secure to ourselves an advantage over any other bidder or bidders.

Signature of Authorized Agent _____

Printed Name _____

Title _____

Company _____

Date _____

SECTION II G
ASBESTOS CERTIFICATION

ASBESTOS REMOVAL

The undersigned indicates herein that s/he is or is not licensed under ORS 468A.710 for asbestos removal.

☐ Is licensed

☐ Is not licensed

Signature of Authorized Agent _____

Printed Name _____

Title _____

Company _____

Date _____

SECTION II H **REGISTRATIONS**

The City will not accept a bid unless the Contractor is registered with the CCB [OAR 137-049-0200(1)(a)(K)], and the contractor or the subcontractor doing the landscaping is licensed by the State Landscape Contractors Board under ORS 701.035 - 055. The undersigned confirms that this firm is registered with the CCB and that this firm or the subcontractor doing the landscaping is licensed by the State Landscape Contractors Board.

Date _____

Signature of Bidder _____

Title _____

Contractor Name _____

Contractor CCB # _____

Landscaping Subcontractor _____

Subcontractor LCB # _____

SECTION II I **BUSINESS LICENSES (OCMC 05.04)**

In accordance with Oregon City Municipal Code 05.04 (www.oregoncity.org/economicdevelopment/business-licenses), no person shall carry on any business within the city without first obtaining an applicable City **OR** Metro business license.

Contractor Name _____

Oregon City Business License No. _____

Metro Business License No.* _____

I CERTIFY THAT THE CONTRACTOR LISTED ABOVE (CHECK ONE):

- ☐ Is in possession of a current City of Oregon City business license.
- ☐ Will apply for and obtain an Oregon City Business License if awarded the contract and required by the City to do so.

Signature of Bidder _____

Title _____

*NOTE: A Metro business license is sufficient to perform work for the City if the Contractor has or will be earning \$250,000 or less in gross receipts from the City of Oregon City for the fiscal year (July 1 to June 30). Contractors earning more than \$250,000 must have a City of Oregon City Business License.

SECTION II J
CERTIFICATION OF NON-DISCRIMINATION
[ORS 279A.110(A) & OAR 137-049-0440(3)]

The undersigned certifies that it has not discriminated against minority, women or emerging small business enterprises in the obtaining of subcontracts for this project and shall not discriminate against minority, women or emerging small business enterprises in awarding of subcontracts for this project.

Date _____

Signature of Bidder _____

Title _____

Contractor Name _____

SECTION II K
CERTIFICATION OF COMPLIANCE WITH TAX LAW

The undersigned certifies, under penalty of perjury, to the best of the undersigned's knowledge, it is not in violation of any tax laws, including state tax laws imposed by ORS 401.792 to 401.816 and ORS chapters 118, 314, 316, 317, 318, 320, 321 and 323; the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Department of Revenue under ORS 305.620.

Date _____

Signature of Bidder _____

Title _____

Contractor Name _____

(this page intentionally left blank)

SECTION II L
STATE OF OREGON FIRST TIER SUBCONTRACTOR DISCLOSURE
REQUIREMENTS

STATE OF OREGON FIRST TIER SUBCONTRACTOR DISCLOSURE FORM TO BE SUBMITTED BY ALL BIDDERS NOT LATER THAN 4:00 P.M. THE DAY THE BID IS DUE

ORS 279C.370 requires that “bidder shall submit to the public contracting agency a disclosure of the first-tier subcontractors that: (A) will be furnishing labor or will be furnishing labor and materials in connection with the public improvement; and (B) will have a contract value that is equal to or greater than five percent of the total project bid or \$15,000, whichever is greater, or \$350,000 regardless of the percentage of the total project bid.”

The disclosure of first-tier subcontractors applies to public improvements with a contract value of more than \$100,000.

The Bidder must disclose the following information about their first-tier subcontracts either in its Bid submission or within two (2) working hours after the date and time of the deadline when bids are due:

1. The subcontractor’s name
2. Dollar value
3. The category of work that the subcontractor would be performing.

If the bidder will not be using any subcontractors that are subject to the above disclosure requirements, the bidder is required to indicate “**NONE**” on the accompanying form.

Failure to submit this form by the disclosure deadline will result in a non-responsive bid. A non-responsive bid will not be considered for award.

Note to Contractors who are not the low bidder:

If apparent low bidder is disqualified or otherwise not awarded the contract and the next low bidder failed to submit the disclosure form within two (2) hours after the date and time of the deadline when bids were due, that bidder will be ineligible to receive award of the contract.

STATE OF OREGON
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

This form must be submitted at the location specified in the Invitation to Bid within two (2) working hours after the date and time of the deadline when the bids are due.

List below the name of each subcontractor that will be furnishing labor or labor and materials and that is required to be disclosed by ORS 279C.370, the dollar value of the subcontract and the category of work that the subcontractor will be performing.

Enter “**NONE**” if there are no subcontractors that need to be disclosed.
 (ATTACH ADDITIONAL SHEETS IF NEEDED)

Project Name: Oregon City 2021 Rectangular Rapid Flashing Beacons Project

Bid Number: CI 20-009 Bid Closing Date: April 29, 2021 Time: 2:00 p.m.

SUBCONTRACTOR NAME (Please Print)	DOLLAR VALUE	CATEGORY/DIVISION OF WORK (Painting, electrical, landscaping, etc.)
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
Failure to submit this form within two hours after the bid opening will result in a non-responsive bid. A non-responsive bid will not be considered for award.		

Form submitted by (Bidder Name): _____

Contact Name: _____ Phone No.: _____

SECTION II M
BID BOND

Know all persons by these presents, that _____ hereinafter called the PRINCIPAL, and _____ a corporation or partnership duly organized under the laws of the State of _____, having its principal place of business at _____, and authorized to do business in the State of Oregon as SURETY, are held and firmly bound unto the City of Oregon City, hereinafter called the OBLIGEE in the penal sum of _____ Dollars (\$_____) for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of this bond is such that, whereas, the PRINCIPAL herein is herewith submitting his/her or its Bid Proposal for **Oregon City 2021 Rectangular Rapid Flashing Beacons**

Project (CI 20-009) said Bid Proposal, by reference thereto, being hereby made a part hereof.

Now, therefore, if the said Bid Proposal, submitted by the said PRINCIPAL, is accepted, the Contract awarded to the PRINCIPAL, and if the said PRINCIPAL shall execute the proposed contract and shall furnish such Performance and Payment Bond as required by the Bidding and Contract documents within the time fixed by the Documents, then this obligation shall be void.

If the PRINCIPAL shall fail to execute the proposed Contract and to furnish the Performance and Payment Bond, the SURETY hereby agrees to pay the OBLIGEE the penal sum as liquidated damages.

Signed and sealed this _____ Day of _____, _____.

Principal

By: _____

Counter Signed:

Resident Agent

Attorney -in-Fact

Phone _____

A certified copy of the Agent's Power of Attorney must be attached hereto.

SECTION II N
CUSTOMER SERVICE ACKNOWLEDGMENT FORM

Project Name: Oregon City 2021 Rectangular Rapid Flashing Beacons Project (CI 20-009)

Bid Closing: Date: April 29, 2021 / Time: 2:00 PM

Note: This form is part of the inquiry concerning bidder responsibility and must be submitted with the other proposal forms as specified in Section 00120.40(g).

Bidder, by his/her signature below, hereby signifies that s/he has read and understands the construction specifications.

Bidder further acknowledges that s/he understands their terms, fully acknowledges their importance to successful completion of the project, and agrees to be bound thereby if awarded this contract. Bidder further assures the City that, if awarded this contract, s/he will promptly, efficiently, and courteously carry out his/her responsibilities under the aforementioned specifications.

Signature of Bidder

Title

Name of Firm

Date

SECTION II O
QUALIFICATION OF BIDDER

Project: Oregon City 2021 Rectangular Rapid Flashing Beacons Project (CI 20-009)

If the above contract is awarded to our company, the following persons will be authorized to sign change orders, progress payments and similar documents for the company: (names and positions)

 _____.

The Contractor's superintendent at the job site will be (give full name):

Contractor Name: _____

Business Address: _____

Phone Number: _____ Fax Number: _____

QUALIFYING EXPERIENCE
 (3 Comparable Projects in the Past 10 Years)

Project Name	Cost	Location	Owner/Owner Contact/Phone/Fax
---------------------	-------------	-----------------	--------------------------------------

1. _____

2. _____

3. _____

(Additional) _____

(Additional) _____

Signature of Bidder: _____

SECTION III – CONTRACT AGREEMENT

(this page intentionally left blank)

Point of Contact: _____
 Term of Contract: _____

SECTION III A **CONTRACT AGREEMENT**

This Agreement, made and entered into this _____ day of _____, 20____, between the CITY OF OREGON CITY ("CITY"), acting by and through the City Commission and CONTRACTOR NAME ("CONTRACTOR").

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **Oregon City 2021 Rectangular Rapid Flashing Beacons Project (CI 20-009)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid Scope of Work Instructions to Bidders Bid Proposal and Bid Schedule Compliance with ORS 279C.840 Resident Bidder Status Certification of Drug Testing Program Non-Collusion Statement Asbestos Certification Registrations Certification of Non-Discrimination Certification of Compliance with Tax Law Bidder Responsibility Form Bid Bond First Tier Subcontractor Disclosure Form Customer Service Acknowledgment Form Contract Agreement Oregon City Public Improvement Standard Conditions	Statutory Conditions to Contract Agreement Performance Bond Payment Bond State of Oregon Statutory Public Works Bond General Conditions Prevailing Wage Rates for Public Works Contracts in Oregon, dated January 1, 2021 Amendments to the Prevailing Wage Rates for Public Works Contracts in Oregon dated April 1, 2020 Prevailing Wage Apprenticeship Rates dated April 1, 2021 Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018 Special Provisions Contract Drawings City of Oregon City Standard Details Technical Specifications 2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents Addendum – list addendums here with date All items included within these Contract Documents.
--	---

The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The project shall be complete within **180** days from the Beginning of Contract Time as identified in 00180.50(b) of the Special Provisions, more specifically established as _____.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **write out contract dollar amount (\$_____)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect.

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY

CONTRACTOR NAME

by: _____
Anthony J. Konkol III
City Manager

Printed Name

by: _____
Authorized signature

by: _____
John M. Lewis, P.E.
Public Works Director

Title

Federal Taxpayer ID Number

Approved as to Legal Sufficiency:

Address:

by: _____
City Attorney

City Commission Award Date:

SECTION III B
PUBLIC IMPROVEMENT STANDARD CONDITIONS

1. Time of Completion. The City and the Contractor recognize that time is of the essence in this agreement, and the City may sustain damages if work is not completed within the contract time limit as stated or as adjusted during the life of the contract. It is agreed that the Contractor shall pay the City, as liquidated damages, but not as a penalty, the per diem amount listed in the Schedule of Liquidated Damages, as set forth in the contract documents, for each and every day elapsed in excess of the final contract time.

Permitting the Contractor to finish the work after the contract time has expired shall not be a waiver of any of the City's contract rights.

2. Payments, Statement of Compliance and Subcontractor Payments.

a. Contract Sum and City Payments. The City shall pay to the Contractor, for the performance of this agreement, the amounts determined for the total supplied number of each of the specified units of work in the Schedule of Bid Items contained in the contract documents. The number of units contained in this schedule is understood to be approximate only, and that any item may be expanded, contracted, or eliminated by procedures contained in the contract documents.

b. Statement of Compliance. Before any payment is made to the Contractor, the Contractor shall file with the City a statement, under oath, that it has complied with all provisions of state law governing contractors on a public contract. In addition, the Contractor shall file with the City a sworn statement by each of its subcontractors to the same effect.

c. Progress Payments and Retainage. Partial payments may be made by the City on a monthly basis. Partial payments will be based on an estimate of the percentage of completion for the work. Progress payments shall not be considered an acceptance or approval of any of the work or a waiver of any defects therein. The City may reserve, as retainage from progress payments, an amount not to exceed five percent of the payment. The Contractor shall have the right to have cash retainage deposited in an interest-bearing account, in accordance with ORS 279C.550. The City does not accept deposit bonds or securities in lieu of cash retainage.

d. Certified Payroll Statements.

The Contractor shall file certified payroll statements with the City at a minimum of once per month. Failure to do so shall result in the City withholding 25% of amounts due the Contractor, in addition to any other required retainage.

e. Final Payment.

The final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by this agreement. Not more than 30 days after final completion of the Work and the City's final acceptance of the work, which shall include the taking of final measurements of quantities, the City shall make its final payment to the Contractor. Retainage held by the City shall be included in, and paid to the Contractor, as part of the final payment. If the final payment is made more than 30 days after final completion and final acceptance, the City shall pay the Contractor interest at the rate of one and one half (1 - 1/2%) per month on the final payment, commencing 30 days after completion of the work by the Contractor and final acceptance of the Work by the City. To facilitate the City's inspection, the Contractor shall notify the City in writing when the Contractor considers the work complete.

f. Subcontractor Payments.

The Contractor shall pay the subcontractor for satisfactory performance under the subcontract, out of amounts that are paid by the City to the Contractor, within 10 days of the Contractor's receipt of such payments from the City.

If the Contractor, or a first tier subcontractor, fails to make timely payment to the subcontractor then the Contractor or first tier subcontractor shall owe the person the amount due plus an interest penalty beginning on the day after the required payment date and ending on the date on

which payment is made, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest charged to the Contractor or first tier subcontractor on the amount due shall equal three times the discount rate on 90 day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve District that includes Oregon on the date that is 30 days after the date when the payment was received from the Contractor, a first tier subcontractor or City, but the rate of interest shall not exceed thirty percent (30%). The amount of interest may not be waived.

The subcontractor must provide in all contracts with lower tier subcontractors or suppliers a clause requiring that the subcontractor shall pay the lower tier subcontractors and suppliers in accordance with the provisions of the immediately preceding two paragraphs above.

Pursuant to ORS 279C.515(C), if the Contractor or a subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with this Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.

If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or a subcontractor by any person in connection with the public contract as the claim becomes due, the proper officer or officers representing the City, may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of the contract.

First tier subcontractors shall file certified payroll statements with the Contractor. Failure to do so shall result in the Contractor

withholding 25% of amounts due the first tier subcontractor.

3. Insurance, Indemnity, Termination.

a. Insurance.

The Contractor shall maintain in force for the duration of this contract the insurance coverages specified below. Each policy required by these provisions shall be written as a primary policy, not contributing with or in excess of any coverage, which the City may carry. A copy of each policy or a certificate satisfactory to the City shall be delivered to the City prior to commencement of work.

Unless otherwise specified, each policy shall be written on an "occurrence" form with an admitted insurance carrier licensed to do business in the State of Oregon. Each policy shall contain an endorsement entitling the City to not less than 30 days prior written notice of any material change, nonrenewal or cancellation.

In the event statutory limits of liability of a public body for claims arising out of a single accident or occurrence is increased above the combined single limit coverage requirements specified below, the City shall have the right to require the Contractor to increase the Contractor's coverages to the statutory limit for such claims, and to increase the aggregate coverage to twice the amount of the statutory limit.

The adequacy of all insurance required by these provisions shall be subject to approval by the City. Failure to maintain any insurance coverage required by this contract shall be cause for immediate termination by the City.

i) Comprehensive General Liability.

The Contractor shall maintain a broad form comprehensive general liability insurance policy with coverage of not less than

\$2,000,000 combined single limit per occurrence, with aggregate of \$4,000,000. Coverage shall be for bodily injury, personal injury or property damage. Such policy shall contain a contractual liability endorsement to cover the Contractor's indemnification obligations under this contract. The policy shall also contain an endorsement naming the City, its officers, agents and employees as additional insureds, in a form satisfactory to the City, and expressly providing that the interest of the City shall not be affected by the Contractor's breach of policy provisions.

ii) Comprehensive Automobile Liability.

The Contractor shall maintain a comprehensive automobile liability insurance policy with coverage of not less than \$2,000,000 combined single limit per occurrence, with aggregate of \$4,000,000 for bodily injury, personal injury or property damage. The coverage shall include both hired and non-owned auto liability. The policy shall also contain an endorsement naming the City, its officers, agents and employees as additional insureds, in a form satisfactory to the City, and expressly providing that the interest of the City shall not be affected by the Contractor's breach of policy provisions.

iii) Workers' Compensation Insurance.

The Contractor shall comply with the Oregon Workers' Compensation law by qualifying as a carrier insured employer or as a self-insured employer and shall strictly comply with all other applicable provisions of such law. The Contractor shall provide the City with such further assurances as the City may require from time to time that the Contractor is in compliance with these Workers' Compensation coverage requirements and the Workers' Compensation law.

b. Indemnification.

The Contractor shall indemnify and hold the City, and its officers, agents and employees, harmless from and against all claims, actions, liabilities, costs (including attorney fees) and other costs of defense, arising out of or in any way related to the Work, the Contractor's failure to comply strictly with any provision of this contract, or any other actions or failure to act by the Contractor and the Contractor's employees, agents, officers, representatives and subcontractors.

In the event any such action or claim is brought against the City, the Contractor shall, if the City so elects and upon tender by the City, defend the same at the Contractor's sole cost and expense, promptly satisfy any judgment adverse to the City or to the City and the Contractor jointly, and reimburse the City for any loss, cost, damage, or expense, including attorney fees, suffered or incurred by the City.

c. Termination and Suspension.

The City may terminate this contract or suspend the work at any time for any reason considered by the City, in the exercise of its sole discretion, to be in the public interest.

In the event the Work's suspension is not the result of a labor dispute and this contract is not terminated, the Contractor shall be entitled to a reasonable extension of the time for completion, to be determined by the City, and shall be compensated for all actual verified costs incurred as a result of the suspension, plus the Contractor's standard overhead with respect to such costs.

In the event of a termination of this contract under these provisions, the Contractor shall be compensated for any preparatory work and actual, verified costs and expenses incurred as a result of the termination. In addition the Contractor shall be compensated for the Work performed on the basis of the Contract Sum in the case of any fully completed separate item or portion of

the Work for which there is a separate or unit price, and with respect to any other portion of the Work shall be paid a percentage of the Contract Sum allocated to such other Work equal to the percentage of Work completed to the date of termination.

None of the foregoing provisions concerning compensation in the event of a suspension of Work or termination of this contract shall apply if such suspension or termination occurs as a result of the Contractor's violation of any Federal, State, or Local statutes, ordinances, rules or regulations, or as a result of any violation by the Contractor of the terms of this contract, including a determination by the City that the Contractor has not progressed satisfactorily with the Work in accordance with specifications.

4. Liquidated Damages.

Unless provided elsewhere in the Contract documents, liquidated damages in the amount of \$250.00 per calendar day shall apply for every day after the completion time limit that the project is not Substantially Complete.

Permitting the Contractor to continue and finish the work after the contract time or adjusted contract time has expired shall not be a waiver of any of the City's contract rights.

Payment of liquidated damages shall not release the Contractor from any obligations to complete the work nor constitute a waiver of the City's right to collect any additional damages that the City may sustain by failure of the Contractor to fulfill the contract. Liquidated damages shall be full and complete payment only for failure of the Contractor to complete the work on time. The amount of liquidated damages accrued may be deducted from payments due or to become due to the Contractor.

5. **Work Schedule.**

The Contractor shall notify the City Engineer a minimum of 48 hours prior to commencing work. The Contractor shall perform all work in an expeditious manner, minimizing delays and inconvenience to local businesses and/or residents.

6. **Existing Utilities.**

The Contractor shall be responsible for checking actual utility locations in the field and checking with appropriate agencies that may have underground facilities within the project limits. The Contractor shall notify utility companies at least 2 business days, but not more than 10 business days before commencing any excavations. The excavator shall notify a utilities notifications system of the date, location, and depth of the proposed excavation and the type of work to be performed. Notifying a utilities notification system constitutes notice only to the participating members of that service. If no utilities notification system is available, or if the owner of the underground facilities is not a member of a utilities notification system, the excavator shall give the same notice to each owner of underground facilities who is known to the excavator or who can be identified and contacted by the excavator.

7. **Materials.**

All materials shall be as specified in the Technical Specifications, plans, noted or other technical descriptions included herewith, unless otherwise noted. The City reserves the right to sample and test all material according to specification requirements cited in this contract.

8. **Traffic Control.**

Maintenance of traffic and traffic control through the work area shall be the responsibility of Contractor. If Contractor fails at any time during the project to provide adequate access for local traffic, the City may, at the discretion of the City

Engineer, and giving the Contractor four (4) hours notice, perform the necessary work to restore traffic and deduct the cost of such work from the contract price. The provisions for traffic control shall perform the necessary work to restore traffic and deduct the costs of such work from the contract price. The following provisions shall be made for traffic control:

- a. All work done under this contract in the City's right of way shall conform to the Manual on Uniform Traffic Control Devices for Streets and Highways, as currently modified by the Oregon Department of Transportation.
- b. The Contractor shall insure that during non-work hours, that on-call staff is available to maintain all traffic control devices for the project. Both the City Engineer and the Chief of Police will be provided up to date contact information on these people. Failure to comply with this provision will cause the Contractor to be billed for any services required to be provided by City forces to provide adequate protection to the traveling public during non-work hours.
- c. Traffic control and temporary protective and directional devices may be used outside the limits of the project when they have direct bearing on the work under contract.
- d. The Contractor shall consider at least the following factors in restricting traffic flow (consistent with notes above):
 - i) Emergency vehicle access.
 - ii) Sufficiency of traffic control personnel and devices.
 - iii) Prior warning to the public and residents.

iv) Notification to TriMet, School District, Post Office, garbage company, and City/County emergency dispatch agencies.

- e. At the pre-construction conference, the Contractor shall provide the name, address and telephone number of the individual responsible for project and construction traffic controls during non-working hours.
- f. The Contractor shall not interrupt access to any private driveway for more than three consecutive hours unless written permission has been given to the Contractor by the owner of the property affected. Advance notice of forty-eight hours shall be given by the Contractor to the affected landowners and residents.

9. Contractor's Use of Premises.

The Contractor shall exercise care to protect adjacent existing structures and property from damage. All debris and excess materials shall be removed and disposed at the direction of the City Engineer.

10. Control of Work.

All work done under this contract shall not be deemed complete until accepted by the City Engineer. The City Engineer shall decide any and all questions that may arise as to the quality and/or acceptability of the materials used and/or work performed. Final approval and acceptance of any and all work performed under this contract shall be the responsibility of the City Engineer.

11. Contractor's Responsibility.

It is understood that the plans, specifications and other contract documents do not purport to control the method of preparing the work, but only the requirements as to the nature of the completed work. The Contractor assumes the entire responsibility for the

method of performing and installing the work. Suggestions as to the method of performing and installing the work included in the contract documents shall be deemed advisory only and the feasibility of such methods, or the lack thereof, shall not affect the Contractor's liability or status as an independent Contractor under this contract.

12. Plans and Specifications.

If there is a conflict between contract documents, the document highest in precedence shall control. The precedence shall be:

- First: Permits as may be required by law
- Second: Contract Agreement
- Third: Bidder's Proposal
- Fourth: Technical Provisions (Technical Specifications and Drawings)
- Fifth: General Requirements, General Conditions, and Supplementary Conditions

Change orders, supplemental agreements and approved revisions to plans and specifications will take precedence over documents listed above. Detailed plans shall have precedence over general plans as modified by the General Requirements and Technical Provisions applicable to this Project.

13. Control of Work.

It will be the direct responsibility of the Contractor to furnish every subcontractor a complete set of project plans and ensure that these plans are on the project site and in use when the subcontractor is performing that portion of the project.

The Contractor shall be responsible for any process control sampling, testing, measurement, and inspection needed to insure that the finished work complies with specifications. When density testing is required for assurance and/or acceptance

testing, the Contractor shall furnish and operate the nuclear gauge or shall retain an independent testing firm to perform the compaction testing. The testing shall be conducted under the observation of the engineer and performed on all surfaces regardless of density requirements unless otherwise directed by the engineer. All test results shall be provided in written report form to the engineer.

The Contractor shall give the attention necessary to keep the work progressing at a rate satisfactory to the engineer. The Contractor shall provide, at all times, a competent superintendent for all work on the project. The superintendent shall be readily accessible on a daily basis, have a set of plans, specifications, special provisions, and addenda, and be experienced in the type of work being performed. The superintendent shall have the authority to receive and carry out, without delay, the engineer's instructions and orders and to make arrangements for necessary materials, equipment, and labor.

The Contractor shall allow the engineer access at all times, during normal office hours, to books and records of the Contractor and the Contractor's subcontractors that pertain to the contract, and furnish the engineer facts necessary to determine actual cost of any part of all of the work. The engineer will consider a request for confidentiality to protect trade secrets.

If the engineer is not provided proper facilities by the Contractor for keeping strict accounting of cost, then the Contractor agrees to waive any claim for extra compensation.

Contractor shall schedule work Monday through Friday only. Contractor shall establish a standard daily work schedule for hours to begin and end work that is acceptable to the City.

Contractor shall not trespass on private property nor shall they use business or residential garden hoses or water faucets without the written approval of the property owner(s).

14. Protection of City Property.

It is the Contractor's responsibility to protect sidewalks, asphalt paving, concrete, trees, shrubs, and any lawn areas at all times from work related damage of any type. Costs for cleaning, restoration or repair shall be borne by the Contractor, as the City may deem appropriate.

Should, during the course of Contractor's work, Contractor observe or suspect the presence of asbestos fiber, Contractor shall immediately stop work and notify the City of its findings. Should the project's schedule be delayed because of such findings, the Contractor will remove itself from the project and wait the City's order to return to work, at no penalty to the City.

Debris shall not be permitted to remain on site and shall be disposed daily and/or as directed by City.

It is the Contractor's responsibility to manage a safe work environment and Contractor shall take any means necessary to secure a safe work site for both the safety of all personnel and the public.

15. Contractor Identification.

Contractor shall furnish to City its taxpayer identification number as designated by the IRS.

16. Assignment.

Contractor shall not assign any rights acquired hereunder, without obtaining prior written approval from City.

17. Access to Records.

City shall have access to all books, documents, papers and records of Contractor that are pertinent to this Agreement for the purpose of making audits, examinations, excerpts and transcripts.

18. Ownership of Work Product; License.

All work products of Contractor that result from this Agreement (the "Work Products") are the exclusive property of City. In addition, if any of the Work Products contain intellectual property of Contractor that is or could be protected by federal copyright, patent, or trademark laws, or state trade secret laws, Contractor hereby grants City a perpetual, royalty-free, fully paid, nonexclusive and irrevocable license to copy, reproduce, deliver, publish, perform, dispose of, use and re-use, in whole or in part (and to authorize others to do so), all such Work Products and any other information, designs, plans, or works provided or delivered to City or produced by Contractor under this Agreement. The parties expressly agree that all works produced pursuant to this Agreement are works specially commissioned by City, and that any and all such works shall be works made for hire in which all rights and copyrights belong exclusively to City. Contractor shall not publish, republish, display or otherwise use Work Products resulting from this Agreement without the prior written agreement of City.

19. Legal Expenses.

In the event legal action is brought by City or Contractor against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for attorney fees, costs, and expenses as may be set by a court. "Legal action" shall include matters subject to arbitration and appeals.

20. Severability.

The parties agree that, if any term or provision of this Agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected.

21. Number and Gender.

In this Agreement, the masculine, feminine or neuter gender, and the singular or plural number, shall be deemed to include the others or other whenever the context so requires.

22. Captions and Headings.

The captions and headings of this Agreement are for convenience only and shall not be construed or referred to in resolving questions of interpretation or construction.

23. Calculation of Time.

All periods of time referred to herein shall include Saturdays, Sundays and legal holidays in the state of Oregon, except that, if the last day of any period falls on any Saturday, Sunday or legal holiday, the period shall be extended to include the next day that is not a Saturday, Sunday or legal holiday.

24. Notices.

Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United States mail, postage prepaid, or personally delivered to the addresses listed in the Agreement attached hereto. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

25. Nonwaiver.

The failure of City to insist upon or enforce strict performance by Contractor of any of the terms of this Agreement or to exercise any rights hereunder shall not be construed

as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights of any future occasion.

26. Information and Reports.

Contractor shall, at such time and in such form as City may require, furnish such periodic reports concerning the status of the project, such statements, certificates, approvals, and copies of proposed and executed plans and claims, and other information relative to the project as may be requested by City. Contractor shall furnish City, upon request, with copies of all documents and other materials prepared or developed in relation with or as a part of the

project. Working papers prepared in conjunction with the project are the property of City, but may remain with Contractor. Copies as requested shall be provided free of cost to City.

27. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

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SECTION III C
STATUTORY CONDITIONS TO CONTRACT AGREEMENT

ORS 279C.505(1)(a) CONTRACTOR shall make payment promptly, as due, to all persons supplying to such CONTRACTOR labor or material for the performance of the work provided for in such contract.

ORS 279C.505(1)(b) CONTRACTOR shall pay all contributions or amounts due the Industrial Accident Fund from such CONTRACTOR or subcontractor incurred in the performance of the contract.

ORS 279C.505(1)(c) CONTRACTOR shall not permit any lien or claim to be filed or prosecuted against the state, county, school district, municipality, municipal corporation or subdivision thereof, on account of any labor or material furnished.

ORS 279C.505(1)(d) CONTRACTOR shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

ORS 279C.505(2) CONTRACTOR shall demonstrate that an employee drug testing program is in place.

ORS 279C.510 CONTRACTOR shall salvage or recycle construction and demolition debris, if feasible and cost-effective. In a public improvement contract for lawn and landscape maintenance, CONTRACTOR shall compost or mulch yard waste material at an approved site, if feasible and cost-effective.

ORS 279C.515(1) If the CONTRACTOR fails, neglects or refuses to pay promptly a person's claim for labor or services that the person provides to the CONTRACTOR or a subcontractor in connection with the public contract as the claim becomes due, the proper officer that represents the state or a county, school district, municipality, or municipal corporation or a subdivision, of

the state, county, school district, municipality or municipal corporation, may pay the amount of the claim to the person that provides the labor or services and charge the amount of the payment against funds due or to become due the CONTRACTOR by reason of the contract.

ORS 279C.515(2) If the CONTRACTOR or a first-tier subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public improvement contract within 30 days after receiving payment from the contracting agency or a contractor, the CONTRACTOR or first-tier subcontractor owes the person the amount due plus interest charges that begins at the end of the 10-day period within which payment is due under ORS 279C.580 (4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived.

ORS 279C.515(3) If the CONTRACTOR or a subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public improvement contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.

ORS 279C.520

(1) A contractor may not employ an employee for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency or when the public policy absolutely requires otherwise, and in such cases, the contractor shall pay the employee at least time and a half pay for:

(a)(i) All overtime in excess of eight hours in any one day or 40 hours in any one

week if the work week is five consecutive days, Monday through Friday; or

(ii) For all overtime in excess of 10 hours in any one day or 40 hours in any one week if the work week is four consecutive days, Monday through Friday; and

(b) All work the employee performs on Saturday and on any legal holiday specified in ORS 279C.540.

(2) The CONTRACTOR shall comply with the prohibition set forth in ORS 652.220, that compliance is a material element of the contract and that a failure to comply is a breach that entitles the contracting agency to terminate the contract for cause.

(c) The CONTRACTOR may not prohibit any of the contractor's employees from discussing the employee's rate of wage, salary, benefits or other compensation with another employee or another person and may not retaliate against an employee who discusses the employee's rate of wage, salary, benefits or other compensation with another employee or another person.

(3) CONTRACTOR shall give notice in writing to employees who work on a public contract, either at the time of hire or before work begins on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and days per week that the contractor may require the employees to work.

ORS 279C.525 In addition to any other laws, rules and regulations dealing with the prevention of environmental pollution and the preservation of natural resources he following environmental and natural resources, laws, rules and regulations affect the performance of the contract:

- City of Oregon City Erosion Control Ordinance (Ref. Oregon City Municipal Code Chapter 17.47 Erosion and Sediment Control).

ORS 279C.530 The CONTRACTOR shall promptly, as due, make payment to any person, copartnership, association or corporation, furnishing medical, surgical and hospital care, or other needed care and attention, incident to sickness or injury, to the employees of the CONTRACTOR, of all sums which the CONTRACTOR agrees to pay for such services and all moneys and sums which the CONTRACTOR collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.

ORS 279C.530(2) All employers, including CONTRACTOR, that employ subject workers who work under this Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. CONTRACTOR shall ensure that each of its subcontractors complies with these requirements.

ORS 279C.545 Any worker employed by the CONTRACTOR shall be foreclosed from the right to collect for any overtime provided in ORS 279C.540 unless a claim for payment is filed with the CONTRACTOR within 90 days from the completion of the contract, providing the CONTRACTOR has caused a circular clearly printed in boldfaced 12-point type and containing a copy of this section to be posted in a prominent place alongside the door of the timekeeper's office or in a similar place that is readily available and freely visible to workers employed on the work and maintained the circular continuously posted from the inception to

the completion of the contract on which workers are or have been employed.

ORS 279C.550 - 570 Retainage and payment under the terms of this Agreement shall be governed by the terms of ORS 279C.550 – 570.

ORS 279C.570 The CITY shall make progress payments on the contract monthly as work progresses on the contract. Payments shall be based upon estimates of work completed that are approved by the CITY. A progress payment is not considered acceptance or approval of any work or waiver of any defects therein. The CITY shall pay to the CONTRACTOR interest if any payment becomes overdue.

ORS 279C.580

(1) CONTRACTOR shall pay first-tier subcontractors for satisfactory performance under subcontract out of amounts that are paid by the CITY to the CONTRACTOR within 10 days of CONTRACTOR's receipt of such payments from the CITY.

(2) CONTRACTOR shall provide first-tier subcontractors with a standard form that the first-tier subcontractor may use as an application for payment or as another method by which the subcontractor may claim a payment due from CONTRACTOR.

(3) CONTRACTOR, except as otherwise provided in this paragraph, shall use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. CONTRACTOR may change the form or the regular administrative procedures used for processing payments if CONTRACTOR:

- (A) Notifies the subcontractor in writing at least 45 days before the date on which the change is made; and
- (B) Includes with the written notice a copy of the new or changed form or a description of

the new or changed procedure.

(4) If CONTRACTOR does not pay the first-tier subcontractor within 30 days after receiving payment from the contracting agency, the CONTRACTOR shall pay the first-tier subcontractor an interest penalty as provided in ORS 279C.580(3)(d).

(5) The CONTRACTOR shall include this requirement as further detailed in the Special Provisions in all subcontracts worded appropriately to require prompt payment of said subcontractors to lower tier subcontractors. In addition, CONTRACTOR shall require a first-tier subcontractor to include a payment clause and an interest penalty clause that conforms to the standards of ORS 279C.580(3) in each of its subcontracts and CONTRACTOR shall require each of the first-tier subcontractor's subcontractors to include such clauses in the first-tier subcontractors' subcontracts with each lower-tier subcontractor or supplier.

ORS 279C.605 A notice of claim required by ORS 279C.600 must be sent by registered or certified mail or hand delivered no later than 120 days after the day the person last provided labor or furnished materials or 120 days after the worker listed in the notice of claim by the Commissioner of the Bureau of Labor and Industries last provided labor. The notice may be sent or delivered to the CONTRACTOR at any place the CONTRACTOR maintains an office or conducts business or at the residence of the CONTRACTOR. Notwithstanding the preceding, if the claim is for a required contribution to a fund of an employee benefit plan, the notice required by ORS 279C.600 must be sent or delivered within 200 days after the employee last provided labor or materials.

ORS 279C.830(1) (1) The existing prevailing rate of wage and, if applicable, the federal prevailing rate of wage required under the Davis-Bacon Act (40 U.S.C. 3141 et seq.) that may be paid to workers in each trade or occupation required for the public works employed in the performance of the contract either by the CONTRACTOR or subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by the contract is included in Section IX of these contract documents. The workers shall be paid not less than the specified minimum hourly rate of wage and CONTRACTOR shall pay the higher of the applicable state or federal prevailing rate of wage to all workers on the public works and include this requirement in all subcontracts.

(2) CONTRACTOR shall pay all workers not less than the specified minimum hourly rate of wage in accordance with ORS 279C.838 and 279C.840, and CONTRACTOR shall require this provision be included in all subcontracts.

ORS 279C.830(2) The CONTRACTOR and every subcontractor must have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt. CONTRACTOR shall:

- (a) Have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt.
- (b) Include in every subcontract a provision requiring the subcontractor to have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt.

ORS 279C.845(7) If CONTRACTOR is required to file certified statements, the public agency **shall** retain 25 percent of any amount earned by the CONTRACTOR on the public works until the CONTRACTOR has filed with the public agency certified

statements as required by ORS 279C.845. The public agency shall pay the CONTRACTOR the amount retained under this subsection within 14 days after the CONTRACTOR files the certified statements as required by ORS 279C.845, regardless of whether a subcontractor has failed to file certified statements as required by this section.

ORS 279C.845(8) CONTRACTOR shall retain 25 percent of any amount earned by a first-tier subcontractor on a public works until the subcontractor has filed with the public agency certified statements as required by ORS 279C.845. CONTRACTOR shall verify that the first-tier subcontractor has filed the certified statements before the CONTRACTOR may pay the subcontractor any amount retained under ORS 279C.845(7). CONTRACTOR shall pay the first-tier subcontractor the amount retained under this subsection within 14 days after the subcontractor files the certified statements as required by ORS 279C.845.

ORS 305.385(6) CONTRACTOR shall certify in writing, under penalty of perjury, that CONTRACTOR is, to the best of the person's knowledge, not in violation of any tax laws described in ORS 305.380 (4).

ORS Chapter 701 CONTRACTOR shall certify that all subcontractors performing work described in ORS 701.005(2), i.e., construction work, will be registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under this contract.

OAR 137-049-0200(2). CONTRACTOR shall not assign, sell, dispose of, or transfer rights, or delegate duties under the Contract, either in whole or in part, without the CITY's prior Written consent. Unless

otherwise agreed by the CITY in Writing, such consent shall not relieve CONTRACTOR of any obligations under the Contract. Any assignee or transferee shall be considered the agent of CONTRACTOR and be bound to abide by all provisions of the Contract. If the CITY consents in Writing to an assignment, sale, disposal or transfer of CONTRACTOR's rights or delegation of CONTRACTOR's duties, CONTRACTOR and its surety, if any, shall remain liable to the CITY for complete performance of the Contract as if no such assignment, sale, disposal, transfer or delegation had occurred unless the City otherwise agrees in Writing.

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SECTION IV – BOND FORMS

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SECTION IV
BOND FORMS

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That, WHEREAS, the City of Oregon City, State of Oregon, on _____, _____, has awarded to _____, hereinafter designated as "Principal", a Contract for construction of _____, the terms and provisions of which contract are incorporated herein by reference, and;

WHEREAS, said Principal is required to furnish a bond in connection with this said Contract, providing that if said Principal, or any of his or its subcontractors, shall fail to pay for any materials, provisions, provender or other supplies or teams used in, upon, for, or about the performance of the work contracted to be done, or any other work or labor done thereon of any kind, the Surety of this body will pay the same to extend hereinafter set forth;

NOW, THEREFORE, we the Principal and _____, as Surety, are held and firmly bound unto the City of Oregon City, State of Oregon, in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, being one hundred percent (100%) of the Contract amount for the payment of which sum well and truly to be made, we bond ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

NOW, THEREFORE, if the above bounden Principal and all of his subcontractor shall promptly make payment to all persons supplying labor and material or amounts due in the prosecution of the work provided for in said Contract, and any and all duly authorized modifications of said Contract that may hereafter be made, then this obligation shall be void; otherwise, this obligation shall remain in full force and virtue; and if the bounden Principal or any of his subcontractors fails to promptly pay any of the persons or amounts due with respect to work or labor performed by any such claimant, the Surety will pay for the same, in an amount not exceeding the sum specified in this bond, and also in case suit brought upon this bond, a reasonable attorney's fee, to be fixed by the court; and this bond shall inure to the benefit of any persons so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

The bond shall inure to the benefit of any all persons, companies and corporations entitled to file claims, so as to give a right of action to them or their assigns in any suit brought upon this bond.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, or the Specifications accompanying the same shall in any wise affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work or to the Specifications.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this _____ day of _____, _____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

Attorney-in-Fact, Surety

 Local Office Agency Name

 Agent Name and Address

 Phone Number

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That, WHEREAS, the City of Oregon City; of Oregon, on _____, _____, has awarded to _____ hereinafter designated as the "Principal", a Contract for construction of _____ the terms and provisions of which Contract are incorporated herein by reference, and;

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract;

NOW, THEREFORE, we, the Principal and _____, as Surety, are held and firmly bound unto the City of Oregon City, State of Oregon, in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, being one hundred percent (100%) of the Contract amount for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bound Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions, and agreements in the said Contract and any alterations made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless City of Oregon City, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said Contract, the above obligation to the amount of _____ Dollars (\$ _____), shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time if the above bounden Principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said City of Oregon City from loss or damage made evident during said period of one (1) year from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the above obligation in the said sum of _____ Dollars, (\$ _____), shall remain in full force and virtue; otherwise the above obligation shall be void.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration of addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

In the event the City of Oregon City or its successors or assigns, shall be the prevailing party in an action brought upon this bond, then in addition to the penal sum hereinabove specified, we agree to pay to said City of Oregon City, or its successors or assigns, a reasonable sum on account of attorney's fees in such action, which sum shall be fixed by the court.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this _____ day of _____, _____, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

 Principal

 Attorney-in-Fact, Surety

 Local Office Agency Name

 Agent Name and Address

 Phone Number

STATUTORY PUBLIC WORKS BOND**STATE OF OREGON****STATUTORY PUBLIC WORKS BOND**

Surety bond #: _____ CCB # (if applicable): _____

We, _____, as principal, and _____, a corporation qualified and authorized to do business in the State of Oregon, as surety, are held and firmly bound unto the State of Oregon for the use and benefit of the Oregon Bureau of Labor and Industries (BOLI) in the sum of thirty thousand dollars (\$30,000) lawful money of the United States of America to be paid as provided in ORS chapter 279C, as amended by Oregon Laws 2005, chapter 360, for which payment well and truly to be made, we bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by this agreement.

WHEREAS, the above-named principal wishes to be eligible to work on public works project(s) subject to the provisions of ORS chapter 279C, as amended by Oregon Laws 2005, chapter 360, and is, therefore, required to obtain and file a statutory public works bond in the penal sum of \$30,000 with good and sufficient surety as required pursuant to the provisions of section 2, chapter 360, Oregon Laws 2005, conditioned as herein set forth.

NOW, THEREFORE, the conditions of the foregoing obligations are that if said principal with regard to all work done by the principal as a contractor or subcontractor on public works project(s), shall pay all claims ordered by BOLI against the principal to workers performing labor upon public works projects for unpaid wages determined to be due, in accordance with ORS chapter 279C, as amended by Oregon Laws 2005, chapter 360, and OAR Chapter 839, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is for the exclusive purpose of payment of wage claims ordered by BOLI to workers performing labor upon public works projects in accordance with ORS chapter 279C, as amended by Oregon Laws 2005, chapter 360.

This bond shall be one continuing obligation, and the liability of the surety for the aggregate of any and all claims which may arise hereunder shall in no event exceed the amount of the penalty of this bond.

This bond shall become effective on the date it is executed by both the principal and surety and shall continuously remain in effect until depleted by claims paid under ORS chapter 279C, as amended by Oregon Laws 2005, chapter 360, unless the surety sooner cancels the bond. This bond may be cancelled by the surety and the surety be relieved of further liability for work performed on contracts entered after cancellation by giving 30 days' written notice to the principal, the Construction Contractors Board, and BOLI. Cancellation shall not limit the responsibility of the surety for the payment of claims ordered by BOLI relating to work performed during the work period of a contract entered into before cancellation of this bond.

IN WITNESS WHEREOF, the principal and surety execute this agreement. The surety fully authorizes its representatives in the State of Oregon to enter into this obligation.

SIGNED, SEALED AND DATED this _____ day of _____, 20 _____

Surety by:

Principal by:

(Seal)
Company Name

Name

Signature

Signature

Title (e.g. Attorney-in-Fact)

Title

**SEND BOND TO: Construction Contractors Board
PO Box 14140
Salem, OR 97309-5052
Telephone: (503) 378-4621**

Address

City State Zip

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SECTION V – BOLI PREVAILING WAGE RATES

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BOLI PREVAILING WAGE RATES (PWR)

By this reference, the Oregon Bureau of Labor and Industries Prevailing Wage Rates are in effect for this contract. They can also be found online at <https://www.oregon.gov/boli/employers/Pages/prevailing-wage-rates.aspx>. More specifically, they include the information in the table below.

<i>Prevailing Wage Rates for Public Works Contracts in Oregon</i>	<i>Effective January 1, 2021</i>
<i>Prevailing Wage Rates Apprenticeship Rates</i>	<i>Effective April 1, 2021</i>
<i>Prevailing Wage Rates Amendment</i>	<i>Effective April 1, 2020</i>
<i>Definitions of Covered Occupations for Public Works Contracts in Oregon</i>	<i>Effective July 1, 2018</i>

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SECTION VI – STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION
CONTRACT

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GENERAL CONDITIONS

1.0 STANDARD SPECIFICATIONS

The Standard Specifications for this project shall be the “2018 Oregon Standard Specifications for Construction” prepared and amended by the Oregon Department of Transportation and the American Public Works Association, Oregon Chapter, which shall be incorporated into these Contract Documents and made a part hereof in their entirety except as amended by the Special Provisions. All provisions which are not so amended or supplemented remain in full force and effect.

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SECTION VII – SPECIAL PROVISIONS

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CITY OF OREGON CITY SPECIAL PROVISIONS

WORK TO BE DONE

The work to be done under this Contract consists of the following improvements:

1. Construct and remove temporary traffic control and erosion control measures.
2. Perform earthwork.
3. Adjust existing storm sewer systems.
4. Install aggregate base and asphalt concrete paving.
5. Construct concrete curbs, sidewalks and ramps.
6. Install permanent paving markings.
7. Remove and reinstall existing signs.
8. Construct flashing beacons.
9. Perform additional and incidental Work as called for by the Specifications and Plans.

APPLICABLE SPECIFICATIONS

The Standard Specifications for this project shall be the “2018 Oregon Standard Specifications for Construction” prepared and amended by the Oregon Department of Transportation and the American Public Works Association, Oregon Chapter, which shall be incorporated into these Contract Documents and made a part of hereof in their entirety except as amended by the Special Provisions. All provisions which are not so amended or supplemented remain in full force and effect.

AUTHORITY OF CONSULTANT

The consultant will be directly in charge of the Project. However, the consultant’s authority on this Project is as designated in the official “Consultant Agreement” for this Project, and as designated by the Engineer. This does not include authority to approve contract changes or semifinal and final inspection of the Project.

CLASS OF PROJECT

This is a Local Agency project.

SECTION 00110 – ORGANIZATION, CONVENTIONS, ABBREVIATIONS AND DEFINITIONS

Comply with Section 00110 of the Standard Specifications supplemented and/or modified as follows:

00110.20 Definitions – Make modifications to the list of definitions as follows:

Agency - Defined as the City of Oregon City

Bid Booklet – The bidding documents bound with the Solicitation Documents that contains the information identified in 00120.10.

Bid Proposal – The bidding forms included in Part I Bidding Documents of the Solicitation Documents as identified in 00120.10.

Bid Section – The portion of the Solicitation Documents labeled, Part I Bidding Documents.

Construction Contracts Unit – City of Oregon City Public Works Department.

Engineer – The City Engineer of the City of Oregon City, and/or its authorized representatives.

Final Acceptance – Written confirmation by the Agency that the Project has been accepted by the Agency.

Project Manager – The Agency’s representative who directly supervises the administration of the Contract.

Substantial Completion – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of the Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

SECTION 00120 – BIDDING REQUIREMENTS AND PROCEDURES

Comply with Section 00120 of the Standard Specifications supplemented and/or modified as follows:

00120.00 Prequalification of Bidders – Replace this section, except for the section number and title, with the following:

Prequalification shall not be a requirement for Bid Proposal consideration.

00120.05 Request for Plans, Special Provisions, and Bid Booklets – Replace this subsection, except for the subsection number and title, with the following:

Bidders are cautioned that only solicitation documents obtained from the City of Oregon City, 625 Center Street, Oregon City, Oregon may be used to submit bids. Copies of the Oregon Standard Specifications for Construction may be purchased from the Oregon Department of Transportation, Plan Distribution Center in Salem, Oregon.

00120.10 Bid Booklet – Replace this subsection, except for the subsection number and title, with the following:

- Refer to Part I Bidding Documents, Instructions to Bidders for a list of required bidding forms

00120.15 Examination of Work Site and Solicitation Documents; Consideration of Conditions to be Encountered – Replace the last sentence of the third paragraph with the following:

Such notification shall also be made at least seven calendar days prior to Bid Opening to provide the Agency sufficient time to make necessary modifications and issue addenda to Bidders.

00120.30 Changes to Plans, Specifications, or Quantities before Opening of Bids – Replace this subsection, except for the subsection number and title, with the following:

The Agency reserves the right to issue addenda making changes or corrections to the Plans, Specifications, or quantities. Only holders of Solicitation Documents obtained from the Agency's office who have been identified by the Agency as Holders of Bidding Plans will be notified of these Addenda by mail, delivery service, or email sent to the Bidder's address, or email as it appears in the Agency's files.

The Agency will not be responsible for failure of Bidders to receive Addenda sent as described in the preceding paragraph. Bids may be rejected if opened and found by the Agency not to be based on Addenda issued before Bids were opened.

00120.40(a)(1) Paper Bids: - Replace this subsection, except for the subsection number and title, with the following:

For Bids submitted by paper, obtained from the City's online bid center, the Bidders shall not alter, in any manner, the documents included within the Bid Section. Bidders shall complete the certifications and statements included in the Bid Section of the Bid Booklet according to the instructions. Signature of the Bidder's authorized representative thereon constitutes the Bidder's confirmation of and agreement to all certifications and statements contained in the paper Bid Booklet. Entries on the paper documents in the Bid Section shall be in ink or typed. Signatures and initials shall be in ink. The Bidder shall properly complete and bind all the paper documents in the Bid Section, as specified in 00120.10, between the front and back covers of the Bid Booklet, except that the Bid Bond is not required if another permissible type of Bid guaranty is provided [see 00120.40(e)].

00120.40(a)(2) Electronic Bids: Remove this subsection in its entirety.

00120.40(c)(2) Electronic Bid Schedule Entries: Remove this subsection in its entirety.

00120.40(d) Bidder's Address and Signature Pages: Replace this subsection, except for the subsection number and title, with the following:

Bidders shall include in the Bid the address to which all communications concerning the Bid and Contract should be sent. The Bid must be signed by a duly authorized representative of the Bidder.

00120.40(e)(2) Bid Guaranty with Electronic Bids: Remove this subsection in its entirety.

00120.40(f) Disclosure of First-Tier Subcontractors: Remove the portion of this subsection beginning with the sentence "The Subcontractor Disclosure Form may be submitted for an Electronic Bid either" and ending with the sentence "The Agency is not responsible for partial, failed, illegible or partially legible facsimile (FAX) transmissions or e-mail submittals, and such forms may be rejected as incomplete." and replace with the following:

Subcontractor Disclosure forms submitted will be considered late if not received by the City of Oregon City within 2 working hours of the time designated for receiving Bids.

Add the following Subsection:

00120.40(g) Customer Service Acknowledgement – To demonstrate a commitment to providing an exceptionally high level of customer service to the City and the community on this project, each Bidder shall complete the provided Customer Service Acknowledgment. The Acknowledgment certifies that s/he has read and understands the sections of the specifications emphasizing customer service, including public safety and convenience, protection and preservation of private property and existing vegetation, and related aspects of construction.

00120.45 Submittal of Bids – Replace this section, except for the section number and title, with the following:

Bids may be submitted by mail or parcel delivery service to the address shown in the Invitation to Bid in an envelope marked with the word "Bid", the name of the project, and the words "To Be Opened Only by Authorized Personnel" on the outside. If a delivery or courier service is used, place the envelope containing the bid inside the delivery or courier service envelope.

Bids submitted after the time set for receiving bids will not be opened or considered. The Agency assumes no responsibility for the receipt and return of late bids. Requirements for submittal of Bids are detailed in the Invitation to Bid (advertisement). Preparation and submittal of Bids is at the sole risk and expense of the Bidder and is not a cost of contract performance.

00120.50 Submitting Bids for More than One Contract – Delete this subsection in its entirety.

00120.60(a) Paper Bids – Replace the first sentence with the following:

Information entered into the Bid Booklet by the Bidder may be changed after the Bid has been delivered to the Agency, provided that:

Replace the last bulleted item in this section with the following:

- The request is received by the Agency prior to bidding.

00120.60(b) Electronic Bids: Delete this subsection in its entirety.

00120.70 Rejection of Nonresponsive Bids: Replace the 5th bulleted item in its entirety with:

- The Bid is submitted on documents not obtained from the City's online bid center.

Remove the last bulleted item in this subsection.

Supplement this subsection with the following bulleted items:

- The Agency determines that any Pay Item is significantly unbalanced to the potential detriment of the Agency.
- The Agency may reject any or all Bids and waive irregularities not affecting substantial rights in accordance with ORS 279C.395 upon a finding of the Agency that is in the public interest to do so.

00120.95 Opportunity for Cooperative Arrangement – Delete this subsection in its entirety.

SECTION 00130 – AWARD AND EXECUTION OF CONTRACT

Comply with Section 00130 of the Standard Specifications supplemented and/or modified as follows:

00130.10 Award of Contract – Supplement this subsection with the following:

Remove the third paragraph beginning with “The Agency will provide Notice of Intent” and replace with the following:

The City will post the Notice of Intent to Award on its website at <http://bids.orcity.org/>.

00130.15 Right to Protest Award – Replace this subsection, except for the subsection number and title, with the following:

Adversely affected or aggrieved Bidders, limited to the three apparent lowest Bidders and any other Bidder directly in line for Contract Award, may submit to the Agency a written protest of the Agency’s Intent to Award within three (3) calendar days following the date of the Notice of Intent to Award. The protest shall specify the grounds upon which it is based.

An aggrieved Bidder may protest an award only if the Bidder alleges, in its written protest, that it should have received the award because:

- All lower Bids are non-responsive;
- The Agency failed to conduct the Bid process as described in the Bid document;
- The Agency has abused its discretion in rejecting the protestor's Bid as non-responsive or non-responsible; or
- The Agency's evaluation of Bids or subsequent determination of award is otherwise in violation of ORS Chapter 279C or the Agency's public contracting rules.

The written protest must describe the facts that support the protest. The Agency may not consider late protests that do not describe facts that would support a finding that the Bidder is aggrieved for one of the reasons cited above.

00130.50(a) By the Bidder – Replace the sentence that begins “The successful Bidder shall deliver...” with the following sentence:

The successful Bidder shall deliver the required number of Contract booklets with the properly executed Contract, Performance Bond, Payment Bond, certificate of workers' compensation coverage, and the required certificates of insurance, to the Agency within 15 Calendar Days after the date on which the Contract booklets are sent or otherwise conveyed to the Bidder under 00130.10.

00130.90 Notice to Proceed – Replace this subsection, except for the subsection number and title, with the following:

Notice to Proceed will be issued within ten (10) calendar days after the contract is executed by the Agency.

Should the Agency fail to issue the Notice to Proceed within ten (10) calendar days, the Contractor may apply for an adjustment of contract time according to subsection 00180.80(c).

The Engineer will issue a “First Notification” recording the date the Work commenced on the Project.

SECTION 00140 – SCOPE OF WORK

Comply with Section 00140 of the Standard Specifications supplemented and/or modified as follows:

00140.30 Agency Required Changes in the Work – Replace the paragraph beginning with “Upon receipt of a Change Order.....” with the following:

Changes in the work will be initiated by a Contract Change Order if the changes are significant as addressed in 00195.20(b) and/or if there are no applicable unit prices. If the changes are not significant and there are applicable unit prices, the work will be initiated by written direction from the Engineer.

Upon receipt of a Change Order or written direction from the Engineer, the Contractor shall perform the Work required. If the Work increases the total Contract Amount, the Contractor shall notify the Surety of the increase and shall provide the City with a copy of any resulting modification to bond documents. The Contractor's performance of Work pursuant to a Change Order or written direction from the Engineer shall neither invalidate the Contract nor release the Surety. Payment for changes in the Work shall be made in accordance with 00180.80.

Add the following subsection:

00140.31 As-Built Records – Contractor shall maintain a current and accurate record of the work completed during the course of this contract. This may be in the form of “as-built” drawings kept by accurately marking a designated set of the contract plans with the specified information as the Work proceeds.

Accurate, complete and current “as-built” drawings are a specified requirement for full payment of the work completed. At project completion and as a condition of final payment, the Contractor shall deliver to the Project Manager a complete and legible set of “as-built” drawings.

The “as-built” drawings must show the information listed below. Where the term “locate” or “location” is used, it shall mean record of position with respect to both the construction vertical datum and either construction horizontal datum or a nearby permanent improvement.

1. Record location of underground services and utilities as installed.
2. Record location of existing underground utilities and services that are to remain and that are encountered during the course of the work.
3. Record changes in dimension, location, grade or detail to that shown on the plans.
4. Record changes made by change order.
5. Record details not in the original plans.
6. Provide fully completed shop drawings reflecting all revisions.

00140.40 Differing Site Conditions – Add the following to this subsection:

The Contractor's attention is directed to the Proposal and the declaration made and signed therein concerning examination and investigation of the site. In no event shall "changed conditions" be deemed to include conditions that the Engineer determines would have been disclosed by examination of the site and/or review of “as-built” information and other records prior to bidding the project or by pot-holing during construction as discussed below. “As-built” plan sheets are available upon request.

It is critical that the contractor carefully inspect each manhole, structure, and other point of utility connection to verify the suitability of the Engineer's recommended connection method prior to excavation for that utility. The contractor's failure to adequately inspect each manhole and other points of connection directly accessible from the surface, and to pothole points of potential conflict, as agreed to with the Engineer, to verify the suitability of the recommended

connection method in advance of trenching or other excavation, shall invalidate any claims for delay and/or expenses that would not have otherwise been incurred.

When pot-holing is determined to be necessary, the Contractor shall complete the pot-holing before trenching or pipe installation is within 100 feet of the existing conflicting utility or impediment unless otherwise directed by the Engineer. Pot-holing to determine existing utility depths that may conflict with treated subgrade work shall be completed in the same fashion. Contractor shall report accurately the exact location and depth of same existing conflicting utility to the Engineer sufficiently in advance so that the designed horizontal and vertical alignment may be adjusted by the Engineer to accommodate conflicting existing utilities or impediments, where necessary, without inconvenience or delay of the work.

When a differing site condition as defined in subsection 00140.40 occurs, the Contractor shall make no claims for payment adjustments for the first two (2) working days of delay associated with the differing site condition during which the Engineer attempts to design or coordinate a solution. The Contractor may make a request for contract time adjustment according to subsection 00180.80(c).

Failure to call for locates in a timely manner, to discover or uncover an existing overhead or underground utility or other impediment or to report its size, location and depth as specified herein, or failure to perform any of the aforementioned work in a timely manner to the Engineer's satisfaction, shall invalidate any claim of changed conditions or out-of-sequence work and shall invalidate any subsequent request(s) for extra payment therefore. Any additional work, including but not limited to excavation, pipe-laying, fittings, re-laying of pipe or reinstallation of appurtenances that the Engineer determines to be required as a result of the Contractor's failure to perform any of the work required by this Section, shall be entirely at the Contractor's expense.

00140.90 Final Trimming and Cleanup – Add the following bulleted items:

- The Contractor shall replace existing landscaping or other surfacing damaged during construction. All restorations shall meet the Engineer's approval.
- The Contractor shall remove and clean up erosion and sediment controls needed to stabilize the Project Site.

SECTION 00150 – CONTROL OF WORK

Comply with Section 00150 of the Standard Specifications supplemented and/or modified as follows:

00150.10(a) Order of Precedence – Add the following bulleted items after the “Contract Change Orders” bulleted item:

- Permits from governmental agencies;
- The public improvement contract;
- Addenda (if issued);
- Bid Proposal;

00150.15(b) Agency Responsibilities – Replace this subsection, except for the subsection number and title, with the following:

The Agency will not establish any principal grades or lines.

00150.15(c) Contractor Responsibilities – Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall be responsible to furnish all principal lines, grades, and measurements as needed to construct the work per the requirements outlined in Section 00305.

00150.20(a) Inspection by the Engineer – Supplement the first paragraph with the following:

The Contractor shall notify the Engineer a minimum of one working day in advance for inspection of all portions of the Work.

00150.30 Delivery of Notices – Supplement this subsection with the following:

Notices may also be delivered electronically by email or through a confirmed facsimile transmission. Notices transmitted electronically shall be delivered, if to the Agency, to the office and attention of the Engineer and, if to the Contractor, to the office and attention of the Contractor's superintendent.

00150.50(b) Agency Responsibilities – Add the following paragraph:

The locations, depth and description of existing utilities shown were compiled from available GIS mapping, records and/or field surveys. The Engineer or Utility Companies do not guarantee the accuracy or the completeness of such records. Additional utilities may exist in the project area.

00150.50(c) Contractor Responsibilities – Add the following bulleted items:

- Verify all utility locations prior to construction. Pothole as shown on the Contract Plans and/or as necessary to provide such verification, and arrange for the relocation of any utilities in conflict with the proposed Work.
- Support and protect pipes, conduits and other services where they cross an open excavation.

00150.50 Cooperation with Utilities – Add the following subsection:

(f) Utility Information:

The following organizations have utilities within the limits of the Project. Relocation work is not anticipated beyond the work outlined below:

Utility

Oregon City Public Works

122 S. Center Street

Oregon City, OR 97045

Water System Contact: Kevin Hanks, khanks@orccity.org

Sanitary and Storm System Contact: Eric Hand, ehand@orccity.org

Street System Contact: Jayson Thornberg, jthornberg@orccity.org

503-657-8241 office

Portland General Electric

3700 SE 17th Avenue

Portland, Oregon 97202

Contact: James Blood

Service and Design Project Manager

503-736-5504 phone

James.Blood@pgn.com

Portland General Electric

209 Warner Milne Rd

Oregon City, Oregon 97045

Contact: Lisa Guarnero

PGE Outdoor Lighting Services

503-742-8299 phone

Lisa.Guarnero@pgn.com

Portland General Electric

1705 NE Burnside Road

Gresham, Oregon 97030

Contact: Ross Cichosz

Design & Crew Coordination Manager

Ross.Cichosz@pgn.com

NW Natural

20285 SW Cipole Road

Sherwood, OR 97140

Contact: Rich Girard, P.E.

r2g@nwnatural.com

503-226-4211 x2967 phone

360-921-0314 mobile

CenturyLink (Lumen)

8021 SW Capitol Hill Road, Room 110

Portland, OR 97219

Contact: David Dodd

David.Dodd@centurylink.com

503-242-8849 phone

Comcast

11308 SW 68th Parkway
 Tigard, Oregon 97223
 Contact: Brent Christiansen
 503-347-0854
brent_christiansen@comcast.com

Clackamas County

Transportation Maintenance - Signal Operations
 902 Abernethy Road
 Oregon City, Oregon 97045
 Contact: Jonathan McDowell
 503-970-8989
jonathanMcD@co.clackamas.or.us

Zayo Group

18110 SE 134th St, Bldg One, Ste 100
 Vancouver, WA 98683
 Contact: Brian Davidson
Brian.davidson@zayo.com
 360-558-4215 phone

Lightspeed Networks

921 SW Washington St, Ste 370
 Portland, OR 97205
 Contact: Winfried Vogt
wvogt@lsnetworks.net
 503-414-0475 phone
 503-936-8107 cell

Beaver Creek Telephone/DirectLINK

Consolidated Business Services (CBS)-
 Contact: Eric Kheler
 503-266-8223

The Contractor may also need to coordinate work efforts with the following organization:

B&B Leasing (Garbage)
 503-656-8403 phone

TriMet (Public Transit)
 503-238-7433 phone

Oregon City School District (Bus Transportation)
 1417 12th Street
 Oregon City, Oregon 97045
 503-785-8000

The following organizations may be adjusting utilities within the limits of the Project during the period of the Contract with Relocation Work estimated to be completed by the following dates (times).

The Contractor shall not be entitled to any additional compensation due to the presence of or interference, delays, or expense caused by said existing utilities.

Utility	Estimated Completion Date (Time)
1. Portland General Electric	Concurrent with Project
1. Portland General Electric	
Energized power lines overhang portions of the Work with a minimum vertical clearance of 18 feet. The Contractor shall maintain at least 10 feet of safety clearance. Exceptions require written approval from Portland General Electric and may require an on-site safety watcher. The Contractor shall provide the Engineer a copy of the written approval of exception before beginning work.	
The Contractor shall notify, in writing, Portland General Electric, with a copy to the Engineer, at least 30 Calendar Days before beginning Work on the Project. After Portland General Electric receives the notification, the Contractor shall then allow Portland General Electric 7 Calendar Days to schedule and complete illumination pole removal at Holcomb Boulevard and Swan Avenue work before the Contractor begins illumination pole foundation relocation work.	
The Contractor shall notify, in writing, Portland General Electric, with a copy to the Engineer, within 2 Calendar Days once illumination pole foundation relocation work is completed at Holcomb Boulevard and Swan Avenue. The Contractor shall then allow Portland General Electric 7 Calendar Days to schedule and complete illumination pole reinstallation work.	
The Contractor shall coordinate with Portland General Electric to perform excavation, signal or illumination pole installation, boring, or other road construction activities within 10 feet of the aerial power line during construction when Portland General Electric cannot de-energize the power facility.	

This Project is located within the Oregon Utility Notification Center area, which is a utilities notification system for notifying owners of utilities about Work being performed in the vicinity of their facilities. The utilities notification system telephone number is 1-800-332-2344 or 811 in Oregon.

00150.60(a) Load and Speed Restrictions for Construction Vehicles and Equipment – Supplement this subsection with the following:

The Contractor shall follow an approved truck route when hauling all materials and equipment beyond the limits of the Project Site. The proposed truck route to be used by the Contractor shall be submitted to the Engineer for review and approval prior to the start of work.

00150.70 Detrimental Operations – Add the following to the end of this subsection:

Portions of this project will be constructed in close proximity to existing private improvements. All private improvements disturbed by the Contractor's operations shall be repaired or replaced to equal or better condition at the Contractor's expense. In addition, prior to construction, the Contractor shall provide to the Engineer videotape showing private property, which may be disturbed during construction.

Add the following subsection:

00150.75(a) Maintaining Cleanliness – The Contractor shall be responsible for maintaining cleanliness within the work zone, including removing the Contractor's refuse, equipment, and materials from all areas outside the staging area by the end of each work day. The Owner will provide one notification to the Contractor that a specific area shall be cleaned. If the Contractor does not remove their refuse and unused materials from an area by the end of the work day, the Owner will complete this work. The cost of the Owner's work to remove the Contractor's refuse from an area will be at the Contractor's expense, in accordance with subsection 00180.15.

Add the following subsection:

00150.81 Correction of Work Before Final Payment – The Contractor warrants to the City that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove and replace all defective materials, equipment and Work as determined by the City, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the City, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement.

00150.95 Final Acceptance – Add the following:

Once the construction work is complete, all systems are operable, and final inspection discloses no deficiencies, the following documentation shall be delivered to the Engineer:

- Special guarantees and bonds;
- Separate waivers of liens for subcontractors, suppliers, and others with lien rights against property of the owner;
- Final pay estimate;
- Evidence that the Maintenance Bond will remain in effect for one year following the date of Final Acceptance;
- Red-lined as-built drawings showing locations of all improvements constructed as part of this project.

00150.96 Maintenance Warranties and Guarantees – Add the following paragraphs:

The Contractor shall provide a 100% Maintenance Bond for a period of one year from the date of final acceptance by the Agency. A surety licensed to do business as a surety in the state of Oregon shall provide the Maintenance Bond.

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Agency of all claims and all liability to the Contract other than claims in stated amounts as may be specifically excepted by the Contractor in writing prior to the request for final payment for all things done or furnished in connection with this work and for every act and neglect of the Agency and its agents and others relating to or arising out of this work. However, any payment, final or otherwise, or any acceptance, shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds or diminish the Agency's rights under the guaranty provisions.

In addition to and not in lieu of any other warranties required under the Contract make all necessary repairs and replacements to remedy, in a manner satisfactory to the Engineer and at no cost to the Agency, any and all defects, breaks, or failures of the Work occurring during the specified warranty period due to faulty or inadequate materials or workmanship. Repair damage or disturbance to other improvements under, within, or adjacent to the Work, whether or not caused by settling, washing, or slipping, when such damage or disturbance is caused, in whole or in part, from activities of the Contractor in performing his duties and obligations under this Contract when such defects or damage occur within the warranty period. The one-year maintenance period required shall, with relation to such required repair, be extended one year from the date of completion of such repair.

If Contractor, after written notice, fails within ten (10) days to proceed to comply with the terms of this Section, Agency may have the defects corrected, and Contractor and Contractor's Surety shall be liable for all expense incurred. In case of an emergency where, in the opinion of the Engineer, delay would cause serious loss or damage, repairs may be made without notice being given to Contractor and Contractor or Surety shall pay the cost of repairs. Failure of the Engineer to act in case of an emergency shall not relieve Contractor or Surety from liability and payment of all such costs.

SECTION 00160 – SOURCE OF MATERIALS

Comply with Section 00160 of the Standard Specifications supplemented and/or modified as follows:

00160.10(b) Approval of Quantity of Materials Ordered – Remove and replace the first paragraph with the following:

Materials quantities shown on the Plans, or indicated by quantities and Pay Items, are subject to change or elimination. The Contractor is responsible for payment for excess Materials delivered to the Project Site or storage sites. Unless otherwise specified in the Contract, the Agency will not be responsible for:

00160.50(b) Waste, Excess, and By-Product Materials – Replace this subsection, except for the subsection number and title, with the following:

Unless otherwise specified by the Engineer, all waste, excess, and by-product materials resulting from the Work are the property of the Contractor and are to be removed from the site. The cost of removal and disposal of waste, excess, and by-product materials will be incidental to applicable pay items, and no additional payment will be made for such removal.

SECTION 00165 – QUALITY OF MATERIALS

Comply with Section 00165 of the Standard Specifications supplemented and/or modified as follows:

SECTION 00170 – LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the Standard Specifications supplemented and/or modified as follows:

00170.10(d) Agency’s Payment of the Contractor’s Prompt Payment Obligations – Delete the word “ODOT” from the second sentence.

00170.70(a) Insurance Coverages – The following insurance coverages and dollar amounts are required pursuant to this subsection:

Insurance Coverages	Combined Single Limit per Occurrence	Annual Aggregate Limit
Commercial General Liability	\$2,000,000	\$4,000,000
Commercial Automobile Liability	\$2,000,000	\$4,000,000

00170.70(c) Additional Insured – Add the following paragraph and bullets to the end of this subsection:

Add the following as Additional Insured under the Contract:

- The City of Oregon City and its officers, agents, and employees
- Clackamas County
- DOWL, LLC
- Kittelson & Associates, Inc.

00170.72 Indemnity/Hold Harmless – Add the following paragraph and bullets to the end of this subsection:

Extend indemnity and hold harmless to the Agency and the following:

- The City of Oregon City and its officers, agents, and employees
- Clackamas County
- DOWL, LLC
- Kittelson & Associates, Inc.

SECTION 00180 – PROSECUTION AND PROGRESS

Comply with Section 00180 of the Standard Specifications supplemented and/or modified as follows:

00180.06 Assignment of Funds Due under the Contract – Delete the first bulleted item and replace with the following:

- The assignment request is made on a form acceptable to the Agency;

00180.10 Responsibility for Contract – Add the following sentence to the end of this subsection:

Action by the Agency under this provision will not prejudice any other remedy it may have.

00180.15 Agency’s Right to Do Work at the Contractor’s Expense – Supplement this subsection with the following:

As described in subsection 00150.75(a), the Agency will complete clean-up of the Contractor’s refuse at the Contractor’s expense.

00180.21(a) General – In the second paragraph, delete the sentence that begins “If the Agency approves...” and the two bulleted items that follow.

00180.21(c) Substitution of Disclosed Subcontractors – Replace the bulleted item that begins “The disclosed Subcontractor does not hold...” with the following bulleted item:

- The disclosed Subcontractor does not hold a license from the Construction Contractor’s Board or Landscape Contractor’s Board, as appropriate, and is required to be licensed by the board;

00180.22 Payments to Subcontractors and Agents of the Contractor – Delete the second paragraph in its entirety.

00180.31 Required Materials, Equipment and Methods – Add the following sentence to the beginning of this subsection:

The Agency is entitled to determine what constitutes a product that is equal or superior to the product specified, and any such determination is final.

00180.40(a) In General – Add the following bulleted items:

- Limit hours of construction to between 7:00 AM to 6:00 PM, Monday through Friday for all project segments. Construction in all project areas is prohibited on Saturday or Sunday. Work outside of these hourly limits may only be performed when specifically noted in the Contract Documents or approved in writing by the City.
- Construction vehicles shall park on the construction site or at a location approved by the City or private property owner. Contractor parking shall not interfere with the everyday operations of the businesses surrounding and/or adjacent to the project area.
- Clean up the project area and leave it in a neat and secured manner at the end of each workday. Backfill or cover all open excavations with pinned steel sheets capable of supporting traffic loads.
- In no way shall the Contractor's employees or subcontractors drive, step, work, or otherwise encroach upon private property, unless approved in writing by both the City and the private property owner.
- Provide the Agency Project Manager with a 24-hour emergency contact person's name and telephone number.

Add the following subsections:

00180.40(c) Specific Limitations – Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

Limitations	Section
Cooperation with Utilities	00150.50
Contract Completion Time	00180.50(h)
Traffic Lane Restrictions	00220.40(e)
Maintenance Under Traffic.....	00620.43

The Contractor shall be aware of and subject to schedule limitations in the Standard Specifications that are not listed in this subsection.

00180.41 Project Work Schedules – After the paragraph that begins “One of the following Type...” add the following paragraph:

A Type “B” schedule as detailed in the Standard Specifications is required on this Contract.

Add the following paragraphs:

The Contractor shall submit an updated project work schedule with all pay requests unless approved otherwise in writing by the Engineer. Payments to the Contractor may be held or delayed until an updated schedule has been received.

The Project Work schedule shall also address the sequencing of critical activities and shall identify the critical path for the project, critical milestones in accomplishing the work and fixed completion dates for those milestones.

Add the following subsections:

00180.41(i) Weekly Schedule – Submit a weekly progress schedule to Engineer at each weekly meeting. At a minimum, the schedule shall include the following:

- Actual work completed during the previous week alongside the previously submitted weekly schedule;
- Work to be completed during the current week;
- Tentative work to be completed during the second week;
- Summary of any work elements shown on the schedule which fall behind the current overall project schedule and a summary of corrective actions that the Contractor will utilize to regain the overall project schedule.

00180.41(j) Customer Service Element to Construction Schedule – Construction will be executed with the highest level of customer service. Critical to that effort is planning of work sequence to minimize disruption and inconvenience to residents and commuter traffic. As a supplement document to the Contractor's construction schedule, the Contractor shall submit, prior to the pre-construction conference, a plan to the Engineer that identifies: construction sequencing and timing, expected disruptions to residents, and a public safety plan that explains procedures on how the Contractor will maintain safe continuous ingress and egress for pedestrians and vehicular traffic including personal use by residents, mail and newspaper delivery, garbage collection and other daily deliveries, as applicable.

00180.42 Preconstruction Conference – Supplement this subsection with the following:

The Contractor is required to contact the Agency to schedule the preconstruction conference.

In addition to the Contractor, the intended project superintendents, subcontractor foremen and major suppliers – those who will actually be involved in construction activities – should attend the preconstruction conference. The Contractor must be prepared for a thorough discussion and review, as well as revision, which may be deemed necessary in the opinion of the Engineer, of the following:

(Note: These materials SHALL be brought to the preconstruction conference for discussion followed by Engineer review. Some items may also require submittal in advance of the preconstruction meeting per the specifications.)

- Contractor's plan of operation and progress schedule (3+ copies)
- List of 24 hour emergency phone numbers for the project manager, site foreman, and traffic control supervisor
- List of subcontractors, names, addresses and phone numbers
- List of quality control subcontractor(s), name(s), address(s) and phone number(s)
- List of materials fabricated or manufactured off the project
- Material sources for the project
- Names of principal suppliers

- Detailed equipment list
- “Project Labor List” for all employee classifications anticipated to be used on project
- Cost percentage breakdown for lump sum bid item(s)
- Shop drawings (bring preliminary list)
- Traffic Control Plans (3+ copies)
- Erosion and Sediment Control Plan (3+ copies)
- Pollution Control Plan (3+ copies)
- Proposed site for waste material disposal and any necessary permits required for placing this material
- Proposed truck haul route
- Time schedule for relocations, if by other than Contractor (coordinate with utilities)

During the preconstruction conference, be prepared to discuss the following items:

- Bonds and Insurance
- Weekly project meetings – schedule and responsibilities
- Provision for inspection for materials from outside sources
- Responsibility for locating utilities
- Responsibility for damage
- Time schedule for relocations, if by other than Contractor (coordinate with utilities)
- Compliance with Contract Documents
- Hours of work
- Acceptance and approval of work
- Labor compliance, payrolls, and certifications
- Safety regulations for Contractor’s and Owner’s employees and representatives
- Suspension of work, time extensions
- Change order procedures
- Progress estimates – procedures for payment
- Special requirements of funding agencies
- Construction engineering, advance notice of special work
- Any interpretation of the Contract Documents requested by the Contractor
- Any conflicts or omissions in the Contract Documents
- Any other problems or questions concerning the work
- Processing and administration of public complaints

- Rights-of-way, Easements and Temporary Construction Easements

In addition to the preconstruction conference, the City reserves the right to require the Contractor to attend a construction kick-off public open house/presentation wherein the Contractor shall be prepared to present and discuss all elements of the project's construction with the general public.

00180.43 Commencement and Performance of Work – Add the following bulleted item to the end of this subsection:

- Conduct the Work at all times in a manner and sequence that will ensure minimal interference with traffic. The Contractor shall not begin Work that will interfere with work already started. If it is in the City's best interest to do so, the City may require the Contractor to finish a portion or unit of the project of which work is in progress or to finish a construction operation before work is started on an additional portion or unit of the project.

Add the following subsection:

00180.44 Weekly Construction Meetings – Schedule and coordinate weekly construction progress meetings between the Contractor, Agency Project Manager, Engineer, utilities, subcontractors and subconsultants to discuss project schedule, payment and other issues.

Create and record meeting minutes for each weekly construction meeting. Provide copies of meeting minutes to all parties in attendance prior to the next regularly scheduled meeting. Meeting minutes shall include a running summary of topics discussed at previous weekly meetings.

00180.50 (b) Kinds of Contract Time – Replace this subsection in its entirety with the following:

00180.50 (b) Contract Time – the Contract Time shall be based on calendar day calculation and shall be 180 days from the Beginning of Contract Time as stated in 00180.50(c). Linn Avenue trenching and road work restoration shall be completed by August 1, 2021, to allow the Oregon City Chip Seal Project to be constructed.

00180.50(d) Recording Contract Time – Replace this subsection, except for the subsection number and title, with the following:

Recording of contract time shall be the responsibility of the Contractor and the Engineer but should not deviate from the provisions of 00180.50 without written Notice of Delay as stated in 00180.60 and written agreement by the Engineer for an adjustment of Contract Time in accordance with 00180.80. All written contract amendments (Change Orders) shall include documentation of time increase and decrease.

00180.50(g) End of Contract Time - Replace this subsection, except for the subsection number and title, with the following:

When the Engineer determines that the On-Site Work has been completed, except for the items listed below, the Engineer will issue a Second Notification.

The Second Notification will list:

- Final trimming and clean-up tasks (see 00140.90);
- Equipment to be removed from the Project Site;
- Minor corrective work not involving additional payment to be completed; and
- Submittals, including without limitation all required certifications, bills, forms, warranties, certificate of insurance coverage [00170.70(b)], and other documents, required to be provided to the Engineer before the Third Notification will be issued.

The Contractor shall complete all tasks listed in the Second Notification within the contract time unless otherwise agreed upon by the Engineer in writing.

Liquidated Damages will be assessed in accordance with subsection 00180.85 of the Standard Specifications and these Special Provisions if the Second Notification tasks are not completed within the contract time, unless otherwise agreed upon by the Engineer in writing.

00180.80(d) Basis for Adjustment of Contract Time – Add the following bulleted item immediately following the sentence “The Engineer will not consider requests for adjustment of Contract Time based on any of the following”:

- Delays that are the result of the Contractor’s scheduling and coordination with their own subcontractor(s), but which have occurred following delays that are outside of the Contractor’s control as determined by the Engineer.

00180.85(b) Liquidated Damages – Add the following sentence to the end of the first paragraph:

The liquidated damages for failure to complete the Work on time are identified in item 4 of the Oregon City Public Improvement Standard Conditions made a part of this Contract.

SECTION 00190 – MEASUREMENT OF PAY QUANTITIES

Comply with Section 00190 of the Standard Specifications. Supplemented and/or modified as follows:

00190.20(f-2) Scale Without Automatic Printer – Add the following sentence after the first paragraph:

Pay costs for the weigh witness at \$35.00 per hour.

00190.20(g) Agency-Provided Weigh Technician – Add the following paragraph after the bullet list:

Pay costs for the weigh technician at \$35.00 per hour.

SECTION 00195 – PAYMENT

Comply with Section 00195 of the Standard Specifications supplemented and/or modified as follows:

00195.20(b) Significant Changed Work – Replace the first two paragraphs with the following:

If the changes completed under subsection 00140.30 significantly alter the character, unit cost, or lump sum cost of the Work, the Agency will adjust the Contract. The Contractor shall not be entitled to compensation for any loss in profits resulting from elimination of, reduction of, or other change to, a part of the Work.

Any adjustments will be established under the procedures set out in Section 00196 for determining rates for Extra Work, but those procedures shall account for the decrease or elimination of Work as well as for increases in the Work.

00195.50(b) Retainage – Replace with first paragraph with the following:

The amount to be retained from progress payments will be 5% of the value of the Work accomplished. No retainage will be withheld from Work performed as Force Account Work, escalation/de-escalation, bonuses, or other items decided by the Agency.

00195.50(c)(1) Cash, Alternate A – Replace this subsection, except for the subsection number and title, with the following:

Retainage will be deducted from progress payments and held by the Agency until final payment is made according to 00195.90, unless otherwise specified in the Contract.

If the Contractor submits a request in writing to the Agency, the Agency will deposit the cash retainage withheld in an interest-bearing account in a bank, trust company, or savings association for the benefit of the Agency, as provided by ORS 279C.560(4). Interest earned on the account shall accrue to the Contractor. Interest shall only accrue to the Contractor following payments made by the Agency after receipt of the written request. Amounts retained and interest earned will be included in the final payment made according to 00195.90.

Any retainage withheld on Work performed by a Subcontractor will be released to the Contractor according to 00195.90(d).

00195.60 Advance Allowance for Materials on Hand – Delete this subsection in its entirety.

00195.70(a) Termination for Default – Replace the second, third and fourth paragraphs with the following:

Upon completion of the Project, the Engineer will determine the total amount that the defaulting Contractor would have been entitled to receive for all of the Work, under the terms of the Contract, had the Contractor completed the Work (the “cost of the Work”).

If the cost of the Work, less the sum of all amounts previously paid to the Contractor, exceeds the expense incurred by the Agency in completing the Work, including without limitation expense for additional managerial and administrative services, the Agency will pay the excess to the Contractor, subject to the consent of the Contractor’s Surety, but only to the extent that such excess is applied to Work performed by Contractor prior to the date of termination or to reimburse payments made by the Contractor or its surety to complete the Work.

If the expense incurred by the Agency in completing the Work, including, without limitation, expense for additional managerial and administrative services, exceeds the cost of the Work less the sum of all amounts previously paid to the Contractor, the Contractor or the Contractor’s Surety shall pay to the Agency the amount of the excess expense.

00195.80(b-1) Formula – Replace this subsection, except for the subsection number and title, with the following:

“The Agency will apply the following formula in determining the Contractor’s allowance for Materials left on hand:

Contractor’s Actual Cost, plus 5% Overhead Allowance but no markup or profit.”

00195.80(b-2) Conditions – Add the following bulleted item to this list:

- Demonstrates to the satisfaction of the Engineer that the Materials cannot be returned for credit or otherwise disposed of on the open market.

SECTION 00196 – PAYMENT FOR EXTRA WORK

Comply with Section 00196 of the Standard Specifications.

SECTION 00197 – PAYMENT FOR FORCE ACCOUNT WORK

Comply with Section 00197 of the Standard Specifications supplemented and/or modified as follows:

00197.01 General – Supplement this subsection with the following:

Force account work performed by Subcontractors will be measured and paid for on the same basis and in the same manner as for the Contractor.

Failure to present documentation of Force Account Work in proper form within thirty (30) days after the close of the month in which the work covered was performed shall constitute a waiver on the part of the Contractor or Subcontractor's right to present such claim thereafter or to receive payment thereof.

The Contractor shall submit a proposed operation plan for performance of the Force Account Work that includes materials, equipment and labor. The contractor shall obtain approval for Subcontractors used on Force Account Work.

00197.20(a) General – Supplement this subsection with the following:

The Contractor shall provide applicable copies of the “Blue Book” rates to the Engineer at no cost to the Owner. Costs for the Owner to obtain copies of the “Blue Book” if not provided by the Contractor will be deducted from the payment to the Contractor.

00197.20(c) Rental Rates (without Operator) – Replace this subsection, except for the subsection number and title, with the following:

Rental rates for Equipment will be paid on an hourly basis for Equipment and for attachments according to the following formula:

Hourly Rate = (Hourly *Base Rate* for Equipment + *Attachment Base Rate*) x *Age Adjustment factor* + *Hourly Operating Rate*

“*Base Rate*” – The cost of the equipment as listed in the Blue Book.

“*Attachment*” is defined as attached equipment not considered standard equipment and not included in the Base Rate for a specific piece of equipment. See Primedia Information, Inc. for specific listings of allowed attachments.

“*Age Adjustment Factor*” is defined as a multiplier of the Base Rate that is dependent on the year the equipment was manufactured and is listed in the Blue Book.

“*Hourly Operating Rate*” is defined as the hourly cost of operating the equipment and attachments and provides compensation for fuel, maintenance, expendable parts such as tires, and general degradation of the equipment resulting from use.

00197.20(g) Outside Rental Equipment – Supplement the first paragraph with the following:

Renting equipment from outside sources requires the Engineer's approval.

00197.30 Labor – Replace this subsection, except for the subsection number and title, with the following:

The Contractor will be paid for all labor engaged directly on Force Account Work, including Equipment operators and supervisors in direct charge of the specific force account operations. The payment to be made for labor used in the work will be computed at the BOLI rates (if the project is a prevailing wage job) for the classification of the work being performed by the

Contractor or subcontractor. Payment for labor performed by higher classification employees employed by the Contractor or Subcontractor to perform lower classification work will be computed at the classification of labor performed. When authorized, non-BOLI personnel will be paid \$3.00 above the highest labor classification used plus the allowance.

The hourly amount paid to the Contractor for each employee engaged on Force Account Work will be two times the wage rate described above (excluding fringe benefits, vacation, and all other direct or indirect costs including subsistence).

No overtime will be compensated unless authorized in advance of performing the work.

00197.80 Percentage Allowances – Change the percentage allowance for 00197.30, Labor from “22” to “No additional markup”.

SECTION 00199 – DISAGREEMENTS, PROTESTS, AND CLAIMS

Comply with Section 00199 of the Standard Specifications supplemented and/or modified as follows:

Add the following subsection:

00199.15 Inappropriate Protest or Claim as Breach of Contract – It shall be presumed that the Contractor submits a protest or claim for additional compensation in good faith, based upon facts which reasonably support the Contractor’s position and with full knowledge and understanding of the injury done to the Agency when notice of differing Project Site conditions or claims for additional compensation are not submitted in a timely manner as required under the Contract. Accordingly, the submission of a protest or claim without the concurrent submission of evidence that reasonably supports the protest or claim, or the submission of a protest or claim in an untimely manner shall constitute a breach of the Contract.

00199.20 Protest Procedure – Replace this entire subsection, except for the subsection number and title, with the following:

If the Contractor disagrees with anything required in a Change Order or other written or oral order from the Engineer, including any direction, instruction, interpretation, or determination that, in the Contractor's opinion, entitles or would entitle the Contractor to additional compensation, the Contractor shall do all of the following in order to pursue a protest and preserve its claim:

- (a) Oral Notice** – Give oral notice of protest to the Engineer and outline the areas of disagreement before starting or continuing the protested Work.
- (b) Written Confirmation of Oral Notice** – Not later than the end of the next business day following the day that oral notice of protest is given; deliver written documentation to the Engineer of the oral notice that includes the notice of protest and the areas of disagreement.

(c) Written Notice – File a proper written notice of protest with the Engineer within seven Calendar Days after receiving the protested order. In the notice the Contractor shall:

- Describe the acts or omissions of the Agency or its agents that allegedly caused or may cause damage to the Contractor or to the Project, citing specific facts, persons, dates and Work involved;
- Describe Contractor's proposed alternative to the Work ordered, if any, which will avoid damage to Contractor or to the Project;
- Describe the nature of the damages;
- Cite the specific Contract provision(s), if any, that support the protest;
- Include the estimated dollar cost, if any, of the protested Work, and furnish a list of estimated Materials, Equipment and labor for which the Contractor might request additional compensation; and
- If additional compensation is estimated to be due, include the estimated amount of additional time required, if any.

FAILURE TO COMPLY WITH THIS NOTICE REQUIREMENT RENDERS THE NOTICE IMPROPER AND SHALL CONSTITUTE A WAIVER OF ANY CLAIM FOR ADDITIONAL COMPENSATION FOR ANY PART OF THE PROTESTED WORK.

(d) Engineer's Record and Response – The Engineer will file a copy of each written notice of protest in the Project records and will issue a written response to the protest within seven (7) business days of receipt of a timely filed written notice of protest. The Engineer has no responsibility to evaluate the protest unless the Contractor has timely filed a proper notice submitting all of the above information.

(e) Final Documentation of Claim – Within 60 Calendar Days following completion of the protested work, Contractor shall provide the Engineer with complete documentation of protested work, listing exact materials, equipment and labor used for the work and the dollar amount requested for each. If the claim is accepted, no additional compensation will be awarded based on documentation submitted after this deadline. If the claim is denied or if the Contractor is not satisfied with the decision by the Engineer, the amount claimed by the Contractor in any subsequent Step or proceeding may not exceed the dollar amount requested under this subsection.

(f) Records – Contractor must keep complete records of all costs and time incurred throughout the protested Work, and allow the Engineer access to those and other supporting records. Provide daily records of protested Work, on a weekly basis, on a schedule to be set by agreement with the Engineer.

(g) Comparison of Records – Provide the Engineer adequate facilities for keeping cost and time records of the protested Work. The Contractor and the Engineer will compare records and either bring them into agreement at the end of each day, or record and attempt to explain any differences.

(h) Work to Proceed – In spite of any protest, proceed promptly with the Work ordered by the Engineer.

- (j) Evaluation of Protest** – The Engineer has no responsibility for evaluating a protest that is not timely filed, or for which adequate supporting documentation has not been made available to the Engineer. Provided the procedures above are followed, the Engineer will promptly evaluate all protests and, if the protest is denied, advise the Contractor in writing of the reasons for full or partial denial. If a protest is found to be valid, the Engineer will, within a reasonable time, make an equitable adjustment of the Contract. Adjustment of time will be evaluated according to 00180.80.

If the Contractor does not accept the Engineer's evaluation of the protest, the Contractor may pursue a claim as described in 00199.30.

00199.30(b) Claims Requirements – Replace the first paragraph with the following:

At any time during the progress of the Work, but not later than 15 Calendar Days following the date of the Second Notification, the Contractor shall submit to the Engineer claims for compensation additional to that specified in the Contract, except claims waived by the Contractor per 00199.30(a). A claim not submitted within the 15 day limit is deemed waived by the Contractor, and the Agency may reject it.

00199.40 Claim Decision; Review; Exhaustion of Administrative Remedies – Replace this entire subsection, except for the subsection number and title, with the following:

00199.40 Claim Decision; Review; Exhaustion of Administrative Remedies – The Agency intends to resolve claims at the lowest possible administrative level. If the Engineer denies the claim, in full or in part, pursuant to 00199.40(a), the Contractor may request review of the denial. The disputed claim may then be resolved, in full or in part, at any of the progressive steps of claim review procedure as set forth in (b) through (d) of this Section. All of the actions and review under each step of the review process shall occur before the review can be advanced to the next higher step.

If, at any step in the claim decision or review process, the Contractor fails to promptly submit requested information or documentation that the Agency deems necessary to analyze the claim, the Contractor is deemed to have waived its right to further review, and the claim will not be considered properly filed and preserved.

- (a) Decision by the Engineer** – The Engineer will, as soon as practicable, consider, investigate, and evaluate a Contractor's claim for additional compensation, or for additional compensation and Contract Time, if submitted as required by 00199.30.

If the Engineer determines that additional information or documentation is needed to allow proper analysis of the claim, the Contractor shall meet with the Engineer within 14 Calendar Days, or as otherwise agreed by the parties, to present the additional information or documentation, or make other arrangements with the Engineer to supply that material.

The Engineer will advise the Contractor of the decision to accept or deny the claim, and the reasons for any full or partial denial of the claim, within 30 Calendar Days of receipt of the Contractor's claim, or the receipt of requested additional information or

documentation regarding the claim, whichever is later, unless the Engineer and Contractor have agreed upon a longer response time. If the Contractor does not accept the Engineer's decision, the Contractor may, within 10 Calendar Days of receipt of the written decision, request in writing that the Engineer arrange a review at Step 1 (See (b) below).

(b) Step 1: City Engineer Level Review – The Contractor shall request that the Engineer arrange a meeting with the City Engineer in order to present the denied or partially denied claim for formal review and discussion. The meeting will take place within 21 Calendar Days of the Agency's receipt of the request, or as otherwise agreed by the parties.

If the City Engineer determines that the Contractor must furnish additional information or documentation to allow proper analysis of the claim, the reviewer will schedule a second meeting, to be held within 14 Calendar Days, or as otherwise agreed by the parties, at which the Contractor shall present the requested information or documentation.

The City Engineer will provide a written decision to the Contractor within 30 Calendar Days of the last meeting with the City Engineer.

If the Contractor does not accept the Step 1 decision, the Contractor may, within 180 Calendar Days from the date of receipt of the City Engineer's written decision or within 90 Calendar Days of the date of Second Notification, whichever is later, initiate Step 2 as set forth in subsection (c) below.

(c) Step 2: Arbitration and Litigation – The Contractor must follow each step in order, and exhaust all available administrative remedies before resort to arbitration and litigation. Litigation of a claim that cannot be resolved in Step 1 shall be initiated by filing a complaint in the Clackamas County Circuit Court that contains a stipulation to arbitration under ORS 36.410. The claim and all cross and counter-claims filed in response to the complaint shall be submitted to the Court Arbitration Program set forth in ORS 36.400 to 36.425, Chapter 13 of the Oregon Uniform Trial Court Rules and the Clackamas County Circuit Court supplemental local rules concerning arbitration. Either party may seek, and shall be entitled to, an order directing the other party to submit to arbitration as provided herein and to judgment for its costs, expenses and attorney fees in obtaining and enforcing the order.

In any litigation, the entire text of any order or permit issued by a governmental or regulatory authority, as well as any documents referenced or incorporated therein by reference, shall be admissible for the purpose of Contract interpretation.

The Contract shall not be construed against either party regardless of which party drafted it. Other than as modified by the Contract, the applicable rules of contract construction and evidence shall apply. This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

Any dispute between the Agency and the Contractor that arises from or relates to this Contract and that is not resolved under the provisions of Section 00199 shall be brought and conducted solely and exclusively within the Clackamas County Circuit Court; provided, however, if a dispute must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon, Portland Division. In no event shall this Subsection be construed as a waiver by the City of Oregon City on any form of defense or immunity, whether sovereign immunity, governmental immunity or otherwise, from any claim or from the jurisdiction of any court.

CONTRACTOR BY EXECUTION OF THE CONTRACT HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION.

- (d) Payment of Costs, Expenses and Attorney's Fees** – The prevailing party shall be entitled to an award for reasonable costs and expenses incurred after the initiation of Step 2, including costs and expenses incurred for arbitration, trial de novo and on appeal. Costs and Expenses shall include, but shall not be limited to, reasonable attorney fees and expenses, arbitrator fees and expenses, and costs of discovery.

As used in this subsection 00199.40(d), "prevailing party" for an arbitration award means (1) a Contractor who has received an arbitration award, exclusive of interest, costs and expenses, that is more than the dollar amount claimed by the Contractor in its Final Documentation of Claim under 00199.20(d) or (2) the City of Oregon City if there is no arbitration award to the Contractor or if the arbitration award to the Contractor, exclusive of interest, costs and expenses, is less than the dollar amount of the award in the City Engineer's Step 1 decision. For all other arbitration awards, there shall not be a "prevailing party."

The award of costs and expenses after trial de novo shall be made as provided for in ORS 36.425. The award of costs and expenses after appeal from a judgment entered after trial de novo shall be to the prevailing party designated as such by the appeals court.

00199.50 Mediation – Replace this subsection, except for the subsection number and title, with the following:

Mediation is a condition precedent to litigation as detailed above in amended subsection 00199.40(c).

SECTION 00210 – MOBILIZATION

Comply with Section 00210 of the Standard Specifications modified as follows:

Add the following subsection:

00210.00(a) Pre-construction Visual Survey – Prior to commencing any construction activities, the Contractor shall prepare a recorded visual survey of all existing features within the project limits as well as adjacent properties. The visual survey shall be recorded on standard digital equipment and an electronic copy shall be provided to the Agency for the Agency's review prior to commencing construction. The survey shall show all features within or adjacent to the project limits which are known or suspected to generate damage claims. The survey shall also include video of any existing improvements which were damaged prior to construction.

Post-construction visual comparison to the visual survey shall be a basis for determining damage to properties should a damage claim arise.

Add the following subsection:

00210.02 General Requirements – Install two (2) Agency standard project identification signs per Oregon City Standard detail 531. Install signs on Holcomb Boulevard according to Section 00225. Install one sign approximately 200 feet west of Front Avenue on the south side of Holcomb Road and the other sign 200 Feet east of Swan Avenue on the north side of Holcomb Road. Coordinate the location of signs with the Engineer prior to the installation. Remove signs at completion of project.

00210.40 Mobilization – Add the following bulleted items to the end of this subsection:

- Obtain all applicable licenses and insurance required by the Contract to complete the work as specified herein.
- Pre-construction Visual Survey.
- Installation of Agency Standard project identification signs and removal at end of project.

00210.90 Payment – Add the following to this subsection:

Payment for mobilization shall also include all costs associated with completing a preconstruction visual survey and obtaining all necessary licenses and insurance, and removing project identification signs.

SECTION 00220 – ACCOMMODATIONS FOR PUBLIC TRAFFIC

Comply with Section 00220 of the Standard Specifications modified as follows:

Add the following subsection:

00220.01(d) Terminology - According to 00110.05(a), for the purposes of this Contract, the terms "sidewalk ramp" and "sidewalk ramps" shall respectively refer to and shall be read to mean "curb ramp" and "curb ramps".

00220.02(a) General Requirements - Add the following sentence to the end of the bulleted item beginning with "Provide and maintain safe temporary..." as follows:

- Allow unrestricted vehicle and pedestrian access to all properties outside the allowable working areas.

Add the following bullets to the end of the bullet list:

- Do not place work zone signs or supports that will block existing walkways or existing bikeways.
- When maintaining 1-way, flagged traffic per an approved TCP, traffic shall not be held longer than 10 minutes. The Contractor shall notify the held driver of an approximate time they will have to wait.
- Maintain and coordinate access to all affected properties. Allow unrestricted vehicle and pedestrian access to all properties outside the allowable working hours.
- Open all lanes and adjacent asphalt surfaces (including shoulders and bike lanes) on all streets outside of allowable working or lane restriction hours with temporary or permanent pavement surfacing. Temporary steel plates or other methods to open the roadway to traffic must be approved by the Engineer. Compacted gravel surfacing is not allowed.
- Provide and maintain access to garbage containers and garbage pick-up or other regularly scheduled deliveries. Coordinate with school district and with TriMet to minimize impacts and delays for any school and public bus routes.
- Coordinate with TriMet to minimize impacts and delays for transit routes.
- Notify all emergency services of all changes to the traffic control prior to completing the change. Notify the Police and Fire of all lane closures.
- When an abrupt edge is created by excavation, protect traffic using the "ABRUPT PAVEMENT EDGE DETAIL" and the "TYPICAL ABRUPT EDGE SIGNING DETAIL" configurations shown on the standard drawings.
- No vertical transitions between pavements greater than one inch will be allowed. When pavement transitions (including transitions at driveways) are greater than one inch, provide papered asphalt transition joints, and appropriate signing as directed by the Engineer.
- Inform and contact all affected residents and businesses with special written notices approved by the Engineer, within the project area 48 hours before each of the following work activities: pavement removal, cold plane pavement removal, digouts, cement treated base, utility improvements including water shut downs/connection, and before top lift asphalt paving.
- Contractor shall coordinate construction activities with adjacent property owners to ensure driveway access is maintained at all times.
- When performing trench excavation or other excavation across or adjacent to a Traffic Lane on a roadway having a pre-construction posted speed greater than 35 mph, backfill the excavation, install surfacing, and open the roadway to traffic by the end of each work shift. Install a "BUMP" (W8-1-48) sign approximately 100 feet before the backfilled area and a "ROUGH ROAD" (W8-8-48) sign approximately 500 feet ahead of the "BUMP" sign. If

this requirement is not met, maintain all necessary lane or shoulder closures and provide additional TCM, including flagging, at no additional cost to the Agency. Do not use temporary steel plating to reopen the roadway.

- Before activating new traffic signals, revising lane usage, implementing new roadway geometry, or removing a "STOP" sign, protect traffic by installing "NEW TRAFFIC PATTERN AHEAD" (W23-2) signing according to 00225.02. Keep the signs in place for 30 Calendar Days after completing the modifications.

00220.02(b) Temporary Pedestrian Accessible Route Plan – Add the following sub-bullets under the bullet beginning “For all sidewalk or sidewalk ramp closures...”:

- Closures of sidewalk ramps shall not extend longer than one week. Sidewalk closures at any location shall not be longer than one consecutive week.
- For all sidewalk or sidewalk ramp closures, install signs and other TCD to delineate alternate routes.
- Close the sidewalk at a point where there is an alternate way to proceed, or provide signing and other TCD to indicate an alternate pedestrian route. Place closure signing at the closure point in the middle of the existing pedestrian facility facing pedestrian traffic.
- Provide additional TCM and an alternate pedestrian route that, as nearly as is practical, matches existing facility features and meets the accessibility requirements in Part 6 of the MUTCD and the requirements of the Americans with Disabilities Act (ADA).
 - Pave the alternate pedestrian route surface or provide an approved, non-slip 60 inch minimum wide surface meeting the requirements of the ADA.
 - Where a 60 inch minimum width along the entire alternate pedestrian route is not possible, provide 60 by 60 inch passing spaces every 200 feet along the route.
- Provide temporary ADA compliant ramps at each ramp location prior to existing sidewalk removal through the time until new ADA compliant ramps are complete.
- Provide temporary ramps for existing ramp closures. Temporary ramps shall meet ADA requirements and utilize materials which create a hard surface that is not susceptible to rutting.
- Protect pedestrians and delineate the alternative pedestrian route by placing pedestrian channelizing devices (PCD), or other approved devices, between the alternate pedestrian route and the work area. Keep PCD in place, except as required for actual work, until the existing pedestrian facility is reopened.
- Reopen the existing pedestrian facility during non-work hours or continue to provide an alternate pedestrian route which meets ADA requirements.

00220.03(b) Closures – Add the following bullet to the end of the bulleted list:

- **Bus Stops** - A minimum of 14 Calendar Days before closing, relocating or modifying a TriMet bus stop. Also notify the TriMet Field Operation Coordinator by e-mail, with a copy to the Engineer, at: foc@trimet.org

00220.40 General Requirements – Add the following to the end of the section:

f. Periods of No Active Work – Outside of regular construction hours:

- Provide pedestrian surfaces meeting the requirements of the MUTCD and Section 00225.

- Provide traversable bicycle and pedestrian routes with surfaces free of dirt, mud, gravel, and debris.
- Provide traversable automobile travel lanes. If necessary, provide Temporary Trench Plating which complies with 00405.46(e) or backfill and temporary pavement over trenches in a method approved by the Engineer.

00220.42 RRFBs Site Sidewalk and Lane Closures - Do not close sidewalks or traffic lanes until all materials and equipment are on hand or guaranteed to be delivered so that the work can be done in an efficient manner with a minimum period of sidewalk and lane closures.

The sidewalk and lane closures will not be allowed until the area is signed according to the TCP and the requirements of Section 00225.

00220.40(e)(2) Opened Lanes – Replace subsection (a) in its entirety with the following:

a. Holidays – Between noon on the day preceding a legal holiday or holiday weekend and midnight on a legal holiday or the last day of the holiday weekend, except for Thanksgiving, when no lanes may be closed between noon on Wednesday and midnight on the following Sunday.

For the purpose of this Section, legal holidays during the proposed construction timeline include:

- New Year's Day on January 1
- Martin Luther King Jr. Day on the third Monday of January
- Presidents' Day on the third Monday in February
- Memorial Day on the last Monday in May
- Independence Day on July 4
- Labor Day on the first Monday in September
- Veterans' Day, on the 11th of November
- Thanksgiving Day and the day after Thanksgiving Day (the fourth Thursday and Friday in November)
- Christmas Day on December 25

When a holiday falls on Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

00220.60(a-1) Contractor Responsibility – Add the following bulleted items to the end of this subsection:

- Keep surfaces being used by bicycles and pedestrians free of all dirt, mud, gravel and other harmful materials. Surfaces include bike paths, bike lanes, roadway shoulders or the outside 6 feet of the roadway.
- Vacuum sweep loose aggregate, soil and other materials on the roadway out of the travel ways at the end of each day. Swept materials shall be removed by broom, or other means to prevent pollution of the storm sewer system or receiving streams.

00220.60(b-2) Suspension Due to Other Causes – Replace the last paragraph in this Subsection with the following:

The Contractor shall assume responsibility for maintenance of the roadway surfaces during the suspension.

SECTION 00225 – WORK ZONE TRAFFIC CONTROL

Comply with Section 00225 of the Standard Specifications supplemented and/or modified as follows:

00225.00 Scope – Add the following to the end of this subsection:

The Contractor shall be responsible for all traffic control costs to complete punch-list items.

00225.01(b) Definitions – Modify the definitions as follows:

Traffic Control Plan (TCP) – A written and drawn (or computer generated) plan for handling pedestrian, bicycle, and vehicular traffic on a specific roadway through a work zone.

Monitor the length of traffic queues and install an additional set of advance flagger signs if traffic queues extend beyond the first set of advance flagger signs. Advance flagger signs include the "BE PREPARED TO STOP" (W3-4-48) and the Flagger Symbol (CW23-2-48) signs.

00225.02(a) Temporary Signs - Add the following bullet(s) to the end of the bullet list:

- Place a "WAIT FOR FLAGGER" (CR4-23) sign approximately 50 feet in advance of each flagger station, facing incoming pedestrian traffic. Install the sign on a conical marker or other temporary sign support, as shown or as directed. Do not allow the sign installation height or location to block the visibility of the flagger for incoming public traffic.
- At least ten Calendar Days before closing the sidewalks at Holcomb Boulevard & Swan Avenue, and Holcomb Boulevard & Front Avenue, place a "SIDEWALK CLOSED, Daily" (CW11-5) sign in advance of each future closure point. Locate the sign so it is legible from the nearest alternate pedestrian pathway facing incoming pedestrian traffic. The sign may be mounted between the panels of a Type II barricade, or on a single-post TSS. Do not place the sign or sign support such that it narrows the pedestrian pathway to a width of less than 4 feet.
- Before opening the TPAR, place TPAR signing and other TCM as shown, or as directed. Maintain the "SIDEWALK CLOSED, Daily" (CW11-5) signs while the TPAR is open to pedestrian traffic.
- Install a "PROJECT IDENTIFICATION" (CG20-8) sign on Holcomb Boulevard. Place the sign according to sign spacing "A" from the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Supplemental Drawings, in advance of the "ROAD WORK AHEAD" sign at each end of the Project, facing incoming traffic. The Engineer will determine the sign legend.

- Install "ROAD WORK AHEAD" (W20-1-48) signs with a 36 by 24-inch "FINES DOUBLE" (R2-6aP) rider on Holcomb Boulevard, according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Plans except do not install the "FINES DOUBLE" rider on barrier mounted signs.
- Install beyond each end of the Project, facing outgoing traffic, an "END ROAD WORK" (CG20-2A-24) sign a distance of $(A \div 2)$ according to the "TCD Spacing Table" shown on the Standard Drawings or as modified by the Plans.

00225.05 Contractor Control Plan – Supplement this subsection with the following:

If the general contractor prepares traffic control plans for work to be completed by subcontractors, the TCP shall also be signed by the subcontractor who will be completing work items under that plan.

00225.05(a) Agency or Contractor Traffic Control Plan – Add the following bullet item to the end of this section:

- A detailed temporary striping plan in compliance with the current ODOT Traffic Line Manual.

Add the following to the end of this subsection:

If at any time during the work the Engineer determines the Traffic Control Plan to be inadequate, the Contractor shall provide additional traffic control signs, devices and labor at no additional cost to the Agency.

The Contractor shall provide the Engineer five (5) working days to review any submitted traffic control drawings. Drawings which are not approved shall be corrected and resubmitted for review as specified above.

Public traffic shall be permitted to pass through the work area, or an approved detour, with as little inconvenience and delay as possible. Bicycle and pedestrian lanes and pathways are legal travel lanes and must be treated as such. They shall be free of obstructions with as little delay as possible. Lane and pathways will be maintained free of debris to allow safe passage. The minimum travel lane width for a bicycle lane through a work zone area shall be four (4) feet. For temporary bicycle and pedestrian lanes and pathways, ADA compliant ramps must be used where the elevation difference is greater than ¼ inch.

The Contractor shall provide temporary ADA compliant ramps at each ramp location prior to existing sidewalk removal through the time until new ADA compliant ramps are complete. See Section 00220.02 for additional requirements

The Contractor shall utilize cones, no parking signs and other means as needed in advance of paving and other construction operations to keep the roadway clear. The Contractor shall provide general mailer information to nearby property owners, including Contractor contact information, construction duration, impacts, and other pertinent details. The Contractor shall also be responsible for all day-to-day coordination necessary to clear the roadway prior to paving.

In work areas where ongoing work has extended for a period longer than one month, the Contractor shall provide monthly updates to adjacent property owners with the anticipated work for the month. The Contractor shall also notify adjacent property owners in these areas with anticipated interrupted driveway access a minimum of one week prior to impacting access. Access closures shall not be allowed.

When signs are required for which specifications are not listed in the Contract Documents, the Contractor shall submit drawings for approval by the Engineer.

00225.11(a)(2) Type – Delete the bullet that begins "3/4 inch medium-density...".

Add the following subsection:

00225.12(f) Pedestrian Channelizing Device - Use pedestrian channelizing devices (PCD) from the QPL or Conditional Use List and as shown on the standard drawings or as modified by the supplemental drawings.

00225.32(b) Traffic Control Inspection Without TCS - Add the following bullet to the end of the bullet list:

- Shall report to the Project Site within 1 hour after being notified in the event of a Work Zone incident during non-work periods.

SECTION 00280 - EROSION AND SEDIMENT CONTROL

Comply with Section 00280 of the Standard Specifications modified as follows:

00280.04 Erosion and Sediment Control Plan on Agency Controlled Lands - Replace the paragraph that begins "For Work on Agency Controlled Lands..." with the following paragraph:

For Work on Agency Controlled Lands use either the Agency's ESCP, a Contractor modified version of the Agency's ESCP, or a Contractor developed ESCP. Submit the following for approval at least 10 Calendar Days before the preconstruction conference:

00280.06 Erosion and Sediment Control Manager - Delete this subsection.

00280.15(a) Check Dams - Replace the bullet that begins "Type 2: Fiber Rolls - Fiber rolls or wattles..." with the following bullet:

- **Type 2: Fiber Rolls** - Fiber rolls or wattles that are pre-manufactured, filled with plant based, naturally occurring fiber (e.g.: straw, wood, excelsior, hemp or coconut fiber) that contains no weed seeds and that is not moldy, caked, decayed or of otherwise low quality. When straw is used, furnish straw meeting the requirements of 01030.15(b). Furnish fiber roll that is fully biodegradable with enclosing netting derived from natural fibers (e.g.: jute, sisal, hemp or coir fiber). Furnish rolls with a minimum density of 2.75 pounds per cubic foot and constructed to hold its shape to provide a diameter of between 8 and 10 inches.

00280.16(d) Inlet Protection - Replace the bullet that begins “**Type 3: Prefabricated Filter Inserts** ...” with the following bullet:

- **Type 3: Prefabricated Filter Inserts** - Prefabricated filter inserts manufactured specifically for collecting sediment in drainage inlets and from the QPL. Include handles and fasteners sufficient to keep the insert from falling into the inlet during maintenance and removal of the insert from the inlet.

00280.62 Inspection and Monitoring - Replace this subsection, except for the subsection number and title, with the following:

Inspect the Project Site and all ESC devices for potential erosion or sediment movement on a weekly basis and when 1/2 inch or more of rainfall occurs within a 24-hour period, including weekends and holidays.

If a significant noncompliance or serious water quality issue occurs that could endanger health or the environment, verbally report it to the Engineer within 24 hours.

In the paragraph that begins "Item (a) includes..." delete the bullet that specifies "providing the Erosion and Sediment Control Manager".

Replace the paragraph that begins "When only Item (a) is..." with the following paragraph:

When only item (a) is listed in the Contract Schedule of Items, additional ESC devices required for permit compliance will be paid for as Extra Work according to Section 00196.

SECTION 00290 - ENVIRONMENTAL PROTECTION

Comply with Section 00290 of the Standard Specifications modified as follows:

00290.10 Staging and Disposal Sites –

Replace the paragraph that begins "Locate staging areas and disposal..." with the following paragraphs:

Locate staging areas and disposal sites in previously improved or disturbed sites, including existing Roadways, pullouts, turnouts, parking lots, and storage yards that have been compacted, and graveled or paved unless otherwise specified in Section 00236 or Section 00237 or approved, in writing, by the Engineer,

Do not stage Equipment, park Equipment or store Materials in any City, County, State, or Federal park, wayside or recreational facility.

00290.20(c)(1) General - Replace the paragraph that begins “Segregate all demolition debris according to...” with the following paragraph:

Segregate all demolition and construction debris according to its intended end use (reuse, recycle, or dispose). If required, store in designated areas in a manner that prevents contamination to Soil and water and prevents fugitive dust emissions. Remove all waste materials recovered from the site unless otherwise approved, in writing. Retain disposal and recycling facility receipts for wastes generated on site for at least 1 year after completion of the Project. Provide copies of the receipts to the Engineer within 7 Calendar Days of the disposal or recycling.

00290.20(c)(3) Reuse, Recycle and Dispose of Materials - Replace the title of this subsection with “**Reuse, Recycle, Compost and Dispose of Materials**”.

(3) Reuse, Recycle, Compost and Dispose of Materials – Replace the three bullets with the following bullets:

- Reuse demolition and construction debris.
- Recycle demolition and construction debris.
- Compost or mulch yard waste material from lawn and landscape maintenance.
- If it is not feasible to reuse, recycle, or compost, ("feasible" is defined as a facility that is capable of handling the material, will take the material and the cost of transportation plus the cost to reuse or recycle the material is equal to or less than the costs of disposal) dispose of waste material according to the following:

00290.20(c)(3)a. Burnable Materials – Replace this subsection, except for the subsection number and title, with the following:

Burning will not be allowed on this project.

SECTION 00305 – CONSTRUCTION SURVEY WORK

Section 00305, which is not a Standard Specification, is included for this Project by Special Provision.

00305.00 Scope – Provide construction survey work according to the current edition on the date of Advertisement, of the ODOT “Construction Surveying Manual for Contractors”, except as modified in this Special Provision. This manual is available on the web at:

<https://www.oregon.gov/ODOT/ETA/Pages/Manuals.aspx>

At a minimum the Contractor shall include the following stakes:

- Two stakes for each collection structure,
- One stake along the curb return alignments at points of curvature, tangency, and at 5’ feet intervals between these two points.

The Agency will **not** establish control stations, perform measurements and calculations for pay quantities, or perform final “as constructed” measurements, contrary to Section 1.5 of the above referenced manual. The Contractor’s surveyor will be responsible to complete this work.

Make all supporting computations and field notes required for control of the work and as necessary to establish the exact position, orientation, and elevation of the work from control stations, including furnishing and setting construction stakes and marks, reference marks, and additional control stations.

The Engineer will not be responsible for any data translations. An electronic copy of the base drawing, in Autocad.dwg format shall be delivered to the Contractor’s surveyor. The electronic drawings shall be used by the Contractor’s surveyor as a reference, and it shall be the responsibility of the Contractor to confirm that all data contained within the electronic drawings is consistent with the contract documents.

00305.80 Measurement - No measurement of quantities will be made for construction survey work.

00305.90 Payment - The accepted quantities of performing construction survey work will be paid for at the Contract lump sum amount for the item "Construction Survey Work". Payment will be payment in full for furnishing all material, equipment, labor, and incidentals necessary to complete the work as specified.

No separate or additional payment will be made for temporary protection and direction of traffic measures including flaggers and signing necessary for the performance of the construction survey work.

No separate or additional payment will be made for preparing surveying documents including but not limited to office time, preparing and checking survey notes, and all other related preparation work.

The amount to be allowed for "Construction Survey Work" in the progress payments will not be in excess of the reasonable value of the surveying work performed under this specification as said reasonable value is estimated by the Engineer.

Costs incurred as a result of survey errors will be borne by the Contractor. Such costs include price adjustments for failure to meet requirements of the construction specifications, repair or removal and replacement of deficient products, and over-run of material.

SECTION 00310 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Comply with Section 00310 of the Standard Specifications modified as follows:

00310.41(a) General - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall immediately vacuum all saw cutting waste and dispose of in a legal manner. Where an abutting structure or part of a structure is to be left in place, make clean, smooth, vertical cuts with a saw or other approved cutting device. Avoid operations that may damage any portion of the remaining structure.

00310.44 Earthwork in Connection with Removal – Replace the second paragraph with the following:

Backfill holes according to 00405.46. Backfill will be considered incidental and will not be paid separately.

SECTION 00320 - CLEARING AND GRUBBING

Comply with Section 00320 of the Standard Specifications.

SECTION 00330 – EARTHWORK

Comply with Section 00330 of the Standard Specifications modified as follows:

00330.03 Basis of Performance - Add the following paragraph to the end of this subsection:

Perform all earthwork under this Section on the excavation basis.

00330.41(a-5) Waste Materials - Replace this subsection, except for the subsection number and title, with the following:

Unless otherwise specifically allowed and subject to the requirements of 00280.05, dispose of materials, classed as waste materials in 00330.41(a)(3) and 00330.41(a)(4), outside and beyond the limits of the Project and Agency controlled property according to 00290.20. Do not dispose of materials on wetlands, either public or private, or within 300 feet of rivers or streams.

00330.41(a)(9)(c) Unstable Subgrade Material - Delete the entire subsection.

00330.91(d) General Excavation - Delete the bullet that begins "Includes Unsuitable Material...".

00330.92 Kinds of Incidental Earthwork - Add the following bullet to the end of the bullet list:

- Saw cutting of any structures as shown on the plans.

SECTION 00340 – WATERING

Comply with Section 00340 of the Standard Specifications modified as follows:

00340.40 Watering - Add the following paragraph to the end of this subsection:

Obtain a fire hydrant meter and double check valve from the Oregon City Public Works Operations Division located at 122 S. Center Street. A refundable deposit of \$2,600.00 is required for the meter and a \$400 refundable deposit is required for the double check valve. The Contractor will not be charged for water but shall record and report all water used for this project to the City. All costs for equipment, labor and materials required to haul and apply water shall be incidental to other bid items with no separate payment made.

SECTION 00350 - GEOSYNTHETIC INSTALLATION

Comply with Section 00350 of the Standard Specifications modified as follows:

00350.90 Payment - Delete the sentence that begins “If the Engineer orders geosynthetics...”

SECTION 00440 - COMMERCIAL GRADE CONCRETE

Comply with Section 00440 of the Standard Specifications modified as follows:

Add the following subsection:

00440.01 Terminology - According to 00110.05(a), for the purposes of this Contract, the terms "sidewalk ramp" and "sidewalk ramps" shall respectively refer to and shall be read to mean "curb ramp" and "curb ramps".

Add the following subsection:

00440.02 Abbreviations and Definitions:

ASTV – Actual Strength Test Value – See 02001.02 for definition.

00440.12 Properties of Commercial Grade Concrete - Replace the bullet that begins "Compressive strength..." with the following bullet:

- **Compressive Strength** - ASTV minimum of 3,000 psi at 28 days

00440.14(d) Hardened CGC - Add the following to the end of this subsection:

The ASTV at 28 Days is the average compressive strength of the three cylinders tested. Discard all specimens that show definite evidence, other than low strength, of improper sampling,

molding, handling, curing, or testing. The average strength of the remaining cylinders shall then be considered the test result.

SECTION 00490 - WORK ON EXISTING SEWERS AND STRUCTURES

Comply with Section 00490 of the Standard Specifications modified as follows:

00490.10 Materials - Replace the "Precast Concrete Sections" line with the following line:

Precast Concrete Sections02450

SECTION 00640 - AGGREGATE BASE AND SHOULDERS

Comply with Section 00640 of the Standard Specifications.

SECTION 00730 - EMULSIFIED ASPHALT TACK COAT

Comply with Section 00730 of the Standard Specifications modified as follows:

00730.90 Payment - Replace this subsection, except for the subsection number and title, with the following:

No separate or additional payment will be made for Emulsified Asphalt tack coat. Approximately 0.02 tons of Emulsified Asphalt in tack coat will be required on this Project.

SECTION 00744 – ASPHALT CONCRETE PAVEMENT

Comply with Section 00744 of the Standard Specifications modified as follows:

00744.00 Scope – If aramid fibers are to be used in the project, insert the following:

Where shown, work shall include furnishing all materials, equipment, labor, and incidentals for mixing aramid fiber into ACP, when aramid fiber is required as a mixture ingredient. The fiber reinforced ACP will be subject to all requirements for ACP in this Section.

00744.02 Definitions – Insert the following in alphabetical order:

Reinforcing Fibers – An asphalt concrete additive consisting of aramid fibers added at time of mixing.

Add the following section:

00744.03 Quality Control Plan – Submit a comprehensive and project specific paving quality control plan for approval. Submit a draft Quality Control Plan prior to the Prepaving Conference and re-submit the Quality Control Plan for approval based on comments received at the Prepaving Conference. The plan shall include a brief narrative for each of the following items:

- List of personnel to be used meeting the requirements of 00744.30, including:
 - Contractor
 - Mix Supplier including plant manufacturer, model and capacity
 - QC Officer
 - Backup QC Officer
 - Plant Technicians
 - Paver Technicians
- Source of all materials
- Trucking plan that ensures continuous paving operation.
- Sampling and testing plan meeting the requirements of 00744.10, 00744.11, 00744.16 and 00744.49.
- JMF meeting the requirements of 00744.12, 00744.13 and 00744.14.
- List of equipment to be used in the paving operation.
- List of best management practices used during construction to ensure the specifications are met. Practices shall address the following items:
 - Subgrade and surface preparation
 - Utility adjustments (valve cans, manholes, etc.)
 - Tack
 - Temperature
 - Release agent (diesel not allowed)
 - Cleanout location for delivery trucks
 - Joints
 - Segregation
 - Depth
 - Cross Slope
 - Roller pattern
 - Compaction
 - Smoothness
 - Correction of surface defects (segregation, separated joints, etc.)

00744.10(a) New Course and Fine Aggregates – replace the third paragraph beginning with "Testing of Aggregates" in its entirety with:

Provide test results showing aggregates meet requirements for soundness, durability, fractured faces and harmful substances as described below. No sandstone, shale or other soft material will be allowed.

00744.11 Asphalt Cement and Additives – insert the following at the end of this section:

Provide PG64-22 grade asphalt cement for this Project unless otherwise directed or approved with support from a project specific pavement design.

00744.13 Job Mix Formula Requirements – replace the first paragraph in its entirety with:

Provide a JMF for the Project meeting with the following criteria that was either developed or verified within 3 years of the date the Contract was advertised and was used in another Contract within 1 year of the date the Contract was advertised:

In the second paragraph, insert the following after the second sentence:

Submit all Mix Design Verification (MDV) data developed over the last year including air voids.

00744.16 Sampling and Testing – At the end of the first group of bulleted items, insert the following bullet:

- Gmb (bulk) to obtain voids worksheet calculations

Add the following sentence at the end of this section:

The Agency may elect to complete additional QA testing at its discretion.

If aramid fibers are to be included in the work, insert the following section after "**Equipment**" but before Section 00744.23, Pavers:

00744.22 Addition of Reinforcing Fiber – Have a fiber supplier's representative on site during the first day of production mixing. This requirement can be waived if fiber supplier and HMA producer can supply evidence of supplier's brand of fiber product being successfully produced by the HMA producer.

Introduce the aramid product as follows:

(a) Batch Plant – When a batch type plant is used, add the aramid product dosage to the aggregate in the weigh hopper. This may be done with loose fibers and a fiber metering device, or may be done by using manual dosing equipment. If necessary, increase the batch dry mixing time to ensure the aramid fibers are uniformly distributed prior to the injection of asphalt cement into the mixer.

(b) Drum Plant – When a continuous or drier-drum type plant is used, add the aramid product to the RAP material to uniformly disperse with the aggregate and injected asphalt.

Use a separate aramid product metering device feed system to proportion by weight of total mix, the required percentage of fiber reinforcement into the mixture. Control the aramid product metering system with a proportioning device to meet the dosing requirements.

When a continuous or drier-drum type plant is used for limited production volumes, the addition of the aramid product may be done by using manual measuring tools or equipment and adding them directly onto the RAP belt or into the RAP opening on the plant. Because this is not an automated process, a written protocol must be supplied by the producer to demonstrate how they will attain the dosage requirement, and documentation must be supplied by the

material manufacturer assuring this method will produce the desired uniform aramid fiber distribution.

Mix the aramid fiber with the aggregate longer, if needed, to allow thorough distribution of aramid fibers at the end of the mixing process and to promote asphalt coating of individual strands of aramid fiber. At the start of any fiber mixing, visually observe the reinforced HMA at the plant and in first three trucks at the point of discharge and prior to delivery to the job site. Observation shall include using a shovel or other device. Look for proper distribution of aramid fibers and make mixing adjustments if needed.

00744.24 Compactors – Insert the following at the end of this section:

The use of equipment which crushed the aggregate to an appreciable extent will not be permitted.

Insert the following new section:

00744.25 Trucks – Do not use vehicles or transfers with rear drop axles in which raising the drop axle would cause the vehicle to exceed legal load limits.

00744.30 Quality Control Personnel – If aramid fibers are used, insert the following at the end of the first sentence:

Provide at least one fiber reinforcing product representative at each plant site when producing mixture for the Project unless plant submits a minimum of three examples of prior use of fibers.

00744.41 Mixing Temperatures – Replace the second paragraph in its entirety with:

Establish the allowable mixing and placement temperature ranges by the JMF. Measure the mixture temperature at the discharge of the mixer. Measure the placement temperature in the hauling vehicle per 00744.45 and behind the paver. The allowable production temperatures may be adjusted based on the asphalt cement supplier's recommendation if approved by the Engineer. The maximum mixture temperature and the minimum placement temperature shall be as follows:

00744.42 Tack Coat – Replace this section in its entirety except for the section number and name with the following:

Construct a tack coat before placing each lift of ACP according to Section 00730. A tack coat is not required before placing ACP on aggregate base. Omission of a tack coat for a second lift placed on a base lift in the same day may be allowed if approved by the inspector.

Treat all existing and newly paved ACP or curb (below finish grade) surfaces on and against which ACP is to be placed with an asphalt tack coat according to Section 00730. Before applying the tack coat, clean and dry the surface to be tacked. Do not place tack coat any further than 500 feet in front of the paver.

Remove all loose material that will reduce adhesion of the tack by brooming, flushing with water, or other approved methods.

Avoid excess tack coat being applied to the gutter or curb face. Shields protecting curb faces shall be provided and used during tacking of curb faces. Any tack coat inadvertently or inappropriately applied to the gutter or curb face shall be promptly removed.

00744.43 Hauling, Depositing and Placing – Replace this section in its entirety except for the section number and name with the following:

Haul, deposit and place ACP according to the following:

(a) Hauling – Provide vehicles with tight, clean and smooth metal beds equipped with covers to protect against moisture and heat loss. Cover ACP if rain is encountered any time between loading and placement. Provide a 3/8-inch diameter hole near the middle of the left sidewall of the bed for ACP placement temperature testing.

ACP will be rejected before placing if one or more of the following occurs:

- Placement temperature measured in the truck below limit specified in the approved JMF.
- Below temperature limit specified in 00744.42.
- Slumping or separating.
- Solidifying.
- Absorbing moisture

Dispose of rejected loads at no additional cost to the Agency.

Vehicles which cause excessive segregation, which leak badly, or which the Engineer has determined delay normal operations, shall not be used.

Deliver the mixture to the paving machine at a rate that provides continuous operation of the paving machine, except for unavoidable delay or breakdown. If excessive stopping of the paving machine occurs during paving operations, the Engineer may suspend paving operations until the mixture delivery rate matches the paving machine operation. Any delay under the control of the Contractor that results in greater than 30 minutes between trucks will pay deductions or load rejection per 00744.90.

Do not use diesel oil as a release agent unless approved by the Engineer. Do not clean out trucks in front of the paver. Clean trucks in an approved location away from the paving operation. Pick up and restore cleanout area daily.

(b) Depositing - Deposit ACP from the hauling vehicles so segregation is prevented.

(c) Placing - Alternative equipment and means may be allowed by the Engineer if the use of a paver is impractical. If a dump truck cannot physically deliver the mix to a tight area, a very clean bucket of a loader may be used as an alternate.

Do not place ACP during rain or other adverse weather conditions, unless allowed by the Engineer. ACP in transit at the time adverse conditions occur may be placed if:

- It has been covered during transit.

- The ACP temperature is satisfactory.
- It is placed on a foundation free from pools or flow of water.

Place the mixture in the number of lifts and courses, and to the compacted thickness for each lift and course, as shown. Place each course in one lift unless otherwise specified. Do not exceed a compacted thickness of 3 inches for any lift. Limit the minimum lift thickness to twice the maximum aggregate size in the mix.

Asphalt shall not be placed against concrete, curb or gutter, or other structures, until seven days after the concrete has been placed, adequate strength of the concrete has been achieved, and they have been backfilled to provide lateral support.

When more than one lift of asphalt is required, no subsequent lifts shall be placed until the prior lift has adequately cooled and set sufficiently to prevent marking and has achieved minimum compaction requirements. Sequence operations so that each lift of asphalt is placed on different days.

Any mixture that becomes loose and broken, mixed with dirt or is any way defective shall be subject to removal and to replacement with fresh hot mixture, which shall be compacted to conform to the surrounding area. Any area showing an excess or deficiency of asphalt cement shall be subject to removal and to replacement. Removal and replacement under these provisions shall be at the expense of the Contractor.

If hand work is necessary such as at transitions, ramps, beginning, and ending panels, stop material from becoming segregated by excessive raking. If larger aggregate collects on the surface, remove this larger aggregate and introduce fresh, appropriately graded mixture to the area and finish so there is no apparent segregation and the mat is one uniform texture.

Do not broadcast mix by shovel across a new mat. If observed, the portion the affected portion of the mat may be rejected.

Insert the following new section:

00744.46 Asphalt Driveway Connections – Pave all driveway connections after the mainline has been paved. Do not stop the paver to wing out and pave driveways.

Insert the following new section:

00744.47 Asphalt Side Street Connections – Where four or more side street connections are required for a single collector or arterial street beyond the mainline paving, utilize a second paving machine to pave side street connections. Do not stop the mainline paver to complete side street connections. Complete side street connections within two hours of the mainline paving to provide a warm joint between the mainline and side street paving.

00744.49 Compaction – Replace this section in its entirety except for the section number and name with the following:

After the ACP has been spread, struck off, and surface irregularities and other defects remedied, roll it uniformly until compacted to a minimum of 92 percent of MAMD. Perform finish rolling and continue until all roller marks are eliminated. Rollers shall not make sharp turns on the course being compacted and they shall not be parked on the hot asphalt mixture.

Complete breakdown and intermediate compaction before the HMAC temperature drops below 180°F, unless otherwise directed or required based on the control strip. When the rolling causes tearing, displacement, cracking or shoving, make necessary changes in compaction temperature, type of compaction equipment, and rolling procedures.

Determine compliance with density specifications by random testing of the compacted surface with calibrated nuclear gauges. Determine the density by averaging QC tests performed by a CDT with the nuclear gauge operated in the backscatter mode according to WAQTC T 8 at one random location for each 100 tons of asphalt concrete placed, but take no less than 10 tests each shift. Do not locate the center of a density test less than 1 foot from the panel edge. Calculate MAMD according to ODOT TM 305. The Agency may elect to complete additional compaction testing at its discretion. The Engineer may waive compaction testing upon written notice. Compaction to a specified density will not be required for the following:

- **Thin Pavements** - Leveling, patches, or where the nominal compacted thickness of a course of ACP will be less than 2 inches.
- **Other Areas** - Temporary surfacing, guardrail flares, mailbox turnouts, road approaches, and areas of restricted width of less than 8 feet wide or limited length, regardless of thickness.

Compact thin pavements and other areas according to 00749.45.

Any displacement of any course, regardless of thickness, occurring as a result of the reversing of the direction of a roller, or from other caused, shall be corrected at once by the use of rakes and addition of fresh mixture when required.

The Contractor shall notify the Engineer/Inspector immediately when the average density does not meet 92% or exceeds 95%. An investigation will be initiated to determine if the results indicate that a problem with the mix is developing before laying any more material. Take all actions necessary to resolve compaction problems. Do not resume paving until allowed by the Engineer. Take immediate corrective measures when the specified compaction density is not being achieved. At the Engineer's discretion, corrective measures may include removing and replace areas that fail to comply with compaction requirements.

Insert the following new section:

00744.50 Joints - Sand seal all joints following the final lift. Width of joint seal coat shall be no less than four inches and no more than six inches.

Insert the following new section:

00744.51 Prepaving Conference – Have a prepaving conference with all Contractor supervisory personnel, all subcontractors who are to be involved in the paving work, and the Engineer. Meet

at a mutually agreed time and discuss all methods of accomplishing all phase of the paving work. The Prepaving Conference agenda will be prepared by the Agency, and distributed to the Contractor prior to the conference. Contractor shall submit a draft Quality Control Plan per Section 00744.03 and a draft Traffic Control Plan per Section 00225 for discussion purposes at the Prepaving Conference. Contractor shall revise the Quality Control Plan and Traffic Control Plan based on approvals obtained at the Prepaving Conference. The conference shall address topics such as:

- Contractor Key Paving Personnel
- Quality Control Plan
- Traffic Control Plan
- Erosion Control Plan
- Review of JMF (mix type(s), asphalt grade, mixing and placement temperatures, etc.)
- Haul Vehicles (type and quantity, truck routes, haul distance, clean out areas, release agents etc.)
- Check weights and scales
- Manhole and box adjustments
- Tack spread rates and certifications
- Laboratory and equipment certifications
- Review type of paver, grade control and panel widths, lift sizes and staging
- Roller pattern for compaction
- Smoothness testing by Contractor
- ACP plant testing and compaction testing
- Temporary striping

Insert the following new section:

00744.52 Preparation of Underlying Surfaces - All water valves, manholes and catch basins shall be adjusted to finish grade in advance of or during the paving operation. No adjustments shall be made after the paving is completed unless approved by the Engineer prior to paving. Minimum paving ring for manholes size shall be two inches. Adjustments made for manhole slopes and/or less than two inches of grade increase shall require a frame adjustment.

Any tree branches or foliage which will hinder the proper placement of the surfacing shall be removed by the Contractor by pruning and sealing the cut ends, or tying back in a manner approved by the Engineer. The Contractor shall be responsible for trees damaged that are not properly pruned or tied back.

All surfaces to be paved shall be swept clean by the Contractor no more than 24 hours in advance of paving. The Contractor shall remove vegetation prior to washing or sweeping. The Contractor shall use vacuum street sweepers that are self-propelled equipment with rotating brooms and brushes that are capable of loosening dirt and debris from the road surface. In those areas where dirt and debris cannot be removed with sweeping alone, washing of the surface will be required.

Coordinate construction of driveway transitions with property owners to minimize disruption of access.

00744.60 Correction of Defects – Replace the first paragraph in its entirety except for the section number and name with the following:

Correct all defects in materials and work, as directed, at no additional cost to the Agency. Corrective measures required by the Engineer may include removal and replacement of the surface course within the defective area. Complete all corrective work within 14 calendar days following notification from the Engineer. After completion of the defective work, if the Engineer finds the work unsatisfactory, perform additional corrective work on the areas still not meeting the requirements. Correct defects according to the following:

Insert the following new section:

00744.60 Warranty – Provide a one-year warranty for all work completed on the project in conformance with the City’s General Conditions.

00744.70 Pavement Smoothness – At the end of the first paragraph, insert the following sentence:

These tolerances shall apply when water valve boxes and other utility appurtenances can be adjusted during the paving operations.

Insert the following new section:

00744.76 Cleanup - Clean and remove all excess asphalt, debris and tack from all facilities including but not limited to manhole covers, valve boxes, catch basins, gutter and curb faces.

Keep a sweeper on site at all times to sweep areas as needed and as directed.

00744.90 Payment – In the first group of bulleted items, replace the third bullet with the following:

- The words "in Leveling", "in Temporary", "in Leveling and Temporary", or “with Fibers” will be inserted in the third blank when applicable.

In the second group of bulleted items, insert the following bulleted item:

- asphalt tack coat

At the end of this section, insert the following:

When delays in asphalt mix delivery to the paver exceed 30 minutes and the delays are within the control of the Contractor, in the Engineer’s opinion, the following payment provisions shall apply:

- Greater than 30 minutes – 5% bid item payment deduction of quantity in previous load
- Greater than 45 minutes – 10% bid item payment deduction of quantity in previous load
- Greater than 60 minutes – Rejection of previous load, suspension of operations and asphalt subject to corrective action

00744.90 Payment – In the first group of bulleted items, replace the third bullet with the following:

- The words "in Leveling", "in Temporary", "in Leveling and Temporary", or "with Fibers" will be inserted in the third blank when applicable.

SECTION 00749 - MISCELLANEOUS ASPHALT CONCRETE STRUCTURES

Comply with Section 00749 of the Standard Specifications.

SECTION 00759 - MISCELLANEOUS PORTLAND CEMENT CONCRETE STRUCTURES

Comply with Section 00759 of the Standard Specifications modified as follows:

00759.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Work consists of furnishing, placing and finishing Commercial Grade Concrete curbs, concrete curb ramps with curbs, islands, traffic separators, driveways, sidewalks, monolithic curb and sidewalks, miscellaneous surfaces, and stairs and furnishing and installing metal handrail in close conformity to the lines, grades and dimensions shown or established.

This Work consists of furnishing, placing and finishing concrete bus pads according to Section 00756.

The Commercial Grade Concrete items in this Section will be collectively referred to as "Structures".

Add the following subsection:

00759.01 Terminology - According to 00110.05(a), for the purposes of this Contract, the terms "sidewalk ramp" and "sidewalk ramps" shall respectively refer to and shall be read to mean "curb ramp" and "curb ramps".

00759.02 Required Submittals – Replace this subsection with the following subsection:

00759.02 Definitions:

Pedestrian Access Routes - An area for the use of pedestrians to navigate along sidewalks, driveways, curb ramps, crossings, and pedestrian facilities.

00759.03 Placement Conference - Replace this subsection with the following subsection:

00759.03 Required Submittals - Do not begin any curb ramp Work before the plan for completing the Work has been approved. Material ordered or Work done before the Engineer reviews and returns the documents will be at the Contractor's risk. Before the preplacement conference, submit the following:

(a) Working Drawings - At least 10 Calendar Days before the preplacement conference, submit six copies of unstamped Working Drawings according to 00150.35 for all curb ramp Work. Include field verification of each ramp location, and all dimensions and grades necessary to demonstrate compliance with the Standard Drawings and Plans. Notify the Engineer of any deficiencies or noncompliance with the Standard Drawings or Plans. The Engineer will provide additional or modified Plans as needed.

(b) Curb Ramp Plan - At least 21 Calendar Days before the curb ramp Work is scheduled to begin, submit a plan for accomplishing all phases of the curb ramp Work, including but not limited to the following:

- Surface preparation
- Compliance with Working Drawings and details submitted under 00759.02
- Compliance with current Standard Drawings and Plans
- Waste handling and disposal

(c) ADA Certification for Contractors - For all supervisory personnel who directly supervise the curb ramp Work, submit the names, telephone numbers, and copies of the ODOT ADA Certification for Contractors at least 10 Calendar Days before the preconstruction conference.

Add the following subsection:

00759.04 Preplacement Conference - Before beginning any curb ramp Work, meet with the Contractor's supervisory personnel and quality control manager, any curb ramp Subcontractors' supervisory personnel, and the Engineer at a mutually agreed upon time.

If the Contractor's personnel change, or if the Contractor proposes a significant revision to the plan for accomplishing the curb ramp Work, the Engineer may require additional preplacement conferences.

All supervisory personnel who have an active ODOT ADA Certification for Contractors and directly supervise the curb ramp Work are required to attend the preplacement conference.

00759.12 Sidewalk Ramp Treatment – Replace the title of this subsection with “**Curb Ramp Treatment**”

Replace the paragraph that begins “Furnish truncated dome detectable warning...” with the following paragraph:

Furnish precast cementitious concrete or cast iron truncated dome detectable warning surfaces for sidewalk ramps and accessible route islands. Furnish City-approved concrete or cast iron

panels in non-fading black or charcoal color. Plastic panels, fiberglass panels, and surface applied systems will not be accepted.

The following products are City-approved:

ADA Solutions – Cast Iron Tactile System or City-approved equal
<http://adatile.com/cast-iron-tactile-systems/>

Transpo Industries, Inc. Step-Safe® Polymer Concrete Detectable Warning Tile
<https://www.transpo.com/roads-highways/precast-products/ada-detectable-warning-tiles-and-mats/step-safe-cast-in-place-ada-tile>

Add the following subsection:

00759.22 Smart Level - Use ODOT approved smart level devices to measure cross slopes and curb ramp slopes. Calibrate smart levels at the time of inspection. Use percentage mode to record all slope measurements to the nearest 10th of a percent relative to a true horizontal plane (zero).

(a) Qualified Smart Levels - Slopes will be measured with the use of a 24 inch SmartTool level model 92379 or model 92500, and a 6 inch SmartTool level model 92346.

Add the following subsection:

00759.31 Qualifications - Use supervisory personnel who have an active ODOT ADA Certification for Contractors to directly supervise the curb ramp Work.

00759.41 Earthwork - Add the following paragraph to the end of this subsection:

Remove and dispose of existing concrete sidewalks, curbs, and curb ramps that are scheduled for removal according to Section 00310.

00759.48(b) Driveways, Walks, Monolithic Curbs and Sidewalks, and Surfacing - Replace this subsection, except for the subsection number and title, with the following:

Do not provide expansion joints within the curb ramp, and between separate concrete pours on the same project.

Provide expansion joints:

- Between driveways and concrete Pavement.
- Transversely in walks opposite expansion joints in adjoining curbs and elsewhere so the distance between joints does not exceed 45 feet.
- Transversely in walks at a distance of 16 feet to 8 feet from ends of walks which abut curbs.
- Around poles, posts, boxes, and other fixtures which protrude through or against the Structures.

00759.50(c) Driveways, Walks, and Surfacing – Add the following to the end of this subsection:

The 24-inch smart level will be used to measure driveway and sidewalk cross slopes on the pedestrian access route.

Add the following subsection:

00759.50(d) Curb Ramps - The 6 inch smart level will be used to measure curb running slope. The 6 inch smart level will be used to measure slopes on portions of the curb ramp, gutter pan, or adjacent surfaces that cannot accommodate a 24 inch smart level. All other curb ramp locations will use a 24 inch smart level to measure slopes.

00759.80 Measurement - Replace this subsection, except for the subsection number and title, with the following:

The quantities of Structures constructed under this Section will be measured according to the following:

- **Volume Basis** - Measurement will be limited to the Neat Lines of the finished Structure as shown or directed.
- **Area Basis** - Measurement will be the finished surface, limited to the Neat Lines shown or directed.

Measurement of concrete walks will include the total area of concrete walk, including the area of concrete curb ramps within the footprint of the concrete walk.

When monolithic curb and sidewalks are measured on the area basis, measurement will include the total area of monolithic curb and sidewalk, including the area of concrete curb ramps within the footprint of the monolithic curb and sidewalk.

Measurement of concrete islands will include the total area of concrete islands, including the area of concrete curb ramps within the footprint of the concrete islands.

When concrete curb ramp construction is not adjacent to concrete walk, monolithic curb and sidewalk, or concrete island Work, the area of the concrete curb ramp Work will be included in the measurement of concrete walks.

- **Length Basis** - Measurement of concrete items will be along the face of the Structure, from end to end including curb tapers or depressed lengths at driveways and ramps. Measurement of metal handrail will be along the top rail member, from center of end post to center of end post.
- **Each Basis** - Measurement will be by actual count. Extra for Curb Ramps will be counted for each instance of where a curb ramp crosses a curb at the transition between a pedestrian facility and a roadway.

00759.90 Payment -

Replace pay items (m) and (n) with the following pay item:

(n) Extra for Curb Ramps.....Each

Replace pay item (o) with the following pay item:

(o) Truncated Domes on New SurfacesSquare Foot

Add the following after the sentence that begins “In item (a)”;

Item (a) includes the curb runs constructed adjacent to the curb ramps.

Delete the paragraph that begins "Item (m) includes...".

Replace the paragraph that begins "Item (n) includes the..." with the following paragraph:

Item (n) includes the additional Work required to construct a curb ramp or replace an existing curb ramp. When replacing an existing curb ramp or retrofitting a curb ramp into an existing concrete pedestrian facility, Item (n) also includes saw cutting and removal. Payment for the area of the curb ramp will be made under the concrete walks Pay item.

Add the following to the end of this subsection:

No separate or additional payment will be made for providing supervisory personnel who have an active ODOT ADA Certification for Contractors to directly supervise the curb ramp Work.

SECTION 00850 - COMMON PROVISIONS FOR PAVEMENT MARKINGS

Comply with Section 00850 of the Standard Specifications modified as follows:

00850.30 Manufacturer’s Representative - Replace this subsection, except for the subsection number and title, with the following:

For Sections referencing 00850.30, the services of a manufacturer’s representative are not required. Place pavement markings only when the pavement is ready for the pavement marking material according to the manufacturer’s installation instructions.

00850.40 Plans - Replace the paragraph that begins “For Projects with partial striping...” with the following paragraph:

For Projects with partial striping Plans or Projects without striping Plans, document all existing striping that is not shown in the Supplemental Drawings. Submit documentation to the Engineer at least 7 Calendar Days before the loss of existing pavement markings.

00850.42 Pre-Striping Conference - Replace the paragraph that begins “Meet with the Engineer and striping...” with the following paragraph:

Meet with the Engineer and striping Subcontractor, if striping is done by a Subcontractor, at least 2 weeks prior to beginning striping Work to discuss methods and practices of accomplishing all required striping Work. Submit the following in writing at least 5 Calendar Days before the pre-striping conference for approval:

00850.45 Installation - Add the following bullet before the bullet that begins “Place material according to...”:

- Place material between May 1 and October 15.

Replace the bullet that begins “Place material according to...” with the following bullet:

- Place material according to the manufacturer’s installation instructions.

SECTION 00860 - LONGITUDINAL PAVEMENT MARKINGS - PAINT

Comply with Section 00860 of the Standard Specifications.

SECTION 00867 - TRANSVERSE PAVEMENT MARKINGS - LEGENDS AND BARS

Comply with Section 00867 of the Standard Specifications modified as follows:

00867.90 Payment – Add the following to the end of this subsection:

No separate or additional payment will be made for removal of existing pavement legends and bars.

SECTION 00902 - CROSSWALK CLOSURE SUPPORTS

Section 00902, which is not a Standard Specification, is included in this Project by Special Provision.

Description

00902.00 Scope - This work consists of constructing crosswalk closure supports as shown.

Materials

00902.10 Materials - Furnish materials meeting the following requirements:

Commercial Grade Concrete..... 00440

Steel..... 01070.10 and 01070.12
 Signs..... 00940

Construction

00902.40 General - Construct crosswalk closure supports as shown or directed.

Measurement

00902.80 Measurement - The quantities of crosswalk closure supports will be measured on the unit basis.

Payment

00902.90 Payment - The accepted quantities of work done under this Section will be paid for at the Contract unit price, per each, for the item "Crosswalk Closure Supports".

Payment will be payment in full for furnishing and placing all Materials, and for furnishing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS

Comply with Section 00960 of the Standard Specifications modified as follows:

00960.01 Regulations, Standards, and Codes - Replace the paragraph that begins "Wherever reference is made..." with the following paragraph:

Use the code, order, or standard in effect on the date the Project is advertised unless otherwise shown.

Replace the paragraph that begins "Do not begin installations..." with the following paragraph:

Safe wiring labels normally required by the Department of Consumer and Business Services, Building Codes Division will not be required for traffic management systems listed on the Red Sheets (see 00160.00) as allowed by ORS 479.540 and OAR 918-261-0037. The Red Sheets may be viewed on ODOT's web site.

00960.02 Equipment List and Drawings - Replace this subsection with the following subsection:

00960.02 Equipment List and Drawing Submittals - Within 30 Calendar Days after execution of the Contract, submit the Blue Sheets (see 00160.00 and 00160.07) and two copies of the Green Sheets (see 00160.00 and 00160.07) according to 00150.37 for all materials the Contractor proposes to install. Blue Sheets and Green Sheets contain submittal instructions and will be made available to the Contractor by the Engineer.

Within 14 Calendar Days after receipt of submittals, the Engineer will review the submittals and designate them in writing as "approved", "approved as noted", or "returned for correction". Do not proceed with the Work before receiving written approval of the submittals from the Engineer.

Add the following subsection:

00960.03 Permits – Provide the Engineer with copies of all required electrical permits prior to performing any work.

00960.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish Materials meeting the following requirements:

Commercial Grade Concrete.....	00440
Controlled Low Strength Materials	00442
Delineators	00840.10 and 00840.11
Metal Illumination and Traffic Signal Supports	00962
Selected General Backfill	00330.13
Selected Granular Backfill.....	00330.14
Reinforcement.....	02510

Furnish electrical Materials that have been approved through the Blue Sheet and Green Sheet submittal process in 00960.02.

Anchor rods shall conform to 02560.30 and to the types and sizes shown.

Use commercially available 30 pound nonperforated asphalt-saturated felt where shown.

Use commercially available No. 10 - 0 sand when sand blanket is required.

Use commercially available UL listed insulating vinyl plastic tape where shown.

Use commercially available UL listed silicon bronze (or copper alloy) split bolt where shown.

Use commercially available galvanized steel weatherproof compression fittings where shown.

00960.41 (d) Conduit under Roadway and Shoulders – Replace the paragraph that begins “Install conduit under all Roadway...” with the following paragraph:

Install conduit under all Roadway and Shoulders by horizontal directional drilling. Use open trench method where conduit to be installed crosses water mains.

00960.42 Conduit - Replace this subsection, except for the subsection number and title, with the following:

(a) Cleaning New Conduit – Before cable and wire installation, clean all new conduit with cylindrical mandrel of the proper size for that conduit and blow out with compressed air. Mechanical pulling methods may be used for conduit cleaning.

(b) Cleaning Existing Conduit - Before installation of new cable(s) or wire(s) in an existing conduit, temporarily remove all existing cable(s) and wire(s). Clean existing conduit with cylindrical mandrel of the proper size for that conduit and blow out with compressed air. Mechanical pulling methods may be used for conduit cleaning. Stop work and notify the Engineer immediately if there are any difficulties cleaning the existing conduit. Reinstall existing cable(s) and wire(s) in existing conduit unless otherwise shown.

(d) Connecting Non-Metallic Conduit to Metallic Conduit - Use a nonmetallic female threaded connector to connect nonmetallic conduit to metallic conduit.

00960.43 Foundations – Replace this subsection, except for the subsection number and title, with the following:

Construct foundations for pedestals, posts, and cabinets according to Section 00440 and the applicable portions of 00540.48(a). Place concrete:

- Directly against the sides of the excavation in undisturbed or well-compacted material or place in forms.
- With a continuous pour.
- To the elevation shown or directed.
- With conduit ends and anchor rods held securely in proper vertical position, to proper height, using a manufacturer's recommended template until the concrete sets.

Maintain rebar clearances during concrete pour.

Make no adjustments of anchor rods after concrete has set.

Set forms square and true to line and grade. Construct forms of rigid materials that remain in position until removed.

Remove forms and place subsequent loading according to Table 00540-1.

Finish tops of foundations to Roadway, sidewalk or curb grade, or as directed.

Finish exposed concrete foundations to present a smooth, neat appearance. Fill all holes.

00960.44 Junction Boxes - Delete this subsection.

00960.45 Cable and Wire - Delete this subsection.

00960.46 Wiring Practices - Replace this subsection with the following subsection:

00960.46 Service Cabinet and Electrical Energy - Install service cabinet and associated equipment early on to allow the Utility to schedule its Work before project completion. Have the service cabinet inspected by the Utility providing power. Arrange for the Utility to make the electrical hookup.

The following table contains Utility contact information to arrange for the Utility to make electrical hookups:

Location	Utility	Utility Contact Person's Name, Email and Phone Number	Utility Job Number
Holcomb Blvd @ Front Ave	PGE – RRFB Installation	Tim Anderson Timothy.Anderson2@pgn.com 503-736-5504	#M2989448
	PGE- Lighting	Lisa Guarnero Lisa.Guarnero@pgn.com 503-742-8299	#M2989789
Holcomb Blvd @ Swan Ave	PGE – RRFB Installation	Tim Anderson Timothy.Anderson2@pgn.com 503-736-5504	#M2989786
	PGE- Lighting	Lisa Guarnero Lisa.Guarnero@pgn.com 503-742-8299	#M2989788
Linn Ave @ Williams St	Portland General Electric	Ross Cichosz Ross.Cichosz@pgn.com (503-669-3331	M2983464

Furnish and install a meter base approved by the serving Utility (with cover by the Utility), where shown.

00960.47 Wood Poles - Delete this subsection.

00960.48 Coating - Delete this subsection.

00960.49 Electrical Service - Delete this subsection.

00960.50 Grounding and Bonding - Replace this subsection, except for the subsection number and title, with the following:

(a) General - Make all ground rods, metal conduit, metal poles, grounding wire, metallic junction boxes, metallic junction box covers, and cabinets mechanically and electrically secure to form a continuous, effectively grounded and bonded system.

(b) Grounding/Bonding Wire - Use a THWN No. 6 AWG stranded copper grounding/bonding wire in conduit or as shown. Use an un-insulated No. 4 AWG stranded copper grounding/bonding wire outside of conduit or as shown.

(c) Ground Rods - Ground each above ground metallic Structure with a separate ground rod.

(1) Located in Junction Box - Install ground rod in a junction box if shown. Drive ground rods into the ground with the top of the ground rod 2 inches to 3 inches above the bottom of the junction box to allow for an accessible clamp.

(2) Located in Foundation - Install ground rod in a foundation if shown, with the ground rod 2 inches to 3 inches above the top of the foundation to allow for an accessible clamp.

(d) Services and Cabinets - Bond the neutral conductor, the control cabinets, and the metal base to the grounding electrode system.

(g) Nonmetallic Conduit - In all nonmetallic conduit, run a ground/bond wire continuously between all poles, pedestals, posts, and cabinets. Bond wires are not required in conduit that only contains circuits that operate at less than 25 volts.

Add the following subsection:

00960.60 Maintenance, Operation and Power Costs - The Agency will continue normal maintenance and operations of the existing systems including the furnishing of electrical energy. Do not use for construction purposes electrical energy billed to the Agency or other agencies.

00960.70 Electrical Energy - Delete this subsection

Add the following subsection:

00960.71 As-Built Plans - Upon completion of the installation, submit a red-lined copy of the original Plans noting all changes made. The information furnished shall include all modifications made and shall represent the material installed and in operation. It shall be sufficiently detailed to enable maintenance forces to replace or repair any part of the Project under routine or emergency maintenance by direct reference.

SECTION 00962 - METAL ILLUMINATION AND TRAFFIC SIGNAL SUPPORTS

Comply with Section 00962 of the Standard Specifications modified as follows:

Add the following subsection:

00962.11 PGE Light Pole Foundations - Furnish the following PGE pre-approved light pole foundation:

- Utility Vault #20R-LB-4-PGE

00962.41 Excavation - Replace this subsection, except for the subsection number and title, with the following:

(a) Excavation of PGE pole foundations – Excavation of PGE pole foundations shall be consistent with PGE and manufacturer's requirements and installation standards. See PGE Statement of Streetlight Responsibilities.

00962.48 Coating - Replace this subsection, except for the subsection number and title, with the following:

Prepare and powder coat supports according to the applicable portions of Section 00593 or prepare and coat supports according to the applicable portions of Section 00594. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation, according to Section 00593 or 00594. Do not coat:

- Slip plate or arm connection surfaces.
- Slip base bolting hardware.
- Anchor rods, anchor rod washers, and anchor rod nuts.

Provide the following colors:

Item	SAE AMS-STD-595 Color Number
Rectangular Rapid Flashing Beacon Poles & push button Poles	27038 (BLACK)

SECTION 00970 - HIGHWAY ILLUMINATION

Comply with Section 00970 of the Standard Specifications modified as follows:

00970.02 Equipment List and Drawings - Replace this subsection, except for the subsection number and title, with the following:

All illumination materials shall be approved by PGE and listed on the most recent PGE Approved Street Lighting Equipment list. PGE updates this list two to three times per year. The most current update may be found at the following website:

https://assets.ctfassets.net/416ywc1laqmd/1SII104royWwABo5gLkhmJ/aac5f473f480b4212bc9e21647276152/Approved_Materials_List.pdf

The contractor is responsible for ensuring that hardware supplied as part of this project is listed on the current PGE Approved Street Lighting Equipment list.

00970.50 Grounding and Bonding - Replace the paragraph that begins "Install 1 inch nonmetallic conduit..." with the following paragraph:

Install 1 inch nonmetallic conduit from the pole base to the concrete and polymer concrete junction box at each pole. Install a ground rod in each junction box and install No. 6 AWG copper ground wire from the ground stud in the pole base to the ground rod in the junction box.

The ground rod may be installed in the same junction box that provides illumination circuitry to the pole, if a separate and independent conduit is installed for the ground wire. Bond all metal conduit and metal junction box covers, if used, together to the ground rod.

SECTION 00990 - TRAFFIC SIGNALS

Comply with Section 00990 of the Standard Specifications modified as follows:

00990.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

In addition to the requirements of Section 00960 and Section 00962, install traffic signals according to the following Specifications.

Add the following subsection:

00990.02 Electrical Materials - Submit all electrical materials the Contractor proposes to install according to 00960.02.

Add the following subsection:

00990.40 Cable and Wire : Delete this subsection.

Add the following subsection:

00990.41(b)(1) Coating - Prepare and powder coat cabinets according to the applicable portions of Section 00593 or prepare and coat supports according to the applicable portions of Section 00594. Provide coating materials for field application, repairing damaged coatings, and coating hardware after installation, according to Section 00593 or 00594. Do not coat:

- Anchor rods, anchor rod washers, and anchor rod nuts.

Provide the following colors:

Item	SAE AMS-STD-595 Color Number
Rectangular Rapid Flashing Beacon Cabinets	27038

Add the following subsection:

00990.45 Signal Covers - Cover mounted vehicle signals and pedestrian signals at all times until the signal installation is ready for continuous operation.

00990.46 Fire Preemption – Replace this subsection with the following subsection:

00990.46 Pushbutton Covers - Cover mounted pushbuttons at all times until the pushbuttons are operational.

00990.70(f) Control Equipment Installation - Add the following paragraph to the end of this subsection:

The Agency will be responsible for providing signal timing software and timing parameters.

00990.90 Payment - Add the following paragraph(s) to the end of this subsection:

Replace the sentence beginning with “No separate or additional payment will...” with the following paragraph:

No separate or additional payment will be made for:

- Replacement of disturbed earthwork, Base and Surfacing
- Illumination and associated appurtenances shown on traffic signal poles.
- Steel Reinforcement

SECTION 01030 – SEEDING

Comply with Section 01030 of the Standard Specifications modified as follows:

01030.13(f) Types of Seed Mixes - Add the following to the end of this subsection:

Provide the following seed mix formulas:

- **Permanent Seeding:**

Botanical Name (Common Name)	PLS (lb/acre)	÷ (% Purity (minimum)	x % Germination) (minimum)	= Amount (lb/acre)
Hordeum vulgare var Poco (Poco Barley)	52.24	_____	_____	_____
Hordeum brachyantherum (Meadow Barley)	36.57	_____	_____	_____
Bromus carinatus (California Brome)	23.51	_____	_____	_____
Festuca idahoensis romerii (Roemer’s Fescue)	7.18	_____	_____	_____
Trifolium fragiferum (Strawberry Clover)	5.22	_____	_____	_____
Clarkia amonea (Farewell to Spring)	1.96	_____	_____	_____
Oenothera elata hookeri (Hooker’s Evening Primrose)	1.96	_____	_____	_____
Deschampsia caespitosa				

(Tufted Hairgrass)	1.31	_____	_____	_____
Agrostis exerata				
(Spike Bentgrass)	0.65	_____	_____	_____

01030.80 Measurement - Add the following bullet to the end of this subsection:

- **Lump Sum Basis** - No measurement of quantities will be made for lump sum items.

01030.90 Payment - Delete the Pay Item beginning with “(d) Permanent...” and replace with the following Pay Item:

(d) Permanent Seeding, _____ Acre or Lump Sum

SECTION 01040 - PLANTING

Comply with Section 01040 of the Standard Specifications modified as follows:

01040.80(b) Topsoil and Wetland Topsoil - Replace the paragraph that begins "Topsoil and wetland Topsoil will be measured..." with the following paragraph:

Topsoil and wetland Topsoil will be measured on the volume basis at the time of placement. Trucking invoices may be used to determine volumes if the quantities are verifiable to the satisfaction of the Engineer.

SECTION 01070 - MAILBOX SUPPORTS

Comply with Section 01070 of the Standard Specifications modified as follows:

01070.10 Reinforcement - Replace the sentence that begins “Furnish reinforcement for concrete...” with the following sentence:

Furnish reinforcement for concrete collars meeting the requirements of Section 02510.

SECTION 02001 - CONCRETE

Comply with Section 02001 of the Standard Specifications modified as follows:

02001.00 Scope - Replace this subsection, except for the subsection number and title, with the following:

This Section includes the requirements for the properties, submittals, production, quality control and acceptance of portland cement concrete (concrete) for structural, precast prestressed, and paving applications.

02001.01 General - Delete this subsection.

02001.02 Abbreviations and Definitions - Replace this subsection, except for the subsection number and title, with the following:

- ASTV** - Actual Strength Test Value
- f'_c - Minimum Specified Compressive Strength at 28 days
- f'_{cr} - Required Average Compressive Strength
- GGBFS** - Ground Granulated Blast Furnace Slag
- HPC** - High Performance Concrete
- HRWRA** - High-Range Water-Reducing Admixture (super-plasticizer)
- IC** - Internally Cured
- LWFA** - Lightweight Fine Aggregate
- PPCM** - Precast prestressed concrete member
- SCM** - Supplementary Cementitious Materials
- SSD** - Saturated Surface-Dry
- w/cm Ratio** - Water-Cementitious Material Ratio
- WRA** - Water Reducing Admixture

Actual Strength Test Value - The ASTV at 28 Days is the average compressive strength of the three cylinders tested. Discard all specimens that show definite evidence, other than low strength, of improper sampling, molding, handling, curing, or testing. The average strength of the remaining cylinders shall then be considered the test result.

Cementitious Materials - Portland cement and supplementary cementitious materials.

High Performance Concrete - Concrete designed for enhanced durability and performance characteristics. High performance concrete is identified by the letters "HPC" in front of the concrete class designation (for example, HPC4500 - 1 1/2).

Internally Cured Concrete - Concrete designed to utilize lightweight fine aggregate to mitigate shrinkage.

Moderate Exposure - Elevations below 1,000 feet.

Pozzolans - Fly ash, silica fume, and metakaolin.

Severe Exposure - Elevations 1,000 feet and above.

Supplementary Cementitious Materials - Fly ash, silica fume, metakaolin, and ground granulated blast furnace slag.

02001.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish Materials meeting the requirements of the following:

Aggregates.....	02690
Cement.....	02010
Chemical Admixtures.....	02040
Concrete Modifiers.....	02035
Supplementary Cementitious Materials.....	02030
Synthetic Fiber Reinforcing.....	02045
Water.....	02020

Add the following subsection:

02001.15 Concrete Mix Design - Submit current or new mix designs, prepared by a CCT, with the information listed in 02001.15(c), for each required class of concrete to the Engineer for review. Allow 21 Calendar Days for the review. Design mixes by the volumetric method in ACI 211.1 to achieve the properties of 02001.20 and 02001.30 when tested in accordance with 02001.15(b). Provide a design that will be workable, placeable and finishable given the specific conditions for the Project and Structure. Do not proceed with concrete placement until the Engineer has determined that the mix design complies with the Specifications. Review of concrete mix designs does not relieve the Contractor of the responsibility to provide concrete meeting the Specification and jobsite requirements.

(a) Current Mix Designs - Mix designs that meet the requirements for the specified class of concrete and are currently being used or have been used within the past 12 months on any project, public or private may be submitted for review. Provide individual tests results that comprise the average if more than one data point exists. For paving designs the flexural strength testing must be from within the last two years. For HPC designs the Length Change and Permeability tests must be from within the last two years.

(b) New Mix Designs - Make at least one trial batch for each concrete mix design. Notify the Engineer at least 48 hours before making each trial batch. The Engineer may witness preparation and testing. Prepare and test trial batches using the same materials, at the same proportions, and having the same plastic properties of concrete that will be used in the Project. Simulate haul time, batching sequence and mixing conditions to ensure the trial batch is representative of the mixture that will be delivered to the Project. Furnish all Materials, Equipment, testing and Work required for designing the mixes at no additional cost to the Agency.

(1) Trial Batch Plastic Properties - For each trial batch, test according to the following test methods:

Test	Test Method
Sampling Fresh Concrete	WAQTC TM 2
Concrete Temperature	AASHTO T 309
Slump	AASHTO T 119 ¹
Air Content	AASHTO T 152
Density	AASHTO T 121
Yield	AASHTO T 121
Molding Concrete Specimens	AASHTO T 23 or R 39 ²
Water Cement Ratio	³

¹ For drilled shaft concrete test the slump retention by subsequent tests at half-hour intervals for the duration of the estimated drilled shaft placement, including temporary casing extraction. Report in table or graphical format.

² Cast cylinders in single use plastic molds

³ Use ODOT's Field Operating Procedure for AASHTO T 121 in the MFTP

(2) Trial Batch Hardened Properties - When applicable, test properties according to the following test methods:

Test	Test Method
Compressive Strength	AASHTO T 22
Flexural Strength	AASHTO T 97
Length Change	AASHTO T 160
Permeability	AASHTO T 277

a. Compressive Strength Tests - For each trial batch, cast and cure at least three test cylinders according to AASHTO T 23 or AASHTO R 39, in 6 inch by 12 inch or 4 inch by 8 inch single use plastic molds. The use of unbonded caps according to ASTM C1231 is permitted. Test at 28 days according to AASHTO T 22.

b. Flexural Strength Tests - For each paving concrete trial batch, cast and cure at least three flexural beams according to AASHTO T 23 or AASHTO R 39. Test flexural beams at 28 days according to AASHTO T 97.

c. Length Change Tests - For all HPC mix designs, except for precast bridge rail elements, make at least three specimens from the trial batch for length change testing. Sample prisms shall have a square, 4 inch by 4 inch cross section. Wet cure the samples until they have reached an age of 28 days, including the period in the molds. Following the wet cure, air store and measure samples according to AASHTO T 160, Section 11.1.2 for 28 days. Report length change results at total specimen age of 56 days.

d. Permeability Tests - For alternate HPC mix designs, make at least three specimens from the trial batch for permeability testing. Prepare, cure, dry and test according to AASHTO T 277. Report permeability in coulombs at 90 days.

(c) Required Submittals for Mix Designs - Submit the following information for each concrete mix design:

(1) Supplier's Information - Provide the supplier's unique mix design identification number and batch plant location.

(2) Mix Design Constituent Proportions:

- Weight per cubic yard (pounds per cubic yard) of cement, SCM, fine Aggregates and coarse Aggregates (SSD), mix water, concrete modifiers, and chemical admixtures
- Absolute volumes of cement, SCM(s), fine Aggregates and coarse Aggregates (SSD), mix water, air content, concrete modifiers, and chemical admixtures
- Dosage rates for chemical admixtures (ounces per cubic yard)
- w/cm Ratio including all chemical admixtures

(3) Aggregates - Identify the Aggregate source by the ODOT source number. Report current values of the following:

- Bulk specific gravities (SSD)
- Fine Aggregate absorptions
- Coarse Aggregate absorptions
- Dry-rodded density of coarse Aggregates
- Average stockpile gradations
- Fineness modulus of sand used in the mix design calculations

(4) Cement - For each cement used, provide the following:

- Manufacturer
- Brand name
- Type
- Source or location plant
- QPL product number

(5) SCM - For each SCM used, provide the following:

- Manufacturer
- Brand name
- Source
- Class
- QPL product number

(6) Concrete Modifiers - For each concrete modifier used, provide the following:

- Manufacturer

- Brand name
- QPL product number

(7) Admixtures - For each admixture used, provide the following:

- Manufacturer
- Brand name
- Design dosage rate
- QPL product number

(8) Synthetic Fiber Reinforcing - For each synthetic fiber reinforcing used, provide the following:

- Manufacturer
- Brand name
- Design dosage rate
- QPL product number

(9) Water - Identify the source of water to be used and provide a certificate of compliance certifying that the water meets the requirements of 02020.10.

(10) Plastic Concrete Tests - Report the temperature, slump, density, air content, yield, and w/cm Ratio of the trial batch or the average of these values for the cylinder sets presented for evaluation of a current mix design.

For drilled shaft concrete, report the following additional information:

- The total time estimate from initial batching through drilled shaft placement, including haul time, placing concrete, and temporary casing extraction.
- Initial slump test results and subsequent results at 30-minute intervals, verifying a minimum slump of 4 inches is maintained for the total time estimated for drilled shaft placement, including temporary casing extraction. Report data in a table or graph format.

(11) Compressive Strength Test Results - Report the individual test results and the ASTV of cylinders from the trial batch for new mix designs. For current designs, provide the individual tests and the average of the cylinder sets presented for evaluation.

(12) Strength Analysis - Provide an analysis, showing all calculations, demonstrating that the mix design meets the requirements of 02001.20(a)(1).

(13) HPC Test Results - For all HPC except precast bridge rail elements, report the length change according to 02001.15(b)(2)(c).

For alternate HPC designs only, report the permeability according to 02001.15(b)(2)(d).

(14) Quality Control Personnel - Provide the name and certification number of the CCT who prepared the mix design, the QCT who performed the plastic concrete tests and cast the test cylinders, the CSTT who tested the cylinders, and the ODOT certification number of the laboratory where the cylinders were tested.

02001.20 Concrete Properties, Tolerances, and Limits - Replace the paragraph that begins “Provide concrete that is a workable...” with the following paragraph:

Provide concrete that is workable, placeable, uniform in composition and consistency, and having the following properties:

02001.20(a) Strength - Replace this subsection, except for the subsection number and title, with the following:

Provide concrete meeting the required Classes shown in the Contract Documents. The class of concrete designates the minimum required compressive strength, f'_c at 28 days.

Table 02001-1

Concrete Strength and Water/Cementitious Material (w/cm) Ratio		
Type of Concrete	Strength f'_c (psi)	Maximum w/cm Ratio
Structural	3300	0.50
	3300 (Seal)	0.45
	4000	0.48
	4000 (Drilled Shaft)	
	HPC4500	0.40
	HPC(IC)4500	
	5000 +	
Paving	4000	0.44
PPCM's (with cast-in-place decks and no entrained air)	5000	0.48
	5500	0.44
	6000 +	0.42

(1) Required Average Compressive Strength (f'_{cr}) - Except for PPCM designs, provide calculations demonstrating compliance with ACI 301 section 4.2.3.3 using the ASTV from either field results or trial batch cylinders,

(2) Flexural Strength - Provide paving concrete mix designs with a minimum of 600 psi at 28 Days.

02001.20(b) Air Entrainment - Replace Table 02001-2 with the following:

Table 02001-2

Air Entrainment		
Nominal Maximum Aggregate Size, inch.	Moderate Exposure (Percent)	Severe Exposure (Percent)
3/8	6.0	7.5
1/2	5.5	7.0
3/4	5.0	6.0
1	4.5	6.0
1 1/2	4.5	5.5

02001.20(c) Slump - Replace this subsection, except for the subsection number and title, with the following:

Provide concrete at the appropriate slump shown in Table 02001-3. Take corrective action to maintain a consistent slump at the point of discharge from the delivery vehicle.

Table 02001-3

Concrete Slump	
Condition	Slump
Concrete without WRA	4" max.
Concrete with WRA	5" max.
Concrete with HRWRA	6" ± 2"
Precast Prestressed Concrete with HRWRA	10" max.
Seal Concrete	8" ± 2"
Drilled Shaft Concrete	8 1/2" ± 1 1/2" ¹
¹ Maintain a minimum slump of 4 inches throughout drilled shaft placement, including temporary casing extraction.	

Add the following subsection:

02001.20(e) Durability - For HPC designs, except designs for precast bridge rail elements, the following additional requirements apply:

Test	Test Method	Acceptance Value
Length Change	AASHTO T 160	-0.045%
Permeability	AASHTO T 277	1,000 Coulombs (max.) at 90 days ¹

¹ Only required for alternate HPC designs. See 02001.30(b)(2).

02001.30 Concrete Mix Design - Replace this subsection with the following subsection:

02001.30 Concrete Constituents:

(a) Portland Cement - Use Type I or II cement for structural or paving concrete. Use Type III cement for precast prestressed concrete.

(b) Supplementary Cementitious Materials - SCM may be used separately or in combinations up to the specified maximum percentage by mass according to the following:

(1) General Limits - SCM may be used separately or in combination as shown:

Separate SCM	Maximum
Fly Ash + Other Pozzolans	30%
GGBFS	50%
Silica Fume	5%
Combined SCM	Maximum
Fly Ash + Other Pozzolans + GGBFS + Silica Fume	50%*
Fly Ash + Other Pozzolans + Silica Fume	30%*

* Fly ash + other pozzolans shall constitute no more than 25% and silica fume shall constitute no more than 5% of the total weight of cementitious materials.

When silica fume is added to truck mixed concrete, mix the batch a minimum of 100 revolutions at the mixing speed specified by the manufacturer before leaving the batch plant.

(2) HPC Cementitious Composition - Provide HPC with one of the following:

- Cementitious material with 66 percent portland cement, 30 percent fly ash or GGBFS, and 4 percent silica fume.
- Cement with SCM proportioned according to 02001.30(b)(1) and with trial batches performed to demonstrate that the proposed alternate mix design provides a maximum of 1,000 coulombs at 90 days when tested according to AASTHO T 277.

(c) Blended Hydraulic Cement - Blended hydraulic cement may be used subject to the limits of 02001.30(b) and 02010.20.

(d) Chemical Admixtures - Use chemical admixtures according to the manufacturer's recommendations. Use WRA in all seal concrete and in Class 5000 concrete or greater. Use HRWRA in all HPC.

Use a hydration stabilizer from the QPL in all concrete for bridge decks. Use an appropriate amount to extend the initial set time of the concrete by 90 minutes.

(e) Aggregate - If the nominal maximum size of the coarse Aggregate is not included as a part of the class of concrete, or shown on the Plans, any size from 1 1/2-inch to 3/8-inch nominal maximum size Aggregate may be used according to ACI guidelines except:

- Use 1 1/2 inch nominal maximum size Aggregates in bridge deck concrete.
- Use 1 1/2 inch nominal maximum size Aggregates in paving concrete unless otherwise indicated.
- Use 3/8 inch nominal maximum size Aggregates in drilled shafts unless otherwise indicated.

(1) HPC Coarse Aggregate Content - Proportion all HPC for a minimum coarse Aggregate absolute solid volume according to Table 02001-4:

Table 02001-4	
Absolute Solid Volume	
Maximum Nominal Aggregate Size	Cu. Yd. (Aggregate) / Cu. Yd. (Concrete)
3/8"	0.36
1/2"	0.38
3/4"	0.40
1"	0.42
1 1/2"	0.44

Two or more Aggregate products or sources meeting Specifications may be blended to improve concrete properties. Blending non-specification Aggregate Materials, except for gradation, with specification Materials is not allowed.

(f) Synthetic Fiber Reinforcing for Concrete - Use synthetic fiber reinforcing from the QPL and according to Section 02045 in all high performance concrete. Use synthetic fiber reinforcing according to the manufacturer's recommendations at the rate designated on the QPL. Fiber packaging is not allowed in the mixed concrete.

02001.31 Concrete Constituents - Delete this subsection.

02001.32 New Mix Designs - Delete this subsection.

02001.33 Required Over Design Strength (f'_{cr}) for New Mix Designs - Delete this subsection.

02001.34 Current Mix Designs - Delete this subsection.

02001.35 Required Submittals for Mix Designs - Delete this subsection.

02001.36 Adjusting Concrete Proportions - Delete this subsection.

02001.37 Trial Batch Costs – Delete this subsection.

02001.40 Concrete Production - Replace this subsection, except for the subsection number and title, with the following:

Produce concrete according to the following sections of ASTM C94, Standard Specification for Ready-Mixed Concrete:

ASTM Section	ASTM Title
9.	Measuring Materials
10.	Batching Plant
11.	Mixers and Agitators
12.	Mixing and Delivery ¹

¹ When haul time or placement conditions warrant exceeding the time of discharge, submit a detailed breakdown of the estimated time needed from batching to discharge of a load along with the measures that will be taken to ensure slump, temperature and uniformity will be maintained. This request must be submitted in advance and may establish a new time limit at the Engineers discretion.

(a) Delivery Tickets - Send a concrete delivery ticket with each load of concrete supplied to the Project. Each delivery ticket shall include the following information:

- Concrete supplier's name, address and telephone number
- Address and telephone number of batch plant if different from above
- Date and time the concrete batch was produced
- ODOT mix design number
- Size of load batched
- Weights or volumes of constituents batched in the load
- Amount of water that can be added at the job site
- Amount of water added at the job site

(b) Adjusting Concrete Proportions - After a mix design has been reviewed and accepted, submit any proposed adjustments to concrete proportions for review. Significant changes to the mix design, as determined by the Engineer, may require verification of performance by trial batch according to 02001.32. Significant changes include, but are not limited to the following:

- Decreases in cementitious material content.
- Changes in cement source.
- Increases in SCM quantity replacing cement.
- Changes in SCM source.
- Substitution of aggregates from a different source.
- Admixture product changes.
- Large admixture dosage changes, excluding seasonal adjustments for air entraining agents and Type A or D water reducers (± 25 oz/cubic yard).

02001.50 Quality Control Personnel - Replace this subsection with the following subsection:

02001.50 Quality Control - Provide quality control according to Section 00165 and the following:

- Sample and test according to the MFTP.
- Provide certified technicians to sample and test the mix for temperature, air content, slump, water-cementitious ratio, density and yield, from the first load of each placement, whenever there is a visible change in the slump of the concrete, and when a set of cylinders is obtained.
- If the results of any test are outside of the specification limits, stop placement of the load. Correct the load or, if the load cannot be corrected, do not incorporate it into the Work. Test subsequent loads before any further concrete placement. Correct subsequent loads if any of the tests are still outside the specification limits. Return to the specified test frequency when the test results from two consecutive loads are shown to meet the specification limits.
- The Contractor shall designate a person responsible for accepting and rejecting concrete onsite.

Certified Technician duties:

(a) Certified Aggregate Technician (CAgT) -

- Sample and test Aggregates.
- Sample and test each stockpiled size according to the test procedures and at the frequencies shown in the Field Tested Materials Acceptance Guide section of the MFTP.
- Record and evaluate test results according to Section 00165.
- Provide Stat-Spec results to the Engineer.
- Notify the CCT whenever a fine aggregate fineness modulus varies by more than ± 0.20 from the mix design it is to be used in.
- Test the fine and coarse aggregates for total moisture content according to AASHTO T 255.

(b) Quality Control Technician (QCT) -

- Attend pre-placement meetings for bridge deck pours and paving.
- Be at the concrete placement site when concrete placement is in progress.
- Have a copy of the mix design on site and available during concrete placement.
- Obtain and check each batch ticket upon arrival of the concrete at the jobsite for the correct mix design.
- Sample the concrete and test for ambient air temperature, plastic concrete temperature, slump, air content, density, w/cm Ratio and yield at the frequencies required by and according to the tests listed in the MFTP, after concrete mixture proportions are adjusted in the field, and at such times as requested by the Engineer.
- Notify the Contractor and the Engineer immediately when the concrete is not in compliance with the Specifications.
- Be in direct contact with the CCT by telephone, radio or other means to convey information.
- Notify the CCT of loads rejected and the reason for rejection.
- Notify the CCT immediately whenever the w/cm Ratio varies from the mix design target by more than ± 0.03 .
- Notify the CCT immediately whenever the air content varies from the mix design target by more than ± 1.5 percent.
- Notify the CCT immediately whenever the slump varies from the allowable limits of Table 02001-3.
- Notify the CCT immediately whenever the density of the plastic concrete varies from the mix design target by more than ± 3.0 pounds per cubic foot.

(c) Concrete Control Technician (CCT) –

- Prepare new concrete mix designs.
- Notify the Engineer 48 hours prior to trial batching.
- Control the quality of concrete during production.
- Submit proposed adjustments of the mix design, in writing, to the Engineer for approval by the middle of the following work shift.
- Ensure approved adjustments are implemented prior to proceeding with production.
- Before batching is started and when there is a significant change in the slump of the concrete ensure moisture contents of the coarse and fine aggregate are verified by the CAgT. Make necessary adjustments to maintain consistent concrete properties. Provide moisture content test results to the Engineer upon request.
- Monitor concrete properties and compressive strength tests throughout the duration of the Project.
- Make adjustments to loads that fail to meet the air content or slump criteria of these Specifications prior to the 90-minute time limit. Adjustments shall comply with the provisions of ASTM C94.
- Make adjustments to maintain a satisfactory over-design f'_{cr} .

- Perform an analysis and verify the accuracy of coarse and fine aggregate moistures whenever the w/cm Ratio varies from the mix design target by more than ± 0.03 .
- Perform an analysis and make necessary adjustments whenever the unit weight of the plastic concrete varies from the mix design by more than ± 3.0 pounds per cubic foot.
- Perform an analysis whenever the fineness modulus of the fine aggregate varies by more than ± 0.20 from the established mix design. If necessary to maintain proper workability, ability to pump or ability to finish, make an adjustment to the coarse/fine aggregate ratio and submit to the Engineer by the middle of the following work shift.

02001.60 Delivery Tickets – Replace this subsection with the following subsection:

02001.60 Acceptance of Concrete - Acceptance of concrete will be according to Section 00165 and the following:

(a) Aggregate - Acceptance of aggregate will be according to 02690.12.

(b) Plastic Concrete - Acceptance of plastic concrete will be based on tests performed by the Contractor's QCT, according to the tolerances and limits of 02001.20, when discharged within the time allotted in 02001.40.

(c) Hardened Concrete - Cast and cure test specimens according to AASHTO T 23 in 6 inch x 12 inch or 4 inch x 8 inch, single-use plastic molds and test at 28 days according to AASHTO T 22.

(1) General - For all classes of concrete, acceptance of hardened concrete will be based on an analysis of compressive strength tests of cylinders cast by the QCT. Test cylinders at an Agency certified laboratory.

(2) Acceptance - Hardened concrete with an ASTV meeting or exceeding the specified design strength, f'_c will be accepted for strength. If the ASTV is less than f'_c but at least 85 percent of f'_c , the Engineer may review the results to determine if the concrete represented by the cylinders is suitable for the intended purpose. Remove concrete that has an ASTV less than 85 percent of f'_c unless otherwise authorized, in writing, by the Engineer. If the concrete is removed, the cost of removal, replacement and all related Work is the Contractor's responsibility. If the Engineer determines that the concrete is suitable for the intended purpose, the concrete may be allowed to remain in place, subject to a price adjustment according to 00150.25. If an ASTV falls below f'_c , the Contractor may submit a written plan outlining a proposed alternate method of evaluating compressive strength. Submit the plan for review by the Engineer within 3 days of the test. Provide evidence that a reasonable f'_{cr} (over-design) was maintained and that there is credible evidence (besides low strength) which warrants consideration of this option. The Engineer may allow an alternate method of acceptance if the compressive strength test results are determined to be suspect from definable external factors.

SECTION 02040 – CHEMICAL ADMIXTURES

Comply with Section 02040 of the Standard Specifications modified as follows:

02040.10 Materials - Replace this subsection, except for the subsection number and title, with the following:

Furnish admixtures from the QPL.

SECTION 02050 - CURING MATERIALS

Comply with Section 02050 of the Standard Specifications modified as follows:

02050.10 Liquid Compounds - Replace the paragraph that begins “Furnish liquid membrane-forming curing...” with the following paragraph:

Furnish liquid membrane-forming curing compounds from the QPL and meeting the requirements of ASTM C309.

Delete the paragraph that begins “Before using liquid compounds, submit...”.

02050.20 Polyethylene Films - Replace the paragraph that begins “Furnish clear or white...” with the following paragraph:

Furnish clear or white polyethylene films for curing concrete meeting the requirements of ASTM C171.

SECTION 02440 - JOINT MATERIALS

Comply with Section 02440 of the Standard Specifications modified as follows:

02440.19 Steel Bridging Plate - Replace this subsection, except for the subsection number and title, with the following:

Furnish ASTM A36 steel bridging plate with a minimum thickness of 1/4 inch and a width of 8 inches, cut in lengths of 4 to 8 feet. Drill spike holes at 12 inch centers along the centerline of the plate.

02440.20 Preformed Joint Seal - Replace this subsection, except for the subsection number, with the following:

02440.20 Strip Seal - Furnish strip seals from the QPL and conforming to ASTM D5973.

Add the following subsection:

02440.22 Preformed Compression Joint Seal - Furnish preformed compression joint seals from the QPL and conforming to the requirements of AASHTO M 297.

Add the following subsection:

02440.23 Precompressed Foam Silicone Joint Seal - Furnish precompressed foam silicone joint seals from the QPL.

02440.30 Hot Poured Joint Filler - Replace this subsection with the following subsection:

02440.30 Hot Applied Joint Sealant - Furnish hot applied joint sealant from the QPL.

02440.40 Gaskets for Concrete Pipe and Precast Manhole Section Joints - Replace this subsection, except for the subsection number and title, with the following:

(a) Preformed Flexible Joint Sealant - Furnish Materials for tongue and groove or key lock manhole joints conforming to the requirements of ASTM C990.

(b) Rubber Gaskets - Furnish Materials for O-ring manhole and concrete pipe joints conforming to ASTM C443.

02440.70(b) Rubber - Replace this subsection, except for the subsection number and title, with the following:

Provide rubber water stops to the dimension shown and conforming to the requirements of ASTM C923, ASTM C1478, or ASTM F2510 as appropriate for the specific structure and pipe types.

SECTION 02450 - MANHOLE AND INLET MATERIALS

Comply with Section 02450 of the Standard Specifications modified as follows:

02450.00 Scope – Replace this subsection, except for the subsection number and title, with the following:

This Section includes the requirements for precast manhole sump sections, metal frames, covers, grates, and manhole steps.

02450.30 Metal Frames, Covers, Grates, and Ladders - Replace this subsection with the following subsection:

02450.30 Metal Frames, Covers, Grates, and Steps – Comply with the following:

Projects on State Highways		
Item	AASHTO (ASTM) Designation	Grade
Manhole frames and covers	M 306	Class 35 B
Inlet frames and grates	M 306	Class 35 B
	M 227 (A663)	65
	M 270 (A709) (A36)	36
	M 103 (A27)	65 - 35
All Other Projects		
Item	AASHTO (ASTM) Designation	Grade
Manhole frames and covers	M 105	Class 30 B
Inlet frames and grates	M 227 (A663)	65
	M 270 (A709) (A36)	36
	M 103 (A27)	65 - 35

Steps for manholes shall be steel-reinforced plastic conforming to AASHTO M 199 (ASTM C478) and AASHTO T 280 (ASTM C497). The steel shall be deformed reinforcing bar conforming to AASHTO M 31 (ASTM A615) Grade 60, No. 4 minimum. The plastic material surrounding the reinforcing steel bar shall be injection molded, with a textured, non-slip surface and a minimum thickness over the steel of 1/16 inch. Voids in the plastic will be cause for rejection of the step.

Welding shall conform to AWS D1.1. Frames, covers and grates for use one with another shall have even and uniform bearings. Miscellaneous metal items and hardware shall conform to the appropriate requirements of Section 00560.

Inlet frames and grates that are fabricated out of steel shall be galvanized according to the appropriate requirements of Section 02530.

SECTION 02510 - REINFORCEMENT

Comply with Section 02510 of the Standard Specifications modified as follows:

02510.10 Deformed Bar Reinforcement - Replace this subsection, except for the subsection number and title, with the following:

Furnish deformed bar reinforcement from the QPL and conforming to the requirements of ASTM A706, AASHTO M31 (ASTM A615), AASHTO M334, or ASTM A1035. Unless otherwise specified or shown, all reinforcing bars shall be Grade 60.

02510.20 Mechanical Splices - Replace this subsection, except for the subsection number and title, with the following:

Furnish mechanical splices from the QPL. Where bars of different sizes or strengths are connected, the governing strength shall be the strength of the smaller or weaker bar.

- Type 1 Mechanical Splices - Furnish Type 1 Mechanical Splices that develop at least 125 percent of the specified minimum yield strength of the reinforcing bars. Type 1 Mechanical Splices are not allowed for column bars.
- Type 2 Mechanical Splices - Furnish Type 2 Mechanical Splices that develop at least 125 percent of the specified minimum yield strength of the reinforcing bars and 100 percent of the specified tensile strength of the reinforcing bars.
- Total slip displacement - Measure displacement after loading in tension to 30.0 ksi and relaxing to 3.0 ksi. The displacement for bars up to No. 14 shall not exceed 0.01 inches. The displacement for No. 18 bar shall not exceed 0.03 inches.

02510.25 Headed Bar Reinforcement - Replace this subsection, except for the subsection number and title, with the following:

Furnish Class HA headed steel bar from the QPL for concrete reinforcement. The headed steel bar shall develop the specified minimum tensile strength of the reinforcing bars, according to ASTM A970. Ferrous-filler coupling sleeves and welded headed steel bars are not allowed for concrete reinforcement.

SECTION 02530 - STRUCTURAL STEEL

Comply with Section 02530 of the Standard Specifications modified as follows:

02530.70 Galvanizing - Replace the paragraph that begins "Steel that will be finished by hot-dip galvanizing..." with the following paragraph:

Steel that will be finished by hot-dip galvanizing for use as sign bridges, illumination poles, traffic signal poles, sign supports, bridge rail and items designated on the Plans as "Galvanize - Control Silicon" shall have controlled silicon content. The silicon content shall be in either of the ranges 0 - 0.06 percent or 0.13 - 0.25 percent. Before galvanizing, submit mill test certificates verifying silicon content to the Engineer and the galvanizer.

SECTION 02560 - FASTENERS

Comply with Section 02560 of the Standard Specifications modified as follows:

Add the following subsection:

02560.05 Geometry - Bolt or rod length used shall be such that the end of the bolt or rod extends beyond or is at least flush with the outer face of the nut when properly installed.

02560.10(b) Nuts– Replace this subsection, except for the subsection number and title, with following:

Nuts for carbon steel bolts shall conform to the requirements of the following, or equivalent:

Plain (Noncoated) Bolts:

- 1/4" - 1 1/2" - ASTM A563, Grade A, hex
- Over 1 1/2" - 4" - ASTM A563, Grade A, heavy hex

Galvanized Bolts:

- All - ASTM A563, Grade A, C, D, or DH, heavy hex

02560.20(a) Bolts – Replace this subsection, except for the subsection number and title, with following:

High-strength bolts used in noncoated weathering steel connections shall be Type 3. High-strength bolts shall conform to the requirements of the following:

Heavy Hex Head:

- ASTM F3125, Grade A325

Twist-Off:

- ASTM F3125, Grade F1852

02560.20(b) Nuts – Replace this subsection, except for the subsection number and title, with following:

Nuts for high-strength bolts shall conform to the requirements of the following, or equivalent:

Type 1 Plain (Noncoated) Bolts:

- All - Heavy hex ASTM A563, Grade C, D, or DH

Type 1 Galvanized Bolts:

- All - Heavy hex ASTM A563, Grade DH

Type 3 Bolts:

- All - Heavy hex ASTM A563, Grade C3 or DH3

02560.20(f) Lock-Pin and Collar Fasteners - Delete this subsection.

02560.30(c) Nuts – Replace this subsection, except for the subsection number and title, with following:

Nuts for tie rods, anchor bolts, and anchor rods shall conform to the requirements of the following, or equivalent:

Plain Steel Tie Rods, Anchor Bolts, and Anchor Rods:

- All - Heavy hex ASTM A563, Grade A

Galvanized Steel Tie Rods, Anchor Bolts, and Anchor Rods:

- All - Heavy hex ASTM A563, Grade A, C, D, or DH

Plain Or Galvanized High-Strength Tie Rods, Anchor Bolts, or Anchor Rods:

- All - Heavy hex ASTM A563, Grade DH

02560.40 Galvanizing and Coating - Replace this subsection with the following subsection:

02560.40 Galvanizing and Coating:

(a) High Strength Fasteners - When specified, hot-dip galvanize Grade A325 fasteners or mechanically deposit zinc to Grade F1852 fasteners according to ASTM F3125.

(b) Tie Rods, Anchor Bolts, Anchor Rods and Carbon Fasteners - Hot-dip galvanize, tie rods, anchor bolts, anchor rods, nuts, washers and carbon fasteners according to ASTM F2329 as appropriate to the product.

Overtap nuts for galvanized fasteners, galvanized tie rods, galvanized anchor bolts, and galvanized anchor rods according to ASTM A563.

Measure the zinc thickness on the wrench flats or top of bolt head of galvanized bolts and on the wrench flats of galvanized nuts.

(c) Direct Tension Indicators – When specified, apply mechanically deposited zinc according to ASTM F959.

(d) Repair of Hot-Dip Galvanizing - Repair damaged hot-dip galvanizing according to ASTM A780. Minimum zinc content for Method A2 is 94 percent on the dry film.

02560.60(b) Other Test Requirements - In the paragraph that begins "Wedge test all bolts according..." replace the words "AASHTO M 164 (ASTM A325)" with the words "ASTM F3125, Grade A325 or Grade F1852".

02560.70 Lubricating Fasteners - Replace this subsection, except for the subsection number and title, with following:

Furnish all galvanized and coated fasteners with a factory applied commercial water-soluble wax that contains a visible dye of a color that contrasts with the color of galvanizing or coating. Black fasteners shall be "oily" to the touch when installed.

Field lubricate galvanized bolts in tapped holes, galvanized anchor rods, and galvanized tie rods with a lubricant from the QPL. Apply lubricant to threads and to bearing surfaces that will turn during installation.

Protect fasteners from dirt and moisture at the Project site.

Retest heavy hex head fasteners that do not pass the field rotational capacity test. Clean and relubricate heavy hex head fasteners with a lubricant from the QPL prior to retesting.

Relubrication of Twist-Off fasteners is not permitted.

SECTION 02690 - PCC AGGREGATES

Replace Section 02690 of the Standard Specifications with the following Section 02690:

SECTION 02690 - PCC AGGREGATES

Description

02690.00 Scope - This Section includes the requirements for coarse and fine aggregates for portland cement concrete.

02690.01 Definitions:

Coating - Foreign or deleterious substances found adhering to the aggregate particles.

Detrimental Materials - Materials that adversely affect concrete, including but not limited to clay, shale, mica, silt, bark, alkali, sticks, organic matter, soft and flaky particles.

Nominal Maximum Size Of Aggregate - One sieve larger than the first sieve that retains more than 10 percent of the material using an agency specified set of sieves based on cumulative percent retained. Where large gaps in specification sieves exist, intermediate sieves may be inserted to determine nominal maximum size.

Materials

02690.10 Materials - PCC Aggregates shall consist of natural or crushed rock that is hard, strong, durable and free from adherent coatings or other detrimental materials.

Produce, handle and store the aggregates in a way that will maintain passing material properties and avoid introducing deleterious materials or segregation prior to its use in portland cement concrete.

02690.11 Alternate Grading - The Contractor may request approval to produce coarse and fine aggregates in sizes other than those stated in 02690.20 and 02690.30. The request shall be in writing, and shall state the proposed target value and specified tolerances for each of the individual sieve sizes of the materials the Contractor proposes to produce.

02690.12 Acceptance of Aggregate - Acceptance of aggregate will be according to Section 00165 and based on the Contractor's quality control testing, if verified, according to Section 00165.

(a) Aggregate Gradation - A stockpile contains specification aggregate gradation when the quality level for each sieve size calculated according to 00165.40 is equal to or greater than the quality level indicated in Table 00165-2 for a PF of 1.00. Each required sample represents a subplot. When the quality level indicated in Table 00165-2 yields a PF of less than 1.00 for any constituent, the material is non-specification.

(b) Non-specification Aggregate Gradation - Stockpiled aggregates that contain non-specification aggregate gradation will be rejected by the Engineer unless non specification material is removed from the stockpile. Do not add additional material to the stockpile until enough non-specification material is removed so that the quality level for each constituent is equal to or greater than the quality level in Table 00165-2 for a 1.00 PF.

Reprocessing of non-conforming material and the testing required for acceptance will be at no additional cost to the Agency. Acceptance of reprocessed material will be based on passing test results or accepted visually by the Engineer.

02690.20 Coarse Aggregate:

(a) Harmful Substances - Harmful substances shall not exceed the following limits:

Test	Test Method		Percent (by Weight)
	ODOT	AASHTO	
Lightweight Pieces	—	T 113	1.0
Material passing No. 200 sieve	—	T 11	1.0
Wood Particles	TM 225	—	0.05

(b) Soundness - Coarse aggregates for concrete shall be tested for soundness using sodium sulfate salt, according to AASHTO T 104. The weighted percentage loss shall not exceed 12 percent by weight.

(c) Durability - Coarse aggregates shall meet the following durability requirements:

Test	Test Method		Requirements
	ODOT	AASHTO	
Abrasion	—	T 96	30.0% Max.
Oregon Air Aggregate Degradation:			
Passing No. 20 sieve	TM 208	—	30.0% Max.
Sediment Height	TM 208	—	3.0" Max.

(d) PCC Paving Aggregate - In addition to requirements above, comply with the following:

(1) Fracture - Provide aggregate with at least two fractured faces on at least 50 percent of the particles retained on the 3/8 inch, 1/2 inch, 3/4 inch, 1 inch, and 1 1/2 inch sieves, as determined by AASHTO T 335.

(2) Elongated Pieces - Provide aggregate with elongated pieces not exceeding 10 percent by weight of the material retained on the No. 4 sieve when tested according to ODOT TM 229 with the proportional caliper device set at a ratio of 5:1.

(e) Grading and Separation by Sizes for Prestressed Concrete - Sampling shall be according to AASHTO R 90 and sieve analysis shall be determined according to AASHTO T 27 and AASHTO T 11. PCC coarse aggregate shall conform to grading and separated sizes as follows:

(1) Where indicated in Table 02690-1, the coarse aggregate shall be separated into two sizes and each separated size shall be measured into the batch in the quantity determined by the mix design.

For each of the indicated maximum sizes of coarse aggregates, the separated sizes shall be as indicated in Table 02690-2:

Table 02690-1

Maximum Nominal Size of Aggregates	Separated Sizes
1"	1" - No. 4
3/4"	3/4" - No. 4
3/4"	3/4" - 1/2" and 1/2" - No. 4
3/4"	3/4" - 3/8" and 3/8" - No. 4

(2) The grading of each of the specified separated sizes of coarse aggregate shall conform to the following:

Table 02690-2						
Separated Sizes						
Percent Passing (by Weight)						
Sieve Size	1" - No. 4	3/4" - No. 4	3/4" - 1/2"	3/4" - 3/8"	1/2" - No. 4	3/8" - No. 4
1 1/2"	100					
1"	90 – 100	100	100	100		
3/4"	50 – 80	90 – 100	85 – 100	85-100	100	100
1/2"	-	-	0 – 15	-	85 – 100	-
3/8"	15 – 40	20 – 50	0	0 – 15	35 – 65	85 – 100
No. 4	0 – 10	0 – 10	-	-	0 – 15	0 – 15
No. 200	¹	¹	¹	¹	¹	¹

¹See 02690.20(a). Do not evaluate material passing the No. 200 sieve according to 00165.40.

(f) **Grading and Separation by Sizes for Other Concrete** - Sampling shall be according to AASHTO T 2. Sieve analysis shall be according to AASHTO T 27 and AASHTO T 11. Provide aggregates meeting the gradation requirements of Tables 02690-3 and 02690-4 for structural concrete. Provide a CAgT to perform sampling and testing when required.

Table 02690-3				
Gradation of Coarse Aggregates				
	Combined* Sizes	Separated Sizes	Separated Sizes	Separated Sizes
Sieve Size	1 1/2" - No. 4	1 1/2" - 3/4"	1" - No. 4	3/4" - 1/2"
Percent Passing (by Weight)				
2"	100	100		
1 1/2"	95 – 100	90 – 100	100	
1"	-	20 – 55	95 – 100	100
3/4"	35 – 70	0 – 15	-	85 – 100
1/2"	-	-	25 – 60	0 -15
3/8"	10 – 30	0 – 5	-	-
No. 4	0 – 5	-	0 – 10	-
No. 8	-	-	0 – 5	-
No. 200	**	**	**	**

*For 1 1/2 inch coarse aggregate use two or more separated sizes which when combined shall meet the gradation limits for 1 1/2" - No. 4

**See 02690.20(a). Do not evaluate material passing the No. 200 sieve according to 00165.40.

Table 02690-4				
Gradation of Coarse Aggregates				
	Separated Sizes	Separated or Combined Sizes	Separated Sizes	Separated Sizes
Sieve Size	3/4" - 3/8"	3/4" - No. 4	1/2" - No. 4	3/8" - No. 8
Percent Passing (by Weight)				
1"	100	100		
3/4"	90 – 100	90 – 100	100	
1/2"	20 – 55	-	90 – 100	100
3/8"	0 – 15	20-55	40 – 70	85 – 100
No. 4	0 – 5	0 -10	0 – 15	10 -30
No. 8	-	0 – 5	0 – 5	0 – 10
No. 16	-	-	-	0 – 5
No. 200	*	*	*	*

*See 02690.20(a). Do not evaluate material passing the No. 200 sieve according to 00165.40.

02690.30 Fine Aggregates:

(a) Different Sources - Do not mix fine aggregates from different sources of supply, or store in the same pile. Do not use alternately in the same class of mix, without prior approval.

(b) Harmful Substances - The amount of harmful substances shall not exceed the following limits:

Test	Test Method (AASHTO)	Percent (by Weight)
Lightweight Pieces	T 113	2.0%
Material passing No. 200 sieve	T 11	3.0%

(c) Soundness - Fine aggregate shall be tested for soundness using sodium sulfate salt, according to AASHTO T 104. The weighted percentage loss shall not exceed 10 percent by weight.

(d) Organic Impurities - All fine aggregate shall meet the requirements of AASHTO M 6 for organic impurities.

(e) Sand Equivalent - Fine aggregate shall be tested according to AASHTO T 176 and shall have a sand equivalent of not less than 75.

(f) Sand for Mortar - Sand for mortar shall conform to the requirements of this Section.

(g) Grading - Sampling shall be according to AASHTO T 2. Sieve analysis shall be determined according to AASHTO T 27 and AASHTO T 11. Provide aggregates meeting the gradation requirements of Table 02690-5 for structural concrete. Provide a CAgT to perform sampling and testing when required.

Table 02690-5
Gradation of Fine Aggregate*

Sieve Size	Percent Passing (by Weight)
------------	--------------------------------

3/8"	100
No. 4	90 - 100
No. 8	70 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	**

* Determine the fineness modulus according to AASHTO T 27 and AASHTO T 11. Maintain the fine aggregate fineness modulus within plus or minus 0.20 from the fineness modulus used in the Contractor's mix design. Fine aggregates in which the fineness modulus varies by more than 0.20 from the mix design target shall not be incorporated until an assessment is done to determine whether an adjustment in the aggregate proportions is necessary. Proportion changes must be performed by a CCT according to the provisions of ACI 211. Submit analysis of FM and mix design adjustments to the Engineer for approval.

** See 02690.30(b). Do not evaluate material passing No. 200 sieve according to 0165.40.

SECTION 02910 - SIGN MATERIALS

Comply with Section 02910 of the Standard Specifications modified as follows:

02910.20 Reflective and Retroreflective Sheeting - Replace the title of this subsection with “**Retroreflective Sheeting**”

02910.20(a) General - Replace the paragraph that begins “Use retroreflective sheeting Type...” with the following paragraph:

Use retroreflective sheeting from the QPL and the following:

02910.32(b) Retroreflective Sheeting Legend – Replace the paragraph that begins “The Silver-white or white letters...” with the following paragraph:

Removable legend shall be fabricated with sheeting conforming to 02910.20 that is permanently adhered to a flat aluminum frame.

02910.40 Hardware - Replace the paragraph that begins "The bolts, nuts, and washers..." with the following paragraph:

The bolts, nuts, and washers used to fabricate and erect signs shall be aluminum alloy, stainless steel, or hot-dip galvanized steel. Aluminum for bolts and nuts shall conform to ASTM B211, alloys 2024-T4 or 6061-T6 as the Contractor elects. Aluminum washers shall conform to ASTM B209, alloy Alclad 2024-T4. Stainless steel for bolts, nuts, and washers shall be Type 304 or Type 316. Galvanized steel bolts, nuts and washers shall be medium carbon steel. Galvanize steel hardware according to AASHTO M 232 (ASTM A153).

02910.75(a) Warranty Period – Replace the bullet that begins “For retroreflective Type III and Type IV ...” with the following paragraph:

- For retroreflective ASTM Type III and Type IV sheeting used for permanent signs, the warranty period shall be for 10 years.

Replace the bullet that begins “For retroreflective Type IX sheeting used ...” with the following paragraph:

- For retroreflective ASTM Type IX and Type XI sheeting used for permanent signs, the warranty period shall be for 12 years.

02910.75(b) Failure – Replace the bullet that begins “70 percent of minimum coefficient...” with the following paragraph:

- 70 percent of minimum coefficient of retroreflection for designated sheeting or cuttable film according to ASTM D4956 for the remaining 3 years of the warranty period for Type III and Type IV sheeting and remaining 5 years of the warranty period for Type IX and Type XI sheeting.

02910.75(c) Remedy – Replace the bullet that begins “For the remaining 3 years ...” with the following paragraph:

- For the remaining 3 years (5 years for ASTM Type IX and Type XI sheeting), furnish replacement sheeting required to restore the sign panel to a condition that meets the Specifications.

SECTION 02920 – COMMON ELECTRICAL MATERIALS

Comply with Section 02920 of the Standard Specifications.

SECTION 02925 – TRAFFIC SIGNAL MATERIALS

Comply with Section 02925 of the Standard Specifications modified as follows:

02925.66 Pedestrian Push Buttons and Mount: - Add the following to the end of Section 02925.66(a):

Pedestrian push button system shall be Polara model INX9WN0-Y or approved equal. See the plan set for additional details.

SECTION 03020 – EROSION MATERIALS

Comply with Section 03020 of the Standard Specifications modified as follows:

03020.90 Acceptance – Delete the bullet that begins “Quality compliance certification...”.

SECTION VIII – APPENDIX

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SECTION IX – CONTRACT DRAWINGS

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CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Public Works Director John M. Lewis, PE

Agenda Date: 05/19/2021

SUBJECT:

Public Improvement Contract with Sierra Santa Fe Corporation for the 2021 Preventive Pavement Maintenance – Chip Seal/Fog Seal and Striping (CI 21-002)

STAFF RECOMMENDATION:

Award the bid and authorize the City Manager to execute the Public Improvement Contract with Sierra Santa Fe Corporation in the amount of \$159,158.00 for construction of the 2021 Preventive Pavement Maintenance – Chip Seal/Fog Seal and Striping (CI 21-002).

EXECUTIVE SUMMARY:

The 2021 Preventive Pavement Maintenance – Chip Seal/Fog Seal and Striping (CI 21-002) includes the application of approximately 24,997 square yards of 3/8" No. 8 asphalt chip seal to the travel lanes and approximately 43,301 square yards of fog seal on the entire asphalt paved surface of South End Road, from Partlow Road to 100 feet north of Barker Avenue, and the entire length of Warner Parrott Road. The project includes street preparation, material delivery, material application, final clean-up, striping, and thermoplastic replacement.

BACKGROUND:

The work authorized by this contract is funded through the City's Pavement Maintenance Utility Fee (PMUF) and is a necessary component of the City's annual street maintenance commitment. The condition of these streets is good, but all the streets show signs of age through limited pavement cracking and rough surfaces.

The chip seal treatment, consisting of a mixture of emulsified asphalt and well-graded fine aggregate, fills existing pavement surface defects and extends the life of the road by an estimated 5 to 7 years. Without this treatment, these cracks and rough surfaces will become more porous, allowing water to compromise the subgrade and causing the road section to fail.

On April 21 and 23, 2021, the project was advertised in the *Daily Journal of Commerce* and the City bid site in accordance with City and State contracting procedures. The bid opening was held on May 5, 2021, and three (3) bids were received. Staff reviewed the bids and determined that Sierra Santa Fe Corporation was the low responsive bidder. The contract award value is one hundred fifty-nine thousand, one hundred fifty-eight and 00/100 dollars (\$159,158.00).

On May 5, 2021, Oregon City Public Works opened bids for the above-referenced project. Three bids were received with the lowest responsive and responsible bid submitted by Sierra Santa Fe Corporation.

The list below includes the bidders and bid amounts received for this project:

Sierra Santa Fe Corporation	\$159,158.00
Doolittle Construction, LLC	\$225,747.95
Intermountain Slurry Seal	\$300,530.00
Engineer's Estimate	\$205,000.00

The average bid was 12% higher than the engineer's estimate, and the apparent low bidder was 23% lower than the engineer's estimate.

OPTIONS:

1. Authorize the City Manager to execute the Contract.
2. Authorize the City Manager to execute the Contract with specific modifications.
3. Deny the Contract. If the Commission chooses to deny the Contract, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$159,158.00

FY(s): 21/22

Funding Source(s): Transportation Fund – Pavement Maintenance Utility Fee (PMUF)

SECTION IIIA

CONTRACT AGREEMENT

This Agreement, made and entered into this _____ day of _____, 20____, between the CITY OF OREGON CITY (“CITY”), acting by and through the City Commission and SIERRA SANTA FE CORPORATION (“CONTRACTOR”).

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **2021 PREVENTIVE PAVEMENT MAINTENANCE – CHIP SEAL/FOG SEAL AND STRIPING (CI 21-002)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid Scope of Work Instructions to Bidders Bid Proposal and Bid Schedule Compliance with ORS 279C.840 Resident Bidder Status Certification of Drug Testing Program Non-Collusion Statement Asbestos Certification Registrations Certification of Non-Discrimination Certification of Compliance with Tax Law Bidder Responsibility Form Bid Bond First Tier Subcontractor Disclosure Form Customer Service Acknowledgment Form Contract Agreement Oregon City Public Improvement Standard Conditions	Statutory Conditions to Contract Agreement Performance Bond Payment Bond State of Oregon Statutory Public Works Bond General Conditions Prevailing Wage Rates for Public Works Contracts in Oregon, dated January 1, 2021 Amendments to the Prevailing Wage Rates for Public Works Contracts in Oregon dated April 1, 2021 Prevailing Wage Apprenticeship Rates dated April 1, 2021 Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018 Special Provisions Contract Drawings City of Oregon City Standard Details Technical Specifications 2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents
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The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The contract time shall be based on Fixed Date Calculation and all Work shall be completed no later than September 30, 2021 as identified in Article II of the Contract Documents Section IIIA, Contract Agreement, and will be known as the “Contract Time”. The earliest start date for the work is July 12, 2021. Once the work begins, the contractor has 30 days to complete the work.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **one hundred fifty-nine thousand, one hundred fifty-eight and 00/100 dollars (\$159,158.00)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect.

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY

SIERRA SANTA FE CORPORATION

by: _____
Anthony J. Konkol III
City Manager

Printed Name

by: _____
Authorized signature

by: _____
John M. Lewis, P.E.
Public Works Director

Title

Federal Taxpayer ID Number

Approved as to Legal Sufficiency:

Address:

by: _____
City Attorney

City Commission Award Date:



May 5, 2021

RE: Notice of Intent to Award Contract – Oregon City 2021 Preventive Pavement Maintenance Chip Seal/Fog Seal and Striping Project - CI 21-002

On May 5, 2021, the City of Oregon City opened bids for the above-referenced project. Three bids were received with the apparent low bid being submitted by Sierra Santa Fe Corporation. The bidders and the bid amounts are tabulated below:

<u>Bidder Name</u>	<u>Bid Amount</u>
Sierra Santa Fe Corporation	\$159,158.00
Doolittle Construction, LLC	\$225,747.95
Intermountain Slurry Seal, Inc.	\$300,530.00

The City has evaluated the low bid and has determined it to be responsive and responsible. Therefore, the City intends to award the contract to Sierra Santa Fe Corporation. The City Commission is scheduled to take action to award this contract at their May 19, 2021, City Commission meeting.

The City of Oregon City appreciates your interest and effort in preparing and submitting a bid for this project. If you have any questions about the bid process or our decision of award, feel free to call me at 503-657-8241.

Sincerely,

Jayson Thornberg

Jayson Thornberg
Transportation Maintenance Manager

\\depot\Departments\PublicWorks\CIP_PS_RFQ_RFP\CIP_Open\CI 21-002 2021 Preventative Pavement Maintenance - Chip Seal\BID DOCUMENTS\RFP-Second Round\Notice of Intent to Award.docx

Client City of Oregon City
Project 2021 Preventative Pavement Maintenance Chip/Fog Seal & Striping
Bid Tabulation
Date: 5/5/21 2:00 PM

Apparent Low

Other Bidders

Item	Description	Units	Quantity
1	Mobilization - Spec 210	LS	1
2	3/8" No. 8 Chip Seal - Spec 710	SQ YD	24997
3	Fog Seal - Spec 705	SQ YD	43301
4	Pavement Bar, Type B-HS - Spec 867	SQ FT	1008
5	Thermoplastic, Extruded, Surface, Non-Profiled - Spec 865	LF	57933
6	Pavement Legend, Type B-HS, Bike Symbol - Spec 867	Each	12
7	Pavement Legend, Type B-HS, Arrow - Spec 867	Each	10
8	Bar Removal - Spec 225	SQ FT	1008
9	Legend Removal - Spec 225	Each	22

Engineers Estimate	
Unit Price	Extended
\$ 25,000.00	\$ 25,000.00
\$ 3.25	\$ 81,240.25
\$ 0.55	\$ 23,815.55
\$ 9.00	\$ 9,072.00
\$ 1.00	\$ 57,933.00
\$ 300.00	\$ 3,600.00
\$ 300.00	\$ 3,000.00
\$ 1.00	\$ 1,008.00
\$ 50.00	\$ 1,100.00
	\$ 205,768.80

Sierra Santa Fe Corporation	
Unit Price	Extended
\$ 11,728.71	\$ 11,728.71
\$ 2.55	\$ 63,742.35
\$ 0.55	\$ 23,815.55
\$ 8.16	\$ 8,225.28
\$ 0.71	\$ 41,132.43
\$ 242.10	\$ 2,905.20
\$ 287.40	\$ 2,874.00
\$ 3.06	\$ 3,084.48
\$ 75.00	\$ 1,650.00
\$ 159,158.00	

9.7%

Doolittle Construction, LLC	
Unit Price	Extended
\$ 38,000.00	\$ 38,000.00
\$ 4.00	\$ 99,988.00
\$ 0.60	\$ 25,980.60
\$ 9.00	\$ 9,072.00
\$ 0.75	\$ 43,449.75
\$ 250.00	\$ 3,000.00
\$ 250.00	\$ 2,500.00
\$ 2.20	\$ 2,217.60
\$ 70.00	\$ 1,540.00
\$ 225,747.95	

46.1%

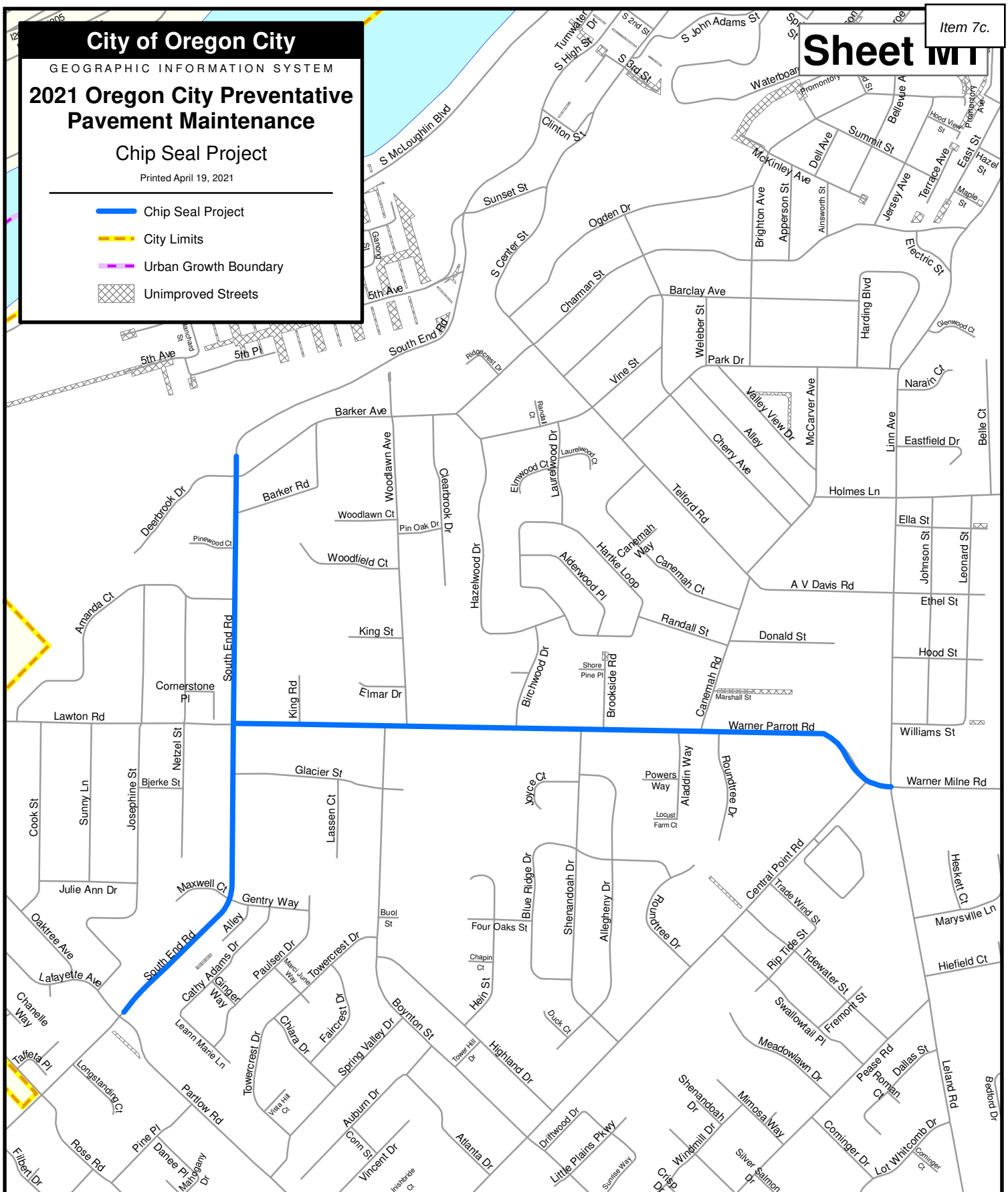
Intermountain Slurry Seal, Inc.	
Unit Price	Extended
\$ 70,423.64	\$ 70,423.64
\$ 5.25	\$ 131,234.25
\$ 1.00	\$ 43,301.00
\$ 8.00	\$ 8,064.00
\$ 0.67	\$ 38,815.11
\$ 238.00	\$ 2,856.00
\$ 239.00	\$ 2,390.00
\$ 2.00	\$ 2,016.00
\$ 65.00	\$ 1,430.00
\$ 300,530.00	

GEOGRAPHIC INFORMATION SYSTEM

Chip Seal Project

Printed April 19, 2021

- Chip Seal Project
-  City Limits
- Urban Growth Boundary
-  Unimproved Streets



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, or surveying purposes. Notification of any errors is appreciated.



0 250 500 1,000 1,500 Feet

Please recycle with colored office grade paper.

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.orcity.org





CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Public Works Director John M. Lewis, PE

Agenda Date: 5/19/2021

SUBJECT:

Public Improvement Contract with S-2 Contractors for the 2021 Oregon City Roadway Reconstruction Project (CI 20-011)

STAFF RECOMMENDATION:

Award the bid and authorize the City Manager to execute the Public Improvement Contract with S-2 Contractors in the amount of \$1,944,445.00 for construction of the 2021 Oregon City Roadway Reconstruction Project (CI 20-011)

EXECUTIVE SUMMARY:

The annual road reconstruction project was advertised on April 2 and April 5, 2021. The bid opening was held on April 29, 2021, and six (6) bids were received. Staff and Wallis Engineering reviewed the bids and determined that S-2 Contractors, Inc. was the low responsive bidder. The contract award value is \$1,944,445.00.

BACKGROUND:

In June 2019, the updated five-year pavement maintenance plan was completed for years 2020 through 2024.

The list of roads to be resurfaced in the summer of 2021 as part of this contract include the following:

- High Street from 3rd Street to 7th Street
- 8th Street from Jackson Street to John Adams Street
- John Adams Street from 8th Street to 10th Street
- Division Street near 15th Street
- 14th Street from Buchanan Street to Division Street
- Beaver Lane
- Fox Lane
- Hilltop Avenue
- Joyce Court

On April 2 and April 5, 2021, the project was advertised in the *Daily Journal of Commerce* and the City bid site in accordance with City and State contracting procedures. The bid opening was held on April 29, 2021, and six (6) bids were received. Staff and Wallis Engineering reviewed the bids and determined that S-2 Contractors, Inc. was the low responsive bidder. The contract award value is one million, nine hundred forty-four thousand, four hundred and forty-five dollars and zero cents (\$1,944,445.00).

The list below includes the bidders and bid amounts received for this project:

S-2 Contractors, Inc.	\$1,944,445.00
Pacific Excavation, Inc.	\$2,048,000.00
KnifeRiver Corp - Northwest	\$2,062,140.00
Eagle-Elsner, Inc.	\$2,104,027.67
Kodiak Pacific Construction	\$2,388,388.00
Granite Construction Co.	\$2,953,953.00
Engineer's Estimate	\$2,075,806.50

The apparent low bidder was 6.7% lower than the engineer's estimate.

OPTIONS:

1. Authorize the City Manager to execute the Contract.
2. Authorize the City Manager to execute the Contract with specific modifications.
3. Deny the Contract. If the Commission chooses to deny the Contract, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$1,944,445.00

FY(s): FY21/FY22

Funding Source(s): Transportation Fund – Pavement Maintenance

SECTION III A
CONTRACT AGREEMENT

This Agreement, made and entered into this _____ day of _____, 20____, between the CITY OF OREGON CITY (“CITY”), acting by and through the City Commission and **S-2 CONTRACTORS, INC.** (“CONTRACTOR”).

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **2021 Roadway Reconstruction Project (CI 20-011)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid Scope of Work Instructions to Bidders Bid Proposal and Bid Schedule Compliance with ORS 279C.840 Resident Bidder Status Certification of Drug Testing Program Non-Collusion Statement Asbestos Certification Registrations Certification of Non-Discrimination Certification of Compliance with Tax Law Bidder Responsibility Form Bid Bond First Tier Subcontractor Disclosure Form Customer Service Acknowledgment Form Contract Agreement Oregon City Public Improvement Standard Conditions	Statutory Conditions to Contract Agreement Performance Bond Payment Bond State of Oregon Statutory Public Works Bond General Conditions Prevailing Wage Rates for Public Works Contracts in Oregon, dated January 1, 2021 Amendments to the Prevailing Wage Rates for Public Works Contracts in Oregon dated April 1, 2021 Prevailing Wage Apprenticeship Rates dated April 1, 2021 Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018 Special Provisions Contract Drawings City of Oregon City Standard Details Technical Specifications 2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents Addendum 1 dated April 26, 2021 All items included within these Contract Documents.
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The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The project shall be substantially complete by September 10, 2021, and ready for final acceptance by **September 30, 2021**, as identified in 00180.50(b) of the Special Provisions.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **one million, nine hundred forty-four thousand, four hundred and forty-five and no/100 dollars (1,944,445.00)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect.

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY

S-2 CONTRACTORS, INC.

by: _____
Anthony J. Konkol III
City Manager

by: _____
John M. Lewis, P.E.
Public Works Director

Printed Name

by: _____
Authorized signature

Title

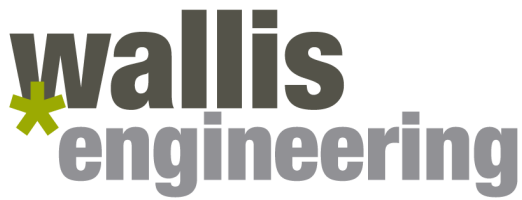
Federal Taxpayer ID Number

Approved as to Legal Sufficiency:

Address:

by: _____
City Attorney

City Commission Award Date:



April 30th, 2021

Josh Wheeler, PE
City of Oregon City
625 Center Street
Oregon City, Oregon 97045

RE: 2021 Oregon City Roadway Reconstruction Projects – Recommendation to Award
W.E. Job No. 1506A
OC Project No. CI 20-011

Dear Mr. Wheeler:

We have reviewed the submitted bid from the apparent low bid received for the above referenced project. A total of six (6) bid were received ranging from \$1,944,445.00 to \$2,953,953.00. Based on the submitted bid documents, the apparent low bidder appears to be responsible and responsive.

The lowest responsive and responsible bid was submitted by S-2 Contractors Inc. from Aurora, OR in the amount of one million nine hundred forty-four thousand four hundred forty-five dollars and zero cents (\$1,944,445.00).

We have reviewed S-2 Contractors Inc.'s bid bond and have checked their current status relative to state licensing and found it to be in order along with verifying that the contractor is not listed on the debarred contractors list. We did not contact references based on the contractor's recent satisfactory performance on other capital projects for the City.

Upon the City's award of the project, please fill out and sign, as applicable, the Notice of Award, Performance Bond, Payment Bond, Public Works Bond, and Contract Agreement forms and forward them to the Contractor.

Please note that in accordance with ORS 279B.135 a Notice of Intent to Award must be sent to other bidders prior to the City's award of a contract.

Sincerely,

A handwritten signature in blue ink, appearing to read "Wes Wegner", with a long horizontal flourish extending to the right.

Wes Wegner, P.E.
WALLIS ENGINEERING

P:\15\1506A 2021 Roadway Reconstruction Pjt\700 Construction\702 Contract Award\702.1 Bidding\1506 Recommendation to Award.docx

Client
Project
Bid Tabulation
Date:

City of Oregon City
2021 Roadway Reconstruction Project
April 29, 2021

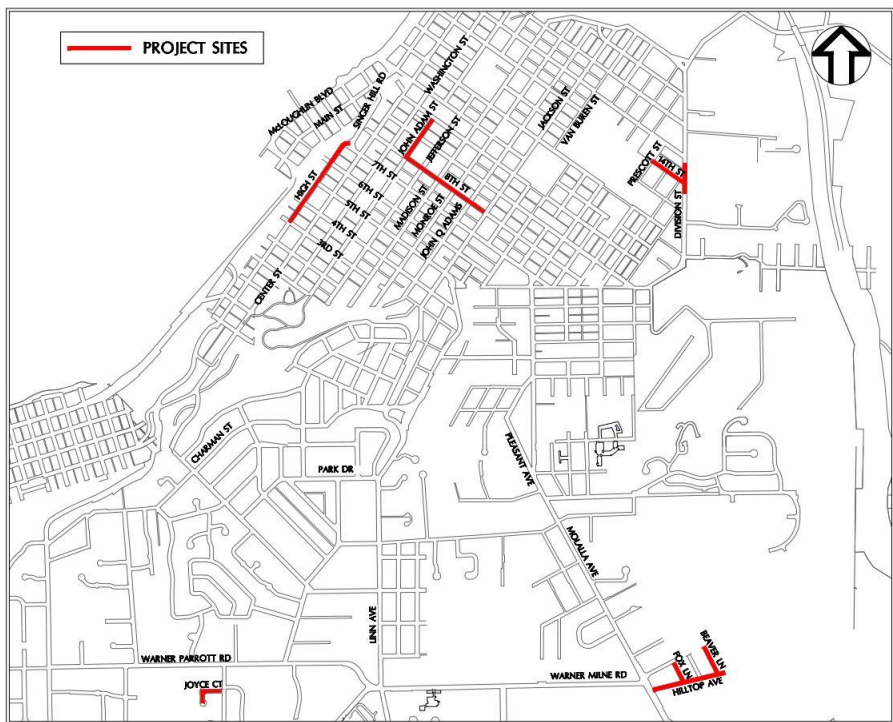
					Engineers Estimate		Average*		Average to Engineer Comparison				S-2 Contractors Inc		Pacific Excavation Inc		Knife River Corp-Northwest		Eagle-Elsner Inc		Kodiak Pacific Construction		Granite Construction Company	
Item	Spec	Description	Units	Quantity	Unit Price	Extended	Unit Price	Extended	Δ Unit Price	Δ Extended	Percent Over(Under)	Unit Price	Extended	Unit Price	Extended	Unit Price	Extended	Unit Price	Extended	Unit Price	Extended	Unit Price	Extended	
1	00210	Mobilization	LS	1	\$ 144,000.00	\$ 144,000.00	\$ 165,916.28	\$ 165,916.28	\$ 21,916.28	\$ 21,916.28	15%	\$ 141,300.40	\$ 141,300.40	\$ 254,954.00	\$ 254,954.00	\$ 139,623.20	\$ 139,623.20	\$ 80,000.00	\$ 80,000.00	\$ 126,173.90	\$ 126,173.90	\$ 253,446.20	\$ 253,446.20	
2	00225	Temporary Work Zone Traffic Control, Complete for High Street	LS	1	\$ 40,000.00	\$ 40,000.00	\$ 35,739.00	\$ 35,739.00	\$ (4,261.00)	\$ (4,261.00)	-11%	\$ 30,000.00	\$ 30,000.00	\$ 5,000.00	\$ 5,000.00	\$ 18,600.00	\$ 18,600.00	\$ 35,000.00	\$ 35,000.00	\$ 50,834.00	\$ 50,834.00	\$ 75,000.00	\$ 75,000.00	
3	00225	Temporary Work Zone Traffic Control, Complete for 8th Street	LS	1	\$ 15,000.00	\$ 15,000.00	\$ 36,580.67	\$ 36,580.67	\$ 21,580.67	\$ 21,580.67	144%	\$ 30,000.00	\$ 30,000.00	\$ 5,000.00	\$ 5,000.00	\$ 25,305.00	\$ 25,305.00	\$ 50,000.00	\$ 50,000.00	\$ 34,179.00	\$ 34,179.00	\$ 75,000.00	\$ 75,000.00	
4	00225	Temporary Work Zone Traffic Control, Complete for John Adams Street	LS	1	\$ 7,500.00	\$ 7,500.00	\$ 16,326.33	\$ 16,326.33	\$ 8,826.33	\$ 8,826.33	118%	\$ 10,000.00	\$ 10,000.00	\$ 5,000.00	\$ 5,000.00	\$ 8,640.00	\$ 8,640.00	\$ 16,000.00	\$ 16,000.00	\$ 28,318.00	\$ 28,318.00	\$ 30,000.00	\$ 30,000.00	
5	00225	Temporary Work Zone Traffic Control, Complete for Division Street	LS	1	\$ 25,000.00	\$ 25,000.00	\$ 35,785.00	\$ 35,785.00	\$ 10,785.00	\$ 10,785.00	43%	\$ 25,000.00	\$ 25,000.00	\$ 65,000.00	\$ 65,000.00	\$ 15,762.00	\$ 15,762.00	\$ 20,000.00	\$ 20,000.00	\$ 38,948.00	\$ 38,948.00	\$ 50,000.00	\$ 50,000.00	
6	00225	Temporary Work Zone Traffic Control, Complete for 14th Street	LS	1	\$ 10,000.00	\$ 10,000.00	\$ 12,441.33	\$ 12,441.33	\$ 2,441.33	\$ 2,441.33	24%	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 8,008.00	\$ 8,008.00	\$ 16,000.00	\$ 16,000.00	\$ 20,640.00	\$ 20,640.00	\$ 20,000.00	\$ 20,000.00	
7	00225	Temporary Work Zone Traffic Control, Complete for Hilltop Avenue	LS	1	\$ 17,000.00	\$ 17,000.00	\$ 14,261.50	\$ 14,261.50	\$ (2,738.50)	\$ (2,738.50)	-16%	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 12,385.00	\$ 12,385.00	\$ 24,000.00	\$ 24,000.00	\$ 16,184.00	\$ 16,184.00	\$ 25,000.00	\$ 25,000.00	
8	00225	Temporary Work Zone Traffic Control, Complete for Beaver Lane	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 4,942.33	\$ 4,942.33	\$ (57.67)	\$ (57.67)	-1%	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 3,210.00	\$ 3,210.00	\$ 4,000.00	\$ 4,000.00	\$ 4,444.00	\$ 4,444.00	\$ 10,000.00	\$ 10,000.00	
9	00225	Temporary Work Zone Traffic Control, Complete for Fox Lane	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 5,942.33	\$ 5,942.33	\$ 942.33	\$ 942.33	19%	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 3,210.00	\$ 3,210.00	\$ 5,000.00	\$ 5,000.00	\$ 4,444.00	\$ 4,444.00	\$ 15,000.00	\$ 15,000.00	
10	00225	Temporary Work Zone Traffic Control, Complete for Joyce Court	LS	1	\$ 10,000.00	\$ 10,000.00	\$ 6,724.33	\$ 6,724.33	\$ (3,275.67)	\$ (3,275.67)	-31%	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 4,800.00	\$ 4,800.00	\$ 6,000.00	\$ 6,000.00	\$ 11,546.00	\$ 11,546.00	\$ 10,000.00	\$ 10,000.00	
11	00280	Erosion Control	LS	1	\$ 12,500.00	\$ 12,500.00	\$ 12,190.33	\$ 12,190.33	\$ (309.67)	\$ (309.67)	-2%	\$ 10,000.00	\$ 10,000.00	\$ 15,000.00	\$ 15,000.00	\$ 8,900.00	\$ 8,900.00	\$ 9,600.00	\$ 9,600.00	\$ 4,642.00	\$ 4,642.00	\$ 25,000.00	\$ 25,000.00	
12	00290	Pollution Control Plan	LS	1	\$ 2,000.00	\$ 2,000.00	\$ 1,214.17	\$ 1,214.17	\$ (785.83)	\$ (785.83)	-39%	\$ 1,000.00	\$ 1,000.00	\$ 250.00	\$ 250.00	\$ 380.00	\$ 380.00	\$ 800.00	\$ 800.00	\$ 2,355.00	\$ 2,355.00	\$ 2,500.00	\$ 2,500.00	
13	00305	Construction Survey Work	LS	1	\$ 35,000.00	\$ 35,000.00	\$ 42,164.67	\$ 42,164.67	\$ 7,164.67	\$ 7,164.67	20%	\$ 18,000.00	\$ 18,000.00	\$ 40,000.00	\$ 40,000.00	\$ 74,115.00	\$ 74,115.00	\$ 36,100.00	\$ 36,100.00	\$ 44,773.00	\$ 44,773.00	\$ 40,000.00	\$ 40,000.00	
14	00310	Removal of Curbs	LF	1498	\$ 7.00	\$ 10,486.00	\$ 9.43	\$ 14,131.13	\$ 2.43	\$ 3,645.13	35%	\$ 2.00	\$ 2,996.00	\$ 4.00	\$ 5,992.00	\$ 10.35	\$ 15,504.30	\$ 10.00	\$ 14,980.00	\$ 18.25	\$ 27,338.50	\$ 12.00	\$ 17,976.00	
15	00310	Removal of Walks	SY	1108	\$ 15.00	\$ 16,620.00	\$ 26.55	\$ 29,417.40	\$ 11.55	\$ 12,797.40	77%	\$ 8.00	\$ 8,864.00	\$ 16.00	\$ 17,728.00	\$ 21.80	\$ 24,154.40	\$ 32.00	\$ 35,456.00	\$ 31.50	\$ 34,902.00	\$ 50.00	\$ 55,400.00	
16	00310	Removal of Structures and Obstructions	LS	1	\$ 15,000.00	\$ 15,000.00	\$ 22,580.62	\$ 22,580.62	\$ 7,580.62	\$ 7,580.62	51%	\$ 15,000.00	\$ 15,000.00	\$ 35,000.00	\$ 35,000.00	\$ 130.00	\$ 130.00	\$ 44,469.69	\$ 44,469.69	\$ 20,884.00	\$ 20,884.00	\$ 20,000.00	\$ 20,000.00	
17	00310	PCC Roadway Removal and Backfill	SY	281	\$ 50.00	\$ 14,050.00	\$ 85.91	\$ 24,140.24	\$ 35.91	\$ 10,090.24	72%	\$ 60.00	\$ 16,860.00	\$ 45.00	\$ 12,645.00	\$ 47.95	\$ 13,473.95	\$ 165.00	\$ 46,365.00	\$ 97.50	\$ 27,397.50	\$ 100.00	\$ 28,100.00	
18	00330	General Excavation	CY	3555	\$ 45.00	\$ 159,975.00	\$ 51.13	\$ 181,779.00	\$ 6.13	\$ 21,804.00	14%	\$ 50.00	\$ 177,750.00	\$ 40.00	\$ 142,200.00	\$ 54.50	\$ 193,747.50	\$ 51.00	\$ 181,305.00	\$ 51.30	\$ 182,371.50	\$ 60.00	\$ 213,300.00	
19	00331	12-Inch Depth Subgrade Stabilization	SY	113	\$ 45.00	\$ 5,085.00	\$ 63.98	\$ 7,230.12	\$ 18.98	\$ 2,145.12	42%	\$ 50.00	\$ 5,650.00	\$ 35.00	\$ 3,955.00	\$ 65.40	\$ 7,390.20	\$ 58.00	\$ 6,554.00	\$ 50.50	\$ 5,706.50	\$ 125.00	\$ 14,125.00	
20	00344	Portland Cement	TON	67	\$ 350.00	\$ 23,450.00	\$ 152.17	\$ 10,195.17	\$ (197.83)	\$ (13,254.83)	-57%	\$ 180.00	\$ 12,060.00	\$ 150.00	\$ 10,050.00	\$ 152.00	\$ 10,184.00	\$ 147.00	\$ 9,849.00	\$ 144.00	\$ 9,648.00	\$ 140.00	\$ 9,380.00	
21	00344	Full Depth Reclamation Base, 12-18 Inches Thick	SY	2123	\$ 9.00	\$ 19,107.00	\$ 20.28	\$ 43,061.52	\$ 11.28	\$ 23,954.52	125%	\$ 9.00	\$ 19,107.00	\$ 25.00	\$ 53,075.00	\$ 16.30	\$ 34,604.90	\$ 13.65	\$ 28,978.95	\$ 32.75	\$ 69,528.25	\$ 25.00	\$ 53,075.00	
22	00350	Subgrade Geotextile	SY	6190	\$ 1.25	\$ 7,737.50	\$ 1.81	\$ 11,193.58	\$ 0.56	\$ 3,456.08	45%	\$ 1.50	\$ 9,285.00	\$ 1.50	\$ 9,285.00	\$ 1.90	\$ 11,761.00	\$ 1.25	\$ 7,737.50	\$ 2.70	\$ 16,713.00	\$ 2.00	\$ 12,380.00	
23	00405	Rock Excavation	CY	80	\$ 200.00	\$ 16,000.00	\$ 331.08	\$ 26,486.00	\$ 131.08	\$ 10,486.00	66%	\$ 300.00	\$ 24,000.00	\$ 100.00	\$ 8,000.00	\$ 225.00	\$ 18,000.00	\$ 847.20	\$ 67,776.00	\$ 214.25	\$ 17,140.00	\$ 300.00	\$ 24,000.00	
24	00445	8 Inch CL S2 Ductile Iron Storm Sewer Pipe, All Depths	LF	21	\$ 140.00	\$ 2,940.00	\$ 245.62	\$ 5,157.95	\$ 105.62	\$ 2,217.95	75%	\$ 200.00	\$ 4,200.00	\$ 165.00	\$ 3,465.00	\$ 272.00	\$ 5,712.00	\$ 300.00	\$ 6,300.00	\$ 236.70	\$ 4,970.70	\$ 300.00	\$ 6,300.00	
25	00445	8 Inch PVC SDR 35 Storm Sewer Pipe, All Depths	LF	25	\$ 120.00	\$ 3,000.00	\$ 214.26	\$ 5,356.42	\$ 94.26	\$ 2,356.42	79%	\$ 180.00	\$ 4,500.00	\$ 120.00	\$ 3,000.00	\$ 245.00	\$ 6,125.00	\$ 230.00	\$ 5,750.00	\$ 210.54	\$ 5,263.50	\$ 300.00	\$ 7,500.00	
26	00445	12 Inch PVC SDR 35 Storm Sewer Pipe, All Depths	LF	31	\$ 180.00	\$ 5,580.00	\$ 234.90	\$ 7,281.90	\$ 54.90	\$ 1,701.90	31%	\$ 200.00	\$ 6,200.00	\$ 130.00	\$ 4,030.00	\$ 245.00	\$ 7,595.00	\$ 210.00	\$ 6,510.00	\$ 324.40	\$ 10,056.40	\$ 300.00	\$ 9,300.00	
27	00470	Catch Basins, Type G-2	EA	9	\$ 3,500.00	\$ 31,500.00	\$ 3,843.00	\$ 34,587.00	\$ 343.00	\$ 3,087.00	10%	\$ 3,500.00	\$ 31,500.00	\$ 2,700.00	\$ 24,300.00	\$ 5,450.00	\$ 49,050.00	\$ 2,700.00	\$ 24,300.00	\$ 3,708.00	\$ 33,372.00	\$ 5,000.00	\$ 45,000.00	
28	00470	Concrete Storm Sewer Manholes	EA	1	\$ 6,000.00	\$ 6,000.00	\$ 7,145.50	\$ 7,145.50	\$ 1,145.50	\$ 1,145.50	19%	\$ 8,000.00	\$ 8,000.00	\$ 3,200.00	\$ 3,200.00	\$ 6,810.00	\$ 6,810.00	\$ 6,100.00	\$ 6,100.00	\$ 11,763.00	\$ 11,763.00	\$ 7,000.00	\$ 7,000.00	

CITY OF OREGON CITY

Item 7d.

2021 ROADWAY RECONSTRUCTION PROJECT

APRIL 2021



PROJECT SITE MAP

NOT TO SCALE

Attention Excavators: Oregon Law requires the contractor to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. The contractor may obtain copies of these rules from the center by calling (503) 232-1987 or by accessing the Internet at www.state.or.us/government/uhn. The contractor must notify the center at least 2 business days, but not more than 10 business days, before commencing an excavation. Call (503) 246-6699.



Civil Engineer: Wallis Engineering
215 W. 4th Ave., Suite 200
Vancouver, Washington 98660
(360) 695-7041
Contact: Wes Wegner, P.E.



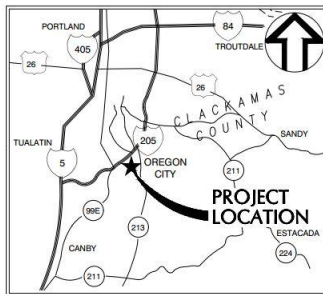
Owner: City of Oregon City
P.O. Box 3040
625 Center Street
Oregon City, Oregon 97045
Oregon City Public Works Department
Contact: Josh Wheeler, Project Manager
(503) 496-1548
Contact (Utility Division): Eric Hand / Kevin Hanks
(503) 657-8241
Contact (Street Division): Jayson Thornberg
(503) 697-8241

Other Agencies:

Portland General Electric
(503) 669-3331
Contact: Ross Cichosz
Clackamas County Traffic Maintenance
(503) 650-3713
Contact: Rich Gandy

NW Natural
(503) 226-4211 Ext. 2967
Contact: Richard Girard
Century Link (Lumen)
(503) 242-8849
Contact: David Dodd

Comcast
(503) 347-0854
Contact: Brent Christiansen
Compass Land Surveyors
(503) 653-9093
Contact: Don Devlaeminck



LOCATION MAP

NOT TO SCALE

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C1	COVER
C2	GENERAL NOTES & LEGEND
C3	SHEET LAYOUT PLAN
C4	TYPICAL SECTIONS I
C5	TYPICAL SECTIONS II
C6	TYPICAL SECTIONS III
C7	HIGH STREET PLAN I
C8	HIGH STREET PLAN II
C9	8TH STREET PLAN I
C10	8TH STREET PLAN II
C11	JOHN ADAMS STREET PLAN
C12	14TH & DIVISION STREET PLAN
C13	HILLTOP AVENUE PLAN I
C14	HILLTOP AVENUE PLAN II
C15	FOX & BEAVER LANE PLAN
C16	JOYCE COURT PLAN
C17	SIDEWALK PLAN & SECTIONS
C18	HIGH STREET & 4TH STREET RAMPS PLAN
C19	HIGH STREET & 5TH STREET RAMPS PLAN
C20	HIGH STREET & 6TH STREET RAMPS PLAN
C21	HIGH STREET & 7TH STREET RAMPS PLAN
C22	8TH STREET & JOHN ADAMS STREET RAMPS PLAN
C23	8TH STREET & JEFFERSON STREET RAMPS PLAN
C24	8TH STREET & MADISON STREET RAMPS PLAN
C25	8TH STREET & MONROE STREET RAMPS PLAN
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C27	JOHN ADAMS & 10TH STREET RAMPS PLAN
C28	14TH STREET & DIVISION STREET RAMPS PLAN
C29	HILLTOP AVENUE & MOLALLA AVENUE RAMPS PLAN
C30	FOX LANE RAMP PLANS
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D2	STREET DETAILS II
D3	STREET DETAILS III
D4	STREET DETAILS IV
D5	STREET DETAILS V
D6	STREET DETAILS VI
D7	UTILITY & EROSION CONTROL DETAILS
D8	SIGNING & STRIPING DETAILS I
D9	SIGNING & STRIPING DETAILS II

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SECTION VIII - CONTRACT DRAWINGS



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Public Works Director John M. Lewis, PE

Agenda Date: 05/19/2021

SUBJECT:

Public Improvement Contract with VSS International for the 2021 Preventive Pavement Maintenance Type II Slurry Seal (CI 21-005)

STAFF RECOMMENDATION:

Award the bid and authorize the City Manager to execute the Public Improvement Contract with VSS International in the amount of \$136,516.00 for construction of the 2021 Preventive Pavement Maintenance Type II Slurry Seal (CI 21-005).

EXECUTIVE SUMMARY:

The slurry seal treatment, consisting of a mixture of emulsified asphalt, water, and well-graded fine aggregate, fills existing pavement surface defects and extends the life of the road by an estimated 5 to 7 years. Without this treatment, these cracks and rough surfaces will become more porous, allowing water to compromise the subgrade and causing the road section to fail.

The work authorized by this contract is funded through the City's Pavement Maintenance Utility Fee (PMUF) which is used to administer the Pavement Maintenance Program and is a necessary component of the City's annual street maintenance commitment. The condition of these streets is fair, but all the streets show signs of age through limited pavement cracking and rough surfaces.

BACKGROUND:

In accordance with City and State contracting procedures, ORS 279A.210, an invitation to bid was solicited from qualified contractors for the 2021 Preventive Pavement Maintenance Type II Slurry Seal Project as a Joint Cooperative Procurement with the City of Hillsboro acting as the administrative contracting agency. The invitation to bid was published on the City of Hillsboro's website on February 17, 2021, and closed on March 10, 2021.

The required work includes the application of slurry seal material including street preparation, neighborhood notification, traffic control, material delivery, material application, and final project cleanup. The work is set to begin no earlier than July 4, 2021, and shall be at substantial completion by September 30, 2021.

On February 19, 2021, the project was advertised in the *Daily Journal of Commerce* in accordance with City and State contracting procedures. The bid opening was held on March 10, 2021, and four (4) bids were received. The City of Hillsboro reviewed the bids and determined that VSS International was the low responsive bidder. The contract award value for Oregon City's portion is one hundred, thirty-six thousand, five hundred sixteen dollars and 00/100 dollars (\$136,516.00). The Oregon City portion of the contract was estimated to be \$171,000 for bidding purposes.

This Joint Cooperative Procurement that was used to solicit qualified contractors has helped reduce staff time and gain a greater economy of scale. The five participating cities received the following bids for the total work of all five cities:

VSS International	\$799,737.00
Doolittle Construction	\$817,807.08
Intermountain Slurry Seal	\$838,838.00
Blackline, Inc.	\$843,843.00
Engineer's Estimate	\$878,362.15

The bidding was close, with the average bid being 6% lower than the engineer's estimate, and the apparent low bidder was 9% lower than the engineer's estimate.

OPTIONS:

1. Authorize the City Manager to execute the Contract.
2. Authorize the City Manager to execute the Contract with specific modifications.
3. Deny the Contract. If the Commission chooses to deny the Contract, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$136,516.00

FY(s): 21/22

Funding Source(s): Transportation Fund – Pavement Maintenance Utility Fee (PMUF)

SECTION IIIA

CONTRACT AGREEMENT

This Agreement, made and entered into this _____ day of _____, 20____, between the CITY OF OREGON CITY (“CITY”), acting by and through the City Commission and VSS INTERNATIONAL (“CONTRACTOR”).

Witnesseth, that the CONTRACTOR and the CITY, for the considerations stated herein, agree as follows:

ARTICLE I - Scope of Work

The CONTRACTOR hereby agrees to furnish all of the materials, equipment and labor necessary, and to perform all of the work for the project entitled: **2021 PREVENTIVE PAVEMENT MAINTENANCE TYPE II SLURRY SEAL (CI 21-005)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid Scope of Work Instructions to Bidders Bid Proposal and Bid Schedule Compliance with ORS 279C.840 Resident Bidder Status Certification of Drug Testing Program Non-Collusion Statement Asbestos Certification Registrations Certification of Non-Discrimination Certification of Compliance with Tax Law Bidder Responsibility Form Bid Bond First Tier Subcontractor Disclosure Form Customer Service Acknowledgment Form Contract Agreement Oregon City Public Improvement Standard Conditions	Statutory Conditions to Contract Agreement Performance Bond Payment Bond State of Oregon Statutory Public Works Bond General Conditions Prevailing Wage Rates for Public Works Contracts in Oregon, dated January 1, 2021 Amendments to the Prevailing Wage Rates for Public Works Contracts in Oregon dated April 1, 2021 Prevailing Wage Apprenticeship Rates dated April 1, 2021 Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018 Special Provisions Contract Drawings City of Oregon City Standard Details Technical Specifications 2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents
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The order of items cited above does not constitute an order of precedence different than that established in the special or standard specifications. Equivalent titles, which may be substituted for the above listed items, are included as if specifically named.

ARTICLE II - Time of Completion

The project shall be complete on or before **September 30, 2021** as identified in 00180.50(b) of the Special Provisions.

ARTICLE III – Contract Amount

The Contract Amount for the work covered by this Agreement is estimated to be **one hundred thirty-six thousand, five hundred sixteen dollars and 00/100 dollars (\$136,516.00)**.

ARTICLE IV - Warranty and Quality of Work

In addition to all other warranties, express or implied, that are part of this Agreement, the Contractor expressly warrants to the City for a period of one year from acceptance of the work by the City that all materials and equipment furnished under this contract will be new, unless otherwise specified, and that the work will be of good quality, free from faults and defects and in conformance with the City's specifications. Work that does not conform to these standards shall be considered defective.

Contractor shall, at its own expense, make good and repair any and all defects arising from faulty workmanship or materials, if the defective work is discovered within the one-year warranty period and notice thereof is given to the Contractor within 60 days after the expiration of the warranty period. If required by the City, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment used to repair the defect.

In witness whereof, the parties hereto have executed this agreement, the day and year first above written.

CITY OF OREGON CITY**VSS INTERNATIONAL**_____
Printed Name

by: _____
Anthony J. Konkol III
City Manager

by: _____
Authorized signature

Title

by: _____
John M. Lewis, P.E.
Public Works Director

Federal Taxpayer ID Number

Approved as to Legal Sufficiency:

Address:

by: _____
City Attorney

City Commission Award Date:

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

1. Time of Completion. The City and the Contractor recognize that time is of the essence in this agreement, and the City may sustain damages if work is not completed within the contract time limit as stated or as adjusted during the life of the contract. It is agreed that the Contractor shall pay the City, as liquidated damages, but not as a penalty, the per diem amount listed in the Schedule of Liquidated Damages, as set forth in the contract documents, for each and every day elapsed in excess of the final contract time.

Permitting the Contractor to finish the work after the contract time has expired shall not be a waiver of any of the City's contract rights.

2. Payments, Statement of Compliance and Subcontractor Payments.

a. Contract Sum and City Payments.

The City shall pay to the Contractor, for the performance of this agreement, the amounts determined for the total supplied number of each of the specified units of work in the Schedule of Bid Items contained in the contract documents. The number of units contained in this schedule is understood to be approximate only, and that any item may be expanded, contracted, or eliminated by procedures contained in the contract documents.

b. Statement of Compliance.

Before any payment is made to the Contractor, the Contractor shall file with the City a statement, under oath, that it has complied with all provisions of state law governing contractors on a public contract. In addition, the Contractor shall file with the City a sworn statement by each of its subcontractors to the same effect.

c. Progress Payments and Retainage.

Partial payments may be made by the City on a monthly basis. Partial payments will be based on an estimate of the percentage of completion for the work. Progress payments shall not be considered an acceptance or approval of any of the work or a waiver of any defects therein. The City may reserve, as retainage from progress payments, an amount not to exceed five percent

of the payment. The Contractor shall have the right to have cash retainage deposited in an interest bearing account, in accordance with ORS 279C.550. The City does not accept deposit bonds or securities in lieu of cash retainage.

d. Certified Payroll Statements.

The Contractor shall file certified payroll statements with the City at a minimum of once per month. Failure to do so shall result in the City withholding 25% of amounts due the Contractor, in addition to any other required retainage.

e. Final Payment.

The final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by this agreement. Not more than 30 days after final completion of the Work and the City's final acceptance of the work, which shall include the taking of final measurements of quantities, the City shall make its final payment to the Contractor. Retainage held by the City shall be included in, and paid to the Contractor, as part of the final payment. If the final payment is made more than 30 days after final completion and final acceptance, the City shall pay the Contractor interest at the rate of one and one half (1 - 1/2%) per month on the final payment, commencing 30 days after completion of the work by the Contractor and final acceptance of the Work by the City. To facilitate the City's inspection, the Contractor shall notify the City in writing when the Contractor considers the work complete.

f. Subcontractor Payments.

The Contractor shall pay the subcontractor for satisfactory performance under the subcontract, out of amounts that are paid by the City to the Contractor, within 10 days of the Contractor's receipt of such payments from the City.

If the Contractor, or a first tier subcontractor, fails to make timely payment to the subcontractor then the Contractor or first tier subcontractor shall owe the person the amount

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

due plus an interest penalty beginning on the day after the required payment date and ending on the date on which payment is made, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest charged to the Contractor or first tier subcontractor on the amount due shall equal three times the discount rate on 90 day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve District that includes Oregon on the date that is 30 days after the date when the payment was received from the Contractor, a first tier subcontractor or City, but the rate of interest shall not exceed thirty percent (30%). The amount of interest may not be waived.

The subcontractor must provide in all contracts with lower tier subcontractors or suppliers a clause requiring that the subcontractor shall pay the lower tier subcontractors and suppliers in accordance with the provisions of the immediately preceding two paragraphs above.

Pursuant to ORS 279C.515(C), if the Contractor or a subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with this Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.

If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or a subcontractor by any person in connection with the public contract as the claim becomes due, the proper officer or officers representing the City, may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of the contract.

First tier subcontractors shall file certified payroll statements with the Contractor. Failure to do so shall result in the Contractor withholding 25% of amounts due the first tier subcontractor.

3. Insurance, Indemnity, Termination.

a. Insurance.

The Contractor shall maintain in force for the duration of this contract the insurance coverages specified below. Each policy required by these provisions shall be written as a primary policy, not contributing with or in excess of any coverage, which the City may carry. A copy of each policy or a certificate satisfactory to the City shall be delivered to the City prior to commencement of work.

Unless otherwise specified, each policy shall be written on an "occurrence" form with an admitted insurance carrier licensed to do business in the State of Oregon. Each policy shall contain an endorsement entitling the City to not less than 30 days prior written notice of any material change, nonrenewal or cancellation.

In the event statutory limits of liability of a public body for claims arising out of a single accident or occurrence is increased above the combined single limit coverage requirements specified below, the City shall have the right to require the Contractor to increase the Contractor's coverages to the statutory limit for such claims, and to increase the aggregate coverage to twice the amount of the statutory limit.

The adequacy of all insurance required by these provisions shall be subject to approval by the City. Failure to maintain any insurance coverage required by this contract shall be cause for immediate termination by the City.

i) Comprehensive General Liability.

The Contractor shall maintain a broad form comprehensive general liability insurance policy with coverage of not less than \$2,000,000 combined single limit per occurrence, with aggregate of \$4,000,000. Coverage shall be for bodily injury, personal injury or property damage. Such policy shall contain a contractual liability endorsement to cover the Contractor's indemnification obligations under this contract.

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

The policy shall also contain an endorsement naming the City, its officers, agents and employees as additional insureds, in a form satisfactory to the City, and expressly providing that the interest of the City shall not be affected by the Contractor's breach of policy provisions.

ii) **Comprehensive Automobile Liability.**

The Contractor shall maintain a comprehensive automobile liability insurance policy with coverage of not less than \$2,000,000 combined single limit per occurrence, with aggregate of \$4,000,000 for bodily injury, personal injury or property damage. The coverage shall include both hired and non-owned auto liability. The policy shall also contain an endorsement naming the City, its officers, agents and employees as additional insureds, in a form satisfactory to the City, and expressly providing that the interest of the City shall not be affected by the Contractor's breach of policy provisions.

iii) **Workers' Compensation Insurance**

The Contractor shall comply with the Oregon Workers' Compensation law by qualifying as a carrier insured employer or as a self-insured employer and shall strictly comply with all other applicable provisions of such law. The Contractor shall provide the City with such further assurances as the City may require from time to time that the Contractor is in compliance with these Workers' Compensation coverage requirements and the Workers' Compensation law.

b. Indemnification.

The Contractor shall indemnify and hold the City, and its officers, agents and employees, harmless from and against all claims, actions, liabilities, costs (including attorney fees) and other costs of defense, arising out of or in any way related to the Work, the Contractor's failure to comply strictly with any provision of this contract, or any other actions or failure to act by the Contractor and the Contractor's employees, agents, officers, representatives and subcontractors.

In the event any such action or claim is brought against the City, the Contractor shall, if the City so elects and upon tender by the City, defend the same at the Contractor's sole cost and expense, promptly satisfy any judgment adverse to the City or to the City and the Contractor jointly, and reimburse the City for any loss, cost, damage, or expense, including attorney fees, suffered or incurred by the City.

c. Termination and Suspension.

The City may terminate this contract or suspend the work at any time for any reason considered by the City, in the exercise of its sole discretion, to be in the public interest.

In the event the Work's suspension is not the result of a labor dispute and this contract is not terminated, the Contractor shall be entitled to a reasonable extension of the time for completion, to be determined by the City, and shall be compensated for all actual verified costs incurred as a result of the suspension, plus the Contractor's standard overhead with respect to such costs.

In the event of a termination of this contract under these provisions, the Contractor shall be compensated for any preparatory work and actual, verified costs and expenses incurred as a result of the termination. In addition the Contractor shall be compensated for the Work performed on the basis of the Contract Sum in the case of any fully completed separate item or portion of the Work for which there is a separate or unit price, and with respect to any other portion of the Work shall be paid a percentage of the Contract Sum allocated to such other Work equal to the percentage of Work completed to the date of termination.

None of the foregoing provisions concerning compensation in the event of a suspension of Work or termination of this contract shall apply if such suspension or termination occurs as a result of the Contractor's violation of any Federal, State, or Local statutes, ordinances, rules or regulations, or as a result of any violation by the Contractor of the terms of this

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

contract, including a determination by the City that the Contractor has not progressed satisfactorily with the Work in accordance with specifications.

4. Liquidated Damages.

Unless provided elsewhere in the Contract documents, liquidated damages in the amount of \$250.00 per calendar day shall apply for every day after the completion time limit that the project is not Substantially Complete.

Permitting the Contractor to continue and finish the work after the contract time or adjusted contract time has expired shall not be a waiver of any of the City's contract rights.

Payment of liquidated damages shall not release the Contractor from any obligations to complete the work nor constitute a waiver of the City's right to collect any additional damages that the City may sustain by failure of the Contractor to fulfill the contract. Liquidated damages shall be full and complete payment only for failure of the Contractor to complete the work on time. The amount of liquidated damages accrued may be deducted from payments due or to become due to the Contractor.

5. Work Schedule.

The Contractor shall notify the City Engineer a minimum of 48 hours prior to commencing work. The Contractor shall perform all work in an expeditious manner, minimizing delays and inconvenience to local businesses and/or residents.

6. Existing Utilities

The Contractor shall be responsible for checking actual utility locations in the field and checking with appropriate agencies that may have underground facilities within the project limits. The Contractor shall notify utility companies at least 2 business days, but not more than 10 business days before commencing any excavations. The excavator shall notify a utilities notifications system of the date, location, and depth of the proposed excavation and the type of work to be performed. Notifying

a utilities notification system constitutes notice only to the participating members of that service. If no utilities notification system is available, or if the owner of the underground facilities is not a member of a utilities notification system, the excavator shall give the same notice to each owner of underground facilities who is known to the excavator or who can be identified and contacted by the excavator.

7. Materials.

All materials shall be as specified in the Technical Specifications, plans, noted or other technical descriptions included herewith, unless otherwise noted. The City reserves the right to sample and test all material according to specification requirements cited in this contract.

8. Traffic Control.

Maintenance of traffic and traffic control through the work area shall be the responsibility of Contractor. If Contractor fails at any time during the project to provide adequate access for local traffic, the City may, at the discretion of the City Engineer, and giving the Contractor four (4) hours notice, perform the necessary work to restore traffic and deduct the cost of such work from the contract price. The provisions for traffic control shall perform the necessary work to restore traffic and deduct the costs of such work from the contract price. The following provisions shall be made for traffic control:

- a. All work done under this contract in the City's right of way shall conform to the Manual on Uniform Traffic Control Devices for Streets and Highways, as currently modified by the Oregon Department of Transportation.
- b. The Contractor shall insure that during non-work hours, that on-call staff is available to maintain all traffic control devices for the project. Both the City Engineer and the Chief of Police will be provided up to date contact information on these people. Failure to comply with this provision will cause the Contractor to be billed for any services

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

required to be provided by City forces to provide adequate protection to the traveling public during non-work hours.

- c. Traffic control and temporary protective and directional devices may be used outside the limits of the project when they have direct bearing on the work under contract.
- d. The Contractor shall consider at least the following factors in restricting traffic flow (consistent with notes above):
 - i) Emergency vehicle access.
 - ii) Sufficiency of traffic control personnel and devices.
 - iii) Prior warning to the public and residents.
 - iv) Notification to TriMet, School District, Post Office, garbage company, and City/County emergency dispatch agencies.
- e. At the pre-construction conference, the Contractor shall provide the name, address and telephone number of the individual responsible for project and construction traffic controls during non-working hours.
- f. The Contractor shall not interrupt access to any private driveway for more than three consecutive hours unless written permission has been given to the Contractor by the owner of the property affected. Advance notice of forty-eight hours shall be given by the Contractor to the affected landowners and residents.

9. Contractor's Use of Premises.

The Contractor shall exercise care to protect adjacent existing structures and property from damage. All debris and excess materials shall be removed and disposed at the direction of the City Engineer.

10. Control of Work.

All work done under this contract shall not be deemed complete until accepted by the City Engineer. The City Engineer shall decide any and all questions that may arise as to the quality and/or acceptability of the materials used and/or work performed. Final approval and acceptance of any and all work performed under this contract shall be the responsibility of the City Engineer.

11. Contractor's Responsibility.

It is understood that the plans, specifications and other contract documents do not purport to control the method of preparing the work, but only the requirements as to the nature of the completed work. The Contractor assumes the entire responsibility for the method of performing and installing the work. Suggestions as to the method of performing and installing the work included in the contract documents shall be deemed advisory only and the feasibility of such methods, or the lack thereof, shall not affect the Contractor's liability or status as an independent Contractor under this contract.

12. Plans and Specifications

If there is a conflict between contract documents, the document highest in precedence shall control. The precedence shall be:

- First: Permits as may be required by law
- Second: Contract Agreement
- Third: Bidder's Proposal
- Fourth: Technical Provisions (Technical Specifications and Drawings)
- Fifth: General Requirements, General Conditions, and Supplementary Conditions

Change orders, supplemental agreements and approved revisions to plans and specifications will take precedence over documents listed above. Detailed plans shall have precedence over general plans as modified by the General Requirements and Technical Provisions applicable to this Project.

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

13. Control of Work.

It will be the direct responsibility of the Contractor to furnish every subcontractor a complete set of project plans and insure that these plans are on the project site and in use when the subcontractor is performing that portion of the project.

The Contractor shall be responsible for any process control sampling, testing, measurement, and inspection needed to insure that the finished work complies with specifications. When density testing is required for assurance and/or acceptance testing, the Contractor shall furnish and operate the nuclear gauge or shall retain an independent testing firm to perform the compaction testing. The testing shall be conducted under the observation of the engineer and performed on all surfaces regardless of density requirements unless otherwise directed by the engineer. All test results shall be provided in written report form to the engineer.

The Contractor shall give the attention necessary to keep the work progressing at a rate satisfactory to the engineer. The Contractor shall provide, at all times, a competent superintendent for all work on the project. The superintendent shall be readily accessible on a daily basis, have a set of plans, specifications, special provisions, and addenda, and be experienced in the type of work being performed. The superintendent shall have the authority to receive and carry out, without delay, the engineer's instructions and orders and to make arrangements for necessary materials, equipment, and labor.

The Contractor shall allow the engineer access at all times, during normal office hours, to books and records of the Contractor and the Contractor's subcontractors that pertain to the contract, and furnish the engineer facts necessary to determine actual cost of any part of all of the work. The engineer will consider a request for confidentiality to protect trade secrets.

If the engineer is not provided proper facilities by the Contractor for keeping strict accounting of cost, then the Contractor agrees to waive any claim for extra compensation.

Contractor shall schedule work Monday through Friday only. Contractor shall establish a standard daily work schedule for hours to begin and end work that is acceptable to the City.

Contractor shall not trespass on private property nor shall they use business or residential garden hoses or water faucets without the written approval of the property owner(s).

14. Protection of City Property.

It is the Contractor's responsibility to protect sidewalks, asphalt paving, concrete, trees, shrubs, and any lawn areas at all times from work related damage of any type. Costs for cleaning, restoration or repair shall be borne by the Contractor, as the City may deem appropriate.

Should, during the course of Contractor's work, Contractor observe or suspect the presence of asbestos fiber, Contractor shall immediately stop work and notify the City of its findings. Should the project's schedule be delayed because of such findings, the Contractor will remove itself from the project and wait the City's order to return to work, at no penalty to the City.

Debris shall not be permitted to remain on site and shall be disposed daily and/or as directed by City.

It is the Contractor's responsibility to manage a safe work environment and Contractor shall take any means necessary to secure a safe work site for both the safety of all personnel and the public.

15. Contractor Identification.

Contractor shall furnish to City its taxpayer identification number as designated by the IRS.

SECTION III B

OREGON CITY PUBLIC IMPROVEMENT STANDARD CONDITIONS

16. Assignment.

Contractor shall not assign any rights acquired hereunder, without obtaining prior written approval from City.

17. Access to Records.

City shall have access to all books, documents, papers and records of Contractor that are pertinent to this Agreement for the purpose of making audits, examinations, excerpts and transcripts.

18. Ownership of Work Product; License.

All work products of Contractor that result from this Agreement (the "Work Products") are the exclusive property of City. In addition, if any of the Work Products contain intellectual property of Contractor that is or could be protected by federal copyright, patent, or trademark laws, or state trade secret laws, Contractor hereby grants City a perpetual, royalty-free, fully paid, nonexclusive and irrevocable license to copy, reproduce, deliver, publish, perform, dispose of, use and re-use, in whole or in part (and to authorize others to do so), all such Work Products and any other information, designs, plans, or works provided or delivered to City or produced by Contractor under this Agreement. The parties expressly agree that all works produced pursuant to this Agreement are works specially commissioned by City, and that any and all such works shall be works made for hire in which all rights and copyrights belong exclusively to City. Contractor shall not publish, republish, display or otherwise use Work Products resulting from this Agreement without the prior written agreement of City.

19. Legal Expenses.

In the event legal action is brought by City or Contractor against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for attorney fees, costs, and expenses as may be set by a court. "Legal action" shall include matters subject to arbitration and appeals.

20. Severability.

The parties agree that, if any term or provision of this Agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected.

21. Number and Gender.

In this Agreement, the masculine, feminine or neuter gender, and the singular or plural number, shall be deemed to include the others or other whenever the context so requires.

22. Captions and Headings.

The captions and headings of this Agreement are for convenience only and shall not be construed or referred to in resolving questions of interpretation or construction.

23. Calculation of Time.

All periods of time referred to herein shall include Saturdays, Sundays and legal holidays in the state of Oregon, except that, if the last day of any period falls on any Saturday, Sunday or legal holiday, the period shall be extended to include the next day that is not a Saturday, Sunday or legal holiday.

24. Notices.

Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United States mail, postage prepaid, or personally delivered to the addresses listed in the Agreement attached hereto. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

25. Nonwaiver.

The failure of City to insist upon or enforce strict performance by Contractor of any of the terms of this Agreement or to exercise any rights hereunder shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights of any future occasion.

SECTION III B
OREGON CITY PUBLIC IMPROVEMENT
STANDARD CONDITIONS

26. Information and Reports.

Contractor shall, at such time and in such form as City may require, furnish such periodic reports concerning the status of the project, such statements, certificates, approvals, and copies of proposed and executed plans and claims, and other information relative to the project as may be requested by City. Contractor shall furnish City, upon request, with copies of all documents and other materials prepared or developed in relation with or as a part of the project. Working

papers prepared in conjunction with the project are the property of City, but may remain with Contractor. Copies as requested shall be provided free of cost to City.

27. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

SECTION III C
STATUTORY CONDITIONS
To CONTRACT AGREEMENT

ORS 279C.505(1)(a) CONTRACTOR shall make payment promptly, as due, to all persons supplying to such CONTRACTOR labor or material for the performance of the work provided for in such contract.

ORS 279C.505(1)(b) CONTRACTOR shall pay all contributions or amounts due the Industrial Accident Fund from such CONTRACTOR or subcontractor incurred in the performance of the contract.

ORS 279C.505(1)(c) CONTRACTOR shall not permit any lien or claim to be filed or prosecuted against the state, county, school district, municipality, municipal corporation or subdivision thereof, on account of any labor or material furnished.

ORS 279C.505(1)(d) CONTRACTOR shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

ORS 279C.505(2) CONTRACTOR shall demonstrate that an employee drug testing program is in place.

ORS 279C.510 CONTRACTOR shall salvage or recycle construction and demolition debris, if feasible and cost-effective. In a public improvement contract for lawn and landscape maintenance, CONTRACTOR shall compost or mulch yard waste material at an approved site, if feasible and cost-effective.

ORS 279C.515(1) If the CONTRACTOR fails, neglects or refuses to pay promptly a person's claim for labor or services that the person provides to the CONTRACTOR or a subcontractor in connection with the public contract as the claim becomes due, the proper officer that represents the state or a county, school district, municipality, or municipal corporation or a subdivision, of the state, county, school district, municipality or municipal corporation, may pay the amount of the claim to the person that provides the labor or services and charge the amount of the payment

against funds due or to become due the CONTRACTOR by reason of the contract.

ORS 279C.515(2) If the CONTRACTOR or a first-tier subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public improvement contract within 30 days after receiving payment from the contracting agency or a contractor, the CONTRACTOR or first-tier subcontractor owes the person the amount due plus interest charges that begins at the end of the 10-day period within which payment is due under ORS 279C.580 (4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived.

ORS 279C.515(3) If the CONTRACTOR or a subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public improvement contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.

ORS 279C.520

(1) A contractor may not employ an employee for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency or when the public policy absolutely requires otherwise, and in such cases, the contractor shall pay the employee at least time and a half pay for:

(a)(i) All overtime in excess of eight hours in any one day or 40 hours in any one week if the work week is five consecutive days, Monday through Friday; or

(ii) For all overtime in excess of 10 hours in any one day or 40 hours in any one week if the work week is four consecutive days, Monday through Friday; and

(b) All work the employee performs on Saturday and on any legal holiday specified in ORS 279C.540.

(2) The CONTRACTOR shall comply with the

SECTION III C
STATUTORY CONDITIONS
To CONTRACT AGREEMENT

prohibition set forth in ORS 652.220, that compliance is a material element of the contract and that a failure to comply is a breach that entitles the contracting agency to terminate the contract for cause.

(c) The CONTRACTOR may not prohibit any of the contractor's employees from discussing the employee's rate of wage, salary, benefits or other compensation with another employee or another person and may not retaliate against an employee who discusses the employee's rate of wage, salary, benefits or other compensation with another employee or another person.

(3) CONTRACTOR shall give notice in writing to employees who work on a public contract, either at the time of hire or before work begins on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and days per week that the contractor may require the employees to work.

ORS 279C.525 In addition to any other laws, rules and regulations dealing with the prevention of environmental pollution and the preservation of natural resources he following environmental and natural resources, laws, rules and regulations affect the performance of the contract:

- City of Oregon City Erosion Control Ordinance (Ref. Oregon City Municipal Code Chapter 17.47 Erosion and Sediment Control).

ORS 279C.530 The CONTRACTOR shall promptly, as due, make payment to any person, copartnership, association or corporation, furnishing medical, surgical and hospital care, or other needed care and attention, incident to sickness or injury, to the employees of the CONTRACTOR, of all sums which the CONTRACTOR agrees to pay for such services and all moneys and sums which the CONTRACTOR collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.

ORS 279C.530(2) All employers, including CONTRACTOR, that employ subject workers who work under this Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. CONTRACTOR shall ensure that each of its subcontractors complies with these requirements.

ORS 279C.545 Any worker employed by the CONTRACTOR shall be foreclosed from the right to collect for any overtime provided in ORS 279C.540 unless a claim for payment is filed with the CONTRACTOR within 90 days from the completion of the contract, providing the CONTRACTOR has caused a circular clearly printed in boldfaced 12-point type and containing a copy of this section to be posted in a prominent place alongside the door of the timekeeper's office or in a similar place that is readily available and freely visible to workers employed on the work and maintained the circular continuously posted from the inception to the completion of the contract on which workers are or have been employed.

ORS 279C.550 - 570 Retainage and payment under the terms of this Agreement shall be governed by the terms of ORS 279C.550 – 570.

ORS 279C.570 The CITY shall make progress payments on the contract monthly as work progresses on the contract. Payments shall be based upon estimates of work completed that are approved by the CITY. A progress payment is not considered acceptance or approval of any work or waiver of any defects therein. The CITY shall pay to the CONTRACTOR interest if any payment becomes overdue.

ORS 279C.580

(1) CONTRACTOR shall pay first-tier subcontractors for satisfactory performance under subcontract out of amounts that are paid by the CITY to the CONTRACTOR within 10 days of CONTRACTOR's receipt of such payments from the CITY.

SECTION III C
STATUTORY CONDITIONS
To CONTRACT AGREEMENT

(2) CONTRACTOR shall provide first-tier subcontractors with a standard form that the first-tier subcontractor may use as an application for payment or as another method by which the subcontractor may claim a payment due from CONTRACTOR.

(3) CONTRACTOR, except as otherwise provided in this paragraph, shall use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. CONTRACTOR may change the form or the regular administrative procedures used for processing payments if CONTRACTOR:

(A) Notifies the subcontractor in writing at least 45 days before the date on which the change is made; and

(B) Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.

(4) If CONTRACTOR does not pay the first-tier subcontractor within 30 days after receiving payment from the contracting agency, the CONTRACTOR shall pay the first-tier subcontractor an interest penalty as provided in ORS 279C.580(3)(d).

(5) The CONTRACTOR shall include this requirement as further detailed in the Special Provisions in all subcontracts worded appropriately to require prompt payment of said subcontractors to lower tier subcontractors. In addition, CONTRACTOR shall require a first-tier subcontractor to include a payment clause and an interest penalty clause that conforms to the standards of ORS 279C.580(3) in each of its subcontracts and CONTRACTOR shall require each of the first-tier subcontractor's subcontractors to include such clauses in the first-tier subcontractors' subcontracts with each lower-tier subcontractor or supplier.

ORS 279C.605 A notice of claim required by ORS 279C.600 must be sent by registered or certified mail or hand delivered no later than 120 days after the day the person last provided labor or furnished materials or 120 days after the

worker listed in the notice of claim by the Commissioner of the Bureau of Labor and Industries last provided labor. The notice may be sent or delivered to the CONTRACTOR at any place the CONTRACTOR maintains an office or conducts business or at the residence of the CONTRACTOR. Notwithstanding the preceding, if the claim is for a required contribution to a fund of an employee benefit plan, the notice required by ORS 279C.600 must be sent or delivered within 200 days after the employee last provided labor or materials.

ORS 279C.830(1) (1) The existing prevailing rate of wage and, if applicable, the federal prevailing rate of wage required under the Davis-Bacon Act (40 U.S.C. 3141 et seq.) that may be paid to workers in each trade or occupation required for the public works employed in the performance of the contract either by the CONTRACTOR or subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by the contract is included in Section IX of these contract documents. The workers shall be paid not less than the specified minimum hourly rate of wage and CONTRACTOR shall pay the higher of the applicable state or federal prevailing rate of wage to all workers on the public works and include this requirement in all subcontracts.

(2) CONTRACTOR shall pay all workers not less than the specified minimum hourly rate of wage in accordance with ORS 279C.838 and 279C.840, and CONTRACTOR shall require this provision be included in all subcontracts.

ORS 279C.830(2) The CONTRACTOR and every subcontractor must have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt. CONTRACTOR shall:

(a) Have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt.

(b) Include in every subcontract a provision requiring the subcontractor to have a public works bond filed with the Construction

SECTION III C
STATUTORY CONDITIONS
To CONTRACT AGREEMENT

Contractors Board before starting work on the project, unless exempt.

ORS 279C.845(7) If CONTRACTOR is required to file certified statements, the public agency **shall** retain 25 percent of any amount earned by the CONTRACTOR on the public works until the CONTRACTOR has filed with the public agency certified statements as required by ORS 279C.845. The public agency shall pay the CONTRACTOR the amount retained under this subsection within 14 days after the CONTRACTOR files the certified statements as required by ORS 279C.845, regardless of whether a subcontractor has failed to file certified statements as required by this section.

ORS 279C.845(8) CONTRACTOR shall retain 25 percent of any amount earned by a first-tier subcontractor on a public works until the subcontractor has filed with the public agency certified statements as required by ORS 279C.845. CONTRACTOR shall verify that the first-tier subcontractor has filed the certified statements before the CONTRACTOR may pay the subcontractor any amount retained under ORS 279C.845(7). CONTRACTOR shall pay the first-tier subcontractor the amount retained under this subsection within 14 days after the subcontractor files the certified statements as required by ORS 279C.845.

ORS 305.385(6) CONTRACTOR shall certify in writing, under penalty of perjury, that CONTRACTOR is, to the best of the person's knowledge, not in violation of any tax laws described in ORS 305.380 (4).

ORS Chapter 701 CONTRACTOR shall certify that all subcontractors performing work described in ORS 701.005(2), i.e., construction work, will be registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under this contract.

OAR 137-049-0200(2). CONTRACTOR shall not assign, sell, dispose of, or transfer rights, or delegate duties under the Contract, either in whole or in part, without the CITY's prior Written consent. Unless otherwise agreed by the CITY in Writing, such consent shall not relieve CONTRACTOR of any obligations under the Contract. Any assignee or transferee shall be considered the agent of CONTRACTOR and be bound to abide by all provisions of the Contract. If the CITY consents in Writing to an assignment, sale, disposal or transfer of CONTRACTOR's rights or delegation of CONTRACTOR's duties, CONTRACTOR and its surety, if any, shall remain liable to the CITY for complete performance of the Contract as if no such assignment, sale, disposal, transfer or delegation had occurred unless the City otherwise agrees in Writing.



"Getting TUF on our streets."

March 11, 2021

Notice of Intent to Award

**RE: 2021 Pavement Management Program Schedule 'A': Overlays, Schedule 'B': Slurry Seal,
ITB# 202102-10003**

To Whom it May Concern:

This is to notify you that bids in response to the Invitation to Bid above have been evaluated. The City intends to award contracts for these services to the following Bidders submitting the responsive, responsible low bid.

- a. Schedule "A": Overlays to Brix Paving Northwest, Inc., in the amount of \$5,467,818.90.
 - b. Schedule "B": Slurry Seal to VSS International, in the amount of \$799,737.00.
- Oregon City not
participating in
Schedule "A" work.

A City representative will be in contact with these Bidders .

Thank you for your interest in doing business with the City of Hillsboro. Any questions regarding this notice may be directed to: Brad Albert at brad.albert@hillsboro-oregon.gov or by phone at 503-681-6234.

Sincerely,

Brad Albert
Street Engineering Section Manager

SCHEDULE "A": OVERLAYS				ENGINEER'S ESTIMATE		Brix Paving Northwest Inc		Baker Rock Resources		S-2 Contractors, Inc		Item 7e.
2021 PAVEMENT MANAGEMENT PROGRAM (ITB# 202102-10003)												
ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	
1	Move-in, Bond, Insurance, Clean Up, All Streets	L.S.	All	\$ 400,000.00	\$ 400,000.00	\$ 250,000.00	\$ 250,000.00	\$ 302,000.00	\$ 302,000.00	\$ 387,500.00	\$ 387,500.00	
2	Traffic Control (including temporary lane marking) and Public Notif	L.S.	All	\$ 400,000.00	\$ 400,000.00	\$ 400,000.00	\$ 400,000.00	\$ 630,000.00	\$ 630,000.00	\$ 500,000.00	\$ 500,000.00	
3	Portable Changeable Message Signs (PCMS)	EA.	16	\$ 2,500.00	\$ 40,000.00	\$ 1,850.00	\$ 29,600.00	\$ 2,460.00	\$ 39,360.00	\$ 3,000.00	\$ 48,000.00	
4	Street Preparation (include surface cleaning, removal of thermoplas reflective markers, de-vegetation, and minor grading), All Streets	L.S.	All	\$ 100,000.00	\$ 100,000.00	\$ 30,000.00	\$ 30,000.00	\$ 127,000.00	\$ 127,000.00	\$ 200,000.00	\$ 200,000.00	
5	Utility Adjustments											
	A. Catch Basin	EA.	244	\$ 300.00	\$ 73,200.00	\$ 100.00	\$ 24,400.00	\$ 278.00	\$ 67,832.00	\$ 200.00	\$ 48,800.00	
	B. Cleanouts	EA.	4	\$ 110.00	\$ 440.00	\$ 100.00	\$ 400.00	\$ 72.50	\$ 290.00	\$ 100.00	\$ 400.00	
	C. Gas Valves	EA.	10	\$ 110.00	\$ 1,100.00	\$ 100.00	\$ 1,000.00	\$ 108.00	\$ 1,080.00	\$ 100.00	\$ 1,000.00	
	D. Manholes - GTE	EA.	3	\$ 250.00	\$ 750.00	\$ 100.00	\$ 300.00	\$ 249.00	\$ 747.00	\$ 200.00	\$ 600.00	
	E. Manholes - Standard	EA.	256	\$ 250.00	\$ 64,000.00	\$ 100.00	\$ 25,600.00	\$ 50.00	\$ 12,800.00	\$ 200.00	\$ 51,200.00	
	F. Water Valves	EA.	87	\$ 110.00	\$ 9,570.00	\$ 55.00	\$ 4,785.00	\$ 92.00	\$ 8,004.00	\$ 100.00	\$ 8,700.00	
6	Reconstruct Existing Manhole	EA.	10	\$ 1,500.00	\$ 15,000.00	\$ 200.00	\$ 2,000.00	\$ 2,700.00	\$ 27,000.00	\$ 800.00	\$ 8,000.00	
7	Survey Monument Boxes											
	A. Adjust Survey Monument Box	EA.	8	\$ 350.00	\$ 2,800.00	\$ 150.00	\$ 1,200.00	\$ 102.00	\$ 816.00	\$ 100.00	\$ 800.00	
	B. New Survey Monument Box	EA.	15	\$ 1,000.00	\$ 15,000.00	\$ 300.00	\$ 4,500.00	\$ 920.00	\$ 13,800.00	\$ 600.00	\$ 9,000.00	
8	3" Depth Grind	S.Y.	205,247	\$ 4.50	\$ 923,611.50	\$ 3.95	\$ 810,725.65	\$ 4.10	\$ 841,512.70	\$ 4.00	\$ 820,988.00	
9	Asphalt Concrete Removal and Preparation	S.Y.	111	\$ 150.00	\$ 16,650.00	\$ 15.00	\$ 1,665.00	\$ 66.00	\$ 7,326.00	\$ 30.00	\$ 3,330.00	
10	Asphalt Concrete Replacement	TON	21	\$ 150.00	\$ 3,150.00	\$ 125.00	\$ 2,625.00	\$ 253.00	\$ 5,313.00	\$ 120.00	\$ 2,520.00	
11	3" Level 2, 1/2" Dense Graded Asphalt Concrete	TON	21,417	\$ 80.00	\$ 1,713,360.00	\$ 75.00	\$ 1,606,275.00	\$ 75.10	\$ 1,608,416.70	\$ 88.00	\$ 1,884,696.00	
12	3" Level 3, 1/2" Dense Graded Asphalt Concrete	TON	16,682	\$ 80.00	\$ 1,334,560.00	\$ 75.00	\$ 1,251,150.00	\$ 69.20	\$ 1,154,394.40	\$ 88.00	\$ 1,468,016.00	
13	Subgrade Stabilization	C.Y.	100	\$ 110.00	\$ 11,000.00	\$ 100.00	\$ 10,000.00	\$ 165.00	\$ 16,500.00	\$ 150.00	\$ 15,000.00	
14	Install/Replace Pavement Markings per Manual of Uniform Traffic Control Devices											
	A. Arrows, Left Turn, Thermoplastic	EA.	15	\$ 300.00	\$ 4,500.00	\$ 275.00	\$ 4,125.00	\$ 260.00	\$ 3,900.00	\$ 300.00	\$ 4,500.00	
	B. Arrows, Left Turn/Thru, Thermoplastic	EA.	2	\$ 300.00	\$ 600.00	\$ 375.00	\$ 750.00	\$ 342.00	\$ 684.00	\$ 420.00	\$ 840.00	
	C. Arrows, Right Turn, Thermoplastic	EA.	9	\$ 300.00	\$ 2,700.00	\$ 275.00	\$ 2,475.00	\$ 260.00	\$ 2,340.00	\$ 300.00	\$ 2,700.00	
	D. Arrows, Right Turn/Thru, Thermoplastic	EA.	1	\$ 300.00	\$ 300.00	\$ 375.00	\$ 375.00	\$ 342.00	\$ 342.00	\$ 420.00	\$ 420.00	
	E. Non-Reflective Raised Pavement Markers, Round, Yellow, 4"	EA.	68	\$ 5.00	\$ 340.00	\$ 5.00	\$ 340.00	\$ 4.35	\$ 295.80	\$ 7.00	\$ 476.00	
	F. Pavement Legend, "ONLY", Thermoplastic	EA.	2	\$ 300.00	\$ 600.00	\$ 350.00	\$ 700.00	\$ 326.00	\$ 652.00	\$ 450.00	\$ 900.00	</

SCHEDULE "B": SLURRY SEALS													
2021 PAVEMENT MANAGEMENT PROGRAM ITB #202102-10003				ENGINEER'S ESTIMATE		VSS International		Doolittle Construction		Intermountain Slurry Seal		Blackline Inc	
ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
1.	Move-in, Bond, Insurance, Clean-up												
	A. City of Hillsboro	L.S.	All	\$ 10,000.00	\$ 10,000.00	\$ 4,250.00	\$ 4,250.00	\$ 14,000.00	\$ 14,000.00	\$ 12,000.00	\$ 12,000.00	\$ 15,000.00	\$ 15,000.00
	B. City of Gladstone	L.S.	All	\$ 10,000.00	\$ 10,000.00	\$ 4,250.00	\$ 4,250.00	\$ 8,000.00	\$ 8,000.00	\$ 4,000.00	\$ 4,000.00	\$ 8,000.00	\$ 8,000.00
	C. City of Milwaukie	L.S.	All	\$ 10,000.00	\$ 10,000.00	\$ 4,250.00	\$ 4,250.00	\$ 6,000.00	\$ 6,000.00	\$ 4,000.00	\$ 4,000.00	\$ 8,000.00	\$ 8,000.00
	D. City of Oregon City	L.S.	All	\$ 10,000.00	\$ 10,000.00	\$ 4,250.00	\$ 4,250.00	\$ 7,000.00	\$ 7,000.00	\$ 6,000.00	\$ 6,000.00	\$ 8,000.00	\$ 8,000.00
	E. City of Sherwood	L.S.	All	\$ 10,000.00	\$ 10,000.00	\$ 4,250.00	\$ 4,250.00	\$ 7,000.00	\$ 7,000.00	\$ 2,000.00	\$ 2,000.00	\$ 14,565.48	\$ 14,565.48
2.	Traffic Control and Public Notification												
	A. City of Hillsboro	L.S.	All	\$ 20,000.00	\$ 20,000.00	\$ 41,610.00	\$ 41,610.00	\$ 26,000.00	\$ 26,000.00	\$ 32,028.58	\$ 32,028.58	\$ 20,000.00	\$ 20,000.00
	B. City of Gladstone	L.S.	All	\$ 20,000.00	\$ 20,000.00	\$ 36,978.97	\$ 36,978.97	\$ 19,000.00	\$ 19,000.00	\$ 18,000.00	\$ 18,000.00	\$ 10,000.00	\$ 10,000.00
	C. City of Milwaukie	L.S.	All	\$ 20,000.00	\$ 20,000.00	\$ 17,932.50	\$ 17,932.50	\$ 12,000.00	\$ 12,000.00	\$ 15,000.00	\$ 15,000.00	\$ 10,000.00	\$ 10,000.00
	D. City of Oregon City	L.S.	All	\$ 20,000.00	\$ 20,000.00	\$ 23,525.00	\$ 23,525.00	\$ 14,000.00	\$ 14,000.00	\$ 20,000.00	\$ 20,000.00	\$ 15,000.00	\$ 15,000.00
	E. City of Sherwood	L.S.	All	\$ 20,000.00	\$ 20,000.00	\$ 26,555.00	\$ 26,555.00	\$ 18,000.00	\$ 18,000.00	\$ 13,000.00	\$ 13,000.00	\$ 15,000.00	\$ 15,000.00
3.	Street Preparation and Application of Type II Asphalt Emulsion Slurry Seal	SQ. YD.	371,462	\$ 1.70	\$ 631,485.40	\$ 1.50	\$ 557,193.00	\$ 1.66	\$ 616,626.92	\$ 1.73	\$ 642,629.26	\$ 1.71	\$ 635,200.02
4.	Install/Replace Pavement Markings per Manual of Uniform Traffic Control Devices												
	A. Arrows, Left Turn, Thermoplastic	EA.	7	\$ 300.00	\$ 2,100.00	\$ 252.00	\$ 1,764.00	\$ 226.00	\$ 1,582.00	\$ 226.00	\$ 1,582.00	\$ 300.00	\$ 2,100.00
	B. Arrows, Right Turn, Thermoplastic	EA.	4	\$ 300.00	\$ 1,200.00	\$ 252.00	\$ 1,008.00	\$ 226.00	\$ 904.00	\$ 226.00	\$ 904.00	\$ 300.00	\$ 1,200.00
	C. Arrows, Right Turn/Thru, Thermoplastic	EA.	1	\$ 300.00	\$ 300.00	\$ 320.25	\$ 320.25	\$ 342.00	\$ 342.00	\$ 342.00	\$ 342.00	\$ 350.00	\$ 350.00
	D. Arrows, Thru, Thermoplastic	EA.	5	\$ 300.00	\$ 1,500.00	\$ 246.75	\$ 1,233.75	\$ 226.00	\$ 1,130.00	\$ 226.00	\$ 1,130.00	\$ 275.00	\$ 1,375.00
	E. Pavement Legend, "R/R XING", Thermoplastic	EA.	2	\$ 600.00	\$ 1,200.00	\$ 960.75	\$ 1,921.50	\$ 1,086.00	\$ 2,172.00	\$ 1,086.00	\$ 2,172.00	\$ 1,000.00	\$ 2,000.00
	F. Pavement Legend, ADA Stall, Thermoplastic	EA.	1	\$ 350.00	\$ 350.00	\$ 225.75	\$ 225.75	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 250.00	\$ 250.00
	G. Pavement Legend, Bike, Thermoplastic	EA.	19	\$ 300.00	\$ 4,500.00	\$ 246.75	\$ 4,688.25	\$ 218.00	\$ 4,142.00	\$ 218.00	\$ 4,142.00	\$ 300.00	\$ 5,700.00
	H. Pavement Legend, Sharrow, Thermoplastic	EA.	7	\$ 350.00	\$ 2,450.00	\$ 257.25	\$ 1,800.75	\$ 250.00	\$ 1,750.00	\$ 250.00	\$ 1,750.00	\$ 300.00	\$ 2,100.00
	I. Pavement Legend, Parking Corner, Thermoplastic	EA.	25	\$ 15.00	\$ 375.00	\$ 31.50	\$ 787.50	\$ 25.00	\$ 625.00	\$ 25.00	\$ 625.00	\$ 40.00	\$ 1,000.00
	J. Pavement Legend, Roundabout Triangles, Thermoplastic	EA.	28	\$ 150.00	\$ 4,200.00	\$ 42.00	\$ 1,176.00	\$ 29.00	\$ 812.00	\$ 29.00	\$ 812.00	\$ 50.00	\$ 1,400.00
	K. Reflective Raised Pavement Markers, Bidirectional, Blue	EA.	131	\$ 25.00	\$ 3,275.00	\$ 8.40	\$ 1,100.40	\$ 25.00	\$ 3,275.00	\$ 25.00	\$ 3,275.00	\$ 10.00	\$ 1,310.00
	L. Striping, White, 4", Thermoplastic	L.F.	14,082	\$ 1.00	\$ 14,082.00	\$ 0.71	\$ 9,998.22	\$ 0.62	\$ 8,730.84	\$ 0.62	\$ 8,730.84	\$ 1.00	\$ 14,082.00
	M. Striping, White, 8", Thermoplastic	L.F.	4,049	\$ 1.75	\$ 7,085.75	\$ 1.43	\$ 5,790.07	\$ 1.24	\$ 5,020.76	\$ 1.24	\$ 5,020.76	\$ 1.50	\$ 6,073.50
	N. Striping, White, 12", Thermoplastic	L.F.	2,419	\$ 9.00	\$ 21,771.00	\$ 8.19	\$ 19,811.61	\$ 8.00	\$ 19,352.00	\$ 8.00	\$ 19,352.00	\$ 9.00	\$ 21,771.00
	O. Striping, Yellow, 4", Thermoplastic	L.F.	32,488	\$ 1.00	\$ 32,488.00	\$ 0.71	\$ 23,066.48	\$ 0.62	\$ 20,142.56	\$ 0.62	\$ 20,142.56	\$ 0.75	\$ 24,366.00
				TOTAL	\$ 878,362.15		\$ 799,737.00		\$ 817,807.08		\$ 838,838.00		\$ 843,843.00

2021 Oregon City Slurry Seal

2021 projected slurry seal project cost:	Jayson Budget	VSS International (low bidder)
Move in	\$15,000	\$4,250
Traffic Control	\$30,000	\$23,525
Emulsion 72,494 sq yd	(@\$1.75) \$126,864.5	(@ \$1.50) \$108,741
Total slurry seal cost	\$171,865	\$136,516

City of Oregon City

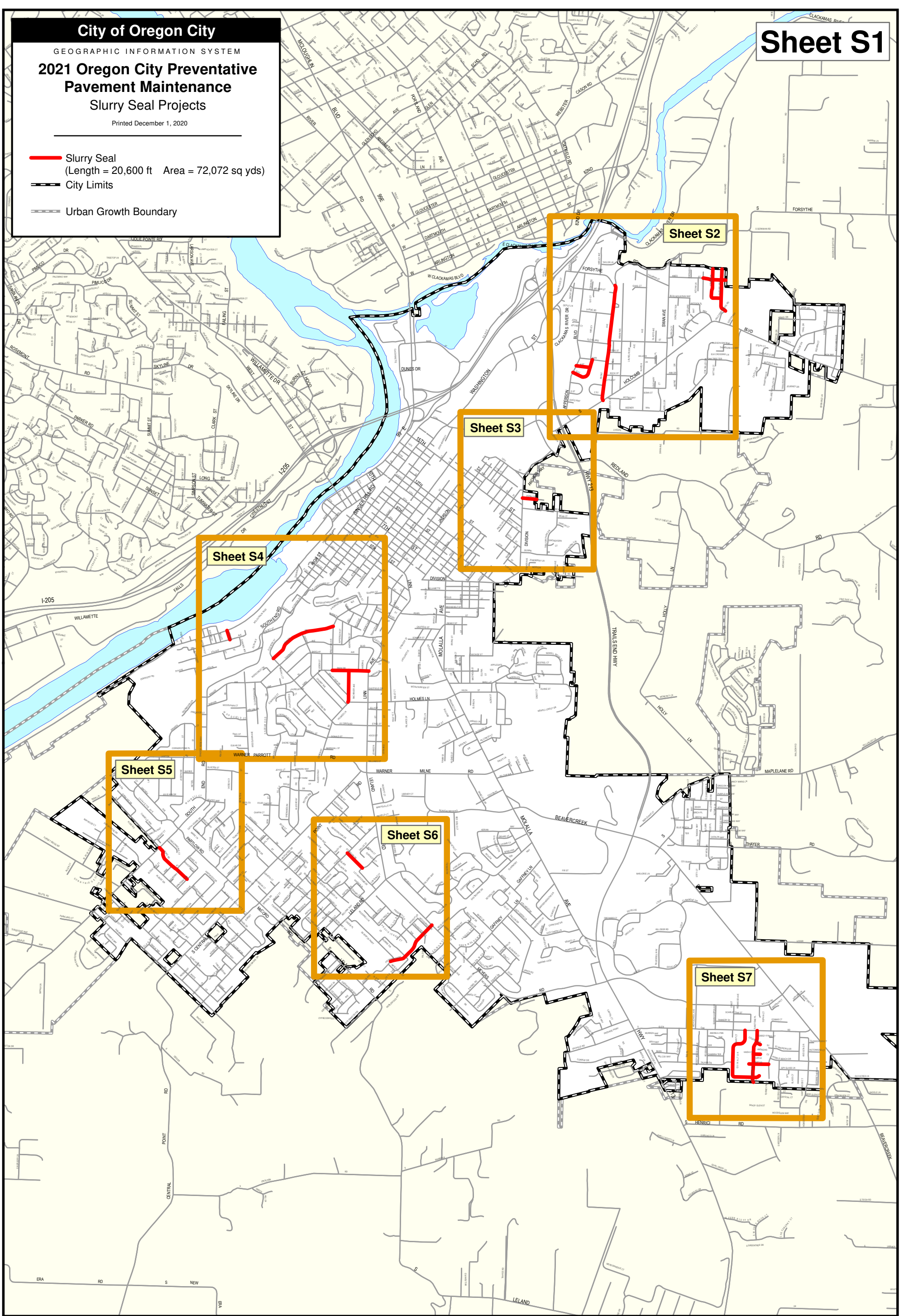
GEOGRAPHIC INFORMATION SYSTEM

2021 Oregon City Preventative Pavement Maintenance Slurry Seal Projects

Printed December 1, 2020

-  Slurry Seal
(Length = 20,600 ft Area = 72,072 sq yds)
-  City Limits
-  Urban Growth Boundary

Sheet S1



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, or surveying purposes. Notification of any errors is appreciated.



0 0.25 0.5 1 Miles

0 1,000 2,000 4,000 6,000 Feet

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City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.orecity.org



Plot date: December 1, 2020
Plot name: PMUF - 2021 Preventive Maintenance Projects Map - 1Sheet S1 - 20201201 - 11x17P.pdf
Map name: PMUF - 2021 Preventive Maintenance Projects Map - Sheet S1 - 20201201 - 11x17P.mxd

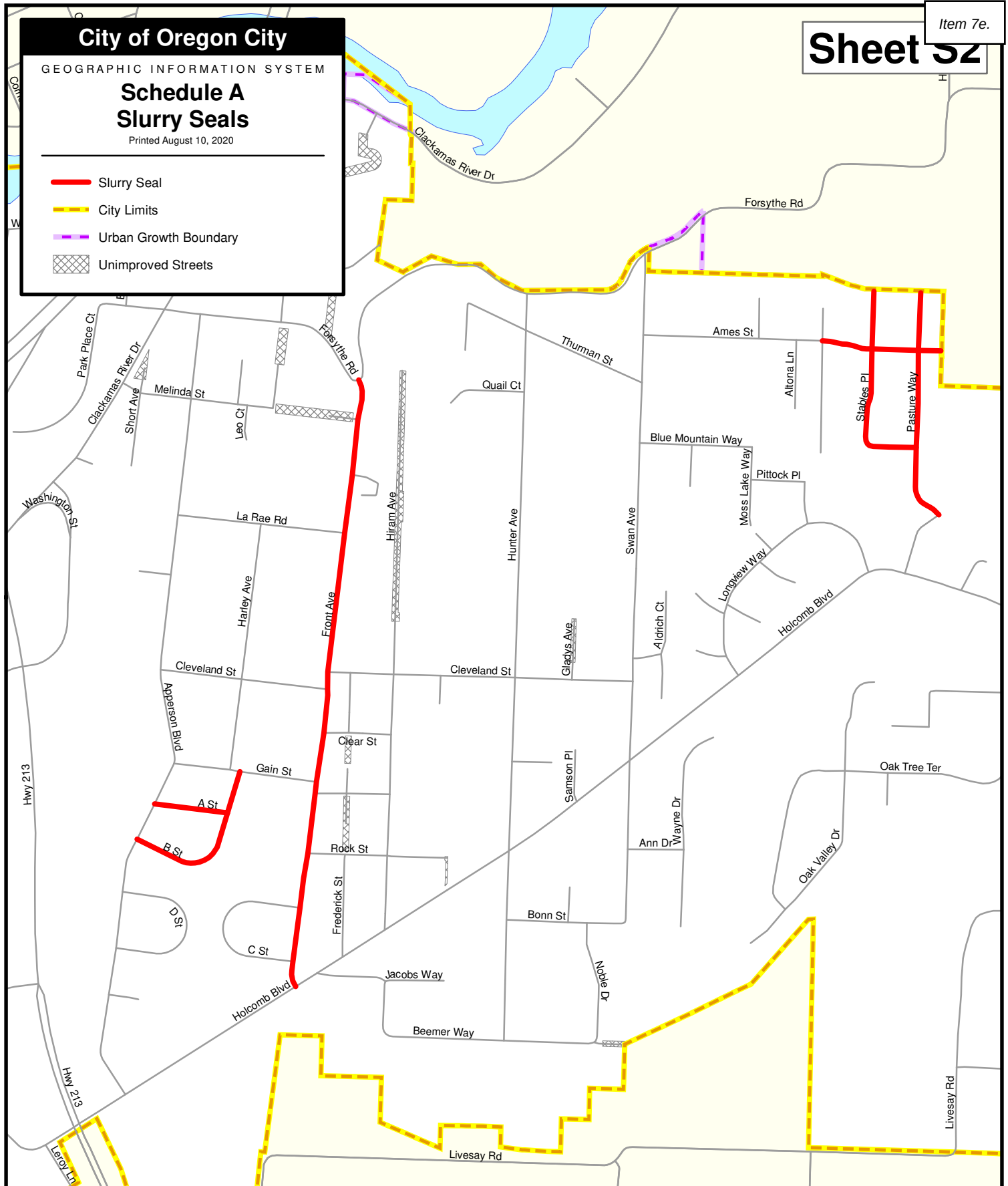
City of Oregon City

GEOGRAPHIC INFORMATION SYSTEM

Schedule A
Slurry Seals

Printed August 10, 2020

- Slurry Seal
- - - City Limits
- - - Urban Growth Boundary
- Unimproved Streets



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0 250 500 1,000 Feet

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City of Oregon City

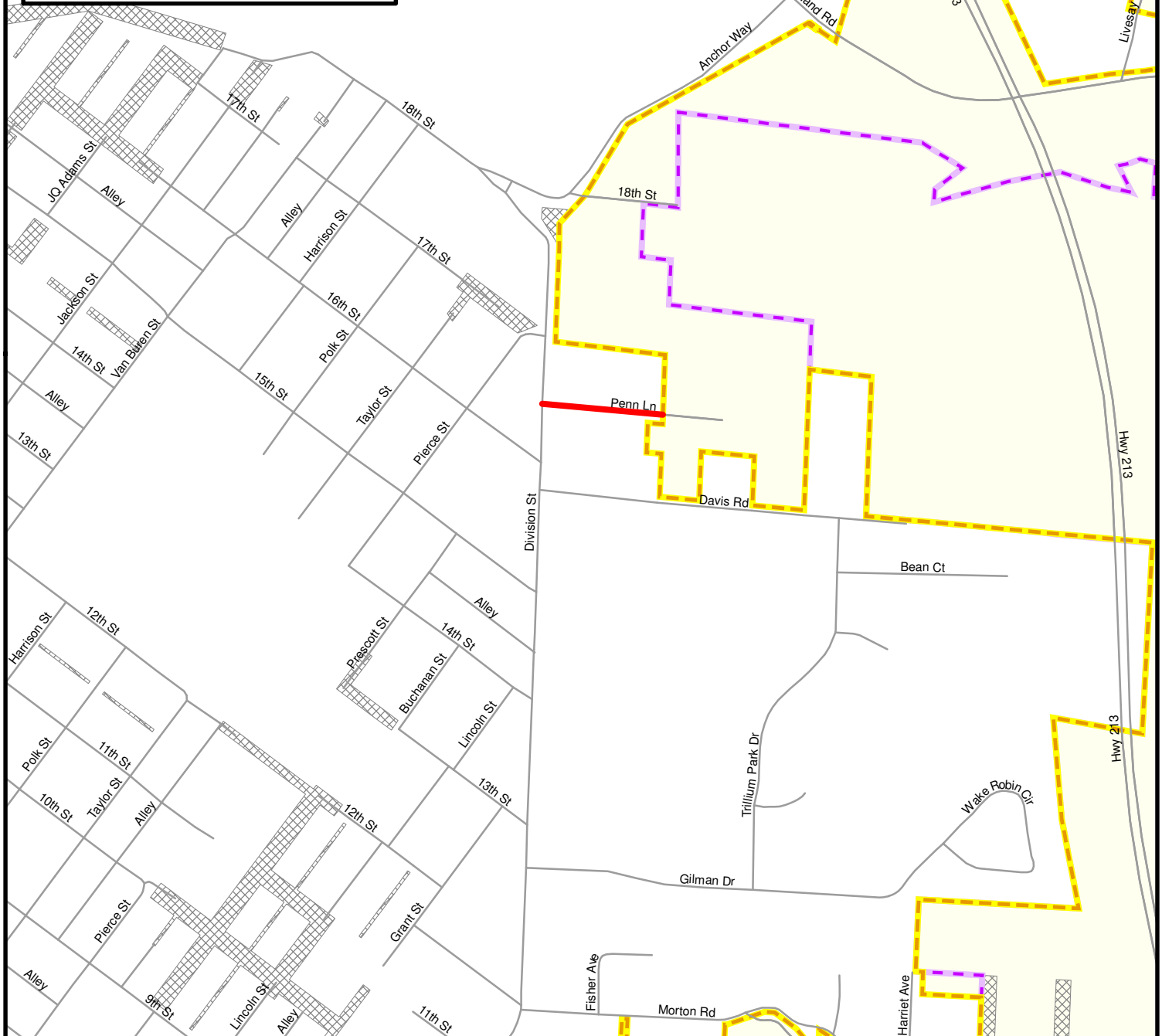
GEOGRAPHIC INFORMATION SYSTEM

Schedule A Slurry Seals

Printed August 10, 2020

-  Slurry Seal
-  City Limits
-  Urban Growth Boundary
-  Unimproved Streets

Item 7e.
Sheet S3



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0 250 500 1,000 Feet

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City of Oregon City

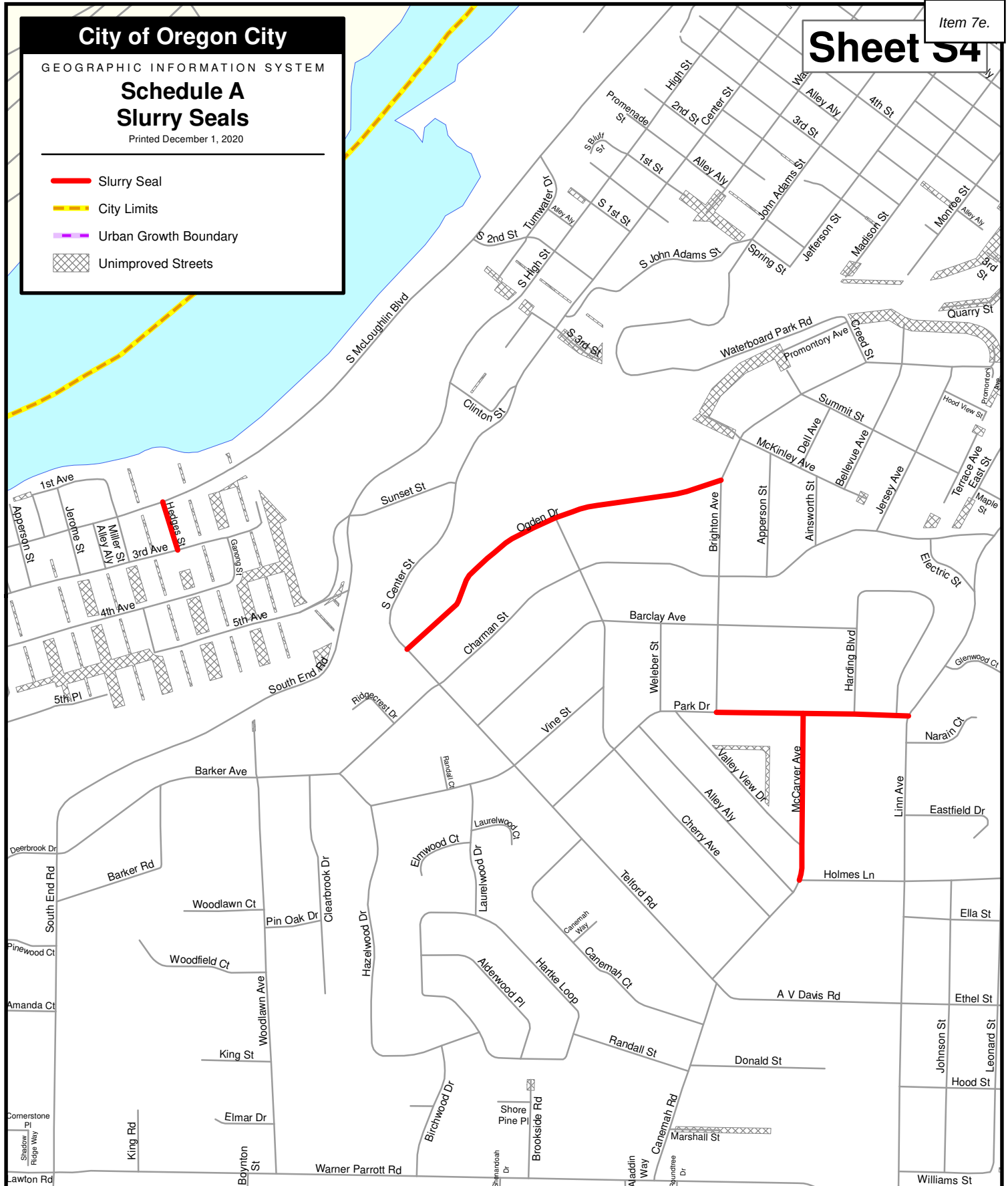
GEOGRAPHIC INFORMATION SYSTEM

Schedule A Slurry Seals

Printed December 1, 2020

- Slurry Seal
- City Limits
- Urban Growth Boundary
- Unimproved Streets

Item 7e.
Sheet S4



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0 250 500 1,000 Feet

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City of Oregon City

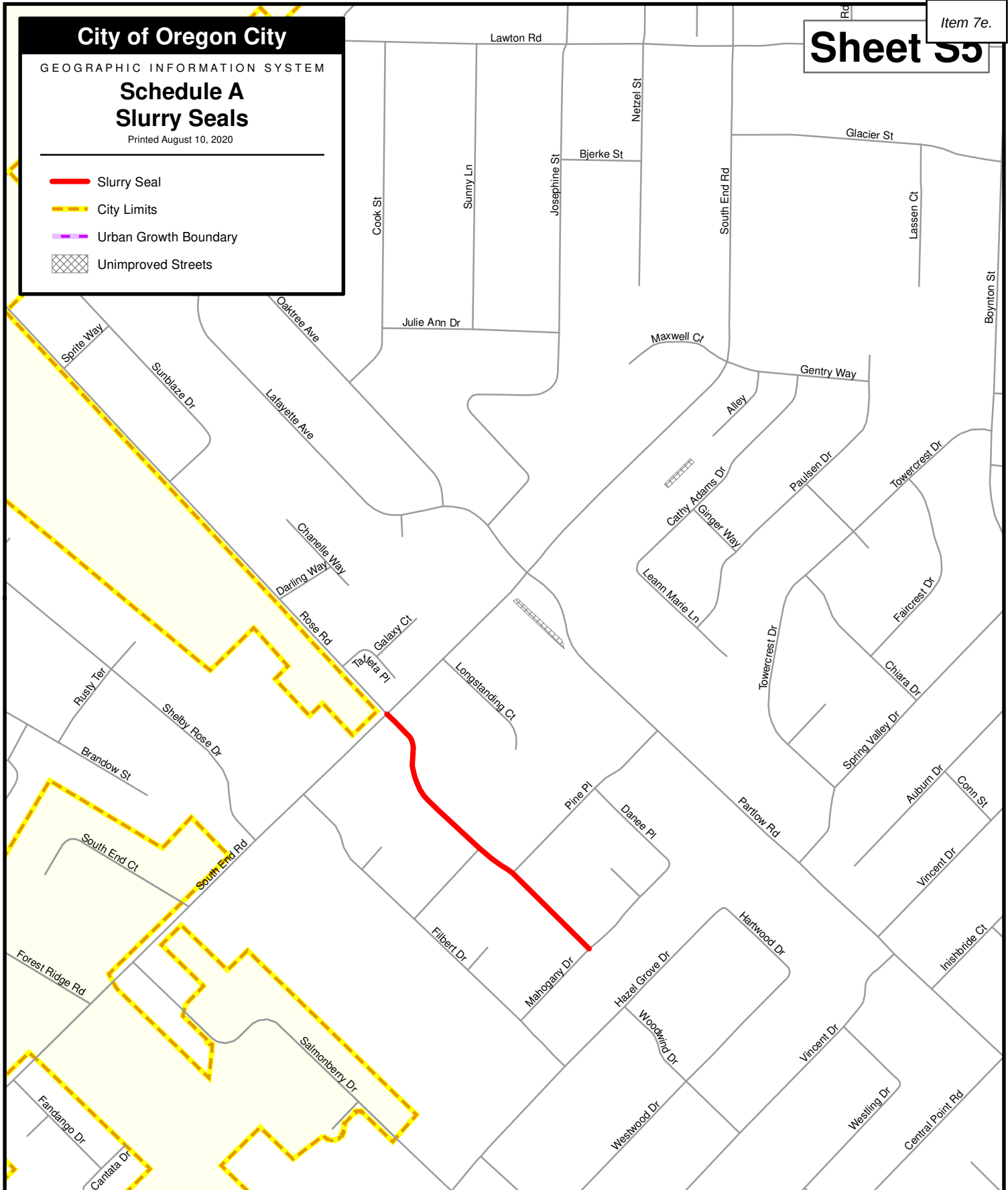
GEOGRAPHIC INFORMATION SYSTEM

Schedule A Slurry Seals

Printed August 10, 2020

-  Slurry Seal
-  City Limits
-  Urban Growth Boundary
-  Unimproved Streets

Item 7e.
Sheet S5



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, or surveying purposes. Notification of any errors is appreciated.

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0 250 500 1,000 Feet

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Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.oregoncity.org

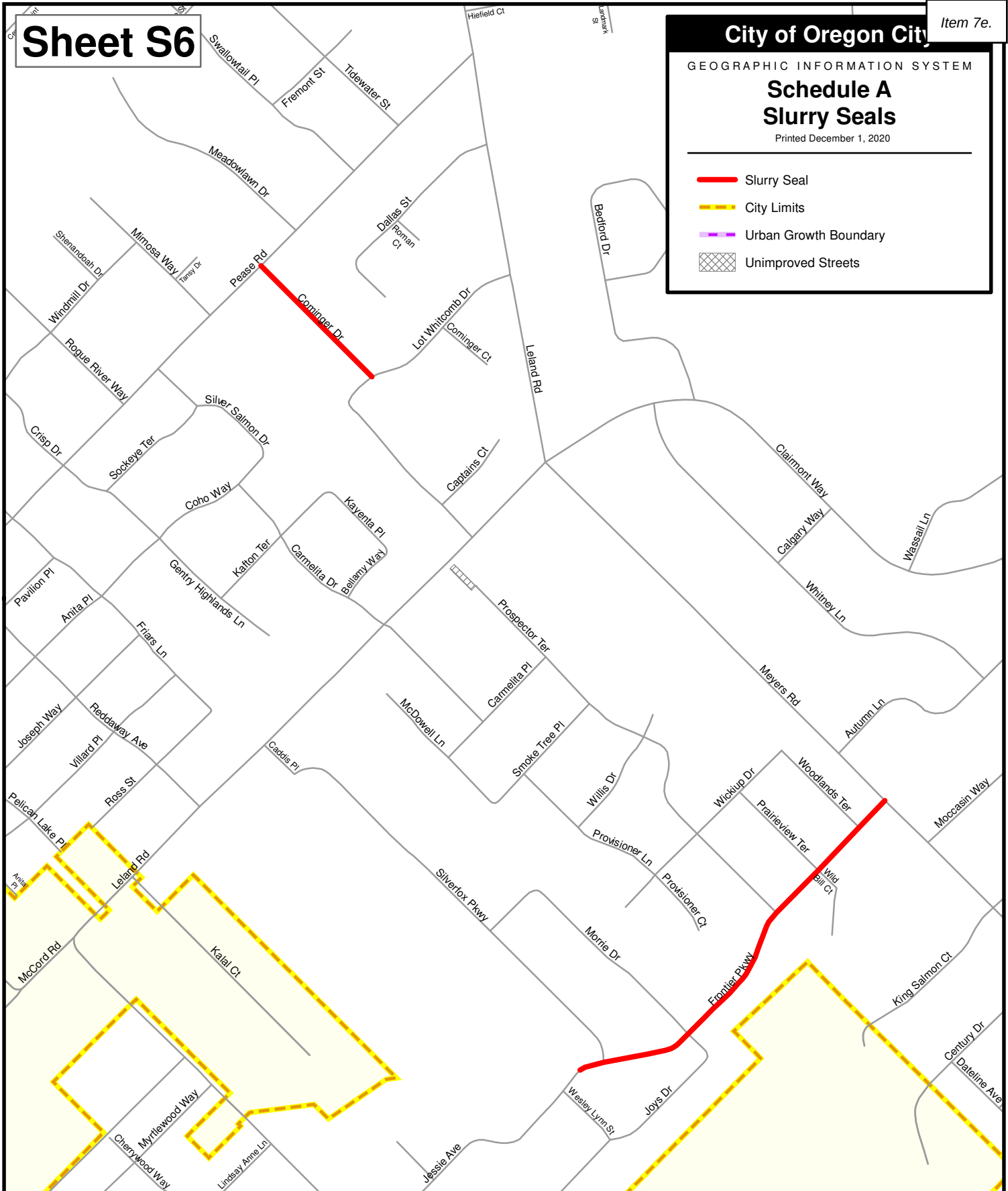


Page 235

Schedule A Slurry Seals

Printed December 1, 2020

- Slurry Seal
- City Limits
- Urban Growth Boundary
- Unimproved Streets



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, or surveying purposes. Notification of any errors is appreciated.

Please recycle with colored office grade paper.



0 250 500 1,000 Feet

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
503-657-6629 fax
www.oregocity.org



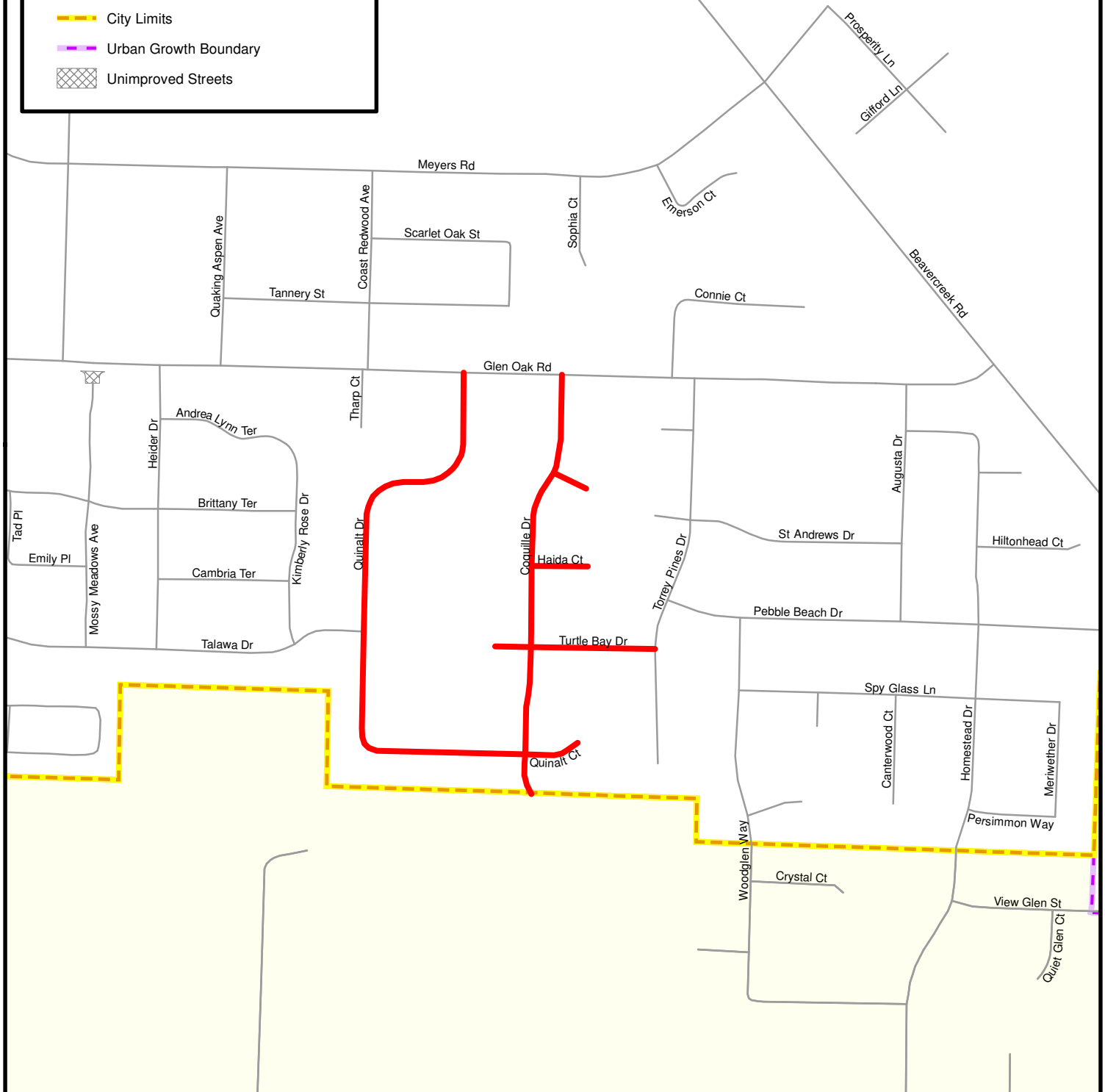
City of Oregon City

GEOGRAPHIC INFORMATION SYSTEM

Schedule A
Slurry Seals

Printed August 10, 2020

-  Slurry Seal
-  City Limits
-  Urban Growth Boundary
-  Unimproved Streets



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CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Parks and Recreation Director Kendall Reid

Agenda Date: 05/19/2021

SUBJECT:

Personal Services Agreement with Nail It! Roofing Company for the Replacement of City Hall Roof Due to Continued Active Leaks

STAFF RECOMMENDATION:

Staff recommends the City Commission approve the contract and authorized the City Manager to execute the contract in the amount of \$94,444.35 with Nail It! Roofing Company to replace the existing flat roofing system at City Hall (625 Center Street, Oregon City, OR 97045)

EXECUTIVE SUMMARY:

The existing roofing is beyond its useful life. Responsible repairs and maintenance have been attended to since moving into the facility in 2009. Repairs and patching are becoming more frequent and increasing in scope. The proposed contract changes the material from the existing torch down (tar and granule) to TPO/PVC with rigid insulation materials to provide a 30-year lifespan for the roof with a higher rating of efficiency and quality of materials.

Roofing replacement, rigid insulation for taper and crickets and to upgrade to 60 mil PVC

Total: \$94,444.35

BACKGROUND:

The roof was existing upon the purchase of the property and during the tenant improvements (TI) of 2008/2009. There were some patches and improvements during the TI for areas where the roof was opened as necessary during construction. Over the course of time between 2010 to 2020, the City has invested approximately \$20,000 in repairs for active leaks. The most significant repair occurring in 2019 at a cost of \$10,750. The leaks are becoming more frequent and causing interior damage at

additional associated costs. The deterioration of the existing roofing material is becoming problematic for repairs to be effective and adhere appropriately.

Staff sought 3 competitive quotes for this project.

Topline provided a quote that did not encompass the entire scope and with an alternate material. They were provided an opportunity to re-quote for scope and material. No response was received.

McDonald Wetle provided a quote with scope and materials without rigid insulation in the amount of \$88,430. This quote would be the high quote when adding the rigid insulation for a combined total of \$105,162.

Nail It! Provided a quote with scope, materials, tapered rigid insulation, crickets and upgrade to PVC material. This total cost was the low estimate within scope and materials at \$94,444.35

OPTIONS:

1. Approve contract and authorize the City Manager to execute the contract as proposed.
2. Decline approval and continue repairs with escalating cost factors.

BUDGET IMPACT:

Amount: \$94,444.35

FY(s): 20/21

Funding Source(s): General Fund

CITY OF OREGON CITY PERSONAL SERVICES AGREEMENT

This PERSONAL SERVICES AGREEMENT ("Agreement") is entered into between the CITY OF OREGON CITY ("City") and Nail It! Roofing Company ("Contractor").

RECITALS

A. City requires services that Contractor is capable of providing under the terms and conditions hereinafter described.

B. Contractor is able and prepared to provide such services as City requires under the terms and conditions hereinafter described.

The parties agree as follows:

AGREEMENT

1. Term. The term of this Agreement shall be from the date the contract is fully executed until July 31, 2021 unless sooner terminated pursuant to provisions set forth below. However, such expiration shall not extinguish or prejudice City's right to enforce this Agreement with respect to (i) breach of any warranty; or (ii) any default or defect in Contractor's performance that has not been cured.

2. Compensation. City agrees to pay Contractor on a time-and-materials basis for the services required. Total compensation, including reimbursement for expenses incurred, shall not exceed \$94,444.35.

3. Scope of Services. Contractor's services under this Agreement shall consist of services as detailed in Exhibit A, attached hereto and by this reference incorporated herein.

4. Standard Conditions. This Agreement shall include all of the standard conditions as detailed in Exhibit B, attached hereto and by this reference incorporated herein.

5. Integration. This Agreement, along with the description of services to be performed attached as Exhibit A and the Standard Conditions to Oregon City Personal Services Agreement attached as Exhibit B, contain the entire agreement between and among the parties, integrate all the terms and conditions mentioned herein or incidental hereto, and supersede all prior written or oral discussions or agreements between the parties or their predecessors-in-interest with respect to all or any part of the subject matter hereof.

6. Notices. Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United States mail, postage prepaid, or personally delivered to the addresses below. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

To the City:

City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045
Attention: City Manager

To Contractor:

Nail It! Roofing Company
16239 SE McLoughlin Blvd. #202
Portland, OR 97267
503.557.8989 phn/info@nailitroofing.com

Contractor shall be responsible for providing the City with a current address. Either party may change the address set forth above for purposes of notices under this Agreement by providing notice to the other party in the manner set forth above.

7. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly appointed officers on this _____ day of MAY, 2021.

CITY OF OREGON CITY

NAIL IT! ROOFING COMPANY

By: _____
Anthony J. Konkol, III
Title: City Manager

By: _____
Title: _____

DATED: _____, 20__.

DATED: _____, 20__.

By: _____
Kendall Reid
Title: Parks and Recreation Director

APPROVED AS TO LEGAL SUFFICIENCY:

By: _____
City Attorney



Estimate

Date	Estimate #
1/12/2021	8989

16239 SE McLoughlin Blvd, #202
 Portland, OR 97267
 PHONE: 503-557-8989 FAX: 503-557-0403
 info@nailitroofing.com CCB 164929
 WA NAILIIC956RF

Name / Address

City Of Oregon City
 PO Box 3040
 625 Center Street
 Oregon City, OR 97045

Description	Total
We propose at 625 Center St. Oregon City OR 97045	
Install all safety guards and signals for complete tear off, clean up and dispose	1.00
Install vapor barrier	6,670.00
IF Needed R-30 polyiso rigid insulation ADD \$ \$16500.00 ***	6,957.50
INSTALL TAPERED INSULATION AND CRICKETS	0.00
Install 1/4" Densdeck	5,635.00
install 60 mil TPO Membrane (20 yr manufacture NDL WARRANTY)	6,013.35
install 20 curbs	40,020.00
2 pitch pans	3,220.00
11 boot pipes	368.00
6 drains	885.50
Install 4 Sq shingles and some hip and ridge black 3 tab	2,622.00
install standing seam cap metal	1,725.00
ADD 13 SQ PRIMED DENSDECK AND GLUE DOWN MEMBRANE FOR WALLS (CURRENTLY WITH T-111)	1,380.00
CITY PERMITS	9,867.00
Options:	
FOR 60 MIL PVC MEMBRANE ADD \$5400.00	3,680.00
For 80MIL PVC MEMBRANE ADD \$9100.00 (30 YR NDL warranty)	0.00

We propose to furnish material and labor in accordance with above specifications, for the sum printed above. PAYMENT IS DUE UPON COMPLETION OF JOB OTHERWISE A LATE CHARGE OF 1.5% PER MONTH WILL BE APPLIED. All work to be completed in workmanlike manner according to standard practices. Additional plywood will be charged at \$95.00 per sheet installed (3/4"). And any structural work needed for dry rot on rafters and/or fascia will be charged at \$65.00 per hour plus materials.	Total Signature
--	---



Estimate

Date	Estimate #
1/12/2021	8989

16239 SE McLoughlin Blvd, #202
Portland, OR 97267
PHONE: 503-557-8989 FAX: 503-557-0403
info@nailitroofing.com CCB 164929
WA NAILIIC956RF

Name / Address
City Of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045

Description	Total
FOR GLUE DOWN MEMBRANE ADD Deduct \$3100.00 it voids the tapered insulation, Densdeck and the vapor barrier WE RECOMMEND ADDING THE INSULATION TO PREVENT CONDENSATION BETWEEN THE MEMBRANE AND PLYWOOD THIS WAY WE WILL ALSO BE ABLE TO ADD TAPERED INSULATION TO PUSH THE WATER THOR THE DRAINS AND VOID PUDDLES AS MUCH AS POSSIBLE. THAT YOU CURRENTLY HAVE AND WILL KEEP HAVING WITH THE GLUE DOWN AS WELL.	0.00

Total \$89,044.35

We propose to furnish material and labor in accordance with above specifications, for the sum printed above.
PAYMENT IS DUE UPON COMPLETION OF JOB OTHERWISE A LATE CHARGE OF 1.5% PER MONTH WILL BE APPLIED.
All work to be completed in workmanlike manner according to standard practices. Additional plywood will be charged at \$95.00 per sheet installed (3/4"). And any structural work needed for dry rot on rafters and/or fascia will be charged at \$65.00 per hour plus materials.

Signature

STANDARD CONDITIONS TO OREGON CITY PERSONAL SERVICES AGREEMENT

Item 7f.

1. Consultant Identification. Consultant shall furnish to City its taxpayer identification number, as designated by the Internal Revenue Service, or Consultant's social security number, as City deems applicable.

2. Payment.

(a) Invoices submitted in connection with this Agreement shall be properly documented and shall identify the pertinent agreement and/or purchase order numbers.

(b) City agrees to pay Consultant within thirty (30) days after receipt of Consultant's itemized statement. Amounts disputed by City may be withheld pending settlement.

(c) City certifies that sufficient funds are available and authorized for expenditure to finance the cost of the services to be provided pursuant to this Agreement.

(d) City shall not pay any amount in excess of the compensation amounts set forth in this Agreement, nor shall City pay Consultant any fees or costs that City reasonably disputes.

3. Independent Consultant Status.

(a) Consultant is an independent consultant and is free from direction and control over the means and manner of providing labor or services, subject only to the specifications of the desired results.

(b) Consultant represents that it is customarily engaged in an independently established business and is licensed under ORS chapter 671 or 701, if the services provided require such a license. Consultant maintains a business location that is separate from the offices of the City and bears the risk of loss related to the business as demonstrated by the fixed price nature of the contract, requirement to fix defective work, warranties provided and indemnification and insurance provisions of this Agreement. Consultant provides services for two or more persons within a 12-month period or routinely engages in advertising, solicitation or other marketing efforts. Consultant makes a significant investment in the business by purchasing tools or equipment, premises or licenses, certificates or specialized training and

Consultant has the authority to hire or fire persons to provide or assist in providing the services required under this Agreement.

(c) Consultant is responsible for obtaining all assumed business registrations or professional occupation licenses required by state or local law (including applicable City or Metro business licenses as per Oregon City Municipal Code Chapter 5.04). Consultant shall furnish the tools or equipment necessary for the contracted labor or services. Consultant agrees and certifies that:

(d) Consultant is not eligible for any federal social security or unemployment insurance payments. Consultant is not eligible for any PERS or workers' compensation benefits from compensation or payments made to Consultant under this Agreement.

(e) Consultant agrees and certifies that it is licensed to do business in the State of Oregon and that, if Consultant is a corporation, it is in good standing within the State of Oregon.

4. Early Termination.

(a) This Agreement may be terminated without cause prior to the expiration of the agreed-upon term by mutual written consent of the parties or by the City upon ten (10) days written notice to the Consultant, delivered by certified mail, email, or in person.

(b) Upon receipt of notice of early termination, Consultant shall immediately cease work and submit a final statement of services for all services performed and expenses incurred since the date of the last statement of services.

(c) Any early termination of this Agreement shall be without prejudice to any obligation or liabilities of either party already accrued prior to such termination.

(d) The rights and remedies of the City provided in this Agreement and relating to defaults by Consultant shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

5. No Third-Party Beneficiaries. City and

STANDARD CONDITIONS TO OREGON CITY PERSONAL SERVICES AGREEMENT

Item 7f.

Consultant are the only parties to this Agreement and are the only parties entitled to enforce its terms. Nothing in this Agreement gives, is intended to give, or shall be construed to give or provide, any benefit or right, whether directly or indirectly or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Agreement.

6. Payment of Laborers; Payment of Taxes.

(a) Consultant shall:

(i) Make payment promptly, as due, to all persons supplying to Consultant labor and materials for the prosecution of the services to be provided pursuant to this Agreement.

(ii) Pay all contributions or amounts due to the State Accident Insurance Fund incurred in the performance of this Agreement.

(iii) Not permit any lien or claim to be filed or prosecuted against the City on account of any labor or materials furnished.

(iv) Be responsible for all federal, state, and local taxes applicable to any compensation or payments paid to the Consultant under this Agreement and, unless Consultant is subject to back-up withholding, the City will not withhold from such compensation or payments any amount(s) to cover Consultant's federal or state tax obligation.

(v) Pay all employees at least time and one-half for all overtime worked in excess of forty (40) hours in any one week, except for individuals excluded under ORS 653.100 to 653.261 or under 29 U.S.C. §§ 201 to 209 from receiving overtime.

(b) If the Consultant fails, neglects or refuses to make prompt payment of any claim for labor or services furnished by any person in connection with this Agreement as such claim becomes due, the City may pay such claim to the person furnishing the labor or services and shall charge the amount of the payment against funds due or to become due to the Consultant by reason of this Agreement.

(c) The payment of a claim in this manner shall not relieve Consultant or Consultant's surety from obligation with respect to any unpaid claims.

(d) Consultant and subconsultants, if any, are subject employers under the Oregon workers' compensation law and shall comply with ORS 656.017, which requires provision of workers' compensation coverage for all workers.

7. Subconsultants and Assignment.

Consultant shall neither subcontract any of the work, nor assign any rights acquired hereunder, without obtaining prior written approval from the City. The City, by this Agreement, incurs no liability to third persons for payment of any compensation provided herein to the Consultant.

8. Access to Records. City shall have access to all books, documents, papers and records of Consultant that are pertinent to this Agreement for the purpose of making audits, examinations, excerpts and transcripts.

9. Ownership of Work Product; License. All work products of Consultant that result from this Agreement (the "Work Products") are the exclusive property of City. In addition, if any of the Work Products contain intellectual property of Consultant that is or could be protected by federal copyright, patent, or trademark laws, or state trade secret laws, Consultant hereby grants City a perpetual, royalty-free, fully paid, nonexclusive and irrevocable license to copy, reproduce, deliver, publish, perform, dispose of, use and re-use, in whole or in part (and to authorize others to do so), all such Work Products and any other information, designs, plans, or works provided or delivered to City or produced by Consultant under this Agreement. The parties expressly agree that all works produced (including, but not limited to, any taped or recorded items) pursuant to this Agreement are works specially commissioned by City, and that any and all such works shall be works made for hire in which all rights and copyrights belong exclusively to City. Consultant shall not publish, republish, display or otherwise use any work or Work Products resulting from this Agreement without the prior written agreement of City.

10. Compliance With Applicable Law.

STANDARD CONDITIONS TO OREGON CITY PERSONAL SERVICES AGREEMENT (4/2017)

Page 2 of 5

STANDARD CONDITIONS TO OREGON CITY PERSONAL SERVICES AGREEMENT

Item 7f.

Consultant shall comply with all federal, state, and local laws and ordinances applicable to the services to be performed pursuant to this Agreement, including, without limitation, the provisions of ORS 279B.220, 279C.515, 279B.235, 279B.230 and 279B.270. Without limiting the generality of the foregoing, Consultant expressly agrees to comply with (i) Title VI of the Civil Rights Act of 1964; (ii) Section V of the Rehabilitation Act of 1973; (iii) the Americans With Disabilities Act of 1990 (Pub. L No. 101-336), ORS 659.425, and all regulations and administrative rules established pursuant to those laws; and (iv) all other applicable requirements of federal and state civil rights and rehabilitation and other applicable statutes, rules and regulations.

11. Professional Standards. Consultant shall be responsible, to the level of competency presently maintained by others practicing in the same type of services in City's community, for the professional and technical soundness, accuracy and adequacy of all services and materials furnished under this authorization.

12. Modification, Supplements or Amendments. No modification, change, supplement or amendment of the provisions of this Agreement shall be valid unless it is in writing and signed by the parties hereto.

13. Indemnity and Insurance.

(a) Indemnity. Consultant acknowledges responsibility for liability arising out of Consultant's negligent performance of this Agreement and shall hold City, its officers, agents, Consultants, and employees harmless from, and indemnify them for, any and all liability, settlements, loss, costs, and expenses, including attorney fees, in connection with any action, suit, or claim caused or alleged to be caused by the negligent acts, omissions, activities or services by Consultant, or the agents, Consultants or employees of Consultant provided pursuant to this Agreement.

(b) Workers' Compensation Coverage. Consultant certifies that Consultant has qualified for workers' compensation as required by the State of Oregon. Consultant shall provide the Owner, within ten (10) days after execution of this Agreement, a certificate of insurance evidencing

coverage of all subject workers under Oregon's workers' compensation statutes. The insurance certificate and policy shall indicate that the policy shall not be terminated by the insurance carrier without thirty (30) days' advance written notice to City. All agents or Consultants of Consultant shall maintain such insurance.

(c) Comprehensive, General, and Automobile Insurance. Consultant shall maintain comprehensive general and automobile liability insurance for protection of Consultant and City and for their directors, officers, agents, and employees, insuring against liability for damages because of personal injury, bodily injury, death, and broad-form property damage, including loss of use, and occurring as a result of, or in any way related to, Consultant's operation, each in an amount not less than \$2,000,000 combined, single-limit, per-occurrence/\$4,000,000 annual aggregate. Such insurance shall name City as an additional insured, with the stipulation that this insurance, as to the interest of City, shall not be invalidated by any act or neglect or breach of this Agreement by Consultant.

(d) Errors and Omissions Insurance Consultant shall provide City with evidence of professional errors and omissions liability insurance for the protection of Consultant and its employees, insuring against bodily injury and property damage arising out of Consultant's negligent acts, omissions, activities or services in an amount not less than \$500,000 combined, single limit. Consultant shall maintain in force such coverage for not less than three (3) years following completion of the project. Such insurance shall include contractual liability.

Within ten (10) days after the execution of this Agreement, Consultant shall furnish City a certificate evidencing the dates, amounts, and types of insurance that have been procured pursuant to this Agreement. Consultant will provide for not less than thirty (30) days' written notice to City before the policies may be revised, canceled, or allowed to expire. Consultant shall not alter the terms of any policy without prior written authorization from City. The provisions of this subsection apply fully to Consultant and its Consultants and agents.

**STANDARD CONDITIONS TO OREGON CITY
PERSONAL SERVICES AGREEMENT**

Item 7f.

14. Legal Expenses. In the event legal action is brought by City or Consultant against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for attorney fees, costs, and expenses as may be set by a court. "Legal action" shall include matters subject to arbitration and appeals.

15. Severability. The parties agree that, if any term or provision of this Agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected.

16. Number and Gender. In this Agreement, the masculine, feminine or neuter gender, and the singular or plural number, shall be deemed to include the others or other whenever the context so requires.

17. Captions and Headings. The captions and headings of this Agreement are for convenience only and shall not be construed or referred to in resolving questions of interpretation or construction.

18. Hierarchy. The conditions contained in this document are applicable to every Personal Services Agreement entered into by the City of Oregon City in the absence of contrary provisions. To the extent there is a conflict, the terms of the Personal Services Agreement will control over the terms of the standard conditions. To the extent there is a conflict between the terms of the standard conditions and any other document, including the scope of services, the terms of the standard conditions shall control those other terms.

19. Calculation of Time. All periods of time referred to herein shall include Saturdays, Sundays and legal holidays in the State of Oregon, except that, if the last day of any period falls on any Saturday, Sunday or legal holiday, the period shall be extended to include the next day that is not a Saturday, Sunday or legal holiday.

20. Notices. Any notices, bills, invoices, reports or other documents required by this Agreement shall be sent by the parties by United

States mail, postage prepaid, or personally delivered to the addresses listed in the Agreement attached hereto. All notices shall be in writing and shall be effective when delivered. If mailed, notices shall be deemed effective forty-eight (48) hours after mailing, unless sooner received.

21. Nonwaiver. The failure of City to insist upon or enforce strict performance by Consultant of any of the terms of this Agreement or to exercise any rights hereunder shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights of any future occasion.

22. Information and Reports. Consultant shall, at such time and in such form as City may require, furnish such periodic reports concerning the status of the project, such statements, certificates, approvals, and copies of proposed and executed plans and claims, and other information relative to the project as may be requested by City. Consultant shall furnish City, upon request, with copies of all documents and other materials prepared or developed in relation with or as a part of the project. Working papers prepared in conjunction with the project are the property of City, but shall remain with Consultant. Copies as requested shall be provided free of cost to City.

23. City's Responsibilities. City shall furnish Consultant with all available necessary information, data, and materials pertinent to the execution of this Agreement. City shall cooperate with Consultant in carrying out the work herein and shall provide adequate staff for liaison with Consultant.

24. Arbitration.

All disputes arising out of or under this Agreement shall be timely submitted to nonbinding mediation prior to commencement of any other legal proceedings. The subsequent measures apply if disputes cannot be settled in this manner.

(a) Any dispute arising out of or under this Agreement shall be determined by binding arbitration.

(b) The party desiring such arbitration shall give written notice to that effect to the other party

**STANDARD CONDITIONS TO OREGON CITY
PERSONAL SERVICES AGREEMENT**

Item 7f.

and shall in such notice appoint a disinterested person of recognized competence in the field as arbitrator on its behalf. Within fifteen (15) days thereafter, the other party may, by written notice to the original party, appoint a second disinterested person of recognized competence as arbitrator on its behalf. The arbitrators thus appointed shall appoint a third disinterested person of recognized competence, and the three arbitrators shall, as promptly as possible, determine such matter, provided, however, that:

(i) If the second arbitrator is not appointed as described above, then the first arbitrator shall proceed to determine such matter; and

(ii) If the two arbitrators appointed by the parties are unable to agree, within fifteen (15) days after the second arbitrator is appointed, on the appointment of a third arbitrator, they shall give written notice of such failure to agree to the parties and, if the parties fail to agree on the selection of the third arbitrator within fifteen (15) days after the arbitrators appointed by the parties give notice, then, within ten (10) days thereafter, either of the parties, on written notice to the other party, may request such appointment by the presiding judge of the Clackamas County Circuit Court.

(c) Each party shall each be entitled to present evidence and argument to the arbitrators. The determination of the majority of the arbitrators or the sole arbitrator, as the case may be, shall be conclusive on the parties, and judgment on the same may be entered in any court having jurisdiction over the parties. The arbitrators or the sole arbitrator, as the case may be, shall give written notice to the parties, stating the arbitration determination, and shall furnish to each party a

signed copy of such determination. Arbitration proceedings shall be conducted pursuant to ORS 33.210 et seq. and the rules of the American Arbitration Association, except as provided otherwise.

(d) Each party shall pay the fees and expenses of the arbitrator appointed by such party and one-half of the fees and expenses of the third arbitrator, if any.

25. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the state of Oregon without resort to any jurisdiction's conflicts of law, rules or doctrines.

Bid/Quote Tabulation Form

Date: 4/29/21

Contract Administrator: Seth Mrowka

Phone Ext: 503-679-9205

Department/Division: Parks and Rec

Were at least three bids/quotes obtained? ☒ Yes ☐ No, explain reason:

Reason:

Bid/Quote	Vendor Name	Price	Not Quoting
#1	Topline Construction	\$42,000	☒
Date Contacted	1/15/21	Date bid/quote received	4/16/21
#2	McDonald Wetle Inc.	\$105,162	☐
Date Contacted	1/22/21	Date bid/quote received	4/27/21
#3	Nail It! Roofing Company	\$94,444.35	☐
Date Contacted	1/12/21	Date bid/quote received	4/6/21

Selected Vendor: Nail It! Roofing Company

Contact Name: Rodrigo Quintanilla Email: info@nailitroofing.com

Address: 15252 Holcomb Blvd Phone: 503-557-8989

Oregon City OR 97045

Generally the contract should be awarded to the vendor with the lowest price conforming Bid/Quote. If you request exception to the low price award, explain justification:

Reason: Topline is lowest bid but failed to meet the required scope of work and did not provide an accurate estimate.



CITY OF OREGON CITY

CITY COMMISSION SPECIAL MEETING

DRAFT MINUTES

Virtual Meeting
Wednesday, April 07, 2021 at 6:00 PM

CONVENE SPECIAL MEETING OF THE CITY COMMISSION AND ROLL CALL

Commission President Rocky Smith called the meeting to order at 6:00 PM.

PRESENT – 4 Commissioner Denyse McGriff, Commissioner Frank O'Donnell, Commissioner Rachel Lyles Smith, and Commissioner Rocky Smith, Jr.

STAFFERS - 9 City Manager Tony Konkol, City Recorder Kattie Riggs, Community Development Director Laura Terway, Chief of Police Jim Band, Library Director Greg Williams, Public Works Director John Lewis, Parks & Recreation Director Kendall Reid, Human Resources Director Patrick Foiles, and Finance Director Matt Zook.

GENERAL BUSINESS

1. Resolution No. 21-20, Certifying the Election Results for the March 9, 2021 Special Election

Motion made by Commissioner McGriff, seconded by Commissioner O'Donnell, to approve Resolution No. 21-20, Certifying the Election Results for the March 9, 2021 Special Election. The motion carried with the following votes:

Yea: 4 - Commissioner McGriff, Commissioner O'Donnell, Commissioner Lyles Smith, and Commissioner Smith, Jr.

2. Oath of Office for Newly Elected Mayor Rachel Lyles Smith Officiated by the Honorable Judge Laraine McNiece

The Honorable Judge Laraine McNiece officiated the Oath of Office for newly elected Mayor Rachel Lyles Smith.

ADJOURNMENT

The meeting was adjourned at 6:15 PM.

Respectfully submitted,

Kattie Riggs, City Recorder



CITY OF OREGON CITY

CITY COMMISSION REGULAR MEETING - REVISED

DRAFT MINUTES

Virtual Meeting
Wednesday, April 07, 2021 at 7:00 PM

VIRTUAL MEETING OF THE CITY COMMISSION

1. CONVENE MEETING AND ROLL CALL

Mayor Rachel Lyles Smith called the meeting to order at 7:01 PM.

PRESENT: 4 - Mayor Rachel Lyles Smith, Commissioner Denyse McGriff, Commissioner Frank O'Donnell, and Commissioner Rocky Smith, Jr.

STAFFERS: 13 - City Manager Tony Konkol, City Recorder Kattie Riggs, City Attorney Bill Kabeiseman, Community Development Director Laura Terway, Public Works Director John Lewis, Police Chief Jim Band, , Human Resources Director Patrick Foiles, Finance Director Matt Zook, Library Director Greg Williams, Parks & Rec. Director Kendall Reid, Senior Planner Christina Robertson-Gardiner, Project Engineer Bob Balgos, and Senior Planner Pete Walter

2. FLAG SALUTE

3. CEREMONIES AND PROCLAMATIONS

3a. Arbor Day Proclamation

Mayor Lyles Smith read the proclamation declaring April 10, 2021 as Arbor Day and announced tree plantings in neighborhoods and at the new Police Department facility.

3b. Mayoral Appointments to City Boards and Commissions

Mayor Lyles Smith made appointments to the Budget Committee, Metro Enhancement Grant Committee, and Library Board. These appointments were:

1. Appointment of the following Oregon City residents to the Oregon City Budget Committee:

- *Christina "Emma" Lugo to fill a vacancy left by Joanne McCall with a term ending 12/31/2022*
- *Kyle Arnhart to fill a vacancy left by Jeffrey Olivas with a term ending 12/31/2023*
- *Casey Flesch to a 4-year term ending 12/31/2024*
- *Mike Mitchell to a 4-year term ending 12/31/2024*

2.Appointment of Laurie Wilson to the Enhancement Grant Program Committee for a 4-year term ending December 31, 2024.

3. Appointment of Heidi Blackwell to the Library Board to fill a vacancy left by Scott Edwards with a term ending 12/31/2023

Kattie Riggs, City Recorder, discussed the current committee vacancies and upcoming interviews.

4. CITIZEN COMMENTS

There were no citizen comments.

5. PRESENTATIONS**5a. Natural Resources Committee (NRC) Annual Report by Chair Dr. Nancy Broshot**

Dr. Nancy Broshot, Natural Resources Committee Chair, provided the annual report including the membership makeup, meetings and accomplishments in 2020, review of the Municipal Code and input on Code changes, Heritage Tree nominations, and feedback on several projects.

5b. Citizen Involvement Committee Annual Report Presented by Chair Bob La Salle

Bob La Salle, Citizen Involvement Committee Chair, provided the annual report including the re-activation of inactive neighborhood associations, accomplishments including Code amendments, quarterly presentations from stakeholders, crosswalk installation input, many informational presentations, and land use application review for inactive neighborhood association areas.

There was discussion regarding the work of this committee.

6. ADOPTION OF THE AGENDA

Commissioner McGriff requested that item 7a be pulled from the consent agenda. The item was renumbered as item 9a as part of General Business. The agenda was adopted as amended.

7. CONSENT AGENDA

Motion made by Commissioner Smith, seconded by Commissioner McGriff, to approve the consent agenda items 7b. - 7l. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith

- 7b. Settlement Agreement Between the McLoughlin Neighborhood Association and the City of Oregon City
- 7c. Personal Services Agreement with PacificWRO for the Furniture Contract for the Oregon City Operations Complex (CI 18-009)
- 7d. Amended Minutes of the August 27, 2020 Special Meeting
- 7e. Minutes of the March 11, 2021 Special Work Session
- 7f. Minutes of the March 17, 2021 Regular Meeting
- 7g. From 3/3/2021 Consent Agenda: Public Improvement Contract with Trench Line Excavation, Inc. for the 5th Street Waterline Replacement and Storm System Improvements Project (CI 21-001)

- 7h. From 3/3/2021 Consent Agenda: Personal Services Agreement with Murraysmith for a Risk and Resiliency Assessment and Emergency Response Plan for the City's Water Infrastructure (PS 21-002)
- 7i. From 3/3/2021 Consent Agenda: Minutes of the December 16, 2020 Work Session
- 7j. From 3/3/2021 Consent Agenda: Minutes of the February 20, 2021 Special Meeting
- 7k. From 3/3/2021 Consent Agenda: Minutes of the January 12, 2021 Work Session
- 7l. From 3/3/2021 Consent Agenda: Minutes of the January 6, 2021 Regular Meeting

8. PUBLIC HEARINGS

- 8a. First Reading of Ordinance No. 21-1007, Amending the Oregon City Municipal Code; Title 13: Public Services, Title 16: Land Divisions, and Title 17: Zoning (GLUA 20-33, LEG 20-01, Public Works Code Amendments Package #2)

Christina Robertson-Gardiner, Senior Planner, provided the staff report. She reviewed the process and proposal for the Public Works Code amendments package #2.

There was discussion regarding the timing of package #3.

Mayor Lyles Smith opened the public hearing. She asked if there were any conflicts of interest. There were none.

There were no public comments.

Mayor Lyles Smith closed the public hearing.

Motion made by Commissioner McGriff, seconded by Commissioner Smith, to approve the first reading of Ordinance No. 21-1007, amending the Oregon City Municipal Code; Title 13: Public Services, Title 16: Land Divisions, and Title 17: Zoning (GLUA 20-33, LEG 20-01, Public Works Code Amendments Package #2) and to continue the hearing to April 21, 2021. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

- 8b. First Reading of Ordinance No. 21-1008, Approving an Emergency Annexation Proposal GLUA-20-00030: AN-20-00002 and Approving the Annexation of Certain Property Located at 11330 Forest Ridge Road to the City of Oregon City

Ms. Robertson-Gardiner presented the staff report. This was a request for an emergency annexation due to a failed septic system. She discussed the location of the property, the reason for the annexation, retaining the current zoning, future zoning of the property which was in the South End Concept Plan, and staff recommendation for approval.

Mayor Lyles Smith opened the public hearing.

Bill Kabieseman, City Attorney, read the hearing statement. He asked if there were ex parte contacts, conflicts of interest, bias, or any other statements to declare including a visit to the site. There were none.

There were no public comments.

Mayor Lyles Smith closed the public hearing.

Motion made by Commissioner McGriff, seconded by Commissioner Smith, to approve the first reading of Ordinance No. 21-1008, approving an emergency annexation proposal GLUA-20-00030: AN-20-00002 and approving the annexation of certain property located at 11330 Forest Ridge Road to the City of Oregon City. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

8c. Public Hearing for Adoption of Conservation Easement on Lazy Creek Lane

Pete Walter, Senior Planner, provided the staff report. This was a request to accept a conservation easement on Lazy Creek Lane. He described the location of the property and Natural Resource Overlay District (NROD), gave a background on the property including ownership, approval of a two-lot partition, and terms of the conservation easement. The easement was required to protect the wetland and 50-foot vegetated corridor. He showed the extent of the proposed wetland area on the partition plat. Staff recommended approval.

There was discussion regarding where a house could be built on the property, how the City monitored this once the easement went into effect, and the NROD boundary.

Mr. Walter explained the mitigation report required monitoring for five years and the applicant would need to submit a report to the City annually. He explained the fence types allowed in the area and what happened after year five of the mitigation plan.

Commissioner McGriff thought there should be ongoing monitoring even after the five years.

Mr. Kabieseman clarified the easement gave the City the right to maintain the easement area in perpetuity.

Commissioner McGriff wanted to make sure the applicant knew that the easement area could not be developed.

Mr. Walter said to do anything in this area it would require a land use application.

Mayor Lyles Smith opened the public hearing.

There was no public testimony.

Mayor Lyles Smith closed the public hearing.

Motion made by Commissioner Smith, seconded by Commissioner McGriff, to approve the Conservation Easement for Lazy Creek Lane. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

8d. Real Estate Contract for the Sale of Public Works Property Located at 306 S. Center Street to Yue Cong Zhu.

John Lewis, Public Works Director, said this was a 9,000 square foot property located in the McLoughlin neighborhood. The house was a two-story home with a below grade basement of about 3,500 square

feet. The property was listed for sale with Keller Williams real estate brokerage firm and listed in the RMLS. The City received one offer. He referred to the memo written to the Commission that answered several questions from the last meeting. The sale price of \$475,000 included addendums with a credit to the buyer of \$8,540 towards closing costs.

There was discussion regarding how the funds would go back to the utility fund that purchased the property.

There was no public comment.

Motion made by Commissioner McGriff, seconded by Commissioner Smith, to approve the sale of Public Works property located at 306 S. Center Street to Yue Cong Zhu. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

8e. Second Reading of Ordinance No. 21-1006, Vacating a Section of Public Right-of-Way Adjacent to 1625 Washington Street

Mr. Lewis explained the right-of-way vacation request.

There was no public comment.

Motion made by Commissioner McGriff, seconded by Commissioner Smith, to approve the second reading and final adoption of Ordinance No. 21-1006, vacating a section of public right-of-way adjacent to 1625 Washington Street. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

9. GENERAL BUSINESS

9a. Resolution No. 21-18, Establishing a Minimum Monthly Rate to be Charged for Stormwater Service Provided to Each Customer Served by Oregon City's Stormwater System

Commissioner McGriff pulled this item from the consent agenda because of the concerns she had heard from Craig Danielson. Due to the current financial challenges with Covid-19, Mr. Danielson did not think the fees should be increased.

Commissioner O'Donnell wondered if the City should use some of the money coming from the Federal Assistance Act to lessen the burden on citizens and businesses.

Mr. Lewis explained the reasons for the fee increase especially due to meeting water quality regulations and increasing impervious surfaces. The federal funding sounded promising, however there were a lot of questions about how it would be implemented. If they got to the point where they did not need the utility rates proposed, they would be brought back to the Commission.

Tony Konkol, City Manager, said they were waiting for additional guidance from the Treasury on how the funds could be used. He did not know if there would be enough money to cover the entirety of the projects that were needed. If they implemented the first step of the increases, that gave the City time to get the rates in-line where they should be knowing there were two additional years to identify what funding would be available.

Commissioner O'Donnell wanted to wait until they heard back before approving the resolution.

Mr. Lewis said staff thought the focus for the funding should be the water rates which had more projects ready than the stormwater rates.

Commissioner McGriff was in favor of deferring the approval as well.

There was discussion regarding the current rates and how the increase would be applied to understand its impact.

Brooke Tacia, FCS Group, said they would have to do more analysis to know how many customers would be paying the commercial class rate and the higher charges. She summarized the statistics for the commercial class and how this one particular property owner was not the average increase.

Mr. Lewis said even with the downturn they still had rainfall and had to manage the stormwater. Staff could look into what the funding would do for the rates and bring it back to the Commission in May.

Commissioner McGriff suggested changing the funding level from the moderate capital level of service to the baseline level of service. There was no interest in this option.

Motion made by Commissioner O'Donnell, seconded by Commissioner Smith, to continue Resolution No. 21-18 to a date certain of May 19, 2021. The motion carried by the following vote:

Aye: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner O'Donnell, and Commissioner Smith.

10. COMMUNICATIONS

City Manager

10a. Distribution of the Financial Reports for Fiscal Year Ended June 30, 2020

Mr. Konkol said an independent financial audit was performed by Merina and Company. They issued an unmodified or clean opinion which meant that the financial statements presented fairly in all material respects. The Comprehensive Annual Financial Report had been submitted to the Secretary of State and qualified for the Government Finance Officers' Association Certificate of Achievement for Excellence in Financial Reporting.

Mr. Konkol discussed the proposed timeline for filling the City Commission position #4 vacancy. Advertising would begin tomorrow (April 8, 2021) and continue until April 26, 2021. Interviews would be on April 28, 2021 and April 29, 2021 with the Oath of Office on April 30, 2021. The timeline was to appoint the new Commissioner before the May 3, 2021 Budget Committee meeting.

There was discussion regarding the City Commission Goals for 2021-2023 being finalized before the budget meeting. Mr. Konkol said it was going to be discussed at the next City Commission Work Session.

There was consensus to move forward with the proposed timeline.

Commissioners

Commissioner O'Donnell discussed the delay on the progress of the Willamette Falls Legacy Project.

Commissioner McGriff reported on the meetings she attended for the Oregon City - West Linn Bike - Pedestrian Bridge Project. The other committees she was on were continuing to meet and make

progress. She would like to have a discussion on the Vision Plan from the Confederated Tribes of the Grand Ronde.

Commissioner Smith thanked staff for the work completed to project information of the Oregon City-West Linn football game on to the Elevator shaft and lighting the Singer Falls in red and white.

Mayor

11. ADJOURNMENT

Mayor Lyles Smith adjourned the meeting 9:15 PM.

Respectfully submitted,

Kattie Riggs, City Recorder



CITY OF OREGON CITY

CITY COMMISSION SPECIAL MEETING

DRAFT MINUTES

Virtual Meeting
Friday, April 30, 2021 at 5:30 PM

VIRTUAL MEETING INFORMATION:

CONVENE SPECIAL MEETING OF THE CITY COMMISSION

Mayor Lyles Smith convened the meeting at 5:32 PM.

ROLL CALL

PRESENT: 4 - Mayor Rachel Lyles Smith, Commissioner Denyse McGriff, Commissioner Rocky Smith, Jr., and Commissioner Frank O'Donnell

STAFFERS: 2 - City Manager Tony Konkol and Asst. City Recorder Jakob Wiley

Commissioner McGriff joined the meeting at 5:33 PM, immediately after the roll call.

CEREMONIES AND PROCLAMATIONS

1. Oath of Office for Newly Appointed City Commissioner Officiated by the Honorable Judge Laraine McNiece

Judge Laraine McNeice conducted the Oath of Office for the newly appointed City Commissioner, Adam Marl, for the vacant Position No. 4.

ADJOURNMENT

Mayor Lyles Smith adjourned the meeting at 5:42 PM.

Respectfully submitted,

Kattie Riggs, City Recorder



CITY OF OREGON CITY

CITY COMMISSION SPECIAL MEETING

DRAFT MINUTES

Virtual Meeting
Thursday, April 29, 2021 at 5:30 PM

VIRTUAL MEETING INFORMATION:

CONVENE SPECIAL MEETING OF THE CITY COMMISSION

Mayor Rachel Lyles Smith convened the meeting at 5:32 PM.

ROLL CALL

PRESENT: 4 - Mayor Rachel Lyles Smith, Commissioner Denyse McGriff, Commissioner Rocky Smith, Jr., Commissioner Frank O'Donnell

STAFFERS: 3 - City Manager Tony Konkol, Asst. City Recorder Jakob Wiley, Finance Director Matt Zook

GENERAL BUSINESS

1. Interviews for the Oregon City – City Commission Position No. 4

The City Commissioners interviewed each of the candidates according to the following schedule, due to the withdrawal submitted by Betty Mumm on April 29, 2021:

Troy Bollinger - 5:32 PM

Adam Marl - 5:52 PM

Bob La Salle - 6:09 PM

Vance Tong - 6:23 PM

Leslie Wright Jr. - 6:41 PM

The following was the list of questions asked each candidate:

1. *Tell us about yourself, your governmental experience, community activities, and why you wish to serve.*
2. *What have you done to educate yourself of the issues facing the City of Oregon City? How have you prepared yourself to assume the duties of a City Commissioner?*
3. *What do you see as the three (3) most important issues facing Oregon City over the next year and a half? Do you have any suggestions for how the City could meet or overcome these challenges or opportunities?*
4. *What is your knowledge of the overall economic health of Oregon City? What do you think that the City could do to promote economic development and overall business development?*

5. *The City Commission may, at times, make decisions that may be unpopular with its residents. How would you address these concerns?*
6. *Give examples of how you work or have worked collaboratively on a project or issues?*
7. *What are the strengths you would bring to the City Commission? What are your weaknesses?*
8. *Is there anything else you would like us to know? Do you have any questions of us?*

After the interviews, the City Commission took a break from 7:03 PM until 7:20 PM.

2. Deliberations and Vote to Appoint Commission Position No. 4

The City Commission discussed the voting process and how an informal poll would be taken. If a majority of the Commissioners selected the same candidate, a motion would be taken to appoint that individual. If no majority could be reached, the Commissioners would provide Mr. Konkol with the top two candidates ranked in order.

The Commissioners sent emails with their top choice to Mr. Konkol. Mr. Konkol reported a unanimous selection of Adam Marl.

Motion made by Commissioner McGriff, seconded by Commissioner Smith, Jr., to appoint Adam Marl to the vacant City Commission Position No. 4. The motion passed by the following vote:

Yea: 4 - Mayor Lyles Smith, Commissioner McGriff, Commissioner Smith, Jr., and Commissioner O'Donnell

ADJOURNMENT

Mayor Lyles Smith adjourned the meeting at 7:38 PM.

Respectfully submitted,

Kattie Riggs, City Recorder



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 5/19/2021
From: Laura Terway, AICP, Community Development Director

SUBJECT:

AP 21-02 and AP-21-03: Two separate appeals of the March 23, 2021 Historic Review Board approval with conditions of Planning Files GLUA-21-00001/ HR 21-00001 through 21-00005 for five Cottage Homes in the Canemah National Register District

STAFF RECOMMENDATION:

Staff recommends that the City Commission deny the appeal and affirm the Historic Review Board's March 24, 2021 decision approving these applications.

EXECUTIVE SUMMARY:

Staff has provided an attached memorandum responding to Commission discussion and questions from the last hearing on May 5th. At that hearing, the Commission voted on the issue raised by AP-21-03 and affirmed the HRB's condition to replace the siding. The May 19th hearing will focus on the issues raised by AP-21-02 as described below.

To respond to Commission concerns about agenda materials, staff has included the design guidelines in the agenda packet as well as each of the HRB record documents as opposed to a hyperlink to the HRB packet.

As a Type III decision, all appeals shall be considered by the City Commission on the record. This means that only those individuals who submitted testimony orally or in writing during the proceeding before the Historic Review Board may participate in this appeal. The City Commission's review is limited to the items identified in the notice of appeal.

The Historic Review Board (HRB) recently approved alterations to a cottage home development in the Canemah National Register Historic District. In 2017, the HRB approved five cottage homes over four lots of record near the corner of 4th Avenue and Miller Street (files MD-17-01 through MD-17-06, and AP-17-04). The Historic Review alteration request was limited to the following design elements of the development: retaining wall height, window placement, materials and design, skylight locations, siding material, and porch design and well as other changes (see full list in the attached List of

Design Changes). The Historic Review Board unanimously approved the alteration request with modifications in the conditions of approval requiring, among other things, the removal of rough-textured cement siding installed on all of the homes and replacement with smooth fiber cement siding or wood siding. Both Appellants participated in the proceeding before the HRB – Appellant Staggs as the applicant and Appellant Edgar in opposition. Mr. Edgar recused himself from participating as a member of the HRB for this matter. The issues raised in the notice of appeal include:

AP-21-02: Appellant Edgar argues that the HRB erred by failing to sufficiently protect the integrity of the Historic District in permitting retaining wall height greater than 3.5 feet, the location and design of windows, and skylight locations visible from the right-of-way in violation of the previously approved conditions of approval, OCMC 17.40 and the design guidelines so as to “detract and degrade the ‘Integrity of the Canemah National Register Historic District.’”

To the extent that the Appellants allege that specific Design Guidelines are not satisfied by the HRB decision, the HRB’s interpretation and application of the Guidelines is consistent with the text of those standards. That said, the Guidelines are subjective, allowing for the exercise of discretion, and reasonable minds may differ in identifying the appropriate response. Given that there is no clear error in the HRB decision and that the HRB provided reasonable findings explaining their decision, staff recommends that the City Commission affirm the Historic Review Board’s decision approving these applications with conditions.

BACKGROUND:

Please review the attached memorandum responding to Commission discussion and questions from the last hearing on May 5th and the “Supplemental Staff Report and Recommendation” prepared by Planner Kelly Reid and City Attorney Carrie Richter, the HRB Staff Report and Findings of March 23, 2021, and the attached record for this application.

OPTIONS:

1. Deny the appeal and affirm the Historic Review Board’s March 24, 2021 decision approving these applications with Conditions.
2. Deny the appeal and affirm the Historic Review Board’s March 24, 2021 decision approving these applications with Conditions as Modified by the City Commission. This would likely require a closure of the record and continuance to adopt final findings.
3. Approve the appeal based on modified findings adopted by the City Commission. This would likely require a closure of the record and continuance to adopt final findings.



Memorandum

To: Honorable Mayor Lyle Smith and City Commissioners

From: Kelly Reid, Planner, AICP and Carrie Richter, Deputy City Attorney

Date: May 11, 2021

Re: Canemah Cottages LLC Modification Appeals – GLUA-21-0001 / HR 21-0001 through HR 21-0005

During deliberation in the above-referenced appeal, a number of Commissioners raised questions or concerns and staff respectfully provides the following memo in response. Communications with staff during deliberation are permitted so long as they do not introduce any new evidence. *Wal-Mart Stores, Inc. v. City of Oregon City*, 50 Or LUBA 87 (2005), *rev'd and remanded* 204 Or App 359, 129 P3d 702 (2006). What is set forth below is a summary restatement of materials already contained within the record.

The Supplemental Staff Report dated April 27, 2021 responded to each issue raised on appeal, quoted the most directly relevant Historic Design Guidelines for New Construction (design guidelines) and also quoted or summarized the approach taken by the HRB and City Commission in its previous 2017 review. Every effort was made to organize and present the material in a way that was accessible and helpful. City staff does not have a practice of providing a copy of the Oregon City Municipal Code (OCMC) where relevant for every land use case appeal. For this same reason, a link to the design guidelines was not included in the agenda packet. To respond to this concern, staff has included a link to the design guidelines as well as individual links to each of the HRB record documents as opposed to a hyperlink to the HRB packet, including the 2017 decision with conditions.

The Scope of the Commission's Review is Limited to Evaluating whether the Modified Project Satisfies the Applicable Standards

The application before the City Commission on appeal is a modification of conditions. OCMC 17.50.130(D) expressly allows an applicant to modify conditions attached to a previous approval.¹ Authorization for modification of a previous decision is available whether it occurs before the requested

¹ OCMC 17.50.130(D) provides:

"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."

construction begins or after construction is complete.² The extent to which development occurred in violation of the 2017-adopted conditions or what penalties should follow are strictly questions of enforcement which are not before the City Commission to decide in this review. OCMC 17.70.010.³ The only question before the Commission is whether the proposed application for modification, regardless of the fact that it is built, satisfies the applicable approval criteria, including the design guidelines, and nothing more.

The Guidelines are Discretionary and Require Commission Interpretation to Determine if the Project Complies in the Whole

New construction in a historic district requires that the City Commission consider a number of criteria including “the design guidelines adopted by the historic review board.” OMC 17.40.060(G)(7). As explained: “The guidelines are not mandatory standard adopted by the City Commission.” Rather:

It is the intent that these guidelines cover design for the wide range of projects that may occur over time. They describe a ‘safe harbor’ to allow new construction projects to be approved easily and quickly. Yet, there may be occasions when alternative designs are either desired or needed. There are also particular product configurations, or materials that are pre-approved, but for which viable alternatives may exist. Those alternative designs and substitute materials shall be first reviewed by City staff and subsequently by the Historic Review Board (HRB) for compliance with the General Principles, and design intent of the guidelines. For those situations when an exception to the guidelines is necessary, the HRB and staff shall evaluate the proposal based upon the significance of the impact, measuring how well the alternative fits into the intent of the guidelines and essentially the end effect on the historic district. P 3.

In other words, the guidelines are not clear and objective, but rather require the exercise of discretion. LUBA will affirm any plausible interpretation or one that is not contrary to the text, context, policy and purpose of the provision. ORS 197.829. In other words, the extent to which retaining walls have been “minimized” or skylights are “inconspicuous” is up to Commission for interpretation. For the reasons explained below, reasonable minds can differ in this regard and often do.

In the *Friends of Canemah v. Oregon City* case, explained in greater detail in a March 17, 2021 memo from this office, LUBA explained that the extent to which the City intended to treat a guideline as mandatory depends on “the wording and context of a particular provision.” Certain design elements listed in the “not allowed” column are mandatory but application of those standards may require the

² In fact, achieving compliance with the regulations through a modification review is far preferable than a protracted enforcement case.

³ OCMC 17.07.10 provides:

“Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of the zoning code is subject to the code enforcement procedures of Chapters 1.16, 1.20 and 1.24.”

exercise of interpretative judgment. For example, dome or bubble shaped skylights or those that are located on “street-side roofs” are identified in the not allowed category so presumably they are expressly prohibited. P 60. Yet, the stated principle for siting skylights provides: “Install on inconspicuous roof slopes, mount skylight close to roof plane.” Identifying those roof slopes that are “inconspicuous” and appropriate for the siting of skylights is subjective.

Further, as explained at the hearing, the City Commission is not bound to interpret the guidelines uniformly over time but it may elect to do so to provide some level of predictability in application of highly subjective standards. If previous precedent is to be given value, it should be prioritized throughout the review or some explanation offered for deviation in approach from one element to the next. For example, the record reflects that the HRB has often approved flat, rectangular, low-relief skylights that are located on side facing facades, even where those skylights and roof planes are visible from the street. Again, it is up to the Commission to decide what weight, if any, to give that precedent.

The counterbalance of precedent in decision-making is that each individual application presents a different and discrete proposal within an existing unique topography and built context that, when considered against a standard could reveal a different result. This variability in site, location and design composition is reflected in the design guideline purpose statement quoted above and elsewhere. For example, when discussing the appropriate design composition, the guidelines explain that: “There are multiple characteristics that must work together to create a successful design composition.” P 44. This is something that Ms. Blythe talked about in her testimony noting that the guidelines all work together and require considering a proposal as a whole as well as for each of its individual parts. Given the number of issues, staff organized its presentation around discrete design elements – windows, skylights, and retaining walls. The language of the guidelines with respect to each of these elements is important but so is how the building works together as a whole to further the objectives reflected in the guidelines, which are identified as:

- “Safeguard the heritage of Oregon City.
- Encourage public knowledge, understanding and appreciation of the City’s heritage.
- Enhance the visual character of the districts by constructing harmonious designs that reflect and support the character and style of buildings during the historic period.
- Protect property values, way of life, owners’ and community investment in the districts.” P 2.

The design guidelines offer a great deal of flexibility in interpreting the relevant standards as well as deviating from the standards when considering a project as a whole and in a way that achieves the objectives for the District. None of these standards involve penalizing an applicant for proceeding with development in advance of getting approval or denying a modification request because it differs from what was previously approved. The guidelines specifically envision variety in project approaches. The question is whether the applicant’s modification with respect to the retaining wall, skylights, window materials and placement achieves a result that satisfies the design guidelines or if additional conditions of approval are necessary in order to further modify the proposal to achieve compliance.

Alternative Conditions that Might Achieve Compliance

Some of the Commissioners expressed some doubt over whether the HRB imposed conditions go far enough or whether there might be alternative conditions that would better serve the design guideline objectives. Here are some more details on the HRB's findings, along with some additional suggestions, again based entirely on evidence contained within the record:

HRB Findings on Overall Development

The HRB found that the applicant's request does not have an adverse effect on the district's key characteristics of narrow streets and informal driveways, the basalt walls and channels, or the dense vegetation. The placement of the homes continues the irregularity of the district's pattern, and the structures themselves are smaller than the average historic home in the district. Thus, the HRB's review focused on the impact of the houses' designs and materials on the historic homes in the district.

The HRB took a holistic look at the overall development when making their decision, finding that, if the siding is replaced and the mitigation measures are taken, the overall development meets the intent of the guidelines. The homes have been built with modern elements including skylights, sidelites, casement windows, and awning windows. Other modern elements in the original proposal, such as floor to ceiling windows and vertical siding, have been eliminated, resulting in a design that is, on the whole, more compatible with the Historic District than the designs that were approved with conditions in 2017. The small size of the homes and simple designs of the street-facing facades serves to direct attention not to themselves but to the larger, historic homes in the district.

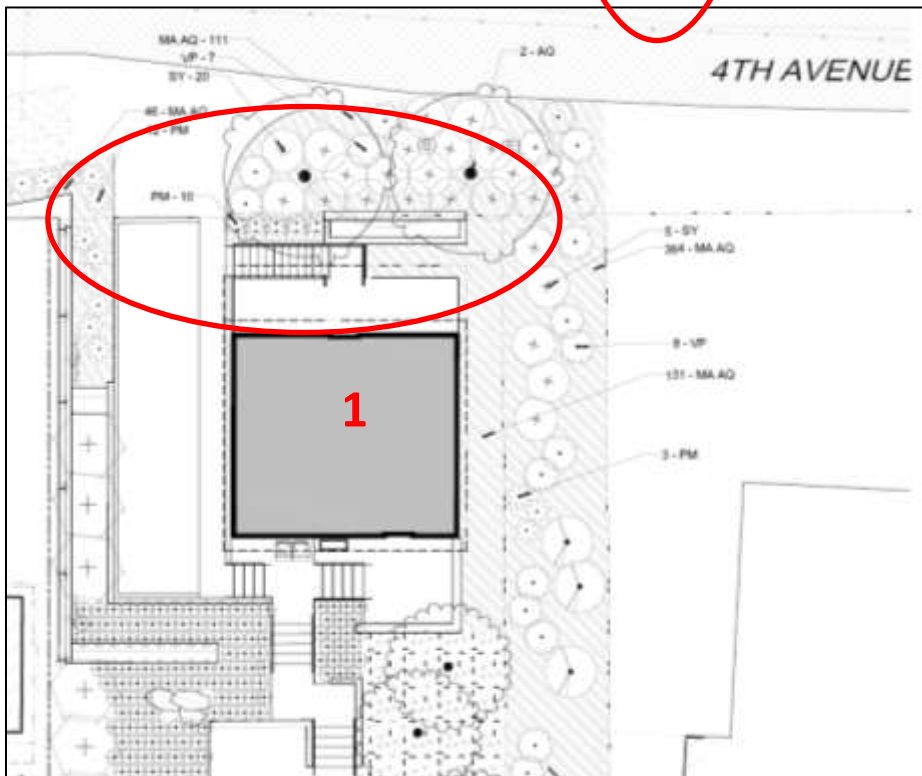
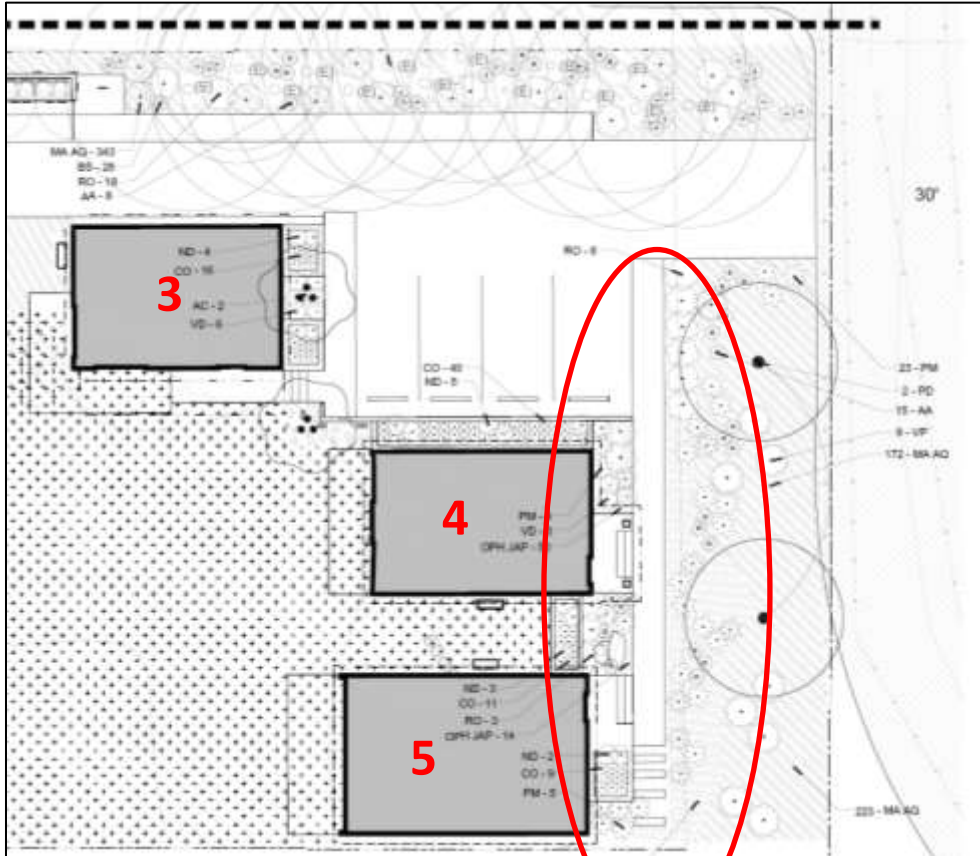
HRB Findings and Possible Alternative Conditions for Window Placement and Design

The Board discussed window design at length during the hearings. The Board acknowledged that the applicant did install aluminum-clad wood windows but that the design of the windows did not have a historic-style shadowline, and the awning windows were modern. The Board and the applicant agreed on a solution to make the windows have the shadowline of a painted wood window by adding thicker window trim, finding that it would add depth to the windows and add depth to the facades as well. The Board discussed the following factors that lessen the effect of the modern windows on the district:

- The homes are located at a distance from the street right-of-way and therefore not as visible from 4th Avenue and Miller Street, where all pedestrian and vehicle activity occurs.
- There are no sidewalks that would bring a visitor right in front of the homes to see the materials up close.
- There is landscaping proposed in front of the homes that will further obscure the view of the materials.

The additional mitigation that the Board has required includes the following:

- Additional landscaping in front of House #1, #4, and #5 in order to provide screening making these windows less visible from the street.
- Thicker window trim to provide a greater depth and shadowline on street-facing windows.



Figures 1 and 2. Landscaping proposed in front of street-side homes.

Questions raised by the Commission include: How can you add dimension to the windows? Are there photos or something in the record showing how this added trim will look?

Staff included a photo of the Cove development in the record, where thicker window trim was used to meet a design standard for 2" recessed windows. This example has limitations because the Cove development was not in a historic district and used vinyl windows and other materials that differ from Canemah Cottages. However, staff points to a different photo in the record that shows a modern window that utilizes a stool and apron at the bottom trim area. The Commission may find that the addition of a stool and apron to the thicker trim might add an element that would improve the compatibility of the windows.



Figure 3. Window with "Stool" and "Apron"

Explanation of HRB Findings on Skylight Locations

According to the design guidelines, skylights are to be located on "inconspicuous roof slopes." The skylights that have been installed are rectangular in shape with flat glass, in keeping with the design guideline.

House #1 Skylight

The skylight on the rear roof of House #1 faces completely away from the street has not been brought up specifically in the record. It has been approved by the HRB and no action of the Commission is requested.

House #2 Skylight

The skylight on House #2 does face 4th Avenue but is setback considerably from 4th Avenue, near the rear of the property. The skylight on House #2 will be at least partially obscured by trees planted on site. The Board found that because of the House #2 is located so deep into the site, along with the proposed trees and overall characteristics of the skylight, that it meets the guidelines.



Figure 4. House #2 Skylight

House #4 Skylights

The skylights on House #4 are the most visible of all the skylights, able to be seen from Miller Street. While the Board acknowledged that these skylights are visible, they also found that the skylights do not visually “jump out” because they are flat against the roofline and blend in with the dark shade of the roof. When traveling through Canemah, the eye is not drawn to the roofs of the structures, generally. The Board’s discussion pointed out that a skylight directly facing the street on a front façade would not meet the guideline, and that the skylights on House #4 are on a side-oriented roof. The Board also pointed out that there is precedent of skylights on non-street facing facades throughout Canemah, including on recently-approved buildings, and that many skylights are visible from the right of way even though they are not directly facing the right of way. The Board saw a differentiation between the words “inconspicuous” and “visible,” and interpreted the guideline to allow some visibility, in keeping with previous HRB decisions.



Figure 5. House #4 Skylights

House #5

The skylights on the south side of House #5 are mostly obscured by vegetation, especially during the summer. House #4 blocks the view of the north facing skylights on House #5. These skylights are located on rooflines that are perpendicular to the street, not directly facing the street. The Board’s discussion about House #4 Skylights also included House #5.



Figure 6. House #5 Skylight on north side (left) and south side (right)

HRB Findings and Alternative Conditions for Retaining Wall

The design guidelines do not contain a specific retaining wall height limit but rather call for minimization of retaining walls. The Board considered that the overall grading on site was reduced and the overall open space and landscaping was increased when House #2 was removed from the plans. The resulting change in the site plan meant that a retaining wall was built closer to the street. The Board found that overall, the taller retaining wall combined with the decreased grading and additional open space does not have a greater impact.

The Board required further screening of the wall through a condition of approval for climbing plants. If the Commission finds that the wall height has not been minimized, the Commission could consider the following alternative conditions:

1. Add another wall either behind or in front of the existing wall, to terrace the slope so that each wall appears to be less than 3.5 feet in height.
2. Face the retaining wall with basalt veneer to match other onsite walls.



April 27, 2021

To: City Commission
From: Kelly Reid, AICP, Planner
Carrie Richter, City Attorney
Re: Supplemental Staff Report – Canemah Cottages Appeals
File #s: AP 21-02 and AP-21-03: Appeals of Planning Files GLUA-21-00001/ HR 21-00001 through 21-00005

Executive Summary:

The Historic Review Board (HRB) recently approved alterations to a cottage home development in the Canemah National Register Historic District. In 2017, the HRB approved five cottage homes over four lots of record near the corner of 4th Avenue and Miller Street (files MD-17-01 through MD-17-06, and AP-17-04). The Historic Review alteration request was limited to the following design elements of the development: retaining wall height, window placement, materials and design, skylight locations, siding material, and porch design and well as other changes (see full list in the attached Exhibit 4. List of Design Changes). The Historic Review Board unanimously approved the alteration request with modifications in the conditions of approval requiring, among other things, the removal of rough-textured cement siding installed on all of the homes and replacement with smooth fiber cement siding or wood siding.

Two separate applications appealing the HRB approval were submitted. Both Appellants participated in the proceeding before the HRB – Appellant Staggs as the applicant and Appellant Edgar in opposition. Mr. Edgar recused himself from participating as a member of the HRB for this matter. The issues raised in the notice of appeal include:

AP-21-02: Appellant Edgar argues that the HRB erred by failing to sufficiently protect the integrity of the Historic District in permitting retaining wall height greater than 3.5 feet, the location and design of windows and porches, and skylight locations visible from the right-of-way in violation of the previously approved conditions of approval, OCMC 17.40 and the design guidelines so as to “detract and degrade the ‘Integrity of the Canemah National Register Historic District.’”

AP-21-03: Appellant Staggs seeks removal of the condition of approval requiring replacement of the textured cement siding, arguing that textured fiber cement siding is appropriate and satisfies the design guidelines.

To the extent that the Appellants allege that specific Design Guidelines are not satisfied by the HRB decision, the HRB’s interpretation and application of the Guidelines is consistent with the text of those standards. That said, the Guidelines are subjective, allowing for the exercise of discretion, and reasonable minds may differ in identifying the appropriate response. Given that there is no clear error in the HRB decision and that the HRB provided reasonable findings explaining their decision, staff recommends that the City Commission affirm the Historic Review Board’s decision approving these applications with conditions.

Background Facts:

In 2016 and 2017, the applicant submitted applications to the City for approval to construct a cottage home development. The Historic Review Board approved a development of five total cottage dwellings with conditions of approval (MD 17-01 through MD 17-06). The decision was then appealed by Friends of Canemah, and the HRB's decision was upheld by the City Commission through AP-17-04. The decision was then appealed by Friends of Canemah to the Land Use Board of Appeals (LUBA). LUBA upheld the City's decisions and the Historic Review Board's decisions were then considered final.

In addition to the Historic Review application, the applicant also submitted a required application for Site Plan and Design Review and Geologic Hazard review through SP-17-145/US-17-09, which was approved with conditions.



Figure 1: Vicinity Map

In 2018, building permits were issued for the development, allowing construction to begin. Since not all of the requirements of the approval could be confirmed when the permits were issued (such as the visibility of the skylights from the roadway), Planning staff informed the applicant that a site visit by Planning staff was needed after framing was constructed (in conjunction with the framing inspection) for an interim review related to HRB elements. Construction began on the homes in 2019. The applicant completed framing, roofing, siding, and window installation in late 2020. Upon an interim inspection, staff identified a number of discrepancies between the building plans approved by city staff, the 2017 HRB-imposed conditions, and the constructed dwellings.

Planning staff notified the applicant of the discrepancies, explained that no further City sign-off for construction would be allowed until the applicant resolved the inconsistencies either by modifying the

homes to comply with the conditions or secured a modification of the 2017 approval. In February, 2021, the applicant filed the subject application seeking modification of the 2017 approval to approve the homes as constructed, arguing that, as built, the project satisfies the Design Guidelines.

The first public hearing was held on February 23rd, 2021 and continued to March 23, 2021 where the public, including the Appellants were given the opportunity to testify.

At the March 23rd public hearing the Historic Review Board voted 5-0-0 (5 in favor, 0 against, 0 abstaining) to approve this application with conditions, finding that many of the elements of the constructed homes still met the Design Guidelines for New Construction, even though they were not consistent with the original plans that the HRB approved in 2017. The significant issues that the HRB discussed are summarized below:

Siding. Though the applicant proposed wood siding in the 2017 application, a rough-textured cement siding was installed. The recent HRB decision included a condition to remove the rough-textured fiber cement siding and replace with smooth fiber cement siding or wood siding. The Board found that the texture of the siding looks artificial and is not consistent with the historic character of the District. The artificial texture does not have the appearance of wood, as called for in the adopted Design Guidelines for New Construction and as approved in the application. In addition, the Board found that the texture is visible from the right of way and that landscaping would not fully screen or shield the siding. Although the homes individually are small, the effect of five homes all with textured siding is quite impactful and visible. The Board did not wish to set any precedent indicating that artificially-textured siding is permissible or that it meets the design guidelines.

Skylights. The 2017 HRB approval of skylights was limited to skylights that are not visible from the right-of-way. The applicant installed skylights, some of which are visible from the street, and requested approval from the HRB. The Board approved the skylights as constructed, finding that the skylights are located on rooflines that are perpendicular to the street and do not visually “jump out” because they are flat against the roofline. When traveling through Canemah, the eye is not drawn to the roofs of the structures, generally. There is precedent of skylights on non-street facing facades throughout Canemah, and many are visible from the right-of-way even though they are not directly facing the right of way. Finding that the skylights are “inconspicuous” given their location and surroundings, the Board found that they are consistent with the adopted Design Guidelines for New Construction.

Windows. The original application that led to the HRB decision in 2017 did not include any precise window design details other than the statement that 2.5’ by 5’ tall wood windows would be used, so the HRB added a condition of approval requiring that the windows utilize historic window shadowlines, citing the relevant design guidelines. The windows that the applicant installed have little depth and shadowline. Upon the 2021 review, the Board approved the window designs, with conditions of approval for thicker trim and additional landscaping. The Board found that adding thicker trim around the windows would create more depth, making the windows appear to have similar shadowlines of historic wood windows. The facades of the homes are fairly simple and flat, and the trim will serve to add depth and changes in plane not just to the window areas but to the building elevations as well.

Retaining Wall. The conditions attached to the 2017 HRB decision required: “Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.” The applicant requested removal of the condition limiting retaining walls to 3 ½ feet and allowing the approval of a retaining

wall five feet in height. The Board approved the retaining wall height of five feet, with a condition of approval to plant a vine or espalier to obscure the wall.

Appeal:

On April 6, 2021, an appeal was filed by Paul Edgar arguing that the HRB's decision to approve with conditions the retaining wall height, skylights, and windows on the five cottage homes was in error because these elements of the development are not consistent with the Design Guidelines for New Construction.

On April 7, 2021 an appeal was filed by Christopher Staggs, the applicant and owner of the Canemah Cottages project. This appeal concerns only Condition of Approval #7, which requires that the applicant replace the siding with wither wood or smooth fiber cement horizontal siding. Mr. Staggs' appeal seeks that the Commission overturn this condition of approval.

Procedural Issues:

As a Type III decision, all appeals shall be considered by the City Commission on the record. This means that only those individuals who submitted testimony orally or in writing during the proceeding before the Historic Review Board may participate in this appeal. The City Commission's review is limited to the items identified in the notice of appeal. Further, the Commission's review of this appeal is limited solely to the evidence contained in the record before the Historic Review Board.

Applicable Standards:

The development was reviewed by the HRB as new construction within the Historic Overlay, which is subject to the approval criteria in OCMC 17.40.060. The decision criteria for the City Commission is the applicable approval criteria that the Appellant has identified in the appeal. The City Commission is tasked with a decision on whether these standards are met, given the evidence submitted into the record to date. The standards, in this case, are the adopted Design Guidelines for New Construction, which are referenced in OCMC 17.40.060.G.7:

17.40.060.G For construction of new structures in an historic or conservation district, or on an historic site, the criteria to be used by the board in reaching its decision on the certificate of appropriateness shall include the following:

(#1-6 omitted)

7. Design guidelines adopted by the historic review board.

Staff also highlights the following statement in the design guidelines regarding how new construction is reviewed: *"These principles shall guide new construction to be compatible with existing historic resources and yet offer strategies that can incorporate new materials and products. New construction is just that. It is not historic, nor shall it attempt to be historic, but rather to stand side by side with existing historic structures in a respectful manner."* Design guidelines that are specifically relevant to this appeal are included in the findings below.

Each argument presented on appeal is explained below, with a staff recommendation for each.

Issue Raised by Appellant Staggs:

Whether the textured fiber cement siding is consistent with the Design Guidelines

As part of File No. GLUA-21-00001, the applicant requested HRB approval for the use of Hardieplank Cedar mill brand textured fiber cement siding. As originally proposed and approved by the HRB, all of the homes were to be wood sided installed both horizontally on some facades and vertically elsewhere. The HRB approved the proposed wood siding in 2017, adding a condition that vertical siding not be used on any street-facing facades.

The Historic Design Guidelines for New Construction sets forth the follow standards with respect to siding:

- *Principle: Compatible with historic siding and enclosure materials in size, profile, orientation, texture, and color.*
- *Design: Wood siding or materials which have the appearance of horizontal wood siding in an allowable design. Sample approval is required for non-wood horizontal board siding.*

In other words, non-wood horizontal board siding that has “the appearance of horizontal wood siding” would be allowed.

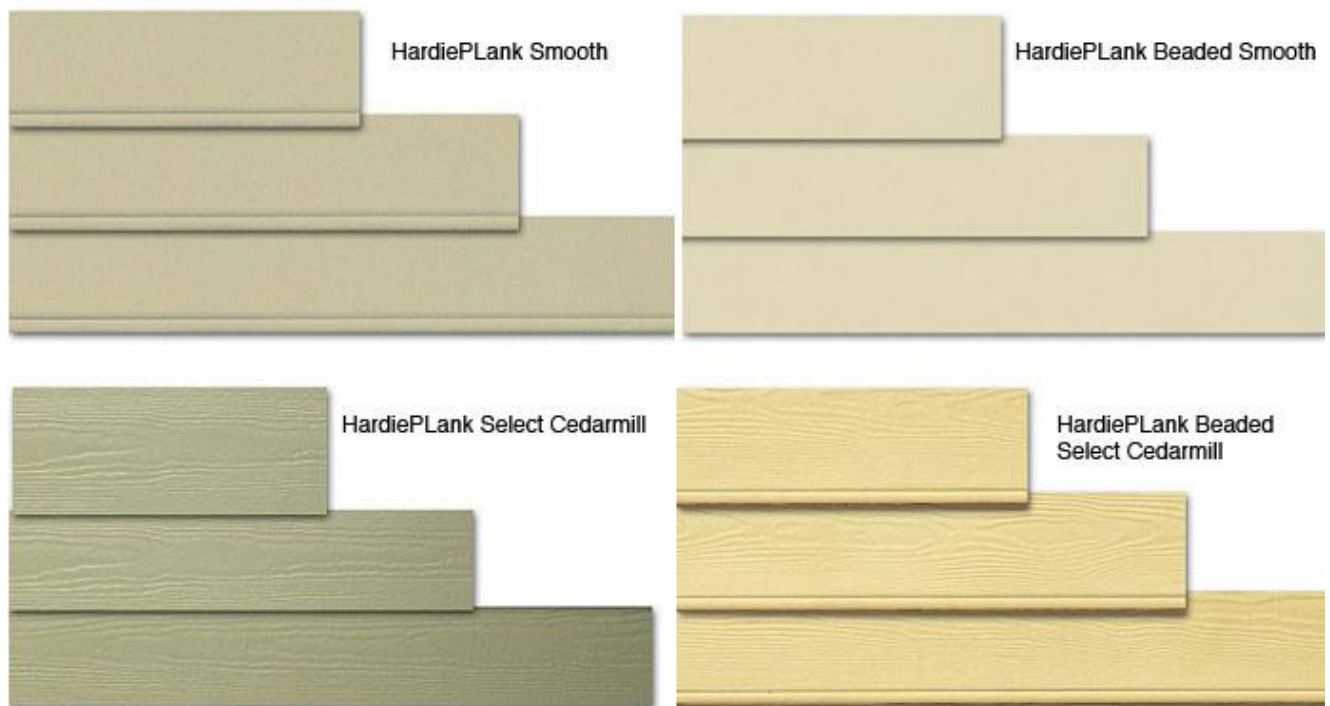


Figure 2. Product comparisons: Smooth versus Textured (Cedar mill) siding

The Appellant Christopher Staggs argues that the HRB’s finding that the textured fiber cement siding is “artificial and not consistent with the historic character of the district” is incorrect. Instead, Mr. Staggs argues, the “wood texture” cement board siding “is specifically designed to have the appearance of wood siding,” in addition to being durable and fire resistant. Mr. Staggs also cites the Design Guideline that states the vernacular style in Canemah “lacks rigid system of exterior detailing that makes it a

clearly definable architectural style; allows design flexibility and is inherently varied,” as the basis for authorizing greater flexibility and variation in design.



Figure 3. Textured fiber cement (hardieboard) siding on the constructed House #1.

First, durability and fire resistance of building materials is not included within the Design Guidelines as justification for siding that does not have the appearance of horizontal wood siding. Second, the guideline about design variability that is cited by the appellant describes the existing Vernacular style in Canemah. Staff does not disagree that design variation is allowable in the district, but points more closely to the design guidelines document, where further guidance on material selection is provided – specifically, in the “How to Use the Guidelines” section on page 8:

E. SPECIFIC DESIGN ELEMENTS

E-1 Design and choose specific design elements, products, and materials that are allowable and consistent with the design styling and framework established.

E-2 Does the design still fit the style’s ‘vocabulary’? Have extraneous or excessive details, ornamentation, or materials been chosen that detract from the neighborhood context?

E-3 Do specific elements comply with the guideline? Are materials, colors and finishes selected? Visible equipment? Landscaping and Plantings?

The instructions provided to applicants in the document ask them to refer to the specific element guidelines for materials and finishes. The specific siding guideline has been cited earlier in this report. The siding guideline does not explicitly prohibit textured fiber cement siding, but provides for the HRB to review non-wood siding on a case by case basis, requiring that “a sample be provided.” In this case, the applicant installed the siding on the buildings before submitting a sample for review by the HRB. The first opportunity HRB members had to view the proposed and installed siding was through a site visit occurring in advance of the HRB decision. (Each Board member disclosed these site visits in advance of the various public hearings.) The applicant was proceeding at its own risk by installing non-wood siding without first securing HRB sign-off.

The March 23rd Staff Report identified mitigation including the 28' distance between the homes and the public street and the level of landscaping within this setback area justified allowing textured siding in this case. Staff also pointed out that the small scale of the buildings also helped to make the buildings themselves not stand out in the District, and that the modest size also might be a factor in the Board's consideration of materials that might not be otherwise permitted. The Board did not agree that the distance and the landscaping satisfied a standard requiring that wood siding have the "appearance of horizontal wood siding", and found that the use of this siding on five homes was impactful to the historic district, even though each individual home is modestly sized.

A number of previous HRB decisions have likewise found that the textured product did not meet the guideline to use "materials which have the appearance of horizontal wood siding." In these other cases, the Board has permitted the use of fiber cement on new construction in a historic district when it has been proposed, and the Board has been consistent in allowing only smooth fiber cement board, finding that the smooth boards better resemble real painted wood siding.

The guidelines give the HRB discretion to determine which materials have the appearance of wood, and they have done so in this case. In the Canemah Historic District, wood siding is painted to be smooth. It does not have any texture, once painted. Although colored to give the appearance of paint, the heavily-textured surface does not give the appearance of wood siding. While Mr. Staggs disagrees with the Board, he has not provided any arguments that the Design Guidelines require approval of textured cement siding or that the textured siding has the appearance of wood, based on the evidence in the record. Staff's recommendation to the City Commission is to uphold the HRB's condition of approval based on the findings made by the Board at the March 23, 2021 hearing.

Issues Raised by Appellant Edgar

1. The Role of the 2017 Conditions of Approval in this Review

One of the arguments included in a number of Appellant Edgar's objections is that the subject 2021 HRB decision did not comply with the conditions of approval attached to the 2017 decision and that the HRB improperly "waived" these conditions through its subsequent review. However, OCMC 17.50.130(D) authorizes the City to process a request to modify a condition of approval through a "major" or "minor" review. A "major modification" must be processed in the same manner and subject to the same standards as the original proposal, which is what occurred in this case. There is no prohibition or other restriction on the alteration of conditions of approval through a subsequent proceeding. The procedures of the HRB were not in error and staff makes no recommendation for any City Commission action.

Appellant Edgar also argues that there are multiple violations of the conditions of approval, but his notice of appeal does not identify any specific conditions beyond those considered and reformed or removed as a result of the HRB review. Because the appellant did not specify other conditions, no additional findings are included in this report.

2. Whether the retaining wall is consistent with the Design Guidelines

The retaining wall height issue is limited to House #1, where a 5-foot-tall retaining wall has been installed at the rear of the off-street parking space to the west of the home. This retaining wall did not appear in the 2017 approval because the Board required that the development be reduced to five houses from the six that were proposed. As part of removing House #2 and its associated off-street

parking, the Applicant elected to eliminate the major site regrading in this area, leaving a larger open space area. To address the ground level elevation change, the applicant installed a 5-foot retaining wall behind House #1.

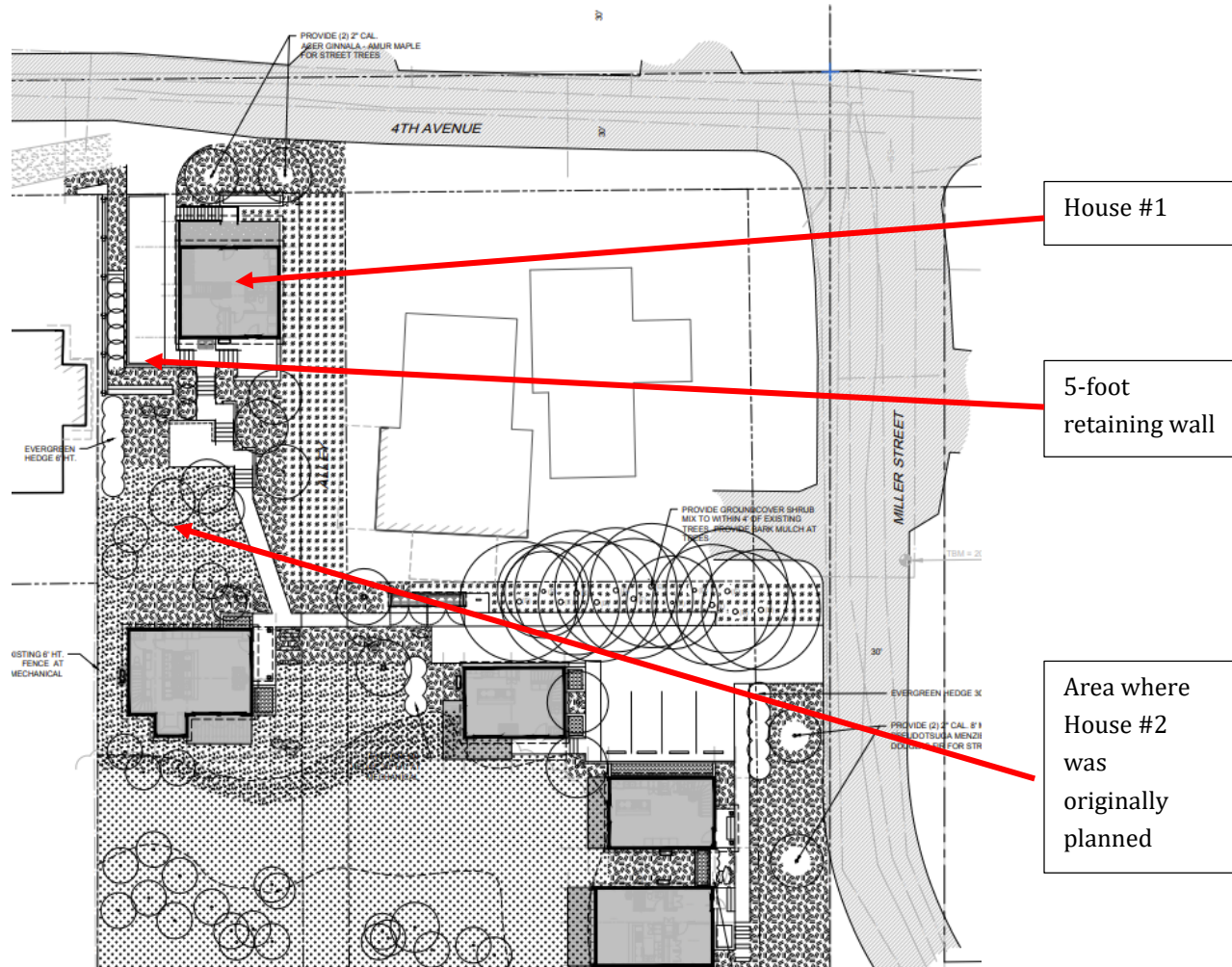


Figure 4. Site Plan with five homes; after removing House #2 from plans

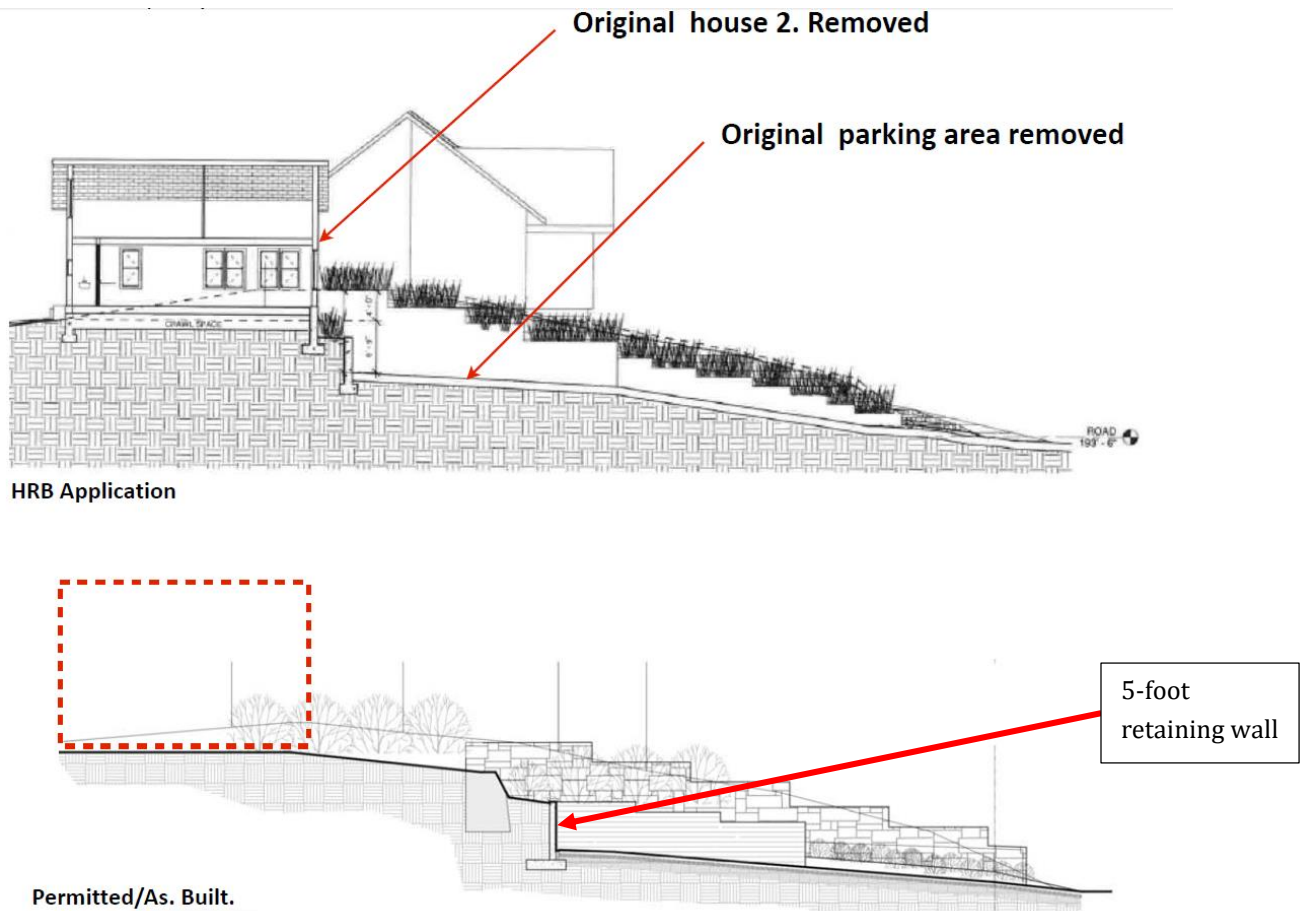


Figure 5. House #2 and surrounding grading and retaining walls in the original plans, versus the constructed plan.



Figure 6. House #1 with retaining wall shown behind.

The conditions attached to the 2017 HRB decision required: “Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.”

The applicant requested removal of the condition limiting retaining walls to 3 ½ feet and allowing the approval of a retaining wall five feet in height. The HRB approved the wall height with a condition of approval to plant vines or espalier to cover the wall. Appellant Paul Edgar argues that the 5-foot tall retaining wall does not meet the Design Guidelines and should not have been approved; that wall height has always been limited to 3.5 feet in maximum height.

Fence and wall height in the front yard is limited to 3.5 feet throughout the City. The wall behind House #1 is in the rear yard and is therefore permitted by general city standards in OCMC 17.54.100 to be up to 6 feet in height. The Design Guidelines contain further guidance for walls in historic districts. They do not contain a specific height limit but rather call for minimization of retaining walls. The controlling guideline states:

“Minimize the height and presence of walls; Use of rock, brick, concrete with finishing; mortared or stacked true masonry or stone that was traditionally quarried in the area”

The HRB found that the height of the wall was minimized as a result of its distance from the public right-of-way. The 5-foot tall wall is more than 60 feet away from the street and fully behind House #1, which minimizes the height and presence of the wall. The HRB also imposed a new condition of approval requiring this installation of vines or espalier to minimize the visual impact.

The Appellant has not identified any Design Guidelines that is violated by the HRB’s decision with respect to the retaining wall beyond House #1, nor identified any evidence in the record which would contravene the HRB’s finding. Staff’s recommendation to the City Commission is to uphold the HRB’s decision with respect to the retaining wall height coupled with the condition of approval based on the findings made by the Board at the March 23, 2021 hearing.

3. Whether the location of the installed skylights are consistent with the Design Guidelines

The 2017 HRB approval authorized the use of skylights, subject to the condition that they be located on “*inconspicuous roof slopes*”, “*mounted close to the roof plane, and not visible from the right-of-way.*”

This condition mirrors the language within the Design Guidelines which provides: “Install on inconspicuous roof slopes, mount skylight close to roof plane.”

The skylights that have been installed on a number of the homes are not in the same locations as depicted in the approved plans and although they are located on side-oriented roof slopes, they are visible from the right of way. More specifically, the skylights on House #4 are visible from the right of way. A skylight on House #2 is also currently visible but might be obstructed in the future by landscaping. Skylights on House #5 are marginally visible and are mostly obstructed by vegetation, especially outside of the winter months. The skylights are rectangular in shape with flat glass.



Figure 7. View from right-of-way on Miller Street – House #4 skylights are visible. August 2020

Through the subject 2021 request, the applicant requested an interpretation that the as-built skylights comply with the condition of approval requiring their location on “inconspicuous roof slopes.”

The HRB interpreted the Guidelines to find that the as-built skylights are “inconspicuous.” The skylights are located on rooflines that are perpendicular to the street and do not visually “jump out” because they are flat against the roofline. When traveling through Canemah, the eye is not drawn to the roofs of the structures, generally. There is precedent of skylights on non-street facing facades throughout Canemah, and many are visible from the right of way even though they are not directly facing the right of way. Given that the skylights are “inconspicuous” due to their location and surroundings, the Board found that they are consistent with the adopted Design Guidelines for New Construction.

Appellant Edgar argues that the skylights do not meet the Design Guidelines, without identifying which Guidelines he believes is not satisfied. Whether the skylights “degrade the historic district” is not the language of the controlling design guideline in any event. The Appellant does not point to any evidence in the record indicating that the skylights are conspicuous or any other explanation of why the as-built skylights are not in compliance with the Design Guidelines. Staff’s recommendation to the City Commission is to uphold the HRB’s decision with respect to the skylights based on the findings made by the Board at the March 23, 2021 hearing.

4. *Whether the windows are consistent with the Design Guidelines*

The original application that led to the HRB decision in 2017 did not include any precise window design details other than the statement that 2.5’ by 5’ tall wood windows would be used. All of the windows were drawn as casement windows with locations as depicted in the plan drawings. In response, the HRB approved Houses #2 through #5 with the following condition of approval:

“Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Nonwood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.”

As with the condition relating to skylights, this condition approval borrows and restates the exact language of the Design Guideline for windows.

As constructed, most of the windows are casement windows with a band that divides the window into two squares to give it an appearance of a 1 over 1 double-hung window. The applicant through this approval seeks approval of these casement windows, as well as a limited number of awning and picture windows in locations that are different from those set forth in the original plans.



Figures 8 and 9. Casement windows with simulated divided lite.

As staff pointed out and the HRB agreed, the member sizing, thickness, and shadowline of painted wood windows is not clearly defined as required in the condition of approval and the Guideline. Because they are casement style windows, the upper and lower portions are located on the same plane and do not create the shadowline effect of a single or double-hung window. The awning windows also lack the shadowline effect. A key dimension for painted wood windows is window sill depth. The installed windows are recessed 1.5" from face of trim, which the Board found is not sufficient to meet the condition or the Guideline. Thus, the Board required, as a condition of approval, that the applicant utilize window trim to achieve 2.5" to 3" of depth from face of trim to glass panes on the windows that face the street.

Appellant Edgar does not address the HRB-imposed condition requiring additional trim to increase the shadowline to more closely approximate that found on historic wood windows. Rather he argues that the applicant had an obligation to submit a sample of the windows first, before proceeding with installation and because that never happened, the applicant is seeking after-the-fact approval. The

guidelines do require a sample be reviewed by the HRB when non-wood windows are proposed; however, the applicant has installed aluminum-clad wood windows, so the sample is not required by the guidelines. As pointed out above, nothing prohibits an applicant from modifying a prior approval. Although it is unfortunate that this approval was sought after-the-fact, ensuring compliance with the Design Guidelines is being assured through this review. The HRB, as well as this Commission on appeal, has the authority pursuant to the modification provision of OCMC 17. 50.130(D), to approve or deny the request to for the as-built windows, their materials and location, even though they were already installed.

Appellant Paul Edgar argues that the windows are not compatible and do not meet the original conditions of approval. Mr. Edgar argues that windows are one of the most important elements of compatibility, and that the placement of the of the windows detracts from the district. Mr. Edgar specifically mentions window placement on the front of Houses #1, #4, and #5 as “incompatible,” specifying that the banks of three windows on House #1 and the sidelites next to the front doors on Houses #4 and #5 have not “been accepted before.”

The Guidelines do not prohibit a three-window bank or the inclusion of sidelites in Canemah. Rather, they speak more generally about maintaining overall design balance, proportion and rhythm in design. The use of disproportionate window elements or locating them asymmetrically or in a way that is out of balance is prohibited. HRB was persuaded by the evidence in the record showing that the Canemah District includes a wide variety of window grouping patterns, shapes and locations creating asymmetric design that is not dissimilar from these homes. With respect to House #1, two identical set of three-bank windows have been placed on either side of a central door creating a symmetrical and balanced design. The HRB concluded that the sidelites on Houses #4 and #5 were not out of balance or disproportionate considering the whole design. Given the diversity of window sizes, location and placement in Canemah and the HRB’s expertise in evaluating symmetry, proportion and rhythm in overall building design, staff recommends that the City Council affirm the HRB on this issue.



Figures 10 and 11. Sidelite on House #5 and banks of windows on House #1.

The Appellant has not identified any evidence in the record that the windows are inconsistent with the Design Guidelines for New Construction, or with OCMC 17.40.060. Staff's recommendation to the City Commission is to uphold the HRB's condition of approval based on the findings made by the Board at the March 23, 2021 hearing.

Conclusion

In summary, the question before the City Commission on appeal is whether the HRB erred in its decision that these elements do not satisfy the adopted Design Guidelines for New Construction. Since the Appellants' notices of appeal do not raise any specific arguments explaining how the Historic Review Board's decision was in error, staff recommends that the City Commission deny both appeals and uphold the Historic Review Board's approval with conditions.

Exhibits

1. AP 21-02 Submission
2. AP-21-03 Submission
3. GLUA-21-00001/HR 21-01 through HR 21-05 Staff Report and Notice of Decision
4. List of Design Changes
5. Photos
6. Public Comments on GLUA-21-00001/HR 21-01 through HR 21-05
7. Powerpoint Presentations from HRB hearings on GLUA-21-00001/HR 21-01 through HR 21-05
8. GLUA-21-00001/HR 21-01 through HR 21-05 Applicant's Submittal

CITY OF OREGON CITY

Community Development Department, 320 Warner Milne Road,
P.O. Box 3040, Oregon City, OR 97045, (503) 657-0891
www.ci.oregon-city.or.us

APPEAL OF A LAND USE DECISION

FILE # AP 21-00002 (of File #) _____ DATE: 04/07/2021
NAME: PAUL D. EDGAR TELEPHONE #: 503 656-6704
ADDRESS: 211 5TH AVENUE

ADDRESS OR PROPERTY DESCRIPTION (T/R/S) OF SUBJECT PROPERTY:

508 4TH AVENUE, 450, 462, 474, 480 MILLER ST. OREGON CITY
SUBJECT OF APPEAL: NOTICE OF DECISION DATE: / / For File #: CANEMAH

The undersigned hereby appeal(s) the decision of the GLUA-21-0001/NR-21-00001 THE
21-00005 HISTORIC REVIEW FOR CANEMAH BOTTLING
IN THE CANEMAH NATIONAL REGISTER HISTORIC DISTRICT
concerning the subject case. The decision to approve YES deny the application was made
at the meeting held on MARCH 23, 2021.

NOTICE OF DECISION MARCH 24, 2021

REASONS FOR APPEAL: Please include a statement identifying which approval criteria are violated by the decision and an explanation of how those criteria are violated, or stating how the decision is otherwise in violation of applicable law. Please see Chapter 17.50 of Oregon City Municipal Code for Administration & Procedures concerning Appeals.

SEE ATTACHMENT

FILING FEE PAID: \$250 DATE PAID: 04/07/2021 RECEIPT NO.: _____

Property Owner Signature _____

Address _____

Property Owner Signature _____

Address _____

****SIGNATURES REQUIRED IF APPLICABLE****

Paul D. Edgar
Signature _____

Address _____

____ Contract Purchaser

____ Lessee

____ Prospective Purchaser

The Appeal of GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District.

1. This Appeal is a result of far too numerous of "Errors in Judgement" in the totality of the instructions made/given to the Oregon City Historic Review Board, by City Staff and the City Attorney. Reference: The Conditions of Approval granted for this Canemah Cottages that were not complied with could be subjectively determined and accepted even when they are in violation of the instructions of the "Conditions of Approval" and our OCMC 17.40 and Building Guidelines.
2. I am essentially wearing two hats when it comes to historic preservation in Oregon City. I am both an individual advocate for preservation, particularly in Canemah, as resident and the owner of a Historic Contributing House as well as a member of the Oregon City HRB. For this Canemah Cottages matter, I recused myself and participated as an individual. I cannot because of my recusal switch positions and lobby for an outcome based on my membership on the HRB, I have to rely on you the Oregon City, City Commission. Moreover, the HRB has not authorized me to speak on behalf of the HRB with respect to this application. I am knowledgeable with respect to our OCMC 17.40 codes and Building Guidelines and I have studied the principles of the right and wrongs of decision making in an effort sustain the integrity of our Historic Districts.
3. A Request was made: **For a Historic Review for alterations and non-compliance of a previously approved Canemah Cottage Homes development (previous file #s MD-17-01 through MD-17-06, and AP17-04) and the Conditions of Approval.** Oregon City Planning Staff in review identified a number of discrepancies between the plans approved by the HRB with conditions, and the current constructed dwellings. The discrepancies include items that are directly in conflict with a condition of approval, items that are in conflict with the applicant's proposal, and items that require interpretation by the HRB and now Oregon City, City Commission.
4. Applicant failed to come back to the City and HRB, and ask for and gain approval of and to the numerous violations of the Conditions of Approval which are in effect a Contract and requests changes to the approved designs and interpretations of the Original Conditions of Approval including but not limited to the following items: wall height, window placement and design, skylight locations, siding material, and porch design.
5. The applicant made this application to the Historic Review Board to request that the HRB to approve the homes as constructed, which would in effect waive or modify some of the previous conditions of approval, OCMC 17.40 Codes and Building Guidelines. Without mitigation, the City was asked to approve through waiving the "Conditions of Approval", our Contract of what was appropriate with the Canemah Cottages, in a National Register Historic District.
6. **Walls and Wall Height:** is and has been limited to 3.5' feet in maximum height. This wall height has always been enforced and in the notice of approval for the Canemah Cottages it is being waived for the wall to the right and behind House #1 and in doing so, this sets precedence to all of those who have been in compliance.

7. **Sky Lights:** were authorized and within the Conditions of Approval, limited where they could be placed. The Sky Lights cannot be visible – viewable from the streets – Right of Ways. In 2018, when the building permits were issued for the development to begin construction, the building plans were reviewed by planning staff. At the time, Planning Staff reviewed the conditions of approval from the Historic Review Board and noted in a written permit review memo which conditions were reflected in the building plans and which conditions remained to be addressed at a later date. The memo noted that the skylights should be reviewed after framing is up, when staff could make a determination which roof areas would be visible from the right of way.

Construction began on the homes in 2019. The applicant completed framing, roofing, and window installation in 2020. Staff was made aware that skylights had been installed without the review that was mentioned in the permit review memo. At that time, staff visited the site and informed the applicant that some of the skylights were visible from the right of way, and this was in violation of a Condition of Approval of MD-17-01 – MD17-06.

Note: House #1 is the only house where the Conditions of Approval are being adhered too, in relationship to Sky Lights and their ability to be viewed from the Right-of-Way. This failure to comply with needed Design Guidelines has a major effect in degrading the overall integrity of the Canemah National Register Historic District by introducing non-compatible designs.

8. **Siding:** The HRB approved the wood siding, and restricted vertical siding for use only on non-street facing facades. The homes have all been built with textured fiber cement siding, and no vertical siding has been used. The HRB found that the textured Hardie-Plank siding installed was not acceptable. The HRB adopted findings that are very context-specific and required that the siding for Canemah needed to be change out. We are not appealing that decision.
9. **Windows Design and Placement, in the “Conditions of Approval”:** “Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Nonwood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish.”

“If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.” A sample window design and approval were never asked for and never happened. The Canemah Cottages asked for approval after the fact, to approve what has been installed and in doing so, this violates the “Conditions of Approval” OCMC 17.40 and Building Guidelines.

The Windows and their design reflect one of the most important elements compatibility as they are seen as “The Eyes of Historically Appropriate Designs”. There is this need to not introduce new and in-compatible and detracting designs that degrade the Integrity of the Canemah National Register Historic District.

The widows that have been installed were installed without approval do not even come close to what was required in the "Conditions of Approval" and what is spelled out in OCMC 17.40 and Historic District Building Guidelines for Canemah.

The problem It is this lack of compatibility to where these windows detract and degrade the "Integrity of the Canemah National Register Historic District", that is at stake.

Setting precedence of accepting modern Window Design and Placement, without regards to this lack of compatibility to the Canemah Historic Contributing Buildings within the Vernacular House Designs, to where they have no shadow line or sill-plates found on Historically Appropriate Windows, just does not exist and that makes them unacceptable.

This act of setting precedence and approving Windows just because they are already installed, no-matter if they detract and are not compliance with our Historic District - Building Design Guidelines is again what I am Appealing in that they are also in violation of "Conditions of Approval" needs your review of if you want to approve them.

There are cluster of 3 windows on each side of the front door of House #1 that is introducing in compatible design placement, that has to the best my knowledge been accepted before. This is introducing a new inappropriate placement that detracts and it is highly visible. These windows should be replaced with compatible windows in cluster of 2-windows side-by-side.

Houses #4 and 5, have door side windows that are not appropriate and detract.in the Canemah National Register Historic District. When the siding is replaced, this is an ideal time to make changes that lead to more compatibility to where these Canemah become less detracting.

10. I am requesting for the City Commission to grant a fee waiver of this Appeal. Under OCMC 17.50.190(F), appeals of HRB decisions are "on the record and the issues under consideration shall be limited to those issues listed in the notice of appeal."

Under OCMC 17.50.290C, Appeal Fee Waivers. The planning division may waive all or any portion of an application fee if, in the opinion of the director, a particular application shall be resubmitted because of an error made by the city. Appeal fees may be waived, wholly or in part, by the city commission, if the city commission finds that, considering fairness to the applicant and to opposing parties, a full or partial waiver of the appeal fee is warranted. Appeal fees shall not be charged for an appeal filed by a city-recognized neighborhood association, so long as the appeal has been officially approved by the general membership or board of the neighborhood association at a duly announced meeting. **This appeal was advanced within fairness to all previous applicants for HRB approvals for new Infill in the Canemah National Register Historic District that have been in compliance with all Conditions of Approval and complied with OCMC 17.40 Code and Historic District Guidelines.**

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4. Applicant failed to come back to the City and HRB, and ask for and gain approval of and to the numerous violations of the Conditions of Approval which are in effect a Contract and requests changes to the approved designs and interpretations of the Original Conditions of Approval including but not limited to the following items: wall height, window placement and design, skylight locations, siding material, and porch design.
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Construction began on the homes in 2019. The applicant completed framing, roofing, and window installation in 2020. Staff was made aware that skylights had been installed without the review that was mentioned in the permit review memo. At that time, staff visited the site and informed the applicant that some of the skylights were visible from the right of way, and this was in violation of a Condition of Approval of MD-17-01 – MD17-06.

Note: House #1 is the only house where the Conditions of Approval are being adhered too, in relationship to Sky Lights and their ability to be viewed from the Right-of-Way. This failure to comply with needed Design Guidelines has a major effect in degrading the overall integrity of the Canemah National Register Historic District by introducing non-compatible designs.

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HRB Options for Each Item
1. Accept Change (Consistent w/ Approved Plans). Accept change as an adjustment that is consistent with the approved plans
2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines
3. Accept Change (Consistent w/ Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation
4. Accept Change (Consistent w/ Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff
5. Reject Change. Require applicant to construct as proposed or come back with additional changes.

SITE/OVERALL				
Description of Change or Element	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Removal of House #2.	HRB Condition of Approval #2 to remove House #2.	N/A	Accept Change (Consistent w/ Approved Plans). The original HRB condition of approval did not specify what should be installed in place of the home or consider the effects of the removal on the site plan.	
Changes to parking and walkway layout	Overall Parking Needs Changed with removal of House #2. Meets standards for parking and pedestrian circulation through Site Plan and Design Review.	N/A	Accept Change (Consistent w/ Approved Plans). The municipal code includes min/max number of parking stalls for each cottage home. The number of off-street parking stalls was reduced to reflect the reduction in homes onsite. The reduced number of parking stalls caused the parking area adjacent to Home #1 to be redesigned from a traditional parking lot to a driveway which accommodates two cars, a design that is more common in the nearby homes and addressed some of the concerns about the parking lots voiced in the initial hearings.	
Location and height of retaining walls behind House #1. Conflict with condition of approval #5 for retaining walls to be 3.5 foot height maximum. Wall is 5 feet tall.	The changes to the parking lot adjacent to Home #1 allowed the wall to move closer to the front of the property and thus reduce the overall grading onsite.	The historic design guidelines do not have a maximum height for retaining walls; they simply say that wall heights should be minimized.	Accept Change (Consistent w/ Design Guidelines). Citywide code allows walls up to 6 feet in height (behind the front facade). The retaining wall is 5 feet in height. The wall is approximately 60 feet from the street and 7 feet behind the back edge of House #1. Previous proposals had stepped walls with lower heights but overall more grading. This design involves less grading, only one retaining wall, at a height that has been approved by the HRB in previous cases. Staff recommends changing the original condition of approval to allow this wall to be 5 feet in height. The Board may want to add a condition for vines/espalier to cover the wall. The landscaping plans do not appear to include any vines or espalier here.	
All homes have textured fiber cement siding rather than wood siding, which was proposed by the applicant and approved by the Board.	Wood siding was cost-prohibitive.	The historic design guidelines do not specifically prohibit textured fiber cement siding; rather, they call for the appearance of wood siding.	Accept Change (Consistent w/ Mitigation Proposed). The HRB has consistently been requiring siding to be smooth; smooth siding has more of a painted wood siding appearance. The modest size of the homes and distance from the street (at least 28 feet) make it difficult to see the texture of the siding. Staff recommends Conditions of Approval #1 and #2 to add landscaping to further screen the view of the homes from the right of way and mitigate/obscure for the appearance of siding from the street.	

All homes have windows that are a single lite or simulated divided lite, with sill depth of approximately 1.5". Conflict with HRB conditions of approval for windows that match the member sizing, thickness and shadowline of historic wood windows.	The condition of approval language did not specify the details of what is the appropriate member sizing, thickness and shadowline of historic wood windows.	The existing windows are not expressly prohibited by the historic design guidelines, but they do not provide a sill depth that matches historic wood windows, and due to the fact that the windows are not single or double hung, there is no depth change with an upper and lower sash.	Accept Change (Consistent w/ mitigation proposed). Staff recommends condition of approval #3 to either replace the street-facing windows or add thicker trim. Adding thicker trim on the outside could provide more shadowline and depth. The distance from the street and additional landscaping will minimize their appearance.	
Fascia width on all homes is larger than shown in HRB approved designs.	To comply with HRB condition of approval #12 to remove vertical siding from all street facing facades. Applicant changed all facades in order to be consistent.	Eaves are typically open with minimal projection beyond the wall plane and simple fascia	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Vertical siding proposed has been replaced with horizontal siding.		Horizontal board siding is preferred in Canemah	Accept Change (Consistent w/ Design Guidelines). Horizontal siding is a preferred siding material in Canemah, and the removal of all the vertical siding creates a more compatible development overall.	
HOUSE #1				
Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Front porch stair orientation - front stair changed to side stair. Stair height change to 4 feet 8 inches.	To reduce grading and meet setbacks of R-6 zone along with meeting the Condition of Approval #10 for 3.5 foot retaining wall height in front.	Exterior stairways at the building front to give access only to the main level, and to be less than five feet in height.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Exposed foundation area on side is larger than shown in plans; at its highest it is 4 feet 8 inches.	Topography constraints	Cover sections of exposed foundations; Concrete or masonry: exceeding 3½ feet; Piling or posts: 1½ feet; above grade; At slopes measure perpendicular to slope	Accept Change (Consistent w/ mitigation proposed). As it stands, the applicant will need to comply with the original condition of approval to use landscaping to cover the exposed foundation. This will require partial removal of the walkway to add space for planting shrubs and/or vines. The Board may add a condition of approval here if a specific type of screening is desired.	
Door and window placement on front is different - door is centered instead of off-set and windows are in groups of 3 rather than paired	Slight adjustments to accommodate floorplan	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Rear façade - four windows were proposed, now there is one door and one window. Also one skylight instead of two.	Slight adjustments to accommodate floorplan	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic. Skylights OK on inconspicuous roof planes.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	

West side elevation - window placement includes paired windows. Square window is now rectangular.	Slight adjustments to accommodate floorplan. Window change to 2:1 proportions.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
East side elevation - five windows instead of two. See applicant submissions with photo comparison to plan drawings.	Slight adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
HOUSE #2				
Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Front door and porch added to east elevation, with square window next to entry door.	Adjustment to floor plan and to achieve better functionality.	Exterior stairways at the building front to give access only to the main level, and to be less than five feet in height.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, the front door placement and covered porch area is consistent with the approved design of other homes in the development, and is not in conflict with any guidelines.	
Removal of side porch roof and stair	No longer needed with front entry moved; removal of stair allows for less disturbance of wetland.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change creates a lesser impact on the wetland by removing the stair.	
Roof cutouts removed.	To comply with HRB Condition of approval #9 to remove roof cutouts	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the roof cutouts were too modern and not compatible.	
Windows are not divided lite - single lite instead	Unclear condition of approval language.	Guidelines do not require divided lite.	Accept Change (Consistent w/ Design Guidelines). There was no condition of approval for all windows to be divided lite; only that they match the member sizing, thickness, and shadowline of wood windows. Staff sees very little difference between the single lite versus simulated divided lite on House #2, which is set back far from the street making the windows minimally visible.	
Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
North side elevation - skylight added		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). Roof plane is distant from street and inconspicuous. Landscaping will further obscure.	
West side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Slight adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	

HOUSE #3

Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Window added to west elevation ground floor	Adjustment to accommodate floorplan - more light in kitchen.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Front door moved to South side elevation; window re-arrangement.	To comply with HRB Condition of approval #5a to not have the entry facing the parking lot. Window changes to accommodate changed floor plan.	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the entry facing the parking lot was not compatible.	
Porch cover added to South side elevation	Entry has been moved to this façade, the cover will provide a covered entry/front porch.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Overall building height increase of 1.5 feet		1 1/2 stories maximum	Accept Change (Consistent w/ Design Guidelines). The house remains 1 1/2 stories and is not taller than other approved structures on site.	
East side elevation - porch cover and door removed, window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	To comply with HRB Condition of approval #5a to not have the entry facing the parking lot. Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas; Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). The door has been moved to a different façade based on HRB direction; but the Board did not specify what the resulting façade without the door should look like. The new window arrangement on this street-facing elevation does not have much of a rhythm, but the wall is only 18-foot wide and setback back considerably from the street; the window placement does not have an impact on the character of the district.	

HOUSE #4

Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Window added to west elevation ground floor.	Adjustment to accommodate floorplan - more light in kitchen.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	

Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). This may have been done to satisfy the HRB condition to approval #4d for maximum roof overhang of three feet. This change does not conflict with any design guidelines.	
North side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
South side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Skylights are included on roof planes visible from the right of way and in conflict with HRB conditions of approval.		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). The skylights are not on street side roofs, rather they are on side-facing roofs. On the north facade they are visible from Miller Street, and on the south facade they are somewhat visible from Miller Street. Landscaping is unlikely to obscure the skylights in the future. The skylights are small in size and flat against the roof. The skylights could be found to meet the design guidelines, but they do not meet the original condition of approval. Staff recommends that the Board find the skylights to be consistent with the design guidelines and waive the original condition of approval.	

HOUSE #5

Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
Overall building height increase of approximately 3.5 feet		1 1/2 stories maximum	Accept Change (Consistent w/ Design Guidelines). The house remains 1 1/2 stories and is not taller than other approved structures on site. It will match the height of House #4 and is placed 28 feet from pavement on Miller Street, the same as House #4.	
Window placement and shape change on east (front) elevation	Adjustments to accommodate floorplan.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
Recessed entry approved in plans is now a covered porch projection.			Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines and is consistent with the approved design of House #4.	
West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/ Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	

Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). This may have been done to satisfy the HRB condition for approval #5c for maximum roof overhang of three feet. This change does not conflict with any design guidelines.	
Skylights are included on roof planes that may be visible from the right of way and in conflict with HRB conditions of approval		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). The skylights are not on street side roofs, rather they are on side-facing roofs. On both roof facades the skylights are minimally visible from Miller Street. The skylights are small in size and flat against the roof. The skylights could be found to meet the design guidelines, but they do not meet the original condition of approval. Staff recommends that the Board find the skylights to be consistent with the design guidelines and waive the original condition of approval.	

CITY OF OREGON CITY

Community Development Department, 320 Warner Milne Road,
P.O. Box 3040, Oregon City, OR 97045, (503) 657-0891
www.ci.oregon-city.or.us

APPEAL OF A LAND USE DECISION

FILE # **AP** _____ (of File #) _____ DATE: 4/7/2021
NAME: CHRISTOPHER STAGGS TELEPHONE #: (503) 387-5545
ADDRESS: 502 MAIN ST.

ADDRESS OR PROPERTY DESCRIPTION (T/R/S) OF SUBJECT PROPERTY:

CANEMAH COTTAGES - 508 4th AVE.

SUBJECT OF APPEAL: NOTICE OF DECISION DATE: 3/24/21 For File #:

GLUA 21-0001 / HR 21-00001 - HR 21-00005

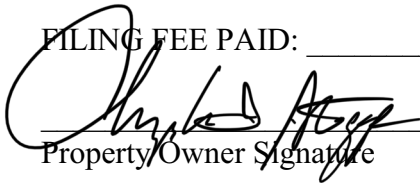
The undersigned hereby appeal(s) the decision of the HRB

concerning the subject case. The decision to approve _____ deny ☒ the application was made at the meeting held on 3/23/2021.

REASONS FOR APPEAL: Please include a statement identifying which approval criteria are violated by the decision and an explanation of how those criteria are violated, or stating how the decision is otherwise in violation of applicable law. Please see Chapter 17.50 of Oregon City Municipal Code for Administration & Procedures concerning Appeals.

SEE ATTACHED APPEAL NARRATIVE

FILING FEE PAID: _____ DATE PAID: _____ RECEIPT NO.: _____


Property Owner Signature

502 MAIN ST.
Address

Property Owner Signature

Address

****SIGNATURES REQUIRED IF APPLICABLE****

Signature _____ Address _____
_____ Contract Purchaser _____ Lessee _____ Prospective Purchaser

INSTRUCTIONS FOR COMPLETING LAND USE APPLICATIONS

- 1. All applications must be either typed or printed (black ink). Please make the words easily readable.**
- 2. The application must be submitted with the correct fee**
- 3. If you mail in the application, please check with the Planning Division to ensure that it was received and that all necessary fees and information are with the application form.**
- 4. If you wish to modify or withdraw the application, you must notify the Planning division in writing. Additional fees may be charged if the changes require new public notice and/or if additional staff work is necessary. Any refund will reflect the amount of time staff worked up until the date a letter of withdrawal is received.**
- 5. With the application form, please attach all the information you have available that pertains to the application you are submitting. All applicable standards and criteria must be addressed prior to acceptance of the application. Detailed descriptions, maps, and other relevant information should be attached and will be available for public review.**
- 6. Incomplete applications will be returned.**

Appeal of Land Use Decision - City of Oregon City

File #

Applicant Appeal -Narrative and testimony in response to “Additional Findings Adopted by the Board - Regarding Siding”

Brief History: the applicant substituted the original siding material, specified as “Wood Siding” with Fiber Cement Board Siding with a wood texture, aka Hardie Board. This is a common siding material on homes in Canemah, is more durable than actual wood and fire resistant, and is known to have a wood appearance. It is commonly used because of these reasons in both historic and non-historic neighborhoods.

Condition of Approval #7 and the associated findings by the HRB (page 3 - Notice of Decision; see exhibit below) violates the Oregon City Guidelines for New Construction in a historic district. Specifically, the statement, ***“The Board finds that the texture of the siding is artificial and is not consistent with the historic character of the district”***, contradicts and violates the allowable siding “Siding Design Criteria” on page 61 (see exhibit below). **“Wood siding or materials which have the appearance of horizontal wood siding....”**

Cement board siding with a wood texture, the material that was used for the home(s) construction, is specifically designed to have the appearance of wood siding, and meets the “Principle” and “Design” criteria for “Siding” as codified in the guidelines for new construction in a historic district. (See exhibit below). Further, fiber cement siding is fire resistant making the homes safer in a neighborhood with a great deal of trees. We believe this is an important factor. The HRB has a recent history of not allowing textured fiber cement board siding and has required smooth. This requirement is not consistent with the guidelines.

EXHIBITS

Additional Findings Adopted by the Board:

Regarding siding

The Board disagrees with staff’s recommendation that the textured fiber cement siding can be mitigated by landscaping. The Board finds that the texture of the siding is artificial and is not consistent with the historic character of the district. The artificial texture does not have the appearance of wood, as called for in the adopted Design Guidelines for New Construction. In addition, the Board finds that the texture is visible from the right of way and that landscaping would not fully screen or shield the siding. Although the homes individually are small, the effect of five homes all with textured siding is quite impactful and visible. The Board does not wish to set any precedent indicating that artificially-textured siding is permissible or that it meets the design guidelines. Therefore, the Board requires that the siding be replaced with wood siding or with smooth fiber cement siding.

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Siding	Compatible with historic siding and enclosure materials in size, profile, orientation, texture, and color Commercial Buildings in McLoughlin: Cement plaster is acceptable	Wood siding or materials which have the appearance of horizontal wood siding in an allowable design; sawn wood shingles (painted) in secondary areas and for ornamental detail; Sample approval is required for non-wood horizontal board siding Cement Plaster (stucco): sand or fine finish; natural color, integral or painted; including parging on concrete; use fine joint lines; possible detailing, quoining or rustication	Aluminum, vinyl, scored plywood or sheet siding Alternative board siding not matching the approved profiles or texture Heavy textured or patterned plaster Canemah: cement plaster or similar

Applicant Appeal - Narrative and Testimony regarding Canemah Historic District, “Vernacular Design Composition” criteria

Brief History: the applicant, in its original land use application in 2017, performed an extensive survey of historic homes in Canemah studying planning, house placement, composition, building form, and design principles to ensure the homes met the criteria for the historic district. The applicant is knowledgeable of the design criteria for the historic district of Canemah.

On page 27 of the guidelines (see exhibit below) the “Design Composition” section specifically states, the Vernacular style in Canemah.....

“Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.”

This basic design composition criteria allows for “design flexibility” and “variation”. The HRB’s condition of approval to remove and replace the siding, which meets the “Siding” criteria, violates this criteria and ignores this specific design composition criteria allowing for variation in the Canemah district. Requiring smooth cement fiber board siding begins to set a precedence in direct contradiction to the very guidelines of the historic district.

EXHIBITS

Building Form

- Form easily allows additions and alterations such as increases in family size, activities or changing technology; generally smaller in size than McLoughlin.
- Shape: rectangular in plan, with smaller rectangular combinations to primary form; Rectangular or square form reinforced on façade. L-plan, T-plan options.
- Height: Maximum 1 ½ stories in height; Basement option.
- Proportions: Height (eave) to maximum width: 1:1 Height to Depth: can vary greatly.
- Roof: gable, of not less than 8:12 pitch, 10:12 and steeper are preferred. No cross-gable roofs; Possible wing or addition with lower ridgeline that is perpendicular or is offset.



Built: 1875



Built: 1864

Design Composition

- Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.
- Designed and built without assistance of a trained architect. Collaborative design evolved with homeowner and builder, based on familiar styles, features and products.
- Can combine features from other architectural styles popular during the historic period; simpler designs than McLoughlin.
- Porch: full or partial length at the front entry; if close to the ground, no railings; at main story only.
- Dormers: None.
- Materials: local, readily available.
- Windows: 1:1, double hung windows.
- Siding: horizontal board siding; typically shiplap, or channel; occasionally bevel.
- Ornament: Exterior decoration is modest, consisting of scroll-work brackets at the top of porch pillars, plain cornerboards and simple window trim. Most houses do not feature spindlework in the peaks of their gable roofs.
- Interior fireplaces and chimneys.



Built: 1885

Applicant Appeal - Conclusion

The applicant respectfully requests that the city commission remove #7 of the HRB Notice of Decision requiring removal of the existing siding and replacement with smooth siding, allowing the existing siding to remain on the homes. The built siding meets all historic criteria for approval, is consistent with the Guidelines for New Construction in Canemah, is safer and more durable, and meets the general, historic intent of the Canemah historic district.



**Historic Review Type III
Staff Report and Notice of Decision
March 24, 2021**

FILE NO.: GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District.

OWNER: Christopher Staggs, Aria Touch LLC

LOCATION: 508 4th Ave,
450, 462, 474, 486 Miller Street
Oregon City, OR 97045
Clackamas County Map 3-1E-01AA- Taxlots 2200, 3600, and 3700

REQUEST: Historic Review for alterations to previously approved Canemah Cottage Homes development (previous file #s MD-17-01 through MD-17-06, and AP-17-04). Applicant requests changes to the approved designs and interpretation of original conditions of approval including but not limited to the following items: window placement and design, skylight locations, siding material, and porch design.

DECISION: On March 23, 2021, after reviewing all of the evidence in the record and considering all of the arguments made by the applicant, opposing and interested parties, the Oregon City Historic Review Board voted 4-0 to approve the proposal with conditions. The Oregon City Historic Review Board adopted as its own the Staff Report with findings and Conditions of Approval for File Number GLUA-21-00001/ HR 21-00001 through 21-00005. The complete record for the Historic Review Board decision is on file at the Planning Division.

CRITERIA: Administration and Procedures are set forth in Chapter 17.50, Chapter 17.40, Historic Overlay District in Chapter 17.40, and “R-6” Single-Family Dwelling District in Chapter 17.12 of the Oregon City Municipal Code. The City Code Book is available on-line at www.orcity.org.

Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the hearing, in person or by letter, with sufficient specificity to afford the Historic Review Board and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. The decision of the Historic Review Board may be appealed to the City Commission by parties with standing within fourteen (14) calendar days of the notice of decision. Any appeal will be based on the record. 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 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.

Conditions of Approval

(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.

1. The applicant shall add two deciduous trees to the landscape area in front of Houses #4 and #5, along with six large shrubs. The trees shall be at least 1.5" caliper and the shrubs shall have a mature height of at least 4 feet. All additional landscaping shall be native species from the City's native plant list.
2. The applicant shall replace at least four of the shrubs proposed in front of House #1 with larger shrub varieties. The shrubs shall have a mature height of at least 4 feet. All additional landscaping shall be native species from the City's native plant list.
3. If the applicant is unwilling to replace the windows on the facades identified below with windows that match the shadowline of historic wood windows, the applicant shall utilize window trim to achieve 2.5" to 3" of depth from face of trim to glass panes on the following facades:
 - a. Front of house #1
 - b. West elevation of House #1
 - c. Front of House #3
 - d. Front of House #4
 - e. North elevation of House #4
 - f. Front of House #5
4. The applicant shall plant native plants or seed mixes only within the wetland area and within 50 feet of the wetland boundaries. Plants or seed mixes with species not found on the city's native plant list are not permitted within the wetland, and any new plants within 50 feet of the wetland boundary shall be native species from the City's list as well. Non-native species within 50 feet of the wetland shall be moved to other areas of the site.
5. The applicant shall plant vines or espalier to cover and screen the 5-foot retaining wall at the back of the parking area next to house #1.
6. The applicant shall add landscaping to screen the area of exposed foundation that is taller than 3.5 feet in height on the front corner of House #1.
7. The applicant shall replace the siding on all of the homes to either horizontal wood board siding or smooth fiber cement horizontal board siding.

Additional Findings Adopted by the Board:Regarding siding

The Board disagrees with staff's recommendation that the textured fiber cement siding can be mitigated by landscaping. The Board finds that the texture of the siding is artificial and is not consistent with the historic character of the district. The artificial texture does not have the appearance of wood, as called for in the adopted Design Guidelines for New Construction. In addition, the Board finds that the texture is visible from the right of way and that landscaping would not fully screen or shield the siding. Although the homes individually are small, the effect of five homes all with textured siding is quite impactful and visible. The Board does not wish to set any precedent indicating that artificially-textured siding is permissible or that it meets the design guidelines. Therefore, the Board requires that the siding be replaced with wood siding or with smooth fiber cement siding.

Regarding skylights

The Board agrees with staff's findings and recommendations about skylights. Skylights are to be located on "inconspicuous roof slopes." These skylights are located on rooflines that are perpendicular to the street and do not visually "jump out" because they are flat against the roofline. When traveling through Canemah, the eye is not drawn to the roofs of the structures, generally. There is precedent of skylights on non-street facing facades throughout Canemah, and many are visible from the right of way even though they are not directly facing the right of way. Given that the skylights are "inconspicuous" given their location and surroundings, the Board finds that they are consistent with the adopted Design Guidelines for New Construction.

Regarding windows

The Board agrees with staff's findings and recommendations about the window design and finds that adding thicker trim around the windows would create more depth, making the windows appear to have similar shadowlines of historic wood windows. The facades of the homes are fairly simple and flat, and the trim will serve to add depth and changes in plane not just to the window areas but to the building elevations as well.

Regarding Landscaping

The Board notes that the Guidelines call for site design in Canemah to include a "native planting mixture" as well as trees and shrubs. Further, the Board finds that since the applicant proposed native plants in the original application. As a result, the applicant shall remove any non-native plants that have been planted on site within 50 feet of the wetland boundary. Some of the plants that have been planted are non-natives, including *Pachysandra*, which is not identified as invasive on the city's nuisance plant list but has the proclivity to spread invasively. Any new species or seed planted within the wetland or within 50 feet of the wetland boundary shall be native species in order to protect the wetland and preserve the natural landscape of the site and district.

I. BACKGROUND:

History of Land Use and Permit Approvals

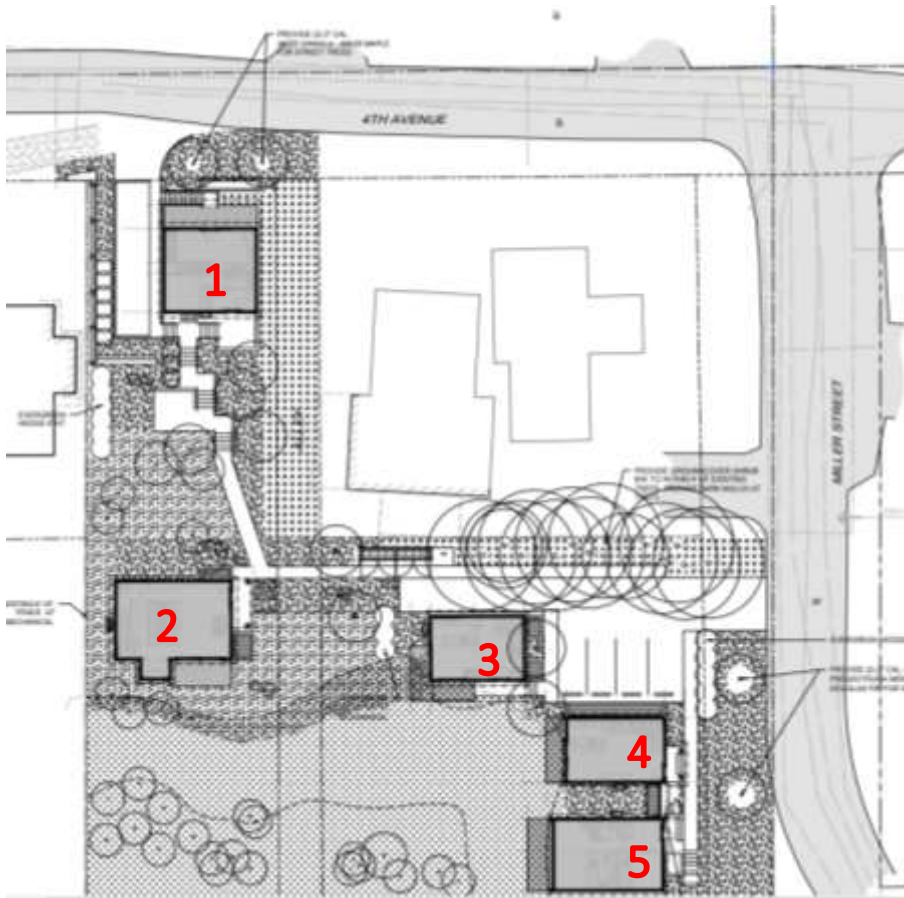
In 2016 and 2017, the applicant submitted applications to the City for approval to construct a cottage home development. The Historic Review Board approved a development of five total cottage dwellings with conditions of approval (MD 17-01 through MD 17-06). The decision was then appealed by Friends of Canemah, and the HRB's decision was upheld by the City Commission through AP-17-04. The decision was then appealed by Friends of Canemah to LUBA. LUBA did not remand the City's decisions and the approvals were then considered final.

The project also submitted for Site Plan and Design Review and Geologic Hazard review through SP-17-145/US-17-09.

In 2018, building permits were issued for the development to begin construction. The building plans were reviewed by planning staff. At the time, Planning staff reviewed the conditions of approval from the Historic Review Board and noted in a written permit review memo which conditions were reflected in the building plans and which conditions remained to be addressed at a later date. The memo noted that the skylights should be reviewed after framing is up, when staff could make a determination which roof areas would be visible from the right of way.

Construction began on the homes in 2019. The applicant completed framing, roofing, and window installation in 2020. Staff was made aware that skylights had been installed without the review that was mentioned in the permit review memo. At that time, staff visited the site and informed the applicant that some of the skylights were visible from the right of way, which was in violation of a Condition of Approval of MD-17-01 – MD17-06.

The building division was later asked to perform an inspection to approve framing and exterior work so that interior work could begin on the homes. The applicant has not yet received approval for that inspection due to the issues identified by the planning division. These issues include the skylight locations mentioned previously, along with other items identified in this report.



Site Plan for 5 cottage homes

Notice and Public Comment:

A public notice was sent to neighbors with 300 feet of the subject property, posted online, emailed to various entities, and posted on site.

Karen Blaha, who lives directly adjacent to the subject property, submitted a comment urging the HRB to approve the development so that construction can be completed. She commented that when landscaping matures, the concerns over design will be moot.

Susan Borger and Dennis Anderson also urge the approval of the development, stating:

"As homeowners on 4th Avenue, we're advocating for the completion of the Cottage homes. We want to see the construction finished, the site landscaped and homes occupied, in spite of the position of skylights, texture of the siding, proportions of windows or porch locations. This neighborhood is on the national register, but the majority of properties are not of historic significance, Canemah is not Colonial Williamsburg! Most of the residents and visitors to Canemah will not be inspecting these details in their daily travels."

Ron Bistline, who recently constructed a new home in the district on 4th Avenue, asked the Board to reject the requests regarding siding, windows, doors, and retaining walls, and instead hold the applicant to the guidelines. He expressed that other recent projects were required to meet the standards, along with a concern that future development in Canemah would also be permitted to violate the guidelines if this request is approved.

II. Findings and Analysis

Staff has identified a number of discrepancies between the plans approved by the HRB with conditions, and the current constructed dwellings. The discrepancies include items that are directly in conflict with a condition of approval, items that are in conflict with the applicant's proposal, and items that require interpretation by the HRB. The applicant has made this application to the Historic Review Board to request that the Board approve the homes as constructed, which would in effect waive or modify some of the previous conditions of approval.

The discrepancies include: siding, window design, skylights, retaining walls, porches, placement of windows and doors, and building height. Each of these items is explained in detail below with a staff recommendation.

The applicant submitted the following narrative with this application:

The five cottage homes are built according to the permitted drawings and documents submitted to the city planning and building department. (The construction is ongoing and not complete). These documents were reviewed by the planning department prior to construction starting. The last set of documents and drawings reviewed by the HRB, at the time of the hearing when approval was granted, are not reflective of the written conditions of approval. The drawings submitted for permitting do reflect the changes and modifications that were conditioned at time of approval. (We are effectively saying, the discrepancies noted by the city planning are in large part, based on conditions of approval that do not match the HRB conditions and approval of the project, and we believe the homes as they are built, are in compliance with the historic standards and historic intent). The applicant has made minor changes to the exterior elevations from the approved drawings which we believe meet the historic standards of Canemah. Further, there is specific language in the conditions of approval, that are not reflective of the HRB conditions, for example, skylights in Canemah are not to be located on roof slopes facing the right of way. The conditions of approval written for this project incorrectly states, "...skylights shall not be visible from the right of way...". This language does not reflect the historic standards which specifically allow skylights in roofs that are not facing the right of way. (House #4 and #5 have skylights that are visible from the right of way but not facing the right of way). The applicant suggests a review of the as built homes demonstrates the homes are built according to historic guidelines as outlined in the city standards, and, the as built homes meet the approved project.

The Board has a few options; it can approve the structures as they have been constructed, it can require that some designs and/or materials be replaced in order to meet the previous HRB approval, or it can require changes or actions that mitigate for the lack of adherence to the previous HRB approval.

The Historic Review Board's task for this review is to evaluate whether the changes to the structures that do not match the approved designs detract from the character of the Canemah National Register District.

The critical components of the district's character are, first and foremost, the historic contributing structures themselves, along with the development pattern and characteristics in the hillside area of Canemah including:

- Narrow streets and informal driveways
- Basalt walls and channels
- Irregular home placement
- Landscape of dense natural vegetation and mature trees on the steep hillsides

Staff finds that current request does not impact the district's characteristics of narrow streets and informal driveways, the basalt walls and channels, or the dense vegetation. The placement of the homes, which continues the irregularity of the district's pattern, has already been approved and is not proposed to change as a result of this request. Thus, the focus here is on the impact of the houses' designs and materials on the historic homes in the district.

The small size of the homes and simple designs of the street-facing facades serves to direct attention not to themselves but to the larger, historic homes in the district. While the materials that have been used on the homes are modern – textured fiber cement siding, casement and awning windows, and skylights, these elements may be found as acceptable on the modest-sized homes. Other modern elements in the original proposal, such as floor to ceiling windows and vertical siding, have been eliminated, making the homes overall more compatible with the Historic District. These modern materials have been found to be inappropriate on historic contributing homes in the district and on larger newly constructed homes that are bulkier than the historic homes in Canemah. In the past several years, all of the new structures built in Canemah have square footage that is larger than the average historic home in the district, while all five of the homes in this development are smaller than the average historic home in the district. Staff finds that may be reasonable to set the bar higher with respect to material compatibility on larger structures with greater massing that will “stick out,” within the district, and allow more flexibility in materials for smaller structures that better blend into the fabric of the district.

Other mitigating factors that may support the use of these modern materials is that at least some of the homes are located further from the street right-of-way and not as visible from 4th Avenue and Miller Street, where all pedestrian and vehicle activity occurs. There are no sidewalks that would bring a visitor right in front of the homes to see the materials up close. In addition, there is landscaping proposed in front of the homes that will further obscure the view of the materials. Staff recommends that additional landscaping may be needed in front of House #1, #4, and #5 in order to provide screening making these buildings less visible from the street. Another action that might provide some mitigation for the window design is adding thicker window trim to provide a greater depth and shadowline, assuming that the applicant is not willing to replace the windows that are visible from the street.

The following pages include an in-depth analysis of each design element that is in conflict with the approved HRB plans.

Siding

As part of MD 17-01 through MD 17-06, the applicant proposed horizontal wood shiplap siding and some vertical wood siding. The application specifically proposed *“Horizontal earth tone painted cedar rainscreen siding with architecturally significant moments of vertical stained cedar rainscreen.”* The HRB approved the wood siding, and restricted vertical siding for use only on non-street facing facades. The homes have all been built with textured fiber cement siding, and no vertical siding has been used.



Textured fiber cement (hardieboard) siding on the constructed homes.



Product comparisons: Smooth versus Textured (Cedarmill) siding

Guidance from Design Guidelines (2006):

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Siding	Compatible with historic siding and enclosure materials in size, profile, orientation, texture, and color Commercial Buildings in McLoughlin: Cement plaster is acceptable	Wood siding or materials which have the appearance of horizontal wood siding in an allowable design; sawn wood shingles (painted) in secondary areas and for ornamental detail; Sample approval is required for non-wood horizontal board siding Cement Plaster (stucco): sand or fine finish; natural color, integral or painted; including parging on concrete; use fine joint lines; possible detailing, quoining or rustication	Aluminum, vinyl, scored plywood or sheet siding Alternative board siding not matching the approved profiles or texture Heavy textured or patterned plaster Canemah: cement plaster or similar

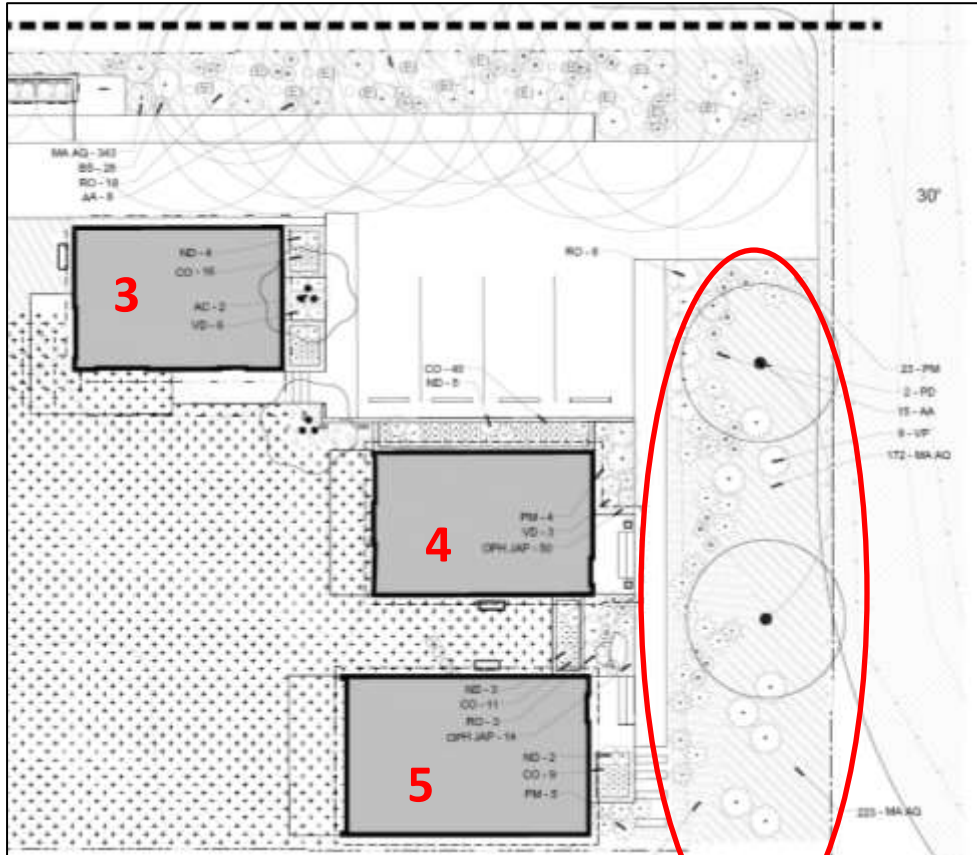
Staff Analysis and Recommendation:

Staff finds that the change from vertical siding to horizontal siding on some of the facades results in a design that is more compatible with the historic character of the district.

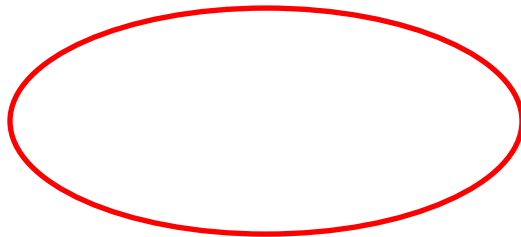
The applicant has opined that the textured hardieplank siding meets the city's guidelines, and has not proposed any possible actions that would mitigate for the siding material. For at least the past 15 years, the Board has consistently allowed only smooth hardieplank to mitigate for the use of non-wood siding material for new construction projects. The guidelines do not specifically prohibit textured hardieplank siding, but previous Boards have found that the textured product did not meet the guideline to use materials which have the appearance of horizontal wood siding. Last year, the Board required an HRB-approved project on Center Street to replace textured hardieplank siding with smooth, when textured siding was used by mistake. Board members noted that the waste caused by such a change was

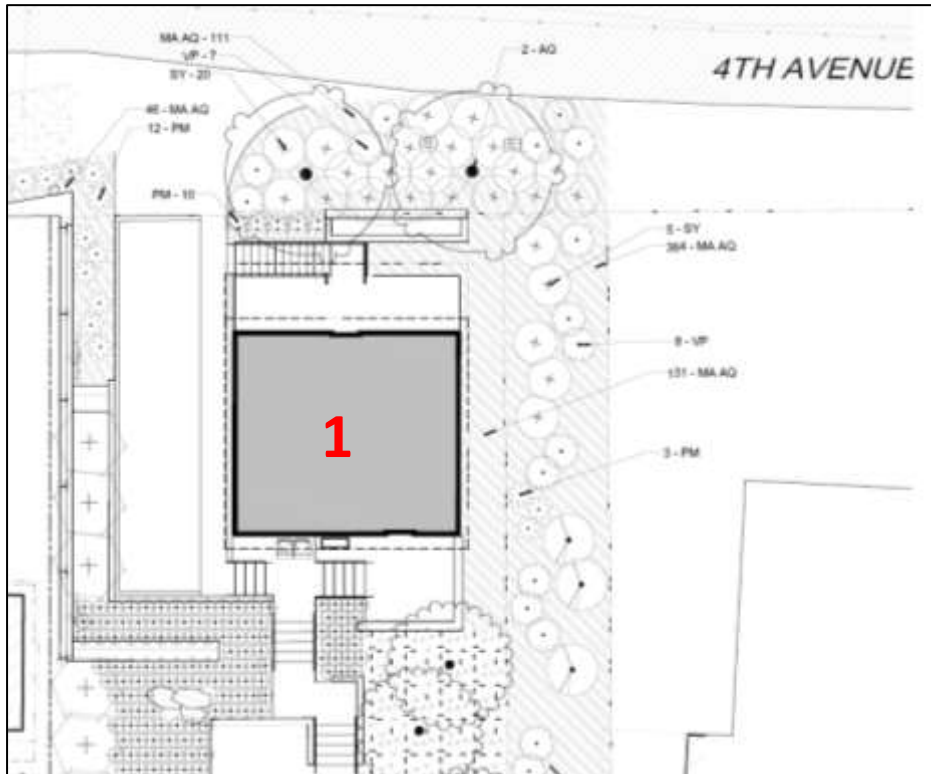
unfortunate but that the applicant should be held to the condition of approval. In the case of the Canemah Cottages, the HRB might find that given the setback, landscaping, and the small size of each residence, it might make sense to allow textured hardieplank as it would not be visible from the street and therefore not detract from the Historic District. The development project on Center Street was a commercial office building, built right up to the sidewalk and on a more visible thoroughfare.

If the HRB finds that the textured hardieplank siding is acceptable, the Board should adopt findings that are very context-specific and would not necessarily lead to an allowance for this siding for future development projects.



Landscaping in front of houses #3, 4, and 5





Landscaping in front of house #1

Window Design

As part of MD 17-01 through MD 17-06, the applicant did not include precise details on the window design, other than the statement that 2.5' wide by 5' tall wood windows would be used. All of the windows in the original application were proposed to be casement windows, according to the drawings. Houses #2 through #5 were approved with the following condition of approval:

"Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Nonwood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board."

The windows that have been installed are recessed 1.5" from the trim. Most of the windows are casement windows with a band that divides the window into two squares to give it an appearance of a 1 over 1 window. Because they are casement style windows, the upper and lower portions have the same plane and do not create the shadowline effect of a single or double-hung window.

A few of the installed windows appear to be fixed lite, while many others are awning windows, instead of the proposed casement windows. Many of the awning windows do not have the simulated divided lite horizontal band. According to the design guidelines, awning windows must be reviewed by the HRB and are not allowed to be approved by staff as a change order.



Casement windows with simulated divided lite on the front of House #1.



Casement windows with simulated divided lite on the front of House #5.

Guidance from Design Guidelines (2006):

Window, Residential	Match the member sizing, thickness and shadowline of painted wood windows	Double, single hung Casement, Fixed if style allows Wood clad acceptable if matching and if in suitable color and finish Non wood acceptable if in appropriate style, and matching wood in profile, shadowline, and if in suitable color and finish; Actual sample is required to be approved Divided lights: with exterior muntins only and if style allows	Sliding, and non rectangular windows Awning, hopper upon HRC review Prefinished windows of unsuitable colors; Unfinished or stained finish Grids between glass Tinted or reflective glass, glass block
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Staff Analysis and Recommendation: The member siding, thickness, and shadowline of painted wood windows is not clearly defined in the guidelines. Because they are casement style windows, the upper and lower portions have the same plane and do not create the shadowline effect of a single or double-hung window. The awning windows also lack the shadowline effect.

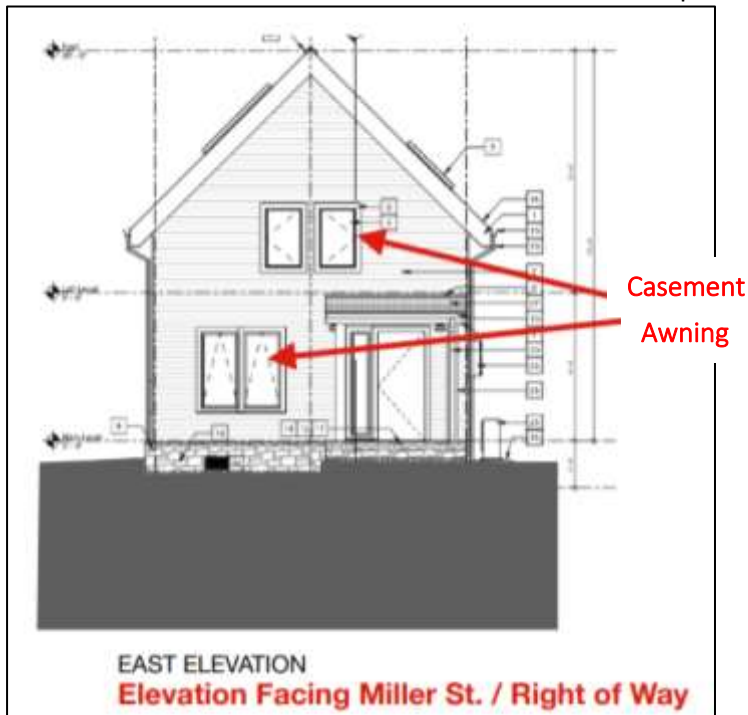
A key dimension for painted wood windows is window sill depth. The applicant states that all windows are recessed 1.5" from face of trim, but did not provide any other information comparing this to painted

wood windows or demonstrating that this dimension meets the condition of approval. A historic, wood, double-hung window would likely have a greater sill depth, and the Board may or may not find that the 1.5" recessed dimension is acceptable for these windows. If the board requires that the windows be modified in any way, staff recommends that the board be very specific about what window dimensions would be acceptable.

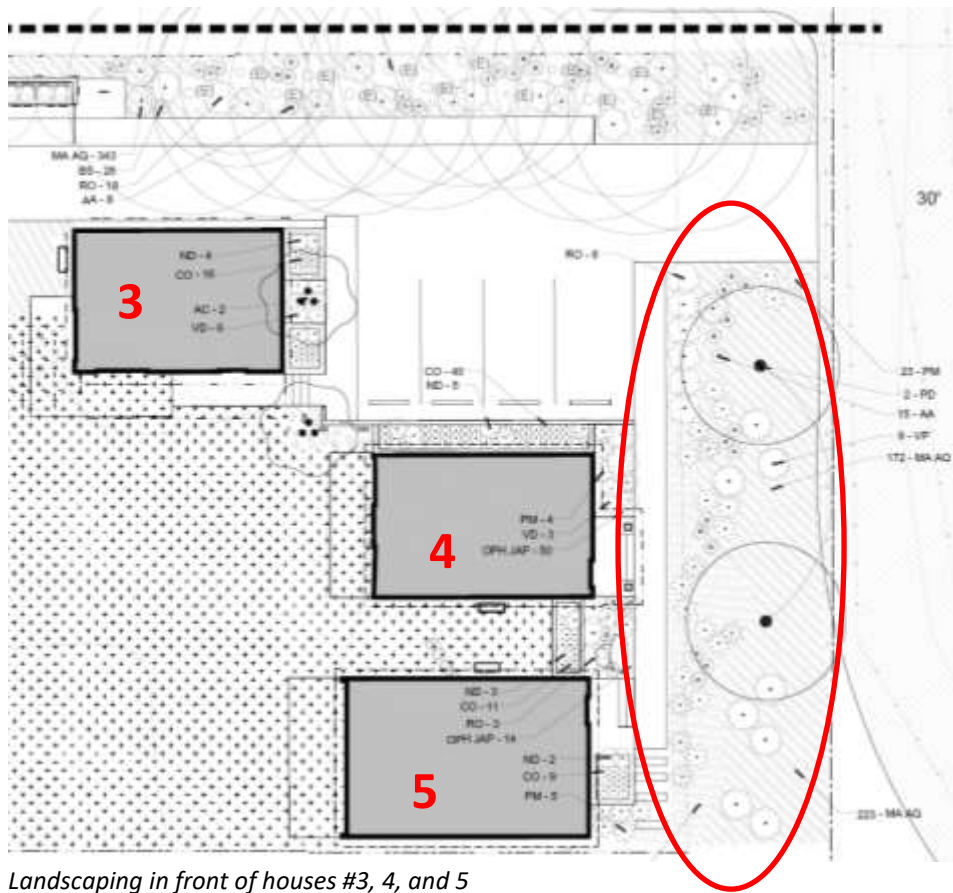
The awning windows that have been installed are in the following locations:

- On the left (east) side of House #1. As this area of the house is obscured from view, staff recommends that the HRB allow the awning windows on House #1 to remain.
- On the front and side (north and east) elevations of House #2. As these parts of the house are generally obscured from view due to the placement of other structures and the topography of the site, staff recommends that the HRB allow the awning windows on House #2 to remain.
- On the north, east, and west elevations of House #3. Some of these windows are on the front and will be visible from Miller Street.
- On the front and side of House #4, which faces Miller Street.
- On the front and side of House #5, which faces Miller Street.

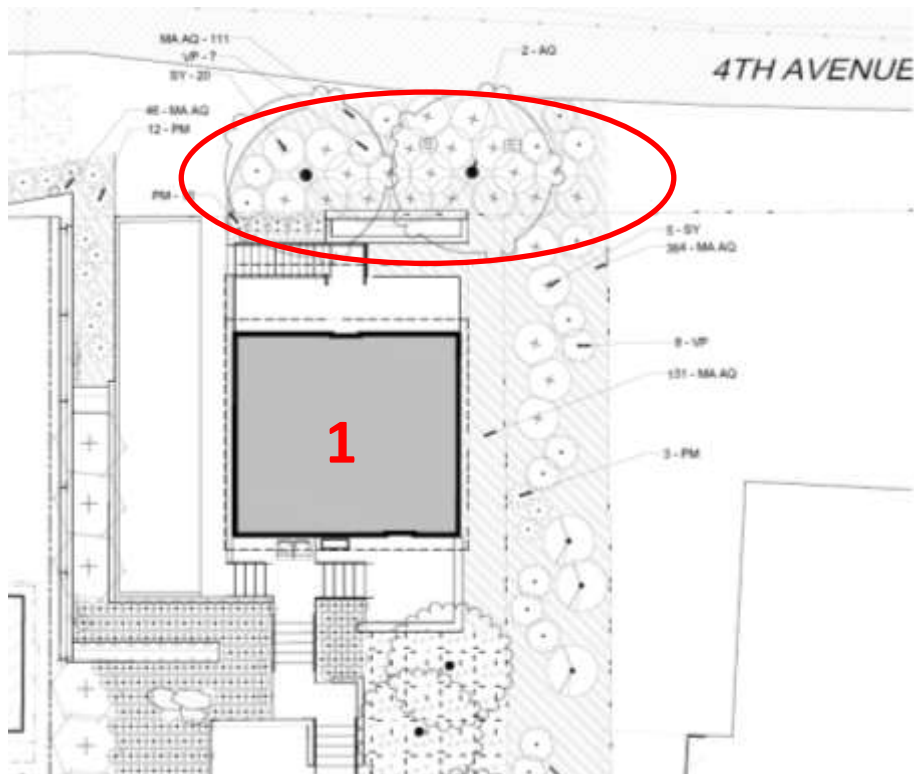
As is the case with respect to the siding, these structures are significantly setback from the street such that the shadowline may not be visible. The proposed landscaping may shield some of the buildings from view. However, the Guidelines are fairly clear in requiring shadowlines that would match a historic wood window. Staff recommends that either (1) the awning windows should be replaced with windows with shadowlines that would match historic windows or (2) additional landscaping is installed and thicker outside window trim be added to increase the depth and shadowline."



House #5 front elevation facing Miller Street contains both awning and casement windows



Landscaping in front of houses #3, 4, and 5



Landscaping in front of house #1

Skylights

As part of MD 17-01 through 17-06, the applicant proposed a number of skylights. The Historic Review Board adopted a condition of approval that skylights were only permitted if they were in *“inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.”* Skylights on House #4 are visible from the right of way. A skylight on House #2 is also currently visible but might be obstructed in the future by landscaping. Skylights on House #5 are marginally visible and are mostly obstructed by vegetation, especially in outside of the winter months.



View from right-of- way on Miller Street – House #4 skylights are visible. August 2020



View from right-of- way on Miller Street – House #4 skylights are visible. August 2020



(Left) View from right-of- way on 4th Avenue – House #2 skylight. August 2020



(Right) View from right-of- way on Miller Street – House #5 skylight. August 2020

Guidance from Design Guidelines (2006):

Skylights	Install on inconspicuous roof slopes, mount skylight close to roof plane	Rectangular in shape with rectangular flat clear (exterior sheet) glass	Skylights on street-side roofs. No dome or bubble shaped skylights; plastic, acrylic glazing
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Staff Analysis and Recommendation:

The skylights that have been installed are rectangular in shape with flat glass. They are placed on side-oriented roof slopes but are visible from the right of way, in violation of the condition. The skylight on House #2 does face 4th Avenue but is setback considerably from 4th Avenue, near the rear of the property. The skylight on House #2 will be at least partially obscured by trees planted on site. The skylights on House #5 are mostly obscured by vegetation, especially during the summer. House #4 blocks the view of the north facing skylights on House #5. Staff recommends that the skylights on House #2 and House #5 be approved.

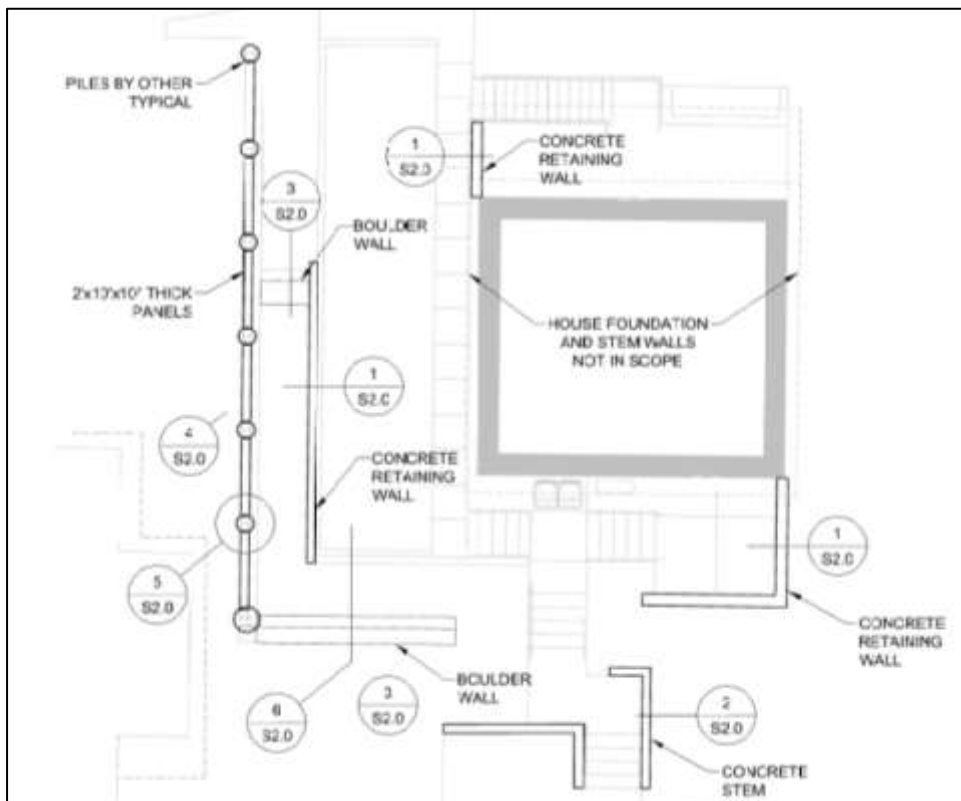
While the skylights on House #4 do not meet the original condition of approval, staff advises that the skylights might be found to be appropriate due to their low profile, reasonable size, and location on side-oriented roofs. The use of skylights is a modern design and can be found to be compatible under these circumstances, especially on a structure with modest massing and height. There do not appear to be any possible actions that would mitigate for the visibility of these skylights.

Retaining walls

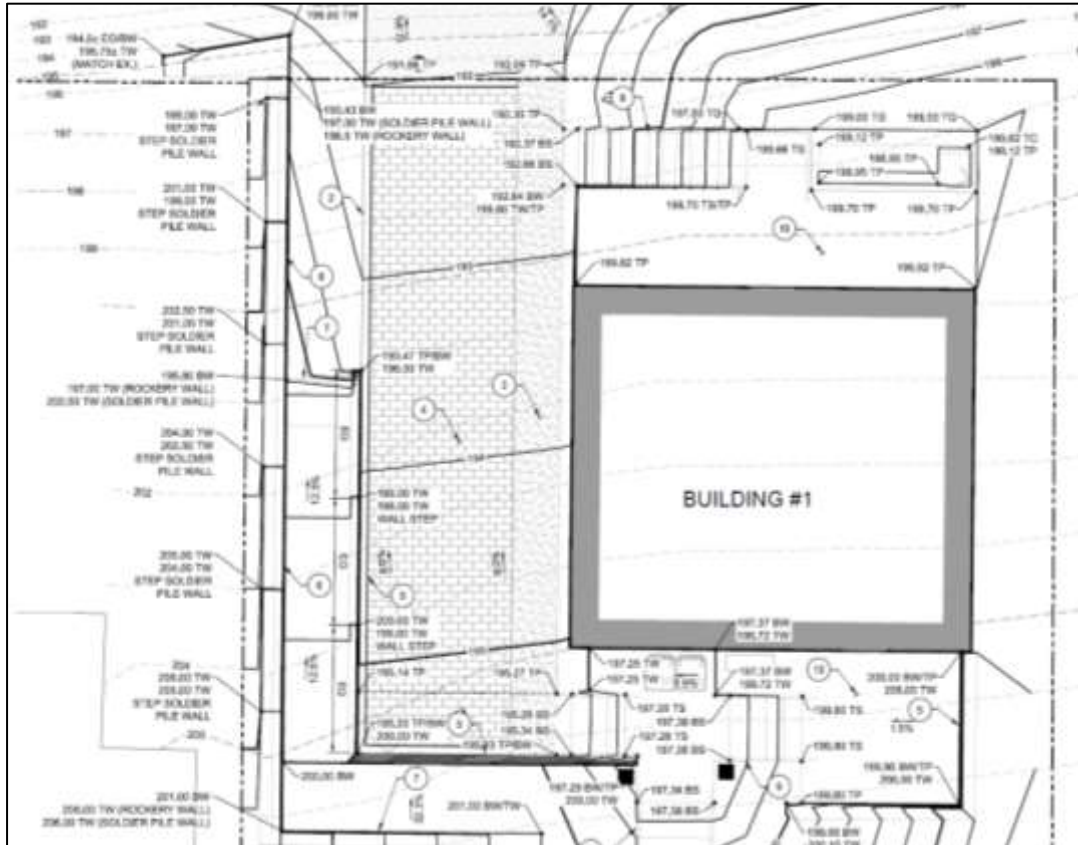
As part of MD 17-01 through MD 17-06, the applicant proposed retaining walls of concrete and layered with “basalt stone over the structural elements along with covering with planting to minimize appearance and to blend more seamlessly in with the surrounding landscape.” The proposal included a retaining wall taller than 3 ½ feet in front of homes #1 and #3, and the Historic Review Board included a condition of approval for House #1 that “Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.” Another condition of approval was written to be specifically about the height of walls in front yards only. It is not clear if the HRB intended for all of the retaining walls on site to be limited to 3.5 feet in height, or just the walls in front yards. It appears that the retaining wall behind House #1 may be taller than 3.5 feet when construction is complete. The construction plans show it is approximately 5 feet in height at the back of the driveway.



Retaining wall next to House #1, at end of driveway



Construction plans: retaining wall plan sheet



Construction plans: grading plan

Guidance from Design Guidelines (2006):

Walls, Site	Low landscape walls for increased site utility Minimize retaining walls and their heights Use natural materials, finished concrete	Minimize the height and presence of walls; Use of rock, brick, concrete with finishing; mortared or stacked true masonry or stone that was traditionally quarried in the area	Gabion, rip-rap, stacked recycled concrete if unfaced Wood, railroad tie retaining walls in commercial or public setting Use of materials, stone, not regionally available during the historic period
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Staff Analysis and Recommendation:

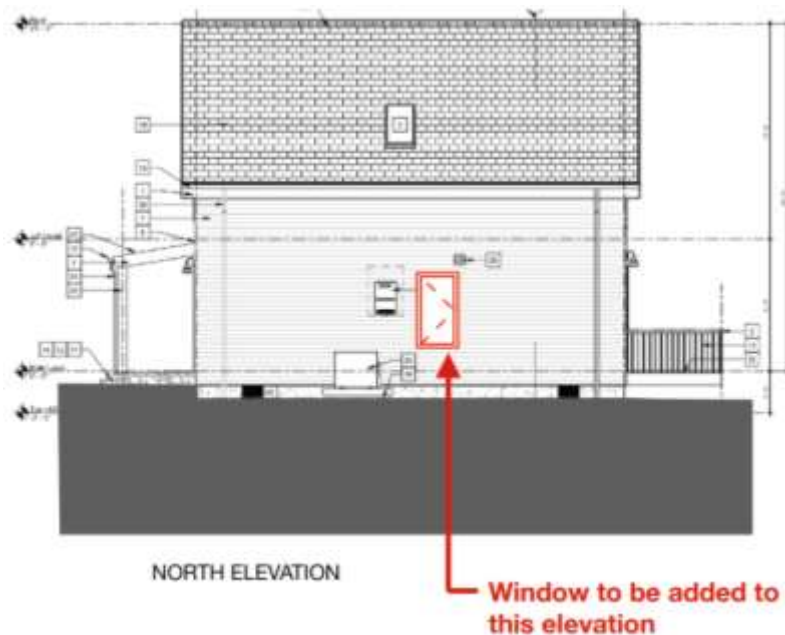
The design guidelines do not contain a specific height limit but rather call for minimization of retaining walls. The wall behind House #1 is in the rear yard and can be up to 6 feet in height based on general city standards. If the wall will end up being taller than 3.5 feet and the HRB finds that the height is not acceptable, the applicant could be required to add another wall to terrace the slope. Staff does not recommend any conditions of approval given that the wall is in the rear yard and proposed to be planted with vine coverage.

Placement and shape of windows and doors

As conditions of approval for MD 17-01 through MD 17-06, the HRB required some adjustments to windows and doors. The applicant made the required changes, but also made numerous other changes to window and door placement that were not required or approved by the HRB. It is fairly common for slight changes to window placement to occur after HRB approval due to interior design decisions that are made prior to building permit submissions.

There was a public comment submitted regarding the use of sidelites next to the entry doors. While sidelites are probably not typical in Canemah, they were approved in the original application to the HRB (MD 17-01 – MD 17-06).

Due to the sheer number of changes, staff recommends that instead of comparing what was approved to what has been built, the HRB simply considers whether the existing window and door placement is appropriate. Staff does not have any major concerns about the placement of windows and doors, except on House #5, where no windows are present on the side elevation facing House #4. The applicant has proposed to add a window to this façade, which is acceptable. Staff recommends that the HRB accept the window and door placement as proposed on all five homes.



The applicant proposes to add a window to the north elevation of House #5.

Porches

On houses #2 and #5, a partial front porch has been added. On house #2, the porch and entrance was originally proposed on the side of the home, and the HRB required that the front door be on the front instead. The applicant also modified the porch, adding a projecting porch on the front of house #2. On house #5, the applicant proposed a recessed porch, which was approved by the HRB. The house has been constructed with a projecting porch instead, with no recessed area on the front.

The porches that have been constructed are similar to those on the other homes in the development. They are of simple design and do not violate any design guidelines or conditions of approval. Staff recommends that the HRB accept the porch changes as proposed.



(Left) House #5 under construction in Fall 2020 with projecting porch.

(Right) House #2 under construction with projecting porch added.

Building Heights and Massing

The overall height of houses #3 and #5 are taller than what was approved by the HRB in MD-17-01 through MD 17-06. House #3 is approximately 1.5 feet taller than proposed, and House #5 is approximately 4.5 feet taller than proposed. This discrepancy was not discovered by staff during the review of the building plans. The additional massing is due to more second level height above the first story windows. These heights are the same or similar to the other houses in the development, and are not taller than what is allowed by the design guidelines. Staff recommends that the HRB accept the building heights as proposed.



Proposed and constructed versions of House #5. The height difference is approximately 4.5 feet.



Proposed and constructed versions of House #3. The height difference is approximately 1.5 feet.

III. APPLICABLE STANDARDS AND FINDINGS

17.40.060 - Exterior alteration and new construction.

- A. *Except as provided pursuant to subsection I of this section, no person shall alter any historic site in such a manner as to affect its exterior appearance, nor shall there be any new construction in an historic district, conservation district, historic corridor, or on a landmark site, unless a certificate of appropriateness has previously been issued by the historic review board. Any building addition that is thirty percent or more in area of the historic building (be it individual or cumulative) shall be considered new construction in a district. Further, no major public improvements shall be made in the district unless approved by the board and given a certificate of appropriateness.*

Applicable: The proposal for new construction in a historic district is being reviewed by the Historic Review Board.

B. Application for such a certificate shall be made to the planning staff and shall be referred to the historic review board. The application shall be in such form and detail as the board prescribes.

Complies as Proposed: The applicant submitted the required materials.

D. [1.] The historic review board, after notice and public hearing held pursuant to Chapter 17.50, shall approve the issuance, approve the issuance with conditions or disapprove issuance of the certificate of appropriateness.

Applicable: The proposal is being reviewed by the Historic Review Board.

2. *The following exterior alterations to historic sites may be subject to administrative approval:*
 - a. *Work that conforms to the adopted Historic Review Board Policies.*

Not Applicable: The proposal is not subject to administrative approval.

F. For construction of new structures in an historic or conservation district, or on an historic site, the criteria to be used by the board in reaching its decision on the certificate of appropriateness shall include the following:

1. *The purpose of the historic conservation district as set forth in Section 17.40.010;*

Finding: Complies with Conditions. The purpose of the district is to:

- A. *Effect and accomplish the protection, enhancement and perpetuation of such improvements and of districts which represent or reflect elements of the city's cultural, social, economic, political and architectural history;***
- B. *Safeguard the city's historic, aesthetic and cultural heritage as embodied and reflected in such improvements and districts;***
- C. *Complement any National Register Historic districts designated in the city;***
- D. *Stabilize and improve property values in such districts;***
- E. *Foster civic pride in the beauty and noble accomplishments of the past;***
- F. *Protect and enhance the city's attractions to tourists and visitors and the support and stimulus to business and industry thereby provided;***
- G. *Strengthen the economy of the city;***
- H. *Promote the use of historic districts and landmarks for the education, pleasure, energy conservation, housing and public welfare of the city; and***
- I. *Carry out the provisions of LCDC Goal 5.***

Staff finds that current request does not impact the district's characteristics of narrow streets and informal driveways, the basalt walls and channels, or the dense vegetation. The placement of the homes, which continues the irregularity of the district's pattern, has already been approved and is not proposed to change as a result of this request. Thus, the focus here must be on whether the materials – the siding, windows and skylights - detract from the character of the protected Historic District.

The small size of the homes and simple designs of the street-facing facades serves to direct attention not to themselves but to the larger, historic homes in the district. While the materials that have been used on the homes are modern – textured fiber cement siding, casement and awning windows, and skylights, these elements may be found as acceptable on the modest-sized homes, given their location. These modern materials have been found to be inappropriate on historic contributing homes in the district and on larger newly constructed homes that are bulkier than the historic homes in Canemah. In the past several years, all of the new structures built in Canemah have square footage that is larger than the average historic home in the district, while all five of the homes in this development are smaller than the average historic home in the district. Therefore, given the unique size, massing and placement of these homes, coupled with surrounding landscaping, it might make sense to allow greater flexibility with respect to materials.

Other mitigating factors that might support the use of more modern materials are that the homes are removed from the street pavement of 4th and Miller, where all pedestrian and vehicle activity occurs. There are no sidewalks that would bring a visitor right in front of the homes to see the materials up close. In addition, there is landscaping proposed in front of the homes that will further obscure the view of the materials. Staff recommends that additional landscaping may be needed in front of House #1, #4, and #5 in order to provide ample screening. Another action that might provide some mitigation for the window design is adding thicker window trim to provide a greater depth and shadowline, assuming the HRB finds that replacement of the windows is not necessary. Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

2. *The provisions of the city comprehensive plan;*

Finding: Complies with Condition.

There are a few goals and policies in the Comprehensive Plan that pertain to this proposal:

Section 5

Open Spaces, Scenic and Historic Areas, and Natural Resources

Canemah is an important example of a relatively intact riverboat town with architectural resources dating from the 1860s. Having evolved from a community for the elite of the riverboat industry to a workers' community, Canemah retains essentially the same sense of place it had in the latter half of the 19th century. Situated above the Falls of the Willamette, it was an important portage town and the major shipbuilding center on the upper Willamette River. Canemah was listed as a Historic District in the National Register of Historic Places in 1977.

Goal 5.3 Historic Resources

Policy 5.3.1

Encourage architectural design of new structures in local Historic Districts, and the central Downtown area to be compatible with the historic character of the surrounding area.

Policy 5.3.8

Preserve and accentuate historic resources as part of an urban environment that is being reshaped by new development projects.

Finding: Complies with Conditions. Staff finds that current request does not impact the district's characteristics of narrow streets and informal driveways, the basalt walls and channels, or the dense vegetation. The placement of the homes, which continues the irregularity of the district's pattern, has already been approved and is not proposed to change as a result of this request. Thus, the focus here is on the impact of the houses' designs and materials on the historic homes in the district.

The small size of the homes and simple designs of the street-facing facades serves to direct attention not to themselves but to the larger, historic homes in the district. While the materials that have been used on the homes are modern – textured fiber cement siding, casement and awning windows, and skylights, these elements may be found to be acceptable on these unique, modest-sized homes. These modern materials have been found to be inappropriate on historic contributing homes in the district and on larger newly constructed homes that are bulkier than the historic homes in Canemah. In the past several years, all of the new structures built in Canemah have square footage that is larger than the average historic home in the district, while all five of the homes in this development are smaller than the average

historic home in the district. Staff finds that it is reasonable to set the bar higher for materials on larger structures with greater massing that will “stick out,” within the district, and allow more flexibility in materials for smaller structures that better blend into the fabric of the district.

Other mitigating factors that support the use of these modern materials are that the homes are removed from the street pavement of 4th and Miller, where all pedestrian and vehicle activity occurs. There are no sidewalks that would bring a visitor right in front of the homes to see the materials up close. In addition, there is landscaping proposed in front of the homes that will further obscure the view of the materials. Staff recommends that additional landscaping may be needed in front of House #1, #4, and #5 in order to provide ample screening. Another action that might provide some mitigation for the window design is adding thicker window trim to provide a greater depth and shadowline.

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

3. *The economic effect of the new proposed structure on the historic value of the district or historic site;*

Finding:

The development of the five structures have already been approved by the Board. The scope of the current application is limited to design details such as windows, siding material, skylights, and retaining walls. The Canemah National Register district’s historic value comes from the preservation of the historic structures in the district, and the pattern of development. The overall development and placement of structures that will become part of the pattern of the Canemah District will not change as a result of the HRB’s decision on these design details.

4. *The effect of the proposed new structure on the historic value of the district or historic site;*

Finding: The development of the five structures have already been approved by the Board. The scope of the current application is limited to design details such as windows, siding material, skylights, and retaining walls. The Canemah National Register district’s historic value comes from the preservation of the historic structures in the district, and the pattern of development. The overall development and placement of structures that will become part of the pattern of the Canemah District will not change as a result of the HRB’s decision on these design details.

5. *The general compatibility of the exterior design, arrangement, proportion, detail, scale, color, texture and materials proposed to be used in the construction of the new building or structure;*

Finding: Complies with Conditions. See findings in Section II of this staff report. The applicant shall add two deciduous trees to the landscape area in front of Houses #4 and #5, along with six large shrubs. The trees shall be at least 1.5” caliper and the shrubs shall have a mature height of at least 4 feet. The applicant shall replace at least four of the shrubs proposed in front of House #1 with larger shrub varieties. The shrubs shall have a mature height of at least 4 feet. If the applicant is unwilling to replace the windows on the facades identified below, the applicant shall utilize window trim to achieve 2.5” to 3” window depth from face of trim to glass panes on the following facades:

- a. Front of house #1
- b. West elevation of House #1
- c. Front of House #3
- d. Front of House #4

- e. North elevation of House #4
- f. Front of House #5

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

6. *Economic, social, environmental and energy consequences;*

Finding: Complies as Proposed. Environmental and energy consequences of replacement of materials or re-design of the structures may be taken into account by the Board. The environmental and energy waste of discarding new building materials for five homes is significant and is in conflict with the spirit of historic preservation, which values the embodied energy in existing building materials. These consequences must be balanced with other approval criteria.

7. *Design guidelines adopted by the historic review board.*

Finding: Complies with Conditions. See Section 2 of the staff report. Design guidelines that are relevant to the application are discussed in the Section 2 of this staff report. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

IV. PUBLIC NOTICE

A public notice was sent to neighbors with 300 feet of the subject property, posted online, emailed to various entities, and posted onsite.

V. CONCLUSIONS AND RECOMMENDATIONS

Based on the following findings, staff recommends that the Historic Review Board approve the proposed development of GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District with conditions for the property located at Clackamas County Map 3-1E-01AA- Taxlots 2200, 3600, and 3700.

Exhibits

1. Vicinity Map
2. Applicant's Submission
3. Public Comments
4. MD-17-01 – 17-076 staff report
5. MD -17-01 – 17-06 application materials
6. AP 17-04 Findings and Decision
7. Approved engineering and landscaping plans
8. Photos of homes under construction

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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SITE/OVERALL				
Description of Change or Element	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
1 Removal of House #2.	HRB Condition of Approval #2 to remove House #2.	N/A	Accept Change (Consistent w/Approved Plans). The original HRB condition of approval did not specify what should be installed in place of the home or consider the effects of the removal on the site plan.	
2 Changes to parking and walkway layout	Overall Parking Needs Changed with removal of House #2. Meets standards for parking and pedestrian ciruclation through Site Plan and Design Review.	N/A	Accept Change (Consistent w/Approved Plans). The municipal code includes min/max number of parking stalls for each cottage home. The number of off-street parking stalls was reduced to reflect the reduction in homes onsite. The reduced number of parking stalls caused the parking area adjacent to Home #1 to be redesigned from a traditional parking lot to a driveway which accomidates two cars, a design that is more common in the nearby homes and addressed some of the concerns about the parking lots voiced in the initial hearings.	
3 Location and height of retaining walls behind House #1. Conflict with condition of approval #5 for retaining walls to be 3.5 foot height maximum. Wall is 5 feet tall.	The changes to the parking lot adjacent to Home #1 allowed the wall to move closer to the front of the property and thus reduce the overall grading onsite.	The historic design guidelines do not have a maximum height for retaining walls; they simply say that wall heights should be minimized.	Accept Change (Consistent w/ Design Guidelines). Citywide code allows walls up to 6 feet in height (behind the front facade). The retaining wall is 5 feet in height. The wall is approximately 60 feet from the street and 7 feet behind the back edge of House #1. Previous proposals had stepped walls with lower heights but overall more grading. This design involves less grading, only one retaining wall, at a height that has been approved by the HRB in previous cases. Staff recommends changing the original condition of approval to allow this wall to be 5 feet in height. The Board may want to add a condition for vines/espalier to cover the wall. The landscaping plans do not appear to include any vines or espalier here.	
4 All homes have textured fiber cement siding rather than wood siding, which was proposed by the applicant and approved by the Board.	Wood siding was cost-prohibitive.	The historic design guidelines do not specifically prohibit textured fiber cement siding; rather, they call for the appearance of wood siding.	Accept Change (Consistent w/ Mitigation Proposed). The HRB has consistently been requiring siding to be smooth; smooth siding has more of a painted wood siding appearance. The modest size of the homes and distance from the street (at least 28 feet) make it difficult to see the texture of the siding. Staff recommends Conditions of Aprpoval #1 and #2 to add landscaping to further screen the view of the homes from the right of way and mitigate/obsecure for the appearance of siding from the street.	

SITE/OVERALL				
Description of Change or Element	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
5 All homes have windows that are a single lite or simulated divided lite, with sill depth of approxmiately 1.5". Conflict with HRB conditions of approval for windows that match the member sizing, thickness and shadowline of historic wood windows.	The condition of approval language did not specify the details of what is the appropriate member sizing, thickness and shadowline of historic wood windows.	The exsiting windows are not expressly prohibited by the historic design guidelines, but they do not provide a sill depth that matches historic wood windows, and due to the fact that the windows are not single or double hung, there is no depth change with an upper and lower sash.	Accept Change (Consistent w/ mitigation proposed). Staff recommends condition of approval #3 to either replace the street-facing windows or add thicker trim. Adding thicker trim on the outside could provide more shadowline and depth. The distance from the street and additional landscaping will minimize their appearance.	
6 Fascia width on all homes is larger than shown in HRB approved designs		Eaves are typically open with minimal projection beyond the wall plane and simple fascia	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
7 Vertical siding proposed has been replaced with horizontal siding.	To comply with HRB condition of approval #12 to remove vertical siding from all street facing façades. Applicant changed all facades in order to be consistent.	Horizontal board siding is preferred in Canemah	Accept Change (Consistent w/ Design Guidelines). Horizontal siding is a preferred siding material in Canemah, and the removal of all the vertical siding creates a more compatible development overall.	

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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HOUSE #1

Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
8 Front porch stair orientation - front stair changed to side stair. Stair height change to 4 feet 8 inches.	To reduce grading and meet setbacks of R-6 zone along with meeting the Condition of Approval #10 for 3.5 foot retaining wall height in front.	Exterior stairways at the building front to give access only to the main level, and to be less than five feet in height.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
9 Exposed foundation area on side is larger than shown in plans; at its highest it is 4 feet 8 inches.	Topography constraints	Cover sections of exposed foundations; Concrete or masonry: exceeding 3½ feet, Piling or posts: 1½ feet; above grade; At slopes measure perpendicular to slope	Accept Change (Consistent w/ mitigation proposed). As it stands, the applicant will need to comply with the original condition of approval to use landscaping to cover the exposed foundation. This will require partial removal of the walkway to add space for planting shrubs and/or vines. The Board may add a condition of approval here if a specific type of screening is desired.	
10 Door and window placement on front is different - door is centered instead of off-set and windows are in groups of 3 rather than paired	Slight adjustments to accommodate floorplan	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
11 Rear façade - four windows were proposed, now there is one door and one window. Also one skylight instead of two.	Slight adjustments to accommodate floorplan	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic. Skylights OK on inconspicuous roof planes.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
12 West side elevation - window placement includes paired windows. Square window is now rectangular.	Slight adjustments to accommodate floorplan. Window change to 2:1 proportions.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
13 East side elevation - five windows instead of two. See applicant submissions with photo comparison to plan drawings.	Slight adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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HOUSE #2					
	Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
14	Front door and porch added to east elevation, with square window next to entry door.	Adjustment to floor plan and to achieve better functionality.	Exterior stairways at the building front to give access only to the main level, and to be less than five feet in height.	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, the front door placement and covered porch area is consistent with the approved design of other homes in the development, and is not in conflict with any guidelines.	
15	Removal of side porch roof and stair	No longer needed with front entry moved; removal of stair allows for less distrubance of wetland.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change creates a lesser impact on the wetland by removing the stair.	
16	Roof cutouts removed.	To comply with HRB Condition of approval #9 to remove roof cutouts	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the roof cutouts were too modern and not compatible.	
17	Windows are not divided lite - single lite instead	Unclear condition of approval language.	Guidelines do not require divided lite.	Accept Change (Consistent w/ Design Guidelines). There was no condition of approval for all windows to be divided lite; only that they match the member sizing, thickness, and shadowline of wood windows. Staff sees very little difference between the single lite versus simulated divided lite on House #2, which is set back far from the street making the windows minimally visible.	
18	Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
19	North side elevation - skylight addedd		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). Roof plane is distant from street and inconspicuous. Landsacping will further obscure.	
20	West side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Slight adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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HOUSE #3					
	Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
21	Window added to west elevation ground floor	Adjustment to accommodate floorplan - more light in kitchen.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
22	West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
23	Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does nto conflict with any design guidelines.	
24	Front door moved to South side elevation; window re-arrangement.	To comply with HRB Condition of approval #5a to not have the entry facing the parking lot. Window changes to accommodate changed floor plan.	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the entry facing the parking lot was not compatible.	
25	Porch cover added to South side elevation	Entry has been moved to this façade, the cover will provide a covered entry/front porch.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
26	Overall building height increase of 1.5 feet		1 1/2 stories maximum	Accept Change (Consistent w/ Design Guidelines). The house remains 1 1/2 stories and is not taller than other approved structures on site.	
27	East side elevation - porch cover and door removed, window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	To comply with HRB Condition of approval #5a to not have the entry facing the parking lot. Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas; Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). The door has been moved to a different façade based on HRB direction; but the Board did not specify what the resulting facade without the door should look like. The new window arrangement on this street-facing elevation does not have much of a rhythm, but the wall is only 18-foot wide and setback back considerably from the street; the window placement does not have an impact on the character of the district.	

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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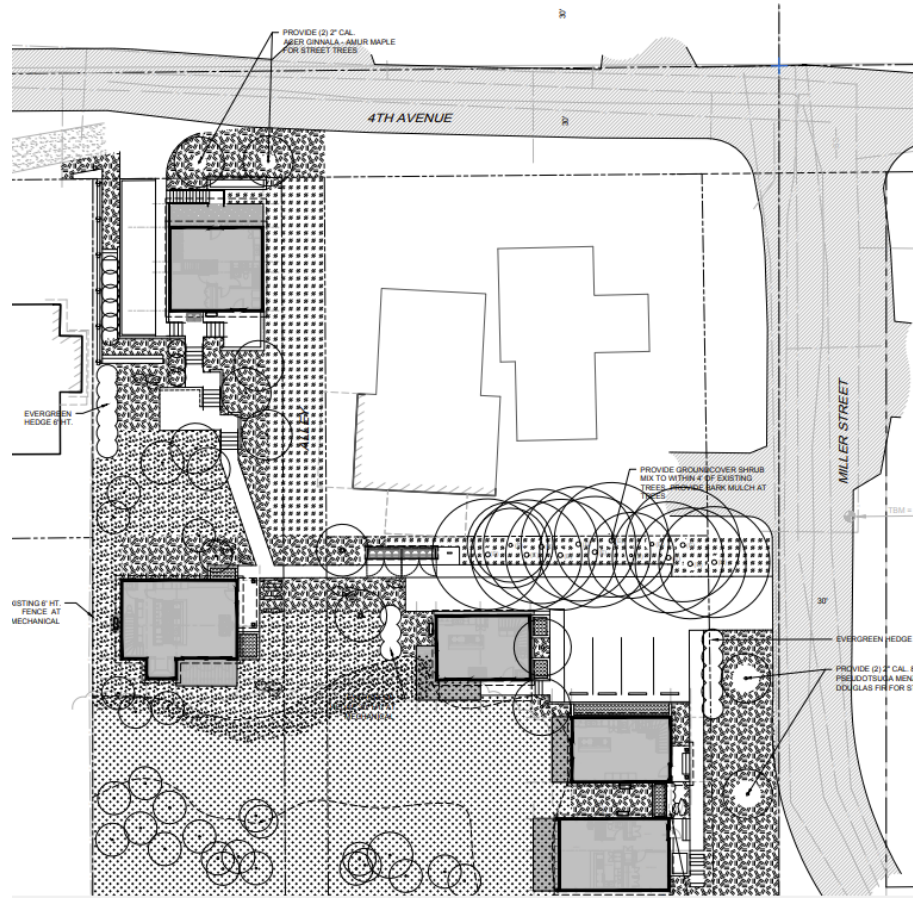
HOUSE #4					
	Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
28	Window added to west elevation ground floor.	Adjustment to accommodate floorplan - more light in kitchen.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
29	West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
30	Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). This may have been done to satisfy the HRB condition fo approval #4d for maximum roof overhang of three feet. This change does not conflict with any design guidelines.	
31	North side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
32	South side elevation - window placement and sizes have changed. See applicant submissions with photo comparison to plan drawings.	Adjustments to accommodate floorplan.	Not allowed: Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
33	Skylights are included on roof planes visible from the right of way and in conflict with HRB conditions of approval.		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). The skylights are not on street side roofs, rather they are on side-facing roofs. On the north facade they are visible from Miller Street, and on the south facade they are somewhat visible from Miller Street. Landscaping is unlikely to obscure the skylights in the future. The skylights are small in size and flat against the roof. The skylights could be found to meet the design guidelines, but they do not meet the original condition of approval. Staff recommends that the Board find the skylights to be consistent with the design guidelines and waive the original condition of approval.	

Canemah Cottages - Changes made between HRB approved plans (2017) and current site as constructed (2021)

Disclaimer: The project is not yet fully constructed; future work to finish construction is still required to meet the approved plans and conditions.

HRB Options for Each Item	1. Accept Change (Consistent w/Approved Plans). Accept change as an adjustment that is consistent with the approved plans 2. Accept Change (Consistent w/ Design Guidelines). Accept change as an adjustment that is consistent with design guidelines 3. Accept Change (Consistent w/Mitigation Proposed). Accept change as a significant adjustment that can be mitigated by overall site design or proposed mitigation 4. Accept Change (Consistent w/Additional Mitigation). Require additional mitigation to achieve compatibility, beyond conditions of approval recommended by staff 5. Reject Change. Require applicant to construct as proposed or come back with additional changes.
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HOUSE #5					
	Description of Change	Reason Applicant Identified for Change	Relevant Design Guideline	Staff Recommendation	HRB Member Notes
34	Overall building height increase of approximately 3.5 feet		1 1/2 stories maximum	Accept Change (Consistent w/ Design Guidelines). The house remains 1 1/2 stories and is not taller than other approved structures on site. It will match the height of House #4 and is placed 28 feet from pavement on Miller Street, the same as House #4.	
35	Window placement and shape change on east (front) elevation	Adjustments to accommodate floorplan.	N/A	Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines.	
36	Recessed entry approved in plans is now a covered porch projection.			Accept Change (Consistent w/ Design Guidelines). While this was not a condition of the HRB, this change does not conflict with any design guidelines and is consistent with the approved design of House #4.	
37	West façade - Second story window changes.	To comply with HRB condition of approval #8 that windows shall be rectangular in shape and shall not exceed door height plus a one foot transom.	N/A	Accept Change (Consistent w/Approved Plans). The HRB found that the floor-to-ceiling windows were too modern and not compatible.	
38	Roof overhang reduced on west façade.		N/A	Accept Change (Consistent w/ Design Guidelines). This may have been done to satisfy the HRB condition fo approval #5c for maximum roof overhang of three feet. This change does not conflict with any design guidelines.	
39	Skylights are included on roof planes that may be visible from the right of way and in conflict with HRB conditions of approval		Skylights on inconspicuous roof planes. Not allowed: skylights on street-side roofs	Accept Change (Consistent w/ Design Guidelines). The skylights are not on street side roofs, rather they are on side-facing roofs. On both roof facades the skylights are minimally visible from Miller Street. The skylights are small in size and flat against the roof. The skylights could be found to meet the design guidelines, but they do not meet the original condition of approval. Staff recommends that the Board find the skylights to be consistent with the design guidelines and waive the original condition of approval.	



GLUA-21-00001/ HR 21-00001 through 21-00005:
 Historic Review for Canemah Cottages
 March 2, 2021

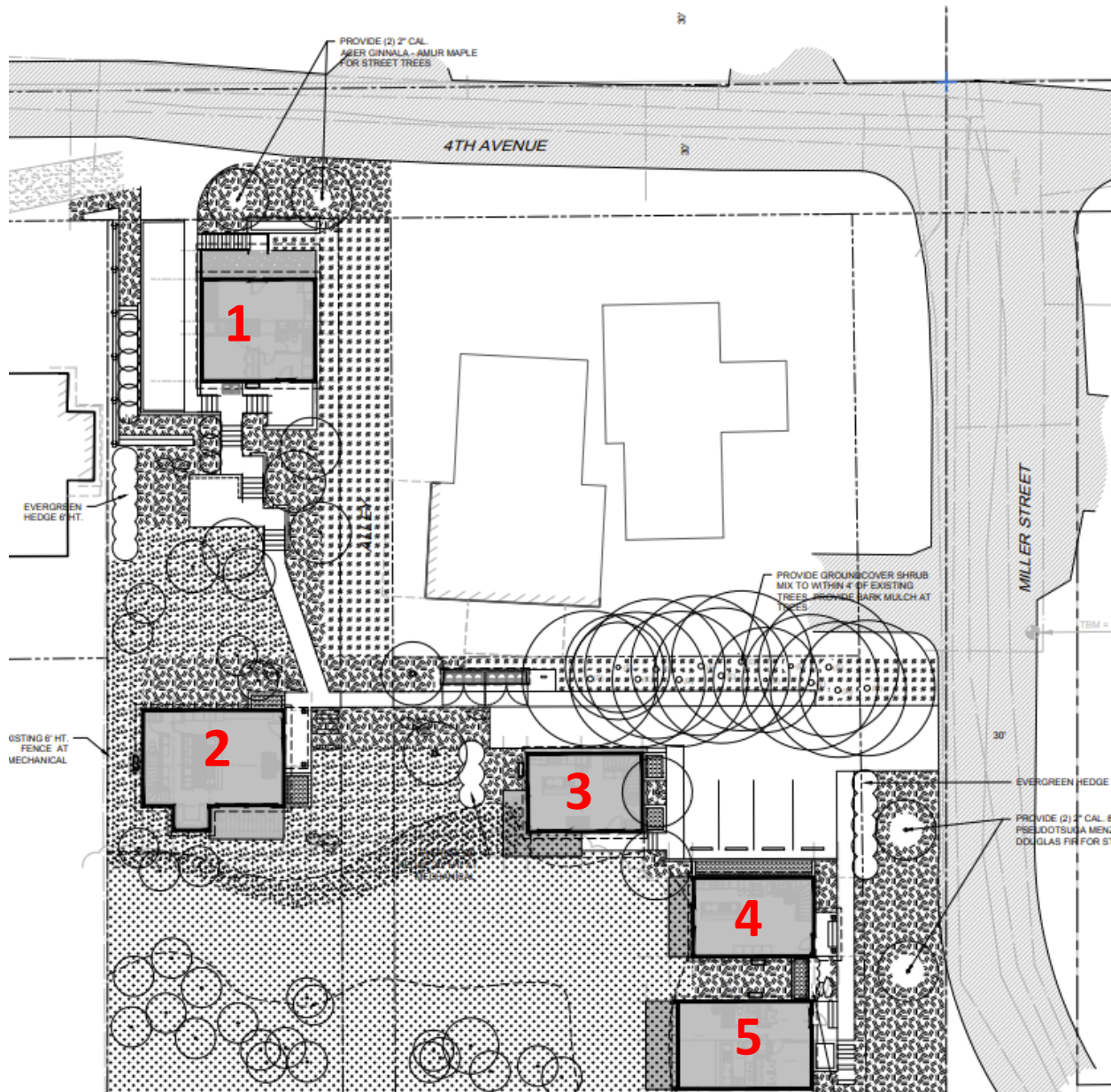


Vicinity Map

Surrounding Structures



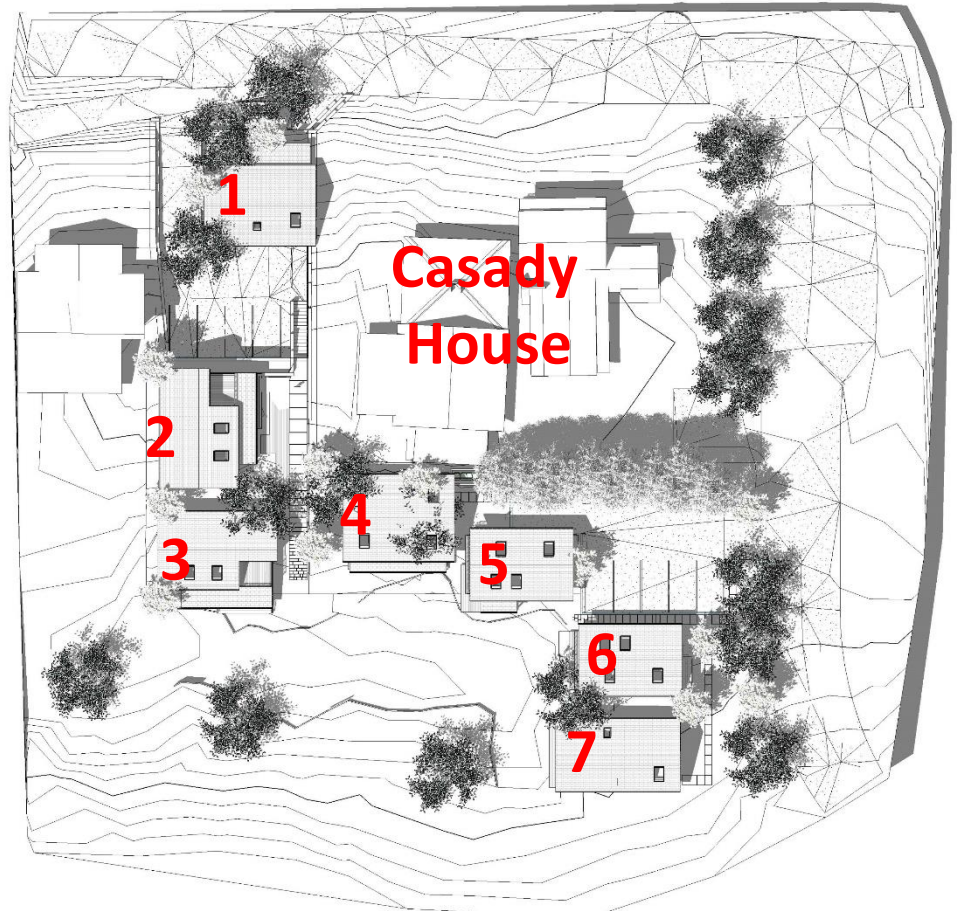




Approved Site Plan

History

- 2016 HRB proposal – 7 homes
- 2017 HRB proposal – 6 homes (HRB reduced to 5)
- Appeal to City Commission
- Appeal to LUBA
- 2017/2018 Site Plan and Design Review and Geologic Hazard Review – 5 homes
- Building permits issued in 2018



2016 Site Plan

Design Iterations



House #5



House #2

Approval Criteria (selected from Chapter 17.40)

New Construction shall:

- Safeguard the city's historic, aesthetic and cultural heritage
- Complement any National Register Historic districts designated in the city;
- Promote the use of historic districts and landmarks for the education, pleasure, energy conservation, housing and public welfare of the city
- Be consistent with Comprehensive Plan:
 - *“Policy 5.3.8: Preserve and accentuate historic resources as part of an urban environment that is being reshaped by new development projects.”*
- Meet Adopted Design Guidelines

Canemah National Register District

The critical components of the district's character are:

- Narrow streets and informal driveways
- Basalt walls and channels
- Development pattern of irregular home placement
- Landscape of dense natural vegetation and mature trees on the steep hillsides



Design Guidelines

“It is the intent that these guidelines cover design for the wide range of projects that may occur over time. They describe a ‘safe harbor’ to allow new construction projects to be approved easily and quickly. Yet, there may be occasions when alternative designs are either desired or needed.

There are also particular product configurations, or materials that are pre-approved, but for which viable alternatives may exist. Those alternative designs and substitute materials shall be first reviewed by City staff and subsequently by the Historic Review Board (HRB) for compliance with the General Principles, and design intent of the guidelines.

For those situations when an exception to the guidelines is necessary, the HRB and staff shall evaluate the proposal based upon the significance of the impact, measuring how well the alternative fits into the intent of the guidelines and essentially the end effect on the historic district. These guidelines are not mandatory standards adopted by the City Commission.”

Overall Development

- Irregular House Placement/Arrangement
- 1 ½ stories
- Vernacular designs
- Small footprints and massing
- Combination of landscape preservation and new landscaping



Siding



Guideline: Wood siding or materials which have the appearance of horizontal wood siding

Not Allowed:
Alternative Board siding not matching the approved profiles or texture



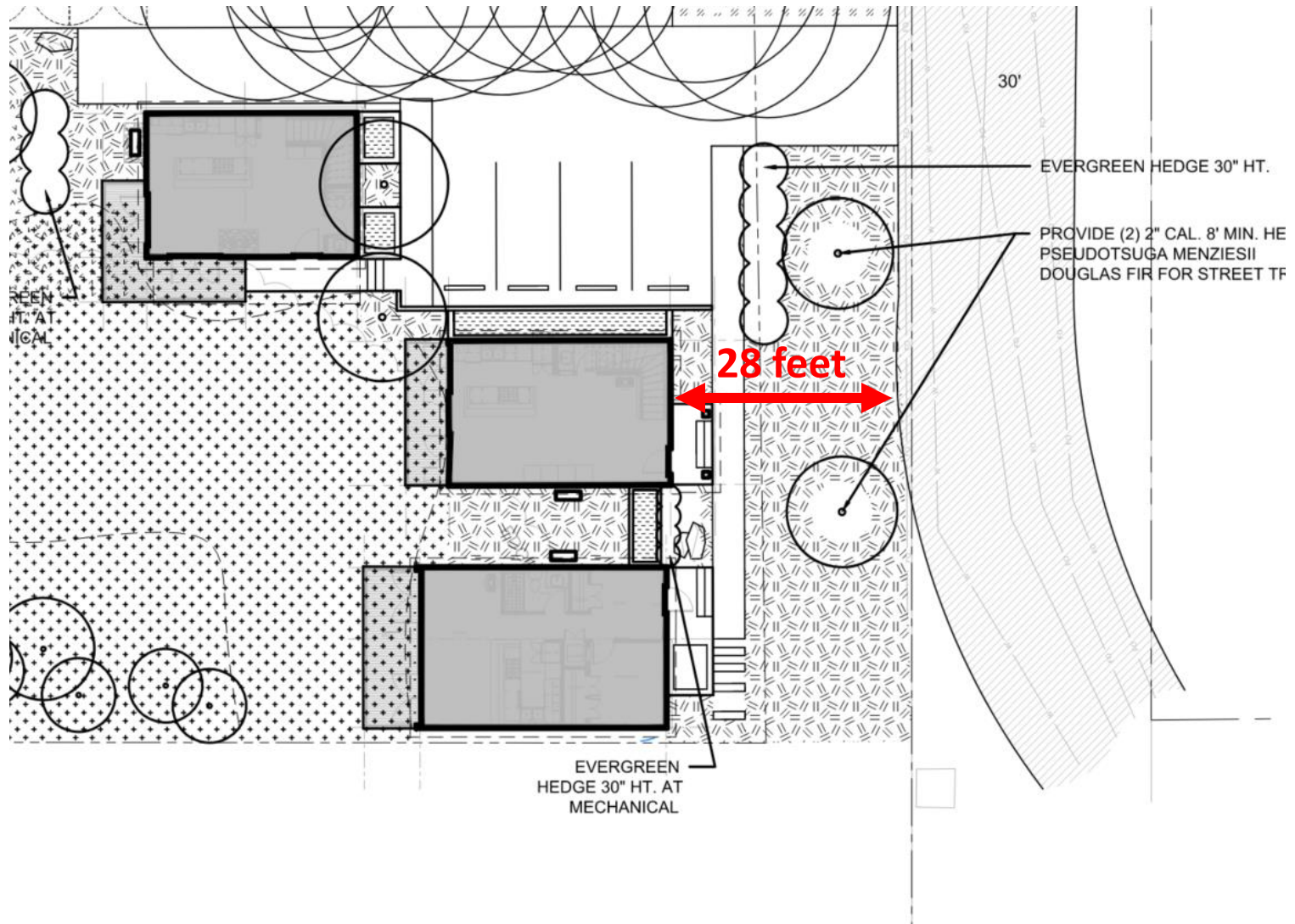
Hardie
Smooth →

Hardie
Cedarmill
↓ (textured)

→
Painted
Wood
↓ textures

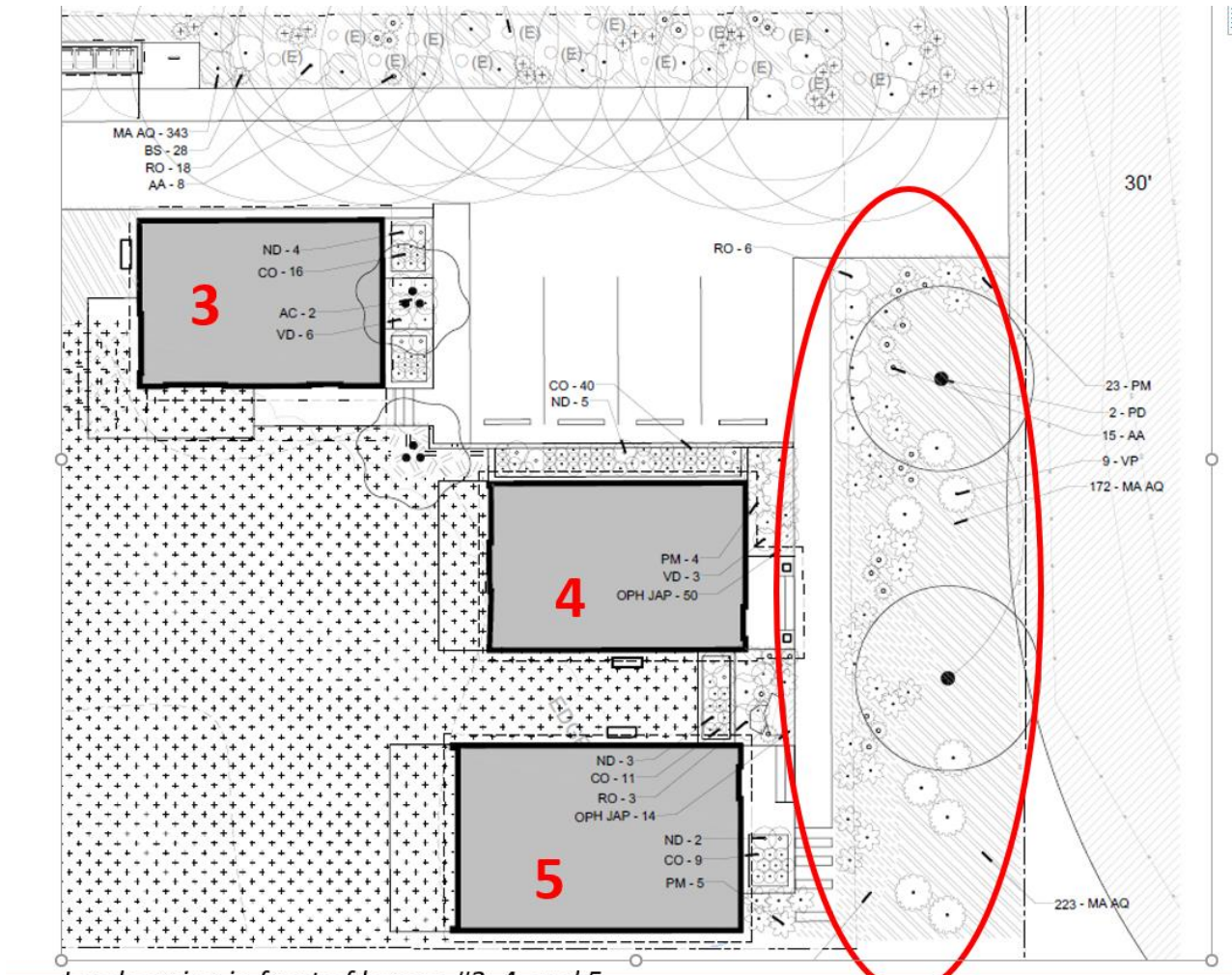


Separation from street



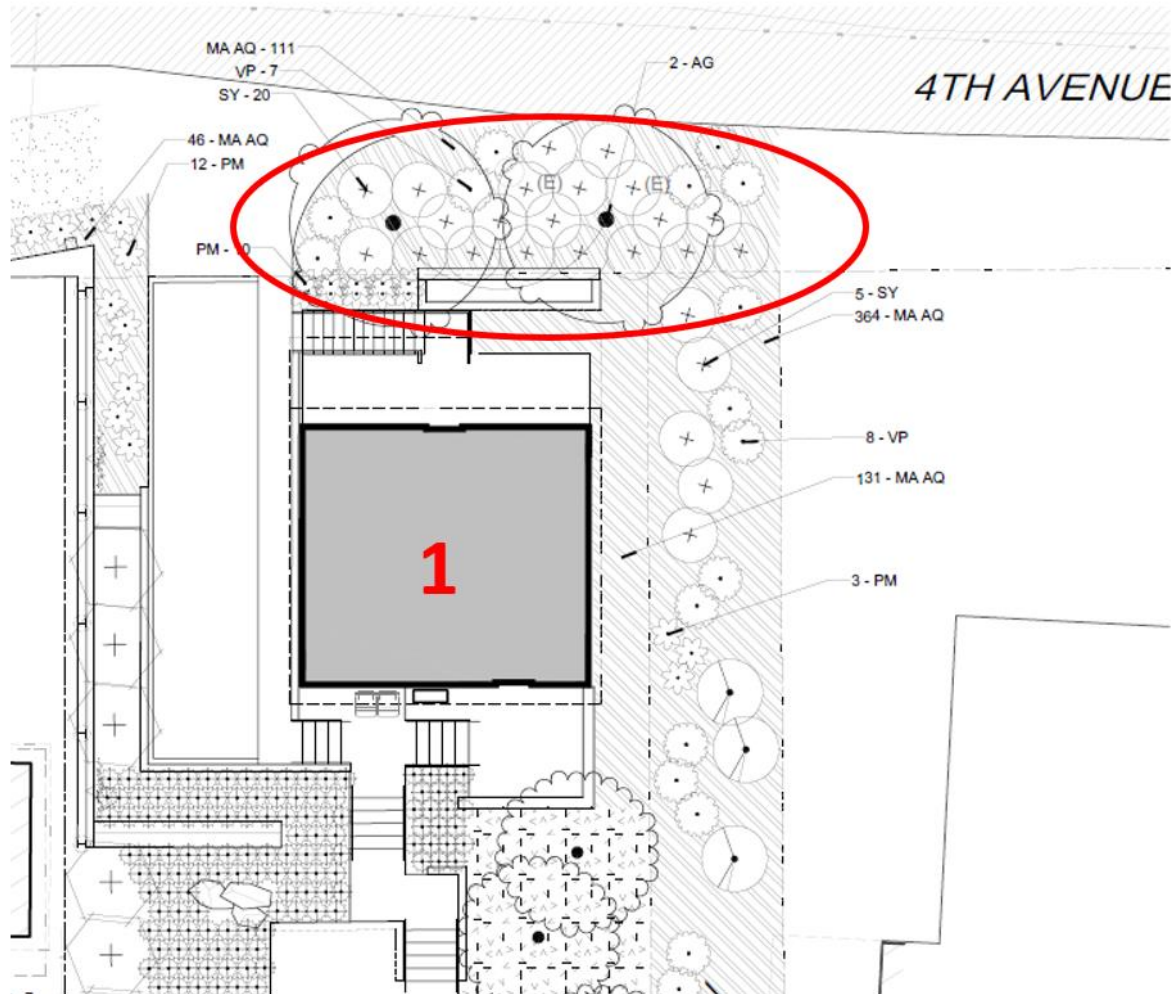
Landscaping

Additional landscaping could mitigate



Landscaping

Additional landscaping could mitigate



Windows



Guideline: match
the member sizing,
thickness, and
shadowline of
painted wood
windows



Windows



Examples of windows with a greater shadowline and sill depth

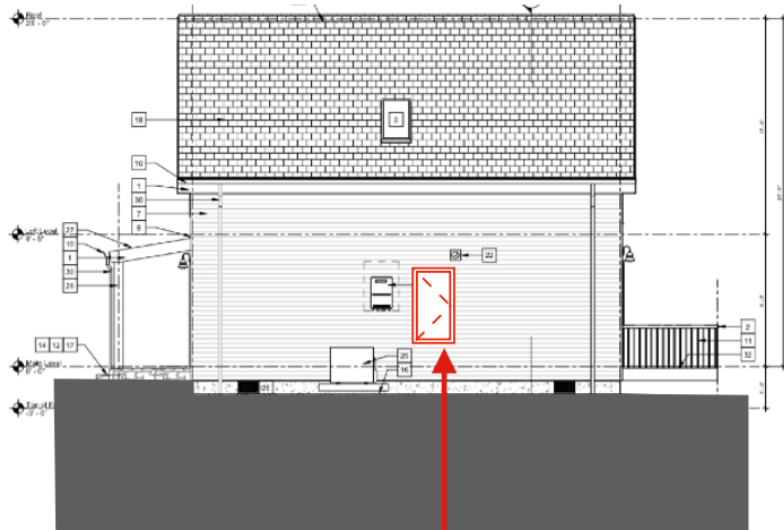
Staff recommendation - Windows



Example of thicker window trim added (note these windows are vinyl and this building is not in the district)

Staff recommends that either (1) the awning windows should be replaced with windows with shadowlines that would match historic windows or (2) additional landscaping is installed and thicker outside window trim be added to increase the depth and shadowline.

Window Placement



NORTH ELEVATION

Window to be added to
this elevation



Skylights



Guideline: Install on inconspicuous roof slopes

Skylights



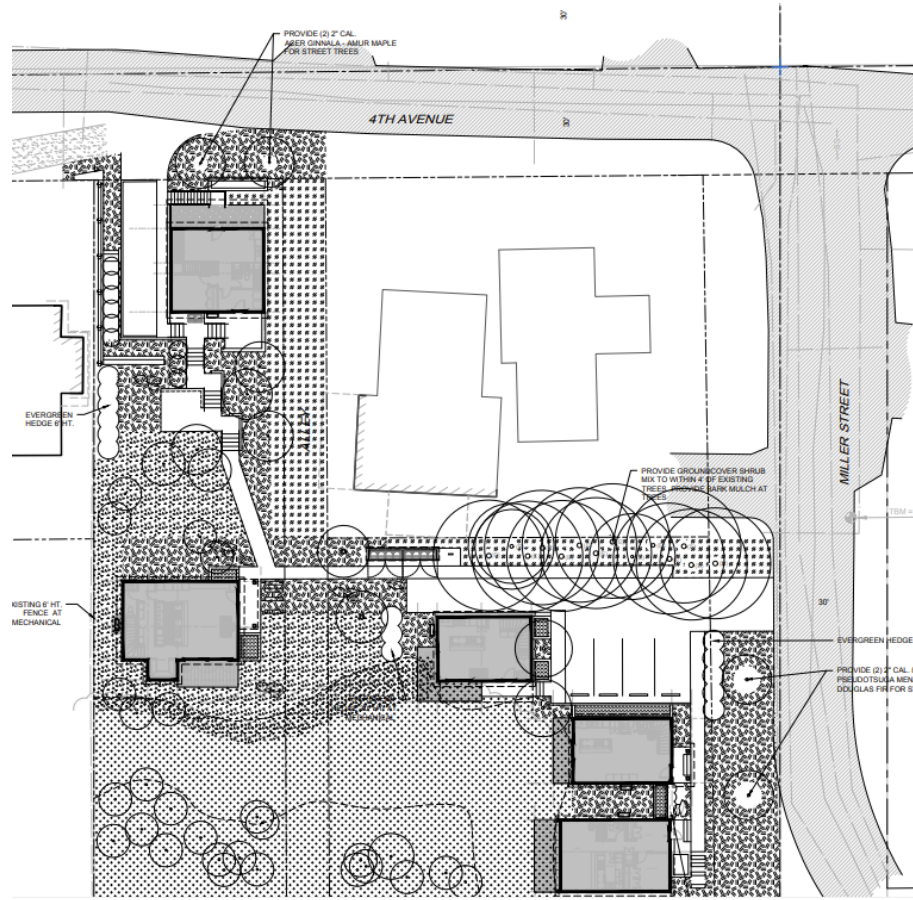
Retaining Walls



- Guideline: Minimize height and presence of walls
- Final proposed wall height behind House #1: 5 feet

Recommended Conditions of Approval

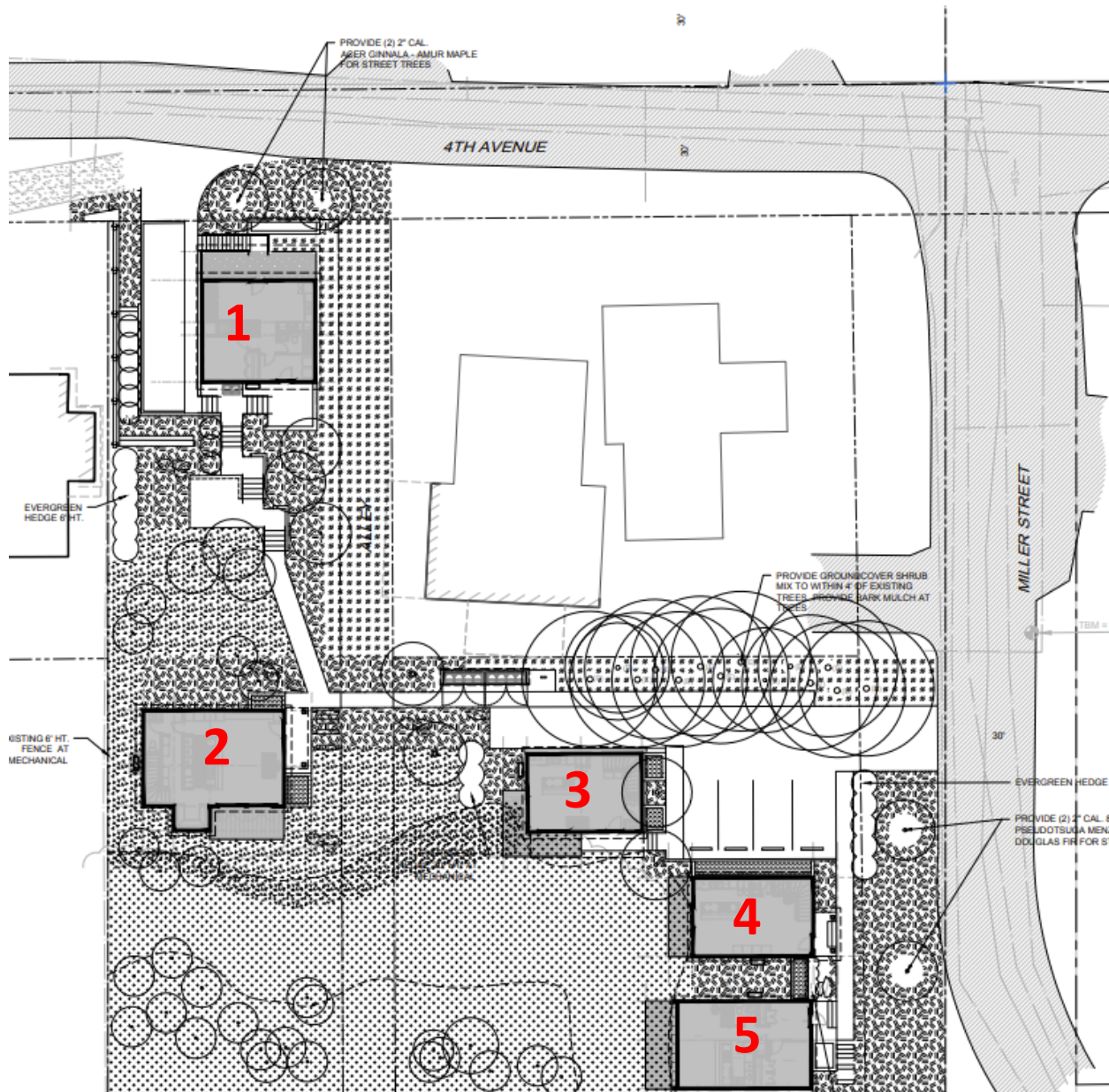
1. The applicant shall add two deciduous trees to the landscape area in front of Houses #4 and #5, along with six large shrubs. The trees shall be at least 1.5" caliper and the shrubs shall have a mature height of at least 4 feet.
2. The applicant shall replace at least four of the shrubs proposed in front of House #1 with larger shrub varieties. The shrubs shall have a mature height of at least 4 feet.
3. If the applicant is unwilling to replace the windows on the facades identified below with windows that match the shadowline of historic wood windows, the applicant shall utilize window trim to achieve 2.5" to 3" of depth from face of trim to glass panes on the following facades:
 - a. Front of house #1
 - b. West elevation of House #1
 - c. Front of House #3
 - d. Front of House #4
 - e. North elevation of House #4
 - f. Front of House #5



GLUA-21-00001/ HR 21-00001 through 21-00005:
 Historic Review for Canemah Cottages
 March 2, 2021



Vicinity Map



Approved Site Plan

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- Be consistent with Comprehensive Plan:
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Overall Development

- Irregular House Placement/Arrangement
- 1 ½ stories
- Vernacular designs
- Small footprints and massing
- Combination of landscape preservation and new landscaping

Landscaping

The original application for Canemah Cottages included this statement: Once construction is completed the site will be replanted with a dense mix of shrubs, trees, grasses and flowers native to the region.

The design guidelines for new construction document says the following regarding landscaping in Canemah:

Description of district characteristics:

Planting: South of 3rd Street: forest setting, native and ornamental plantings form visual screen and sense of privacy; Elsewhere on the more level portions: lawn and planted area around buildings.

Design Guideline:

Canemah, South of 3rd: native planting mixture, large shrubs and trees are appropriate for any yard. Houses to maintain a sense of privacy to each other. Minimize the removal of trees over 6" in diameter by adjusting house siting, limit tree cutting outside of the house footprint. Replant to preserve tree canopy.

Landscaping

Status: Current landscaping includes native and non-native species. Some non-native species are proposed in wetland seed mix, which has not been applied yet.

Recommendation: Condition of approval for native species only within 50 feet of wetland.



Siding



Guideline: Wood siding or materials which have the appearance of horizontal wood siding

Not Allowed: Alternative Board siding not matching the approved profiles or texture

Guidelines do not specifically prohibit textured hardieplank siding



Hardie
Smooth →

Hardie
Cedarmill
↓ (textured)

→
Painted
Wood
↓ textures



Separation from street

28 feet

A red double-headed arrow pointing left and right, indicating a horizontal distance.

Landscaping

Additional landscaping could mitigate



Landscaping

Additional landscaping could mitigate



Windows



Guideline: match the member sizing, thickness, and shadowline of painted wood windows.

Guidelines do not provide minimum depth or dimensions.



Windows



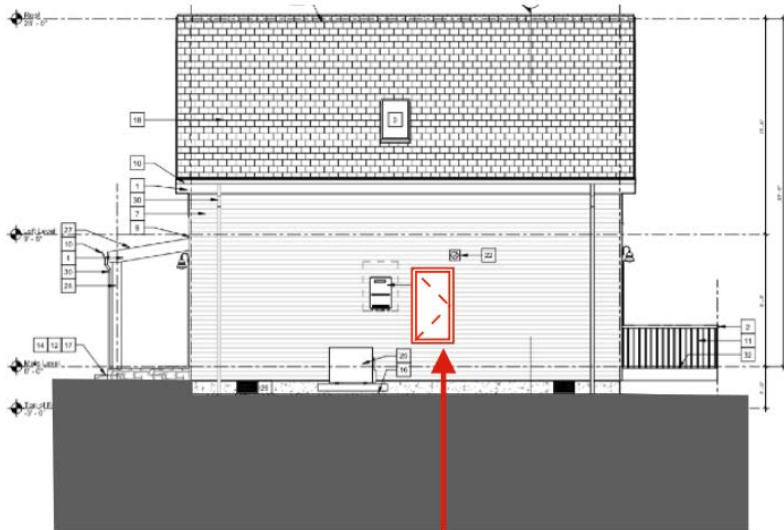
Examples of windows with a greater shadowline and sill depth

Staff recommendation - Windows

Example of thicker window trim added (note these windows are vinyl and this building is not in the district)

Staff recommends that either (1) the awning windows should be replaced with windows with shadowlines that would match historic windows or (2) additional landscaping is installed and thicker outside window trim be added to increase the depth and shadowline.

Window Placement



NORTH ELEVATION

Window to be added to
this elevation



Skylights



Guideline: Install on inconspicuous roof slopes

Guidelines do not specifically prohibit skylights that are visible from the right of way

Skylights



Retaining Walls



- Guideline: Minimize height and presence of walls
- Final proposed wall height behind House #1: 5 feet
- Guidelines do not specifically prohibit a 5 foot wall

Recommended Conditions of Approval

1. The applicant shall add two deciduous trees to the landscape area in front of Houses #4 and #5, along with six large shrubs. The trees shall be at least 1.5" caliper and the shrubs shall have a mature height of at least 4 feet. All additional landscaping shall be native species from the City's native plant list.
2. The applicant shall replace at least four of the shrubs proposed in front of House #1 with larger shrub varieties. The shrubs shall have a mature height of at least 4 feet. All additional landscaping shall be native species from the City's native plant list.
3. If the applicant is unwilling to replace the windows on the facades identified below with windows that match the shadowline of historic wood windows, the applicant shall utilize window trim to achieve 2.5" to 3" of depth from face of trim to glass panes on the following facades:
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 - Front of House #3
 - Front of House #4
 - North elevation of House #4
 - Front of House #5

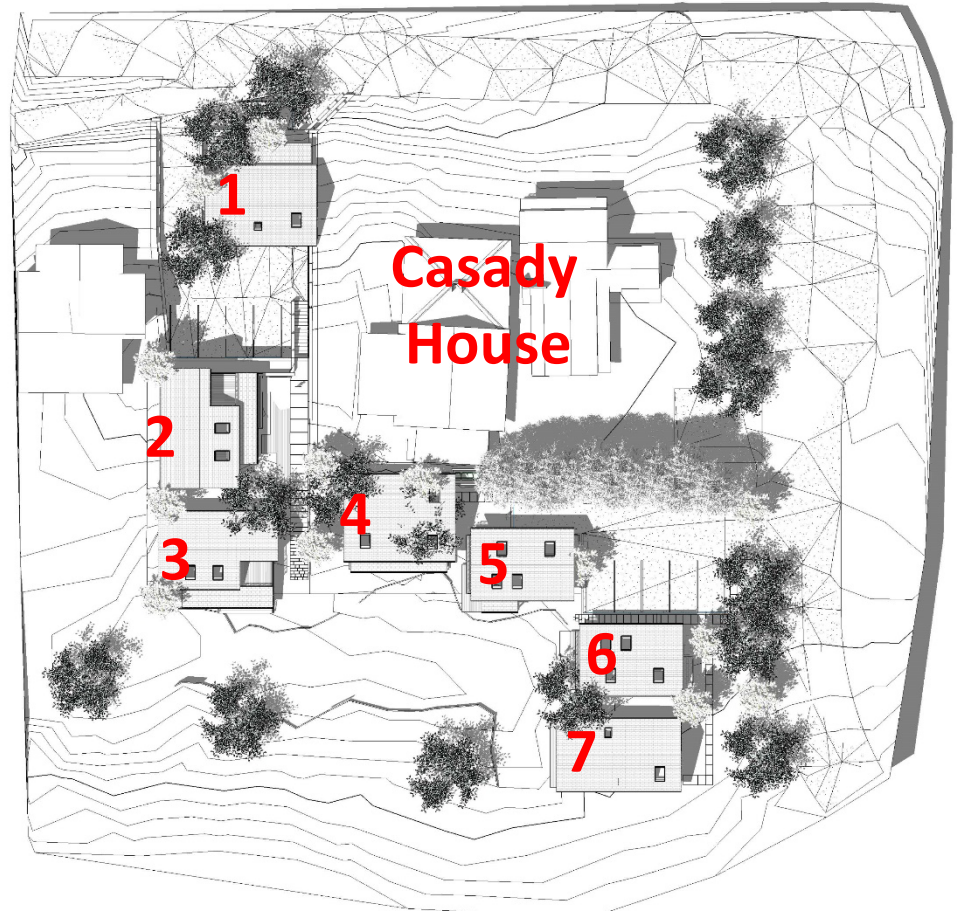
New Recommended Conditions

4. The applicant shall plant native plants or seed mixes only within the wetland area and within 50 feet of the wetland boundaries. Plants or seed mixes with species not found on the city's native plant list are not permitted within the wetland, and any new plants within 50 feet of the wetland boundary shall be native species from the City's list as well. Non-native species within 50 feet of the wetland shall be moved to other areas of the site.
5. The applicant shall plant vines or espalier on the 5 foot retaining wall at the back of the parking area next to house #1.

Surrounding Structures

History

- 2016 HRB proposal – 7 homes
- 2017 HRB proposal – 6 homes (HRB reduced to 5)
- Appeal to City Commission
- Appeal to LUBA
- 2017/2018 Site Plan and Design Review and Geologic Hazard Review – 5 homes
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2016 Site Plan

Design Iterations



House #5



House #2



Design Guidelines

“It is the intent that these guidelines cover design for the wide range of projects that may occur over time. They describe a ‘safe harbor’ to allow new construction projects to be approved easily and quickly. Yet, there may be occasions when alternative designs are either desired or needed.

There are also particular product configurations, or materials that are pre-approved, but for which viable alternatives may exist. Those alternative designs and substitute materials shall be first reviewed by City staff and subsequently by the Historic Review Board (HRB) for compliance with the General Principles, and design intent of the guidelines.

For those situations when an exception to the guidelines is necessary, the HRB and staff shall evaluate the proposal based upon the significance of the impact, measuring how well the alternative fits into the intent of the guidelines and essentially the end effect on the historic district. These guidelines are not mandatory standards adopted by the City Commission.”



LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)

- ☐ Compatibility Review
- ☐ Lot Line Adjustment
- ☐ Non-Conforming Use Review
- ☐ Natural Resource (NROD) Verification
- ☐ Site Plan and Design Review
- ☐ Extension of Approval

Type II (OCMC 17.50.030.B)

- ☐ Detailed Development Review
- ☐ Geotechnical Hazards
- ☐ Minor Partition (<4 lots)
- ☐ Minor Site Plan & Design Review
- ☐ Non-Conforming Use Review
- ☐ Site Plan and Design Review
- ☐ Subdivision (4+ lots)
- ☐ Minor Variance
- ☐ Natural Resource (NROD) Review

Type III / IV (OCMC 17.50.030.C)

- ☐ Annexation
- ☐ Code Interpretation / Similar Use
- ☐ Concept Development Plan
- ☐ Conditional Use
- ☐ Comprehensive Plan Amendment (Text/Map)
- ☐ Detailed Development Plan
- ☒ Historic Review
- ☐ Municipal Code Amendment
- ☐ Variance
- ☐ Zone Change

File Number(s): GLUA-21-00001 and HR-21-00001 through HR-21-00005

Proposed Land Use or Activity: Five Cottage Homes changes to previous approvals: MD-17-01 through MD-17-07, and AP-17-04

Project Name: Canemah Cottages **Number of Lots Proposed (If Applicable):** _____

Physical Address of Site: 508 4th Ave, 450, 462, 474, 486 Miller Street

Clackamas County Map and Tax Lot Number(s): Clackamas County Map 3-1E-01AA- Taxlots 2200, 3600, and 3700

Applicant(s):

Applicant(s) Signature: 

Applicant(s) Name Printed: Christopher Staggs **Date:** 01/05/2021

Mailing Address: 502 Main Street, Oregon City, OR 97045

Phone: (951)236-9628 **Fax:** _____ **Email:** chris@ariatouch.com

Property Owner(s):

Property Owner(s) Signature: same as applicant

Property Owner(s) Name Printed: Canemah Cottages LLC **Date:** 01/05/2021

Mailing Address: 502 Main Street, Oregon City, OR 97045

Phone: (951)236-9628 **Fax:** _____ **Email:** chris@ariatouch.com

Representative(s):

Representative(s) Signature: _____

Representative (s) Name Printed: _____ **Date:** _____

Mailing Address: _____

Phone: _____ **Fax:** _____ **Email:** _____

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 parties willingness to comply with all code requirements.

TYPE III –HISTORIC REVIEW BOARD SUBMITTAL

February 1, 2021

APPLICANT: Canemah Cottages LLC
502 Main Street, Oregon City, OR 97045

OWNER: Canemah Cottages LLC (Christopher Staggs AIA)
502 Main Street, Oregon City, OR 97045

REQUEST: Review of Exterior / As Built HOMes

LOCATION: 508 4th Ave., Oregon City, OR

I. BACKGROUND:

Note: Applicant encourages HRB members to visit site and observe homes.

1. **Existing Conditions:** The five cottage homes are built according to the permitted drawings and documents submitted to the city planning and building department. (The construction is ongoing and not complete). These documents were reviewed by the planning department prior to construction starting. The last set of documents and drawings reviewed by the HRB, at the time of the hearing when approval was granted, are not reflective of the written conditions of approval. The drawings submitted for permitting do reflect the changes and modifications that were conditioned at time of approval. (We are effectively saying, the discrepancies noted by the city planning are in large part, based on conditions of approval that do not match the HRB conditions and approval of the project, and we believe the homes as they are built, are in compliance with the historic standards and historic intent). The applicant has made minor changes to the exterior elevations from the approved drawings which we believe meet the historic standards of Canemah. Further, there is specific language in the conditions of approval, that are not reflective of the HRB conditions, for example, skylights in Canemah are not to be located on roof slopes facing the right of way. The conditions of approval written for this project incorrectly states, "...skylights shall not be visible from the right of way...". This language does not reflect the historic standards which specifically allow skylights in roofs that are not facing the right of way. (House #4 and #5 have skylights that are visible from the right of way but not facing the right of way). The applicant suggests a review of the as built homes demonstrates the homes are built according to historic guidelines as outlined in the city standards, and, the as built homes meet the approved project.
2. **Project Description:** 5 cottage homes in Canemah Historic District

CODE RESPONSES:*17.40.060 - Exterior alteration and new construction.*

- A. *Except as provided pursuant to subsection I of this section, no person shall alter any historic site in such a manner as to affect its exterior appearance, nor shall there be any new construction in an historic district, conservation district, historic corridor, or on a landmark site, unless a certificate of appropriateness has previously been issued by the historic review board. Any building addition that is thirty percent or more in area of the historic building (be it individual or cumulative) shall be considered new construction in a district. Further, no major public improvements shall be made in the district unless approved by the board and given a certificate of appropriateness.*
 - B. *Application for such a certificate shall be made to the planning staff and shall be referred to the historic review board. The application shall be in such form and detail as the board prescribes.*
 - C. *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.*
- D. *[1.] The historic review board, after notice and public hearing held pursuant to Chapter 17.50, shall approve the issuance, approve the issuance with conditions or disapprove issuance of the certificate of appropriateness.*
 - F. *For construction of new structures in an historic or conservation district, or on an historic site, the criteria to be used by the board in reaching its decision on the certificate of appropriateness shall include the following:*
 - 1. *The purpose of the historic conservation district as set forth in Section 17.40.010;*
 - 2. *The provisions of the city comprehensive plan;*
 - 3. *The economic effect of the new proposed structure on the historic value of the district or historic site;*
 - 4. *The effect of the proposed new structure on the historic value of the district or historic site;*

5. *The general compatibility of the exterior design, arrangement, proportion, detail, scale, color, texture and materials proposed to be used in the construction of the new building or structure;*
Applicant response: (Response to F.5 is applicable). Based on the historic home guidelines, the previously approved permit documents, the as built homes meet the historic standards in proportion, scale, texture and materials (see attached exterior photographs)
6. *Economic, social, environmental and energy consequences;*
7. *Design guidelines adopted by the historic review board.*

Design Guidelines for New Construction - Canemah

1. STYLE

New construction shall complement one of these styles to support the historic context. Use of other styles dilutes and distracts from the historic context of the district.

While there may be several styles dominant within the district, the specific choice of a style shall be compatible with adjacent properties, the block, and the neighborhood. It also must be fitting for the particular function of the building and its size.

Applicant response: The construction is built to compliment the Canemah historic district “Vernacular” style. During the original HRB review of our project we produced an extensive survey of the district identifying the features of the Canemah homes and character. The construction is based on these findings as well as the approval of the HRB. We have not changed the project from this original intent with the following exceptions and request for approval at this hearing:

1. House 1: window facing south (away from right of way and not visible) removed.
Window facing east added for light in upstairs bathroom.
2. House 2: skylight in roof facing right of way that will be covered with landscape and will not be visible. Entry elevation window changed to square. House 2 is the least visible house on the property located in the rear.
3. House 3: N/A
4. House 4: N/A
5. House 5: North facing Window facing House 4 moved to bathroom (to be installed)

Note: all houses siding changed to wood simulated Hardi board in lieu of wood (allowed by historic guidelines)

Note: all primary windows facing right of way are in the 2:1 proportion as is the predominant window proportion in Canemah with some square windows and sidelight windows by front doors.

Note: all house siding is horizontal (rather than) horizontal on elevations facing right of way and vertical on elevations facing away from right of way. Historic standard and style is horizontal.

2. SITE

Siting principles involve both how the site is used and how the building(s) is placed within the site. The specific lot location and its topography can dictate many requirements.

Residential buildings are to face the street squarely with their primary face in full view, and to be set back from lot lines and be spaced from one another similar to the immediate neighborhood. The primary structure is to be placed in the primary position with accessory structures in a service or

ancillary position except where topography is an issue. Yard area between the house and street to primarily be planted with minimal paving only for pedestrian access and for vehicle movement. More private activity spaces to be located at the less public areas of the site.

SITE CHARACTERISTICS OF THE VERNACULAR STYLE IN CANEMAH

- No uniform front setback; South of 3rd Street: houses may face front or side depending on topography.
- Lots range from 50x100 to 100x100 and contain a single house.
- Properties edges often not defined; Where fenced, primarily picket or low slat at front with side or partial returns.
- Planting: South of 3rd Street: forest setting, native and ornamental plantings form visual screen and sense of privacy; Elsewhere on the more level portions: lawn and planted area around buildings.
- House Placement: to suit the existing topography and most level lot portion especially south of 3rd Street.
- Retaining walls: stone, mortared or stacked basalt, or concrete south of 3rd Street, especially in proximity with street.
- Garages: Not found historically; informal graveled or paved parking next to street or along house; New garages to be located along side or behind house. Where topography is a concern, locate garage offset from building primary façade, close to street with direct access.
- Accessory Buildings: detached, behind along side of house and located to allow use of particular function.
- Streets: South of 3rd Street: narrow, without curbs or sidewalks; casual pedestrian paths and connecting stairs are encouraged.

Applicant Response: No changes proposed to site design as approved by HRB

3. BUILDING FORM

Address the overall size, shape and bulk of the building. The architectural style used for the building defines many aspects of its appropriate form and proportions. Excessive variation in the size, shape, or configuration creates an inappropriate solution that is stylistically incorrect and not complementary to the district. The building form needs to relate to the buildings in the immediate neighborhood, and to take into account both similarities and changes on the block. The new building form shall reference the principles, proportions and scale of an historically appropriate style.

BUILDING FORM CHARACTERISTICS OF THE VERNACULAR STYLE IN CANEMAH

- Form easily allows additions and alterations such as increases in family size, activities or changing technology; generally smaller in size than McLoughlin.
- Shape: rectangular in plan, with smaller rectangular combinations to primary form; Rectangular or square form reinforced on façade. L-plan, T-plan options.
- Height: Maximum 1 ½ stories in height; Basement option.
- Proportions: Height (eave) to maximum width: 1:1 Height to Depth: can vary greatly.
- Roof: gable, of not less than 8:12 pitch, 10:12 and steeper are preferred. No cross-gable roofs; Possible wing or addition with lower ridgeline that is perpendicular or is offset.

Applicant Response: No changes proposed to site design as approved by HRB

4. DESIGN COMPOSITION

Include a range of more detailed design issues that address groups of elements, individual elements, their design and how they relate to the overall composition and finish. The principles place a traditional emphasis on the design's composition as seen from the exterior, rather than as a result of interior functional planning requirements. They also outwardly convey a sense of quality craftsmanship. The design composition principles, being more detailed, and stylistically dependent, are typically developed after the previous principles are resolved. These principles also reflect historically appropriate materials, respective finishes, and unobtrusive integration of new technology.

DESIGN COMPOSITION CHARACTERISTICS OF THE VERNACULAR STYLE IN CANEMAH

- Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.
- Designed and built without assistance of a trained architect. Collaborative design evolved with homeowner and builder, based on familiar styles, features and products.
- Can combine features from other architectural styles popular during the historic period; simpler designs than McLoughlin.
- Porch: full or partial length at the front entry; if close to the ground, no railings; at main story only.
- Dormers: None.
- Materials: local, readily available.
- Windows: 1:1, double hung windows.
- Siding: horizontal board siding; typically shiplap, or channel; occasionally bevel.
- Ornament: Exterior decoration is modest, consisting of scroll-work brackets at the top of porch pillars, plain cornerboards and simple window trim. Most houses do not feature spindlework in the peaks of their gable roofs.
- Interior fireplaces and chimneys.

Applicant Response: The proposed changes to the approved homes as outlined in Section 1 "Style" follow the vernacular style of Canemah by NOT being rigid, and following design flexibility and variation.

17.40.065 - Historic Preservation Incentives.

A. Purpose. Historic preservation incentives increase the potential for historically designated properties to be used, protected, renovated, and preserved. Incentives make preservation more attractive to owners of locally designated structures because they provide flexibility and economic opportunities.

B. Eligibility for Historic Preservation Incentives. All exterior alterations of designated structures and new construction in historic and conservation districts are eligible for historic preservation incentives if the exterior alteration or new construction has received a certificate of appropriateness from the Historic Review Board per OCMC 17.50.110(c).

C. Incentives Allowed. The dimensional standards of the underlying zone as well as for accessory buildings (OCMC 17.54.100) may be adjusted to allow for compatible development if the expansion or new construction is approved through historic design review.

D. Process. The applicant must request the incentive at the time of application to the Historic Review Board.

Applicant Response: We request the HRB approve the homes, as built, if necessary, through the historic incentives. We believe the homes, as built, are in the spirit of Canemah Vernacular style and are an appropriate, contemporary addition to the historic district.

ALSO

Relevant Character Guidelines:

Topography (see page 34 of Guidelines)
 Landscaping (see page 34 of Guidelines)
 Spacing (see page 36 of Guidelines)
 Heights (see page 38 of Guidelines)
 Widths (see page 38 of Guidelines)
 Context Scale (see page 40 of Guidelines)
 Volume (see page 40 of Guidelines)
 Proportion (see page 44 of Guidelines)
 Porches (see page 46 of Guidelines)
 Dormers (see page 47 of Guidelines)
 Foundations (see page 56 of Guidelines)
 Windows (see page 63 of Guidelines)

Staff will review your application based on these guidelines. If you propose anything that does not meet these character guidelines, please include an explanation in your application of how your design differs and why you think it is still compatible with the District.

Chapter 17.12 R-6 Single-Family Dwelling District

17.12.020 - Permitted uses.

Permitted uses in the R-6 district are:

- A. Single-family detached residential units;
- B. Parks, playgrounds, playfields and community or neighborhood centers;
- C. Home occupations;
- D. Farms, commercial or truck gardening and horticultural nurseries on a lot not less than twenty thousand square feet in area (retail sales of materials grown on-site is permitted);
- E. Temporary real estate offices in model homes located on and limited to sales of real estate on a single piece of platted property upon which new residential buildings are being constructed;
- F. Accessory uses, buildings and dwellings;
- G. Family day care provider, subject to the provisions of Section 17.54.050;
- H. Residential home per ORS 443.400;
- I. Cottage housing;
- J. Transportation facilities.

Applicant Response: N/A to this application

17.12.030 - Conditional uses.

The following conditional uses are permitted in this district when authorized by and in accordance with the standards contained in Chapter 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 facility;
- 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.

Applicant Response: N/A to this application

17.12.035 - Prohibited uses.

Prohibited uses in the R-8 district are:

- A. Any use not expressly listed in Section 17.12.020 or 17.12.030.
- B. Marijuana businesses.

Applicant Response: N/A to this application

17.12.040 - Dimensional standards.

Dimensional standards in the R-6 district are:

- A. Minimum lot areas, six thousand square feet;
- B. Minimum lot width, fifty feet;
- C. Minimum lot depth, seventy feet;

Applicant Response: N/A to this application

- D. Maximum building height, two and one-half stories, not to exceed thirty-five feet;

Applicant Response: N/A to this application

- E. Minimum required setbacks:

1. Front yard, ten feet minimum setback,
2. Front porch, five feet minimum setback,
3. Attached and detached garage, twenty feet minimum setback from the public right-of-way where access is taken, except for alleys. Detached garages on an alley shall be setback a minimum of five feet in residential areas.
4. Interior side yard, nine feet minimum setback for at least one side yard; five feet minimum setback for the other side yard,
5. Corner side yard, fifteen feet minimum setback,
6. Rear yard, twenty feet minimum setback,
7. Rear porch, fifteen feet minimum setback.

Applicant Response: N/A to this application

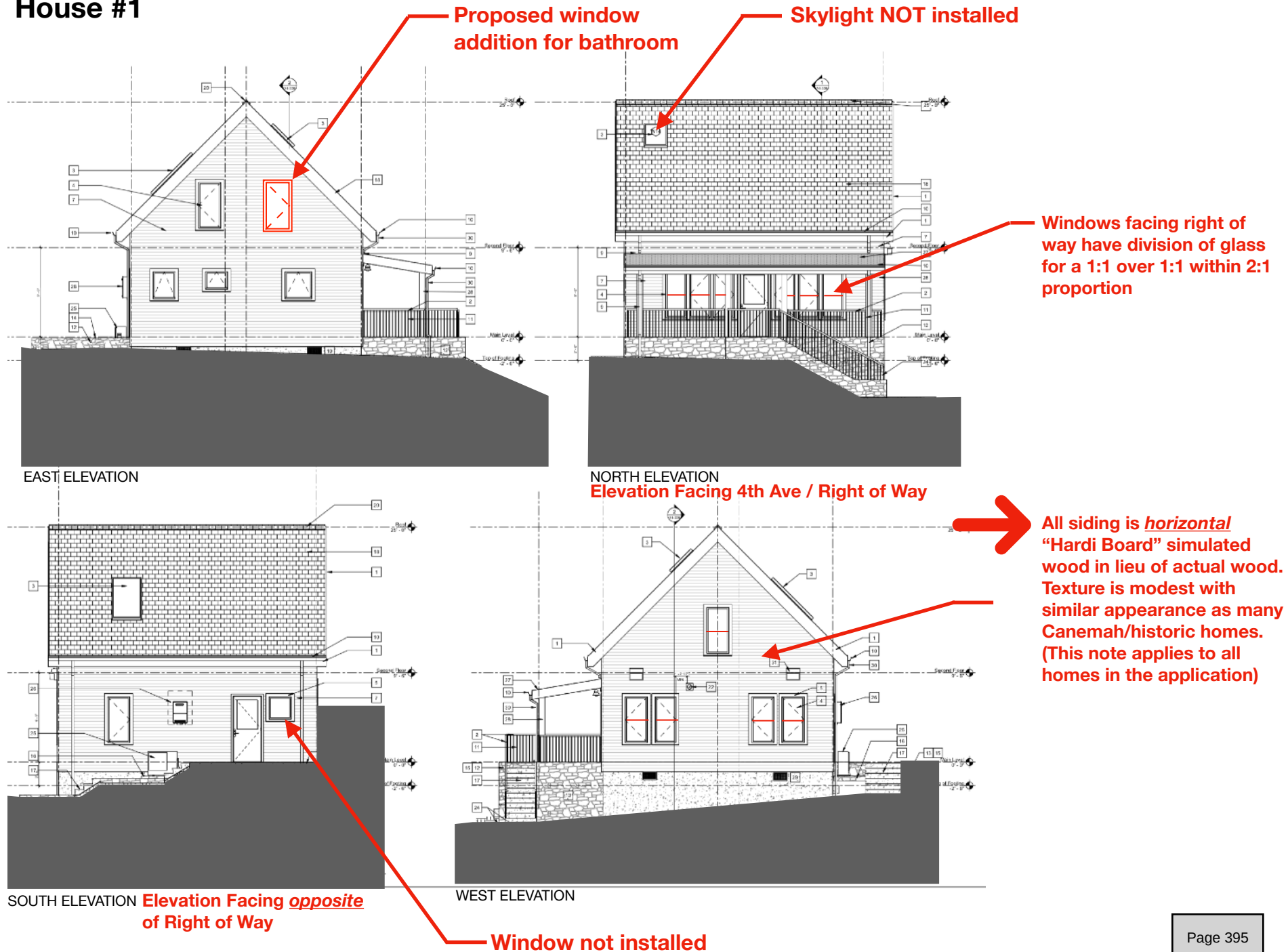
- F. Garage standards: See Chapter 17.20—Residential Design and Landscaping Standards.

Applicant Response: N/A to this application

- G. Maximum lot coverage: The footprint of all structures two hundred square feet or greater shall cover a maximum of forty percent of the lot area.

Applicant Response: N/A to this application

House #1



House #2 (This home is 150' from right of way and partially visible)

➔ Note: All windows recessed 1.5" from trim. Neither Historic Guidelines, nor original COA specify a window depth

Item 8a.

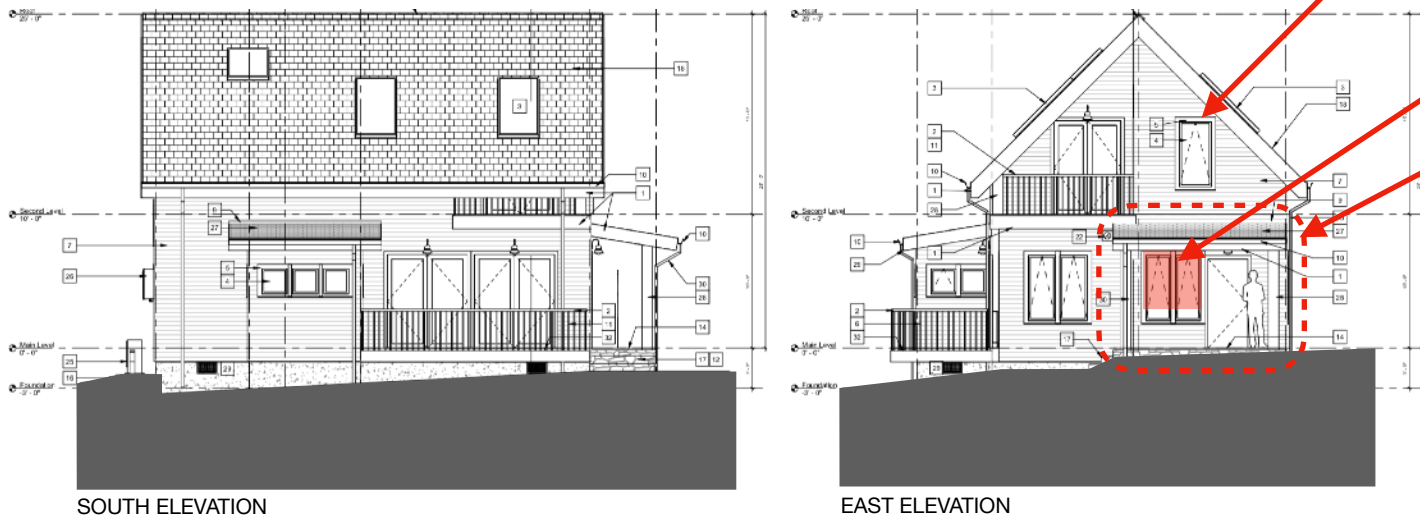
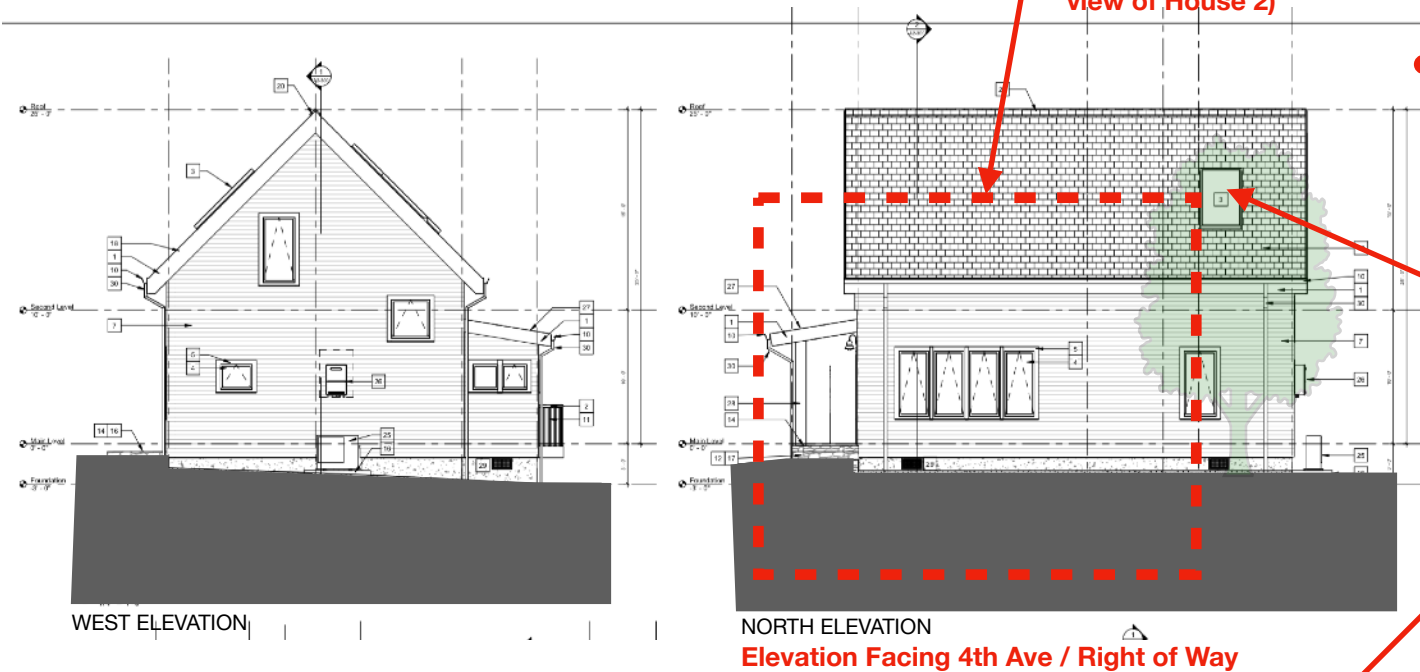
➔ Fascia width is the same on all homes, was not specified in original HRB application; there is no specific fascia width requirement in Canemah.

View of Skylight, facing 4th Ave ROW is mitigated by landscape; is flush with roof and inconspicuous.

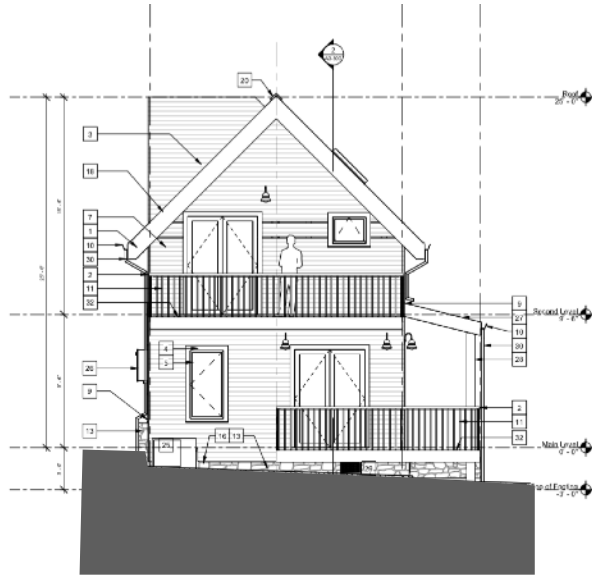
All windows facing ROW are 2:1 proportion with dividing member; see photo

Window changed to square

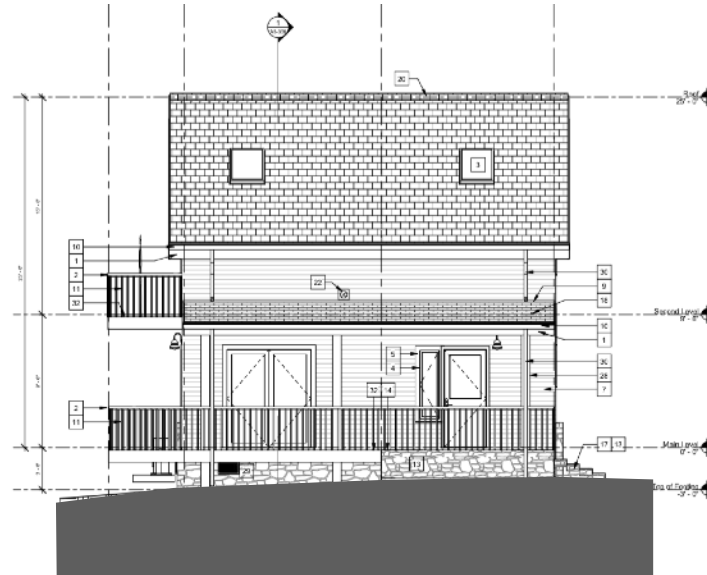
Entry porch and door added to front of home. (Original HRB application did not show an entry or porch. Meets historic guidelines and is similar to all the cottages).



House #3

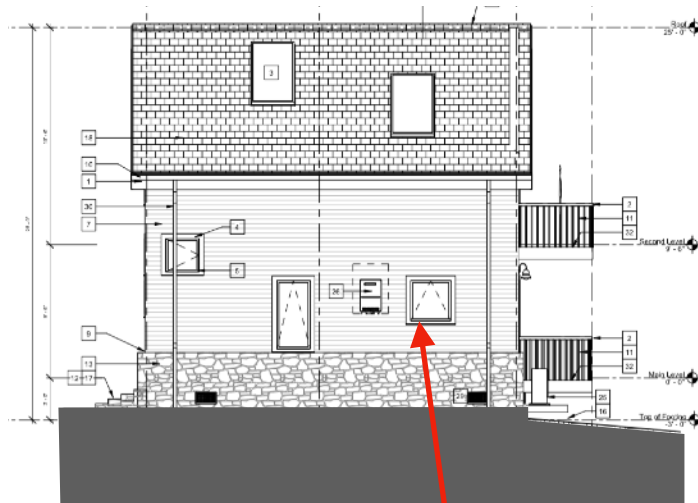


WEST ELEVATION
Elevation Facing *opposite* of Right of Way



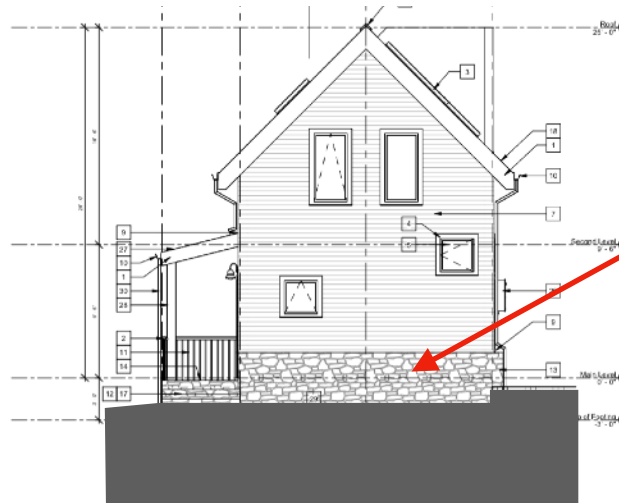
SOUTH ELEVATION

Massing and Height the same as Houses 4 and 5



NORTH ELEVATION

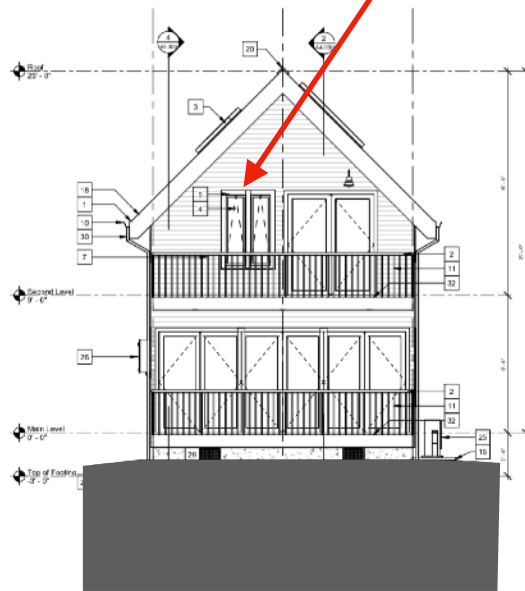
Window changed to square



EAST ELEVATION
Elevation Facing Miller St. / Right of Way

All Homes - Stone veneer replaced with typical concrete foundation - meets historic standards

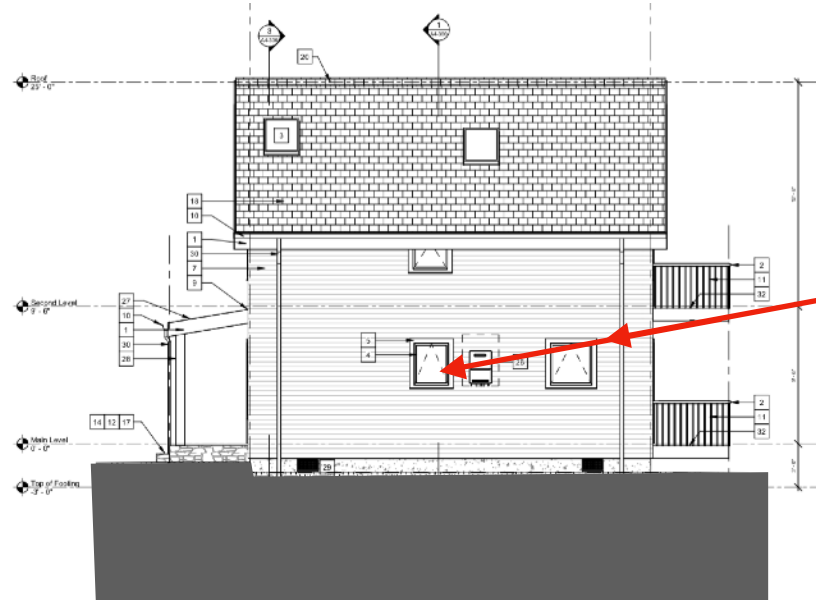
House #4



WEST ELEVATION

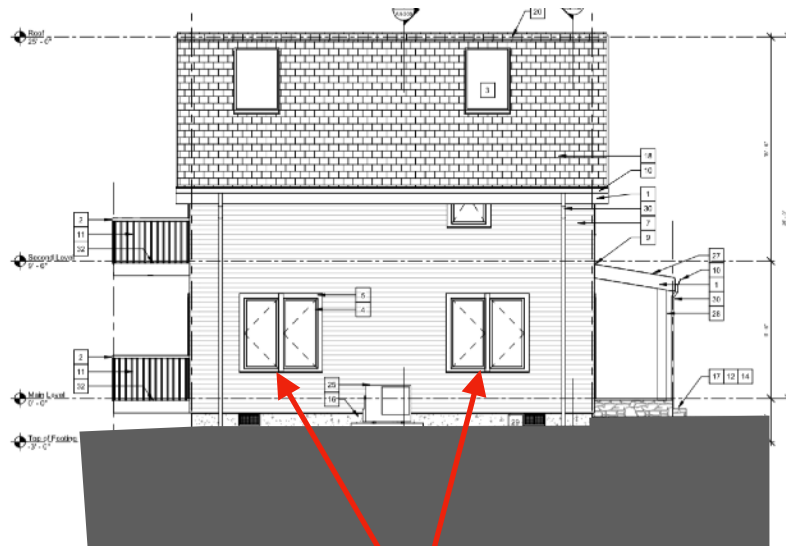
Elevation Facing *opposite* of Right of Way

Window changed to improve natural light



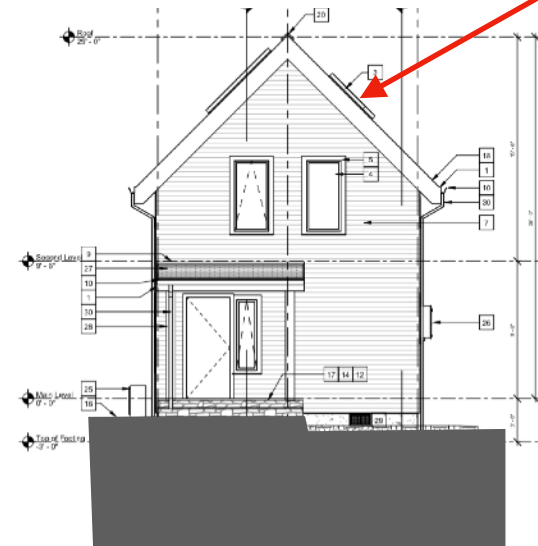
NORTH ELEVATION

Window size changed to square



SOUTH ELEVATION

Windows added to improve natural light; more consistent with all homes



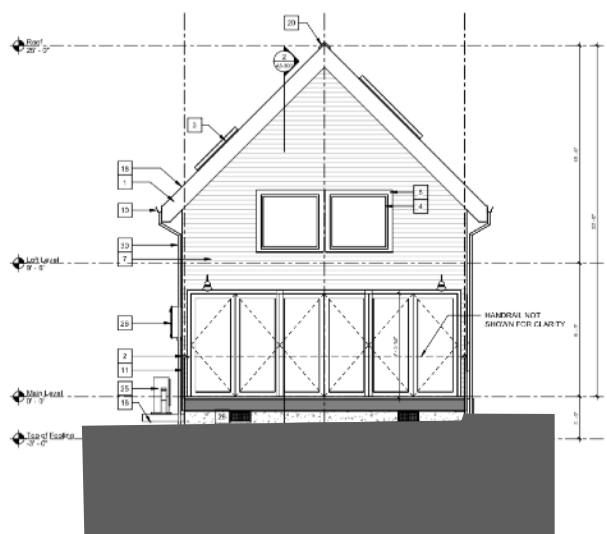
EAST ELEVATION

Elevation Facing Miller St. / Right of Way

Skylight is not facing right of way and is not visible from right of way; historic guidelines reference - *"skylights shall not be in roofs facing ROW"*

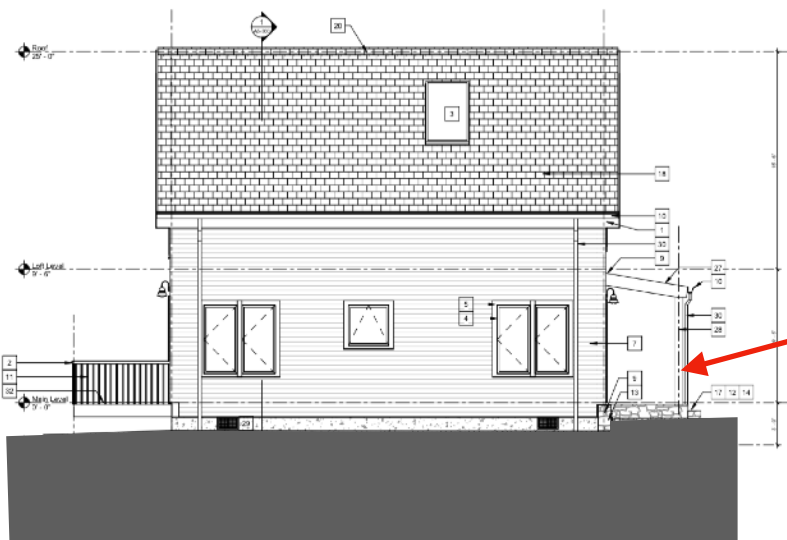
All Homes - roof overhangs reduced; more consistent with Canemah homes than original application.

House #5



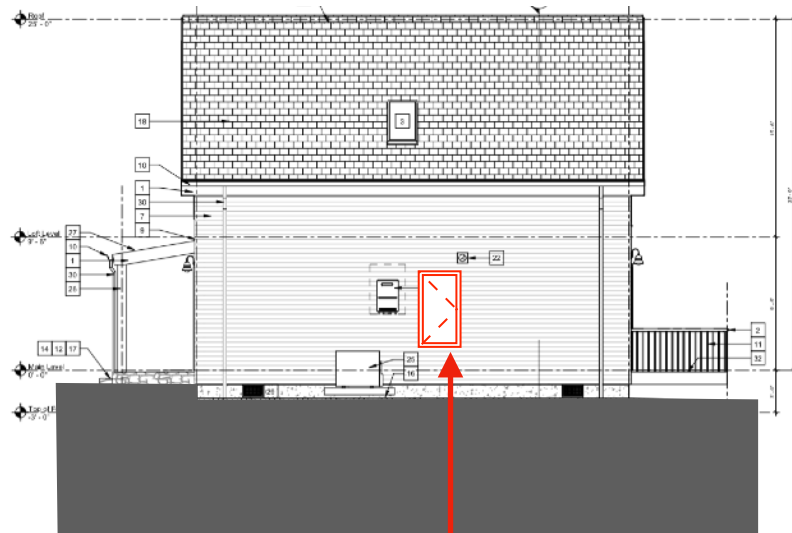
WEST ELEVATION

Elevation Facing opposite of Right of Way



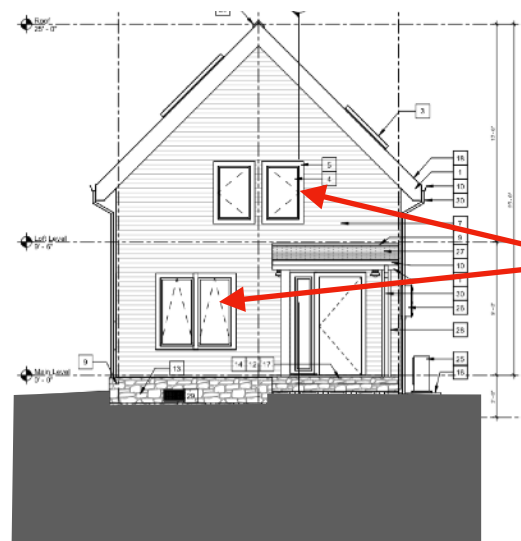
SOUTH ELEVATION

Porch projection added for consistency with other homes.



NORTH ELEVATION

Window to be added to this elevation



EAST ELEVATION

Elevation Facing Miller St. / Right of Way

Home height is same as date of permit submittal and is the same as House #3 and #4.

Windows changed for consistency with all homes.

Siding Material Views and Comparisons



4th Ave New Home



4th Ave New Home



502 4th Ave Siding



502 4th Ave Siding



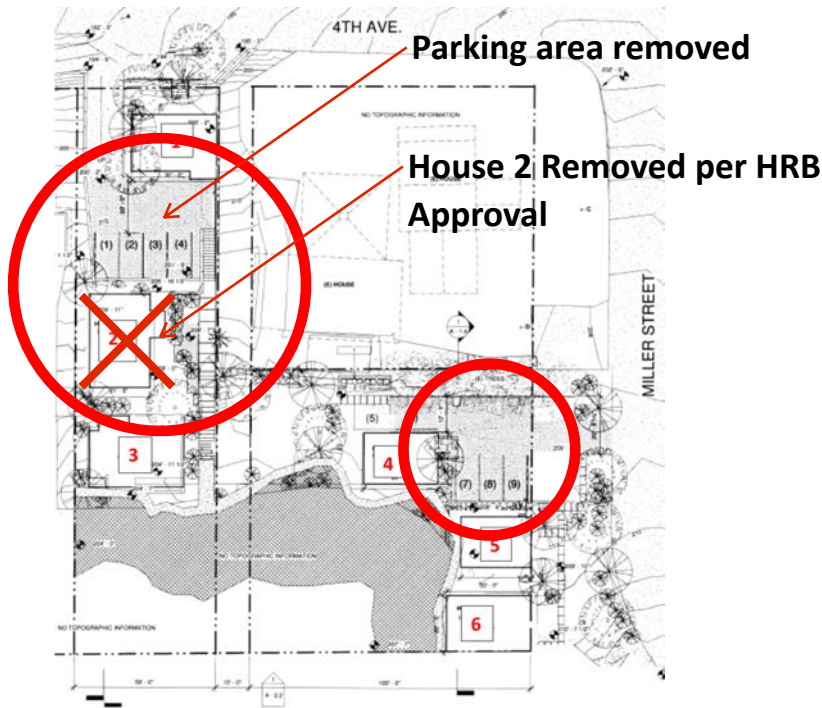
House #5 (View of siding from Right of Way demonstrating wood texture is not visible).



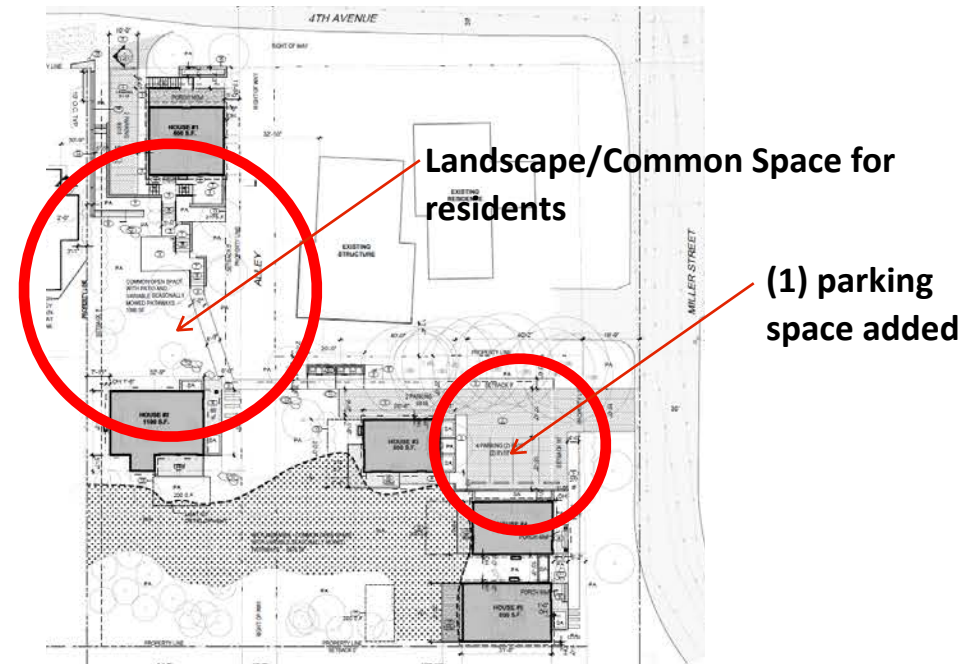
Site Planning

Site Area behind house and East Parking area.

Item 8a.



Original HRB Application - Site Plan



Permitted / As Built. - Site Plan

Conditions of Approval – House #1

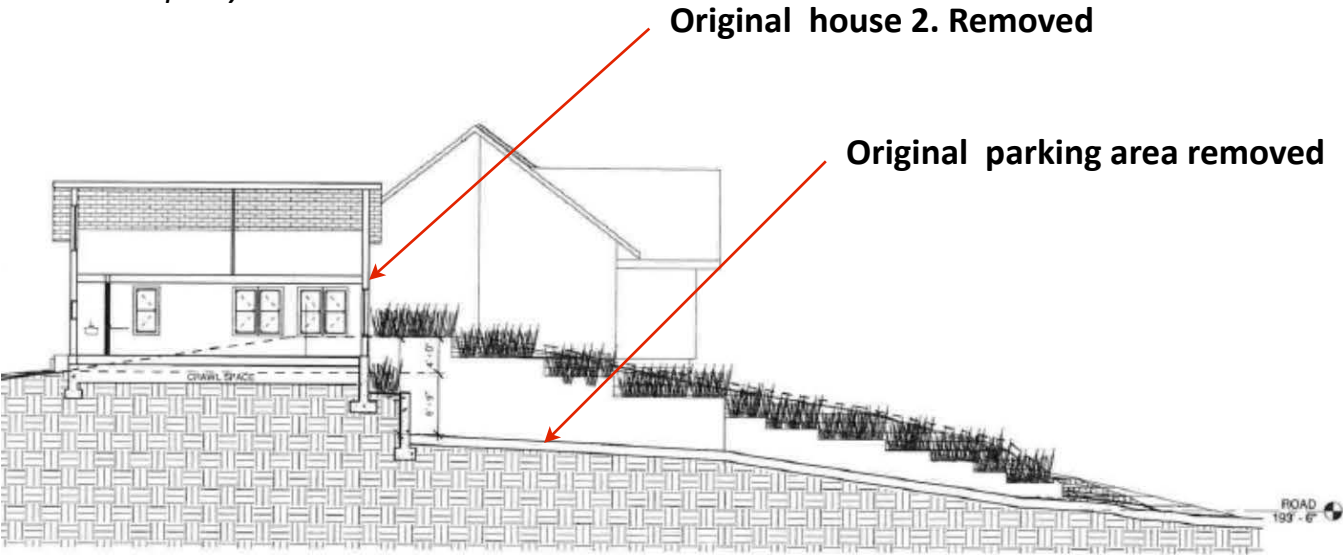
Prior to issuance of a Permit Associated with the Proposed Development:

1. The property shall obtain all necessary permits including but not limited to Site Plan and Design Review, and Geologic Hazards Review by the Planning Division, a right-of-way permit from the Development Services Division, and all necessary permits from the Building Division. (P, DS, B)
2. **House number #2 on the submitted site plan shall be removed from the site, and the proposed cottage home development shall consist of five (5) cottages total.(P)**
3. In addition to street trees, the applicant shall assure one tree is planted (or retained) within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location. (P)
4. The applicant shall assure three trees are planted (or retained) and 20 shrubs are planted (or retained) within 20 feet of the Casady House property line and the locations which border the subject site. (P)
5. The applicant shall minimize the retaining wall height to 3 1/2 feet at maximum height, and use rock, brick, or concrete with finishing; or mortared or stacked true masonry or stone that was traditionally quarried in the area. (P)
6. All windows and door shall be made of wood. (P)
7. All double doors shall be French style doors. (P)
8. Second story windows shall be rectangular on shape and not exceed the door height plus a one foot transom. (P)
9. No roof cutouts shall be permitted on any of the proposed cottages. (P)
10. No retaining walls shall exceed 3 1/2 feet within the front of any home. (P)
11. All tiered retaining walls shall have a spacing of two feet between tiers. (P)
12. Not vertical siding shall face the public streets. (P)

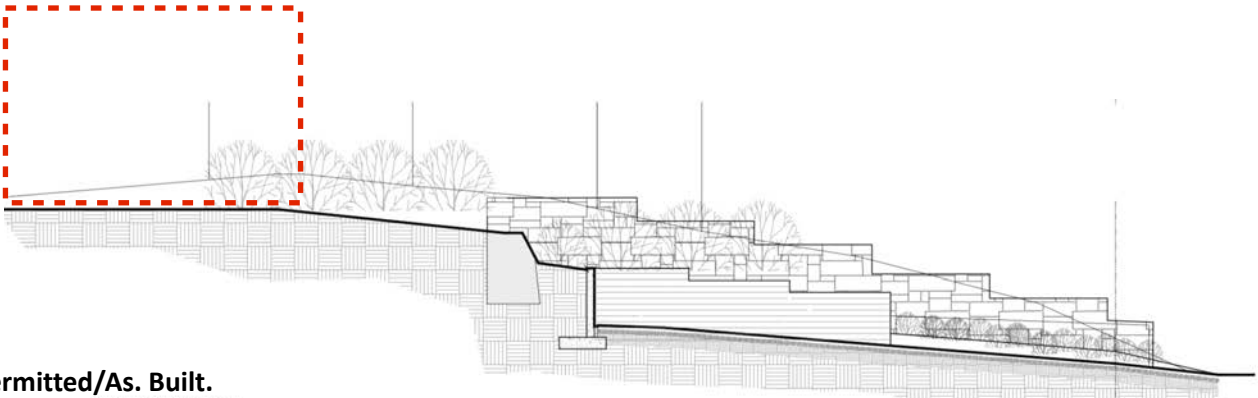
Changes from HRB Approval	Compatibility Proposed Mitigation
House 2 Removed	Per HRB COA's
Parking Area removed behind house 1. One space added by house 4.	Changed due to reduced parking and to minimize grading impact; Compatible w/Historic District.

Site Walls

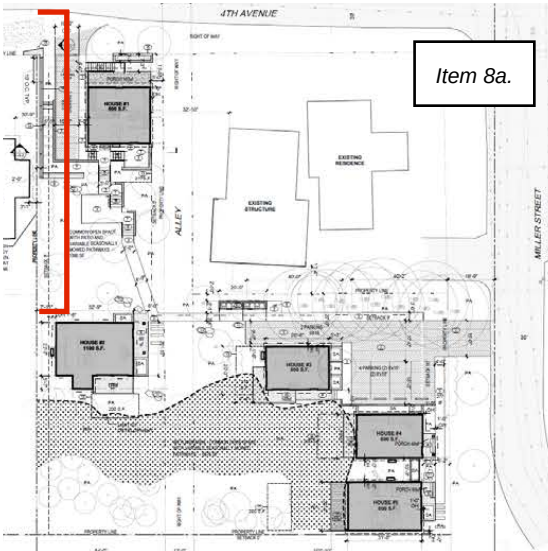
House #1 Property Line Wall



HRB Application



Permitted/As. Built.



Changes from HRB Approval	Compatibility Proposed Mitigation
House 2 Removed	Per HRB COA's
Parking Area removed behind house 1. One space added by house 4.	Changed due to reduced parking and to minimize grading. Compatible w/Historic District.

Site Planning

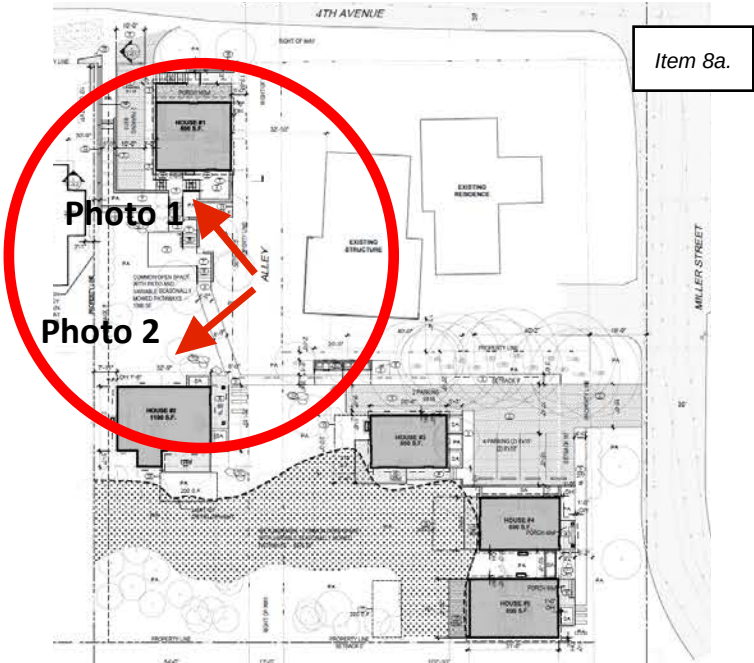
Site Area south of House 1 and North of House 2



Photo 1



Photo 2



Permitted Site Plan / As Built

Changes from HRB Approval	Reason for Change / Compatibility Proposed Mitigation
Original House 2 removed	Per HRB COA's
Parking Area removed behind house 1. One space added by house 4.	Changed due to reduced parking and to minimize grading impact. At or near original topography. Compatible w/Historic District.

"Vernacular" Style - Historic Guidelines

Principles

"Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied."

"Can combine features from other architectural styles popular during the historic period; simpler designs than McLoughlin."



Item 8a.

Multiple Window Groupings and window shapes in one elevation; black window frame and divisions; double hung and fixed (*illustrates flexibility and variation*)



Built: 1885

Window Grouping of (2) 2:1 (*illustrates flexibility and variation*)



Built: 1864

Large entry elevation window; not 2:1 proportion (*illustrates flexibility and variation*)



Built: 1875

Large picture window (not 2:1 proportion)

Window Groupings

Change from HRB Submittal to As Built

Item 8a.



MD-17-01 Reviewed by HRB Aug 2017

**Side by Side / 2:1 Proportion
Window
(Built as 2 separate windows)**

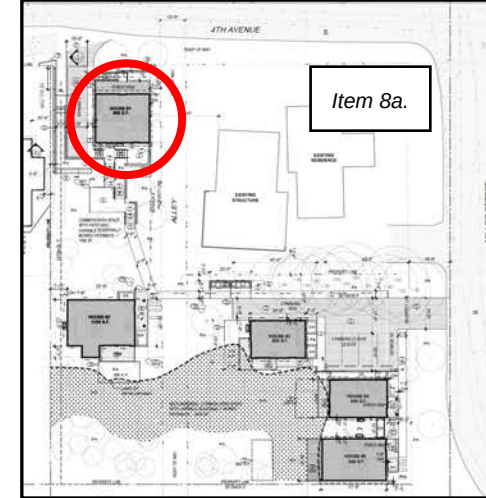


Permitted / As Built

**Side by Side / 2:1 Proportion
Window
(Built as one window assembly)**

House #1

North (front) elevation



MD-17-01 Reviewed by HRB Aug 2017

Permitted / As Built

Conditions of Approval

- All windows and doors shall be made of wood.
- All double doors shall be French style doors.
- Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- No roof cutouts shall be permitted on any of the proposed cottages.
- No retaining walls shall exceed 3 ½ feet within the front of any home.
- All tiered retaining walls shall have a spacing of two feet between tiers.
- No vertical siding shall face the public streets. (P)
- Materials to match what was proposed:
 - Wood shiplap siding
 - Wood decking
 - Wood porch rail and balusters
- The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.
- Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB Approval	Reason for Change / Compatibility Proposed Mitigation
Front porch stair orientation	Changed to reduce grading and visual impact in ROW; More Compatible w/ Historic Canemah character.
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines.
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW

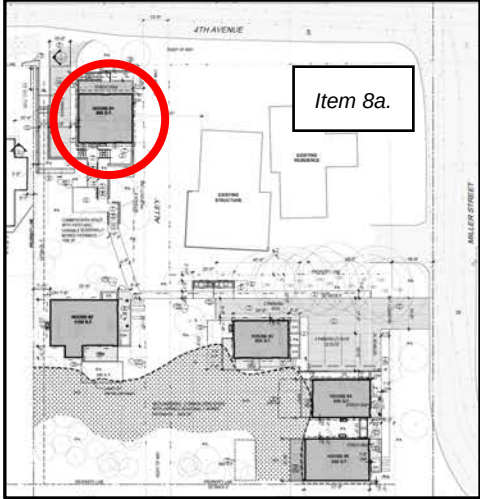
House #1
South (rear) elevation



MD-17-01 Reviewed by HRB Aug 2017



Permitted / As Built



Fascia - Permitted / As Built

Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Materials to match what was proposed:
 - Wood shiplit siding
 - Wood decking
 - Wood porch rail and balusters
9. The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.
10. Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
14. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
15. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB Approval	Compatibility Proposed Mitigation
Window and door placement	Floor plan changed based on HRB COA's; Compatible w/Historic Guidelines.
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Fascia Profile - All Homes	Fascia's with rain gutter match HRB submittal; gable ends are 2" larger

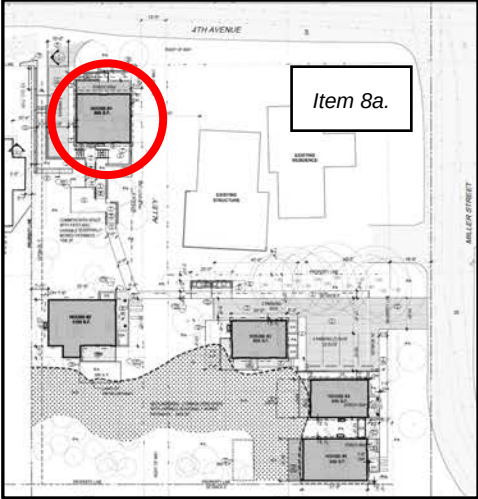
House #1
West (side) elevation



MD-17-01 Reviewed by HRB Aug 2017



Permitted / As Built

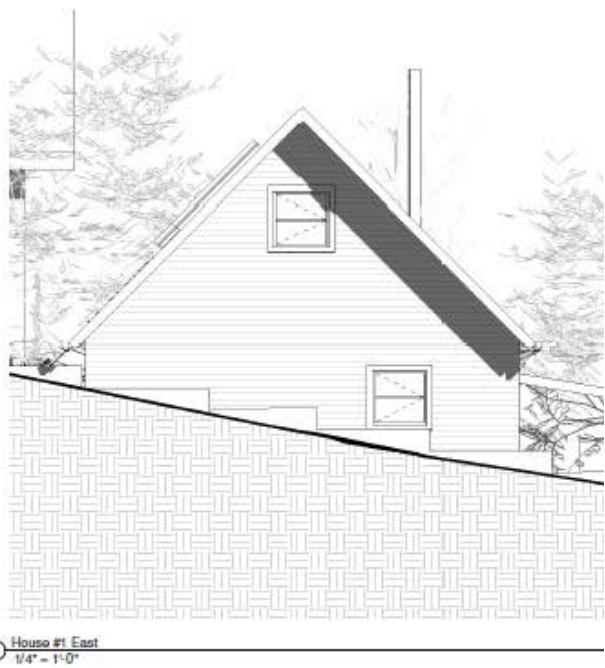


Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Materials to match what was proposed:
 - Wood shiplap siding
 - Wood decking
 - Wood porch rail and balusters
9. The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.
10. Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
14. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
15. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB Approval	Compatibility Proposed Mitigation
Window shape and placement	Windows grouped in 2x; same number of windows as application; compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window design	1:1 Divided Lights; compatible w/ historic guidelines

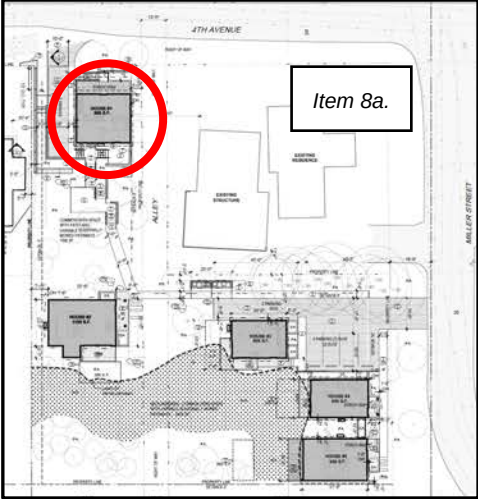
House #1
East (side) elevation



MD-17-01 Reviewed by HRB Aug 2017



Permitted / As Built

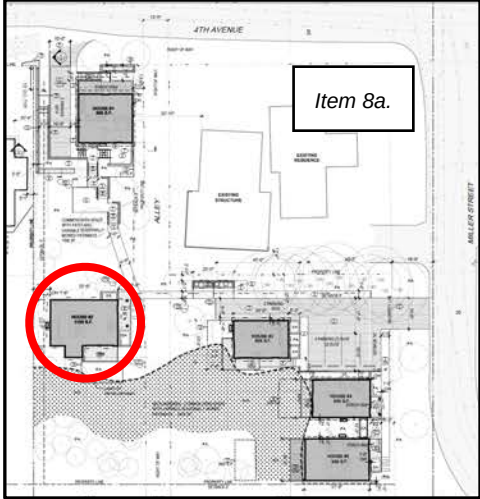


Conditions of Approval

- 1. All windows and doors shall be made of wood.
- 2. All double doors shall be French style doors.
- 3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- 4. No roof cutouts shall be permitted on any of the proposed cottages.
- 5. No retaining walls shall exceed 3 ½ feet within the front of any home.
- 6. All tiered retaining walls shall have a spacing of two feet between tiers.
- 7. No vertical siding shall face the public streets. (P)
- 8. Materials to match what was proposed:
 - Wood shiplap siding
 - Wood decking
 - Wood porch rail and balusters
- 9. The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.
- 10.Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
- 11.Concrete foundations shall have a natural, parged or painted finish.
- 12.Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- 13.A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
- 14.Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- 15.Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB Approval	Compatibility Proposed Mitigation
Addition of windows on upper right and lower left	Added window for bathroom and back porch; Compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Texture not visible from ROW
Window design	1:1 or 1:2 , Divided Lights on 1:2; compatible w/historic guidelines

House #2
East (front) elevation



MD-17-03 Reviewed by HRB Aug 2017

Permitted / As Built

Window Detail

Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
9. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
10. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
11. Concrete foundations shall have a natural, parged or painted finish. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
12. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
13. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Front door and porch added	Moved from south side for site access/function; Compatible w/ Historic Guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Removal of side porch roof and stair to minimize wetland disturbance	
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW

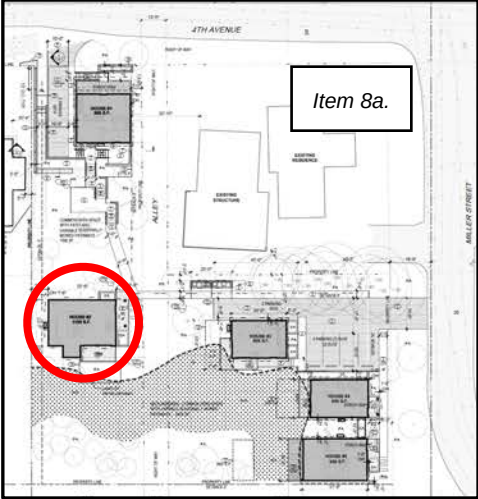
House #2 (formerly house #3)
North (side) elevation



MD-17-03 Reviewed by HRB Aug 2017



Permitted / As Built

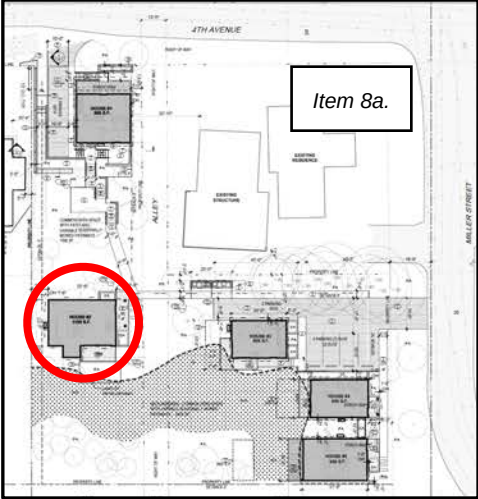


Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
9. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
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11. Concrete foundations shall have a natural, parged or painted finish. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
12. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
13. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Window placement/spacing	Windows grouped similarly to application; Compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Texture not visible from ROW.
Skylight may be visible from ROW. Need to see it with landscaping installed.	Skylight will be obscured by tree in landscape area and is low profile/ inconspicuous
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW

House #2 (formerly house #3)
 South (side) elevation



MD-17-03 Reviewed by HRB Aug 2017

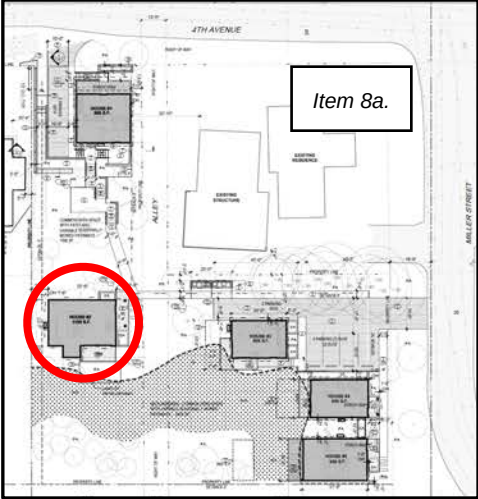
Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
9. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
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11. Concrete foundations shall have a natural, parged or painted finish. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
12. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
13. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Permitted / As Built

Changes from HRB approval	Compatibility Proposed Mitigation
Window on left side missing	compatible w/historic guidelines; not visible from ROW
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW
Removal of side porch roof and stair	Entry Moved to east elevation; Compatible w/historic guidelines

House #2 (formerly house #3)
West (rear) elevation



MD-17-03 Reviewed by HRB Aug 2017

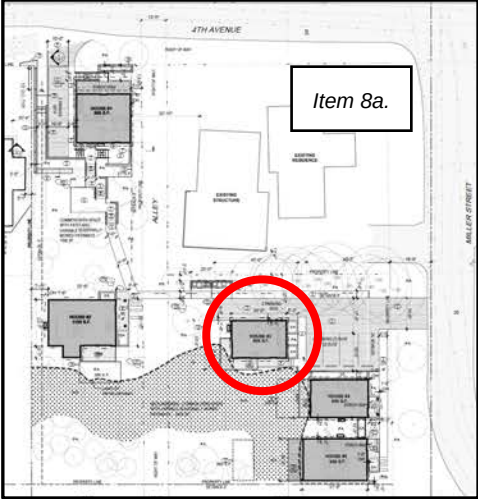
Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
9. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
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11. Concrete foundations shall have a natural, parged or painted finish. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
12. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
13. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Permitted / As Built

Changes from HRB approval	Compatibility Proposed Mitigation
Window locations changed	More efficient use of windows Compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW

House #3
West (rear) elevation



Permitted / As Built

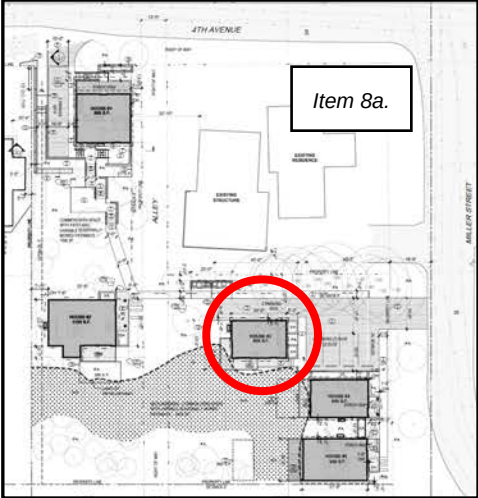
MD-17-04 Reviewed by HRB Aug 2017

Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
10. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Window added on bottom left	Added for light in kitchen; Compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW
Vertical siding changed to horizontal (COA was to not face public streets)	Changed to be consistent with all homes/all elevations. Compatible w/ historic guidelines

House #3
North (side) elevation



MD-17-04 Reviewed by HRB Aug 2017

Permitted / As Built

Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
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11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW

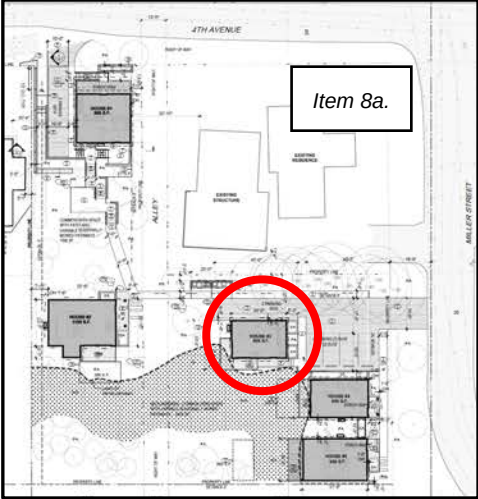
House #3
South (side) elevation - facing wetland



MD-17-04 Reviewed by HRB Aug 2017



Permitted / As Built



Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
10. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1" to Window Trim - only on elevations directly adjacent to ROW
Vertical siding changed to horizontal (COA was to not face public streets)	Changed to be consistent with all homes/all elevations. Compatible w/historic guidelines

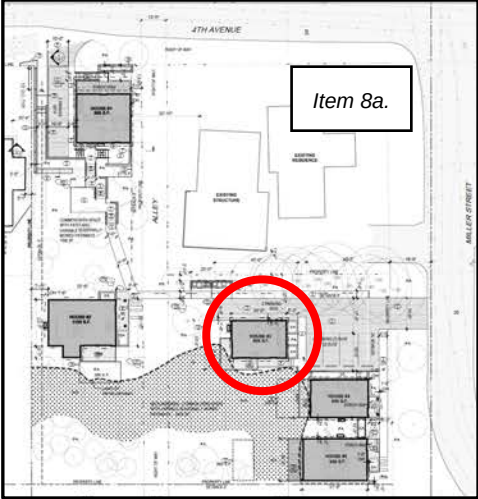
House #3
East (front) elevation



MD-17-04 reviewed by HRB Aug 2017



Permitted / As Built



Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
10. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Entry moved to south elevation	to accommodate parking and storm planters; Compatible w/ historic guidelines; lower facade will have landscape cover to break up facade
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Vertical siding changed to horizontal (COA was to not face public streets)	Changed to be consistent with all homes/all elevations. Compatible w/historic guidelines

House #4

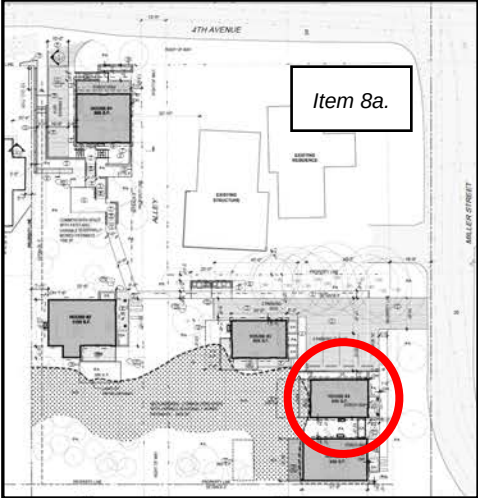
West (rear) elevation



MD-17-05 Reviewed by HRB Aug 2017



Permitted / As Built

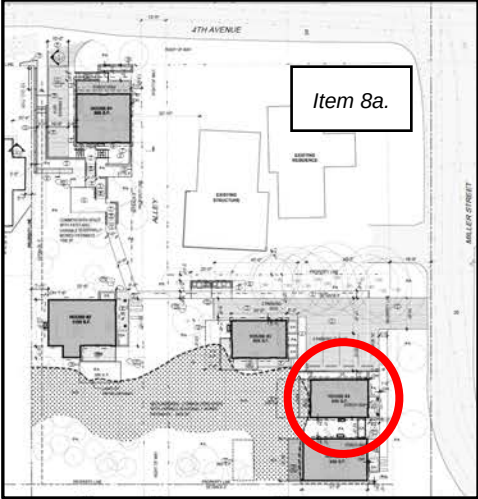


Conditions of approval

- All windows and doors shall be made of wood.
- All double doors shall be French style doors.
- Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- No roof cutouts shall be permitted on any of the proposed cottages.
- No retaining walls shall exceed 3 ½ feet within the front of any home.
- All tiered retaining walls shall have a spacing of two feet between tiers.
- No vertical siding shall face the public streets. (P)
- The main entrance of the house shall not be oriented towards the adjacent parking lot.
- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- The applicant shall revise the home with a porch railing on the second story of the home.
- The porch shall consist of simple trim at base and top, consistent with architectural style.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Vertical siding changed to horizontal (COA was to not face public streets)	Changed to be consistent with all homes/all elevations. Compatible w/ historic guidelines

House #4
North (side) elevation



MD-17-05 Reviewed by HRB Aug 2017

Permitted / As Built

Conditions of approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
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12. Concrete foundations shall have a natural, parged or painted finish.
13. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
14. The applicant shall revise the home with a porch railing on the second story of the home.
15. The porch shall consist of simple trim at base and top, consistent with architectural style.
16. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
17. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Window size and placement	same # of windows; smaller; Compatible w/historic guidelines
Skylights are visible from ROW	Skylights are compatible w/historic guidelines, “Skylights shall not face ROW”
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Front and rear eave overhang length has been reduced; typical all houses	Compatible w/historic guidelines

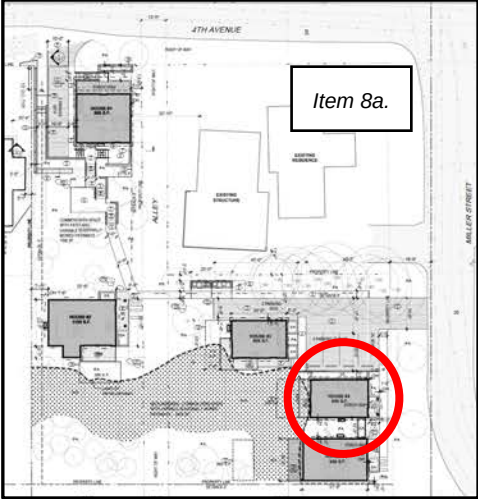
House #4
 South (side) elevation



MD-17-05 Reviewed by HRB Aug 2017



Permitted / As Built

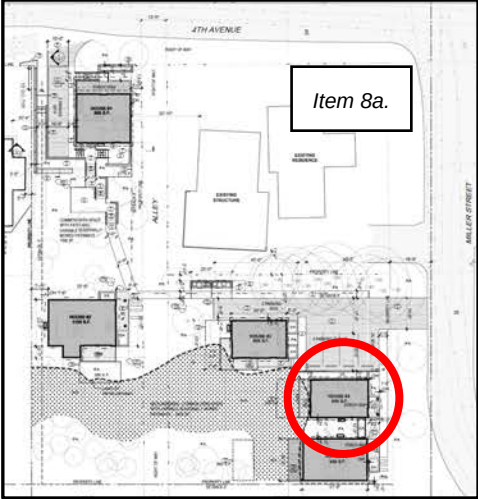


Conditions of approval

- All windows and doors shall be made of wood.
- All double doors shall be French style doors.
- Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- No roof cutouts shall be permitted on any of the proposed cottages.
- No retaining walls shall exceed 3 ½ feet within the front of any home.
- All tiered retaining walls shall have a spacing of two feet between tiers.
- No vertical siding shall face the public streets. (P)
- The main entrance of the house shall not be oriented towards the adjacent parking lot.
- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- The applicant shall revise the home with a porch railing on the second story of the home.
- The porch shall consist of simple trim at base and top, consistent with architectural style.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Larger/paired windows	More windows added for natural light; Compatible w/historic guidelines
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Skylights are visible from ROW	Skylights are compatible w/historic guidelines, “Skylights shall not face ROW”

House #4
East (front) elevation



MD-17-05 Reviewed by HRB Aug 2017

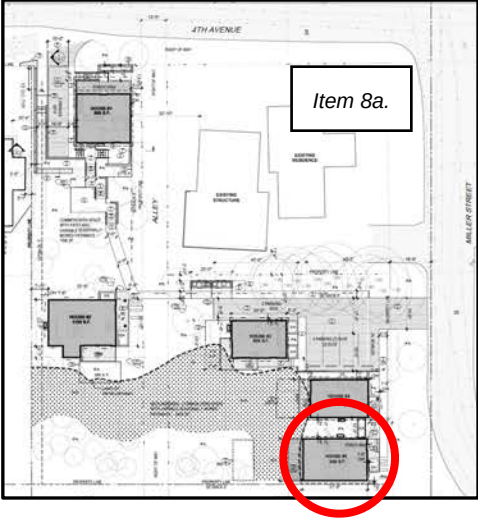
Permitted / As Built

Conditions of approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. The main entrance of the house shall not be oriented towards the adjacent parking lot.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
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12. Concrete foundations shall have a natural, parged or painted finish.
13. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
14. The applicant shall revise the home with a porch railing on the second story of the home.
15. The porch shall consist of simple trim at base and top, consistent with architectural style.
16. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
17. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Skylights are visible from ROW	Skylights are compatible w/historic guidelines, “Skylights shall not face ROW”

House #5
East (front) elevation



MD-17-07 Reviewed by HRB Aug 2017

Permitted / As Built

Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
9. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
10. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
11. Concrete foundations shall have a natural, parged or painted finish.
12. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Window placement	Compatible w/Historic materials Guidelines.
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Porch add on rather than cut out	changed to make homes consistent; Compatible w/Historic Guidelines.

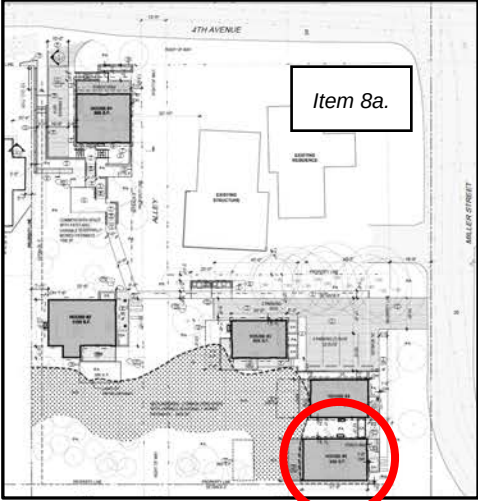
House #5
 West (rear) elevation



MD-17-07 Reviewed by HRB Aug 2017



Permitted / As Built



Conditions of Approval

- All windows and doors shall be made of wood.
- All double doors shall be French style doors.
- Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- No roof cutouts shall be permitted on any of the proposed cottages.
- No retaining walls shall exceed 3 ½ feet within the front of any home.
- All tiered retaining walls shall have a spacing of two feet between tiers.
- No vertical siding shall face the public streets. (P)
- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
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- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Square windows on upper floor	More compatible w/historic district than original application
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Vertical siding changed to horizontal (Condition was no vertical siding facing public streets)	Changed to be consistent with all homes/all elevations. Compatible w/ historic guidelines

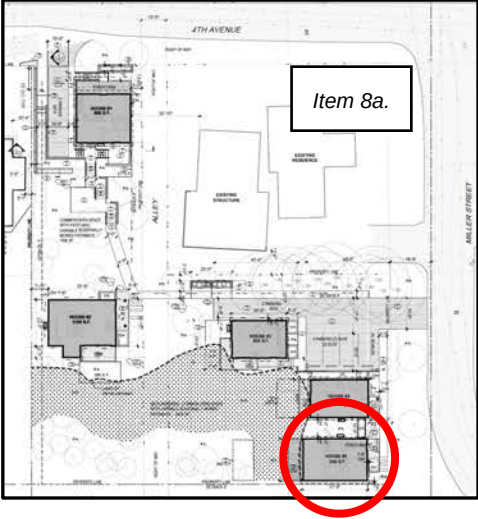
House #5
South (side) elevation



MD-17-07 Reviewed by HRB Aug 2017



Permitted / As Built

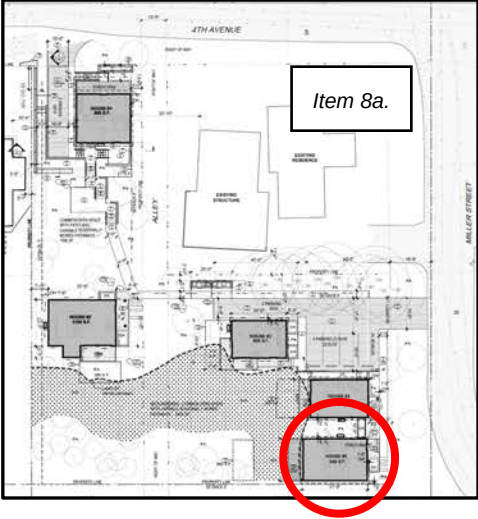


Conditions of Approval

1. All windows and doors shall be made of wood.
2. All double doors shall be French style doors.
3. Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
4. No roof cutouts shall be permitted on any of the proposed cottages.
5. No retaining walls shall exceed 3 ½ feet within the front of any home.
6. All tiered retaining walls shall have a spacing of two feet between tiers.
7. No vertical siding shall face the public streets. (P)
8. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
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13. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
14. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
Window placement	Kitchen window changed to smaller window; Compatible w/historic guidelines; not facing ROW
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW
Window member sizing, thickness, and shadowline does not match painted wood windows	Add 1” to Window Trim - only on elevations directly adjacent to ROW

House #5
North (side) elevation



MD-17-07 Reviewed by HRB Aug 2017

Permitted / As Built

Conditions of Approval

- All windows and doors shall be made of wood.
- All double doors shall be French style doors.
- Second story windows shall be rectangular in shape and not exceed the door height plus a one foot transom.
- No roof cutouts shall be permitted on any of the proposed cottages.
- No retaining walls shall exceed 3 ½ feet within the front of any home.
- All tiered retaining walls shall have a spacing of two feet between tiers.
- No vertical siding shall face the public streets. (P)
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- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

Changes from HRB approval	Compatibility Proposed Mitigation
No windows on this facade	Add 36” Square Window
Window Shadowline	Add 1” to Window Trim - only on elevations directly adjacent to ROW
Siding is textured hardie plank, not wood	Actual wood cost prohibitive; Compatible w/Historic Guidelines. Not visible from ROW

Clad Urban Casement

Known for its industrial modern aesthetics thanks to exposed locking hardware and the narrowest of sightlines, the Clad Urban Casement can be used alone or in combination with other windows types and shapes.

Standard Construction:

- 0.062" thick extruded aluminum exterior, with extruded with integral nail fin and corners sealed with silicone, corner pads and mechanically fastened.
- 5-11/16" overall frame depth with standard 4-9/16" jamb depth.
- Full 1-3/4" sash thickness. Sash available in narrow (1-7/16") or wide (2-3/16") face width.
- Seamless, compression-style frame weatherstrip. Leaf sash weatherstrip.
- Truth Encore operator and standard contemporary folding handle/cover. Optional traditional folding handle/cover.
- Independent high pressure, die-cast zinc sash locks (heights ≥40" have two sash locks). Optional tandem tie bar sash lock operation available.
- Sash opens 90 degrees for easy cleaning and removal from the inside.
- Standard aluminum screen frame. Optional Flexscreen.



MINIMUM / MAXIMUM FRAME SIZES

Additional sizes may be available upon approval.

URBAN CASEMENT – OPERATING (25 SQ/FT MAXIMUM)		URBAN CASEMENT – STATIONARY/PICTURE	
Minimum Frame Width	14.5"	Minimum Frame Width	12"
Minimum Frame Height	14.5"	Minimum Frame Height	12"
Maximum Frame Width	36"	Maximum Frame Width	120"
Maximum Frame Height	84"	Maximum Frame Height	120"
		Maximum Square Feet	42

Performance Data:



Operating Casement: 36" x 72"

AIR INFILTRATION.....0.01/0.01/A3
 WATER.....NO LEAKAGE @ 6.06 PSF
 STRUCTURAL.....CW-PG40 (+40/-40)



Operating Casement: 36" x 84"

AIR INFILTRATION.....0.01/0.01/A3
 WATER.....NO LEAKAGE @ 4.59 PSF
 STRUCTURAL.....CW-PG30 (+30/-30)



Operating Casement: 32" x 72"

AIR INFILTRATION.....0.01/0.01/A3
 WATER.....NO LEAKAGE @ 6.89 PSF
 STRUCTURAL.....CW-PG45 (+45/-45)*



Casement Picture: 72" x 60"

AIR INFILTRATION...0.01/0.01/FIXED
 WATER.....NO LEAKAGE @ 7.52PSF
 STRUCTURAL.....CW-PG50 (+50/-50)

*Single arm operator w/piano hinge.

For a comprehensive list of tested and rated sizes and configurations, please refer to the Clad Urban Casement Product Performance Guide (Structural) located in the Technical Resources Library on our website.

Thermal Performance (NFRC):

Air Filled			Argon Filled		
Low-E 272 Clear	Low-E 366	Triple IG (LE272/LE180/LEi89)*	Low-E 272 Clear	Low-E 366	Triple IG (LE272/LE180/LEi89)*
U-FACTOR.....0.33	U-FACTOR.....0.33	U-FACTOR.....0.21	U-FACTOR.....0.30	U-FACTOR.....0.29	U-FACTOR.....0.19
SHGC.....0.31	SHGC.....0.21	SHGC.....0.36	SHGC.....0.31	SHGC.....0.21	SHGC.....0.25
VT.....0.53	VT.....0.48	VT.....0.46	VT.....0.53	VT.....0.48	VT.....0.41
CR......55	CR......56	CR......55	CR......58	CR......59	CR......61

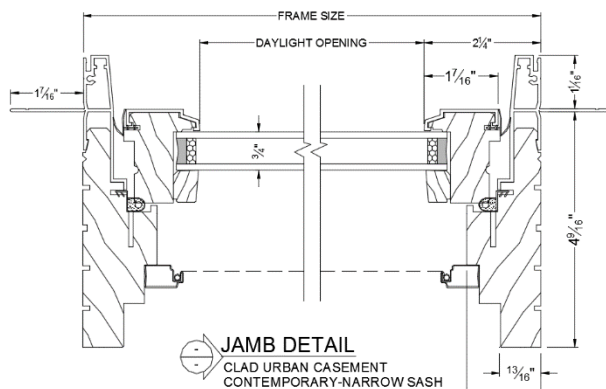
Values represent Clad Urban Casements with narrow sash. Insulated glass units using standard black warm edge spacer. Additional glazing options available.

*Triple IG glass only available with the wide sash option.

For a comprehensive list of glazing configurations, please refer to the Clad Urban Casement Product Performance Guide (NFRC) located in the Technical Resources Library on our website.

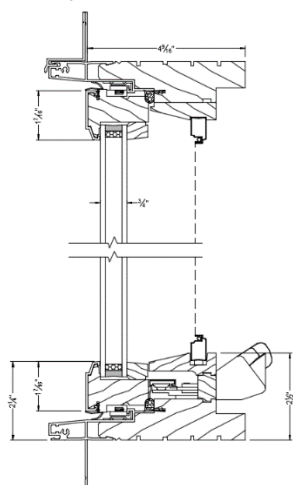
Contemporary 4 9/16" Jamb

Horizontal/Operable Section - Narrow Sash



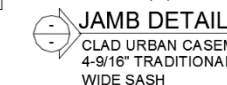
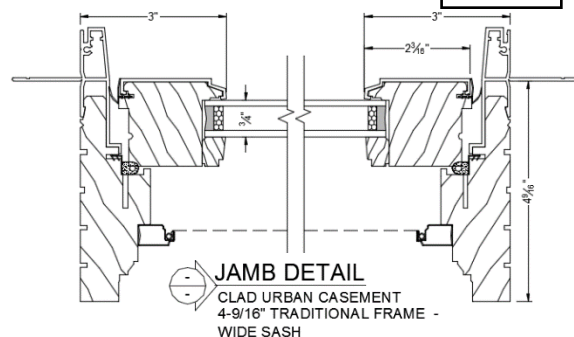
Contemporary 4 9/16" Jamb

Vertical/Operable Section - Narrow Sash



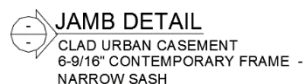
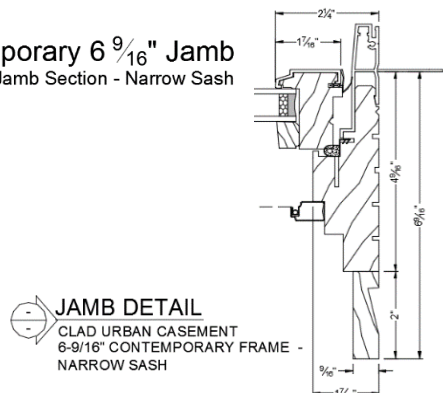
Traditional 4 9/16" Jamb

Horizontal/Operable Section - Wide Sash



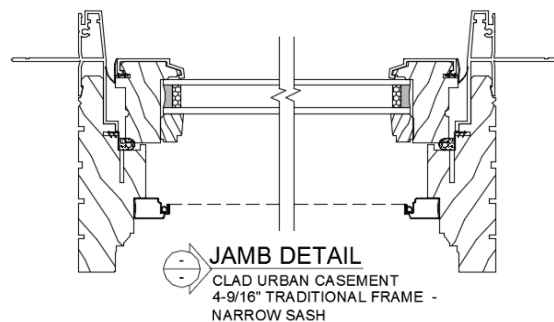
Contemporary 6 9/16" Jamb

Horizontal Jamb Section - Narrow Sash

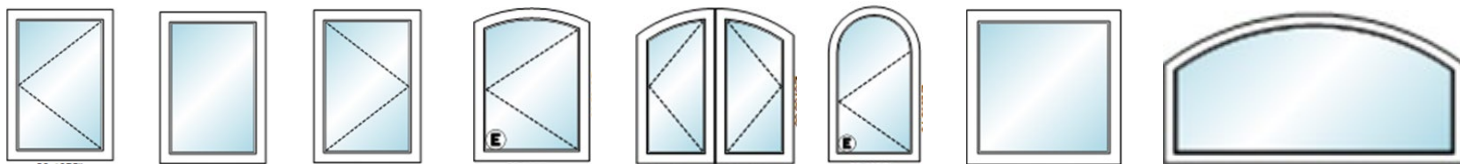


Traditional 4 9/16" Jamb

Horizontal/Operable Section - Narrow Sash



Additional product details may be found on our website www.sierrapacificwindows.com/ProfessionalResources/TechnicalLibrary



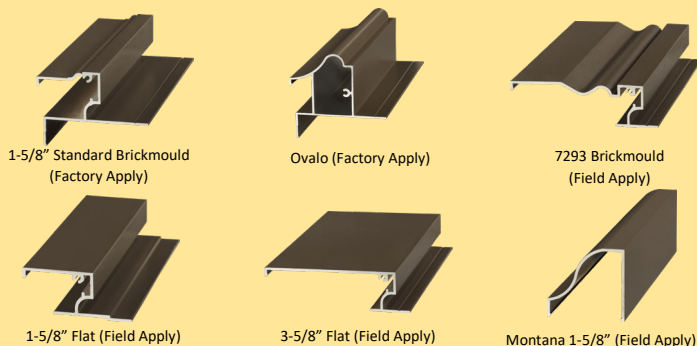
Typical configurations shown. Handing as viewed from the exterior. Contact us for additional options.

Clad Urban Casement Additional Features

- Color Palette of 75 colors in powder coated AAMA 2605. Some design collections only available in AAMA 2604.
- Extensive offering of performance glass available using black warm edge or Cardinal spacer for optimum efficiency.
- Simulated Divided Lites available in 5/8", 7/8" and 1" Putty; 5/8", 7/8", 1", 1-1/4" and 2" Traditional and Contemporary.
- Grilles-Between-The-Glass available in 5/8" and 1" flat.
- Optional veneer wrapped or Genius retractable screen.
- Factory mulling up to 5-wide. Factory stacking and structural supports available.

Please visit our website www.sierrapacificwindows.com for additional details or to contact your nearest Sierra Pacific Branch or Dealer location.

EXTERIOR TRIM OPTIONS



CONTEMPORARY FOLDING HANDLE AND COVER



Available in: Matte Black, White, and Satin Nickel finishes.

Place Business Card or Company Information Here



HOUSE #1



HOUSE #1



HOUSE #1



HOUSE #1



HOUSE #1



HOUSE #1



HOUSE #1



HOUSE #2



HOUSE #2



HOUSE #2



HOUSE #2



HOUSE #4 and 5



HOUSE #3 and 4



HOUSE #3



HOUSE #3



HOUSE #3



HOUSE #5

HOUSE #4

HOUSE #4



HOUSE #5



SIERRA
PACIFIC

HOUSE #5



HOUSE #4



HOUSE #5



HOUSE #3, 4 and 5



HOUSE #3, 4 and 5



HOUSE #4 and 5

DATE: February 12, 2021

TO: Historic Review Board

FROM: Karen Lytle Blaha
514 4th Avenue, Oregon City OR 97045
Cell Phone: 503-989-8905 Email: blahak@comcast.net

SUBJECT: Canemah Cottages Development
File #GLUA-21-0000 and HR-21-00001 through 21-0005

I am the owner of the home westerly contiguous to the Canemah Cottages. I am pleading with this board, comprised primarily of new members, to hear my plea and end this multi-year nightmare in which the City has been intimately complicit, if not fully responsible, in creating.

It is my understanding that it was City planning staff who pointed the Canemah Cottages developer to an untried City code allowing this type of development to be built on small lots in a sensitive area. It is as if the developer was ensnared into a dicey situation that was likely favored because it was a solution to the State of Oregon's push for density and infill.

If the City had objections to elements of this ongoing and years-long construction, could staff not have been more timely in pointing out elements while underway? Meanwhile my house badly suffers from soil erosion because of the project's digging into my embankment. Until the City's most recent Stop order the developer was implementing the rock wall remedy. If the developer abandons the project, who is responsible for fixing this?

Truly, most of Canemah residents want to do what is right and good to protect and enhance our widely diverse neighborhood. Accommodating the Canemah Cottages to enable completion will help, and when landscaping is allowed to mature, the City's current unbelievable fuss will likely become moot.

It is excruciatingly painful that I must again and again prepare testimony on this matter. Please help.

Sincerely,
Karen Blaha

Date: February 12, 2021

To: Chair, Historic Review Board

From: Karen Lytle Blaha, 514 4th Avenue, Oregon City

Subject: HRB Member Recusal

I respectfully request the recusal of Historic Review Board member Paul Edgar regarding any participation and/or discussion concerning the Canemah Cottages development. Mr. Edgar has been an active opponent of the Canemah Cottages and was a lawsuit litigant to halt its development. There is no possibility that Mr. Edgar can participate impartially in either discussions or decisions on the cottages.

In fact, it is shocking that Mr. Edgar has been appointed to this board in light of his track record and specious regard among so many of the Canemah residents, including his failed attempt to jettison the duly authorized Canemah Neighborhood Association and replace it with a small organization that he founded.

DATE: March 1, 2021

TO: Historic Review Board

FROM: Ken Baysinger

516 1st Avenue, Oregon City OR 97045

k.baysinger@comcast.net 503.502.5557

SUBJECT: Canemah Cottages Development

File #GLUA-21-0000 and HR-21-00001 through 21-0005

About fifteen years ago, with buildable land inside the Urban Growth Boundary becoming increasingly expensive and difficult to find, planners in Oregon City were looking for new options to increase housing density. The Cottage Development concept was one way the city addressed that need, by allowing multiple single-family housing units to occupy lots that previously could accommodate only one unit.

It took over a decade before a builder came along to share that vision and turn the cottage concept into reality. That builder was Chris Staggs, and the location for his proposed cottage development was Canemah, despite all of the challenges associated with building in the National Register Historic District, on top of multiple site issues involving wetlands, geology and topography. Mr. Staggs took the challenge and undertook the project.

In some respects, Canemah seems an ideal place to test the cottage concept: Small homes, minimal setbacks, and irregular lots have been the norm in Canemah throughout its history, though navigating the multiple layers of rules and restrictions has proven to be a much bigger task than anticipated.

I was a member of the Historic Review Board when this development was approved, following multiple public hearings and many hours of testimony and debate. Approval came with a long list of conditions that went into great detail about design and placement of the individual cottages on the building site.

At the time we made that approval, the board was faced with a dilemma. The conditions of approval that we agreed upon were different in major ways (including the complete elimination of two of the seven units shown on the drawings) from the plans submitted to us. But none of us at the time wanted to demand new drawings and force another public hearing, so we attempted to resolve all of the issues verbally.

While I believe that that was the right decision at the time, it appears to have set the stage for the issues now on the table. I think Mr. Staggs is correct when he states (on page 149 of the staff report) that there is confusion between the drawings that were approved by the HRB with conditions, and the subsequent drawings that were submitted to comply with the conditions.

Construction is now stopped, awaiting the resolution of the apparent deviations from some of the conditions of approval, as a result of what I believe was a breakdown in communication between the Planning Department and the builder as to exactly what the board approved.

As a member of the board that set the stage for that breakdown, I accept a share of the blame for the consequences. As convoluted as our conditions of approval wound up being, we probably should have insisted on seeing new plans. But what's done is done.

The design issues in question, while having only minor impact on the finished appearance of the structures, may be very costly to change, to the point of threatening the economic viability of completing the entire project. It does not serve the best interests of the neighborhood or the community to penalize the builder and risk leaving the development unfinished for an indeterminate period of time. Nor do these deviations detract from the character or integrity of the historic district.

For these reasons, I urge the board to approve the design of the structures as built and allow the completion of the project, which will be a credit to the neighborhood and the city as a model for future Cottage Developments.

Respectfully,

Ken Baysinger

From: [Paul Edgar](#)
To: [Kelly Reid](#)
Cc: [Laura Terway](#); [Paul Edgar](#)
Subject: Cottage Home Development Hearing, sharing subjective decision making criteria and what is needed to enable good decision making
Date: Monday, February 22, 2021 10:50:43 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.

Kelly, I am having problems with getting my Thunderbird Email Browser setup with pedgar@orcity.org. With the power out and now back on I am going to try to now get started with the process of getting through 9 days of unread and/or acted upon email traffic, with 700 plus emails in my inbox. I started to think about it and work-up to early and could not go back to sleep. So here I am. I tried to create this email from within Thunderbird and use pedgar@orcity.org and could not make that happen, as yet.

In reference to the HRB hearing and review of the Cottage Homes, I would like for you to send out this document initially prepared by the Historic Preservation League of Oregon and now labeled "Restore Oregon" on Compatible Infill Design Principles for New Construction in Oregon's Historic Districts. [UPDATED-RO-Special-Report-Compatible-Infill-Devel-Final_web.pdf \(historicpreservationleague.com\)](#)

The Table of Contents: 1. Purpose, 2. Why Good Infill Matters, 3. The Value of Oregon's Historic Districts, 4. Advising, Encouraging, and Regulating, 5. What Makes a Good Guideline?, 7. Principles for Infill Construction, 8. Strategies for Implementation.

There is significant importance within writing referencing National Register Historic Districts found within this document: **"The Preservation Roundtable was organized by Restore Oregon, formerly the Historic Preservation League of Oregon, to bring together diverse stakeholders to analyze and develop solutions to the underlying issues that stymie preservation efforts. The inaugural topic in 2010 was "Healthy Historic Districts in a Changing World—Compatibility and Viability." Nearly one hundred people participated, arriving at nine recommendations published in a report titled Healthy Historic Districts – Solutions to Preserve and Revitalize Oregon's Historic Downtowns. An electronic copy is available on Restore Oregon's website."**

"The 2011 Preservation Roundtable focused in on "Design Standards for Compatible Infill," one of the recommendations from the 2010 report, to provide clarity and consistency for review of new construction projects in historic districts. The principles and approaches to implementation that follow come from the best source: the people that live, work, own property, govern, and build within the state's 123 National Register historic districts."

Please Note, that these "Standards, Principles and Guidance" are coming collectively from 100 highly knowledgeable and valued sources, from within Restore Oregon to help us better understand their definition of "Compatible Infill" for the State of Oregon with New Infill building within the state's 123 National Register Historic Districts".

"The Secretary of the Interior's Standards for the Treatment of Historic Properties

mandates that additions to historic buildings must differentiate new from old. Furthermore, the Standards imply that a Modern or Postmodern approach is best for additions on historic structures (an interpretation with which Restore Oregon does not agree). Though there is no Secretary of Interior "Standard for Compatible Infill," it has often been assumed that new construction in Oregon's historic districts must also be differentiated – with widely differing ideas of what "differentiated" means.¹

"Today, planners and politicians across the state are working to limit sprawl by diversifying and densifying existing urban areas to create walkable 20-minute neighborhoods. Although many still think there's a conflict between preserving historic places and boosting density, increasing the square footage in Oregon's historic districts represents an economic, social, and environmental opportunity."

"This report outlines seven baseline Principles for New Construction intended to promote responsible infill within Oregon's historic districts. In practice, they would function as a Secretary of the Interior's Standard for Compatible Infill. While many of our recommended principles differ from the current Secretary's Standards and some preservation theories, they are intended to chart a course for Oregon predicated on the belief that historic districts are significant resources far greater than the sum of their component properties."

"Standards: Prescriptive standards are an effective means to address elements such as height, massing, and setbacks from property lines in order to ensure new construction shares attributes typical to a particular area. Standards are generally black and white, providing a measurable box in which new construction can take shape. Standards that provide across-the-board clarity for what can and cannot be built in a historic district are objective and highly effective. However, it is difficult for standards to guide the textural compatibility needed for new construction to fit comfortably and appropriately in a historic district. Design guidelines, discussed in the next section, better address the more subjective compatibility that cannot be expressed in standards. The advantage of standards is that they are clear and objective in nature, easily applied across the board with a minimum amount of discretion and training."

"Design guidelines: The application of design guidelines blends guidance and rules. Guidelines are aspirational and descriptive; standards are prescriptive. Guidelines are discretionary in nature since judgment is required to determine whether aspects of a project are consistent with their intent. Guidelines can be advisory or serve as approval criteria applicants must meet. Design guidelines therefore require more expertise to apply on the part of city staff, project designers, and other regulatory decision makers. However, it is this expertise and judgment that is their strength. Guidelines demand more of projects, but provide for flexibility in their interpretation. In order to balance this flexibility while providing projects certainty and predictability, guidelines must be well crafted."

It again, must be noted and the HRB members should be informed that the LCDC ruled in the case of the Cottage Home Development that Oregon City's Historic District "Design Guidelines must be complied with and are equal with OCMC 17.40 Codes "Standards".

"Each principle consists of a title, statement of intent, and bulleted considerations about how each might be implemented. The principles are intended to be similar in character

to the Secretary of Interior's Standards, however, they are specific to new construction and unique in content. Since the term "standards" in Oregon typically refers to specific measurable characteristics (see page 6), this report has chosen to use the word "principles" to describe these foundational tenets."

These Seven (7) Principles, provide "Critical Thinking Criteria and Value Determination" which can be used as an aid in guidance in how we can apply subjectivity to criteria subject to OCMC 17.40 Codes within HRB Decision Making, in National Register Historic Districts like what we have with Canemah.

1. The District is the Resource, Not its Individual Parts

Designated historic districts are significant as a collective whole and must be considered as such, and protected in their entirety. This is the primary, overarching principle. New construction must respond to and protect the integrity of the overall historic district in much the same way as an addition does to a historic building. The National Register nomination is the primary source for district significance and defining characteristics, and should inform the design of new construction.

2. New Construction Will Reinforce the Historic Significance of the District

Infill buildings should relate to and strengthen the core characteristics of the district, as identified in the National Register nomination Statement of Significance. New construction should build upon the story of the district through its design, landscape, use, cultural expression, and associated interpretive displays. An understanding of the character and significance of the district should predicate any design or development activities. If applicable, cultural expressions and/or historic uses within the district should be considered in design or development activities.

3. New Construction Will Complement and Support the District

Most historic districts have a discernable aesthetic rhythm of massing, scale, and siting. Infill buildings should not deviate in a detracting manner from these elements, but appear as complementary members of the district. Lot size, massing, siting, floor area ratio, and height must correspond to the contributing buildings within the district. Whenever possible, new construction should support the viability of adjacent historic buildings through shared ADA and upper story access, structural stability, and mechanical and environmental systems. New buildings may provide uses not found within the district if such uses are in demand and if adapting historic buildings for such uses would be detrimental to the historic fabric.

4. Infill Will Be Compatible Yet Distinct

New buildings should be identifiable as being of their period of construction; however, they should not be so differentiated that they detract from – or visually compete with – their historic neighbors. Within historic districts, compatibility is more important than

differentiation. Because the district is the resource, the reconstruction of buildings that existed within the district during the period of significance is allowed. Reconstructions should be done in accordance with the Secretary of the Interior Standards for Reconstruction. New buildings should be identified through signage or other interpretative means to relate them to the context of the district's historic significance. Style is discouraged from being the primary indicator of differentiation. Means of differentiation may include materials, mechanical systems, construction methods, and signage.

5. The Exterior Envelope and Patterning of New Buildings Will Reflect District Characteristics

Infill design elements, patterning, texture, and materials should reflect the aesthetic and historic themes of the district. Patterns of fenestration, building divisions, setbacks, and landscapes that are characteristic of the district should inform the design of new buildings. Mechanical and automobile infrastructure should be appropriately concealed when not consistent with the district's character.

6. Contributing Buildings Will Not Be Demolished to Create Infill Opportunities

Properties deemed "contributing" in the National Register nomination or through subsequent research or rehabilitation must not be removed or rendered non-contributing to make way for new construction. Consideration should be given to the demolition of non-contributing buildings 50 years of age or older on a case-by-case basis, dependent on the character of the district. Buildings deteriorated beyond repair may be demolished if so determined by the State Historic Preservation Office and local preservation staff/commission. Properties deemed non-contributing to the district should be retained and/or documented if they have achieved historic significance over time.

7. Archeological Resources Will Be Preserved in Place or Mitigated

When new construction must disturb archaeological resources, mitigation measures should contribute to the story of the district. Archaeological mitigation must conform to local, state, and federal laws and accepted professional standards. When appropriate, archaeological mitigation should be accessible to the general public in an educational capacity. Information yielded from archaeological mitigation should be interpreted in the new building and throughout the district.

It will be my intent to reference this document and what is suggested as "Compatible Infill Design Principles" as subjective guidance when we are asked to make determinations with what to do within the review of OCMC 17.40 Codes, Oregon City Historic District Building Guidelines, and Conditions of Approval that were granted by previous HRB actions to the Cottage Home Development.

I also would like for you to send out to the others a pdf copy of a document I prepared some

years ago that was derived from this Restore Oregon Special Report. I will take the document over to City Hall or to the Planning Office, your choice to also be sent out to my fellow HRB members as a reference document on guidance within "Subjective Process and Thinking" when being asked to determine the extent of what to do and to what extent the builder-contractor must comply with "OCMC 17.40 Codes, Oregon City Historic District Building Guidelines, and Conditions of Approval that were granted by previous HRB actions".

This Second Document's reads on it's first line: "What, Why and How of Stewardship". Next is the heading: "The Canemah National Register Historic District, with Federal Recognition of Historic Places Status". It also includes the important "Statement of Significance in text and the "Setting" description from the National Nomination Document for Historic Places status of the Canemah National Register Historic District.

It will be my intent to inform all of the members of the Oregon City Historic Review Board and the applicant of these referenced documents and information included as guidance in our task of "Stewardship" within decision making. It appears most of what we will be asked to make decision on, will be on compliance and the extent of the need to be in compliance with the Codes, Building Guidelines and Conditions of Approval.

Can you get this out to everyone as this is important in providing greater insight and reference within creating a Value Structure within a Critical Thinking Process. When review all options with the upcoming hearing on the Cottage Home Development and what in the past has been allowed in and with developments in our Historic Districts to not comply with Codes and Standards of allowable siding with new infill, have we ever allowed all sides of new Infill Building from all aspects to **"Not to Comply with the final "Conditions of Approval"**. We see a reference with a the precedence set on a recent building on Center Street, where the decision was made that it must comply with "Conditions of Approval" and they did not just have to replace the siding material on the front side of that building, they were required to replace the siding on all sides to be in compliance with the "Conditions of Approval".

I would also like more reference of where decisions were made by the HRB to wave the total need for compliance of "Conditions of Approval" with identified violations of Windows with new Infill in all places where ever it exists. I am trying to dig deeper into the possible selective and subjective choices of where it can be shown that the HRBs in the past have allowed new infill construction to not be in total compliance with all codes and conditions associated with windows. This to me is part of "Stewardship and Precedence" of past and future and the importance of "The Eyes of Historic Building" and this is where we must compare these windows with other Contributing Historic Structures in the immediate area. We need to see with referenced pictures of what these Historic Windows had in defining features and than relate it to the codes. Without these pictures and cross reference to the codes we are in a very subjective place on what we may be asked to make determinations on.

On Cottage Home #1, we have six (6) windows across the front of this Cottage Home, which appears to not be compatible with any compatible contributing Historic Home in design, in Canemah? Is this OK, and was this approved within the "Conditions of Approval"? A picture of the six (6) windows and their design needs to be part of the decision making criteria for this hearing. Pictures of the Door Side Windows on Cottage Homes #4 and #5 need to be made available with the reasons why they are considered OK within the "Conditions of Approval.

The question of should Sky-Lights, on the roofs be visible from coming down 5th Avenue or going up Miller Street and can they be mitigated?? We need pictures of the Cottage Homes

building of the Sky-Lights that exists right on Cottage Homes #4 and #5 that face Miller Street and Cottage Home #3 from the property line on Miller Street with the house at 502 4th Avenue. With the potential that the string of evergreen trees will have to be taken out, because of how the roots were cut in construction and what mitigation of views change.

The walls constructed primarily around and associated with Cottage Home #1 and the material and height of these retaining walls needs far more information on how they violate "Conditions of Approval" and OCMC 17.40 Codes and Historic District Building Guidelines. What are all of detail of the specifics and we know everyone has to play by the same rules, so there are fears of setting a set of Precedents, with less than adequate mitigation.

In this "What, Why and How of Stewardship" document on page 4, "Stewardship - Advisory Approach" there is the wording, "While community sentiment can help inform and shape a project, there must be full and consistent advisory approach is only as strong as its weakest link. It is followed with the highlighted test:

"If the quality of the advice is not clear or, if there's and unwillingness to acknowledge advice, or if attitudes or commitments change over time, the approach can fail to protect the values of a National Register Historic District."

Everyone has to play by the same rules and in Principle #1, there is this question, of compliance as a primary, overarching principle. "New construction must respond to and protect the integrity of the overall Historic District in much the same way as an addition does to a historic building."

Paul O. Edgar, Oregon City Historic Review Board Member

PS: Is there going to be any discussion on the significant amount of fill in the Designated Wetland. In reviewing the Contour lines in relationship to the neighboring property it appears that there could be greater than 100 yards fill, behind Cottage Homes #2, #3, #4 and #5 in the boundary of this Wetland. What is spelled out in the "Conditions of Approval" for relocating fill dirt from other areas into this Wetland?

From: [Paul Edgar](#)
To: [Kelly Reid](#)
Cc: [Laura Terway](#)
Subject: Cottage Homes and Pictures of what is happening and what is allowed ?? Please include this as part of the record of GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District.
Date: Tuesday, February 23, 2021 6:26:55 PM
Attachments: [Attached Message Part](#)
[Attached Message Part](#)
[Attached Message Part](#)
[Attached Message Part](#)

Kelly, please include this email below sent with the attachment Photo's and make it part of the record for GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District, HRB Hearing 03/02/2021. I have decided that I should withdraw (recuse) myself from this agenda item.

I intend to testify at this hearing and I would like for you to send out the email to the fellow HRB members as additional statement that has come in on the above agenda item GLUA-21-00001/HR21-00001 through 21-00005. Please also include my email sent to you dated 02/22/2021 and include a copy of the Restore Oregon, Special Report on Compatible Infill Design, Principles for New Construction in Oregon's Historic Districts. (This references National Register Historic Districts with Historic Places Status, such as Canemah)

Thank you, Paul Edgar

Below sent 08/18/2020 to Nancy Bush and copying you and others

I, Paul Edgar, with this email, am filling a "Formal Code Enforcement Complaint", on the Cottage Home Development in that they are not complying with the Historic Review Board Conditions of Approval, Planning File MD 17-01-17-06.

To be prudent and respectful of adhering to the Conditions of Approval and what it would cost to change things after construction is at a high level of completion, it is the intent of this "Formal Code Enforcement Complaint, to validate if the conditions of approval are not being met at this time or not. It is less expensive and more timely (prudent) to correct errors now, better sooner than later.

1. Enclosed with this document are pictures that can be used to display that the windows on these Cottage Home Building do not comply with the conditions of approval.

"Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board."

2. The Sky Lights are not in-compliance, with the Conditions of Approval.

"Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, **and not visible from the right-of-way.**"

3. Door side windows are not approved.

"Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house."

4. Retaining Walls, with House Number 1, the wall to the right of the Cottage Home #1 appears to be collapsing, and appears to not be compliance with material and height requirements.

"Retaining and structural walls shall be minimized; to be faced or finished in, stone, mortared basalt, or concrete, and not exceed 3 2/2 feet, to complement the Canemah Neighborhood."

5. A complete review of all conditions of approval should be done in an assessment - review, to determine if additional errors/violations have taken place at this current level of completion.

Paul Edgar, Resident of Oregon City and The Canemah National Register Historic District

My previous writing (edited) and emailed to the City of Oregon City, Community Development Department

The Canemah National Register Historic District and the questions of what appears to be taking place with this Cottage Home Development, and does this represent the best example of development, or is this another example of a National Register Historic District, "**Dying the Death of a Thousand Cuts**" !!

I have tried to learn and understand our OCMC 17.40, 44, and 49 Codes and the Historic District Building Guides that are codified.

Please take a look at the pictures:

IMG_1263.JPG is of Cottage House #1 and three (3) wide, imitation double hung design, that in my opinion does not come close to our code and what was allowed and permitted, but you are the judge of that ??

IMG_1270.JPG is of Cottage House #4 and it has two sky-light of each side of the roof.

Our OCMC 17.40 and Building Guidelines and conditions of approval are to restrict these type of Sky-Lights that are visible and also look at all of these windows for their historic appearance, as to not detract from the Historic District as a whole.

IMG_1276.JPG is of Cottage House #5 and door side windows and the rest of the windows, don't even come close to having the style and image of reflecting the eyes of a Historic District Structure, my opinion ??

Come by, take a look and you don't have to even get out of your cars, these people, this developer does not care, does anyone care ??

Look at the wall of steel beams and concrete slabs and the six to seven foot high concrete wall

to the side of Cottage House #1 and the detracting density of the totality of this development and compliance to our codes.

Environmentally, the water continues to pour down from the Historic Canemah Waterworks on to this site and puddles-up and is in the ground and probably in and under the crawl spaces of the Cottage Houses #4 & 5.

Mother Nature creates the water that fills the Wetlands and everyone should examine the amount of water that comes out of the little pipe from wall of unimproved Apperson Street and 4th Avenue.

History has shown that this whole basin flooded in a extreme water event, and at that time it got so deep, because of the illegal fill that has been allowed in creating a Dam, where the water is forced to flowed over Miller Street, creating a Public Safety Hazard and problematic damage to neighbor structures and property.

All of this puts tears in my eyes, because I care, but if no-one at City Hall cares anymore, let put a end to the facade of acting like we all care and lets just eliminate this National Register Historic Places status of Canemah.

My wife and I have tried to do what is right with the environment and within re-building our Historic and Contributing House at 211 5th Avenue.

Example, just compare and look at our Replica Double Hung, Wood, Low E, 4 over 4 lite, windows in a double hung design and match/compare them to the windows of these Canemah Cottages Houses.

My wife and I took every step and invested dearly to make our remodel complimentary and to do everything possible so as to not detract from this National Register Historic District, and now I feel like we have been made a fool of !! There should not be a difference between a add-on to a Contributing Historic Structure in Canemah and what is required with new Infill in Canemah, as the District has National Register Historic Places Status over everything, in what is acceptable and where it does not detract from why Canemah is a National Register Historic District.

How can we ask anyone, who wants to improve their house in this National Register Historic District and ask them to be in compliance with our OCMC 17.40, 44, and 49 Codes, with all of this appearance of selective enforcement of our OCMC Codes and Building Guidelines ??

Paul

From: Paul Edgar
To: Kelly Reid; Laura Terway
Cc: Denyse McGriff; Rachel Lyles Smith; Rocky Smith, Jr.; Frank O'Donnell
Subject: This is an example of the problem and opportunity within attempting to protect the "Integrity of the Canemah National Register Historic District"
Date: Wednesday, February 24, 2021 10:45:43 AM

The letter below is an example of the problem and opportunity within attempting to protect the "Integrity of the Canemah National Register Historic District".

Dennis and his wife Susan, bought Howard Klemens's house, and they remodeled it and put on a Metal Roof. This was in violation of Oregon City's Historic District OCMC 17.40 Code and our City Building Guide lines and somehow this violation of our code was allowed. Dennis has been an officer on the Board of the Canemah Neighborhood Association for the last 6 years.

I have decided to "Recuse Myself" from this Type III, Historic Review Process of: GLUA-21-00001 through 21-00005 Cottage Review Historic Review Board Review, February 23, 2021.

I will however ask, that I am offered all of the time necessary to defend this National Register Historic District of Canemah and it's "Integrity". Someone must step up as an advocate for the Stewardship of our Oregon City Historic Assets.

In an email to the City of Oregon City last August the 18th 2020, I advanced this need to Nancy Busch of Code Enforcement for an early on review and evaluation of if all of the "Conditions of Approval" were being met, with this Cottage Home Development and all of you were copied.

My hope, that the reason I was appointed to the Oregon City Historic Review Board was that I am a knowledgeable, honest and principled person. That I can bring pragmatism and use the Critical Thinking Skills Training I have received in the past, in my determinations of how to apply Oregon City's Historic District Codes and Building Guidelines. But again, because of my history and early involvements in litigation with this development the only reasonable thing I can do at this time is to recusing myself from this process.

It has been my belief that, "New Construction (Should Reinforce the Historic Significance of the District), not detract from it or dilute it's significance. New Construction must respond to and protect the integrity of the overall Historic District in much the same way, as an addition does to a Historic Building. New Building, should not deviate in a detracting manner from the elements codified in its Historic District Nomination Document and its "Statement of Significance" as a National Register Historic Place.

Paul O. Edgar, Board Member - Oregon City's Historic Review Board

Kelly Reid, Planner, AICP City of Oregon City Planning Department

re: GLUA-21-00001 through 21-00005 Cottage Review Historic Review Board Review, February 23, 2021

As homeowners on 4th Avenue, we're advocating for the completion of the Cottage homes. We want to see the construction finished, the site landscaped and homes occupied, in spite of the position of skylights, texture of the siding, proportions of windows or porch locations. This neighborhood is on the national register, but the majority of properties are not of historic significance, Canemah is not Colonial Williamsburg! Most of the residents and visitors to Canemah will not be inspecting these details in their daily travels.

City planning courted this project several years ago. The City, through the Historic Review Board, should use discretion with this project to enable its completion. We're concerned that a hazard will be created for immediate neighbors and the whole community if the structures were abandoned due to financial hardship for the developer. As members of the Canemah Neighborhood Association, we're also expecting Mr Edgar, as the chief opponent to this project from its inception, to recuse himself from deliberations and decisions in this matter.

Respectfully,

Susan Borger, Dennis Anderson, 804 4th Avenue Oregon City





Want to Learn More?
Text 'KNIFE' to 35620

Canemah Cottage Homes
modern living touching the human spirit



\$389,000-\$459,000

- 5 Unique Detached Cottage Condo Designs: 580-1180 sq ft
- Stainless Appliances
- Induction Cooktop
- Stone Entry/Porch/Vestibule, Bath Flooring
- Wood Floors and All Wood Operable Windows
- Bathroom Floor to Ceiling Ceramic Tiles
- Cedar Siding
- Ductless Energy Efficient Heat/Cool
- Energy Efficient Wall Assemblies, Insulation & Windows
- Oregon Energy Trust Verified Home
- Skylights & Extraordinary Natural Daylight Throughout
- Low Voltage Wiring & Smart Home Technology (Optional)
- HURRY to Choose Colors & Finishes, and Unique Interior Features by local artist Jennifer Upshurst
- TEXT 115449 to 35620 for more details

450-486 Miller Street (S) Unique Design

Imagine living in a luxury small home, custom designed by an international award winning architect. Located in the heart of the Canemah community, this home is a true masterpiece. It features a stone entry, a full kitchen with stainless steel appliances, a full bathroom, and a full living area. The home is built with high-quality materials and features a unique design. The home is a true masterpiece. It features a stone entry, a full kitchen with stainless steel appliances, a full bathroom, and a full living area. The home is built with high-quality materials and features a unique design. The home is a true masterpiece. It features a stone entry, a full kitchen with stainless steel appliances, a full bathroom, and a full living area. The home is built with high-quality materials and features a unique design.

Cathedral Ceilings

Induction Cooktop

DA

CONSTRUCTION

KEY

Cottage Community Characterization

Louise Borakoff

Page 470



From: [Paul Edgar](#)
To: [Kelly Reid](#)
Subject: Fwd: A picture is worth a thousand words so here is a picture of a Historic Window from 1880's, in 4 over 4 Lite, double hung configuration
Date: Monday, March 22, 2021 12:56:30 PM

FYI, A picture is worth a thousand words so here is a picture of a Historic Window from 1880's, in 4 over 4 Lite, double hung configuration, on a Vernacular Design House, in Canemah.

The question of what are the characteristics of a original Historic Wood Window and its dimensions are 68.5" inches high and 32" wide.

Sent: October 26, 2019, To: Laura Terway and Kelly Reid



Item 8a.

GLUA-21-00001/ HR 21-00001 through 21-00005: Historic Review for Canemah Cottages

Project ID: GLUA-21-00001

Project Type:

Land Use

Project Contact Information:

Kelly Reid, Planner, AICP kreid@orc.org

Project Status: Active

Date Received:

Monday, February 1, 2021

Location:

Clackamas County Map 3-1E-01AA-

Taxlots 2200, 3600, and 3700

508 4th avenue

Oregon City, OR 97045

See map: [Google Maps](#)

Neighborhood: Canemah

Kelly,

I would like to respond to some of the changes being reviewed for this project.

After examining the submission there are 4 items that the board needs to reject and make recommendations on how to meet the code.

- 1) Change of siding and type used:
 - a. The siding in the submission was changed without HRB or City staff authorization. This is in complete violation of the code.
 - b. The Siding used is not allowed by the HRB code (Not Smooth Hardie siding). All 4 houses built under the new code in the last 5 years have been held in strict compliance and future homes being submitted also have submitted to this siding restrictions.
- 2) Window design and changes:
 - a. The windows in the submission were changed without HRB or City staff authorization. This is in complete violation of the code.
 - b. Windows are one of the top 5 code restrictions for the House design and approval. Not one of the last 4 houses approved in the last 5 years and future approved homes have all needed some type of window alterations to their original design to meet the design criteria. These homes have made changes that do not reflect the code.
- 3) Door and side lights:
 - a. I believe the code does not allow for door sidelights and some of these houses have them.
- 4) Cement retaining walls;
 - a. Code limits the heights and appearance of cement retaining walls and has been an issue with previous approved houses in the neighborhood just recently on an approval limiting the height. This approval states a limit of 3 ½ ft walls and appearance. Their walls are higher than what was approved and higher than what has been accepted recently.

Conclusion:

Private home owners in the last 5 years that have built their homes in this neighborhood have painstakingly gone through the building process following all of the guidelines and rules. However, it appears that a developer can come in and tell you he wants to improve the neighborhood and be compliant to all the restrictive covenanted restrictions and yet build multiple homes against the code and not follow the rules and instead wants acceptance.

I believe this is ethically wrong and if allowed, then the code might as well be thrown out and people allowed to build whatever they wish. Allowing these changes makes for future mitigation which allows code violations for this type of construction.

Ron Bistline

Recent Canemah home builder/owner and future Canemah home builder.

Kelly Reid, Planner, AICP
City of Oregon City
Planning Department

re: GLUA-21-00001 through 21-00005 Cottage Review
Historic Review Board Review, February 23, 2021

As homeowners on 4th Avenue, we're advocating for the completion of the Cottage homes. We want to see the construction finished, the site landscaped and homes occupied, in spite of the position of skylights, texture of the siding, proportions of windows or porch locations. This neighborhood is on the national register, but the majority of properties are not of historic significance, Canemah is not Colonial Williamsburg! Most of the residents and visitors to Canemah will not be inspecting these details in their daily travels.

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As members of the Canemah Neighborhood Association, we're also expecting Mr Edgar, as the chief opponent to this project from its inception, to recuse himself from deliberations and decisions in this matter.

Respectfully,
Susan Borger
Dennis Anderson
804 4th Avenue
Oregon City

From: [William Foster](#)
To: [Kelly Reid](#)
Cc: [Pete Walter](#); [Rachel Lyles Smith](#); [Laura Terway](#)
Subject: Re: Canemah Cottage Homes "native" landscaping
Date: Monday, March 22, 2021 1:43:42 PM

Thanks, Kelly. If you can, please let me know how the developer responds. I wasn't aware of the HRB hearing, but sure, might as well add it to the public record. And now that I understand the issue with the wetland boundary, you can also add this:

The neighborhood would be better off ecologically and aesthetically if the areas outside the wetland boundary were also landscaped with natives, regardless of what's mandated by city code. This is a perfect illustration of how developers view conservation merely as a bureaucratic obstacle, and not as a desirable feature. Thousands of people visit Canemah each year to enjoy the natural, native beauty of Canemah Bluff Nature Park. Why are developers so opposed to emulating that beauty throughout the neighborhood? I think they need more nudging from the city.

On Mon, Mar 22, 2021 at 1:01 PM Kelly Reid <kreid@orccity.org> wrote:

Thanks William. I have reached out to the developer to confirm that all plants in the wetland boundary will be native. Outside the wetland boundary, our code allows non-natives as long as they are not invasive and are part of an approved landscaping plan from a landscape architect.

Can you please indicate whether you intend for your email to be part of the public record for the Canemah Cottages HRB hearing tomorrow?

Thank you,

Kelly Reid

She/Her

Planner

Community Development

NOTE ADDRESS CHANGE: 695 Warner Parrott Rd, Oregon City, OR 97045

EMAIL IS THE BEST WAY TO REACH ME. kreid@orccity.org

503) 496-1540 Direct - **VOICEMAILS ARE SENT TO MY EMAIL.**

(503) 722-3789 Main

[Website](#)

[Interactive Maps and Apps](#)

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PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the

State Retention Schedule and may be made available to the public.

From: William Foster <williamjfoster@gmail.com>

Sent: Monday, March 22, 2021 8:36 AM

To: Kelly Reid <kreid@orccity.org>; Pete Walter <pwalter@orccity.org>; Rachel Lyles Smith <rlsmith@orccity.org>

Subject: Canemah Cottage Homes "native" landscaping

As you know, the Canemah Cottage Homes development is supposed to mitigate its environmental impact by landscaping with native species to recreate a native wetland environment. The planning documents include this statement:

Once construction is completed the site will be replanted with a dense mix of shrubs, trees, grasses and flowers native to the region.

I interpret that sentence to mean that the landscaping will include native plants exclusively, and that is what I would expect given the circumstances of the development.

I drove past the cottage homes yesterday and noticed that they recently completed most of the landscaping. It was obvious at first glance, even from a moving car, that a significant portion of the plants are not native. I re-visited on foot today and took a closer look. I estimate that at least 50% of the plants are not native.

I wasn't able to inspect every area, but here is a list of the non-native species that I could see:

- *Pachysandra terminalis* - this comprises the majority of the plantings. It seemed that close to half of the ground area was covered with this non-native.
- *Ophiopogon planiscapus* (Black mondo grass)
- *Viburnum davidii* - I might have the species wrong on this, but it's certainly not a native viburnum
- Rhododendron x 'Jean Marie de Montague' - this is not a native rhododendron, but even Oregon's native rhododendron isn't native to Willamette Valley wetlands

Ilex crenata (Japanese Holly)

The cottage homes development has already caused significant disruption, and this glib landscaping effort only adds insult to injury. It's a pitiful facsimile of a true native wetland, and it is especially frustrating in light of the promising rhetoric of the developer's earlier statements.

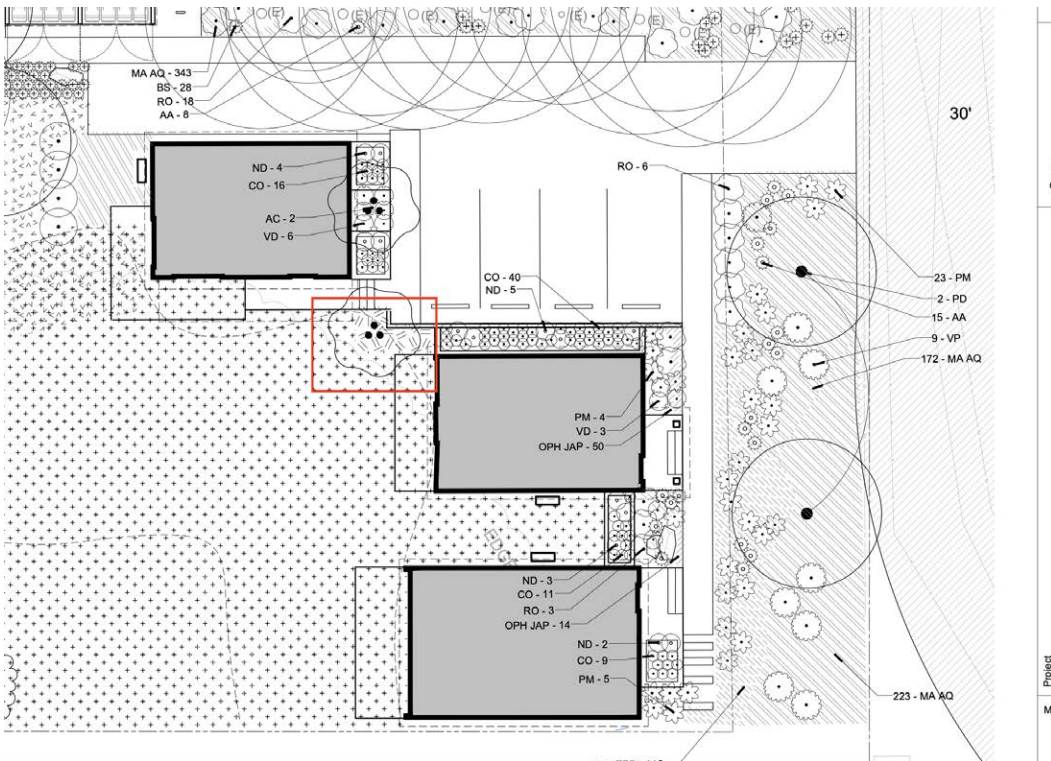
I would like to see this rectified, if possible, not just for its own sake but also to set a better standard for what native landscaping should look like in our city's "natural scenic resources."

Thanks for your time.

From: [Kelly Reid](#)
To: [Kelly Reid](#)
Subject: FW: landscaping plan Canemah cottages
Date: Tuesday, March 23, 2021 5:50:39 PM
Attachments: [Screen Shot 2021-03-23 at 5.31.55 PM.png](#)

From: William Foster <williamjfoster@gmail.com>
Sent: Tuesday, March 23, 2021 5:36 PM
To: Kelly Reid <kreid@orcity.org>
Subject: Re: landscaping plan Canemah cottages

I just visited the site and confirmed that this spot is planted with *Pachysandra*, which is not what is specified in the schematic. I think it should be removed across the board due its proclivity to spread invasively. This spot in particular is very close to the wetland area, and it will certainly spread there over time.



On Tue, Mar 23, 2021 at 12:52 PM William Foster <williamjfoster@gmail.com> wrote:

You can enter that last reply into the record, but please edit the "and/or" to just say "and."

On Tue, Mar 23, 2021 at 12:26 PM William Foster <williamjfoster@gmail.com> wrote:

I didn't explicitly state the most important point about the *Pachysandra*: it is rhizomatous and will spread aggressively beyond the immediate area where it's been planted. It could likely end up outcompeting some of the natives, and/or spread into the wetland boundary and

surrounding forested area.

It's not on the Oregon or Clackamas noxious weed lists, but it is problematic nonetheless. Here are some sources (of varying quality) to support that statement:

<https://www.brandywine.org/conservancy/blog/invasive-species-spotlight-japanese-pachysandra-pachysandra-terminalis>

See the comments here: <https://davesgarden.com/guides/pf/go/1146/#b>

<https://plants.ces.ncsu.edu/plants/pachysandra-terminalis/>

This plant is a very common groundcover that spreads by rhizomes to form large colonies. ...
This plant can spread aggressively and it is difficult to remove.

<https://fafard.com/native-evergreen-groundcovers/>

It's time for American gardeners to move beyond Japanese spurge (*Pachysandra terminalis*), English ivy (*Hedera helix*), and periwinkle (*Vinca minor*). It's true that these ubiquitous landscape plants make excellent evergreen groundcovers, rapidly forming dense swaths of handsome foliage. But, in addition to being tiresomely common in American gardens, they're a nuisance outside of cultivation, invading natural areas and out-muscling native plants with their aggressive growth. (English ivy and periwinkle appear on invasive plant lists over much of the southeastern and far-western U.S.).

GUIDELINES FOR NEW CONSTRUCTION OREGON CITY HISTORIC DISTRICTS



Historic Review Board ▪ Oregon City Staff ▪ The Office of Robert Dortignacq, Architect

September 2006

GUIDELINES FOR NEW CONSTRUCTION IN OREGON CITY HISTORIC DISTRICTS



Upper Oregon City View To West From 3rd to 6th Streets and High to Adams Streets, ca 1904 Clackamas County Historical Society, C-0250-000619

Historic Review Board • Oregon City Staff
September 2006

ACKNOWLEDGEMENTS

These Guidelines for New Construction in Oregon City's Historic Districts were developed by the Office of Robert Dortignacq, Architect in cooperation with Oregon City between January and September, 2006.

The Guidelines were adopted by the Historic Review Board (HRB) on September 18, 2006

Resolutions supporting the adoption of the Guidelines were also adopted by the Planning Commission (Resolution 06-01 August 28, 2006) and City Commission (Resolution 06-38 September 6, 2006)

Participating groups during this time included:

Office of Robert Dortignacq Participants:

Robert Dortignacq
Eileen Fitzsimons
William Morrow
Eileen Yee

City of Oregon City

Christina Robertson-Gardiner, Associate Planner
Dan Drentlaw, Community Development Director

Oregon City City Commission

Alice Norris, Mayor
Tom Lemmons, Commission President
Damon Mabee
Trent Tidwell
Daphne Wuest

Oregon City Historic Review Board

Rick Winterhalter, Chair
Carolyn Phelps
Jason Pompel

Oregon City Planning Commission

Tim Powell, Chair
Daniel LaJoie
Allan Dunn
Chris Groener
Paul Carter

McLoughlin Neighborhood Association

Canemah Neighborhood Association

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C 0250-004459

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General Photographs: Office of Robert Dortignacq

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GUIDELINES FOR NEW CONSTRUCTION IN OREGON CITY HISTORIC DISTRICTS

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INTRODUCTION

The Canemah National Historic District and the McLoughlin Historic Conservation District were established by the community to recognize and preserve their historic buildings and settlement fabric. These design guidelines have been formulated to protect the buildings in the districts, and their relationships to one another in the face of development pressures. The careful, sensitive and thoughtful design of any new construction in the districts is of the utmost importance because it must harmonize with the character of the neighborhoods and also be made compatible with existing historic structures. A lack of attention to the character of the design, the materials and details, and to the context within which the building will be placed can have a significant adverse impact for the area that can last a long time. As a result, proposals for new construction receive serious scrutiny.

To guide new development in the districts, the following objectives are reflected in the guidelines:

- Safeguard the heritage of Oregon City.
- Encourage public knowledge, understanding and appreciation of the City's heritage.
- Enhance the visual character of the districts by constructing harmonious designs that reflect and support the character and style of buildings during the historic period.
- Protect property values, way of life, owners' and community investment in the districts.

The design guidelines serve two important purposes in the context of an overall preservation plan. First, they provide the Historic Review Board (HRB) and City staff with uniform standards and a framework on which to base design review decisions. Second, they provide property owners, designers, contractors and developers a similar set of standards to allow for predictable planning and timely construction. Although written for new construction, historic property owners can find useful information in these guidelines to plan their own rehabilitation projects.



Canemah ca. 1904 Clackamas County Historical Society—C-0250-00-3109

PROCESS AND PROCEDURES

Organization of the Guidelines

The guidelines are intended to be utilized early in the design process rather than as a final checklist once a design is completed. The guidelines are comprehensive in nature and take into account all aspects that define the historic character of a structure and its surroundings. They begin with the General Design Principles. These principles are explained in the McLoughlin and Canemah Historic District sections and in the Character Guidelines which more specifically define the appropriate range of design solutions. The Element Guidelines address specific construction and products.

The guidelines follow the typical manner by which a project is designed from the initial planning to the development of specific details. Reference should, however, be made to all sections to give the applicant a sense of what is expected.

Alternative Designs: It is the intent that these guidelines cover design for the wide range of projects that may occur over time. They describe a ‘safe harbor’ to allow new construction projects to be approved easily and quickly. Yet, there may be occasions when alternative designs are either desired or needed. There are also particular product configurations, or materials that are pre-approved, but for which viable alternatives may exist. Those alternative designs and substitute materials shall be first reviewed by City staff and subsequently by the Historic Review Board (HRB) for compliance with the General Principles, and design intent of the guidelines. For those situations when an exception to the guidelines is necessary, the HRB and staff shall evaluate the proposal based upon the significance of the impact, measuring how well the alternative fits into the intent of the guidelines and essentially the end effect on the historic district.

These guidelines are not mandatory standards adopted by the City Commission. In order to have any development approved, the development must be shown to comply with the adopted historic review standards found in the Oregon City Municipal Code. These guidelines were adopted by the Oregon City Historic Review Board (the "HRB"), the body who performs the initial review of development in historic districts, and are intended to provide supplemental information and additional guidance about how the HRB interprets the standards in the code. Although complying with these guidelines does not guarantee approval of any development, the guidelines should assist anyone who is seeking approval.

Areas Of Applicability For The Guidelines

The guidelines are intended for new detached construction within the Canemah National Historic District and the McLoughlin Historic Conservation District, and on Landmark property sites outside of an historic district that may add a new structure or that may be subdivided. The guidelines do not apply to additions to existing structures. These are covered by the City’s “Design Guidelines For Alterations and Additions”.

Geographic Application Areas:

- McLoughlin Historic Conservation District (See Map in Appendix)
- Canemah National Register Historic District (See Map in Appendix)
- Individually listed Landmarks outside of the districts. Including those properties involving property divisions.
- Other historic districts or subdistricts created in the future may reference these guidelines.

How To Use The Guidelines: The Process In Brief

There is a two stage review process for new construction, except for minor projects such as fences, small sheds and minor landscape projects. This allows all parties to focus on the preliminary, yet major themes and issues, and obtain resolution before proceeding to the second review that requires developing more extensive drawings including details and finishes. It also allows early discussion on a project before extensive work is performed. At the first stage review the project is reviewed for compliance with the major design features. This includes Style, Site Use, Building Placement, and Building Form. Some aspects of Design Composition can be presented or discussed at the first hearing to provide direction. The second stage review, upon successful completion of the first, addresses the building and site details and any contingent issues or revised designs. For smaller projects, and those in which there appears to be general agreement, the hearings may be held during the same meeting.

AN EXAMPLE OF THE GUIDELINE PROCESS

TASK: NEW BUILDING IS DESIRED ON A PARTICULAR LOT

A. WHERE IS THE SITE?

McLoughlin Historic Conservation District, the Canemah National Register Historic District, or on individually listed historic property outside of the districts?

What is the Immediate Context? The Block? The Neighborhood?

What are the Mix of Existing Appropriate Historic Styles?

B. DECIDE WHICH STYLE TO USE

Determining the appropriate style is the important first step toward successfully designing a compatible building in the district. Decide which style direction to use from acceptable neighborhood styles and those in the applicable specific Historic District Design Guideline. The styles noted for the district have specific District modifications indicated.

C. SITING AND BUILDING FORM

- C-1** Review basic zoning requirements for New Construction for the particular site (R3.5, R6, MUC etc) to understand basic setbacks, lot coverage issues.
- C-2** Review Siting, Building Form Principles and the Specific Historic District from Design Guideline. Note any requirements that are more specific than those found in the basic zoning.
- C-3** Establish the Site Plan and the Overall Building Form. Is the use of the site and the building's placement on the site respectful of its context? Is the size, shape and bulk of the building consistent with the style chosen? Does it complement the neighborhood context? Is there too much 'program' for the site or style?

D. DESIGN COMPOSITION

- D-1** Design the building and site starting with primary design groups and major elements, such as wings, roofline, secondary portions, porches, window groupings, dormers. Are these elements supportive or are they detractive to the historic district? Are they supportive of the style and building?
- D-2** Review the design; Is it in good proportion and is the composition balanced?

Work Up To This Point Is Reviewed At The First Stage Hearing. Upon Its Successful Completion, The Second Stage Hearing Addresses The Following More Specific Design Information

- D-3** Review the design and adjust to incorporate comments from the first review. Is the design representative of the style range and do the forms and individual features work toward a united design approach as viewed from the exterior?
- D-4** Design the finer or more detailed portions of the building and site to fit within the framework established.

Continued on next page

HOW TO USE THE GUIDELINES: THE PROCESS IN BRIEF *Continued*

E. SPECIFIC DESIGN ELEMENTS

- E-1** Design and choose specific design elements, products, and materials that are allowable and consistent with the design styling and framework established.
- E-2** Does the design still fit the style's 'vocabulary'? Have extraneous or excessive details, ornamentation, or materials been chosen that detract from the neighborhood context?
- E-3** Do specific elements comply with the guideline? Are materials, colors and finishes selected? Visible equipment? Landscaping and Plantings?



Canemah 1867 Carleton E. Watkins photo, Oregon Historical Society, #OrHi 21601

Applicable Projects For The Guidelines

The guidelines apply to new detached construction and sitework, either infill on a vacant lot or accessory structures to an existing building. They also apply to the total rebuilding of demolished structures that were previously Non-conforming under current zoning. In addition, the guidelines apply to new public works projects. They do not apply to additions to an existing building. For those projects refer to the City's "Design Guidelines For Alterations and Additions".

These guidelines fit within other pre-existing ordinances and regulations that apply to both inside and outside of the historic districts. Those ordinances may be more specific, or may address other issues, such as parking, geology or environmental, in which case they are the standard to be followed.

The guidelines are useful for owners who may wish to phase in new work over time. Some of the work may not require permits, but information included in the guidelines can provide design direction to ensure the district character is preserved.

The following are common items that are reviewed for compliance when a new project is submitted for plan review:

- New Buildings
- Garages and Sheds
- Fences and Walls
- Walks, Drives, and Paving
- Hot Tub, Swim Pools (where visible)
- Landscape Alterations if Significant
- Mechanical, Electrical Equipment on Exterior or Site

Project Information Required For Submittal

1. A written, brief scope of work; That is, describe the project, approximate size, construction schedule, and how it meets the General Design Principles, utilize the Character Guidelines for illustration of compliance.
2. Site and Neighborhood Photographs; show site, existing and adjacent buildings, and those across street
3. Drawings; scaled design drawings indicating items that require approval:
 - a. Site; show site boundaries, structures, paving, improvements, and planting.
 - b. Floor Plans; each level
 - c. Sections; each way through the building when floor heights are specified.
 - d. Roof Plan
 - e. Exterior Elevations; for every side of each structure, indicate materials and heights of structure and floor levels.
 - f. Site Line Diagram; show view lines of proposed building, street and context of existing buildings at sites having 25% slope or greater to illustrate visual effect of the design on sloping sites.
 - g. Streetscape Illustration: For commercial, institutional, multifamily and two family projects illustrate photographically or by scale drawing the size and massing of the proposed project in relation to neighboring buildings and topography along the street and across the street, Review specifics with staff.
4. Materials, Color Samples, Product Information; samples of actual finish, color, material for exterior enclosure; door, window, siding, roofing, paving, product literature for alternative materials to illustrate compliance with design intent.

Cross Links To Other Requirements

There are other codes that may have requirements applicable for the project. Often, these are written for particular uses or zones that occur throughout the city not just the historic district, and therefore are generally less restrictive. They address both new and remodel activities. They may contain requirements not addressed in these guidelines and should be reviewed. Numbers refer to Oregon City Municipal Code (OCMC) and are available for review at City offices or website.

- 17.16 R-3.5 Dwellings; Refer to zoning map
- 17.20 Residential Design Standards
- 17.26 Historic Commercial
- 17.29 MUC – Mixed Use Corridor District; Refer to zoning map
- 17.40 Historic District Overlay
- 17.44 Geologic Hazards; a separate review for steep sites (25% slopes)
- 17.49 Water Resources Overlay District; review of environmental issues
- 17.52 Off Street Parking and Loading; Required for MUC zone, reviewed by staff and/or Planning Commission
- 17.54 Supplemental Zoning Regulations and Exceptions; See accessory dwellings
- 17.62 Site Plan Design and Review; Required for MUC zone, reviewed by staff and/or Planning Commission

DESIGN GUIDELINES FOR NEW CONSTRUCTION

1. GENERAL DESIGN PRINCIPLES

There are Guiding Design Principles that govern New Construction in the Historic Districts and on the sites of individually listed historic property.

SUMMARY: The appropriate design of new buildings is an extremely important consideration for historic districts. A compatible design supports the integrity of the district, while an incompatible and historically inappropriate design diminishes the character of the district. This is especially true for portions of a district that have discontinuity among their historic properties and neighborhoods.

New construction infill projects as well as ongoing revisions to existing buildings are necessary for the economic viability of the district. While new construction methods, materials and products continue to be developed, control must be maintained over the visual form and character of the construction to preserve the historic context.

All buildings and related construction utilize the following principles in their design. These principles shall guide new construction to be compatible with existing historic resources and yet offer strategies that can incorporate new materials and products. New construction is just that. It is not historic, nor shall it attempt to be historic, but rather to stand side by side with existing historic structures in a respectful manner.

STYLE COMPATIBLE Determining the appropriate style for a new infill project is an important initial step in the design process. Each historic district has different styles that were prevalent during the historic period of significance. These styles are what create the historic context. New construction shall complement one of these styles to support the historic context. Use of other styles dilutes and distracts from the historic context of the district.

While there may be several styles dominant within the district, the specific choice of a style shall be compatible with adjacent properties, the block, and the neighborhood. It also must be fitting for the particular function of the building and its size.

SITING PRINCIPLES Siting principles involve both how the site is used and how the building(s) is placed within the site. The specific lot location and its topography can dictate many requirements.

Residential buildings are to face the street squarely with their primary face in full view, and to be set back from lot lines and be spaced from one another similar to the immediate neighborhood. The primary structure is to be placed in the primary position with accessory structures in a service or ancillary position except where topography is an issue. Yard area between the house and street to primarily be planted with minimal paving only for pedestrian access and for vehicle movement. More private activity spaces to be located at the less public areas of the site.

Commercial buildings are to face the street squarely with their primary face and display areas in full view, to engage the pedestrian, and to be set back only slightly, if at all from the front and side lot lines. Small courtyard area may be appropriate for multifamily and certain commercial uses. Vehicle access to be on the less visible sides or rear.

BUILDING FORM PRINCIPLES Address the overall size, shape and bulk of the building.

The architectural style used for the building defines many aspects of its appropriate form and proportions. Excessive variation in the size, shape, or configuration creates an inappropriate solution that is stylistically incorrect and not complementary to the district. The building form needs to relate to the buildings in the immediate neighborhood, and to take into account both similarities and changes on the block. The new building form shall reference the principles, proportions and scale of an historically appropriate style.

Existing commercial historic buildings are now less numerous in the districts. Acceptable styles will produce new infill form based on historic character qualities of the original buildings and those found in other similar districts. This new development will then successfully relate to adjacent residential neighborhoods. The appropriate style and form of the new buildings depends upon the site and neighboring, or transitioning context.

DESIGN COMPOSITION PRINCIPLES Include a range of more detailed design issues that address groups of elements, individual elements, their design and how they relate to the overall composition and finish. The principles place a traditional emphasis on the design's composition as seen from the exterior, rather than as a result of interior functional planning requirements. They also outwardly convey a sense of quality craftsmanship.

The design composition principles, being more detailed, and stylistically dependent, are typically developed after the previous principles are resolved. These principles also reflect historically appropriate materials, respective finishes, and unobtrusive integration of new technology.

PUBLIC IMPROVEMENT PRINCIPLES Involve construction in the public right of way. The work may be engineering in nature and built by government, or it may be private but adjacent to the public way serving the public in a similar capacity. These projects are important for the historic district since public space accounts for a large proportion of the district's area and has a significant impact on the setting, context, delivery of services, and movement through the district.

The Public Improvement principles indicate how current engineering and construction can be made appropriate by utilizing materials, finishes, and design that supports the historic nature of the district.

The Guidelines appreciate that certain engineering, public safety, and other institutional work may have, by nature, certain technological or regulatory requirements and that these may conflict with these design guidelines. Work may also interface, modify, or remove existing historic construction. In these situations City staff and the HRB shall work with the agencies to develop the best design and preservation solution for the district, or appropriate mitigation measures. It should be noted that extensive regrading or removal of vegetation shall also be considered for HRB review.

2. McLOUGHLIN HISTORIC CONSERVATION DISTRICT

HISTORIC STATEMENT

Oregon City stretches along a narrow shelf above the Willamette River just below its falls. It had its beginnings in 1832 when Dr. John McLoughlin, chief factor of the Hudson Bay Company at Ft. Vancouver, built both saw and flour mills at the falls to utilize its water power. In the next decade as Great Britain and the United States negotiated the final boundaries of their lands in the West, missionaries and settlers began arriving over what became the Oregon Trail. Not long before the first wagon train arrived in 1843, Dr. McLoughlin surveyed and named the town. Homes, businesses, industries and churches began building in “downtown” Oregon City.

The McLoughlin District is referred to as the “second level,” reflecting its topography and relationship to the original town of Oregon City, which lies just below at the base of a steep basalt cliff. In the 1850’s few people built homes on the second level but as the downtown area became more crowded, and after completion of the Oregon & California railroad in late 1869, more residents moved up the hill, to what is now called the McLoughlin neighborhood. Construction continued from the 1870’s into the first quarter of the 1900’s, and the buildings from this period contribute to McLoughlin’s late 19th - early 20th century ambience. Churches followed their congregants, and the high school, two elementary schools and a parochial school are within the district.

The area is a broad, relatively flat bench which begins at the western edge of the bluff above Oregon City, bounded by High Street and the Promenade. The “bowl” then rises gradually 200 feet on the east in a series of undulating terraces to the top of

the hill, the “third level.” Beyond the top of this bluff the land stretches east to the foothills of the Cascade Mountains.

This was originally an area of farms that after World War II began changing into residential subdivisions and shopping centers, a trend that continues.

To the north the land drops into a series of steep ravines, eventually leveling at the Clackamas River which flows into the Willamette just north of downtown Oregon City. On the northeast the boundary line is Fourteenth Street, but there are some important homes beyond the limits, especially in the vicinity of the Buena Vista Park. At the southeastern edge of the McLoughlin District near the crest of the second level between Van Buren and Harrison Streets, the bluff curves toward the river (the City’s Waterboard Park is near the top). The south edge of the district is Clinton Street. Less than a mile up river is the Canemah National Register Historic District.

The main street connecting downtown Oregon City to the McLoughlin District is Singer Hill Road, which angles south up the face of the bluff, turning at the top to become 7th Street at its intersection with High Street. As people moved into the second level, 7th Street became, and remains its primary commercial street. Fifth Street has become a second connecting street to the third level but remains residential. Two streets above High and parallel to the edge of the bluff is Washington Street, a major arterial that begins at the foot of the ravine to the north, channeling traffic from I-205 and McLoughlin Boulevard/99E through the neighborhood. Some traffic also enters from the south, off 99E onto South Second Street, then up Center Street to 5th or 7th.

Continued on next page

Beginning in 1982 the McLoughlin neighborhood sought designation as an Oregon City Historic Conservation District, which was achieved in 1986. Following a survey of 971 buildings, 305 were identified as architecturally or historically significant properties. In 2002 a resurvey noted approximately 200 more buildings within the district boundaries of lesser significance, but due to their age and form were seen as strengthening the overall historic character of the district. The resurvey found the district eligible for listing as an historic district on National Register of Historic Places. At the same time, historic structures beyond the Conservation District boundaries but within the city limits of Oregon City were surveyed and 72 were designated of historic significance. Some of these are close to the McLoughlin district; others are farther from the core area, either isolated in newer subdivisions or still within their larger homestead-era properties. It should be noted that some of the oldest homes have been moved into the district for their preservation, including the Barclay, McLoughlin, and Ermatinger preterritorial homes.

Since the 1970's individual properties have been placed on the National Register of Historic Places (nearly all are also city landmarks), and several have been restored. Interest in the history of the McLoughlin Neighborhood developed in the 1980's through walking tours organized by an individual, as well as by members of the Old House Forum, a group of historic home owners. In the mid-1980's concern about preserving historic buildings mounted during the city's comprehensive plan update. Residents feared that proposed rezoning to high density residential would lead to destruction of its older buildings. In 2004 Oregon City's updated Comprehensive Plan recommended that the McLoughlin Conservation District be changed to a National Register Historic District, like Canemah.

There are approximately 153 blocks in the McLoughlin Conservation District of which 121 are from the original plat of Oregon City. They are approximately 200 x 200 feet square, and generally divided into 50x100 foot lots. The exception to the square conformance are the blocks between Center and Van Buren, 10th and 11th streets where they are slightly narrower. Many of the blocks were further divided by alleys. Some of these alleys have been vacated and built upon; others, especially in the two blocks which parallel the main business thoroughfare on 7th Street, continue to be used as alleys.



7th Street, 1937 Oregon City Planning Department

Data and Current Status

The McLoughlin Conservation District is composed of pockets of development that coalesced over time. Consequently, it contains a “checkerboard” of architectural styles. Except for 7th Street, which remains a commercial and retail corridor, and Center and High Streets south of 7th, which has lost single-family homes to one-story office buildings, the neighborhood is primarily residential, with scattered churches and schools.

There are few blocks where one architectural style predominates. For example, a Queen Anne style home may be surrounded by a variety of vernacular homes, bungalows, post-1925 homes, non-historic homes, or apartment buildings. While there are clusters of homes in a related style (often fewer than a half-dozen on facing blocks), there are not large sections of just the most popular “bungalow” or “Queen Anne” houses.

The area at the southeast edge of the neighborhood (commonly called “Dutch Camp”) contains the largest concentration of old homes but they vary in style. In the 7th Street business corridor (also known as the “Arc Light” area) a few 19th-Century Falsefront stores remain, interspersed with single-story streetcar-era commercial buildings, a 1920’s stucco-finished Fire & Police station and a brick IOOF hall. Some of these are constructed of wood, others are concrete or brick. Most of the 7th Street businesses are “one building deep.” They are built to the edge of the sidewalk but extend back on either side of 7th Street to the mid-block alleys. A part of “Latourette Canyon” at the northern portion of the district near 12th and Monroe is an area of many bungalows and Four Square style homes.

Near the eastern edge of the commercial area is the city’s former Carnegie Library which has been restored and is now a community building. It is situated in a block-square park with lawn, mature trees and a plaza/play area. As 7th Street rises to the east the commercial district thins and transitions into a more residential area. At the top of the hill (the third level), 7th Street

turns south and changes into a more contemporary strip-mall commercial corridor. There are a number of rock walls and concrete stairways in the neighborhood, including the Promenade, and the steep northwest edge of the district where streets do not go through.



5th & Center Streets 1955 Clackamas County Historical Society C-0250-004473



7th Street, 1899 Clackamas County Historical Society C-0250-005000

Residential Building Styles

There are three predominant architectural styles in the McLoughlin district, Vernacular, Bungalow, and Queen Anne - Queen Anne Vernacular. These form the context for the neighborhood. There is a minority of other styles, each small in number. For the purpose of reinforcing existing context, these three primary styles are to be used in new residential construction.

VERNACULAR

In the McLoughlin Neighborhood of the almost 500 buildings evaluated in 1982, the largest number of a single style is "Vernacular. Approximately two-thirds were built in the 19th century, with the remaining third between 1900-1923. Important style characteristics as found on houses in the McLoughlin District to be used for new construction are noted below.

CHARACTERISTICS OF THE STYLE

Site

- Uniform front setback, house placed with similar sized side yards, except on sloping sites.
- Lots are usually 50x100 and contain a single house.
- Property edges may be defined by wooden fencing; low, open pickets in front, and taller privacy fencing on the sides and back yard.
- Planting: lawn is between the sidewalk and the front of the house, along the sides and behind the property; a mix of lawn, shrubs, trees and flowers. Mature trees are usually behind the house, occasionally in front or in the curb strip.
- House Placement: to suit the existing topography and most level lot portion; at near street level; on high banks, with flights of concrete steps; No extensive cut and fill for siting.
- Retaining walls: stone, mortared basalt, or concrete.
- Garages: detached and behind the front façade of the house.
- Alleys: use of graveled, or casual alley access without curbs.



Built 1884



Built 1879-1892



Built 1893

VERNACULAR *continued*

Building Form

- Form easily allows additions and alterations such as increases in family size, activities or changing technology.
- Shape: rectangular or square in plan, combinations to form L-plan, T-plan; Rectangular or square form reinforced on façade.
- Height: 1, 1½, 2 (maximum) stories in height; Basement option.
- Proportions: Height (eave) to maximum width: 1:1 Height to Depth: can vary greatly.
- Roof: gable, or cross-gable roof of not less than 8:12 pitch, often steeper.

Design Composition

- Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.
- Designed and built without assistance of a trained architect. Collaborative design evolved with homeowner and builder, based on familiar styles, features and products.
- Can combine minor features from architectural styles used during the historic period.
- Porch: full-length at the front entry; possible wrap around (typically not curved).
- Materials: local, readily available.
- Windows: 1:1, double hung windows.
- Siding: horizontal board siding; typically shiplap, or channel; occasionally bevel.
- Ornament: Exterior decoration is modest, consisting of scroll-work brackets at the top of porch pillars, decoratively-cut or laid shingles, often in the peak of a front-gable roof, plain cornerboards and simple window trim. Some houses feature spindlework in the peaks of their gable roofs, often arranged in a sunburst pattern.



Built 1865-1877



Built 1879-1892

BUNGALOW

In the McLoughlin Neighborhood the second most prevalent style is the Bungalow, built between 1905-1929, largely built between 1911-1919, and then continuing from 1920-29. Compared to the Vernacular style, the historic bungalows have undergone few exterior alterations. Important style characteristics as found on houses in the McLoughlin District to be used for new construction are noted below.

CHARACTERISTICS OF THE STYLE

Site

- Uniform front setback with similar sized side yards.
- Lots are usually 50x100 and contain a single house.
- Fences: Few fences around bungalows; some backyard privacy fences, of wood.
- Landscaping: primarily of lawn in front, sides and back; shrubs, smaller trees.
- Garages: detached, toward the rear of the house, accessible from the side of the lot; under the house where on a steep slope.

Building Form

- Building form is difficult to modify for additions, but has versatile floor plan.
- More emphasis on the horizontal than Vernacular or Queen Anne, this extends into porch, dormer and window design; more 'ground hugging'.
- Shape: floor plans are either rectangular, or square.
- Height: 1 or more often 1½ stories high; possible basement.
- Roof: Low-pitched (6:12 minimum) gable roof; front or side facing; occasionally hipped. Roof that often continues down to create a cover over the prominent front porch.
- Proportions: Height to width approximately 1:1½; Height to Depth: 1: no more than 2 for main building portion not including front porch.



Built 1914



Built 1905

Bungalow description continued on next page

BUNGALOW *continued*

Built 1914

Design Composition

- Front façade can be symmetrical or asymmetrical.
- Porch: full or wrap-around front porches; supported with substantial pillars; simply detailed.
- Roof Overhang: wide, over-hanging eaves and exposed rafter tails; decorative knee brackets under eaves.
- Dormers: single front facing; with lower slope gable or shed roof.
- Chimneys: projecting on side of house, usually brick.
- Siding: horizontal board siding; typically bevel profile (occasionally shiplap), shingle siding; or a combination, such as horizontal boards on the first floor with shingles on the second floor, or just in the gable or dormer.
- Bays: possible single story, cantilevered, and rectangular usually located on the side of the house.
- Windows: double-hung; 1:1 or with multiple panes in upper sash; large fixed window flanked by two smaller double-hung windows.
- Windows At Dormers: smaller, often grouped at shed dormers; fixed or casement style where smaller.
- Finishes: generally earth tones; no white doors or windows.



Built 1915



Built 1912

QUEEN ANNE & QUEEN ANNE VERNACULAR

In the McLoughlin Neighborhood the third most popular style grouping, built between 1879-1905, is Queen Anne Vernacular and Queen Anne. The Queen Anne style is a smaller, simpler and less elaborate expression than



1879 Queen Ann

found elsewhere in the Portland area. The Queen Anne Vernacular, a 'sister' style is in many ways similar to the Queen Anne. It often began 'life' as a Vernacular style building that was then embellished. The two styles can be quite similar. However, a Queen Anne generally has a more complex arrangement of building, roof, and porch forms, is more elaborate in detailing, finishes, and usually a much larger volume. Important style characteristics as found on houses in the McLoughlin District to be used for new construction are noted below.

Characteristics of the Style

Site

- Uniform front setback.
- Queen Anne houses, being larger and more ornate, usually on oversize lots.
- The Queen Anne Vernacular homes are on standard, 50x100' lots.
- Landscaping: informal arrangement of native and specimen types, bedding and borders with perennials-annuals.
- Stone or concrete retaining walls for those on sloped lots.
- Garages: detached and behind the front façade of the house.



1896 Queen Anne



1885 Queen Ann



1890 Queen Ann



1900 c Queen Ann Vernacular



1888 Queen Ann Vernacular



1895 Queen Ann Vernacular



1903 c. Queen Ann Vernacular

QUEEN ANNE & QUEEN ANNE VERNACULAR *continued*

Building Form

- A variety of plan configurations; allows some alterations and additions depending on initial complexity. Emphasis on the vertical and on combinations of volumes that play off one another.
- In plan the Queen Anne Vernacular house is simpler; symmetrical or asymmetrical combinations of rectangles; L-plan or T-plan possible.
- Queen Anne floor plan is more complex; may be symmetrical or asymmetrical combinations of rectangles; Possible L-plan or T-plan.
- Main roofs predominantly gable, cross-gable or multi-gable. Queen Anne Vernacular usually has single primary roof form with minor cross or dropped gable extension; Slope: 8:12 minimum often steeper.
- A variety of roof shapes combined in one building, is a hallmark of the larger Queen Anne style. This can include gable and hip roofs and pyramidal roofs on towers. Roof form variation helps to break up larger massing; generally not so large as to require flat roof portions at roof peaks; Slope: 9:12 minimum.
- Height: 1 ½ to 2 ½ story; possible basement. Queen Anne: First Floor ceiling height: 10 foot minimum, and Main Floor Level Height Above Grade: 2½ feet minimum.
- Porches: Front porch, full, corner or wrap around; Rear or Side: smaller, less detail, but not plain. Queen Anne: often may have small upper level porches
- Bays: Distinguishes the style; front, possible sides at main level; 1 story; occupies a portion of the façade width, width and sides mostly filled by windows.
- Garages, Accessory Buildings: Rectangular, less decorative; lower roof slope.
- Recesses and Projections are often used to create bays and entries.

Design Composition

- Front façade can be symmetrical, or asymmetrical if balanced with other elements such as porch or bay.
- Porch: full or wrap-around front porches; can integrate with bay roof; can include extensions, such as an entry gable; Porches are decorative.
- Bay windows: rectangular or faceted; essentially a combination of windows and intervening posts; area of decoration.
- Roof Overhang: over-hanging eaves often soffit on rafter slope.
- Siding: horizontal boards similar to Vernacular, patterned shingles, various combinations; Trim at corner boards, water table, floor level demarcation.
- Ornament: surface details including decorative shingles or shingles laid in patterns; spindlework in gable peaks and on porch railings; decorative eave brackets elaborate window and door trim; no roof cresting or ornament.
- Windows: Emphasis on vertical proportions; primarily double-hung, may be grouped; possible fixed units or smaller casements.
- Window Designs: A variety of window styles, but not arched; stained glass bands; a central fixed window with multi-panes or stained/decorative glass above; porthole or lancet windows some with stained glass.
- Doors: Entry doors single or paired, optional transom windows; an area of ornamentation.



1897 Queen Anne Vernacular

Commercial Building Styles

The historic commercial area was primarily along Seventh Street from Center to John Q. Adams, however, the street was not fully built out for commercial use and historic houses remain. The first commercial buildings were primarily wood framed, although some masonry and concrete buildings were constructed in the historic period. Only a handful of these historic building remain along what is known as the Seventh Street Commercial Corridor. Outside of this corridor were the residential neighborhoods. This commercial corridor remains and has been reinforced by the City's street improvements. Currently there are other commercial mixed use zoned areas that include Seventh Street east of John Q. Adams and north and south along Washington, Center and High. These areas have a mix of newer commercial buildings and historic residential styled structures.

For the Seventh Street Commercial Corridor applicable design styling includes the earlier False Front commercial buildings that were typically wood framed, but could now be masonry, or the later Streetcar Commercial and similar multifamily 'Streetcar' residential styles illustrated below. These styles used a simple, primary rectangular form that could have entry recesses or projections, or upper level vertically oriented window bays. Buildings were built close together to form a continuous row along Seventh. Rowhouses or attached townhouses are not an appropriate style in Oregon City.

New infill buildings should support the historic context of the district by providing designs compatible in design, scale and massing with the limited existing historic commercial buildings, notably the Fire Station and IOOF Hall (34 foot high parapet), those typical of that era, and the adjoining neighborhood. It is appropriate to focus new, denser commercial development

within a several block length at Washington and 7th and/or at key intersections along the corridor. New increased density will strengthen the historic pedestrian and streetcar nature of the district if successfully designed.



IOOF Hall (Odd Fellow Building)

Outside of the Seventh Street Commercial Corridor, commercial uses shall employ a residential style architecture to better integrate into the neighborhood fabric. The larger residential styles, such as Queen Anne, Vernacular [single buildings or grouped], and Foursquare, are appropriate. They create a suitable transition to adjacent residential areas and can be built relatively close together to achieve appropriate density. These styles could be utilized for any uses: retail, office or multifamily residential. The carriage building on High Street is an existing residential style structure used for commercial purposes.

Commercial Building Styles *continued on next page*

Commercial Building Styles *continued*

Important style characteristics to be used for new construction are noted below.

CHARACTERISTICS OF THE STYLES

Site

- Rectangular footprint that largely fills the width of the lot.
- Oriented to street for access, and display. No or small setback from the sidewalk along street; may not extend all way to rear lot line.
- Small front or side setback is appropriate for residential uses.
- Central or individual ground floor customer-tenant entries. Grouped residential entry to lobby or foyer. Separate service entries.
- Vehicle access and storage at side or rear; may be hidden under the building.
- Landscape: small plantings if there are setbacks; otherwise street trees. Upper story gardens visible from the sidewalk were not used in the historic period, and are discouraged.



1 Story New Falsefront



2 Story Historic False Front

Commercial Building Styles *continued*

Building Form

- Building form and foot print primarily rectangular, possible rectangular additions or wings; possible interior light court, courtyard or areaway.
- Massing: A simple rectangular primary form encompassing the primary and visible facades. a parapet or false front that provides the height boundary of the building and hides the view of the roof. Single story with retail or service use; Two or three story with single or mixed use. Basement option
- Ground floor typically has high ceilings; retail use with office or residential use above.
- Height: Main level close to grade.
 - Single story buildings: minimum 16 foot high parapet.
 - First to Second floor height to be at least 12 feet unless for multi-family use, then may be 10 feet.
 - Upper floor to floor heights at least 10 feet.
 - Maximum Height: Per City code
- Height for Commercial Buildings using a Residential Style:
 - First to Second floor height to be at least 10 feet.
 - Main Floor Level Height Above Grade: 2½ feet minimum.
 - Eave Height: 28 feet maximum.
 - Ridge Height maximum: 40 feet.
- Residential styles, including Queen Anne, or Foursquare, are encouraged on Seventh above John Q Adams and on Center and High, and where facing or adjoining residential zoning. Alternatively, the use(s) may be embodied in a grouping of smaller buildings.
- Full width one or two story porches at front (accessed by interior stair), or rear are appropriate for residential.
- Grade level or depressed parking if accessed from rear or rear end of side and generally concealed from sidewalk by building wall, provided commercial or residential use is located along primary street.



2 Story Commercial

Commercial Building Styles *continued*

Design Composition

- Mostly single or double store design to 100 feet in width. Wider than 100 feet requires style change.
- False front: covering front gable roof or just an extended wall; may have a parapet on each side (possibly not rear) hiding a low sloped roof.
- Streetcar Commercial: wood or masonry construction and finish; generous ground floor retail display with individual or grouped upper level double hung windows in an otherwise solid wall.
- Large ground floor storefront windows with short bulkhead wall below and very often with transom windows above; wood frames or appropriate metal. Trim at window/transom frame edges.
- Often recessed store entries; side entries typically not recessed. Separate entries for individual stores.
- Streetcar Multifamily: wood or masonry construction and finish. Less emphasis on retail display, but location of public and lobby areas adjoining the public way. Possible upper level window bays within the width and height of the primary or side façades. Possible entry projection.
- Upper Level Entry: typically a single shared entry with small lobby.
- Upper story wood framed windows designed as ‘punched’ openings in the otherwise solid wall, regularly spaced; individual, paired double hung design or triple units with fixed center and double hung side lights. Possible transom windows. Possible flat arch windows in masonry walls.
- Façade with modest, but defining cornice, possible belt cornice. Wood exteriors can support more detailing; masonry or plaster finished buildings with less detail and ornamentation; typically, no significant form projections or recesses except window bays or entries.
- Materials/Finish: cement plaster (stucco), brick, concrete with plaster over, horizontal board siding; fabric awnings, possible flat steel/wood building supported canopy.



1 Story Streetcar Commercial



1 Story Historic Streetcar Commercial



2 Story Multifamily Streetcar Residential



3 Story Multifamily Streetcar Residential



3 Story Multifamily Streetcar Residential



2 Story Four Square



2 ½ Story Four Square Multifamily



2 Story Four Square Multifamily

3. CANEMAH NATIONAL REGISTER HISTORIC DISTRICT

HISTORIC STATEMENT

Canemah is approximately one mile upriver (south) from Oregon City, just above the Willamette Falls. The community lies within a crescent-shaped hollow in the basalt cliffs that rise above the river. Its name is said to derive from a Native American word for “canoe place” and it was the existence of a graveled beach that gave rise to the town’s establishment in 1845. Because of the falls, cargo and passengers had to be portaged at this point. In 1849 Absalom Hedges platted Canemah and according to Howard McKinley Corning, soon Canemah had “several stores, warehouses, hotels, feed yards for oxen, a blacksmith shop and a plough factory.” The curve of the river also created a protected boat basin and in addition to providing services to travelers, Canemah became a center of riverboat construction. Corning estimates fifty-two side or sternwheel steamboats were built on the Willamette between the early 1850’s into the 1870’s; twenty-seven were built in Canemah.

In the mid-1850’s a narrow roadway was blasted along the edge of the river from Canemah to Oregon City, and the town continued to grow. Late in 1861 a tremendous flood destroyed many of the structures in the community, but they were soon rebuilt. In 1865 a portage railway was established between Canemah and Oregon City that operated until 1873. That year marked both the opening of west side locks around the falls as well as arrival of the east side Oregon & California Railroad. While Canemah’s service businesses were no longer needed and the railroad tracks established a barrier along the river bank, Corning states that at least three final riverboats were built in the 1870’s.

Canemah became a primarily residential community. Some residents who worked in nearby woolen and paper mills commuted to their jobs by boat. Between 1900 and the end of the 1920s, some modest bungalows were built, primarily along the railroad tracks. In the mid-1930’s construction of state highway 99E/McLoughlin Boulevard replaced Second Street, creating an additional barrier between residents and the river. Although there were a few businesses, a grocery store and tavern and for a time a Baptist Church, Canemah continued to be primarily residential, and in 1928 was annexed to Oregon City.

Although Canemah was laid out in 40 blocks arranged in a grid pattern, there is limited level ground, consisting primarily of the block on both sides of 99E, parallel to the river. East of 99E the terrain begins to rise steeply, up a series of narrow shelves to Fifth Street, and beyond, to South End Road which winds to the top of the “third level.” Due to its irregular terrain, few streets go through from the river and traffic within the neighborhood is via a zigzag pattern, back and forth, up and down the levels. The narrow streets are paved but lack curbs and sidewalks. With little space for a garage, many residents park their cars in front of their homes, effectively slowing traffic. Although platted with alleyways, few are recognized, and in some cases houses intrude. However, there is a great opportunity to develop pedestrian paths and stairways. This would provide more district cohesiveness.

Because of limited level building land, Canemah's older homes, especially above 99E are sited in accommodation to the existing terrain. Steep hillside lots were not re-graded or filled. Houses neither "step" down a sloping lot nor are they cantilevered out on "stilts." As a result, some homes lack setbacks, with front porches opening almost directly onto the street. For this reason houses do not uniformly face the river, but uphill, or towards other houses across the street.

The presence of many large trees, such as Douglas Fir and Big Leaf Maple, as well as brushy undergrowth, especially above Third Street, creates an aura of privacy and separation between neighbors. Early photographs indicate Canemah was densely covered with large evergreen trees, primarily Douglas Fir and Hemlock. As the community developed, the hillside "terraces" were cleared of trees, for building (homes and boats), and fuel. However, later photographs (1880's-1900) reveal that smaller trees or seedlings were allowed to regenerate, often very close to homes. In addition, deciduous trees, especially fruit trees, were planted, providing a high, thick canopy which continues to be a characteristic of Canemah. Removing trees to "clear a view" of the river is not a historic feature of Canemah. Views of the river from the hillside, even when homes face downhill, are typically only available from late fall to early spring.

Several spring-fed creeks run down the hillside, behind, and in one case, underneath, a house. At the south end of the district, between Third and Fourth streets is a flight of stone steps, providing pedestrian access between the levels, to the cemetery and playground.

DATA AND CURRENT STATUS

In 1977 Canemah was named a National Register Historic District. Boundaries are roughly from the Willamette River, east to Fourth Street, north to Ganong Street, south to Blanchard Street. There are slightly over 100 properties within the area, including single family homes, apartment buildings and a few commercial structures in the McLoughlin Boulevard/99E corridor.

In 1982 an inventory of 78 historic buildings was conducted. The period of historic significance for Canemah is between 1850-1925. These 75 years cover Canemah's settlement and expansion due to its importance as a portage point, center of boat building and related river-transportation activities, into its transformation as a residential community and its annexation into Oregon City.

In spite of its historic designation, non-compatible building has continued in the ensuing 30 years. A Canemah Neighborhood Association was established in 1982. Like its counterpart in the McLoughlin neighborhood, its members focus is self-education and appropriate restoration of the district's buildings. While some historic structures have been restored, others have been enlarged or remodeled with inappropriate materials, and others continue to be neglected.

RESIDENTIAL BUILDING STYLES

VERNACULAR

In the Canemah Neighborhood the most prevalent extant architectural style is Vernacular, built between 1867-1929. Important style characteristics as found on houses in the Canemah District to be used for new construction are noted below.



Built: 1867

CHARACTERISTICS OF THE STYLE

Site

- No uniform front setback; South of 3rd Street: houses may face front or side depending on topography.
- Lots range from 50x100 to 100x100 and contain a single house.
- Properties edges often not defined; Where fenced, primarily picket or low slat at front with side or partial returns.
- Planting: South of 3rd Street: forest setting, native and ornamental plantings form visual screen and sense of privacy; Elsewhere on the more level portions: lawn and planted area around buildings.
- House Placement: to suit the existing topography and most level lot portion especially south of 3rd Street.
- Retaining walls: stone, mortared or stacked basalt, or concrete south of 3rd Street, especially in proximity with street.
- Garages: Not found historically; informal graveled or paved parking next to street or along house; New garages to be located along side or behind house. Where topography is a concern, locate garage offset from building primary façade, close to street with direct access.
- Accessory Buildings: detached, behind along side of house and located to allow use of particular function.
- Streets: South of 3rd Street: narrow, without curbs or sidewalks; casual pedestrian paths and connecting stairs are encouraged.

Building Form

- Form easily allows additions and alterations such as increases in family size, activities or changing technology; generally smaller in size than McLoughlin.
- Shape: rectangular in plan, with smaller rectangular combinations to primary form; Rectangular or square form reinforced on façade. L-plan, T-plan options.
- Height: Maximum 1 ½ stories in height; Basement option.
- Proportions: Height (eave) to maximum width: 1:1 Height to Depth: can vary greatly.
- Roof: gable, of not less than 8:12 pitch, 10:12 and steeper are preferred. No cross-gable roofs; Possible wing or addition with lower ridgeline that is perpendicular or is offset.



Built: 1875



Built: 1864

Design Composition

- Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.
- Designed and built without assistance of a trained architect. Collaborative design evolved with homeowner and builder, based on familiar styles, features and products.
- Can combine features from other architectural styles popular during the historic period; simpler designs than McLoughlin.
- Porch: full or partial length at the front entry; if close to the ground, no railings; at main story only.
- Dormers: None.
- Materials: local, readily available.
- Windows: 1:1, double hung windows.
- Siding: horizontal board siding; typically shiplap, or channel; occasionally bevel.
- Ornament: Exterior decoration is modest, consisting of scroll-work brackets at the top of porch pillars, plain cornerboards and simple window trim. Most houses do not feature spindlework in the peaks of their gable roofs.
- Interior fireplaces and chimneys.



Built: 1885

BUNGALOW

The second most common architectural style in Canemah is the Bungalow, built between 1909-1928 in the later portion of the historic period. While many of the homes in this style are located on the river side of McLoughlin Boulevard, others are scattered on the hillside up to 4th Street, but generally on more level lots. Use of this style south of 3rd Street requires analysis of adjacent context houses to ensure necessary variety. Important style characteristics as found on houses in the Canemah District to be used for new construction are noted below.



Built: 1920

CHARACTERISTICS OF THE STYLE

Site

- No uniform front setback; South of 3rd Street: houses may face front or side depending on topography, and may be irregularly situated.
- Lots range from 50x100 to 100x100 and contain a single house.
- Properties edges often not defined; Where fenced, primarily low slat or picket at front with side or partial returns.
- Planting: South of 3rd Street: forest setting, native and ornamental plantings form visual screen and sense of privacy; Elsewhere, lawn, and planted area around buildings.
- House Placement: to suit the existing topography and most level lot portion especially south of 3rd Street
- Retaining walls: stone, mortared or stacked basalt, or concrete south of 3rd Street, especially in proximity with street.
- Garages: Not found historically; informal graveled parking next to street or along house; New garages to be located along side or behind house. Where topography is a concern, locate garage offset from building primary façade, close to street with direct access.
- Accessory Buildings: detached, along side or behind house and located to allow use of particular function.
- Streets: South of 3rd Street: narrow, without curbs or sidewalks; casual pedestrian paths and connecting stairs are encouraged.

Building Form

- Building form is difficult to modify for additions, but has versatile floor plan.
- More emphasis on the horizontal than Vernacular; this extends into porch, dormer and window design; more 'ground hugging'.
- Shape: floor plans are either rectangular, or square
- Height: One, or more often one-and-a-half stories high; possible basement.
- Proportions: Height to width approximately 1:1½; Height to Depth: 1: no more than 2 for main building portion not including front porch.
- Roof: Low-pitched (6:12 minimum) gable roof; front or side facing.
- Bays: possible single story, cantilevered, and rectangular located on side of house.
- Porch: Prominent front porch, roof supported with simple posts (less bulky than in McLoughlin); roof often continues down to create cover over porch; at main story only.



Built: 1916



Built: 1913

Design Composition

- Front façade can be symmetrical or asymmetrical
- Porch: full, not typically wrap-around front porches.
- Roof Overhang: wide, over-hanging eaves and exposed rafter tails; decorative knee brackets under eaves.
- Dormers: single front facing; with lower slope gable or shed roofs
- Chimneys: at interior or projecting on side of house, usually brick.
- Siding: horizontal board siding; typically bevel profile (occasionally shiplap), shingle siding; or a combination, such as horizontal boards on the first floor with shingles on the second floor, or just in the gable or dormer.
- Windows: double-hung; 1:1; large fixed window flanked by two smaller double-hung windows.
- Windows At Dormers: smaller, often grouped at shed dormers; fixed or casement style where smaller.
- Finishes: generally earth tones; no white doors or windows.

COMMERCIAL BUILDING STYLES

The established commercial area in Canemah was along the Willamette River from the shore to 2nd (now Highway 99E). An 1867 photograph shows some two and a half story Classical Revival or large Vernacular buildings (probably hotels) with full length, covered porches on the first and second floors; a building similar in style without the porches (possibly a store) and a long, one-story shed.

New infill buildings are to support the context of the district by providing designs compatible with the existing residential buildings and wood commercial buildings typical of that era. Rowhouses or attached townhouses are not appropriate. Important style characteristics as found on houses in the Canemah District to be used for new construction are noted below [Photographs of appropriate buildings from the Aurora Colony].



CHARACTERISTICS OF THE STYLE

Site

- Rectangular footprint may fill a large portion of the lot.
- Oriented to McLoughlin Blvd for access and display, or ninety degrees to the side street, or the river. Small setback from the street; may not extend to rear lot line.



Building Form

- Building form rectangular, possible rectangular additions or wings; a larger version of the Vernacular residential style.
- Gable roofed.
- Single story retail or service; 2 or 2 ½ story height with commercial, residential or mixed use.
- First to second floor height to be at least 12 feet; upper floor to floor heights at least 10 feet; Maximum Eave Height: 28 feet maximum; Ridge Height maximum: 40 feet.
- Ground floor typically have high ceilings with office or residential use above.
- Porches: partial or full width; one or two stories, all covered.

Design Composition

- Ground floor storefront windows, possibly divided with low wall below and transom windows above; possible shed or sliding doors; all set in wood or wood clad frames.
- Possible recessed store entries; side entries typically not recessed. Separate entries for individual stores, common upper level entry or within lower level.
- Upper story windows in the residential style, regularly spaced; individual, double hung design.
- Materials/Finish: horizontal board siding, often white in color; fabric awnings, residential materials. No cement plaster or similar.



4. INDIVIDUAL PROPERTIES

There are a variety of ways new construction can occur in relation to an Individual Historic Property. Often it is the result of property division. For small developments the guidelines should apply to adjacent and (as applicable) opposite infill. Larger developments could create 1) an adequate historic resource boundary, 2) develop a buffer zone, or 3) develop an immediate neighborhood of complementary infill.. Beyond these areas there can then be more freedom in design, style and materials without causing an adverse effect on the historic property.

A variety of styles may be encountered on individually listed resources. The appropriate style is determined by what is complementary to the existing resource and that provides some variety. Infill at the largest, to be slightly smaller than the historic building and not to over power it. The following considerations, as well as the Character and Element Guidelines, should be addressed in planning and design.

Site

- Establish adequate property boundaries for the historic property with consideration to its use (residence, farm including out-buildings, etc.), existing neighborhood context, other historic resources, site attributes, and visual context. Consult with the State Historic Preservation Office (SHPO).
- Adequate spacing, appropriate setbacks, and landscaping depend greatly on the individual site and the proposed new construction. New infill should respect rather than detract from the historic building and its context. Mitigation is a secondary measure, appropriate program and design is more important. Moving the building is a last resort solution that minimizes the importance of the building's relationship to its site.

Style and Building Form

- For a basis of design choose a new building style that is compatible with the historic building, such as one from its historic period, or one that is often found in conjunction with it in the neighborhood or area.
- Use simple and well proportioned building forms and rooflines, especially at the primary façade and when new is viewed alongside the historic. Avoid complicated, non-rectangular forms, and 'busy' compositions.
- Maintain the approximate historic building roof and floor heights; neither too high nor too low.
- Create an interesting and long lasting design, rather than one that becomes dated in a short time.

Design Composition

- Historic buildings can embrace new construction that has detail and ornamentation if it is used skillfully, systematically, in good proportion, and is not excessive.
- Avoid designing an overly plain, unattractive building with minimal texture.
- Utilize materials and design that conveys a sense of quality and craftsmanship.
- If needing to economize, carefully eliminate less important design features beginning with the least visible sides. Utilize similar economic measures of former builders.

5. CHARACTER GUIDELINES

I: SITE

USE OF SITE	<i>How the site is planned to be used.</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Access	Houses and Commercial buildings to have direct pedestrian access from the public sidewalk street to the main entry. Typically, the shortest path, unless topographic considerations Vehicle access to be along side of building, at rear or from alley 	Lack of sidewalk to main entry, circuitous path. Vehicle drive in front of primary façade 
Building to Open Area	Lot Coverage: Houses to cover less than half a typical lot. Commercial buildings can cover most of a lot; 20% Landscape area requirement may be reduced upon approval by HRB. 	Residences with R3.5 or R6 zoning of more than 40% lot coverage Canemah: Residences with R2 zoning of more than 40% lot coverage Canemah South of 3rd Residences on lots of 5,000 square feet or less with R6 zoning: More than 30% lot coverage 

I: SITE *continued*

USE OF SITE	<i>How the site is planned to be used.</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Topography Use	Site houses according to neighboring or contextual practice. At sloping sites, houses were sited at most the easily built portions of the lot and close to grade. At upsloping sites the main level was raised. At downslope sites the main level was lowered. Cross-slope sites utilized the easiest access. Residential garages may extend to front property line at up or down sloping sites. Commercial buildings requiring a larger footprint utilized level lots in close proximity to the street. Buildings may be set back to better integrate with houses where adjacent, and to facilitate grade changes.	Extensive regrading of lot to raise or lower the main level of a house. Tall walls to alter the natural topography for building siting or yard leveling purposes. Commercial buildings without the main level close in height to the public way Foundations, piers or piling more than 1 story in height above natural grade
Landscaping	Residences to utilize a front yard with lawn panel, small-scale shrubs or perennials, and annuals for interest. Similar treatment at side yards facing the public way. Larger scale plantings to be at rear yard. Canemah, South of 3rd: native planting mixture, large shrubs and trees are appropriate for any yard. Houses to maintain a sense of privacy to each other. Minimize the removal of trees over 6" in diameter by adjusting house siting, limit tree cutting outside of the house footprint. Replant to preserve tree canopy.	Canemah, South of 3rd: clear cutting of lot

I: SITE *continued*

USE OF SITE	<i>How the site is planned to be used.</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Paving	Pavement at front and side yards facing the public way is limited to sidewalks and driveway. 	Patios, courtyards and parking spaces between the front (or side where exposed) of the building and the street Commercial buildings may have limited paving for pedestrian use 
Site Features	Secondary features to support the design and character of the building and to not obscure its visibility from the public way. Decorative walls, fences and hedges at front yard to face of building to be no more than 3½ feet high; entry arbors and gates are excepted. Retaining and structural walls to be minimized; to be faced or finished to complement the district where constructed. 	Elements that significantly obscure or detract from the primary sides of the building Tall walls and fences in the front and front portion of side yards Large decorative landscape elements in the front yard, such as a gazebo, fountain, pool, statue Temporary structures in the front yard to face of building Unfinished structural walls; Cribbing, gabion walls unless obscured with plant covering
Equipment, Technology	Site located equipment and technology developed after the period of significance to be minimized in appearance and located at less visible areas. Required utility, public safety, and governmental equipment should follow the guidelines as possible; where difficulties arise review mitigation measures with City design staff and the HRB	Obtrusive equipment such as solar collectors, mechanical units, satellite dishes [other future technology] in the front yard 

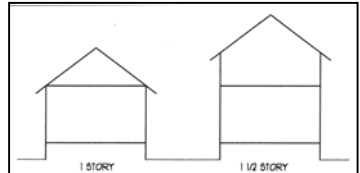
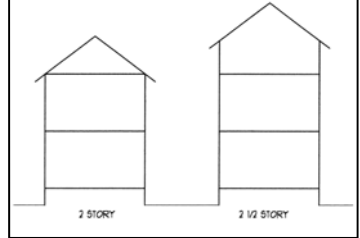
I: SITE *continued*

BUILDING PLACEMENT		
How buildings are located on the site		
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Orientation	Locate the primary side and entry of the building facing the public way. Typically, this side is parallel to the street. Maintain similar orientation of neighboring historic buildings. At reverse corner lots [the entry faces the side street on the end of the block], both sides must respect orientation. Canemah on McLoughlin Blvd: Commercial buildings may orient to McLoughlin Blvd, the river, or side street. Canemah, South of 3rd: orientation depends on specific site topography, but generally orthogonal or square to the street.	Skewed and angled building placement Primary building side facing the interior or side lot line
Spacing	Maintain similar spacing to context buildings and the neighborhood. Canemah, South of 3rd: House spacing is more irregular, but privacy is to be maintained. Adjust the siting to preserve mature plantings. Houses closer than 15 feet to the lot line require visual screening from one another. Lot Divisions and Individual Historic Properties: Use spacing of similarly styled and sized historic context buildings. 	Irregularly spaced buildings within a regularly spaced neighborhood context, or regularly spaced buildings within a irregularly spaced neighborhood context Crowded building sites from too large of building or too small of lot dimension Houses spaced tightly together, or disrupting the neighborhood rhythm Spacing that diminishes the historic quality of existing historic resources

I: SITE *continued*

BUILDING PLACEMENT	<i>How buildings are located on the site</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Setbacks	Maintain setbacks at front and sides similar to context buildings and the neighborhood. McLoughlin Commercial use buildings on 7th Street from Center to John Q. Adams: minimize or delete side yards and front setback. McLoughlin Commercial use buildings on Center and High: provide front setback of 6 feet, or fit to existing historic and newer building context; provide side setbacks of 6 feet for buildings using a residential style. Canemah, South of 3rd: houses with downslope lots may have greatly reduced front yard.	Building placement that is uncharacteristic to the block or neighborhood
Accessory Buildings	Accessory buildings are subservient to the primary building and provide auxiliary use. They are to be located at less visible areas such as the side or back of the primary building. Where topography issues arise, detached garages may be located in the front yard if offset from the main façade.	Placement of buildings that diminishes the historic resource or neighborhood quality Accessory buildings in the front yard in front of the main façade Temporary structures in the front yard in front of the face of the building

II BUILDING FORM

SIZE	<i>The overall size of the building and that relationship to its style and context</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Heights	The building heights to be similar to the neighborhood historic context and appropriate to the style chosen. Important Heights include: • Main level height above grade • Grade to eave and main ridge • Grade to parapet • Individual story height • Number of stories  McLoughlin Commercial Style buildings on 7th Street from Center to John Q. Adams can range from a tall single story to the approximate height of the existing historic buildings to provide new, but appropriately sized context. McLoughlin Commercial Use Buildings in a Residential Style: maximum height similar to residential use. Canemah Commercial use buildings: maximum height is higher than residential use; Maximum 2 ½ stories.	Residential buildings that vary more than 20% from heights of the historic neighborhood context buildings unless approved by the HRB.  Residential building ground levels that are elevated less than 18" above grade, unless there are topographic considerations  Canemah Residential: greater than 1½ story maximum height plus basement McLoughlin Residential: greater than 2½ story maximum height plus basement Commercial use buildings greater than 3 stories
Widths	Residential: maintain historic height to width ratio range for style Commercial: maximum approximately 1:3 height to width ratio 	Use of building widths that are out of proportion, or exceed the range for their historic style 
Depths	McLoughlin Commercial use buildings on 7th Street except from John Q. Adams to Harrison: typically built to front lot line; possible small setback for public use	Use of building depths that are out of proportion, or exceed the range for their historic style

II BUILDING FORM *continued*

SHAPE	<i>The overall geometry of the building created by its primary and secondary volumes</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Primary	Residential buildings formed with a primary single rectangular form or with the addition of subordinate rectangular form to create a wing, 'L', or addition Commercial buildings typically single rectangular primary form; possible rectangular additions at rear or wing where site or context allows 	Oblique, skewed, diagonal primary exterior walls Curved or rounded walls 
Secondary	Rectangular for additions, porches, bays, and detached buildings; joined to primary form at a right angle (orthogonally). Rectangular, faceted bays or porches where style allows Commercial buildings: forms shorter than the parapet and contained within the width of the façade	Commercial buildings: excessive, out of scale secondary forms that are wider or taller than the primary form; Special features (tower or similar) by HRB approval
Roof	Gable roof slopes to have equal pitch Residential: Gable primary roofs with pitch 8:12 or greater [6:12 for Bungalow]; Porch or bay roofs may have lower slope, may have hip if style allows. Roofs to have a minimum 1 foot overhang with a maximum of 3 feet; where soffitted the enclosure is typically parallel to the rafters Commercial: simple roof form, typically one shape-one main roof; low slope roofs if behind parapet or false front with side returns; may also be barrel or curved 	Mansard, clipped gable, shed, for primary roofs Canemah: cross gabled roofs; a secondary wing or addition with a perpendicular gable at the main roof ridgeline; allowable if it is a lower story or lower ridgeline.

II BUILDING FORM *continued*

MASS & BULK	A measure of the overall size of the building.	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Context Scale	Context scale is the relative or apparent size of the building in relation to its neighbors and includes siting and use. 	Buildings out of scale to their context or use 
Volumes	Residential buildings incorporated space within the roofline [a half story] and the basement for added space. McLoughlin Commercial Style buildings on 7th Street from Center to John Q. Adams: dense building along this historic commercial corridor is appropriate. Respect massing and scale of IOOF Hall and Fire Station   Canemah: maintain historic residential massing. Non rectangular volumes are more difficult to integrate into historic styles	Buildings with excessive mass for the style chosen or neighborhood in which located Long, uninterrupted wall planes facing the public way; utilize projections, recesses or wall elements to breakup such planes 

II BUILDING FORM *continued*

MASS & BULK	<i>A measure of the overall size of the building.</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Recesses	Provide recessed volumes in proportion to the main volume to provide interest, weather protection and the break up large volumes. Residential Buildings: Provide recesses, cut away bays to create style appropriate bay windows, porches and entries. Commercial Buildings: utilize recesses for entries, upper level residential porches, building equipment and trash, rear vehicle parking.	Recesses used excessively or in a way that diminishes or over elaborates the traditional style Repetitive or cumulative recesses that detract from the rhythm or style of the building form
Projections	Provide projected volumes in proportion to the main volume to provide interest and the break up large volumes. Residential Buildings: Provide projections, bays, porches to express style provide interest. Commercial Buildings: Provide projections to break up long wall expanses and to create interest. 	Projections used excessively or in a way that diminishes or over elaborates the traditional style Repetitive or cumulative projections that detract from the rhythm or style of the building form 
Special Features	Style appropriate features such as a commercial building entry or tower may be designed for limited applications. Features can create interest and vitality in the business district when thoughtfully designed 	Avoid special features that are not of quality materials and construction or that stylistically clash with the historic fabric

III DESIGN COMPOSITION

The particular building design and character.

Traditional building facades were designed from the exterior, not as a result of only interior needs.

ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
STYLE	Select a particular style that is appropriate for the building use and size. Maintain stylistic consistency in the design of the building; some variety is typical. The districts have variety of styles developed over a period of time. There were no large scale developments that produced multiple buildings of the same style over a short period. Canemah: adjacent historic houses vary in form, design and style, new infill to differentiate, but continue this pattern. 	Combination of various stylistic elements in a manner that detracts from the primary design  Duplication of the same, slightly altered or mirrored design on adjoining sites – no ‘cookie cutter’
FUNCTIONAL SPACE ARRANGEMENT	Arrange interior and site spaces in traditional ways. Public use areas toward the front and exposed sides of the building; service and private spaces at the interior, sides and rear	Locating service or utilitarian spaces at the building front

III DESIGN COMPOSITION *continued*

COMPOSITION CHARACTERISTICS	<i>There are multiple characteristics that must work together to create a successful design composition</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Symmetry	Symmetry is the balance of elements and materials on the façade and of the volumes of the building. Historic buildings extensively utilized symmetrical arrangements in their composition. Some styles are asymmetric in organization but yet ‘balanced’ such as a bay on the left side balancing a porch or tower on the right side. 	Composition without symmetry or balance 
Building Scale	Building Scale is the relative or apparent size of the building and its elements in relation to people. 	Building elements out of scale with each other or in relation to people 

III DESIGN COMPOSITION *continued*

COMPOSITION CHARACTERISTICS	There are multiple characteristics that must work together to create a successful design composition	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Proportion	Proportion is the relationship of height to width dimension of windows, doors and other building elements, their sizing to each other and to the facade of the building. Utilize the proportional relationships found in the traditional styles. 	Buildings and elements on buildings with disproportionate or exaggerated dimensions Residential windows having width to height dimensions other than the historic range, generally 1:1-2½ Commercial Windows: storefront glazing not having traditional proportions or glazing division 
Rhythm	Rhythm is the spacing and repetition of elements on a façade of the building. It is also the spacing and mixture of repetitive fronts of buildings along a street. It can be thought of the ‘music’ made by the building. For Example: Windows placed proportionally along all four elevations and in context with the architecture 	Visible side and rear walls with large blank or void areas Abstract compositions are generally problematic 

III DESIGN COMPOSITION *continued*

COMPOSITION CHARACTERISTICS	<i>There are multiple characteristics that must work together to create a successful design composition</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Pattern & Texture	Pattern refers to the effect of large areas of smaller dimensional elements; such as created by horizontal siding or shingles. Texture refers to the surface of the façade and its flatness and finish; such as a sanded plaster or rough stone. Most traditional materials provide sufficient texture and pattern. 	Excessive pattern changes and differences in pattern scale 

III DESIGN COMPOSITION *continued*

GROUPED ELEMENTS	Elements that are often grouped into assemblies to be consistent with the architectural style	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Porches	Residential front porches to define the main entry, provide shelter, and outdoor living space. Porches are typically close to the main floor level, with roof covering, skirting to grade, and accessed from the public way and yard, typically with stairs. May be projecting, recessed or a combination depending on style chosen. Porches to be designed and finished as part of the architecture, often with slightly more ornamentation than the main structure to highlight the entry. Side and rear porches to be secondary in nature, but to be consistent in design with the primary porch. Multifamily Porches: Upper level porches with roofs are allowed and may be common or private. Commercial Buildings: main level entry or service porches or covered areas and upper level porches are allowed if consistent with building style.	Wrap around front porches where not stylistically appropriate Upper level porches except at multifamily or commercial buildings where style allows Porches that are not consistent with the architectural style, without roofs (except secondary service accesses or those at grade), or those that are overly ornate for the chosen style
		

III DESIGN COMPOSITION *continued*

GROUPED ELEMENTS	<i>Elements that are often grouped into assemblies to be consistent with the architectural style</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Dormers Dormers provide additional use and light for upper half story floor areas and further define and enrich the building architecture. Design and materials to match the chosen style. Dormers here were typically modest in size and number; Design dormers to fit the scale and proportions of the house Shed dormer roofs are typically lower sloped than the main roof and join that roof below its main ridge. Houses generally have no more than one front facing dormer.		 Dormers not consistent with the architecture and scale of the building Excessive number of dormers Canemah: Dormers are not allowed on Vernacular style houses 

III DESIGN COMPOSITION *continued*

GROUPED ELEMENTS	<i>Elements that are often grouped into assemblies to be consistent with the architectural style</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Exterior Stairways	Exterior stairways at the building front to give access only to the main level, and to be less than five feet in height. They are to be consistent with the building style. Upper level stairways to be within the building envelope, except as noted below. Multifamily Buildings: rear or secondary stairways may be on the exterior if designed and finished as part of the architecture. Lower Level Stairs: uncovered stairs may be used for basements and lower levels. 	Exterior stairways exceeding five feet in height at the front of buildings Stairways not designed or finished consistent with the buildings style and architecture 
Breezeways & Connectors	Breezeways and covered walkways provide sheltered links between buildings and accessory structures. They can provide access to or separation from different building uses, as a means for reducing large building massing and to promote use of accessory buildings. Mixed use commercial: breezeways may provide a means of connecting grouped smaller buildings.	Canemah, South of 3rd: Use of breezeways or covered walkways by HRB approval.

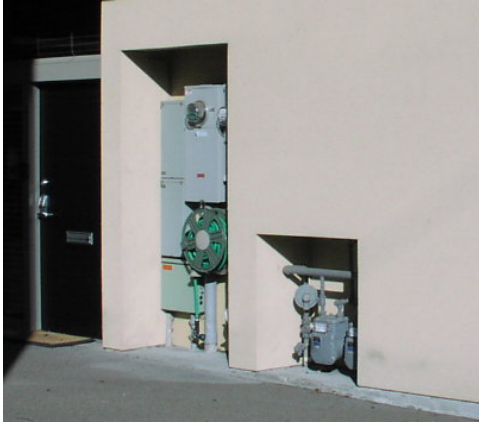
III DESIGN COMPOSITION *continued*

GROUPED ELEMENTS	<i>Elements that are often grouped into assemblies to be consistent with the architectural style</i>	
ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
Storefronts	Storefronts to be located at the front of commercial buildings to facilitate patron use. Storefronts to utilize traditional composition containing lower wall area, primary large glazing area, smaller transom glazing area, with signage area above or below transom. Storefronts may have doors including full width sliding or folding panels. Weather and sun protection from awnings or canopies may be provided. 	Storefronts longer than twenty feet without interruption by building columns and wall sections  Storefront detailing, materials and finishes inconsistent with traditional buildings; examples include flush framing, butt glazing, bright colors, offset doors, frameless doors Storefront glazing not having traditional proportions or glazing division
ORNAMENTATION	Ornamentation in McLoughlin and more so in Canemah is to be limited. On residential buildings it should be primarily located on the porches, and primary building sides. Commercial structures used a limited amount of ornament at pedestrian areas and the parapet for interest. New buildings should not overstate the historic style reference. 	Excessive ornamentation or that which is inconsistent with the building style Commercial buildings that introduce excessive stylistic elements that are inconsistent with the historic period  Lighting used by itself as architectural ornament, including neon and fiber optic

III DESIGN COMPOSITION *continued*

ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
DETAILS	Utilize detailing in a consistent manner throughout the design and in such a way that it is historically appropriate. Traditional buildings developed detail by the use of available products and materials. Use of similar products can produce compatible designs with modern materials. For example, while certain wood molding shapes are not available, there are replacements offering a complementary design, dimension, and sense of craft. Detail can also be achieved through material textures.	Commercial buildings that are void of detail, express modern products detailing, and finishes or are 'brutalistic' in nature Inconsistent use of details on the building
MATERIALS	Utilize materials that are both appropriate for the particular application and for the historic style. A wide variety of currently available materials, and products are acceptable provided the resultant appearance is complementary with the buildings of the historic period.	Materials that through their nature are not historically appropriate Materials that are not appropriate for the particular application or in that specific context

III DESIGN COMPOSITION *continued*

ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
FINISHES & COLOR	Use color and finishes that are historically and contextually appropriate. The colors of the building should complement those of surrounding buildings. Color and texture can be applied or can be integral to the material, such as stone and brick. Consider those differences and the effects of aging for appropriate selection. Particular styles use different colors. Typically, there are no more than three building colors.	 Use of color and finishes to create an appearance unsympathetic to the historic district Use of bright colored building finishes, reflective, fritted glass, stainless or aluminum finish, or painting integrally colored materials such as brick Use of too many colors and textures
EQUIPMENT, TECHNOLOGY	Minimize the presence and visibility of building equipment and technology. Locate in lesser or out of view areas. Organize equipment and systems to consolidate and create ordered appearance. Conceal pipes and conduit inside the building. Recess meters, panels, other equipment, or screen from apparent view. Paint equipment to blend into the background of the building. Allow for future revisions and new technology. 	Equipment and technological systems that distract from the primary views of the building, are disorganized and cluttered, or installed distractingly Required utility, public safety, and regulatory equipment should follow the guidelines as possible; where difficulties arise review mitigation measures with City design staff and the HRB [Good installation at side of building illustrated to left]

IV PUBLIC IMPROVEMENTS, UTILITIES

Improvements in the public right of way

Utilities and related equipment

ASPECT	PRINCIPLE — GOOD EXAMPLE	NOT ALLOWED
STYLE	Construction to complement the nature of the historic district, but flexibility is necessary to allow a system wide approach, parts standardization and use of available materials. New utility work to be minimized in appearance. Support pedestrian use and scale. 	Visible 'high tech' installations Insertion of stylistic elements and systems that do not complement the district The Guideline appreciate that there is necessary public safety and engineering work that may be difficult to alter; Installations should follow the guidelines as possible, often simple measures can reduce an adverse impact; Review with City design staff and HRB
DESIGN	For visible features, use design that was typical or similar to that of the historic period; where unable, screen or cover the installation in an historically appropriate manner. Construction to not significantly alter the district's built pattern. Locate equipment away from primary views to maximum extent practicable. Utilize landscape or fabricated screening to minimize disruptive appearance. Minimize street signage as allowable by codes.	Construction out of scale with the district Street, sidewalk, stairs, walls that significantly alter the historic pattern and dimension of the district. Modern details and construction in visible locations unless screened or appearance mitigated. Excessive regrading or removal of vegetation that adversely affects the historic context of the district and surrounding area without mitigation
MATERIALS	Materials and Products For Visible Features: Use those that were typical of the historic period or those that offer a similar appearance. Use of stone, concrete, wood and metal in finishes and textures similar to that of the historic period is most appropriate. 	Obvious synthetic materials, non historic finishes or colors. Historic materials used in ways not found in the district Bright stainless, galvanized, aluminum, exposed aggregate concrete, other non historic finishes 

6. ELEMENT GUIDELINES

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Antenna/Satellite Dish	Minimize visual impact by screening their view from the street	Do not mount directly to front or street side of house	Roof top cell towers, except as necessary for emergency and public safety facilities
Artwork	Public Art: not to conflict with historic context; may be interpretive; should be enduring and high quality; possible temporary pieces	Wide range of appropriate designs, and memorials Avoid themes and designs that will not be enduring Avoid excessive or large displays that compete with historic context	Inconsistent with colors and finishes for large installations Disruptive work for the historic context Excessive amount or numbers of installations
Awnings, Residential	Not used historically		Any type of awning at front
Awnings/Canopies, Commercial	Awnings with a cloth appearance like canvas; Shape: traditional rigid or collapsible form with valance or side panels	Awnings should be no steeper than 45 degrees from horizontal; solid color or traditionally striped; Provide separate awnings for each bay or opening rather than a continuous run; prevent obscuring architectural detail	Shiny, plastic, or coated awnings; Square or barrel extension awnings; Internally illuminated awnings
Benches, Commercial	The style, design, and materials should be site appropriate within the district Possible district or city system	Historic period appropriate design; high quality, correct scale and materials; located not to impede pedestrian traffic	Heavily scaled or contemporary design or materials
Bike Racks, Commercial	Maintain the pedestrian character of the Historic Districts; Provide secure installations out of pedestrian traffic flow, in parking or public plaza, near building entries	Design should be simple and not conflict with historic context High quality materials Securing rails or similar on buildings are possible alternative to racks	Graphic designs discouraged

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Chimney, Fireplace	Traditional in appearance If utilitarian, diminish presence	Projecting fireplaces and chimneys should be constructed or faced with brick or plaster consistent with historic masonry; Projecting or cantilevered direct vent fireplace may be wood sided where less than one story in height Vent metal flues through the interior of the house and directly through the roof to minimize appearance - painted	Metal flues attached to the outside wall then continuing above the roof line Wood sided enclosures for chimney
Cornice, Commercial	Adds interest at the roofline and defines the top of the building Simple cornice & entablature most appropriate	Horizontal, broad fascia with running moldings, or detail to add relief and shadow lines; Evenly spaced brackets are also appropriate Range of appropriate dimensions Wood, metal or Plaster	
Doors, Commercial	Primary: Signifies building or store entry; style and size appropriate; possible feature Secondary: Typically utilitarian and service oriented Historically appropriate hardware	Primary: stile and rail with panel and glass; single or paired Materials: wood (clad, painted or stained), steel or finished aluminum Secondary: May be flush or sliding types Secondary: may be solid; groups of sliding for retail	Bare aluminum, flush design, frameless glass doors
Doors, Commercial, garage	Typically utilitarian and service oriented and located at minor view areas Finished to match swinging doors	Design should reflect the overall character of the building. Panel, plank, cross-buck, bar grille styles; Materials: wood, painted metal; Overhead, swinging, or sliding are allowed.	Garage doors on front or forward side elevations Bare aluminum, flush design
Doors, Institutional, garage	Similar to Commercial; Where required (Fire station, etc.) may face primary street as needed	Similar to Commercial;	Similar to Commercial as noted;

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Doors, Residential	Primary: Complement the design and detailing of the historic style with similar appearance to wood Secondary: Typically utilitarian	Primary: stile and rail type; panel design; with upper portion glass; May be solid panel door Materials: painted or stained wood, fiberglass clad, or metal clad Secondary: May be solid panel or French door style Prefinished doors to be in color and finish suitable for the style	Sliding doors, large wide openings that are not divided into smaller traditional openings Design: Flush doors, 6 or 8 panel design Colors and finishes that are not suitable for the style Not allowed finishes: bare aluminum/stainless or anodized metal
Doors, Residential garage	Maintain historic scale and materials of traditional accessory structures	Design should reflect the overall character of the building; Panel, plank, cross-buck; Panel, plank, cross-buck styles; Overhead, swinging, or sliding Materials: wood, painted metal Limit of twelve feet (12') in width and eight feet (8') in height	Oversized doors are conditional to HRC approval Flush doors are not allowed
Driveways	Locate to the side or rear of the primary building; Maintain historic scale in dimension	Driveway or Dual wheel tracks (runways) Materials: concrete, patterned concrete, brick, rectangular shaped pavers, asphalt; or combination of two; Gravel beyond paved apron at residential	Oversize driveways, or located in front of the main façade of the house Emergency services may require exception
Equipment, Electronic & Security	As possible locate equipment and installations in discreet locations or away from primary view; Security devices, cameras and ATM equipment have special needs generally requiring visible locations	Consider alternative design solutions that enhance the overall project, provide natural security; Mitigation measures include quality design, concealed conduit and wiring or wireless, sympathetic equipment finishes	Installations that overly detract from the project through design or quality of installation
False front, Commercial	A parapet formed by extending the front wall in height, often to conceal the gable end of a steep roof, or to give the effect of a taller building	Stepped or flat front; front as a false front, with side returns, or on each side; not required on the visible sides or rear	
Fences, Front and Corner Side Yards	Low, open fencing and gates at the front yard to front face of house [Please refer to HRB Policy #6 – Fences]	Simple, painted vertical iron, wooden pickets or slates	Chain-link, vinyl, split rail, ornate wrought iron, stockade, plywood or hard panel; Fences over forty two (42) inches in height

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Fences, Interior Side Yards, Rear Yards and Alleyways	Taller fences suitable as privacy screening beyond the front face of the house [Please refer to HRB Policy #6 – Fences]	Staggered vertical or horizontal boards; woven wire supported on wood or steel	Chain-link, vinyl, split rail, stockade, plywood or hard panel; Fences over six (6) feet in height
Finishes, Commercial	Finishes and colors should complement the adjacent buildings and be consistent with the historic style and period Accent colors used for ornamentation should harmonize with the overall building color	Utilize historic colors and finishes; metal finishes include brass, bronze, medium-dark anodized aluminum, natural lead or copper; Stained wood only for limited use or elements; Refer to approved list 2-4 colors total; Building field color: 1-2 colors; Building Trim color: 1-3 colors	Use of fluorescent, bright, neon or garish colors. Use of heavily reflective surfaces. Unfinished ferrous and galvanized steel metals; stainless steel, chrome, silver aluminum colors Unfinished wood
Finishes, Residential	Paint is the typical finish and should be selected to be historically and contextually appropriate. Many publications are available which illustrate appropriate paint colors Historic colors in the districts are typically white or muted earth tone colors that blend with the surroundings	Utilize historic colors and finishes; metal finishes include brass, bronze, medium-dark anodized aluminum, natural lead or copper; Stained wood only for limited use or elements 2-4 colors total; Building field color: 1-2 colors; Building Trim color: 1-3 colors	Use of fluorescent, bright, neon or nonhistoric colors; Use of heavily reflective surfaces Unfinished metals; stainless steel, chrome, silver aluminum colors Unfinished wood
Foundations	Typical residential foundations are poured concrete or post and beam construction on brick or stone piers	Foundations of poured concrete either natural finish, parged or painted. Possible brick faced concrete Cover sections of exposed foundations; Concrete or masonry: exceeding 3½ feet, Piling or posts: 1½ feet; above grade; At slopes measure perpendicular to slope Keep visibly noticeable areas of waterproofing under 12” above grade	Veneer facing of foundations with stone or synthetic materials Tall or expansive areas of exposed foundations Exposed waterproofing on the foundation
Gazebo, Pergola, Arbor	Large scale exterior structures to be located at side or rear yards; Complement to primary structure style and detail	Painted, wood, metal	Vinyl structures

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Gutters & Downspouts	Exposed gutters and downspouts are typical on residential buildings; less typical at commercial buildings; Commercial buildings: locate downspouts away impact areas; use interior drainage	Rectangular, ogee, or K-shaped gutters are preferable; Rectangular or round downspouts are typical; Paint to match the trim or house body color, whichever is appropriate Materials: painted wood, metal	Vinyl, unpainted plastic pipe or metal
Lighting, Commercial	Walkway illumination for access and security Highlight or wall wash building or portions to create interest Minimize fixture visibility, or historically appropriate decorative; Consider glare	Choose and locate fixtures to be unobtrusive, or to be decorative; color match to building Utilize medium to warm colored lamping Signs should be externally lit.	Industrial, high tech, contemporary, out of scale fixtures Excessively bright, or numerous fixtures Blinking, flashing, moving lighting Lighting used as substitute for architectural ornament or detail
Lighting, Residential	Walkway or outdoor living space lighting Integrate into the design, building or appropriate fixture design	Simple designs that are compatible with the style of the structure; Mount fixtures to the porch ceiling and adjacent to entries; smaller floodlighting from walls; Utilize warm colored lamping	Industrial, high tech, contemporary, out of scale fixtures Excessively bright, or numerous fixtures Blinking, flashing, moving lighting
Lighting, Site	Onsite design style to complement building; Designs for personal use in landscape, parking area lighting Utilize building for lighting where possible; Integrate with other site features and furnishings	Recessed or surface mounted small fixtures in site walls or structures; Posts: painted wood, metal, fiber glass, unpainted concrete Minimize view of security type fixtures Maintain lower light level and casual nature in Canemah	If used, post-mounted lights should not exceed 8 feet in height for residential yards and patios, or 12-14 feet for commercial areas including parking; Use quality materials and non-yellowing lens
Lighting, Street	Lighting on the street and within the public way	Continue the City's existing ornamental pole and bracket design with teardrop style lamps as authorized by the City; variations may be suitable for interior circulation within developments	Variation on the existing style is possible to define neighborhoods or areas; avoid excessive style expressions; Use quality materials and non-yellowing lens

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Masonry	Traditional type of masonry that is used in traditional manner	Brick: red or buff, standard size units and joints, traditional finish; possible quoining or rustication Stone: dimensioned or rough basalt, or local stone for sitework only Concrete Block: allowed if plaster coated Terra Cotta: glazed or unglazed, for trim or detail only	Non-traditional size, color or type of materials; glazed brick or block; uncoated concrete block, glass block, cultured stone Joint: non traditional size or tooling or color Non traditional patterning
Mechanical Equip.	Locate in the most inconspicuous area, usually behind the building; Locate portable window air-conditioning units on rear or inconspicuous side elevations	Minimize visual impact by screening their view from the street	Mechanical equipment in locations that compromise roof slopes visible from the street; Visible vending machines
Parapet, Commercial	Use on Streetcar Commercial and Institutional buildings at front, and sides usually above a cornice; can conceal a low roof and equipment	Stepped or flat front; front may be taller than sides, especially if interior	Commercial style buildings only: Lack of a parapet at front or visible sides
Paving	Paved areas provide a network for pedestrians and vehicles Paving material should be compatible with the function and historic use patterns Paved areas might include sidewalks, walkways, driveways, patios, courtyards, parking areas and shared use areas	Appropriate paving materials include: poured concrete, concrete stepping stones, unit pavers, stone, and asphalt; gravel in limited applications such as residential landscapes Concrete Finish: broomed, or fine finish; score into squares or rectangles 36" or less Unit pavers should be or rectangular or square shape and of grey, tan or red brick color Differentiate vehicle paving from pedestrian	Contemporary style, colored, textured paving Concrete finish, scoring and coloring not consistent with the historic period; avoid smooth troweled borders, large unscored panels, sawcut joints, exposed aggregate and heavily textured finish
Planters, commercial	Planters are encouraged to enhance the visual aspects of a buildings façade or streetscape Materials, scale, finish and color should complement the building's exterior Plantings to be complementary to the historic district	Free standing walkway planters of cast: stone, iron, concrete, composite materials, or clay; Historic period appropriate Pole supported pots in scale Building wall supported planter boxes Perennials, annuals, evergreens	Planters that obscure architectural details or impede pedestrian traffic Planters or plantings not in scale
Porch, Decking	Where visible from public way: Appearance of traditional painted wood decking	Painted 1x4 abutted boards or similar	Where visible from public way: synthetic materials, spaced boards

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Porch, Enclosure	Open or enclosed with low walls or balustrade Space under porch enclosed with continuation of siding or lattice Primary porches have more detail; secondary porches similar or less details and smaller porch – lesser feature	Enclosed with low wall: Use of same material and finish as siding, integrated posts; extend to grade level; water drains cut into enclosure at deck level; Cap at top of wall Balustrade: Square or simple balusters with molded top and bottom rails; finished and painted wood Possible painted lattice enclosure below decking; equal spaces lath to opening	Vinyl siding, lattice, handrails, or balusters Use of metal handrails or balusters; wrought iron Unfinished, unpainted, rough shaped members
Porch, Posts	Square or beveled; may be slightly more detailed at Queen Anne style	Simple trim at base and top, consistent with architectural style	Metal or synthetic materials unless similar in design, dimension, and finish to wood
Roof Decks, Commercial	Design occupied area to be set back from view from public way		On Residential buildings Color: white, metallic
Roof, Railing	Not historic in the districts; Where necessary: appropriate design and materials and set back so not visible from public way	Design to integrate with parapet finish, style and design	Glass, plastic, cable or open pipe systems
Roofing, Commercial	Low sloped: Roof is hidden from street view by parapet Sloped and visible: similar to residential, but possible roll type materials	Roofing material: any where not visible, built-up, roll types, single ply; Color: tan, grey, neutral; any if hidden under pavers Sloped and visible: granule covered membrane, shingle types noted under residential	Low sloped color: white, metallic Sloped and visible: shakes, clay tile, standing seam metal, metal panel, corrugated, single ply or liquid applied types
Roofing, Residential	Traditional materials: wood shingles, composition, and metal shingles Secondary and low sloped: roll type materials with or without granules, soldered metal	3-tab composition, standard or “architectural style” is preferable; Rolled composition roofing is allowed on secondary roofs with slopes less than 4/12; Darker colors are encouraged; Metal roofing acceptable at small areas such as bays; copper, painted steel	Sloped and visible: shakes, clay tile, standing seam metal, metal panel (except at bays), corrugated, single ply or liquid applied types Color: white
Shutters	Not used on the historic styles		Shutters not allowed

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Siding	Compatible with historic siding and enclosure materials in size, profile, orientation, texture, and color Commercial Buildings in McLoughlin: Cement plaster is acceptable	Wood siding or materials which have the appearance of horizontal wood siding in an allowable design; sawn wood shingles (painted) in secondary areas and for ornamental detail; Sample approval is required for non-wood horizontal board siding Cement Plaster (stucco): sand or fine finish; natural color, integral or painted; including parging on concrete; use fine joint lines; possible detailing, quoining or rustication	Aluminum, vinyl, scored plywood or sheet siding Alternative board siding not matching the approved profiles or texture Heavy textured or patterned plaster Canemah: cement plaster or similar
Signs, Building Name	A sign to name the building; Complement and integrate with the overall design and its materials	Sized sufficiently to be read from sidewalk, but in scale to the building; Mount directly on parapet, or other wall area; 1 sign per street face allowed; Utilize quality and lasting materials	Signs and materials out of scale and not designed to coordinate with the building
Signs, Date Built	Residential Historic: Encouraged, in keeping with historic precedent Commercial Infill: required	Residential Historic: per district and City guidelines Commercial Infill: Small (up to 1 square foot) permanent plaque or engraving indicating date constructed visibly located near building base	
Signs, Commercial Tenants	Historically appropriate tenant signs, especially for retail and services. Wide range of appropriate types of signs and materials and locations Building directories are necessary for upper level tenants rather than individual signs Signs on the interior of the building are not regulated for size or materials	Oriented signs to pedestrians and to slow moving vehicle traffic; Sign materials should complement the building materials; Panel and hanging signs should incorporate applied edge molding to provide depth and a finished look; Wall or projecting signs may be illuminated by concealed sources or by compatible exposed fixtures Size: 1 square foot per lineal foot of storefront is total allowance	Internally illuminated cabinet signs, blinking, moving or flashing lights; plastic lettering or face material Neon signs only in traditional style and by HRB approval Design and graphics not produced in a professional manner Materials that are not quality or lasting
Skylights	Install on inconspicuous roof slopes, mount skylight close to roof plane	Rectangular in shape with rectangular flat clear (exterior sheet) glass	Skylights on street-side roofs. No dome or bubble shaped skylights; plastic, acrylic glazing
Spas	Locate inconspicuously		In front yard

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Storm Windows	Storm windows are not typical for new construction Interior storm windows are encouraged for salvaged historic windows if they match the window design	If salvaged wood windows are used; match the design of the storm window with design of the salvaged window; Appropriate materials are painted wood, baked enamel or anodized aluminum; Paint to match or complement existing window trim [Please refer to HRB Policy #2 – Storm Windows and Doors]	Mill finish aluminum
Swimming Pools	Locate in backyard		In front yards
Tile, commercial	Wall tile used for detail or weather protection Entry way tile at commercial buildings	Tile of 6 inch size or less used as accents and detail on commercial building walls Tile at lower storefront walls for aesthetics and weather protection Mosaics or tile of 6 inch size or less for entry way flooring	Excessive use or color and graphic composition that detracts from the building design
Trash Receptacles	Commercial: Locate inconspicuously; screen from view Public: historically, stylistically appropriate; quality materials	Hide from apparent view by landscaping, screening or fencing; keep inside until collection date	
Trim, Doors, Windows	Trim at openings allows opportunity for design detail and some ornamentation while providing weather protection of enclosure	Commercial or residential buildings with wood siding: Typically flat painted boards consistent with architectural style, 4” nominal width or greater, often 6”, with hood molding; Simple designs with appropriate decoration; Main entry doors are often embellished with decorative moldings Plaster and Masonry Finishes: trim is less detailed; painted wood, masonry	Excessive or out of scale ornamentation
Trim, Eave, Gable	Trim at wall to roof: Use simple detailing	Eaves are typically open with minimal projection beyond the wall plane and simple fascia; Gable trim consists of a simple bargeboard with molding at roofline and a wide molded rake board	Excessive or out of scale ornamentation

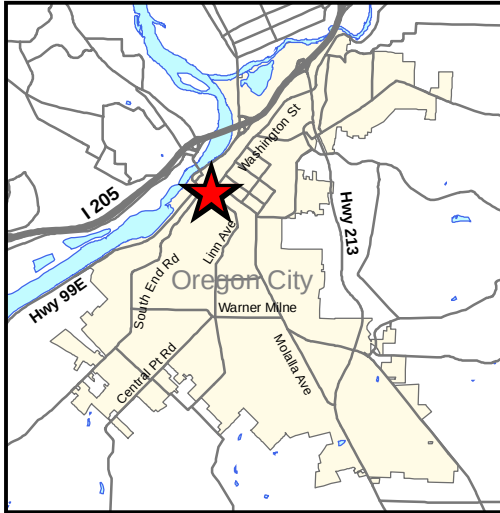
ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Trim, Wall	Trim at wall edges: Ends, corners and intersections of wall siding to have wood trim, consistent with architectural style, 4" nominal width or greater, often 6", Use simple detailing	Corner boards are often used on wood sided buildings; A band board is used as a transition between the wall and gable; A water table and apron protects the foundation and adds interest; These elements are usually painted the trim color	Excessive or out of scale ornamentation Lack or minimal sized wall trim
Vents, Roof	Utilize traditional attic venting such as gable wall louver vents Locate roof vents as inconspicuously as possible	Employ painted wood louver gable wall vents Roof Vents: locate on less visible roofs; Choose vent colors that blend with roofing material or paint out; Use ridge vent instead of multiple individual vents	Vents or ventilation assemblies that detract from the primary façade or roof exposure
Vents, Foundation	Minimize their presence from the street.	Paint to match foundation color or use landscaping to hide	
Vents, Wall, Other	Mechanical exhaust vents for odors and fumes: Minimize their presence from the street or sidewalk	Locate on side or rear elevations; Paint to match wall color or use screening or landscaping to hide	
Wall Finish, Commercial	Traditional materials include cement plaster (stucco), coated and painted concrete	Cement plaster in a sand or fine texture; integrally finished or painted or materials having a similar appearance; smooth surfaced or fine textured, painted concrete	Metal siding, sandwich panel systems, spandrel glass systems
Walls, Site	Low landscape walls for increased site utility Minimize retaining walls and their heights Use natural materials, finished concrete	Minimize the height and presence of walls; Use of rock, brick, concrete with finishing; mortared or stacked true masonry or stone that was traditionally quarried in the area	Gabion, rip-rap, stacked recycled concrete if unfaced Wood, railroad tie retaining walls in commercial or public setting Use of materials, stone, not regionally available during the historic period
Window, Commercial Storefront	Retail display: Framed large glazing with shadowline and detail to composition	Frames set on low bulkhead wall within building wall or wide columns; typically includes transom beam with smaller upper windows in the opening; and large lower display glazing with minimum of 1½ inch wide glass stops; painted or appropriate finish; Metal or wood	Glazing system starting at ground; curtain wall type, spandrel glazing, metal panels; butt or flush glazed systems Vinyl storefront glazing or door systems

ELEMENT	PRINCIPLE	DESIGN	NOT ALLOWED
Window, Commercial	Single or grouped main level and upper level windows: similar in design and materials to residential styled; possible slightly larger member scale	Wood, or clad wood designed to provide an appearance of traditional wood windows Non wood acceptable if in appropriate style, and matching wood in profile, shadowline, and if in suitable color and finish; Actual sample is required to be approved	Narrow profile metal, or frameless windows; butt or flush glazed systems
Window, Glazing	Clear glass, typical Small areas of decorative glass Privacy Glass: locate away from primary facades	Clear glazing for typical use; insulated or not Decorative glass for small or ornamental areas	Glazing: tinted, reflective, fritted, plastic
Window, Residential	Match the member sizing, thickness and shadowline of painted wood windows	Double, single hung Casement, Fixed if style allows Wood clad acceptable if matching and if in suitable color and finish Non wood acceptable if in appropriate style, and matching wood in profile, shadowline, and if in suitable color and finish; Actual sample is required to be approved Divided lights: with exterior muntins only and if style allows	Sliding, and non rectangular windows Awning, hopper upon HRC review Prefinished windows of unsuitable colors; Unfinished or stained finish Grids between glass Tinted or reflective glass, glass block

Appendix

McLoughlin Historic Conservation District

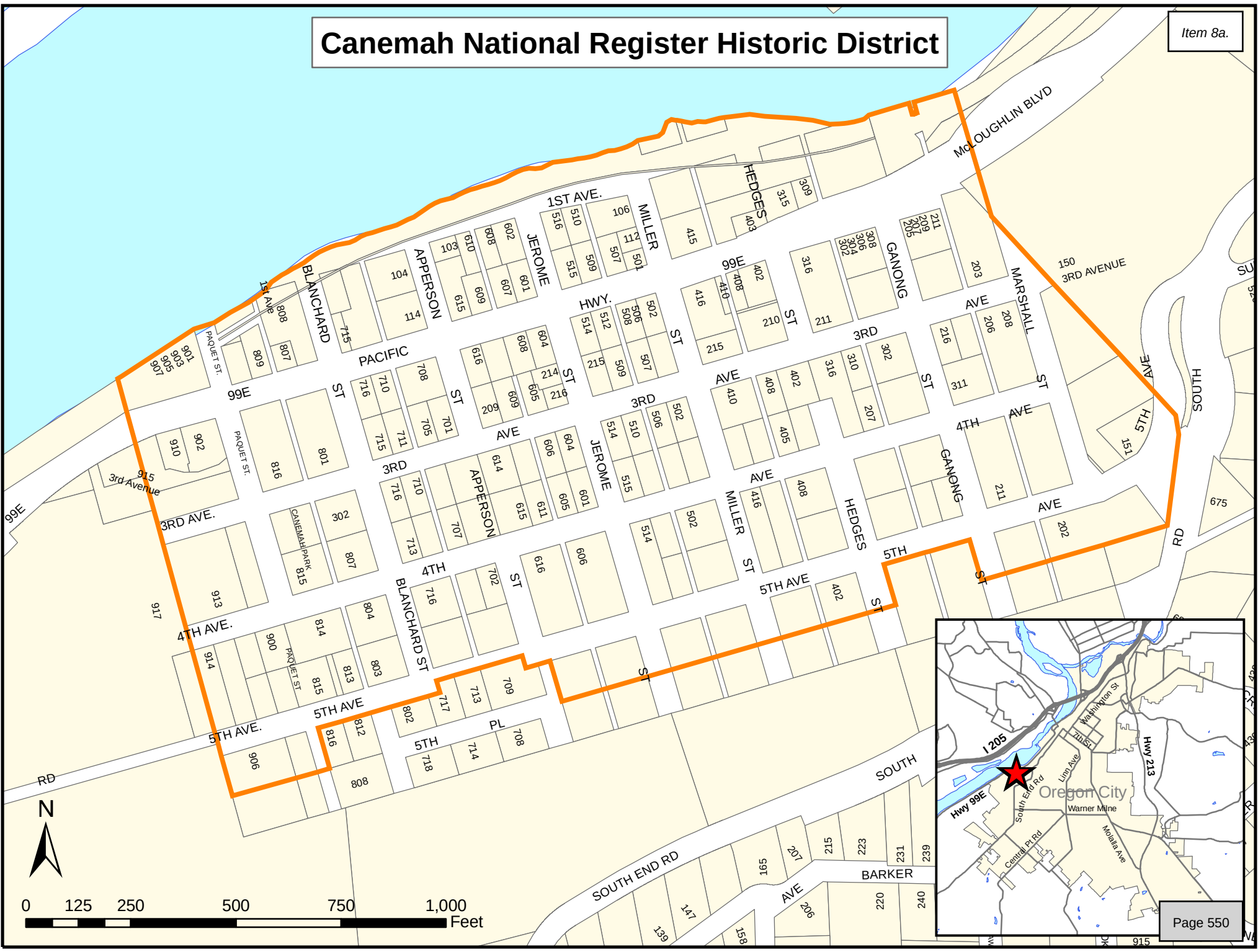
Item 8a.



0 250 500 1,000 1,500 2,000 Feet

Canemah National Register Historic District

Item 8a.



New Building Design in Oregon City's Historic Districts

A. The Project and Location

1. What do you want to build?
2. Where is the site? (circle one)
 - McLoughlin Conservation District
 - Canemah National Register Historic District
 - Outside either district, but in the vicinity of a historic property.
3. The immediate context:
 - What buildings are already next to the site? Style? Use?
 - What buildings are across the street? Style? Use?
4. Are there existing historic buildings in the vicinity of your site?

B. Style

What styles are appropriate? (See: *Acceptable styles in Historic District Design Guidelines*). Pick an appropriate style for the use See below for list.

C. Site Considerations/Principles

1. What does current zoning allow?
2. Are there any specific requirements beyond the basic zoning regulations?
3. What is the setback requirement?
4. What lot coverage is allowed?
5. Where is the pedestrian access?
6. Where is the vehicle access?
7. If your project is a multifamily-use, Can common space be shared (courtyard)?

Assessment Question:

Is the building respectful of its neighbors?

Is the shape/bulk of the building consistent with its style?

D. Site Plan Development

1. What is size of lot?
2. Where is the lot located on the block?
3. Is the site flat or on a slope?
4. Are there any existing, significant trees that should be saved?
5. Where on the lot is the building to be placed?
6. Where on the lot are additional structures to be placed (garage, shed)?
7. Where on the lot is the yard/private area?

E. Design Composition – What Will the Building Look Like?

1. Shape.
2. Any wings, extensions?
3. Roof shapes; secondary roofs.
4. Porches.
5. Window placement.
6. Dormers.
7. Bay windows.

Assessment Question:

Do these details add to or detract from the historic district?

Styles Appropriate For New Construction In:

McLoughlin Historic Conservation District

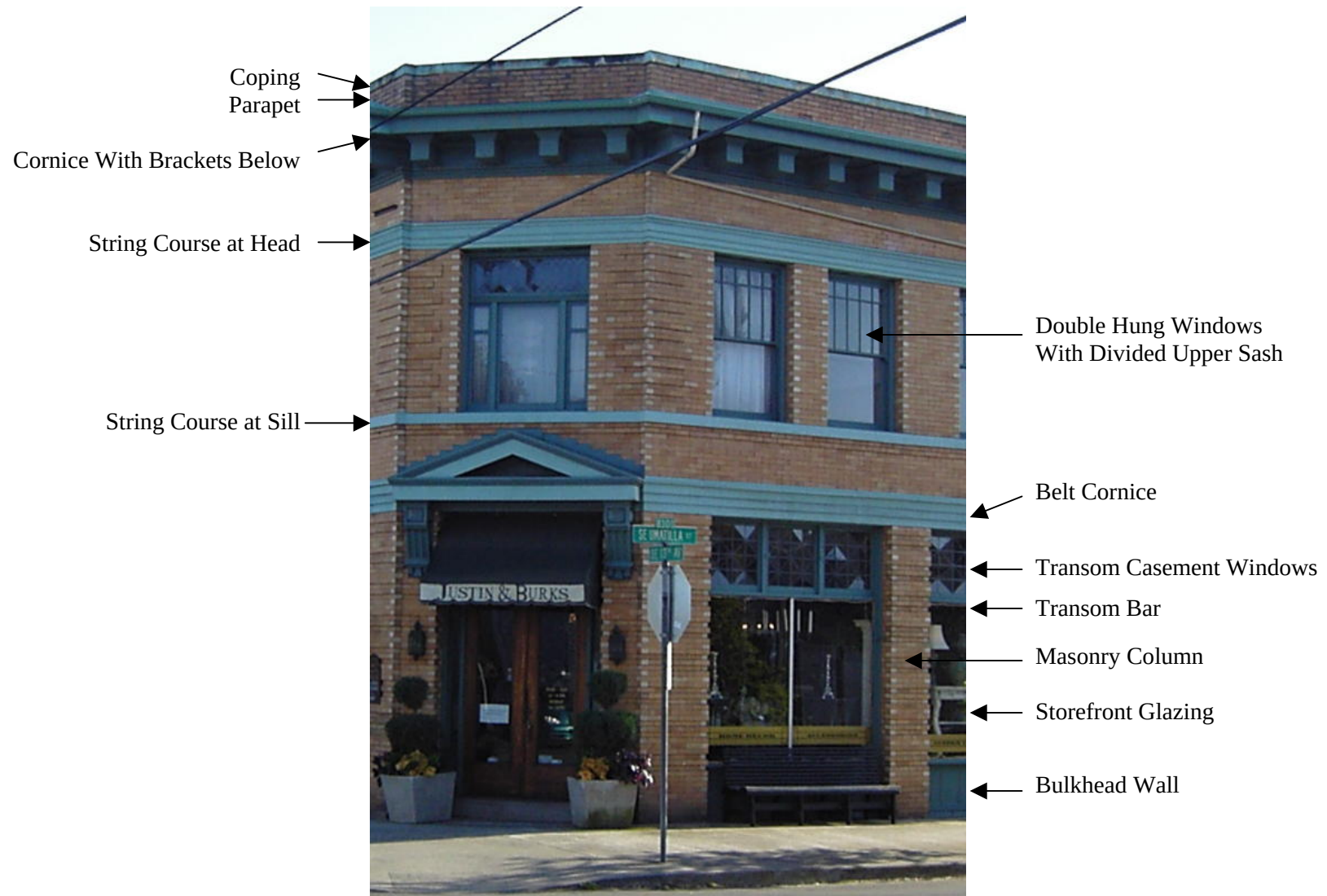
Residential: Vernacular, Bungalow, Queen Anne, Queen Anne Vernacular
 Commercial On 7th Street Corridor: 20th Century Streetcar Commercial or
 Multifamily, Western False Front
 Commercial Elsewhere: Above Residential Styles and Four Square

Canemah National Register Historic District

Residential: Vernacular, Bungalow
 Commercial/Mixed Use: Similar to above with larger allowable sizes

ILLUSTRATED GLOSSARY

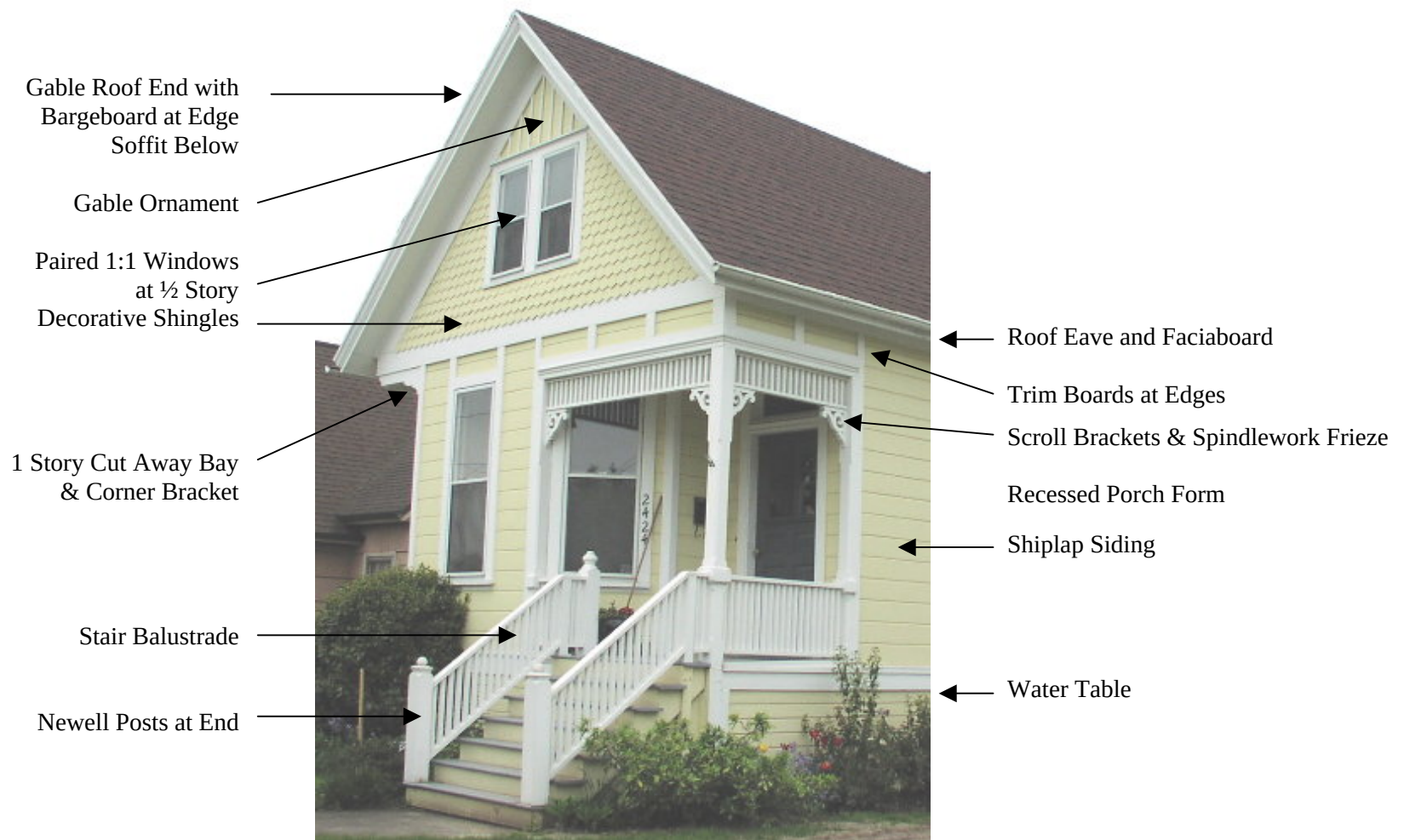
Item 8a.



2 Story Streetcar Commercial

ILLUSTRATED GLOSSARY

Item 8a.



1½ Story Queen Anne Vernacular

ILLUSTRATED GLOSSARY

Item 8a.



2½ Story Four Square

WOOD SIDING PROFILES

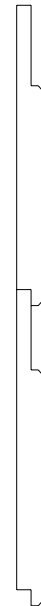
Item 8a.



Bevel Siding
Nominal Sizes: 1x4, 1x6, 1x8



Shiplap Siding #WP-11
Nominal Sizes: 1x6, 1x8



Channel Siding #WP131 or #105
Nominal Sizes: 1x6, 1x8



Canemah Cottages Conditions of Approval Status (File No. MD 17-01 through MD 17-06)		
Number	Condition	Status
Overall		
1	The property shall obtain all necessary permits including but not limited to Site Plan and Design Review, and Geologic Hazards Review by the Planning Division, a right-of-way permit from the Development Services Division, and all necessary permits from the Building Division.	Met
2	House number #2 on the submitted site plan shall be removed from the site, and the proposed cottage home development shall consist of five (5) cottages total.	Met
3	In addition to street trees, the applicant shall assure one tree is planted (or retained) within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location.	Not yet installed
4	The applicant shall assure three trees are planted (or retained) and 20 shrubs are planted (or retained) within 20 feet of the Casady House property line and the locations which border the subject site.	Not yet installed
5	The applicant shall minimize the retaining wall height to 3 ½ feet at maximum height, and use rock, brick, or concrete with finishing; or mortared or stacked true masonry or stone that was traditionally quarried in the area.	5-foot wall behind House #1. Part of current HRB review. This condition could be replaced by a new HRB decision.
6	All windows and door shall be made of wood.	Met. Windows are aluminum clad wood.
7	All double doors shall be French style doors.	Met. No doors are sliding doors.
8	Second story windows shall be rectangular on shape and not exceed the door height plus a one foot transom.	Met
9	No roof cutouts shall be permitted on any of the proposed cottages.	Met
10	No retaining walls shall exceed 3 ½ feet within the front of any home.	Met
11	All tiered retaining walls shall have a spacing of two feet between tiers.	Met
12	No vertical siding shall face the public streets.	Met
House #1		
a	The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.	Met
b	Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.	5-foot wall behind House #1. Part of current HRB review. This condition could be replaced by a new HRB decision.
c	Concrete foundations shall have a natural, parged or painted finish.	Not yet installed
d	Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.	Screening will be needed at front corner of House #1. Not yet installed.
e	A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.	Not yet installed
f	Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.	Met
g	Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.	Met
House #2		
a	Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.	Met
b	Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.	Met

c	Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.	Part of current HRB review. This condition could be replaced by a new HRB decision.
d	Concrete foundations shall have a natural, parged or painted finish.	Not yet installed
e	Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.	Met
f	Roofing shall use traditional materials such as wood shingles, composition, and metal	Met
g	Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.	Skylight on north façade part of current HRB review.
House #3		
a	The main entrance of the house shall not be oriented towards the adjacent parking lot.	Met
b	Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.	Part of current HRB review. This condition would be over-ruled by a new HRB condition.
c	Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.	Met
d	Concrete foundations shall have a natural, parged or painted finish.	Not yet installed
e	Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.	Met
f	Roofing shall use traditional materials such as wood shingles, composition, and metal	Met
g	Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.	Met
House #4		
a	The main entrance of the house shall not be oriented towards the adjacent parking lot.	Met
b	Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.	Part of current HRB review. This condition would be over-ruled by a new HRB condition.
c	Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.	Met
d	Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.	Met
e	Concrete foundations shall have a natural, parged or painted finish.	Not yet installed
f	Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.	Met
g	The applicant shall revise the home with a porch railing on the second story of the home.	Not yet installed
h	The porch shall consist of simple trim at base and top, consistent with architectural style.	Not yet installed
i	Roofing shall use traditional materials such as wood shingles, composition, and metal	Met
j	Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.	Part of current HRB review. This condition would be over-ruled by a new HRB condition.
House #5		
a	Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.	Met

b	Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.	Part of current HRB review. This condition would be over-ruled by a new HRB condition.
c	Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.	Met
d	Concrete foundations shall have a natural, parged or painted finish.	Not yet installed
e	Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.	Met
f	Roofing shall use traditional materials such as wood shingles, composition, and metal	Met
g	Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.	Part of current HRB review. This condition would be over-ruled by a new HRB condition.



Memorandum

To: HRB

From: Kelly Reid, Planner, AICP

Date: March 16, 2021

Re: Canemah Cottages application – additional information

The purpose of this memorandum is to explain what additional information has been provided for the second public hearing for Canemah Cottages.

Last hearing, the Board granted a continuance and asked the applicant to submit a complete inventory of all the discrepancies in the development proposal between the plans that the HRB approved with conditions in 2017 and the current state of the partially constructed site. The Board also asked for direction from staff on how their decision would interact with the previous HRB decisions made for this project.

The new materials included in your agenda packet include:

- 1. Applicant's Inventory of Changes between approved plans and constructed homes.**

The applicant has provided side-by-side plan drawings with site photos to demonstrate how each building façade differs from the version that was approved by HRB in 2017. As requested, the inventory also includes sitework changes to parking and walkways. Staff recommends reviewing this document together with the next item (#2). A window cut sheet has also been provided.

- 2. Staff's Table of Changes with relevant design guidelines and staff recommendations**

Staff placed the list of all changes into a table that also identifies the reason the change was made (if known), the relevant design guideline, and a staff recommendation for each item on the list. The intended use of this document is for the HRB members to walk through the changes line by line, while also looking at the photo comparisons provided by the applicant. There is a space at the end of each row in the table for HRB members to add their own personal notes to aid in the deliberations at the public hearing.

- 3. Memorandum from City Attorney Carrie Richter**

This memorandum responds to the public comments made about how the design guidelines work and whether they are treated as black and white standards or as general guidelines.

- 4. Conditions of Approval Status Matrix**

To provide further clarity to the Board, staff has provided the entire list of conditions of approval from the 2017 review (MD-17-01 through MD 17-06) and the status of each.

If HRB members have any questions regarding the additional information, staff welcomes questions before and/or during the hearing. No new public comments have been received since the last hearing; all comments received previously are included in the agenda materials.



MEMORANDUM

TO: Oregon City Historic Review Board

FROM: Carrie A. Richter, Deputy City Attorney

DATE: May 11, 2021

RE: GLUA-21-00001/ HR 21-0001 through 21-00005: Historic Review for Canemah Cottages in the Canemah National Register Historic District

At the last HRB meeting, there was some discussion about the scope of the HRB's review in the above-reference case. First, the question was asked about the extent to which the HRB is reviewing this proposal anew. The applicant has requested that the HRB consider only those changes that differ from the 2017 Canemah Cottages approval. This 2017 approval consists of the application coupled with the conditions modifying that proposal. Where the new construction does not comply with the application, as modified by the conditions, the HRB must consider whether what has been built (or is proposed) complies with the applicable Design Guidelines or other standards. If the HRB decides that that the changed element complies with the Design Guidelines, memorializing that decision may require revising the condition of approval or may allow interpreting the requirement of the condition of approval differently as justified through written findings.

With respect to some of the building components, what has been built does not comply with the condition of approval so that element must be considered against the controlling standards anew. For example, the condition requiring retaining walls not exceed 3½ feet cannot be satisfied for House #1 where the retaining wall at the rear of the parking space exceeds 5 feet. In a different example, the condition requiring that skylights be installed on "inconspicuous roof slopes" may be satisfied without changing the condition but rather a finding that as built, the skylights satisfy the condition. If the HRB finds that the skylights are not "inconspicuous," mitigation or removal may be required as will be memorialized in new findings and conditions. City staff has worked with the applicant to identify those construction elements that deviate from the 2017 approval.

The second question that has come up is the extent to which the Design Guidelines set forth mandatory approval criteria that the identified alterations must satisfy. This issue was considered by LUBA in the *Friends of Canemah v. Oregon City* case which dealt with this same Canemah Cottages, LLC proposal. 77 Or LUBA 434 (2018). In this case, the Petitioner Friends of Canemah argued that each individual guideline or component concept set forth in the Design Guidelines were mandatory approval criteria that must be satisfied. The City, in conjunction with Canemah Cottages, LLC, argued that the Guidelines were "non-mandatory guidance" against which the proposal must "be generally compatible." LUBA explained that it did not agree with either position. What LUBA said was that it was "not clear" what legal status the City Commission intended to give to the Design Guidelines. As a result, LUBA would apply "a case-by-case inquiry, examining the wording and context" of the particular provision to determine whether it was intended to serve as a mandatory standard.

OREGON CITY HISTORIC REVIEW BOARD

May 11, 2021

From there, LUBA proceeded through each of the guidelines identified by Petitioner in that case. With respect to the “Characteristics of the Vernacular Style” provisions (page 26), LUBA explained that this set forth a description of existing development within the Historic District that do not mandate anything with respect to new construction i.e. all new construction need not be located on their own lot or include garages. These are not issues that have been raised by any party to date with respect to the subject Alteration Review request.

Next, LUBA considered the Character Historic Guidelines set forth on pages 33 through 52. Although there was some question, LUBA concluded that the items identified in the “NOT ALLOWED” column “are prohibited.” For example, “[e]xtensive regrading of lot to raise or lower the main level of a house...” is listed as NOT ALLOWED (p 34), but LUBA found that the City could exercise discretion to determine when grading is “extensive.” LUBA affirmed the City’s interpretation that the grading associated with House 1 would not be “extensive” because the grading was only the amount necessary to allow vehicle access and lowering the prominence of the new dwelling would elevate the prominence of the surround historic homes. In other words, LUBA found that this guideline was “subjective,” giving the City a fair amount of latitude to interpret the standard given the facts of the case presented.

There are a couple of lessons that come from this decision. First, it is not correct to say that all of the Design Guidelines are mandatory approval standards that must be independently satisfied. Rather, in order to be mandatory, the language of the guideline must be unambiguously directed at new construction. Second, even where a guideline is directed at new construction, it may be interpreted in different ways depending on the facts of any given proposal. For example, with respect to skylights, the Guideline identifies as a Design Principle: “Install on inconspicuous roof slopes, mount skylight close to roof plane.” The NOT ALLOWED column prohibits: “Skylights on street-side roofs. No dome or bubble shaped skylights; plastic or acrylic glazing.” Therefore, skylights are prohibited on the portion of a roof that faces a street. They are allowed on other roof sides so long as they are “inconspicuous.” Nothing requires that skylights not be visible from a street but it is up to the HRB to decide whether the skylights on Houses #2, #4, and #5 are sufficiently “inconspicuous” to satisfy the standard.

In conclusion, the HRB review is limited to those building component parts that deviate from the 2017 application coupled with the conditions. Where deviation exists, the HRB must consider whether the constructed element complies with those Design Guidelines that are directed at new construction but may be interpreted based on the unique circumstances of this case.



REVISED NOTICE OF HISTORIC REVIEW BOARD DECISION

DATE OF MAILING OF NOTICE OF DECISION: September 6, 2017

FILE NO.: MD 17-01, MD 17-02, MD 17-03, MD 17-04, MD 17-05, and MD 17-06:
Historic Review for the designs of six (6) cottage style homes in the Canemah Historic District.

OWNER/APPLICANT: Christopher Staggs
8903 Nordic Drive, Portland, OR 97223

REQUEST: The applicant is requesting design approval for the construction of six (6) new construction cottage style dwelling units, with preservation incentives to adjustment the front, side, and rear setbacks, in the Canemah Historic District.

LOCATION Properties located in between 502 and 514 4th Ave., in the vicinity of 4th Ave. and Miller St.
Clackamas County Map 3-1E-01AA- Tax Lots 02200, 3600, and 03700

RECOMMENDATION: Approval with Conditions

REVIEWER Trevor Martin, Planner

DECISION: On August 22, 2017, after reviewing all of the evidence in the record and considering all of the arguments made by the applicant, opposing and interested parties, the Oregon City Historic Review Board voted 4-0-0 to approve with modified conditions the requested six (6) unit cottage style development. Accordingly, the Oregon City Historic Review Board adopted as its own the Staff Report with findings and Conditions of Approval for File Numbers MD 17-01, MD 17-02, MD 17-03, MD 17-04, MD 17-05, and MD 17-06. The complete record for the Historic Review Board decision is on-file at the Planning Division.

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. The process for these land use decisions is controlled by ORS 197.763 and identified in OCMC 17.50. The decision of the Historic Review Board is appealable to the City Commission within fourteen days of the issuance of the final decision. Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the hearing, in person or by letter, with sufficient specificity to afford the Historic Review Board and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. The decision of the Historic Review Board may be appealed to the City Commission by parties with standing. Any appeal will be based on the 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.

**Historic Review Board Conditions of Approval
Planning File MD 17-01 – 17-06**

(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.

Prior to issuance of a Permit Associated with the Proposed Development:

1. The property shall obtain all necessary permits including but not limited to Site Plan and Design Review, and Geologic Hazards Review by the Planning Division, a right-of-way permit from the Development Services Division, and all necessary permits from the Building Division. (P, DS, B)
2. House number #2 on the submitted site plan shall be removed from the site, and the proposed cottage home development shall consist of five (5) cottages total. (P)
3. In addition to street trees, the applicant shall assure one tree is planted (or retained) within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location. (P)
4. The applicant shall assure three trees are planted (or retained) and 20 shrubs are planted (or retained) within 20 feet of the Casady House property line and the locations which border the subject site. (P)
5. The applicant shall minimize the retaining wall height to 3 ½ feet at maximum height, and use rock, brick, or concrete with finishing; or mortared or stacked true masonry or stone that was traditionally quarried in the area. (P)
6. All windows and door shall be made of wood. (P)
7. All double doors shall be French style doors. (P)
8. Second story windows shall be rectangular on shape and not exceed the door height plus a one foot transom. (P)
9. No roof cutouts shall be permitted on any of the proposed cottages. (P)
10. No retaining walls shall exceed 3 ½ feet within the front of any home. (P)
11. All tiered retaining walls shall have a spacing of two feet between tiers. (P)
12. Not vertical siding shall face the public streets. (P)

House 1

- a. The house shall be repositioned on the site so the proposed home meets the setback standards of the underlying zoning district.
- b. Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
- c. Concrete foundations shall have a natural, parged or painted finish.
- d. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- e. A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
- f. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- g. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

House 2

- a. House #2 shall be removed from the Cottage House Historic Review Board Design Application.

House 3

- a. Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
- b. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- c. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- d. Concrete foundations shall have a natural, parged or painted finish.
- e. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- f. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- g. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

House 4

- a. The main entrance of the house shall not be oriented towards the adjacent parking lot.
- b. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- c. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- d. Concrete foundations shall have a natural, parged or painted finish.
- e. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- f. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- g. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

House 5

- a. The main entrance of the house shall not be oriented towards the adjacent parking lot.
- b. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in

color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.

- c. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- d. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- e. Concrete foundations shall have a natural, parged or painted finish.
- f. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- g. The applicant shall revise the home with a porch railing on the second story of the home.
- h. The porch shall consist of simple trim at base and top, consistent with architectural style.
- i. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- j. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

House 6

- a. Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- b. Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- c. Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- d. Concrete foundations shall have a natural, parged or painted finish.
- e. Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- f. Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- a. Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

PROPOSED DEVELOPMENT:

The applicant is requesting Historic Review Board approval for the design of six (6) cottage style homes located along 4th Ave. and Miller Street in the Canemah Historic District. The requests include preservation incentives to allow a portion of the proposed development within the setbacks. The homes average 800 square feet in size and are each modestly sized:

- House #1: 600 Square Feet
- House #2: 1,100 Square Feet
- House #3: 1,100 Square Feet
- House #4: 800 Square Feet
- House #5: 800 Square Feet
- House #6: 600 Square Feet

The existing site contains no buildings and has an approximately 1200 square foot alley right-of-way running through the middle of the four tax lots. Directly to the south of the Casady House located at 502 4th Ave. which is an individually listed home.

These applications are a modification of a previously submitted series of applications to construct seven (7) cottage style homes in the same location. The previous Planning files are identified as HR 16-09, HR 16-10, HR 16-11, HR 16-12, HR 16-13, and HR 16-14. Prior to the Historic Review Board's decision on the previous applications, the applications were withdrawn. The applicant substantially revised the design of the applications and submitted these modification requests. The primary changes include but are not limited to:

- Reducing the number of cottage homes from seven (7) to six (6)
- Revised the site configuration so the parking stalls associated with the application are located onsite and not within the right-of-way.

The modified applications address a majority of the Historic Review Board concerns identified during the previous hearings. As a result the analysis for the proposed cottages homes has been altered to reflect the applicant new proposal.

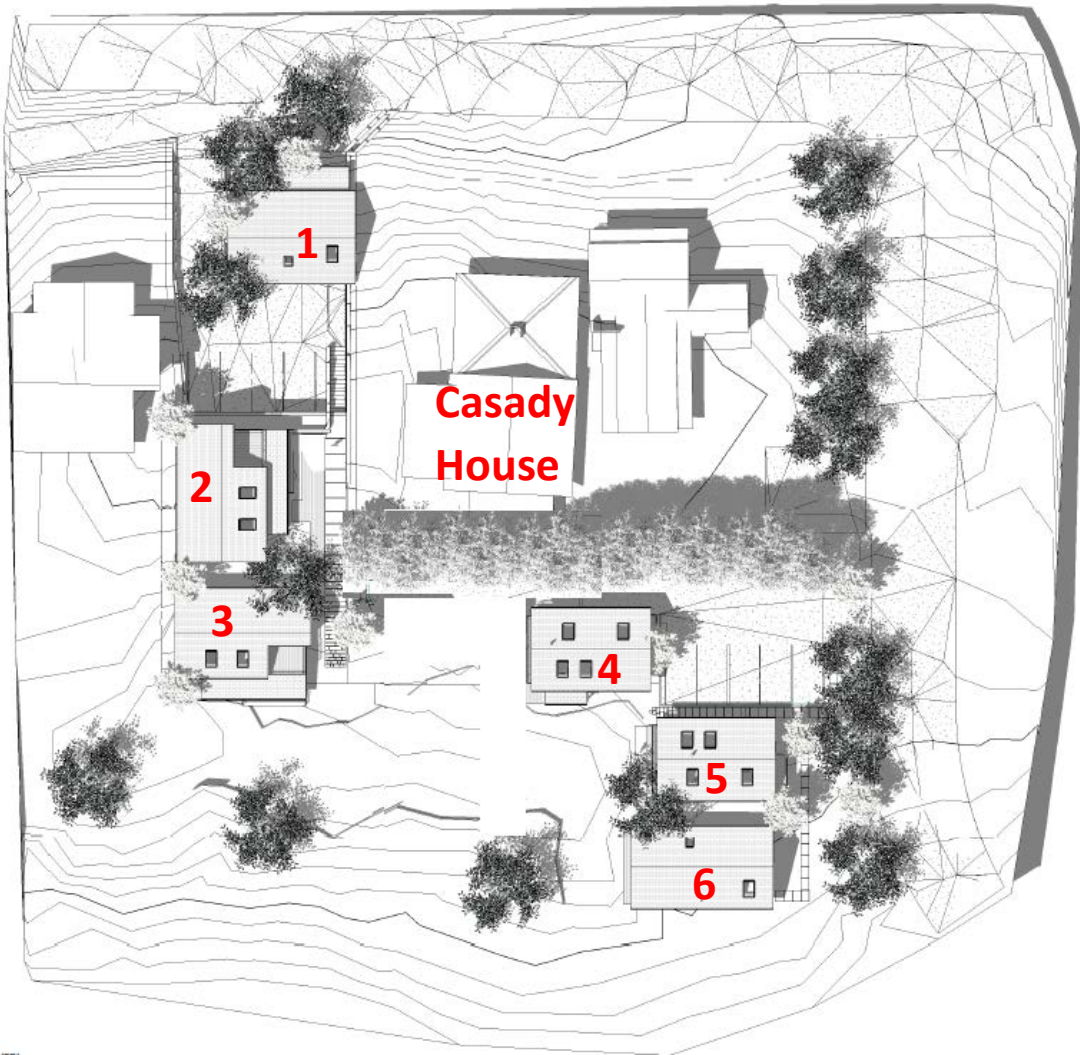
In order to construct the proposed development, approval of separate processes are required including Site Plan and Design Review, and Geologic Hazards Review by the Planning Division, a right-of-way permit from the Development Services Division, and a variety of permits from the Building Division.

On August 22, 2017 the Historic Review Board (HRB) reviewed the proposal, listed to the public comments, and thoroughly reviewed the staff report. The HRB made findings, included in the report below, outlining the reasoning for the approval of five (5) cottage style homes within the Canemah National Historic District. Even though the design of the development does not meet the strict design standards of the Canemah National Historic District, page three of the Design Guidelines for New Construction States

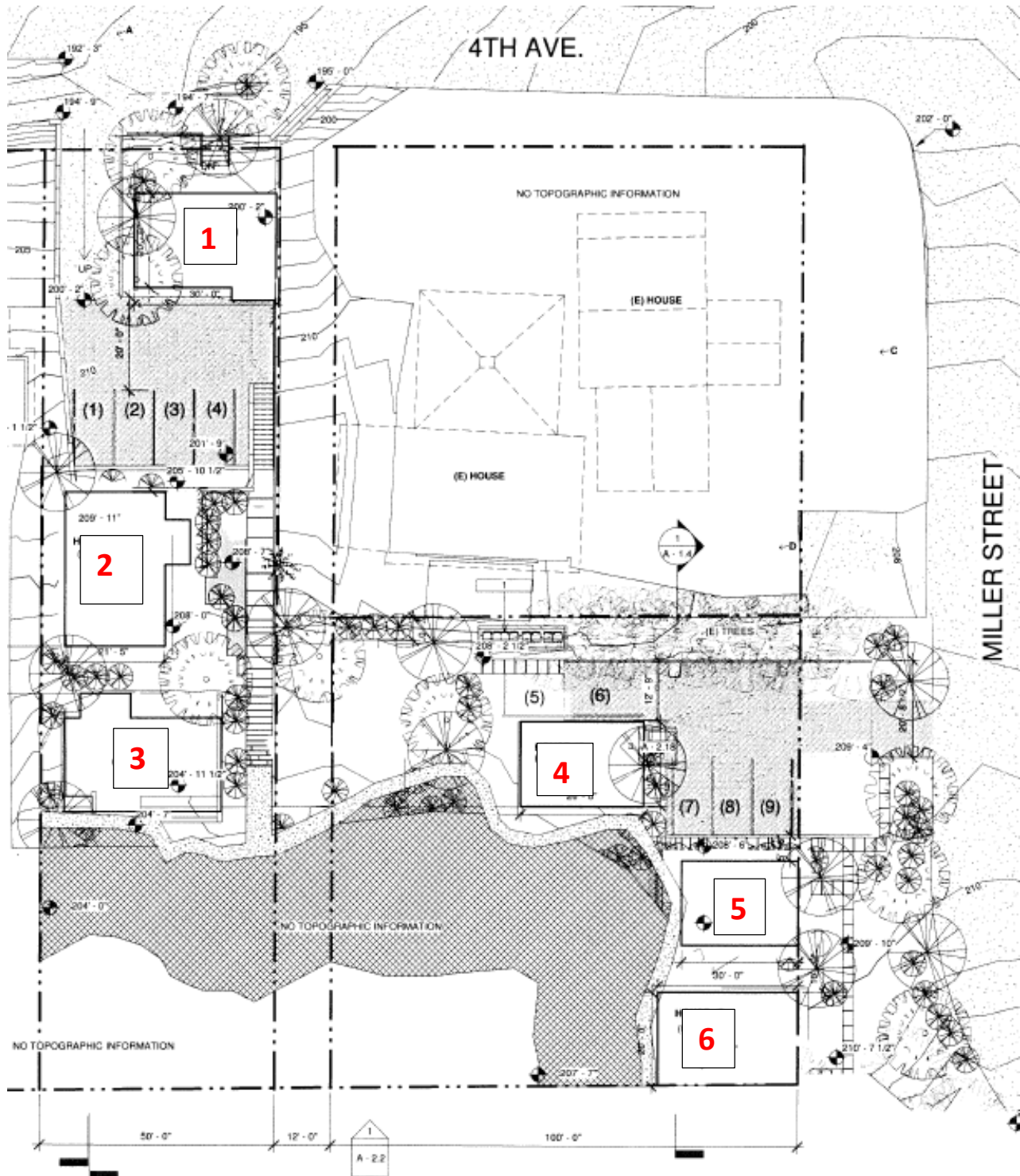
“Alternative Designs: It is the intent that these guidelines cover design for the wide range of projects that may occur over time. They describe a ‘safe harbor’ to allow new construction projects to be approved easily and quickly. Yet, there may be occasions when alternative designs are either desired or needed. There are also particular product configurations, or materials that are pre-approved, but for which viable alternatives may exist. Those alternative designs and substitute materials shall be first reviewed by City staff and subsequently by the Historic Review Board (HRB) for compliance with the General Principles, and design intent of the guidelines. For those situations when an exception to the guidelines is necessary, the HRB and staff shall evaluate the proposal based upon the significance of the

impact, measuring how well the alternative fits into the intent of the guidelines and essentially the end effect on the historic district. These guidelines are not mandatory standards adopted by the City Commission. In order to have any development approved, the development must be shown to comply with the adopted historic review standards found in the Oregon City Municipal Code. These guidelines were adopted by the Oregon City Historic Review Board (the "HRB"), the body who performs the initial review of development in historic districts, and are intended to provide supplemental information and additional guidance about how the HRB interprets the standards in the code. Although complying with these guidelines does not guarantee approval of any development, the guidelines should assist anyone who is seeking approval."

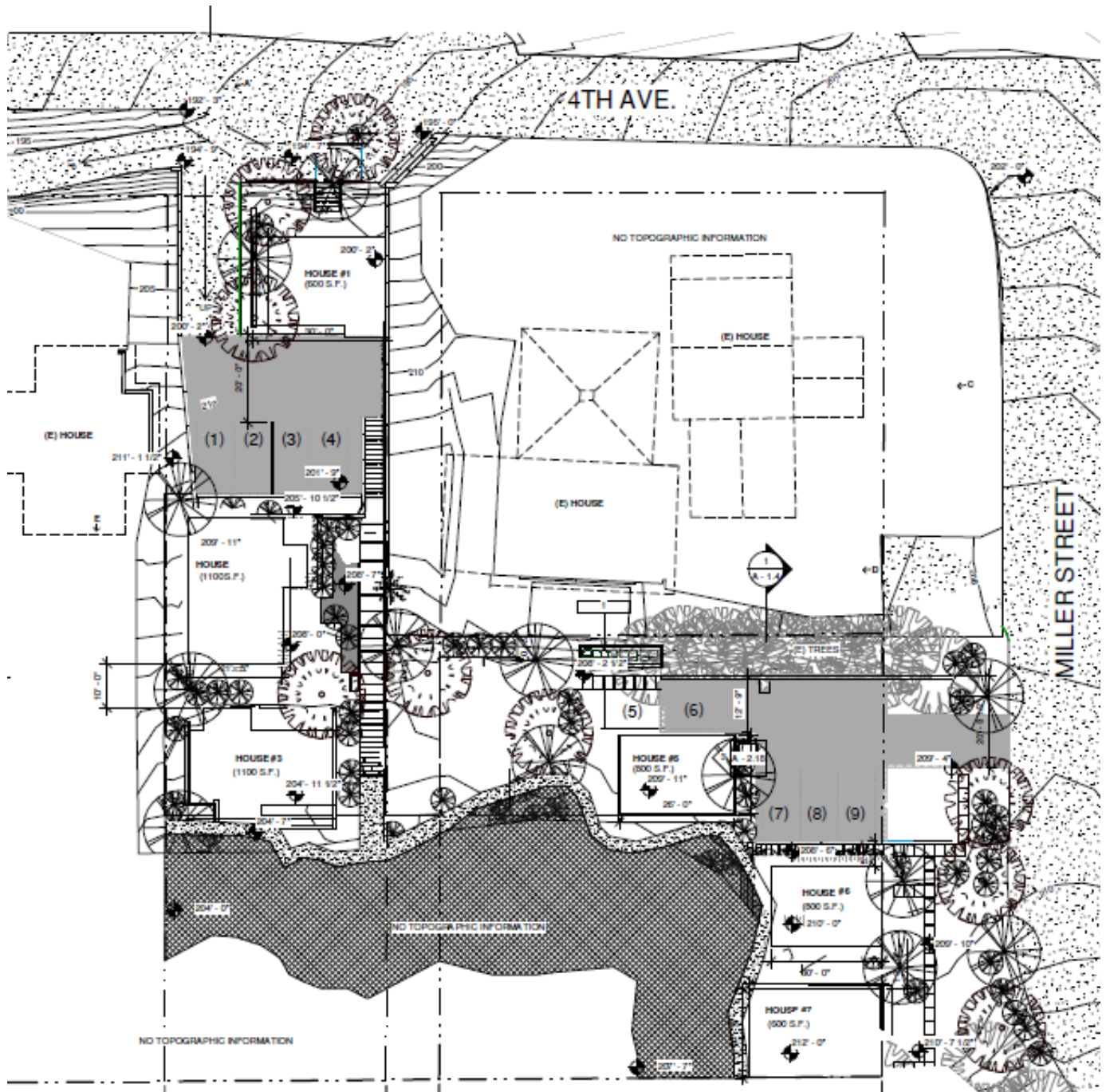
The application can be conditioned to fit within the Canemah National Historic District. The Historic Review Board has reviewed the conditions and determined that if the applicant is willing to comply with the conditions of approval, the design may be deemed compatible with the Canemah National Historic District.



Proposed Layout



Proposed Layout



Site Plan with Delineated Wetlands

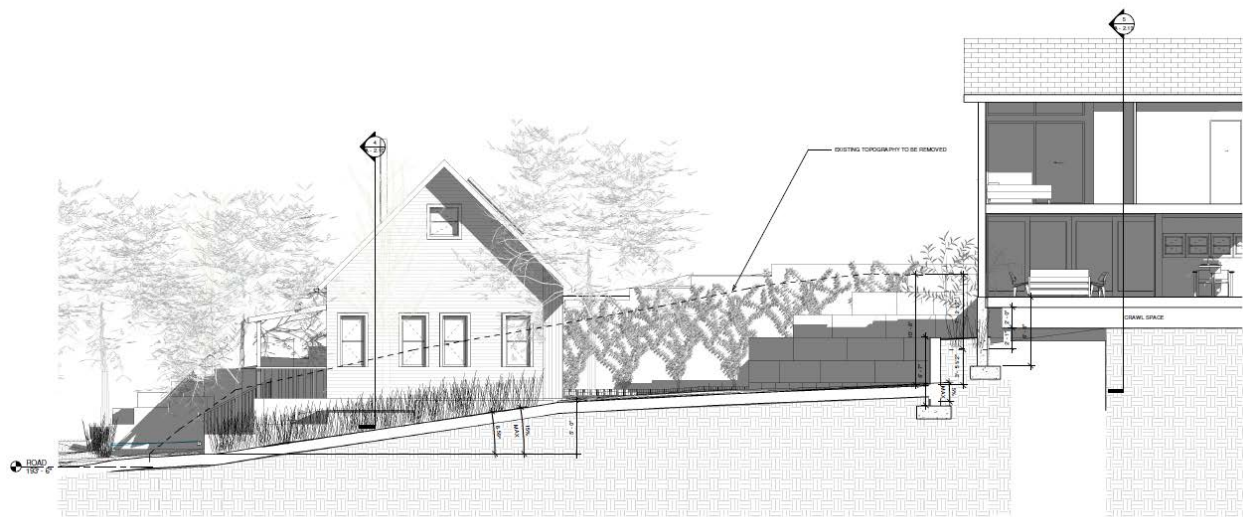


Figure 1: Driveway Section

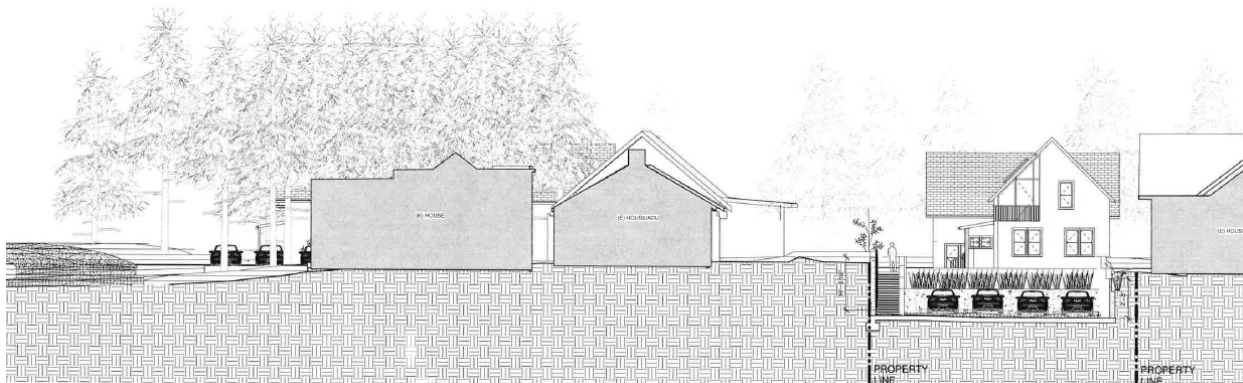
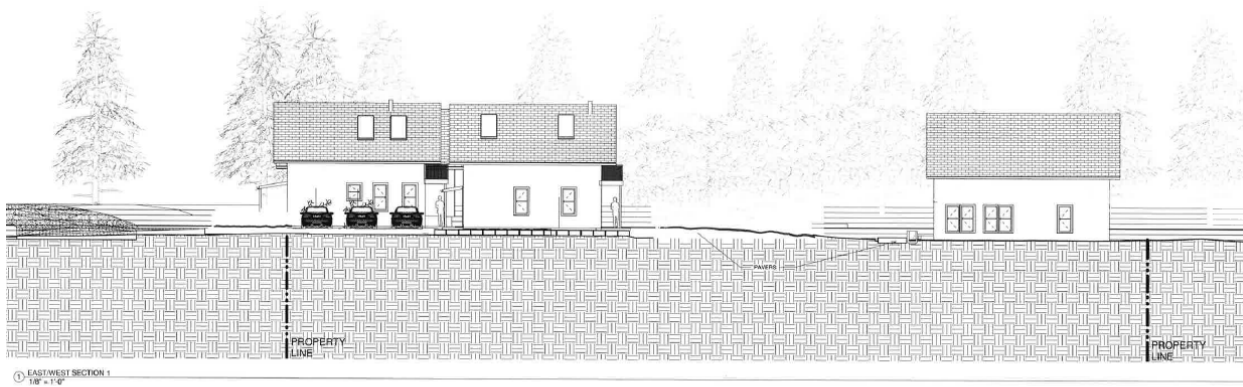


Figure 2: East/West Section 1 & 2

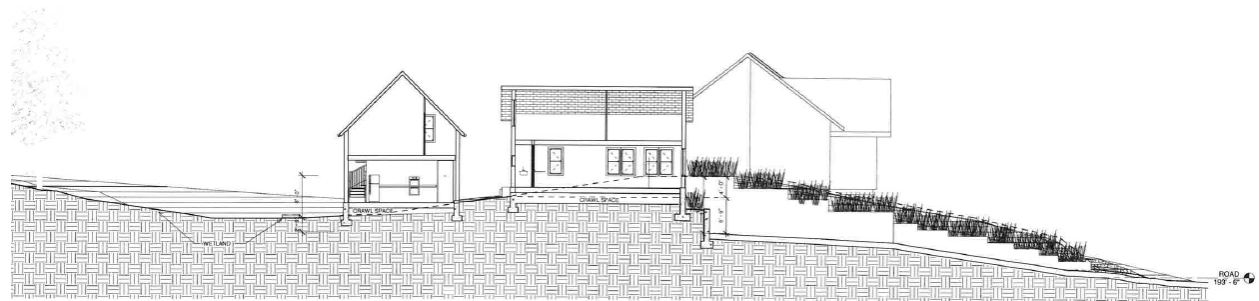


Figure 3: North/South Section Looking East Above / North/South Section Looking West Below

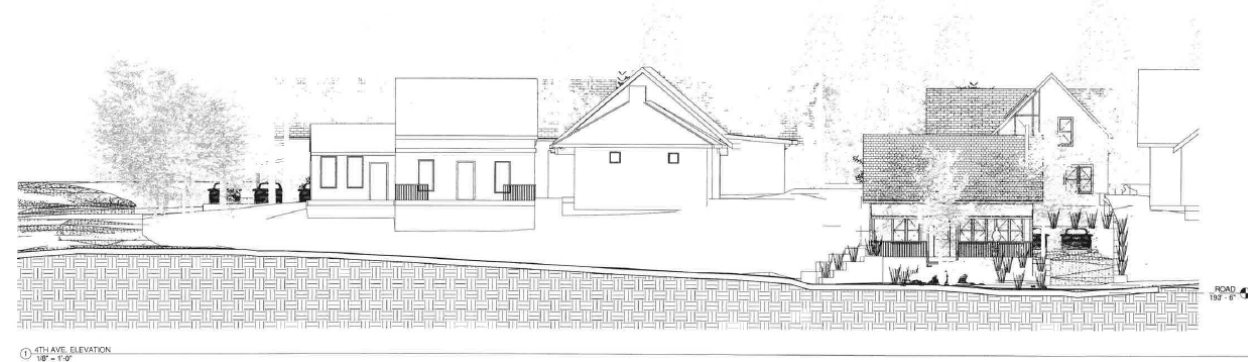


Figure 4: 4th Ave. / Miller St. Elevation

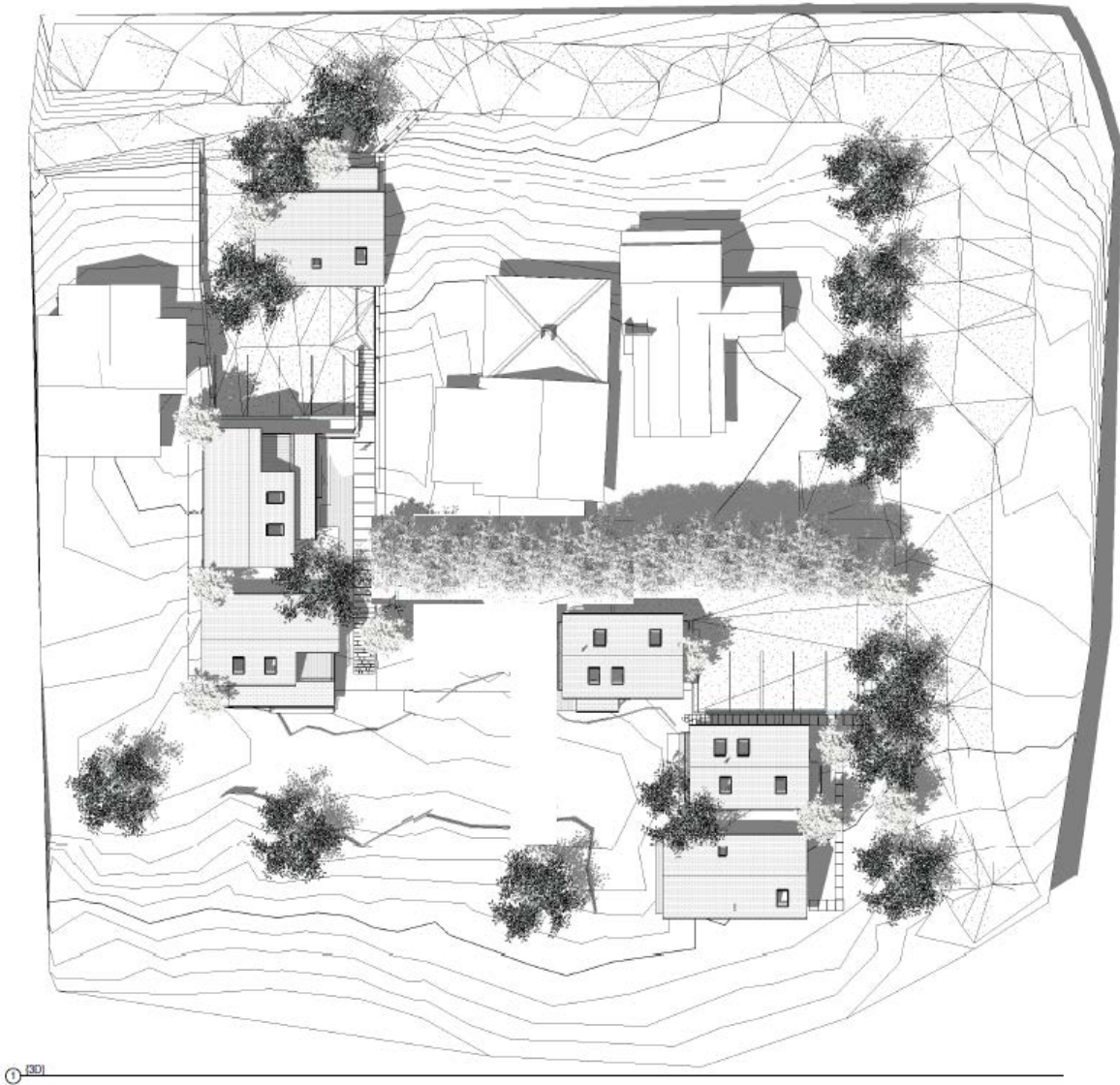


Figure 1: 3D Aerial

Site and Context:

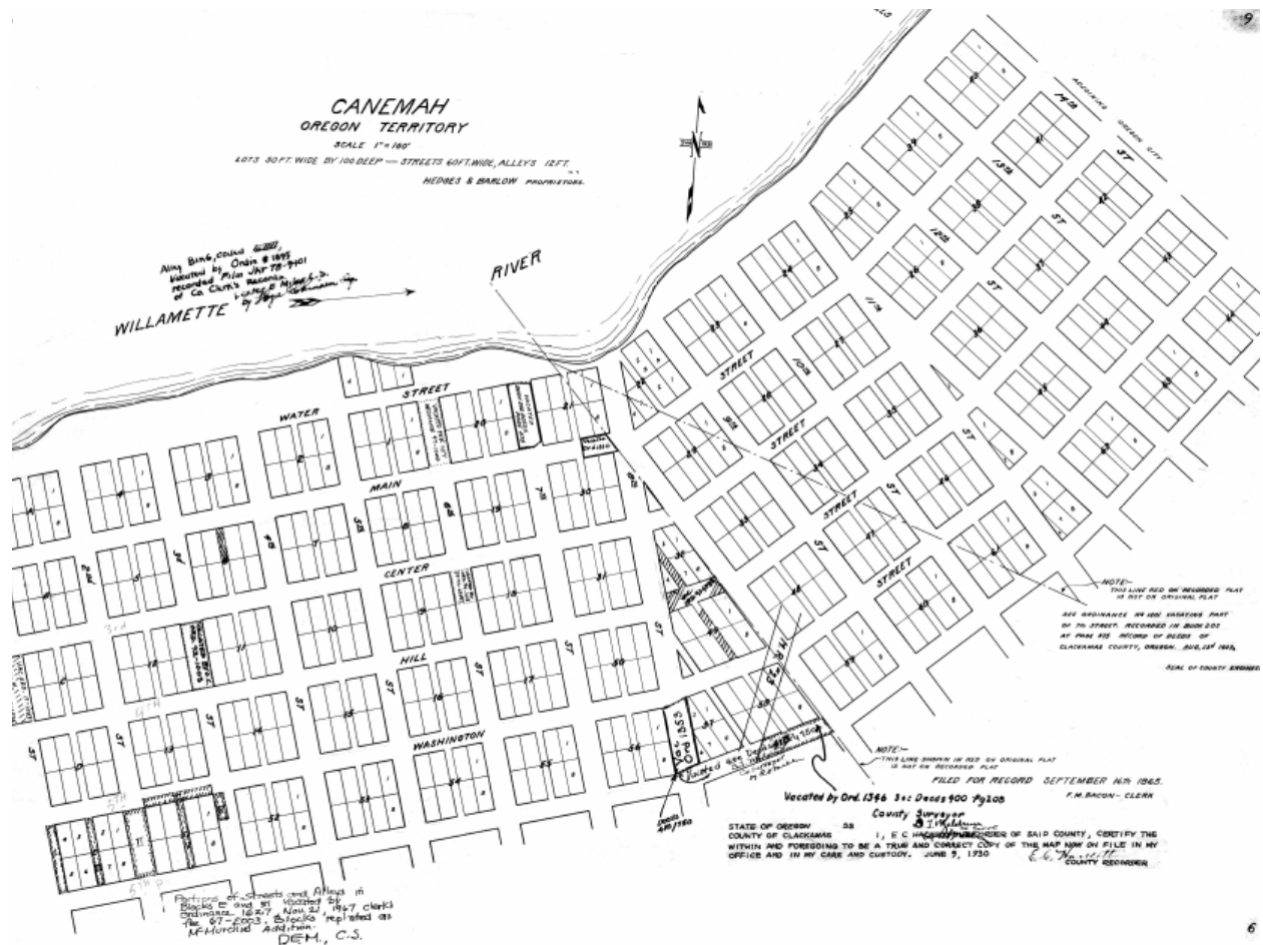
The Canemah Historic District is located at the southwesterly edge of the city limits of Oregon City, on the southerly (rocky ledged) bank of the Willamette River, just above the Willamette Falls. 4th Ave. is a blacktop street, without curb, gutter, and sidewalk, and increases in elevation from Ganong to Blanchard St. 4th Ave. is primarily lined with single family dwellings on lots of 5,000 and 10,000 square feet oriented towards the Willamette River. Additionally, the subject site along with all of the parcels directly surrounding the site are zoned R-6 – Single Family Dwelling District.



Vicinity Map



Figure 2: Historic Tax Map



Miller St. is a short north south blacktop street without curb, gutter, and sidewalk, and increases in elevation from 4th to 5th Ave. Currently there are no homes addressed off this street. The homes closest adjacent to Miller St. are primarily composed of single family dwelling until on lots of 5,000 and 10,000 square feet.

The lots directly surrounding the proposed development are composed of the following homes:
416 4th Ave.



Image taken from Google Maps

Directly to the east of the proposed development is the John and Bertha Searle Residence. The 2 story house has a north gable with a pent-gable porch. The main portion of the building has ship lap siding on the east façade with shingle siding on the rest of the house with front and rear porches. Statement of Significance: *John T. Searle was an employee in the Oregon City Manufacturing Company. Bertha was his second wife; his first, Ellen, died in 1904. Searle worked in the dye section of the Oregon City Woolen Mills; he eventually died of dye poisoning. Searle was related by marriage to the William Freeman family. His sister was Mary Harvey (see 906 5th Avenue). The house has some significance because of its age, and its successful alteration to a bungalow style after the turn of the century.*

502 4th Ave.

Directly to the northeast of the proposed development is the Captain William & Elizabeth Casady House, a listed home building within the Canemah District. "The 1 1/2 story house is located on a level bench slightly above 4th Avenue at Miller Street. The main portion of the building has a side gable roof with a rear attached full width one story shed and full width front porch with low sloped roof supported on four posts. The shed extends east beyond the house as an addition with its own north facing porch. A separate north-south addition with shallow side porches extends south from the rear house

wall. The main foot print of this addition is indicated on a 1911 Sanborn map that also show a 'T' on the east end."

Statement of Significance: William Caseday (also spelled Casady, Cassidy) was an engineer, riverboat captain and pilot. He was co-owner of the 'Clinton' with J.S. Gibson and John Cochran, the first riverboat to successfully navigate the Willamette River as far as Eugene. He also built the 'Relief' in Oregon City and within two years had sold it to Capt. Cochran. Caseday, who was born in Pennsylvania in 1823, married Kentucky born (1815) Elizabeth Barker in Clackamas County in 1856. The Casedays may have moved to New Era, as a William Cassidy died there on 6/10/1903, where "he and his wife had lived for 8 years."

514 4th Ave.

Image taken from Google Maps

Directly to the west of the proposed development is the Stanford Ely Rental. This single story home has a cross gabled roof with a multi-pane enclosed porch, beveled siding, and cornerboards.

Statement of Significance: This house was built as a rental by Stanford Ely, a general contractor in the Oregon City area. Ely is a descendant of Fred Ely, whose donation land claim in Oregon City was known for many years as Elyville; the area neighborhood still is known by that name. Stanford's uncles, Duane and

George Ely, had a store in Elyville near the site of their father Fred's original house. The uncles then moved the store down to the second level on 7th Street. Stanford served as Clackamas County Commissioner for 12 years, beginning in 1957, and is currently on the Clackamas County Fair Board and Vector Control Board. The house has some significance for its association with the Ely family.

515 4th Ave.

Image taken from Google Maps

Directly to the northwest of the proposed development is the John & Belle Rutter Residence. This 1 1/2 story house has a gable foot with a central gable and a porch pent-roof on the south end of the home and is primarily composed of shiplap siding.

Statement of Significance: Belle P. Rutter, born in California in 1852, was the wife of John Rutter, a Canemah farmer who emigrated to the United States in 1872. Belle (whose first husband was Ross Spencer (902, 910 S. McLoughlin Blvd.) and John were married late in life, when he was 55 and she 51. This house is an example of a

transitional style from vernacular to bungalow, and is typical of simple dwellings built in the second decade of the century in the Oregon City area. In the Canemah NR District, this house is classified as a Secondary structure.

Three of the four houses mentioned above have significant landscaping adjacent to the home (in front or on the side) and are located on lots that are 50 feet wide. The home at 502 is slightly different than the other three. This home has been expanded in the past, and landscaping for this home is located on the back and side of the home (where the cottage housing development has been proposed) and this home is located on a lot that has 100 feet of frontage. This home is located by itself on the corner of 4th Ave. and Miller St., and is a significant feature in the neighborhood. The proposed cottage housing development will remove the landscaping and expose the site to be significantly more visible, breaking up the rhythm of the street and removing the Casady house from its context.



Miller St. traveling south



Casady House from the corner of 4th Ave. and Miller St.



Casady House from the corner of 4th Ave. and Miller St.



4th Ave. traveling west

As seen in the street view images, there is significant landscaping adjacent to the Casady House that will be removed as part of the proposed development, and as a result will look completely different than the elevation of the Casady House. The applicant has identified that landscaping would be planted as mitigation.

CRITERIA:
OREGON CITY MUNICIPAL CODE

17.40.030 Designated.

- A. *The historic overlay district shall apply to the following:*
 - 1. *Historic districts, upon designation in accordance with this section;*

2. *Conservation districts designated in accordance with this section;*
3. *Landmarks as designated by this section; and*
4. *Historic corridors designated in accordance with this section.*
- B. *The boundaries of the historic districts, the boundaries of conservation districts, historic corridors, the location of buildings and structures in conservation districts and the location of landmarks shall be designated on a special city zoning map or maps.*
- C. *The following are designated within the historic overlay district:*
 1. *The Canemah Historic District; the minimum boundaries of which are those designated by the United States Department of the Interior on the National Register of Historic Places as indicated in the city comprehensive plan.*
 2. *The McLoughlin Conservation District; the surveyed buildings indicated by map in the comprehensive plan shall constitute the designated structures in the McLoughlin Conservation District, along with any structures designated through the Historic Review Board designation process since initial adoption of the comprehensive plan on March 13, 1980.*
 3. *The Oregon Trail-Barlow Road Historic Corridor: properties identified in the 1993 Barlow Road Historic Corridor inventory of the Barlow Road by Clackamas County.*
 4. *Designations undertaken pursuant to Section 17.40.050. The established historic overlay district shall allow for the designation of two types of districts so that areas with a high concentration of historic structures are designated historic districts and areas with a lower concentration are designated conservation districts. Also allowed is the designation of structures of historic or architectural significance not located in an historic or conservation district as landmarks.*

Finding: Complies as Proposed. The subject site is within the boundary of the Canemah Historic District.

17.40.060 Exterior alteration and new construction.

- A. *Except as provided pursuant to subsection I of this section, no person shall alter any historic site in such a manner as to affect its exterior appearance, nor shall there be any new construction in an historic district, conservation district, historic corridor, or on a landmark site, unless a certificate of appropriateness has previously been issued by the historic review board. Any building addition that is thirty percent or more in area of the historic building (be it individual or cumulative) shall be considered new construction in a district. Further, no major public improvements shall be made in the district unless approved by the board and given a certificate of appropriateness.*

Finding: Complies as Proposed. The applicant has submitted this application for review and determination by the Historic Review Board.

17.040.060.B. *Application for such a certificate shall be made to the planning staff and shall be referred to the historic review board. The application shall be in such form and detail as the board prescribes.*

Finding: Complies as Proposed. The applicant has submitted this application for review and determination by the Historic Review Board.

17.040.060.C. *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. A notice was sent upon submittal of a pre-application conference, more than 45 days before completion of this application.

17.040.060.D.

1. *The historic review board, after notice and public hearing held pursuant to Chapter 17.50, shall approve the issuance, approve the issuance with conditions or disapprove issuance of the certificate of appropriateness.*
2. *The following exterior alterations to historic sites may be subject to administrative approval:*
 - a. *Work that conforms to the adopted Historic Review Board Policies.*

Finding: Complies as Proposed. The application is being reviewed as identified in the Oregon City Municipal Code.

17.040.060.E. *For exterior alterations of historic sites in an historic district or conservation district or individual landmark, the criteria to be used by the board in reaching its decision on the certificate of appropriateness shall be:*

Finding: Not Applicable. The proposal is for new construction in a historic district.

17.040.060.F.1: *The purpose of the historic conservation district as set forth in Section 17.40.010.*

Finding: Complies as Proposed. The purpose is as follows:

It is declared as a matter of public policy that the protection, enhancement, perpetuation and use of improvements of special character or special historical or aesthetic interest or value is a public necessity and is required in the interest of the health, prosperity, safety and welfare of the people. The purpose of this chapter is to:

The residential use proposed is consistent with a majority of uses within the district. In addition, the proposed homes are modest in size and designed in the vernacular style to compliment the historical district. Furthermore, the layout of the development will preserve a large amount of open space.

- A. *Effect and accomplish the protection, enhancement and perpetuation of such improvements and of districts which represent or reflect elements of the city's cultural, social, economic, political and architectural history;*

Finding: Complies as Proposed. The proposed development is intended to develop a series of cottage homes in the Canemah Historic district. The application includes installation of modest sized homes designed in the vernacular style to remain contextually appropriate with the

surrounding homes that currently exist in the historic district. The proposed development will be considered at a public hearing in front of the Historic Review Board and examined based upon City Code, public comment, Staff's recommendation, and the Applicant's Submittal.

B. Safeguard the city's historic, aesthetic and cultural heritage as embodied and reflected in such improvements and districts;

Finding: Complies with condition. The proposed development is a six (6) dwelling unit development that has been designed the Vernacular style with modern updates. This report, with the conditions of approval analyze the appropriateness of the proposal with the historic district and recommend approval with conditions. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Complement any National Register Historic districts designated in the city;

Finding: Complies with condition. The subject site is within a National Registered Historic District. The proposed development has been designed in the Vernacular style with modern components, and an analysis of each individual home can be found in the Housing Analysis section below. The appropriateness of those components is analyzed within this report for compliance with applicable standards.

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

D. Stabilize and improve property values in such districts;

Finding: Complies as Proposed. The applicant has proposed to construct additional housing opportunities. This investment in the property may encourage additional investments into the historic district which would result in stabilization of property values.

E. Foster civic pride in the beauty and noble accomplishments of the past;

Finding: Complies as Proposed. The applicant has proposed to construct a series of cottage style homes in the Canemah Vernacular style with modern characteristics. The applicant has mentioned throughout the submitted narrative that the approach is to be as cohesive and contextually appropriate with the surrounding homes, but with a modern approach that would continue to complement the historic district. The review process will occur in a public forum whereby the public is asked to participate.

F. Protect and enhance the city's attractions to tourists and visitors and the support and stimulus to business and industry thereby provided;

Finding: Complies as Proposed. The proposed development will provide additional housing opportunities to support employment for business and industry.

G. Strengthen the economy of the city;

Finding: Complies as Proposed. The proposed development will add additional housing to the Canemah Historic district, where the current housing stock is low.

H. Promote the use of historic districts and landmarks for the education, pleasure, energy conservation, housing and public welfare of the city; and

Finding: Complies as Proposed. The applicant will be adding additional housing stock and protect an area of delineated wetlands within the historic district. The applicant will also be increasing the housing stock within an area currently with low housing stock. Providing more housing options for

people within the City, and an opportunity for people looking to move into Oregon City, an opportunity to invest within the City and the Canemah National Historic District.

I. Carry out the provisions of LCDC Goal 5.

Finding: See policy 5.3.1 below.

17.040.060.F.2. *The provisions of the city comprehensive plan*

Section 5, Open Spaces, Scenic and Historic Areas, and Natural Resources

Canemah. Canemah is an important example of a relatively intact riverboat town with architectural resources dating from the 1860's. Having evolved from a community for the elite of the riverboat industry to a workers' community, Canemah retains essentially the same sense of place it had in the latter half of the 19th Century. Situated above the Falls of the Willamette, it was an important portage town and the major shipbuilding center on the upper Willamette River.

Present Status. Canemah was listed as a Historic District in the National Register of Historic Places in 1977. The area was zoned in 1954 for industry along the river, commercial and multifamily along McLoughlin Boulevard, and multifamily along Third Avenue and portions of Fifth Avenue. In 1982, a majority of the area was rezoned as residential except for a small strip on McLoughlin Boulevard, which was rezoned to Historic Commercial. In the last 20 years, many homes within the district have been rehabilitated, but some have not been maintained to a level that ensures their significance and status as contributing structures. New construction and exterior alterations need to be reviewed for their long-term effect on the neighborhood and National Register Historic District status.

Goal 5.3 Historic Resources - *Encourage the preservation and rehabilitation of homes and other buildings of historic or architectural significance in Oregon City.*

Finding: Complies with Condition. As demonstrated within this report, the proposal, with the implementation of the conditions listed above, can comply with the applicable sections of the Oregon City Municipal Code as well as the Design Guidelines for New Construction. Compliance will result in protection of existing homes within the district. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Policy 5.3.1 - Encourage architectural design of new structures in local Historic Districts, and the central Downtown area to be compatible with the historic character of the surrounding area.

Finding: Complies with condition. The applicant identified the following:

The surrounding residences are a mix of age and architecture. The neighbor on the corner of 4th and Miller was built in 1890 in the Queen Anne Vernacular Style, but has had several additions and two additional buildings constructed over time increasing the density significantly. One building is a barn/garage built in 1990. If the same development was built now, it would exceed maximum density allowed by Oregon City code. The home to the west of our site was built in 1899 in the bungalow style. It too has been altered including the addition of multiple large single pane view windows. The two homes directly across the street are large, modern homes that do not fit within the historical context in their massing or facade styles.

As we will demonstrate in greater depth within this application, the proposed development is rendered in the Vernacular style to be consistent with the typical original historic development style and the spirit of the neighborhood. Through these design choices, the project enhances the visual character of the district, reflecting and supporting the character of the historic buildings using the following criteria:

- 1. The size of the homes.*

2. *The location of the homes within the property lines.*
3. *The architectural facades of the homes - window, door and porch placement along with materials and colors*
4. *The parking areas.*
5. *The density of plantings and foliage of the site.*
6. *The natural environment of the site.*
7. *The retaining wall conditions.*

In alignment with the cottage housing code, the footprints and massing of the proposed homes are small and modest which naturally fit in with the original historic footprints of the existing surrounding homes. The exterior facades have minimal orientation keeping with the style of the Canemah historic vernacular and bungalow homes. (See Canemah Neighborhood Analysis) Many of the historic homes have been altered and additions have been added to their original footprint which have increased their size and shape. Most of the new homes constructed in this neighborhood are significantly larger buildings than the historic context. (See Canemah Neighborhood Analysis) The proposed cottage homes are more consistent with the footprint, size and shape of the historic homes as they were originally built and what the historic preservation designation is intended to preserve. We have studied the Oregon Inventory of Historic Properties Historic Resource Inventory Forms for the qualifying Historic homes in the neighborhood, and have determined what additions and alterations have been done to the properties and homes from their original construction. The small footprint, minimal facade and placement of the homes on the proposed project site ensure consistency with the original character of the historic neighborhood. The proposed development is made up of six small homes on four property lots. As seen in the density diagram, due to the small size of the homes, the proposed project is less dense than the context of the surrounding neighborhood including the adjacent property of 502 4th Avenue.

To further separate parking from the street, (4) parking spaces will be in a small lot behind the 4th Street house. Due to the maximum driveway slope allowable by code and the grade of the natural slope on the North end of the site, the parking area is required to have multiple retaining walls. The majority of Canemah is nestled within the side of a hill. Retaining walls are a necessary part of constructability in this context and is evident throughout the entire neighborhood. The neighborhood is made up of terraced land held back by various shapes and sizes of retaining walls throughout the entire landscape. Some covered with moss and ivy, some exposed as seen in the construction of a new home along 4th street. The retaining wall condition in this proposed project is not unique. Our intention is to layer basalt stone over the structural elements along with covering with planting to minimize appearance and to blend more seamlessly in with the surrounding landscape. Our design is directly mimicking the retaining walls seen through the neighborhood.

The Oregon City Municipal Code permits cottage housing, though cottage housing has not been constructed within Canemah and is subject to compliance with the applicable criteria in the Oregon City Municipal Code to determine appropriateness.

Though the City agrees with a majority of the applicant's responses, and as demonstrated within this report, the structures and context will comply with the applicable criteria, when the City examines density, the City examines the number of dwelling units per square foot. The historic district is platted with 5,000 square foot lots, most of which are entitled to a single-family dwelling. The applicant has proposed 6 homes over 4 lots of record, but has mitigated the number of units with substantially smaller homes, both in square footage, footprint, and height. Furthermore, the homes are spread throughout

the site and the applicant proposed the installation of a landscaped buffer, which will create further separation and help reduce the impacts of a development on the neighboring properties. In addition to street trees, the applicant shall assure one tree is planted (or retained) a within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location.

The analysis for each home is provided within this report.

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

Policy 5.3.2 - Evaluate the establishment of Historic and Conservation Districts to preserve neighborhoods with significant examples of historic architecture in residential and business structures.

Finding: Complies with Condition. As demonstrated within this report, and the housing analysis below, the proposal can comply with the applicable sections of the Oregon City Municipal Code as well as the Design Guidelines for New Construction, thus preserving the historic district. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Policy 5.3.7 - Encourage property owners to preserve historic structures in a state as close to their original construction as possible while allowing the structure to be used in an economically viable manner.

Finding: Not Applicable. There are no existing structures onsite.

Policy 5.3.8 - Preserve and accentuate historic resources as part of an urban environment that is being reshaped by new development projects.

Finding: Complies with condition. The applicant provided the following:

The LCDC Statewide Planning Goal 5 (OAR 660-015-0000(5)) requires that open spaces and natural scenic and historic resources be protected. When learning there was a potential historic wetland on the property, the project owner worked with the Department of State Lands, the Army Corp of Engineers, and EVREN Northwest and Turnstone Environmental to determine the location of the wetland. The resulting wetland delineation (See Figure 1 - Wetland Delineation Report Pg9) outlined 4,200 sq. ft. of the site as an existing wetland to be preserved to protect the natural water flows of the site - which is especially important in this historical landslide area (see Figure 5 - Geologic Landslide Hazard Zone pg15). The preservation will also be increasing wildlife habitat and native plant species. Due to the significant area of property being preserved for this geo-and hydrologically important historic wetland, the property owner is requesting a Historic Preservation Incentive to build against the east property line in order to fit the project between the boundaries of the property and the wetland.

In addition to not constructing development on the wetland identified onsite, the proposed homes are each buffered from the adjacent Casady House with setbacks and landscaping. In order to allow for such buffering, the applicant has proposed to utilize preservation incentives to place structures 5 and 6 within the setbacks of the zoning designation, a practice common within the historic district. The use of preservation incentives is described in OCMC 17.40.065 of this report. The applicant has also designed the site so that the necessary facilities, such as parking areas, are contained completely within the boundaries of the four lots of record. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.040.060.F.3 *The economic effect of the new proposed structure on the historic value of the district/historic site*

Finding: Complies with Condition. The applicant provided the following:

The project is converting a vacant lot covered in blackberries and at some point used as a dump (soil sample recovered large amounts of rubbish) into 6 new homes while preserving and protecting the natural water flow and increasing natural habitat.

Preserving and protecting the inherent value of the land through the preservation of the wetland increases the human value in the land. The increased number of new families/individuals in the Canemah community will increase the tax revenue of the area, allowing for more improvements and preservation opportunities for the community.

The proposed development will add additional housing to the Canemah Historic District and invest in the subject site, which may encourage other property owners to also invest in their property within the district. With the conditions of approval, the development of the site will comply with the adopted criteria, resulting in protection of the historic value of the district. Further findings on the site can be found in the Site Plan and Density Analysis below. The proposed development will also add additional housing stock to a portion of the City where the housing stock is very low and where only one new single family home has been constructed within the last 5 years. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.040.060.F.4 *The effect of the new proposed structure on the historic value of the district/historic site*

Finding: Complies with Condition. The applicant provided the following:

The design compliments and preserves the architectural language of the historic buildings by closely following the Oregon City Historic Districts Guidelines for New Construction. The design reflects and supports the character and style of the historic district. This small cottage home development not only exists lightly on the site through its small footprint, allowing for more natural landscaping, but it is creating a sense of community within the development itself translating into the larger Canemah community in a way that building one large single family home could not.

With the conditions of approval, the development of the site will comply with the adopted criteria, resulting in protection of the historic value of the district. The proposed new homes have been designed using elements of the Vernacular style with small building footprints. This approach to new construction will help to create contextual cohesiveness along 4th Ave. and within the Canemah Historic District. However, the new development will increase the density along 4th Ave. and create a cottage development in the Canemah Historic District, which does not currently have any cottage developments. On August 22, 2017 The Historic review Board approved by a vote of 4-0-0 to approve, with conditions, the designs of five cottage homes on the subject site. The number of cottages was reduced from six to five because the reduction of the one additional home would bring the proposed cottage development more into line with the density of the other sites found throughout the Canemah National Historic District. Reducing the number of dwelling would also reduce the impact of the development on the neighbors directly adjacent the subject site.

Additionally, many of the proposed homes have design elements that are not typically on homes within the Canemah Historic District, Staff and the HRB evaluated the design elements and have incorporated them into the housing analysis findings below and the conditions listed above. Please reference the Housing Analysis further in the document to review an additional analysis on each individual home. **Staff**

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

17.040.060.F.5 *The general compatibility of the exterior design, arrangement, proportion, detail, scale, color, texture and materials proposed to be used in the construction of the new building or structure;*

Finding: Complies with Condition. The applicant provided the following:

Our goal is to blend in with and respect the historic homes of the neighborhood. The design and composition of the new homes is derived from a deliberate and extensive study, analysis and derivation of the home patterns in Canemah. We are designing in the spirit of the historic vernacular style of architecture with a 12"/12" pitch roof and 1 1/2 story roof height. We are also keeping the exterior minimally designed with painted horizontal and vertically hung board siding (natural shiplap siding and wood slats in architecturally significant locations) and wood windows. The windows are at a 1:2 proportion as is consistent with the historical houses in the area at 2.5' x 5'. We are providing recessed porches and breakfast nook projections in proportion to the main volume to provide variation of the massing, visual interest, weather protection, and to break up the volume. The homes are not cookie cutters of each other. Each home is designed with its specific location and orientation in mind making it unique, which is a common pattern of the Canemah district. We are building with Structurally Insulated Panels (SIPS) to improve buildability and construction schedule with the added benefit of high energy performance and durability. We are painting the homes with a palate of earth tone colors selected from the nature around the neighborhood. (See Figure 2 - Color Palette Pg9) The homes will be fitted with skylights where appropriate to maximize daylighting in the homes. (See Canemah Neighborhood Analysis - Windows for precedence of skylights in the neighborhood) We will have skylights where appropriate to maximize daylighting into the homes but will mount closely to roof plan to minimize appearance. As stated in the Design Guidelines; "New construction is just that. It is not historic, nor shall it attempt to be historic, but rather to stand side by side with existing historic structures in a respectful manner."

The use of preservation incentives is described in OCMC 17.40.065 of this report. The applicant has located all of the homes and associated parking onsite with screening from the public view. At the public hearing on August 22, 2017, The HRB determined that house number one on the submitted design should not receive any preservation incentives and that the house should reoriented to meet the dimensional standards of the underlying zoning district. Doing this would create an additional buffer between the site and the adjacent Casady House.

The proposed homes have been using elements from the Vernacular and modern elements. A breakdown of each home can be found in the Housing Analysis below.

The applicant has proposed to construct a retaining wall on site that will need to comply with a future geotechnical review. The Oregon City Municipal code and Design Guidelines for New Construction specify that retaining walls shall not exceed a maximum of 3 ½ feet within the front yard of a proposed home. The applicant has proposed a retaining wall that will exceed 3 ½ feet within the front of home 1 and 3. The applicant shall minimize the retaining wall height to 3 ½ feet at maximum height, and use rock, brick, or concrete with finishing; or mortared or stacked true masonry or stone that was traditionally quarried in the area.

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

17.40.060.F.6 *Economic, social, environmental and energy consequences*

Finding: Complies with Condition. The applicant provided the following:

The increase of residences will increase tax revenue and potentially provide additional users of local businesses. The increased number of individuals will increase social interactions, and neighborhood support-advocates. The SIPS panel construction will make the envelope of the homes super energy efficient, decreasing energy use and cost. The preservation of the wetland and water flows will help increase habitat and native plants, along with maintaining the natural water flows through the site.

The owner has proposed to construct six (6) new cottage style homes, which will bring additional housing to the Canemah Historic district. The property owner will mitigate for the increased number of dwellings with the modest size of each building, placement of the structures, and installation of landscaping. In addition to street trees, the applicant shall assure one tree is planted (or retained) a within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.040.060.E.7 *Design guidelines adopted by the historic review board.*

Finding: Please refer to the analysis below.

17.040.060.G *For construction of new structures in an historic corridor, the criteria to be used by the board in reaching its decision on the certificate of appropriateness shall include the following:*

Finding: Not Applicable. The proposal is for new construction in a historic district.

17.040.060.H *The following standards apply to development within historic corridors:*

Finding: Not Applicable. The proposal is for new construction in a historic district.

17.040.060.I. *In rendering its decision, the board's decision shall be in writing and shall specify in detail the basis therefore.*

Finding: Complies with Condition. The decision includes this staff report as well as any notice of decision and findings adopted by the Historic Review Board to demonstrate compliance with the applicable criteria. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.040.060.J. *Nothing in this section shall be construed to prevent the ordinary maintenance or repair of any exterior architectural features which does not involve a change in design, material or the outward appearance of such feature which the building official shall certify is required for the public safety because of its unsafe or dangerous condition.*

Finding: Not Applicable. The proposal is for new development.

17.040.060.K. *The following exterior alterations may be made subject to the administrative procedures as outlined below:*

Finding: Not Applicable. The proposal is being reviewed as a Type III decision.

17.40.065 - Historic Preservation Incentives

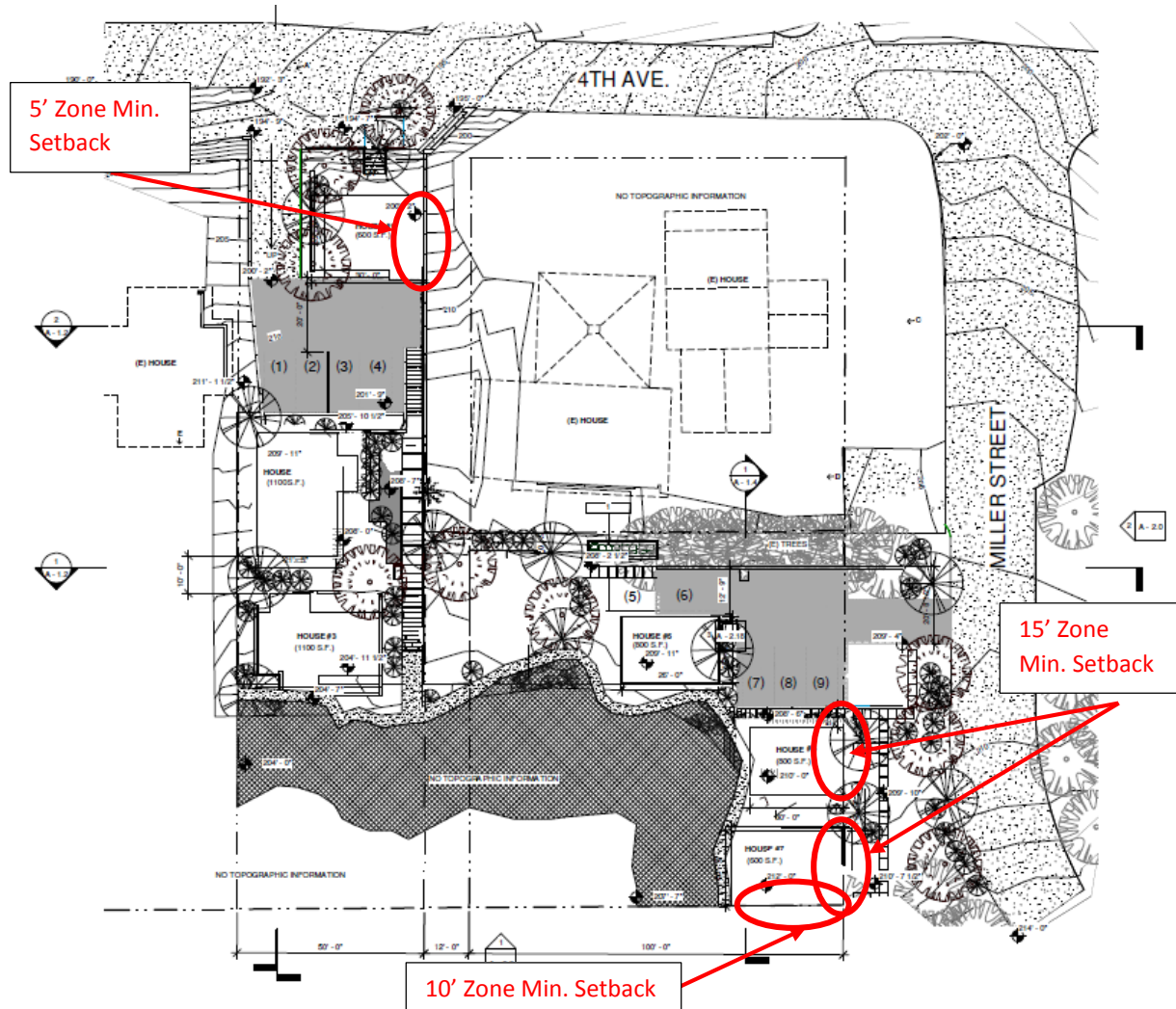
- A. Purpose.** *Historic preservation incentives increase the potential for historically designated properties to be used, protected, renovated, and preserved. Incentives make preservation more attractive to owners of locally designated structures because they provide flexibility and economic opportunities.*
- B. Eligibility for Historic Preservation Incentives.** *All exterior alterations of designated structures and new construction in historic and conservation districts are eligible for historic preservation incentives if the exterior alteration or new construction has received a certificate of appropriateness from the Historic Review Board per OCMC 17.50.110(c).*
- C. Incentives Allowed.** *The dimensional standards of the underlying zone as well as for accessory buildings (OCMC 17.54.100) may be adjusted to allow for compatible development if the expansion or new construction is approved through historic design review.*
- D. Process.** *The applicant must request the incentive at the time of application to the Historic Review Board.*

Complies with Condition. The applicant provided the following:

We are requesting a Historic Review Incentive based on the preservation of the wetland which is of significant importance to the geology and hydrology of this historic landslide area. The owner has worked with the Department of State Lands, the Army Core of Engineers, and EVREN Northwest and Turnstone Environmental to determine the location of the wetland. The resulting wetland delineation outlines a 4,200 sq. ft. of the site as an existing wetland to be preserved to protect and increasing habitat for wildlife and native plant species along with the natural water flows of the site. This preservation area has pushed our housing footprints to the south and east property lines. It is important not to disrupt the water flow or increase water retention in a landslide hazard area so our construction and development will not touch the wetland or water flow into, through or out of the wetland. We are building uphill from the wetland and the development will not impact the natural water flows on the site. All of the runoff from our development will be directed into storm water planters which then overflow into the city's sewer. Due to the historic nature of this wetland and its significance to the hydrology of the surrounding historic district, we are requesting a Historic Preservation Incentive to build on the east and south property line.

Development is required to be located outside of the delineated wetlands, as identified by the Department of State Lands. The wetland is located in the rear of the site, and would cover a majority of 3 of the 4 historic lots encompassed by the proposed development. Compliance with applicable overlay districts is required prior to development onsite.

Per OCMC 17.40.065(A-D) – Historic preservation incentives are used to allow for compatible development and increase the potential for historically designated properties to be used, protected, renovated, and preserved. All exterior alterations of designated structures and new construction in historic and conservation districts are eligible for historic preservation incentives if the exterior alteration or new construction has received a certificate of appropriateness from the Historic Review Board per OCMC 17.50.110(c).



Three of the six proposed dwellings, numbers 1, 5, and 6, appear to be encroaching within the setbacks of the zoning designation as demonstrated above. None of the listed properties extend into the public right of way. The historic preservation incentives should be used in situations where an existing property is being threatened to or where topographical constraints limit the development, and not necessarily used as a tool to increase the density. It has been common within Canemah to grant preservation incentives to single family homes to allow for a zero lot line setback as to reduce the impact of the proposed single family home on the existing topography of the site.

The site contains delineated wetlands, topographic constraints, and an adjacent historic home which limit the location of structures on the site. The wetlands extend over a majority of 3 of the 4 historically platted lots the site encumbers. The preservation incentives allow the structures to locate near the property lines, but in the case of buildings 5 and 6, also allow the structures to be spaced apart from each other which result in an overall more compatible design with the district. In addition, the site is surrounded by a right-of-way which acts as a buffer between the development and other structures as well as the public. Structure #1 is separated from the neighboring property by an alleyway while 5 and 6 are located at the corner of two platted streets. The frontage along Miller is constructed with pavement a distance away from the property line and the 5th Avenue frontage is not developed at all.

The requested preservation incentives within the submitted application could be viewed as appropriate for the requested development with installation of additional landscaping. In addition to street trees,

the applicant shall assure one tree is planted (or retained) a within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location.

On August 22, 2017, the HRB specified why proposed house number one should not be allowed to use the preservation incentives. The HRB specified they wanted to create an additional between the subject site and the neighboring Casady House. By removing proposed house number two and repositioning proposed house number one, the applicant can comply with the HRB condition to remove the home from the property line. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.40.070 - Demolition and moving.

Finding: Not Applicable. The proposal does not include demolition or relocation of a building.

GUIDELINES FOR NEW CONSTRUCTION: OREGON CITY HISTORIC DISTRICTS

A. LOCATION: Where is the Site

McLoughlin Historic Conservation District, the Canemah National Register Historic District, or on individually listed historic property outside of the districts? What is the Immediate Context? The Block? The Neighborhood? What are the Mix of Existing Appropriate Historic Styles?

Finding: Complies as proposed. The applicant provided the following:

Surrounding immediate block and historic district is a mix of historically registered single family homes and newer, more recently built residential single family homes. According to the New Construction Design Guide lines for Oregon City Historic Districts, (NCDGOCHD), the most prevalent architectural style is the Vernacular. To be consistent with this, the cottage home development will be designed in the Vernacular style. (See Canemah Neighborhood Analysis for more details)

The subject site is within the Canemah National Register Historic District. The context of the site and surroundings are described within this report. There are currently no cottage house developments within the Canemah Historic District. Traveling in a block in each direction from the subject site, many of the existing homes have been developed in a traditional design which consists of a single family dwellings on a 5,000 or 10,000 square foot lot, though much of the district has 5,000 square foot lots which have been historically platted. Though many of the newer homes in Canemah are larger in size, the applicant has mitigated the proposed development with smaller building footprints and heights, spacing the structures away from each other and through the installation of landscaping. The site has been designed with revised preservation incentives to balance density and placement of the proposed homes, as mentioned above, the historic preservation incentives could be approved in the current configuration.

On August 22, 2017, the HRD denied Preservation incentives for proposed house number one, and reduced the number of cottages from six to five. The reason for the denial in requesting preservation incentive for proposed house number one and the reduction in the number of structures is order to reduce the impact of the development on neighbors directly adjacent the site and to help maintain the one dwelling unit per 5,000 square foot lot context in which the majority of Canemah is composed. A reduction in one dwelling would create a density of 1.2 dwelling units per 5,000 square foot lot, which is closer to the siting standards which currently exist in the Canemah National Historic District.

B. Style:

Determining the appropriate style is the important first step toward successfully designing a compatible building in the district. Decide which style direction to use from acceptable neighborhood styles and those in the applicable specific Historic District Design Guideline. The styles noted for the district have specific District modifications indicated.

VERNACULAR: *In the Canemah Neighborhood the most prevalent extant architectural style is Vernacular, built between 1867-1929. Important style characteristics as found on houses in the Canemah District to be used for new construction are noted below.*

Staff Response: Complies with Condition. The applicant indicated they have chosen to take our design cues from the Vernacular form as it seems to be the most prominent historic home in the immediate neighborhood that fits best with the use of our site.

Many of the proposed home have been designed using elements from the Vernacular style mixed with modern elements. Staff has listed concerns of the contextual appropriateness of each cottage home. The findings can be found in the Housing Analysis below. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Siting and Building Form

C-1 Review basic zoning requirements for New Construction for the particular site (R3.5, R6, MUC etc) to understand basic setbacks, lot coverage issues.

C-2 Review Siting, Building Form Principles and the Specific Historic District from Design Guideline. Note any requirements that are more specific than those found in the basic zoning.

C-3 Establish the Site Plan and the Overall Building Form. Is the use of the site and the building's placement on the site respectful of its context? Is the size, shape and bulk of the building consistent with the style chosen? Does it complement the neighborhood context? Is there too much 'program' for the site or style?

Building Form

- *Form easily allows additions and alterations such as increases in family size, activities or changing technology; generally smaller in size than McLoughlin.*
- *Shape: rectangular in plan, with smaller rectangular combinations to primary form; Rectangular or square form reinforced on façade. L-plan, T-plan options.*
- *Height: Maximum 1 ½ stories in height; Basement option.*
- *Proportions: Height (eave) to maximum width: 1:1 Height to Depth: can vary greatly.*
- *Roof: gable, of not less than 8:12 pitch, 10:12 and steeper are preferred. No cross-gable roofs; Possible wing or addition with lower ridgeline that is perpendicular or is offset.*

Finding: Complies with Condition. The applicant provided the following:

We are using a combination of 17.62.059 -Cottage Housing code, 17.44 Geologic Hazards code, 17.40.010 Historic Overlay District, along with Oregon City R6 Zoning building codes for new construction.

The Canemah Historic District does not have uniform setbacks. As a result of this and the preserved wetland area, two of our cottage homes are against east property line and one along the south property line. Although the Canemah Historic District lots are traditionally 50x100 with a single house, we are designing to the City of Oregon's Cottage Housing Code which is allowed in this zone. We will have the equivalent of one and half houses per lot. The spacing between the houses will be at least 10' as required by the Cottage Housing Code. There is a precedence in the Canemah neighborhood of the historical homes adding smaller additions to the existing home or beside the home to suite the owners' needs. Many properties have several buildings as

accessories to the main house increasing the density on the lots. From this group of maps we are able to determine that the majority of historic homes are at the base of the hillside where the precedence was to build more densely on the lots.

Where retaining walls are needed they will be concrete and or basalt stone. Each home will have its own rainwater planter which will collect all of the rainwater runoff from the impervious surfaces for its own footprint. The water will collect in the planters and overflow into the city's storm water sewer.

The applicant has proposed 6 modest size dwelling units and associated parking all within the subject site. The additional dwellings are mitigated by the spacing of the structures, the small footprint relative to other structures in the district, and a modest height. Lot coverage means the area of a lot covered by the footprint of all structures two hundred square feet or greater (excluding decks and porches), expressed as a percentage of the total lot area. Given that many homes within Canemah include accessory structures, the number of buildings will not detract from the rhythm of the historic district.

The installation of additional landscaping will mitigate the impact of the proposed development. In addition to street trees, the applicant shall assure one tree is planted (or retained) a within 10 feet of the right-of-way or within the right-of-way for every 35 feet of lineal frontage on Miller Street and 4th Avenue and one shrub is planted (or retained) for every 4 feet of frontage in the same location.

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

Site Plan and Density Analysis:

Finding: Complies as proposed. Currently, there are no areas adjacent to the proposed development with densities as high as the proposal. The parcels directly adjacent to the proposed site contain approximately one dwelling unit (though multiple structures) per 5,000 square feet and one dwelling unit (though multiple structures) per 10,000 square feet. As demonstrated in the above plat of Canemah and Tax Map, the site was historically platted with 5,000 square foot lots. In the current zoning designation of "R-6" Single-Family Dwelling District, each lot may be accommodated with a single-family home, though environmental studies and compliance are required. The proposal mitigates the increased density with decreased building sizes, though the development of the site has extended into the right-of-way with the construction of required parking lots and the applicant has asked for preservation incentives to allow a majority of the homes.

The site contains 4 lots of record which would otherwise be able to be constructed with a single-family home on each. The Oregon City Municipal Code allows the construction of up to 8 cottage homes on the site, however, the density must comply with the development requirements within the Oregon City Municipal Code for the historic district and referenced documents. The applicant proposed six cottage homes, but asked for a preservation incentive to accommodate the dwellings with the required parking and protection from an onsite wetland.

In addition to the findings above, City staff has examined the submitted site plan and has identified several items for consideration by the Historic Review Board:

Preservation Incentives

- Three of the six proposed dwellings, numbers 1, 5, and 6, appear to be encroaching on one of their property lines. All proposed structures appear to be contained on their subject properties and that if a property owner places a structure they need to acquire a right-of-way use permit or go through the process to vacate a portion of the public right-of-way. The historic preservation incentives should be used in situations where an existing property is being threatened to or where environmental or topographical constraints limit the development, and not as a tool to increase the density for a potential new development. The applicant's revised application better balances density and siting to reduce the overall impact on the surrounding neighborhood.
- On August 22, 2017, the HRB denied Preservation incentives for proposed house number one, and reduced the number of cottages from six to five. The reason for the denial in requesting preservation incentive for proposed house number one and the reduction in the number of structures is order to reduce the impact of the development on neighbors directly adjacent the site and to help maintain the one dwelling unit per 5,000 square foot lot context in which the majority of Canemah is composed. A reduction in one dwelling would create a density of 1.2 dwelling units per 5,000 square foot lot, which is closer to the siting standards which currently exist in the Canemah National Historic District.

Site and Context

Finding: Complies with Condition.

- Two parking lots are proposed onsite. The applicant has revised the site plan so that all of the proposed homes and parking spaces are contained within the property lines of the subject site.
- Along the entrance off of 4th Ave. the applicant has proposed to construct a large retaining wall. Per the Guidelines for New Construction the following site features are prohibited in Historic Districts – Elements that significantly obscure or detract from the primary sides of the building, and tall walls and fences in the front and front portion of side yards. The proposal will be reviewed for compliance with maximum retaining wall height limits in OCMC 17.54.100 during the Site Plan and Design Review.
- The Canemah Historic district has many single family homes irregularly spaced on 5,000 and 10,000 square foot parcels, however, many of the homes contain additional accessory structures.

Landscaping

- The applicant has provided illustrations of the development to the proposed grade, staff is still concerned with the landscaping and the effect of the proposed development on the existing neighboring homes. Therefore, prior to obtaining a Certificate of Occupancy, the applicant shall submit a landscape plan that appropriately buffers the proposed development from the adjacent homes and streets in accordance with OCMC 17.52.060(B).
- The applicant shall assure two trees are planted (or retained) and one shrub is planted (or retained) for every 4 feet of property length within 10 feet of the subject site and the adjacent Cassady House. **Staff has determined that it is possible, likely and reasonable that the applicant cannot meet this standard through the Conditions of Approval.**

D. Design Composition

D-1 Design the building and site starting with primary design groups and major elements, such as wings, roofline, secondary portions, porches, window groupings, dormers. Are these elements

supportive or are they detractive to the historic district? Are they supportive of the style and building?

D-2 Review the design; Is it in good proportion and is the composition balanced?

D-3 Review the design and adjust to incorporate comments from the first review. Is the design representative of the style range and do the forms and individual features work toward a united design approach as viewed from the exterior?

D-4 Design the finer or more detailed portions of the building and site to fit within the framework established.

Design Composition

- *Lacks rigid system of exterior detailing that makes it a clearly definable architectural style; allows design flexibility and is inherently varied.*
- *Designed and built without assistance of a trained architect. Collaborative design evolved with homeowner and builder, based on familiar styles, features and products.*
- *Can combine features from other architectural styles popular during the historic period; simpler designs than McLoughlin.*
- *Porch: full or partial length at the front entry; if close to the ground, no railings; at main story only.*
- *Dormers: None.*
- *Materials: local, readily available.*
- *Windows: 1:1, double hung windows.*
- *Siding: horizontal board siding; typically shiplap, or channel; occasionally bevel.*
- *Ornament: Exterior decoration is modest, consisting of scroll-work brackets at the top of porch pillars, plain cornerboards and simple window trim. Most houses do not feature spindlework in the peaks of their gable roofs.*
- *Interior fireplaces and chimneys.*

Finding: Complies with Condition. The applicant provided the following:

The homes are a simple rectangular form with pushing and pulling of the form providing recessed porches and breakfast nook projections in proportion to the main volume to provide variation of the massing, visual interest, weather protection, and to break up the volume. Our goal is to blend in with and respect the historic homes of the neighborhood. The design and composition of the new homes is derived from a deliberate and extensive study, analysis and derivation of the home patterns in Canemah. We are designing in the spirit of the historic vernacular style of architecture with a 12"/12" pitch roof and 1 1/2 story roof height. We are also keeping the exterior minimally designed with painted horizontal and vertically hung board siding (natural shiplap siding and wood slats in architecturally significant locations) and wood windows. The windows are at a 1:2 proportion as is consistent with the historical houses in the area at 2.5' x 5'. The homes are not cookie cutters of each other. Each home is designed with its specific location and orientation in mind making it unique, which is a common pattern of the Canemah district. We are building with Structurally Insulated Panels (SIPS) to improve buildability and construction schedule with the added benefit of high energy performance and durability. We are painting the homes with a palette of earth tone colors selected from the nature around the neighborhood. (See Figure 2 - Color Palette Pg9) The homes will be fitted with skylights where appropriate to maximize daylighting in the homes. (See Canemah Neighborhood Analysis - Windows for precedence of skylights in the neighborhood) As stated in the Design Guidelines; "New construction is just that. It is not historic, nor shall it attempt to be historic, but rather to stand side by side with existing historic structures in a respectful manner." To this

effect, we are respecting the street facing facades to be more traditional and historic while allowing the interior facing facades be more stripped down. Facades facing the wetland or interior of the site will have a vertical, natural stained cedar and large panes of glass to open the homes to their setting as much as possible. (See Figure 11)

All of the proposed homes incorporate elements of the Vernacular style, but also incorporate more modern elements not found along 4th Ave. such as window walls, full light doors, stepped windows, and rood cutouts. A further analysis of each home can be found in the Housing Analysis section below. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Specific Design Elements

E-1 Design and choose specific design elements, products, and materials that are allowable and consistent with the design styling and framework established.

E-2 Does the design still fit the style's 'vocabulary'? Have extraneous or excessive details, ornamentation, or materials been chosen that detract from the neighborhood context?

E-3 Do specific elements comply with the guideline? Are materials, colors and finishes selected? Visible equipment? Landscaping and Plantings?

Finding: Complies with Condition. The applicant provided the following:

Nestled within the side of a hill along the Willamette River at the head of the Willamette Falls, Canemah has amazing views from almost every location in the neighborhood. The focus of which for the observed homes is facing downhill and northwest towards the river. All of the homes, historic and modern have taken advantage of these spectacular views with numerous and/or large window openings facing this direction. We found the sizes and types of windows varied significantly within all housing types to the point where we did not find an obvious standard window type. The most consistent feature is that there are multiple large openings facing towards the views. Many homes, modern and historic, have a mix of rectangular vertical windows, large single pane square picture windows facing the streets and large, long, horizontal openings along the frontage of the homes made up of multiple vertical windows. Even within an individual home, there are multiple different window types. Many homes have skylights; some are visible from the street. The overall orientation of the neighborhood is focused on the views towards the river and the natural features of the place. Our development is taking these cues from the neighborhood and respecting the general proportions, placement and shape of the windows while keeping with this tradition of providing large openings towards the natural views of the place, one of the most beautiful features of the neighborhood. This is why we have large sliding glass doors and large windows facing the wetland. While respecting the more "historic" look from the street, the window walls provide a deeper more direct connection to the surrounding environment - important aspect of living in Canemah. We believe enhancing and encouraging this connection is in direct line of the spirit of this place.

Retaining Wall: The majority of Canemah is nestled within the side of a hill. As you enter Canemah, you are confronted with steep cliffs of basalt rock. Retaining walls are a necessary part of constructability in this context and is evident throughout the entire neighborhood. The neighborhood is made up of terraced land held back by various shapes and sizes of retaining walls throughout the entire landscape. Some covered with moss and ivy, some exposed as seen in the construction of a new home along 4th street. The retaining wall condition in this proposed project is not unique. Our intention is to layer basalt stone over the structural elements along

with covering with planting to minimize appearance and to blend more seamlessly in with the surrounding landscape. Through the use of basalt stone and native plantings, the design is directly mimicking the retaining walls seen through the neighborhood and in the images below.

Porches: As mentioned previously, the views are the predominant feature to which the homes, historic and modern, all have in common and are all designed to maximize. There are multiple wide openings on the north facing facades as well as porches, many times two or three on almost every home in the neighborhood. There are two major types of porch forms in the neighborhood. The first kind is the “attached” porch. It is seemingly independent of the building mass “tacked” onto the side of the building. The second type is a more “built in” porch both with and without roof overhangs. The proposed development has both approaches in keeping with the variety within the neighborhood.

Parking: Like setbacks, parking seems to be influenced by the topography as well as occurring where ever a car can find a place. Most homes have their primary parking alongside the roadway itself providing parking areas for multiple cars. Some do not have driveways at all and the only parking for the home is along the street. Our proposed development will have parking areas consistent with the other multi-family buildings in Canemah, however they will be made with permeable pavers and heavily planted to lessen the visual impact. The single space along 4th Ave will be similar to 900 4th Ave. in that it will be heavily planted to lessen the visual impact of the car along the street while also providing more safety and privacy. By Cottage home code the development is required to provide 11 parking spaces. 1.5 spaces for each cottage home. Parking in lots allows for more of the site to be open to natural landscaping and open views instead of being taken up by driveways. It is safer, more compact and more efficient.

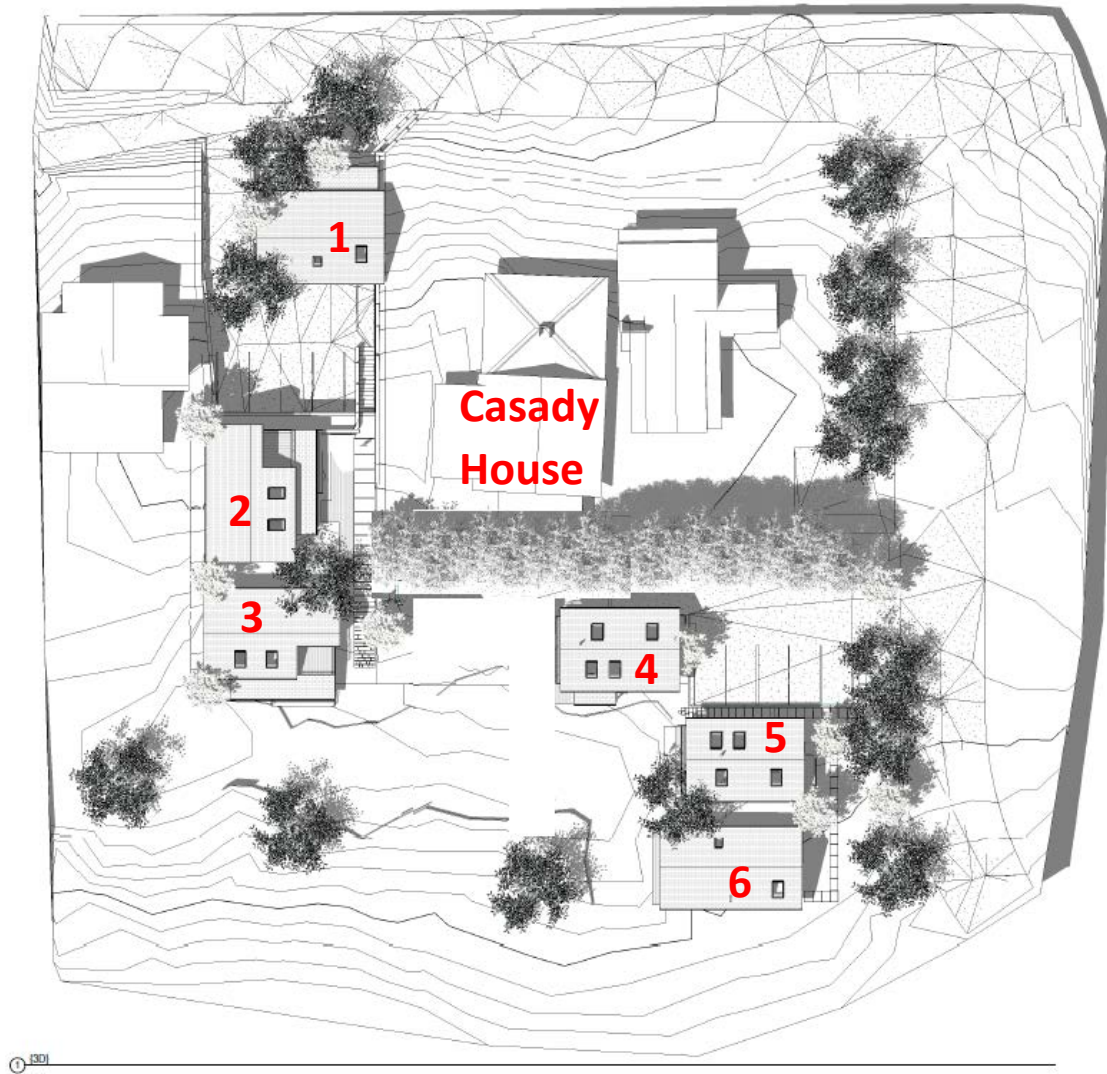
Many of the proposed homes have design elements that are not typically on homes within the Canemah Historic District, Staff and the HRB evaluated the design elements and have incorporated them into the findings below and the conditions listed above. Please reference the Housing Analysis further in the document to review an additional analysis on each individual home.

A geotechnical review has yet to be submitted and the proposed fill removal and retaining wall construction has yet to be addressed. The applicant has proposed to construct a retaining wall on site that will need to comply with a future geotechnical review. The Oregon City Municipal code and Design Guidelines for New Construction specify that retaining walls shall not exceed a maximum of 3 ½ feet within the front yard of a proposed home. The applicant has proposed a retaining wall that will exceed 3 ½ feet within the front of home 1 and 3. The applicant shall minimize the retaining wall height to 3 ½ feet at maximum height, and use rock, brick, or concrete with finishing; or mortared or stacked true masonry or stone that was traditionally quarried in the area.

Additionally, the steps, separate from the proposed homes, that are located within the site are appropriate with the overall context of the Canemah National Historic District. The Design guidelines for new construction call for exterior stairways exceeding five feet in height at the front of buildings is the design composition section and not within the siting. This means this section is talking about the steps leading into a home and not steps within the general site.

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

HOUSING ANALYSIS:

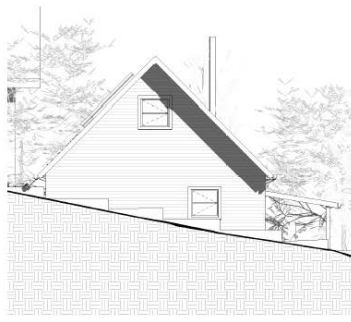


The staff analysis of each home is provided below.

Proposed House 1:



① House #1 South
1/4" = 1'-0"



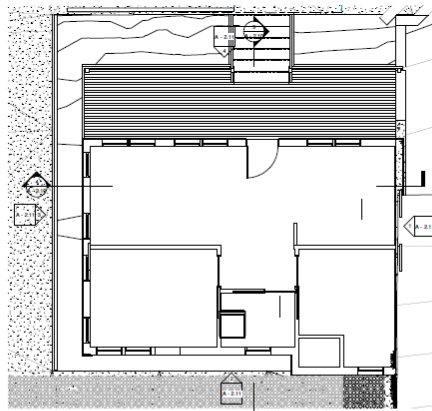
② House #1 East
1/4" = 1'-0"



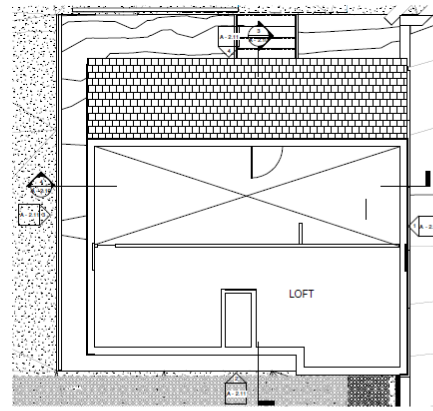
③ House #1 West
1/4" = 1'-0"



④ House #1 North
1/4" = 1'-0"



① HOUSE #1 LEVEL 1
1/4" = 1'-0"



② HOUSE #1 LOFT
1/4" = 1'-0"



③ HOUSE #1 N-S SECTION
1/4" = 1'-0"



④ HOUSE #1 E-W SECTION
1/4" = 1'-0"



⑤ HOUSE #1

Finding: Complies with Condition. This house is designed to be a 600 square foot 1 ½ story home oriented towards 4th Ave. with an elevated front deck on the front of the house. The deck will have approximately seven steps up to the main level. The deck is encircled by a railing on the north and west side of the house with thin vertical spindles and topped by a rail cap. The east side of the deck will abut a retaining wall separating the porch from the neighboring topography.

The house appears to be designed as a small Vernacular bungalow with six large double hung windows and a half light door on the front of the house. Four large rectangular double hung windows and one small square window on the west side of the house. The east side of the home appears to have two small square double hung windows. The south side of the home includes a four large double hung windows with a small bump out abutting a retaining wall on the southeast corner.

The siding appears to be a vertical shiplap siding along the north, east, and west sides of the home. The south side of the home has been designed with vertical shiplap siding.

The roof of the home appears to be designed as a shingle covered with a pitch greater than 8:12 (12:12 according to the applicant narrative). The north side of the roof appears to have a small chimney, and the south side of the roof appears to have one large rectangular and one small square skylight window.

In the design of home number one, the applicant has indicated that they are planning to remove a significant portion of the abutting topography, creating a cutout for the home and a twelve (12) foot wide driveway on the existing lot. This home will also be located directly upon the east property line.

The proposed landscaping in front of the front of the home is unclear. The applicant will need to go through Geotechnical Review along with Site Plan and Design Review.

To ensure compatibility, conditions of approval have been that coincide with the existing Design Standards for the Canemah Historic District, the following conditions are proposed:

- Retaining and structural walls shall be minimized; to be faced or finished in stone, mortared basalt, or concrete, and not exceed 3 ½ feet, to complement the Canemah Neighborhood.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- A minimum of 5 shrubs and groundcover shall be installed along the façade of the front porch.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.
- At the August 22, 2017 Historic Review Board meeting the HRB approved the design of the proposed cottage housing development with a set of conditions. One of the specified conditions was for no preservation incentives to be permitted on house number one. Repositioning the house would create enough separation from the property lines, so no preservation incentive would be necessary for this home.

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

Proposed House 2:



① House #2 West
1/4" = 1'-0"



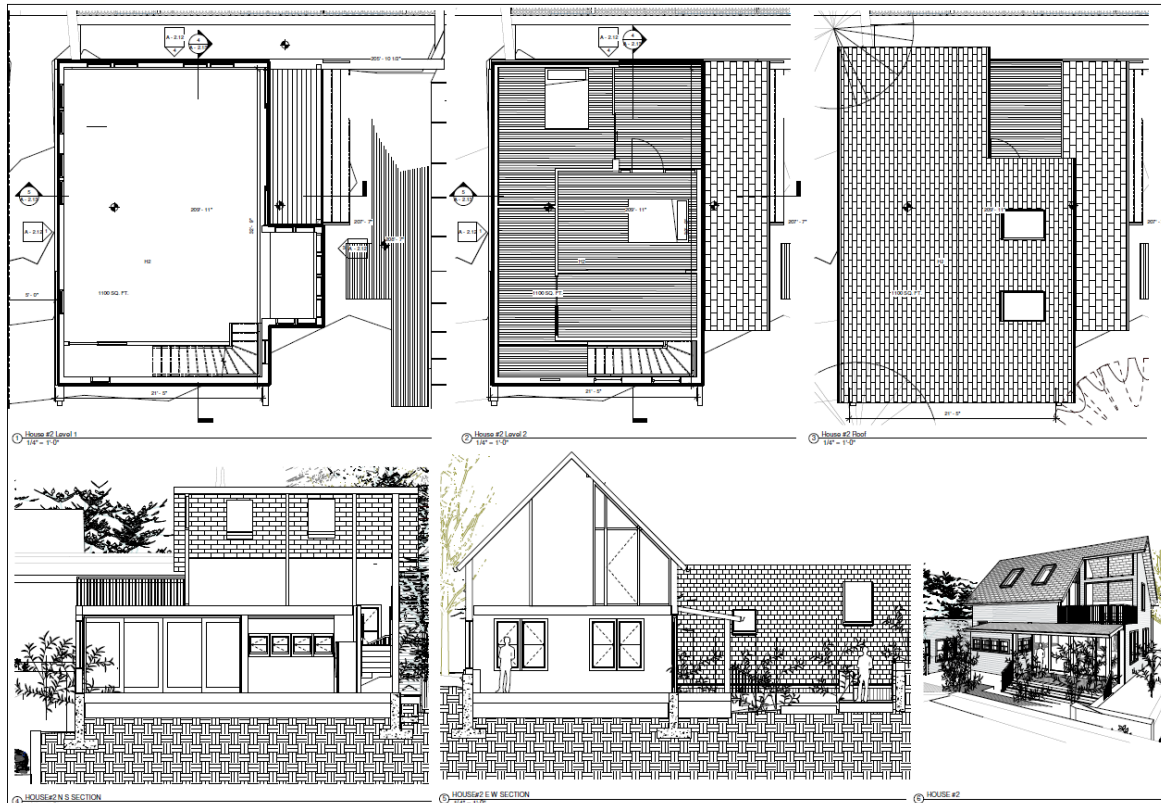
② House #2 South
1/4" = 1'-0"



③ House #2 East
1/4" = 1'-0"



④ House #2 North
1/4" = 1'-0"



Finding: Complies with Condition. On August 22, 2017, the HRB decided by a vote of 4-0-0 to approve the proposed cottage development with condition. One of the conditions is the removal of house number two from the proposed development. Removing house number two will reduce the density of the overall site and create a siting pattern more commonly seen throughout the Canemah National Historic District. Additionally, removing house number two will allow the application more space to reposition house number one.

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

Proposed House 3:



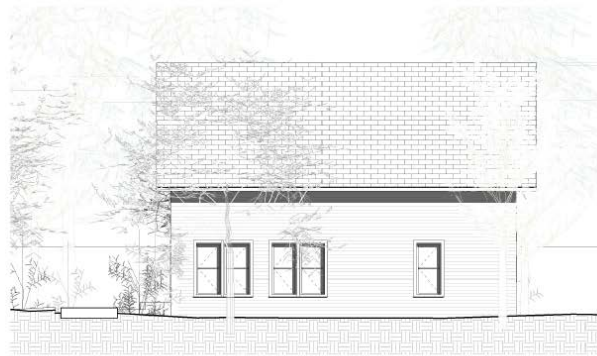
① House #3 South
1/4" = 1'-0"



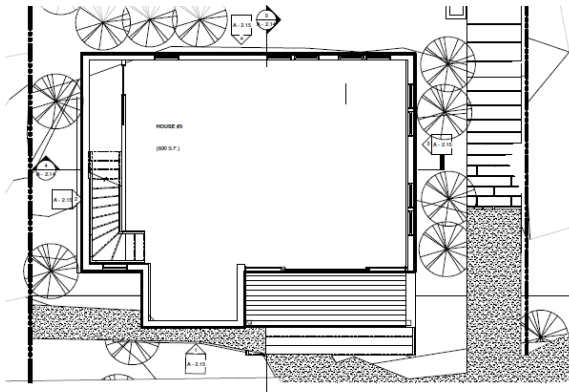
② House #3 West
1/4" = 1'-0"



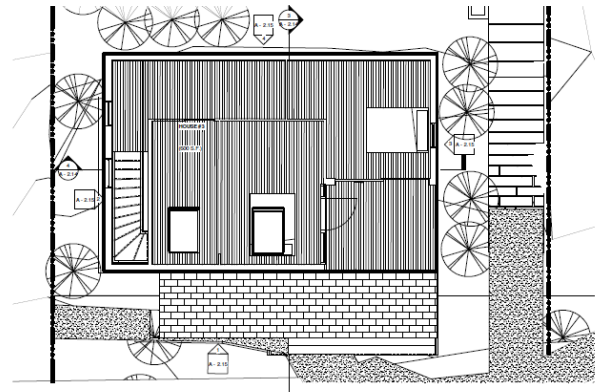
③ House #3 East
1/4" = 1'-0"



④ House #3 North
1/4" = 1'-0"



① House #3 Level 1
1/4" = 1'-0"



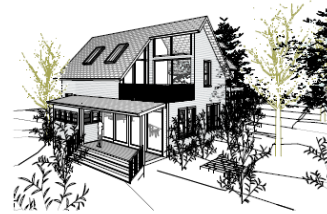
② House #3 Level 2
1/4" = 1'-0"



③ HOUSE #3 N-S SECTION
1/4" = 1'-0"



④ HOUSE #3 E-W SECTION
1/4" = 1'-0"



⑤ HOUSE #3

Finding: Complies with Condition. House number three is located approximately ten feet south of house number 2, and is exactly the same as house two but oriented north/south instead of east/west.

To ensure compatibility, conditions of approval have been created that incorporate the existing Design Standards for the Canemah Historic District, the following conditions are proposed:

- Primary residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted.
- Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- Roof cut-outs do not appear to be a feature found on homes within the Canemah neighborhood and the home shall be redesigned incorporating a continuous roof line with no breaks, or cut-outs, for second story patios.
- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

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

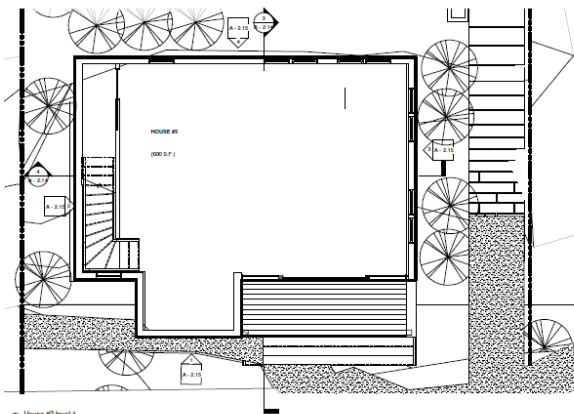
Proposed House 4:



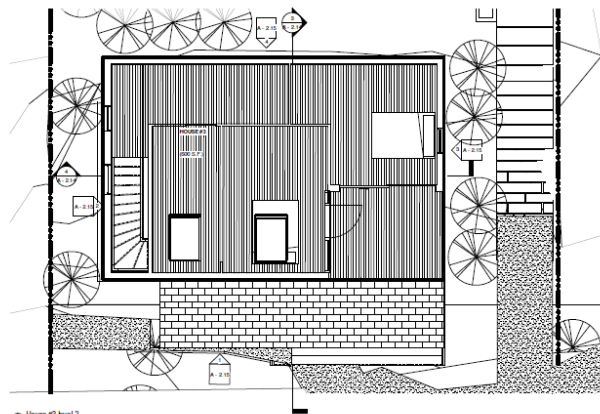
① House #5 West
1/4" = 1'-0"



② House #5 South
1/4" = 1'-0"



① House #3 Level 1
1/4" = 1'-0"



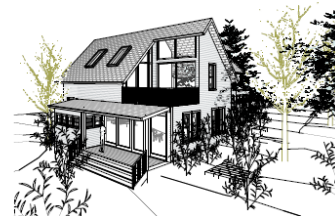
② House #3 Level 2
1/4" = 1'-0"



③ House #3 N Side Section
1/4" = 1'-0"



④ House #3 E/W Section
1/4" = 1'-0"



⑤ House #3

Finding: Complies with Condition. House four is an 800 square foot 1 ½ story modern Vernacular, completely sided in horizontal shiplap on the north, vertical shiplap on the south and west side, and vertical and horizontal shiplap on the east side. This house is located approximately 60 feet to the east of house number three.

The front of the house is on the east side of the building and has been designed with a small elevated deck, covered by an eave, leading into a solid front door with a tall and narrow vertical fixed window to the left of the front door. There is one medium rectangular window on the main floor and two large double hung rectangular windows on the second story.

On main level of south side of the house there are four full light sliding style doors leading out to small covered deck. There is also one small double hung rectangular window and one medium window. On the west side of the home there is another set of full light glass doors leading out to a covered deck. On the second story of the west side is a second story deck encircled by a railing with narrow spindles and a top rail. Half of the second story on the west side of the building is composed of windows. Additionally, there is one small rectangular window on the second story.

There are two large double hung rectangular windows on the north side of the building. The roof appears to greater than an 8:12 slope with two skylights on both the south side and north side of the roof.

To ensure compatibility, conditions of approval have been created that incorporate the existing Design Standards for the Canemah Historic District, the following conditions are proposed:

- The main entrance of the house shall not be oriented towards the adjacent parking lot.
- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

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

Proposed House 5:



① House #5 East
1/4" = 1'-0"



② House #5 South
1/4" = 1'-0"



③ House #5 West
1/4" = 1'-0"



④ House #5 North
1/4" = 1'-0"



Finding: Complies with Condition. House four is an 800 square foot 1 ½ story modern Vernacular, completely sided in vertical shiplap on the west side, horizontal shiplap on the north and south, and vertical and horizontal shiplap on the east side. This house is located approximately 12 feet to the southeast of house number four.

The front of the house is on the east side of the building and has been designed with a small elevated deck, covered by an eave, leading into a solid front door with a tall and narrow vertical fixed window to the right of the front door. There is one medium rectangular window on the main floor and two large double hung rectangular windows on the second story.

The main level of west side of the house has four full light sliding style doors leading out to small covered deck. On the second story of the west side is a second story deck without any form of railing. Additionally, half of the west side second story is composed of windows. The south side of the house there is one large double hung rectangular and one small rectangular double hung window. There are two large double hung rectangular windows and one small double hung rectangular window on the north side of the house.

The roof appears to greater than an 8:12 slope with two skylights on both the south side and north side of the roof.

To ensure compatibility, conditions of approval have been created that incorporate the existing Design Standards for the Canemah Historic District, the following conditions are proposed:

- The main entrance of the house shall not be oriented towards the adjacent parking lot.

- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.
- Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- The applicant shall revise the home with a porch railing on the second story of the home.
- The porch shall consist of simple trim at base and top, consistent with architectural style.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

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

House 6:



① House #7 North
1/4" = 1'-0"



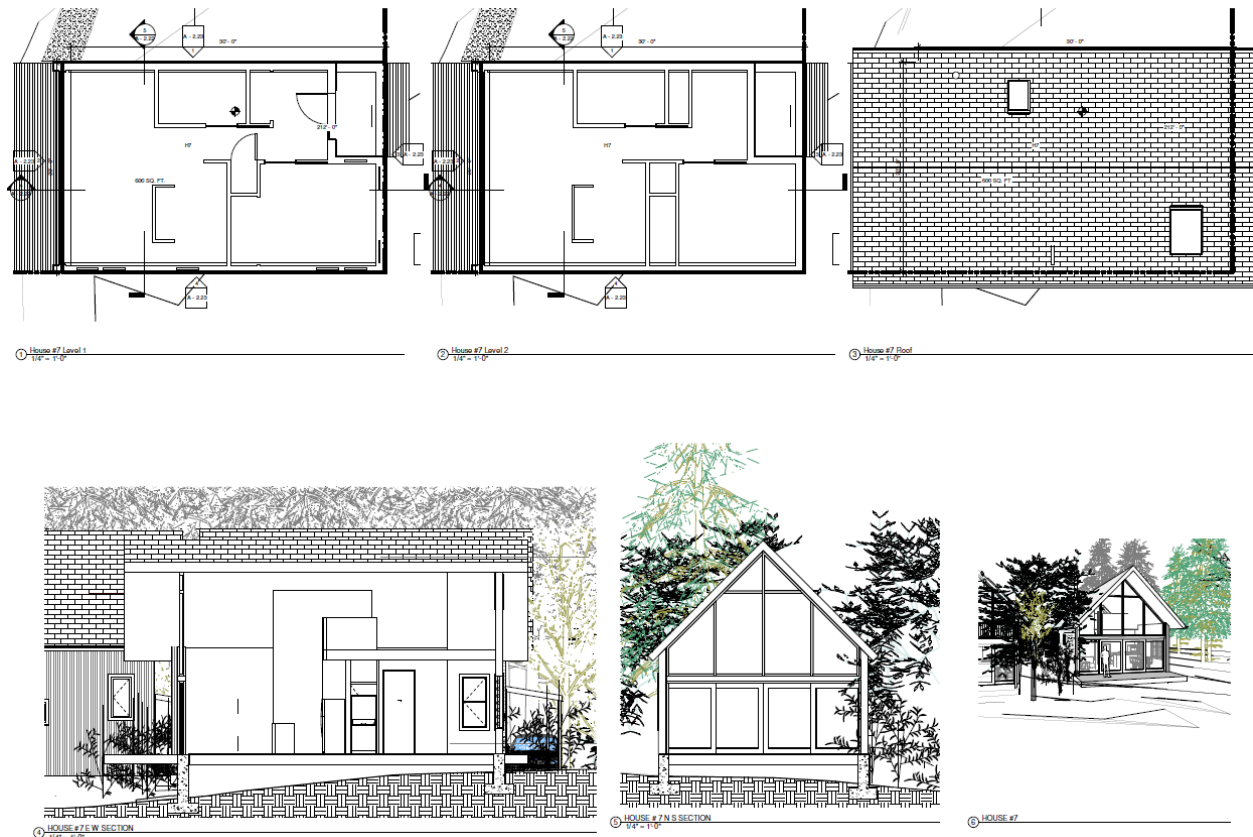
② House #7 West
1/4" = 1'-0"



④ House #7 South
1/4" = 1'-0"



③ House #7 East
1/4" = 1'-0"



Finding: Complies with Condition. House four is a 600 square foot 1½ story modern Vernacular, completely sided in horizontal shiplap on the north and south side of the house, horizontal and vertical and horizontal shiplap on the east side of the house, and primarily windows with minor vertical shiplap on the west side of the house. This house is located approximately 10 feet to the south of house number six.

The front of the house is on the east side of the building and has been designed with a small elevated deck tucked into an alcove, leading into a solid front door with a tall and narrow vertical fixed window to the left of the front door. There is also a large double hung rectangular window on the inside of this alcove looking into the front doorway. Additionally, there are two large double hung rectangular windows on the main floor and one medium widow on the second story.

There is one small fixed window and one small double hung window on the north side of the house. There are five large double hung rectangular windows on the south side of the house. The west side of the house is primarily composed of windows with set of full light glass doors leading out onto a slightly elevated deck.

The roof appears to greater than an 8:12 slope with one skylight on the north and south side of the roof.

To ensure compatibility, conditions of approval have been created that incorporate the existing Design Standards for the Canemah Historic District, the following conditions are proposed:

- Residential doors shall complement the design and detailing of the historic style with similar appearance to wood. Doors shall be designed in a stile and rail type; panel design; with upper

portion glass. The primary door may be a solid panel door. Sliding doors are not permitted on any portion of the house.

- Windows shall match the member sizing, thickness and shadowline of painted wood windows. Windows shall also consist of the following designs: double, single hung, or casement. Wood clad shall be matching in color and finish. Non-wood fiberglass and aluminum windows are acceptable if in appropriate style, and matching wood in profile, shadowline, and if similar in color and finish. If a non-wood style is proposed, a sample is required to be approved by the Historic Review Board.
- Gable roof slopes shall have equal pitch. Gable primary roofs shall have a pitch of 8:12 or greater (6:12 for Bungalow). Porch or bay roofs may have lower slope, may have hip if style allows. Roofs shall have a minimum 1 foot overhang with a maximum of 3 feet.
- Concrete foundations shall have a natural, parged or painted finish.
- Exposed foundations shall be site screened with vegetation if concrete or masonry exceeds 3½ feet, or if pilings or posts are 1½ feet above grade.
- Roofing shall use traditional materials such as wood shingles, composition, and metal shingles.
- Skylights shall be installed in inconspicuous roof slopes and skylights shall be mounted close to the roof plane, and not visible from the right-of-way.

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

PUBLIC NOTICE:

Notice of the proposal was sent to property owners within three hundred feet of the subject property and the Canemah Neighborhood Association in addition to a variety of agencies. Additionally, the property was posted with a Notice of Land Use sign with details about the proposal. Transmittals were sent to various City departments and other agencies regarding the proposed development plan. Relevant comments from City departments are addressed in this report as appropriate.

Prior to the first open public hearing, the Planning Division received one written comment relating to the contextual appropriateness of the cottage development in the Canemah Historic district.

- Mr. Paul Edgar identified concerns with the wetlands on the property, parking, and the building guidelines.
 - The proposed application is for the historic review of the historic appropriateness of the proposed project. Parking, wetlands, and geologic hazards are not reviewed by the Historic Review Board as part of a design review. Additional review for compliance with the Oregon City Municipal Code is required.
 - An analysis for compliance with the applicable standards is provided within this report.

Written Public Comments Received After July 25, 2017:

Mr. Dave Green submitted comments concerning the architecture and whether or not the design of the proposed homes are accurate and adheres to the Vernacular description put forth by the Oregon City Design guidelines. Additionally, he addressed his concerns with the potential density of the proposed project within the neighborhood and the impact such a development will have on the surrounding properties.

Staff Response: The concerns addressed above are some of the concerns staff has had with the application as well. Through the findings and conditions of approval, the submitted concerns should be addressed in the staff report above. The HRB has the obligation to review the proposed application against the Design Guidelines and the context of the Canemah National Historic District and determine whether or not application

Friends of Canemah submitted comments addressing several concerns, those concerns are as follows:

1. There should not be more than one house per each 5,000 Sq. Ft. Lots of record!

Staff Response: This criteria is addressed in the staff report above. Cottage housing has not been developed or proposed with the City limits. The applicant has submitted an application requesting the HRB to evaluate the historic appropriateness of cottage homes in the Canemah National Historic District.

2. There should be standard acceptable set-backs from all bodies of water, right-of-ways and frontages.

Staff Response: The HRB does not evaluate wetlands and wetland designations as part of their evaluation. In the application, there are delineated wetlands on the site, but there is not established buffer from the delineated wetlands.

3. All cuts and fills that require review, these reviews must happen before any HRB process with approvals by City Planning and Natural Resources committees, must be in hand to advance.

Staff Response: Geotechnical reviews are done independently of the HRB review of an application. Geotechnical finding may alter a HRB application, and the applicant may need to resubmit for HRB design review.

4. Parking Lots are incompatible Building Guidelines for Historic Districts.

Staff Response: The applicant has submitted materials referencing why the parking lots may be deemed appropriate for the proposed development. The HRB has the obligation to evaluate the contextual design appropriateness of a parking lot feature within the area the applicant has proposed to develop. If the applicant has contained the proposed development on the site and has mitigate for the impacts of the parking lot on any of the neighboring properties, the HRB may find the proposed parking lots compatible with the application.

5. Impervious surfaces exceed limits for the lot with Houses #1 & 2, NO more than 40%.

Staff Response: There are no areas where the proposed lot coverage, per the definition in the OCMC, exceeds 40% lot coverage.

6. Impervious surfaces exceed limits for the lot with Houses #4, 5 & 6, NO more than 40%.

Staff Response: There are no areas where the proposed lot coverage, per the definition in the OCMC, exceeds 40% lot coverage.

7. There are State of Oregon Standards for Vernacular houses and the designs offered are in violation of those standards found in Oregon Revised Statutes Chapter 358. Violations include Cut-a-Way Roofs. Which also detract from OCMC 17.40 Historic District Building Guidelines.

Staff Response: Staff has addressed the Vernacular criteria of the application and has reflected those criteria within the conditions of approval for the HRB review. The HRB will evaluate the staff findings and conditions and may make alterations where they feel is necessary in staff report.

8. House density on each lot of record must be adjudicated lot by lot, not as a cluster until approved by the Planning Commission.

Staff Response: The concept of cottage housing is addressed through the design guidelines and precedents set within the Canemah National Historic District. Cottage housing has not been proposed within the City of Oregon City in the past. Since this is the first time cottage house has been proposed, the HRB needs to evaluate the proposal and how it relates to the criteria.

9. We see NO Justification and value based criteria for any of the Preservation Incentives! Any Preservation Incentives are to enhance a Historic District @ OCMC 17.40.065 and there are NO referenced Value Based Justifications to receive any of the asked for Historic Preservation Incentives.

Staff Response: The applicant has cited the wetlands on the site and preserving the delineated wetlands as a reason for justifying the preservation incentives. The HRB will evaluate whether or not the proposal from the application justifies the request for preservation incentives.

10. In OCMC 17.40 code we do not accept Flag Lots.

Staff Response: There are no flag lots associated with this development.

11. We are asking for continuance of this meeting and approval process to a future date, until all understanding are adjudicated for any mitigation from standard Set-Backs rules and codes, that are asked for and required of other applicants with ruling from the Planning Commission and Natural Resources Committee.

Staff Response: There was a request for continuance during the first evidentiary hearing (July 25, 2017). The HRB does not have to grant a continuance during the second evidentiary hearing.

12. The Historic Wagon Roads cannot be altered from the current look and feel and what is in these HRB requests changes that.

Staff Response: There do not appear to be any proposed changes to the street within the proposed application.

RECOMMENDATION:

Based on the analysis and findings as described above, Staff recommends that the proposed Modification for Historic Review located on the south side of 4th Ave., in the vicinity of 4th Ave. and Miller St. and identified as Clackamas County Map 3-1E-01AA, TL 02200, 03600, and 03700, meets 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 the Historic Review Board approve file MD 17-01 – MD 17-06 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. Previous Proposal for HR 16-09, HR 16-10, HR 16-11, HR 16-12, HR 16-13, and HR 16-14 (On File)
4. Public Comments (On File)

Previous Public Hearings

The following meeting videos and agendas for this project are available for viewing and are part of the record.

Date	City Website Link	Youtube Link
March 2, 2021 HRB hearing	Video: https://www.orcity.org/bc-hrb/historic-review-board-6 Agenda: https://meetings.municode.com/adaHtmlDocument/index?cc=OREGONCITY&me=cfa1d3f421ba4b729b20b2009a92e87e&ip=True	https://www.youtube.com/watch?v=KksufDMBuAU
March 23, 2021 HRB hearing	Video: https://www.orcity.org/bc-hrb/historic-review-board-7 Agenda: https://meetings.municode.com/adaHtmlDocument/index?cc=OREGONCITY&me=90be4fd064f047b38549ab0c31a74fe6&ip=True	https://www.youtube.com/watch?v=GUh_N2Tq4cg



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 05/19/2021
From: Community Development Director Laura Terway

SUBJECT:

Continuation of Public Works Code Amendments Package #3 (GLUA 20-33, LEG 20-01) to June 16, 2021

STAFF RECOMMENDATION:

Continue Public Works Code Amendments Package #3 (GLUA 20-33, LEG 20-01) to June 16, 2021 City Commission meeting.

EXECUTIVE SUMMARY:

Staff has proposed code revisions to the Geologic Hazards Overlay District and other ancillary Public Works related development code & standards such as refinements to Public Utility Easements (PUE), requirements for undergrounding utilities, sanitary sewer standards, and the adoption of policies relating to sidewalk obstructions and undergrounding of utilities.

As there are multiple chapters proposed for revision, the larger package of amendments was divided into a series of smaller amendments, which will each be considered independently for adoption through separate ordinances at multiple City Commission meetings. This approach will allow the City Commission and the public the ability to review each package closely while moving efficiently through the review process. Hearing dates and future ordinance topics for the project will be provided in the City Commission- Commission Reports for Legislative File: GLUA 20:00033, LEG 20-00001 to allow the public to fully participate in the hearings process.

The revised dates for Package #3 can be found below:

May 24, 2021 City Commission Work Session

Regulating additional land within the Geologic Hazard Overlay District

June 16, 2021 City Commission Hearing (Package #3)

Proposed 1st Reading for the adoption of the following chapters:

- OCMC 17.44 Geologic Hazards Overlay District

July 7, 2021 City Commission Hearing (Package #3)

Proposed 2nd Reading for the adoption of the following chapters:

OCMC 17.44 Geologic Hazards Overlay District

OPTIONS:

1. Continue Public Works Code Amendments Package #3 (GLUA 20-33, LEG 20-01) to June 16, 2021 City Commission meeting.
2. Continuation to a different date certain.



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 05/19/2021
From: Community Development Director Laura Terway

SUBJECT:

Resolution No. 20-37, Update to the Guidelines for Transportation Impact Analyses

STAFF RECOMMENDATION:

Approval of Resolution No. 20-37.

EXECUTIVE SUMMARY:

The Guidelines for Transportation Analyses is used by consultants to assemble the components of a proper traffic study to address transportation impacts created by new development. The Guidelines identify the items which transportation engineers need to analyze to demonstrate that development will minimize traffic impacts, such as crash history, sight distance, intersection configuration, and current automobile congestion levels with other approved development and the proposed. The Guidelines themselves simply identify the data that needs to be collected, not what is done with that data.

The Guidelines for Transportation Impact Analyses were last updated in 2005 and the proposed minor changes bring the Guidelines in line with current codes, standards, and practices. No significant changes are proposed.

The City Commission reviewed the proposed changes on December 2, 2020, January 6, 2021 and has since had numerous discussions regarding transportation and infrastructure planning.

BACKGROUND:

The Guidelines for Transportation Analyses is used by developers to identify the information needed within a traffic study. The Guidelines identify the items which transportation engineers need to analyze to demonstrate that development will minimize traffic impacts. The Guidelines themselves simply identify the data that needs to be collected, not what is done with that data.

The studies undertaken by developers' traffic engineers and are submitted to the city as part of the land use application and thus open to the community for review and comment. City staff and transportation engineering consultant review the TIAs and use the results to help develop conditions of approval for the land use action to comply with the criteria in the Municipal Code. No changes to the criteria in the code or the amount of acceptable congestion is proposed.

Site Traffic Impact Study procedures were first approved on December 15, 1990 and replaced by the Guidelines for Transportation Analyses (Resolution 05-30) on November 2, 2005. No significant changes are proposed, and the proposed update would bring the Guidelines in line with current codes, standards, and policies. Staff has proposed to update the Guidelines for Transportation Analyses. The proposed updates include:

1. Amending the Transportation System Plan (TSP) Goals to be consistent with the currently adopted TSP.
2. Clarifications and details to direct consultants how to properly address Traffic Impacts created by a development.
3. Revisions based on current standards in the area of Traffic Engineering.
4. Revisions based on the most recent adopted Mobility Standards.
5. Clarifications on who is qualified to submit a TIS or TAL.

OPTIONS:

1. Approval of Resolution No. 20-37.
2. Approval of Resolution No. 20-37 with amendments.
3. Deny Resolution No. 20-37 and provide staff further direction.

RESOLUTION NO. 20-37

A RESOLUTION ADOPTING UPDATED GUIDELINES FOR TRANSPORTATION IMPACT ANALYSES

WHEREAS, the impact of traffic generated from new development is a serious concern of the City of Oregon City; and

WHEREAS, the City recognizes the balance between property owner's rights to develop their property and the need for a safe, reliable, and adequate transportation system; and

WHEREAS, previously a Site Traffic Impact Study Procedures document, Policy No. 23 dated December 15, 1990 was published; and

WHEREAS, the Site Traffic Impact Study Procedures document, Policy No. 23 dated December 15, 1990 was replaced by the Guidelines for Transportation Analyses by Resolution 05-30 on November 2, 2005; and

WHEREAS, the City desires to update the document once again to bring the document into compliance with current City Code and practices for Traffic Impact Letters and Traffic Impact Studies.

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. That the Commission, by this Resolution, adopts the Guidelines for Transportation Analyses, attached to this Resolution as Exhibit "A".

Section 2. The effective date for the Guidelines for Transportation Analyses shall be 30 days from the date this Resolution is adopted, signed, and approved.

Section 3. The Guidelines for Transportation Analyses adopted by this Resolution shall supersede the Guidelines for Transportation Analyses, as adopted November 2, 2005.

Approved and adopted at a regular meeting of the City Commission held on the 19th day of May 2021.

RACHEL LYLES SMITH,
Mayor

Attested to this 19th day of May 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

Exhibit:
Exhibit A. Guidelines for Transportation Analyses

CITY OF OREGON CITY

GUIDELINES FOR TRANSPORTATION IMPACT ANALYSES



Adopted : NOVEMBER 2, 2005
Revised : January 6, 2021

1.0 PURPOSE

1.1 TRANSPORTATION PLANNING AND TRANSPORTATION IMPACT ANALYSES (TIAs)

Oregon City strives to accommodate growth in a responsible and sustainable manner. With regard to land use and transportation, this involves a need to balance property owners' rights to develop their land and the City's goal to plan for and provide a transportation system that serves its intended function in a safe, reliable, and predictable manner for the public.

It should be noted that the transportation system includes "transportation facilities" as defined by OCMC 17.04.1312 which more commonly include the roadway, sidewalk, and offsite pathways for vehicles, bicycles, pedestrians, transit, freight, and other modes of transportation.

The City adopted its Transportation System Plan (TSP) in 2001 and was updated on August 16, 2013, outlining a plan to provide a multi-modal transportation system to accommodate expected growth through year 2035. *The Guidelines for Transportation Impact Analyses* are consistent with the TSP Goals (summarized below):

1. Health and Safety: *Enhance the health and safety of residents*

Ensure that the transportation system maintains and improves individual health and safety by maximizing the comfort and convenience of multi-modal transportation options in the City.

2. Effective and Efficient: *Emphasize effective and efficient management of the transportation system*

Optimize travel capacity and improve travel conditions by better managing residents' travel demands, meeting more daily needs within our own community, making transportation facilities as smart and efficient as possible, and being strategic about transportation investments.

3. Sustainability: *Foster a sustainable transportation system*

Build a transportation system that is environmentally and fiscally sustainable and that focuses on decreasing vehicle emissions and transportation related greenhouse gas emissions.

4. Equitable, Balanced, and Connected: *Provide an equitable, balanced, and connected multi-modal transportation system.*

Provide a complete transportation system throughout Oregon City that provides multi-modal travel options and connects people to jobs, schools, services, recreation, social and cultural institutions within the City.

5. Fundable: *Identify solutions and funding to meet system needs.*

The City will identify transportation investments that can be made with available funding to accommodate community growth.

6. Convenient and Available: *Increase the convenience and availability of pedestrian, bicycle, and transit modes.*

Strengthen the pedestrian and bicycle systems in all areas of the City, and work with local transit providers such as TriMet, Canby Area Transit (CAT), South Clackamas Transportation District (SCTD), etc. to cost-effectively improve coverage and frequency to achieve greater ridership productivity.

7. Prosperity: *Ensure the transportation system supports a prosperous and competitive economy.*

Support a prosperous and competitive economy by preserving and enhancing business opportunities and ensuring the efficient movement of people and goods.

8. Compliant: *Comply with state and regional transportation plan.*

The City will meet the requirements of state and regional transportation plans, such as the Oregon Transportation Planning Rule, the Oregon Highway Plan, the Metro 2035 Regional Transportation Plan (RTP) and the Metro Regional Functional Transportation Plan (RFTP).

In addition, *The Guidelines for Transportation Impact Analyses* are intended to be consistent with the provisions of the Oregon City Municipal Code (OCMC); however, if differences or conflicting language are found, the OCMC governs.

1.2 THE NEED FOR TRANSPORTATION ANALYSES FOR INDIVIDUAL DEVELOPMENTS

The City's development review process is designed to help the City achieve its goal of managing growth in a

responsible and sustainable manner. The applicant for development is required to submit full and accurate information upon which the City staff and elected officials can base decisions. A developer-submitted transportation study prepared by a professional engineer qualified in the traffic engineering field is a critical tool used by the City to assess the expected transportation system impacts associated with a proposed development and the long-term viability of the transportation system. A study must highlight development-specific issues, present a mitigation plan to mitigate for traffic impacts, and alert the City to the potential need to program specific projects from the TSP into the Capital Improvement Program (CIP).

1.3 THE LEVEL OF ANALYSIS AND DOCUMENTATION

This document establishes analysis and submittal requirements for developments in accordance with their expected transportation impacts. Under certain conditions, the City allows a lesser level of analysis and documentation for small developments. In addition, other developments meeting specific criteria are exempted from long-range analyses.

The City's overriding concern, as stated in Oregon City Municipal Code (OCMC) 17.02.015, is "to promote public health, safety, and general welfare through standards and regulations...and to facilitate adequate provision for transportation...." It is the responsibility of the applicant to help the City achieve this goal through the analysis and submittal of appropriate documentation.

2.0 OVERVIEW

2.1 DIFFERENT DOCUMENTATION FOR DIFFERENT DEVELOPMENT PROPOSALS

This document describes the City's required content for a **Transportation Analysis Letter (TAL)** and for a **Transportation Impact Study (TIS)**. In general terms, the TAL is applicable to smaller developments that are presumed to have a lesser transportation impact. The TIS applies to larger developments that are presumed to have a greater transportation impact.

Whether the development requires a TAL or a TIS, a professional engineer must prepare it and must use appropriate data, methods, and standards. TAL and TIS documents share many common elements, but the scope of TALs is more limited. Furthermore, there will be more variability in the scope for TISs depending on the type, location, and size of the development being proposed.

Section 3.1 provides criteria used to determine whether a TAL or TIS is required.

2.2 CONTENT OF TRANSPORTATION IMPACT ANALYSES GENERALLY

Transportation analyses, whether conducted to support a TAL or a TIS, are required to provide an objective assessment of the potential multi-modal transportation impacts associated with a specific land use action (e.g., the development of vacant land, the redevelopment of an existing land use, a comprehensive plan amendment or zoning change). The analysis and the documentation provided by the applicant must help answer several important transportation related questions including:

- Will the existing transportation system accommodate the proposed development from a capacity and safety standpoint?
- What on-site and off-site transportation system improvements will be necessary to accommodate the proposed development?
- How will access to the proposed development affect the traffic operations on the existing transportation system and how will each study area intersection operate relative to the city's mobility standards?
- How will transportation impacts of the proposed development impact the land uses, including commercial, institutional, industrial, and residential uses within the development's influence area?
- How will the proposed development meet current city standards for roadway design?
- How will the proposed development ensure the safe and efficient circulation on and adjacent to the site?
- How will the proposed development provide needed connections to abutting parcels (developed or undeveloped) for motorized as well as non-motorized traffic?
- What TSP projects or elements of TSP projects and projects consistent with and derived from specific policies in the TSP will be needed to accommodate the proposed development?

- If the development or certain public improvements are proposed to be completed in phases, how will the various phases impact the transportation system throughout the development timeline, and how will the future phases be developed?

2.3 RESPONSIBILITIES OF THOSE PREPARING TRANSPORTATION ANALYSES GENERALLY

The responsibility for assessing the traffic impacts associated with a proposed land use action rests with the landowner or land use permit applicant. Transportation analyses submitted to the City must be prepared by or under the direct supervision of a Professional Engineer with competence in traffic engineering and registered in the State of Oregon. The report shall be signed and stamped by the professional engineer.

Under state law, engineers shall recognize at all times that their primary obligation is to protect the safety, health, property and welfare of the public in the performance of their professional duties.

These Guidelines in no way serve as a substitute for the application of sound professional engineering judgement expected to be used by practitioners in the preparation and submittal of transportation analyses.

2.4 RESPONSIBILITIES AND AUTHORITY FOR THE CITY

Throughout this document the term “City Engineer” is used as the individual with authority for certain actions and for interpretation of aspects of these guidelines. For the purposes of this document, the term “City Engineer” should be taken to mean the “City Engineer or his/her designee including but not limited to designated staff or City consultant.” The City’s review of the TAL or TIS shall include a Professional Traffic Engineer registered in the State of Oregon or a Professional Engineer registered in the State of Oregon qualified to perform traffic engineering as defined by OAR 820-040-0030.

3.0 TRANSPORTATION IMPACT ANALYSIS DOCUMENTS

An analysis and appropriate documentation is generally required when a development application and/or application for re-zoning is filed with the City. A transportation impact analysis (TIA) is required when application is made for land to be subdivided as provided for in OCMC 16.12; when application is made for a conditional use as specified in OCMC 17.56; and when application is made for a change in zoning districts as provided for in OCMC 17.68.

A transportation analysis is not required for modification of a single-family dwelling, construction of a replacement dwelling, accessory dwelling unit (ADU), lot line adjustment, or an application for work in the right of way. In most other circumstances and for most other development applications, some level of transportation analysis is required.

Recognizing that not all developments will have a significant impact on the transportation system, these guidelines include criteria to help determine the need for and level of transportation analysis required in relation to the proposed development.

3.1 DETERMINING THE REQUIRED LEVEL OF TRANSPORTATION ANALYSIS AND DOCUMENTATION

A Transportation Impact Study (TIS) is required for developments that are expected to have an impact on the transportation system. When specific criteria generally associated with small developments are met, a Transportation Analysis Letter (TAL) may be substituted for the required TIS.

At the discretion of the City Engineer, a TAL may satisfy the City’s transportation analysis requirements, in lieu of a TIS, when a development meets all of the following criteria:

- A. The development generates fewer than 24 peak hour trips during either the AM or PM peak hour and fewer than 250 daily trips.

Examples of common developments generating fewer trips than these threshold levels are: a subdivision

containing 24 or fewer single-family residences, a general office building less than 15,000 square feet, a multi-family building with 42 or fewer units, or any proposed partition.

- B. The development is not expected to further impact intersections that currently fail to meet the City's mobility standards or intersections that are operating near the limits of the acceptable thresholds during a peak operating hour. (Mobility standards are defined in 7.9.1)
- C. The development is not expected to significantly impact adjacent roadways and intersections that are high accident locations, areas that contain an identified safety concern, or high concentration of pedestrians or bicyclists such as school zones

The specific requirements for and content of a TAL are contained in Section 5.0. The specific requirements for and content of a TIS are contained in Section 6.0.

4.0 PROCESS AND PROCEDURES

This section describes in general terms the process and procedures followed by the City in relation to the processing and review of transportation impact analyses. Nothing in this section is intended to replace or supercede the City's process, code requirements, or obligations under state law with regard to land use actions.

4.1 PRE-APPLICATION MEETING

A landowner or developer seeking to develop/redevelop property shall contact the City and schedule a pre-application meeting as required by OCMC 17.50.050. The City's pre-application form specifies the City's requirements applicable to land use actions. An applicant should be prepared to present, preferably in writing, the following:

- type of uses within the development
- the size of the development
- the location of the development
- proposed new accesses or roads
- estimated trip generation and source of data
- proposed study area

4.2 ESTABLISHING THE SCOPE OF WORK

During, or within a reasonable time following the pre-application meeting, the City will establish whether a TAL or TIS is required. (See Section 3.1). If a TIS is required, the City will provide a scoping summary detailing the study area and any special parameters or requirements beyond the requirements set forth in this document. An applicant is encouraged, but not required, to propose a scope of work and a study area using the guidance presented in Section 7.2.

4.2.1 Potential for Expansion of the Scope of Work

In the scoping summary the City will establish expectations and a study area within which significant impacts of the development are expected. The City's final decision on the land use criteria cannot be bound by the specifications or limitations in the scoping summary because additional information or concerns may come to light over the course of the analysis that causes the City to require additional analysis or information. Ultimately, it is the applicant's responsibility to demonstrate compliance with the criteria in the Oregon City code.

The City Engineer reserves the right to require additional analysis, especially when the need for such analysis becomes evident from information gathered by or presented by the applicant. The applicant's engineer should be alert to this possibility and expand his/her scope of work to address issues, especially those of public safety, or at least advise the City of such issues if they arise.

The City Engineer may at his/her discretion expand the requirements and/or study area of a TIS or TAL if needed to address any issue that comes to light after the preparation of the scoping summary.

4.2.2 Time Limit on the Scoping Summary

The City's scoping summary and review requirements are to be considered valid for a reasonable period of time, but are not to be considered binding on the city. Applicants are advised that delays of more than a few months before submitting TAL or TIS documents significantly increases the likelihood that the City will need additional information to adequately evaluate the impacts of a proposed development.

4.3 COMPLETENESS REVIEW

Upon completion of the TIS or TAL, the applicant will submit the number of copies specified by the City in accordance with OCMC 17.50.080 to the City for review. At that time, City staff will perform an initial review of the document to determine whether there are obvious omissions or concerns. The City will rely upon and make use of the TIS checklist, described in more detail in Section 9.0. The lack of a submission of a TIS or TAL will result in a determination of "Incomplete".

A determination of Completeness is not a determination that the applicant's data, methods, accuracy of the analysis, or conclusions and recommendations are valid.

Once the overall development application, including the required TAL or TIS, as appropriate, is deemed "complete," the 120-day land use review process will begin.

4.4 TECHNICAL REVIEW

Once the land use review process is initiated, the City Engineer will conduct a technical review of the TIA to determine the adequacy and quality of the work including, but not limited to the study data sources, methods, findings and recommendations. The City Engineer and/or his/her designee(s) will provide findings for use by the City regarding expected transportation impacts from the proposed development.

If substantive errors or omissions are discovered during review, the applicant will be notified and asked to address the comments prior to a land use decision. The applicant should promptly rectify omissions and respond with any additional analysis or information; a delay or refusal to respond may result in the denial of an application if the information and analysis submitted is insufficient to show compliance with the applicable criteria.

The lack of specificity on the part of the City in the scoping summary or confusion in its interpretation does not alter the applicant's responsibility to perform a thorough and comprehensive transportation analysis nor does it preclude City decision maker from determining that a TAL or TIS that fully complies with the scoping requirement is insufficient to show compliance with all applicable criteria.

Issues or problems discovered during the Technical Review may, at the discretion of the City's decision maker, be resolved through the use of condition of approval.

5.0 TRANSPORTATION ANALYSIS LETTER CONTENTS

If the City determines based on information provided by the applicant and in accordance with the criteria specified in Section 3.1 that a TAL is the appropriate document to submit, the following requirements shall apply.

The TAL shall be prepared by or prepared under the direct supervision of a Professional Engineer registered in the State of Oregon who shall sign and stamp the TAL.

The TAL shall include the following:

1. The expected trip generation of the proposed development including the AM peak hour, the PM peak hour, daily traffic, and other germane periods as may be appropriate, together with appropriate documentation and references.
2. Site plan showing the location of all access driveways, private streets, or alleys where they intersect with public streets plus driveways of abutting properties and driveways on the opposite side of the street from the proposed development. Dimensions of driveway spacing as measured at the right of way from edge to edge

of driveway shall be shown and shall meet or exceed the minimum driveway spacing standards.

3. Site plan showing width of all driveways and shall meet Oregon City Driveway Approach Size Standards.
4. Site plan showing that all public roads meet Oregon City's Street Design Standards including alignment, intersection angles, cul-de-sacs, and block standards.
5. Documentation that all new site accesses and/or public street intersections meet AASHTO intersection sight distance guidelines.
6. Preliminary analysis that all new streets comply with traffic sight obstructions in OCMC 10.32.
7. Documentation that there are no inherent safety issues associated with the design and location of the site access driveways.
8. Documentation that the applicant has reviewed the City's TSP and that proposed streets and frontage improvements do or will comply with any applicable standards regarding the functional classification, typical sections, access management, traffic calming and other attributes as appropriate.
9. When required of the development, documentation that no inherent safety issues are associated with the design and location of pedestrian, bicycle, or transit safety.

6.0 TRANSPORTATION IMPACT STUDY (TIS) CONTENTS

The following information shall be included in each TIS submitted to the City. Additional information specified by the City in the scoping summary or through the pre-application meeting or other project meetings shall also be included.

1. Table of Contents – Listings of all sections, figures, and tables included in the report.
2. Executive Summary – A summary of key points, findings, conclusions, and recommendations including a mitigation plan.
3. Introduction:
 - Proposed land use action including site location, zoning, building size, and project scope.
 - Map showing the proposed site, building footprint (s), access driveways, and/or parking facilities.
 - Map of the study area that shows site location and surrounding roadway facilities
4. Existing Conditions:
 - Existing site conditions and adjacent land uses.
 - Roadway characteristics of transportation facilities located within the study area, including roadway functional classifications, street cross-section, posted speeds, general sight distance, bicycle and pedestrian facilities, on-street parking, and transit facilities.
 - Existing lane configurations and traffic control devices at the study area intersections.
 - Existing traffic volumes and operational analysis of the study area roadways and intersections.
 - Roadway and intersection crash history analysis.
 - Intersection and stopping sight distance related to new and impacted (existing) driveways and intersections.
5. Background Conditions (without the proposed land use action)
 - Approved in-process developments and funded transportation improvements in the study area.
 - Traffic growth assumptions.
 - Addition of traffic from other planned developments.
 - Background traffic volumes and operational analysis.
6. Full Buildout Traffic Conditions (with the proposed land use action)
 - Description of the proposed development plans.
 - Trip generation characteristics of proposed project (including trip reduction documentation).
 - Trip distribution assumptions.
 - Full buildout traffic volumes and intersection operational analysis including the performance relative to the applicable mobility standards for each intersection.
 - Site circulation and parking.
 - Intersection and site-access driveway queuing analysis. Recommended roadway and intersection

mitigation measures (if necessary).

7. Conclusions and recommendations
8. Appendix- With dividers or tabs
 - Traffic count summary sheets.
 - Crash analysis summary sheets.
 - Existing, Background, and Full Buildout traffic operational analysis worksheets with detail to review capacity calculations.
 - Signal, left-turn, and right-turn lane warrant evaluation calculations.
 - Intersection analysis – Roundabout vs. Traffic Signal
 - Other analysis summary sheets such as queuing.

To present the information required to analyze the transportation impacts of development, the following figures shall be included in the TIS:

1. Vicinity Map
2. Existing Lane Configurations and Traffic Control Devices
3. Existing Traffic Volumes and Levels of Service for each required time period
4. Future Year Background Traffic Volumes and Levels of Service for each required time period
5. Proposed Site Plan, including access points for abutting parcels and for those across the street from the proposed development
6. Future Year Assumed Lane Configurations and Traffic Control Devices
7. Estimated Trip Distribution/Assignment Pattern
8. Trip reductions (pass-by trips at site access (es))
9. Site-Generated Traffic Volumes for each required time period
10. Full Buildout Traffic Volumes and Levels of Service for each required time period

7.0 STANDARDS AND PROCEDURES

To help ensure consistency in the preparation and review of each TIS and TAL, the City of Oregon City has established a set of guidelines and procedures. These standards and procedures include the following:

- Preparer qualifications
- TIS study area
- Analysis years and time periods
- Data collection guidelines
- Trip generation guidelines
- Trip distribution and assignment guidelines
- Minimum intersection operational standards
- Minimum access spacing standards
- Other analysis guidelines

7.1 PREPARER QUALIFICATIONS

Each TIS and TAL shall be prepared by or under the direct supervision of a Professional Traffic Engineer registered in the State of Oregon or a Professional Engineer registered in the State of Oregon qualified to perform traffic engineering as defined by OAR 820-040-0030. The engineer must have background and experience in the methods and concepts associated with transportation impact studies. Each TIS and TAL shall be sealed and signed by the Professional Engineer registered in the State of Oregon prior to acceptance by the City for a technical review.

7.2 TIS STUDY AREA

Each TIS shall include a vicinity map that shows the site, the study area, and the surrounding transportation system. A brief description of the site location and study area shall be provided. The study area shall be based on engineering judgement and an understanding of existing and future land use and traffic conditions in the

vicinity of the site. The following considerations shall form the basis of establishing the study area. The following facilities shall be included in the study area for all TIS's:

- All site-access points and intersections (signalized and unsignalized) adjacent to the proposed site. In particular, if the proposed site fronts an arterial or collector street, the analysis shall address all intersections and driveways along the site frontage, including those serving parcels on the opposite side of the street(s) and parcels directly adjacent to the proposed development.
- Roads through and adjacent to the proposed development.
- Any intersection of two streets, each with a classification of collector or arterial, where site traffic will exceed 20 vehicles during a peak hour or, in the case of a rezone, if the trip differential resulting from the rezone will exceed 20 vehicles during a peak hour.
- All intersections needed for signal progression analysis

As indicated in Section 4.1, the applicant is encouraged to propose a study area at the pre-application meeting or in response to the discussions between the applicant and the City's representatives.

In addition to these requirements, the City Engineer may determine any additional intersections or roadway links that may be adversely affected as a result of the proposed development. The applicant reduces his risk of having an adverse staff report if the applicant reaches agreement with the City Engineer prior to the start of the transportation impact analysis.

7.3 ANALYSIS YEARS TO BE ANALYZED IN THE TIS

To adequately assess the impacts of a proposed land use action, several study periods should be addressed in the transportation impact analysis. These study periods or horizon years consist of the following:

- **Existing Year**
- **Background** – The conditions in the year in which the proposed land use action will be completed and occupied, but without the expected traffic from the proposed land use action. This analysis should include all in-process developments, or city approved developments that are expected to be fully built out in the proposed land use action horizon year. It should also account for all in-process/planned transportation system improvements.
Note: Depending on funding or project development issues, it may not be appropriate to assume that certain planned transportation system improvements will be in place on opening day. Applicants should contact the City Engineer to confirm appropriate assumptions.
- **Full Buildout** – The background condition plus traffic from the proposed land use action assuming full build-out and occupancy.
- **Phased Years of Completion** – If the project involves construction or occupancy in phases or for master plans, the applicant is expected to assess the expected roadway, intersection, and land use conditions resulting from major development phases. Phased years of analysis will be determined in coordination with City staff.
- **20-Year or TSP Horizon Year** – For master plans, zone changes, and conditional uses, the applicant shall assess the expected future roadway, intersection, and land use conditions resulting from deviations from approved comprehensive planning documents.

A twenty-year or TSP Horizon Year analysis will not be required for the following development proposals:

- For out-right permitted uses under the current zoning.
- For residential-to-residential rezoning proposals when the rezoning produces an increase of twenty-five (25) or fewer peak hour trips.

7.4 ANALYSIS PERIODS TO BE ANALYZED IN THE TIS

Within each analysis year, specific consideration should be directed to the time period(s) that experience the highest degree of network travel. These periods typically occur during the weekday morning (7:00AM to 9:00AM) and weekday evening (4:00 PM to 6:00 PM) peak commuting hours.

The TIS shall address the weekday AM and PM peak hours when the proposed land use action is expected to generate 25 trips or more during the peak time periods. If the applicant can demonstrate that the peak hour trip generation of the proposed land use action is fewer than 25 trips during one of the two peak study periods and the peak trip generation of the land use action corresponds to the roadway system peak, then only the worse of the two peak periods must be analyzed. This does not mean, however, that all aspects of the other peak period can be ignored. The applicant should consider, for example, the possibility that inbound and outbound trips at the site driveway have specific operational issues that may need to be addressed for both peak hours.

Depending upon the proposed land use action and the expected trip generating characteristics of that development, other time periods may be specified, either as a substitute for, or in addition to the AM and PM peak hours. Examples of land uses that have non-typical trip generating characteristics include schools, restaurants, movie theatres, nightclubs, and churches. Applicants should assume that the City will require additional analysis periods for certain uses as summarized below:

- Schools – End of the school day (early afternoon) peak hour
- Churches and worship facilities – Peak period prior to and after worship services.
- Restaurants – Mid-day weekday peak hour
- Shopping centers, home improvement centers, superstores, and retail facilities of more than 60,000 square feet – Saturday peak hour.

When the additional hours for analysis are specified, the applicant need not necessarily carry the analysis through all steps if the data and the engineer's analysis shows that some time periods clearly represent the worst case. If, for example, the mid-day peak period traffic volumes at a restaurant are lower than the other peak periods, except at the site driveway, the mid-day peak need only be analyzed for the driveway location. The engineer preparing the TIS is advised to provide thorough documentation of the reasons for reducing the scope of the extra time periods. The applicant may choose to bring such issues to the attention of the City Engineer for discussion prior to submittal of the TIS.

The above list is not necessarily an all-inclusive list of uses for which additional analysis periods is required. The City Engineer and applicant should discuss the potential for additional study periods prior to the start of the transportation impact analysis.

7.5 APPLICATIONS INVOLVING ZONE CHANGES

In the case of a land use proposal involving a zone change, the TIS must analyze a 20-year horizon period as required by the Oregon Transportation Planning Rule (TPR) and may require interim years in the case of a master plan that also requires a zone change. Applicants seeking a rezoning are advised that in addition to any requirements specified by the City, it is their obligation to address requirements in OAR 660-12-0060. The City's exemption from the requirement for 20-year analysis for certain rezoning actions as specified in Section 7.3 may not exempt the applicant from addressing TPR requirements.

For proposals involving rezoning, the applicant shall compare the traffic generated by his/her development proposal, a reasonable worst-case development under the proposed zoning and a reasonable worst-case development under current zoning.

7.6 TRAFFIC COUNT REQUIREMENTS

Once the TIS study area and analysis periods have been determined, turning movement counts shall be collected at all study area intersections to determine the base traffic conditions. These turning movement counts should typically be conducted during the weekday (Tuesday through Thursday) between 7:00 a.m. – 9:00 a.m. and 4:00 p.m. – 6:00 p.m. and for other periods depending upon the proposed and/or surrounding land uses. Historical turning movement counts may be used if the data is not more than 12 months old at the time the TIS is deemed complete for review. Historical counts shall be factored accordingly to meet the existing traffic conditions. In high traffic locations where congestion is present or traffic peaks early or late, extended or altered count periods may be required.

7.7 TRIP GENERATION FOR THE PROPOSED DEVELOPMENT

To determine the impacts of a proposed development on the surrounding transportation network, the trip generation characteristics of that development must be estimated. Trip generation characteristics should be obtained from one of the following acceptable sources:

- Institute of Transportation Engineers (ITE) *Trip Generation* (latest edition).
- Specific trip generation studies that have been conducted for the particular land use for the purposes of estimating peak hour trip generating characteristics, subject to approval by the City Engineer prior to their inclusion in the transportation impact analysis.

In addition to new site generated trips, several land uses typically generate additional trips that are not added to the adjacent traffic network. These trips include pass-by trips and internal trips and are considered to be separate from the total number of new trips generated by the proposed development. The procedures listed in the (ITE) *Trip Generation Handbook* should be used *where appropriate* (emphasis added) to account for pass-by trips and internal trips. The applicant's engineer shall not use any pass-by or internal trip reductions with prior approval of the method or data sources by the City Engineer.

Special Attention Items

The ITE *Trip Generation Handbook* maintains limited data regarding pass-by, diverted-linked, and internal shared trip-making characteristics. Professional judgment needs to be used in applying this data. For example, it is not appropriate to apply PM peak hour pass-by percentages to AM or daily periods where AM and daily percentages do not exist. Also, ITE's internal shared trip characteristics are based on a limited number of studies from the early 1990's in Florida. These sites included a mix of commercial, residential, retail, and other uses. For developments that contain only one or two of these uses, a maximum shared trip reduction of five (5) percent will be allowed without appropriate justification and supporting data from the applicant.

The ITE *Trip Generation Handbook* outlines specific guidelines for use of weighted average trip rates versus regression equations. These guidelines shall be followed unless the applicant provides valid justification for deviation.

7.8 TRIP DISTRIBUTION AND ASSIGNMENT

Estimated site generated traffic for the proposed development should be distributed and assigned to the existing or proposed arterial and collector street network. Trip distribution methods should be based on a reasonable assumption of local travel patterns and the locations of off-site origin/destination points within the site vicinity. Acceptable trip distribution methods should be based on one or more of the following procedures:

- A select zone analysis of the proposed site can be obtained from METRO's regional planning model. When using the regional planning model for distribution purposes, the engineer preparing the TIS should make sure that the model assumes the proper existing and future year land use and zoning designations and that he/she understands model load points (centroid connectors). The applicant should also be aware that Metro's model is a regional model and that professional judgement must be applied when using it for specific developments.
- An analysis of local traffic patterns and intersection turning movement counts can be used as long as the data has been gathered within the previous twelve months.
- A detailed market study specific to the proposed development and surrounding land uses may be used to determine the specific influence area. Site generated traffic within the identified influence area should be distributed based on principles and concepts associated with the gravity model theory. Note that if a market study is to be used as a basis for trip distribution, the entire market study must be made available to the City and it shall become part of the public record and, as such, any client confidentiality is lost.

Special Attention Items

In the case of retail developments, the applicant shall clearly distinguish between pass-by and non-pass-by trips to allow the reviewer to understand how the pass-by trips were accounted for and applied throughout the study

area. The treatment of pass-by trips at the site entrance may be most easily addressed through separate figures depicting the total site trips and the individual pass-by and non-pass-by components.

7.9 INTERSECTION OPERATIONAL STANDARDS

To assess the impacts of the proposed land use action on the transportation system, the TIS shall compare the existing, background, and full buildout intersection traffic volumes to the minimum intersection operational standards.

The City of Oregon City evaluates intersection operational performance based on the volume-to-capacity ratio (v/c) or the Level of Service (LOS) as defined in the *Highway Capacity Manual (HCM)* published by the Transportation Research Board depending on the specifics of the intersection and location

All LOS definitions should be consistent with the most recent version of the *HCM*. The v/c ratio used by Oregon City is based on the Oregon Department of Transportation's *Analysis Procedures Manual*.

7.9.1 Intersection Level of Service Standards

The City of Oregon City requires all intersections within the study area to maintain an acceptable performance upon full buildout of the proposed land use action as defined below.

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.
- C. 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. 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.

2. 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. 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 Beaver Creek 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.

7.9.2 Intersection Design Features and Queuing Calculations

The TIS shall contain sufficient data and information derived from the traffic analysis to provide the roadway/intersection designer and City staff with information on which to assess intersection design features such as the length of storage required for lanes on each approach.

Queue lengths shall be calculated for each lane of all approaches to signalized intersections for the 95th percentile queue. Queue lengths shall also be calculated for unsignalized locations, such as site driveways, where standing queues can interfere with other movements, especially if such interference can contribute to safety problems. Appropriate analysis methods should be used that account for the actual arrivals of vehicles at an intersection.

Special Attention Items

The applicant's engineer shall use professional judgment in selecting the appropriate analysis tools and methods for evaluation of intersection operations. The HCM, for example, states "The [HCM] methodology does not take into account the potential impact of downstream congestion on intersection operation. Nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation." If these conditions are present or can reasonably be expected to exist as a result of the proposed development, the applicant's engineer shall supplement his/her initial analysis with other analysis tools and methods that account for such conditions.

The applicant's engineer also must use reasonable signal timing and consider corridor timing plans where appropriate.

When calculating queues, Poisson distribution may be used for locations subject to random arrivals. Other analysis methods shall be used where signal systems cause different arrival patterns and when congestion causes accumulation from one cycle to the next. Queue lengths shall be based on average vehicle length of twenty-five (25) feet, or longer where appropriate.

7.10 ACCESS SPACING STANDARDS

Access locations on roadway sections must be located to ensure safe and efficient travel along a transportation facility to limit potential conflicting turning movements, weaving maneuvers over short distances, and congestion along facilities. Access management standards vary depending upon the functional classification and purpose on a given roadway. Roadways in the upper echelon of the functional classification system (i.e. arterials) tend to have stringent spacing standards, while facilities ranked lower in the functional classification system allow more closely spaced accesses.

The applicant shall use the standards in OCMC 16.12 and discuss whether the following standards are met through their proposed development:

- Minimum city street intersection spacing (the distance between adjacent intersections),
- Minimum private access spacing (the distance between adjacent driveways and between driveways and street intersections),
- Minimum traffic signal spacing (the distance between adjacent signalized intersections),
- Minimum private access driveway widths (the measurement of the individual driveway surface)

Exception Process:

In cases where physical constraints or unique site characteristics limit the ability for the above access spacing standards to be met, the City decision maker may grant an access spacing exception. Typically, access exceptions are available only for a parcel whose roadway frontage, topography, or location would otherwise preclude issuance of a conforming permit and the parcel would either have no reasonable access or cannot otherwise obtain reasonable alternate access to the public road system. However, if the limitation or condition is one that the applicant or owner has contributed to by any previous subdivision of property, sale, building activity, or site development, the limitation or condition shall not constitute a basis for an access exception. Note also that the City may choose to prohibit some movements (e.g. left turns) at the site access location, especially if such access is in a location where an access exception is needed.

When an exception is required, the transportation impact analysis must show that the new access will not adversely impact the existing transportation system. A high burden is placed on the applicant and his/her engineer to prove that the system will not be adversely impacted and that public safety will not be compromised.

7.11 SIGHT DISTANCE

For all new proposed site driveways and public street intersections, an evaluation of stopping sight distance (SSD) and intersection sight distance (ISD) shall be conducted consistent with procedures outlined in the current version of the AASHTO *Policy on Geometric Design of Highways and Streets*. At the discretion of the City Engineer, the applicant may be exempted from a need to assess sight distance.

The City standard for new driveways and intersections requires that ISD meet the minimum distance specified in AASHTO. The applicant may apply for a design exception allowing a driveway or intersection that meets SSD rather than ISD. A high burden is placed on the applicant and his/her engineer to prove that the system will not be adversely impacted and that public safety will not be compromised. The City Engineer may grant a design exception if the following conditions are met:

1. The intersection or driveway is proposed to intersect with a local or neighborhood collector street (not a major collector or arterial street), and
2. The approach is forecast to serve fewer than forty (40) vehicles per day, and
3. The intersection will not adversely impact the existing transportation system.

The City Engineer may also grant a design exception if the intersection is forecast to serve less than 100 vehicles per day for a period of not more than twenty-four (24) months. Should the City Engineer choose to grant a design exception, he/she may place additional conditions on the applicant, such as, but not limited to placement of warning signs or the use of flaggers for manual traffic control as prescribed by the *Manual on Uniform Traffic*

Control Devices (MUTCD).

Special Attention Items

Under AASHTO procedures, intersection sight distance is evaluated based on the roadway design speed – not the roadway posted speed. Where design speed is not known, it shall be estimated using procedures outlined in the AASHTO *Policy on Geometric Design of Highways and Streets*. This generally results in a design speed anywhere from 5 to 10 mph above prevailing posted speed.

7.12 CRASH HISTORY

Within the study area for each TIS, a crash history evaluation shall be conducted for the most recent four-year period. The intent of the evaluation is to identify any apparent trends in the data that reflect a safety issue that may be exacerbated by the proposed development and to identify mitigation to resolve the issue(s). At a minimum, the analysis shall summarize the number of crashes per year by type and severity. Intersection crash rates shall be calculated and evaluated. The engineer shall assess the overall results of the safety analysis.

7.13 SAFE ROUTES TO SCHOOL

For proposed residential developments, the TIS shall include a brief discussion of routes to the nearest schools. The applicant shall identify the primary walking/biking route between the proposed development and the nearest elementary, middle, and high school. Specifically, the applicant shall describe the general bicycle and pedestrian environment between the proposed development and each school, including the presence and condition of pedestrian and bicycle facilities and the roadway environment (speed, lanes, etc.) along the routes. This section requires applicants to address the special need to link residential areas to area schools.

7.14 WARRANTS (TURN LANE, TRAFFIC CONTROL)

The following section provides guidance on evaluating turn lane and traffic signal warrants.

7.14.1 Traffic Control Warrants

An evaluation of traffic signal warrants shall be conducted for all unsignalized study area intersections where any approach is shown to operate at LOS E or worse under existing, background, or total traffic conditions. Signal warrant analysis shall be conducted in accordance with the current version of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD).

Warrants to evaluate conversions between yield control, two-way STOP control, and multi-way- STOP control shall, as deemed necessary by the applicant's traffic engineer, comply with the MUTCD.

Special Attention Items

The reduction of minor street right turns is an important factor in evaluating traffic signal warrants and care must be taken to ensure the practice is not overlooked or improperly applied as it can affect warrant determinations. Both the MUTCD and the National Cooperative Highway Research Program (NCHRP) Report 457- *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001 offer detailed discussions of the proper methods to address right turn reductions.

For state highways, ODOT's Transportation Planning Analysis Unit maintains specific guidelines regarding right turn reductions that shall be applied to highway intersections. Other methods such as delay-based reduction methods may be considered if reasonably explained and justified by the applicant.

The construction of a lane to accommodate right turns shall be considered as a mitigation measure before or in addition to the analysis of traffic signal warrants for the installation of a traffic signal.

Note that Warrant 3, Peak Hour according to the MUTCD "shall be applied only in unusual cases." The burden of proof is on the applicant that the case is truly unusual. The applicant must evaluate the conditions using other warrants before attempting to justify the use of the Peak Hour warrant.

7.14.2 Turn Lane Warrants

The provision of dedicated left- and right-turn lanes on the major approach to an unsignalized intersection can significantly improve operations and safety at an intersection. The provision of a second lane on minor street approaches at unsignalized intersections can significantly reduce side street delay for right-turning motorists.

The applicant's engineer shall exercise professional judgement in evaluating the need for, and benefits of, providing dedicated left-turn and right-turn lanes. Documentation of the engineer's analysis of turn lanes shall be provided in the TIS.

The following is a non-exclusive list of conditions where an evaluation of turn lanes is appropriate:

- When no lane is currently provided for left turns and when left turn movements from the major street are predicted to increase because of the proposed development. This is especially appropriate when a turn lane is included as part of the standard cross-section for a street of this classification in the *Transportation System Plan*.
- When an intersection has a crash rate above 1.0 crashes per million entering vehicles and includes crash types subject to improvement from a turn lane.
- When the speed and volume of through traffic and increases predicted in right turn volumes raise concerns in the engineer's professional judgment about safety or about impeding through traffic.
- When only a single lane is provided for minor street approaches and the approach LOS is calculated to be "E" or worse.

The following are some of the references that should be considered by the applicant's engineer.

- **State Highways** – The Oregon Department of Transportation (ODOT) maintains criteria that shall be used for evaluating development of left- and right-turn lanes along state highways at Unsignalized Grade Intersections.
- **Local Streets** – Much of the published information regarding warrant criteria are centered on highway facilities and practitioners have therefore applied these criteria to local streets. The applicant shall refer to pages 686-89 of the 2001 *AASHTO Policy on Geometric Design of Highways and Streets* when evaluating turn lane warrants. Specifically, the applicant shall draw from other sources [see sources 2, 11, 12, and 13] cited by AASHTO. This criteria shall be updated coinciding with future revisions to the *AASHTO Policy*. An additional resource not cited by AASHTO is the National Cooperative Highway Research Program (NCHRP) Report 457- *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001.

8.0 COMMON ERRORS AND OMISSIONS

The following are some common errors and omissions. Special care should be taken to address these items that are part of the TIS requirements identified herein.

- Failure to include a crash analysis.
- Failure to conduct a warrant analysis or incorrect methods, particularly a failure to account for right turns from minor streets.
- Failure to address access spacing.
- Lack of discussion of observed traffic flow.
- Failure to address intersection and/or stopping sight distance.
- Failure to discuss bicycle, pedestrian and transit facilities.
- Failure to present justification for some assumptions.
- Failure to account for downstream congestion, turn-pocket overflow, or signal timing of adjacent traffic signals (particularly with regard to the selection of software analysis tools)
- Use of unrealistic signal timing
- Use of inappropriate tools and assumptions for calculation of queues.

TRANSPORTATION IMPACT STUDY CHECKLIST

Project Name: _____

City Reference Code: _____

Provided? Page No.
 Yes No _____ Study Required Comment: _____ Date: _____

BACKGROUND INFORMATION

Yes No _____ Oregon PE Stamp and Signature

INTRODUCTION AND SUMMARY

EXISTING CONDITIONS

Yes No _____ Roadway Network - summary of roadway classifications, lanes, speeds, transit service and facilities, alternative mode service and facilities (e.g., sidewalks, bike lanes, crosswalks) and description of study area

Yes No _____ Analysis Periods Correct (☐ AM, ☐ Mid-day, ☐ PM ☐ Afternoon, _____ Saturday _____,

Yes No _____ Existing Traffic Operations (Existing LOS, traffic volumes (new counts _____), speeds _____, crash data _____)

IMPACTS

Yes No _____ Trip Generation - Daily, peak hour trips generated by site development

Yes No _____ Level of Service Analysis -projected LOS with site build out, existing, and background traffic growth

Yes No _____ Future year 20-year analysis required for zone change or conditional use

Yes No _____ Signal Warrant Analysis

Yes No _____ Turn Lane Warrant Analysis

Yes No _____ Access Spacing Standards

Yes No _____ Analysis of intersection and stopping sight distance at frontage road access point(s)

Yes No _____ Identify safe route to school or school bus stop (Contact with school district)

Yes No _____ Analysis of safe pedestrian/bicycle access to nearest transit stop (if within 1/2 mile of project site)

Yes No _____ Identify accessibility to public transit

Yes No _____ Account for planned roadway improvements at future build year ☐ and 20-year horizon

MITIGATION

Yes No _____ Identify need for right/left turn lanes, storage capacity and length

Yes No _____ Identify possible corrections of any LOS deficiencies

Yes No _____ Identify any access deficiencies (including transit/pedestrian/bicycle connections)

Yes No _____ Identify any TDM measures

FIGURES

Yes No _____ Vicinity Map

Yes No _____ Site Plan

Yes No _____ Existing peak hour turn movement volumes (counts conducted within previous 12 months)

Yes No _____ Trip Distribution (%) including Added Project Peak Hour Traffic Volumes (see sample)

Yes No _____ Approved Projects Peak Hour Traffic Volumes (see sample)

Yes No _____ Programmed transportation improvements and transportation mitigation outlined in study

TABLES

Yes No _____ Intersection Performance Existing Conditions

Yes No _____ Project Trip Generation

Yes No _____ Intersection Level of Service

OTHER

Yes No _____ Technical appendix - sufficient material to convey complete understanding of traffic issues (e.g. HCM or similar analyses, trip generation calculations, signal warrant analyses, turn lane warrant analyses, queuing calculations, signal timing sheets, traffic counts, etc.)

Completed By: _____

[SEAL]

Date: _____

CITY OF OREGON CITY

GUIDELINES FOR TRANSPORTATION IMPACT ANALYSES



Adopted : NOVEMBER 2, 2005
Revised : January 6, 2021

1.0 PURPOSE

1.1 TRANSPORTATION PLANNING AND TRANSPORTATION IMPACT ANALYSES (TIAs)

Oregon City strives to accommodate growth in a responsible and sustainable manner. With regard to land use and transportation, this involves a need to balance property owners' rights to develop their land and the City's goal to plan for and provide a transportation system that serves its intended function in a safe, reliable, and predictable manner for the public.

It should be noted that the transportation system includes "transportation facilities" as defined by OCMC 17.04.1312 which more commonly include the roadway, sidewalk, and offsite pathways for vehicles, bicycles, pedestrians, transit, freight, and other modes of transportation.

The City adopted its Transportation System Plan (TSP) in 2001 and was updated on August 16, 2013, outlining a plan to provide a multi-modal transportation system to accommodate expected growth through year 20352040. The Guidelines for Transportation Impact Analyses are consistent with the TSP Goals (summarized below):

1. Health and Safety: Enhance the health and safety of residents

Ensure that the transportation system maintains and improves individual health and safety by maximizing the comfort and convenience of multi-modal transportation options in the City.

2. Effective and Efficient: Emphasize effective and efficient management of the transportation system

Optimize travel capacity and improve travel conditions by better managing residents' travel demands, meeting more daily needs within our own community, making transportation facilities as smart and efficient as possible, and being strategic about transportation investments.

3. Sustainability: Foster a sustainable transportation system

Build a transportation system that is environmentally and fiscally sustainable and that focuses on decreasing vehicle emissions and transportation related greenhouse gas emissions.

4. Equitable, Balanced, and Connected: Provide an equitable, balanced, and connected multi-modal transportation system.

Provide a complete transportation system throughout Oregon City that provides multi-modal travel options and connects people to jobs, schools, services, recreation, social and cultural institutions within the City.

5. Fundable: Identify solutions and funding to meet system needs.

The City will identify transportation investments that can be made with available funding to accommodate community growth.

6. Convenient and Available: Increase the convenience and availability of pedestrian, bicycle, and transit modes.

Strengthen the pedestrian and bicycle systems in all areas of the City, and work with local transit providers such as TriMet, Canby Area Transit (CAT), South Clackamas Transportation District (SCTD), etc. to cost-effectively improve coverage and frequency to achieve greater ridership productivity.

7. Prosperity: Ensure the transportation system supports a prosperous and competitive economy.

Support a prosperous and competitive economy by preserving and enhancing business opportunities and ensuring the efficient movement of people and goods.

8. Compliant: Comply with state and regional transportation plan.

The City will meet the requirements of state and regional transportation plans, such as the Oregon Transportation Planning Rule, the Oregon Highway Plan, the Metro 2035 Regional Transportation Plan (RTP) and the Metro Regional Functional Transportation Plan (RFTP)

1. ~~Health and Safety—Enhance the health and safety of residents.Mobility—Develop a transportation system that serves the mobility needs of all Oregon City residents.~~
2. ~~Effective and Efficient—Emphasize effective and efficient management of the transportation system.Safety—Develop a transportation system that provides adequate safety for the transportation system users.~~
3. ~~Sustainable—Foster a sustainable transportation system.Capacity—Develop a transportation system that provides adequate capacity to serve the system user's needs.~~
4. ~~Equitable, Balanced, and Connected—Provide an equitable, balanced, and connected multi-modal transportation system.Travel Options—Develop a transportation system that incorporates, provides for, and encourages a variety of multi-modal travel options.~~
5. ~~Fundable—Identify solutions and funding to meet system needs.Environment—Develop a transportation system that preserves, protects, and supports the environmental integrity of the Oregon City community.~~
6. ~~Convenient and Available—Increase the convenience and availability of pedestrian, bicycle, and transit modes.Economic Development—Develop a transportation system that facilitates the desired economic development and viability of the community.~~
7. ~~Prosperity—Ensure the transportation system supports a prosperous and competitive economy.Transportation Funding—Develop reasonable and effective funding and financing strategies for the recommendations and improvements contained within the Transportation System Plan.~~
8. ~~Compliant—Comply with state and regional transportation plan.Accessibility—Develop a transportation network that ensures adequate and efficient accessibility for all desired land uses, modes of travel, and system users.~~
9. ~~Coordination—Develop a transportation system plan that is consistent with the goals, objectives, and vision of Oregon City residents, participating agencies, and the community in general.~~
10. ~~Consistency—Provide Oregon City with a transportation system and transportation policies that allow the community to manage its transportation facilities in a manner consistent with the City's goals and philosophies.~~

In addition, *The Guidelines for Transportation Impact Analyses* are intended to be consistent with the provisions of the Oregon City Municipal Code (OCMC); however, if differences or conflicting language are found, the OCMC governs.

~~OCMC 17.68.020 sets forth the criteria for a zone change and includes the provisions:~~

~~B. That public facilities and services (water, sewer, storm drainage, transportation, schools, police and fire protection) are presently capable of supporting the uses allowed by the zone, or can be made available prior to issuing a certificate of occupancy.~~

~~C.~~

~~Service shall be sufficient to support the range of uses and development allowed by the zone.~~

~~The land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the~~

~~proposed zoning district.~~

~~OCMC 16.04.060 specifies that:~~

~~The decision maker may impose reasonable conditions of approval on any approval granted under this title to ensure that the application meets, or will meet, any application approval standard.~~

~~OCMC 16.12.010 specifies that:~~

~~All land divisions shall be in conformance with the policies and design standards established by this chapter [Chapter 16] and with applicable standards in the city's public facility master plan and city design standards and specifications.~~

1.2 THE NEED FOR TRANSPORTATION ANALYSES FOR INDIVIDUAL DEVELOPMENTS

The City's development review process is designed to help the City achieve its goal of managing growth in a responsible and sustainable manner. The applicant for development is required to submit full and accurate information upon which the City staff and elected officials can base decisions. A developer-submitted transportation study prepared by a professional engineer qualified in the traffic engineering field is a critical tool used by the City to assess the expected transportation system impacts associated with a proposed development and the long-term viability of the transportation system. A study must highlight development-specific issues, present a mitigation plan to mitigate for traffic impacts, and alert the City to the potential need to program specific projects from the TSP into the Capital Improvement Program (CIP).

1.3 THE LEVEL OF ANALYSIS AND DOCUMENTATION

This document establishes analysis and submittal requirements for developments in accordance with their expected transportation impacts. Under certain conditions, the City allows a lesser level of analysis and documentation for small developments. In addition, other developments meeting specific criteria are exempted from long-range analyses.

The City's overriding concern, as stated in Oregon City Municipal Code (OCMC) 17.02.015~~20~~, is "to promote public health, safety, and general welfare through standards and regulations...and to facilitate adequate provision for transportation..." It is the responsibility of the applicant to help the City achieve this goal through the analysis and submittal of appropriate documentation.

2.0 OVERVIEW

2.1 DIFFERENT DOCUMENTATION FOR DIFFERENT DEVELOPMENT PROPOSALS

This document describes the City's required content for a **Transportation Analysis Letter (TAL)** and for a **Transportation Impact Study (TIS)**. In general terms, the TAL is applicable to smaller developments that are presumed to have a lesser transportation impact. The TIS applies to larger developments that are presumed to have a greater transportation impact.

Whether the development requires a TAL or a TIS, a professional engineer must prepare it and must use appropriate data, methods, and standards. TAL and TIS documents share many common elements, but the scope of TALs is more limited. Furthermore, there will be more variability in the scope for TISs.

depending on the type, location, and size of the development being proposed.

Section 3.1 provides criteria used to determine whether a TAL or TIS is required.

2.2 CONTENT OF TRANSPORTATION IMPACT ANALYSES GENERALLY

Transportation analyses, whether conducted to support a TAL or a TIS, are required to provide an objective assessment of the potential multi-modal transportation impacts associated with a specific land use action (e.g., the development of vacant land, the redevelopment of an existing land use, a comprehensive plan amendment or zoning change). The analysis and the documentation provided by the applicant must help answer several important transportation related questions including:

- Will the existing transportation system accommodate the proposed development from a capacity and safety standpoint?
- What on-site and off-site transportation system improvements will be necessary to accommodate the proposed development?
- How will access to the proposed development affect the traffic operations on the existing transportation system and how will each study area intersection operate relative to the city's mobility standards?
- How will transportation impacts of the proposed development impact the land uses, including commercial, institutional, industrial, and residential uses within the development's influence area?
- How will the proposed development meet current city standards for roadway design?
- How will the proposed development ensure the safe and efficient circulation on and adjacent to the site?
- How will the proposed development provide needed connections to abutting parcels (developed or undeveloped) for motorized as well as non-motorized traffic?
- What TSP projects or elements of TSP projects and projects consistent with and derived from specific policies in the TSP will be needed to accommodate the proposed development?
- If the development or certain public improvements are proposed to be completed in phases, how will the various phases impact the transportation system throughout the development timeline, and how will the future phases be developed?

2.3 RESPONSIBILITIES OF THOSE PREPARING TRANSPORTATION ANALYSES GENERALLY

The responsibility for assessing the traffic impacts associated with a proposed land use action rests with the landowner or land use permit applicant. Transportation analyses submitted to the City must be prepared by or under the direct supervision of a Professional Engineer with competence in traffic engineering and registered in the State of Oregon. The report shall be signed and stamped by the professional engineer.

Under state law, engineers shall recognize at all times that their primary obligation is to protect the safety, health, property and welfare of the public in the performance of their professional duties.

These Guidelines in no way serve as a substitute for the application of sound professional engineering judgement expected to be used by practitioners in the preparation and submittal of transportation analyses.

2.4 RESPONSIBILITIES AND AUTHORITY FOR THE CITY

Throughout this document the term “City Engineer” is used as the individual with authority for certain actions and for interpretation of aspects of these guidelines. For the purposes of this document, the term “City Engineer” should be taken to mean the “City Engineer or his/her designee including but not limited to designated staff or City consultant.” The City’s review of the TAL or TIS shall include a Professional Traffic Engineer registered in the State of Oregon or a Professional Engineer registered in the State of Oregon qualified to perform traffic engineering as defined by OAR 820-040-0030.

~~The term “City decision maker” is used to identify the individual or body with responsibility for certain actions. The “City decision maker” and city decision-making process are defined in OCMC Section 17.50.030.~~

3.0 TRANSPORTATION IMPACT ANALYSIS DOCUMENTS

An analysis and appropriate documentation is generally required when a development application and/or application for re-zoning is filed with the City. A transportation impact analysis (TIA) is required when application is made for land to be subdivided as provided for in OCMC 16.12; when application is made for a conditional use as specified in OCMC 17.56; and when application is made for a change in zoning districts as provided for in OCMC 17.68.

A transportation analysis is not required for modification of a single-family dwelling, ~~or for~~ construction of a replacement dwelling, accessory dwelling unit (ADU), lot line adjustment, or an application for work in the right of way. In most other circumstances and for most other development applications, some level of transportation analysis is required.

Recognizing that not all developments will have a significant impact on the transportation system, ~~the City of Oregon City has developed~~ these guidelines include criteria to help determine the need for and level of transportation analysis required in relation to the proposed development.

3.1 DETERMINING THE REQUIRED LEVEL OF TRANSPORTATION ANALYSIS AND DOCUMENTATION

A Transportation Impact Study (TIS) is required for developments that are expected to have an impact on the transportation system. When specific criteria generally associated with small developments are met, a Transportation Analysis Letter (TAL) may be substituted for the required TIS.

At the discretion of the City Engineer, a TAL may satisfy the City’s transportation analysis requirements, in lieu of a TIS, when a development meets all of the following criteria:

- A. The development generates fewer than 24 peak hour trips during either the AM or PM peak hour and fewer than 250 daily trips.

~~Two~~ examples of common developments generating fewer trips than these threshold levels are: a subdivision containing 24 or fewer single-family residences, or a general office building less than 15,000 square feet, a multi-family building with 42 or fewer units, or any proposed partition.

- B. The development is not expected to further impact intersections that currently fail to meet the City’s level of service mobility standards or intersections that are operating near the limits of the acceptable level of service thresholds during a peak operating hour. ~~(LOS Mobility~~

standards are defined in 7.9.1)

1

B.C. The development is not expected to significantly impact adjacent roadways and intersections that are high accident locations, areas that contain an identified safety concern, or high concentration of pedestrians or bicyclists such as school zones

The specific requirements for and content of a TAL are contained in Section 5.0. The specific requirements for and content of a TIS are contained in Section 6.0.

4.0 PROCESS AND PROCEDURES

This section describes in general terms the process and procedures followed by the City in relation to the processing and review of transportation impact analyses. Nothing in this section is intended to replace or supercede the City's process, code requirements, or obligations under state law with regard to land use actions.

4.1 PRE-APPLICATION MEETING

A landowner or developer seeking to develop/redevelop property shall contact the City and schedule a pre-application meeting as required by OCMC 17.50.050. The City's pre-application form specifies the City's requirements applicable to land use actions. An applicant should be prepared to present, preferably in writing, the following:

- type of uses within the development
- the size of the development
- the location of the development
- proposed new accesses or roads
- estimated trip generation and source of data
- proposed study area

4.2 ESTABLISHING THE SCOPE OF WORK

During, or within a reasonable time following the pre-application meeting, the City will establish whether a TAL or TIS is required. (See Section 3.1). If a TIS is required, the City will provide a scoping summary detailing the study area and any special parameters or requirements beyond the requirements set forth in this document. An applicant is encouraged, but not required, to propose a scope of work and a study area using the guidance presented in Section 7.2.

4.2.1 *Potential for Expansion of the Scope of Work*

In the scoping summary the City will establish expectations and a study area within which significant impacts of the development are expected. The City's final decision on the land use criteria cannot be bound by the specifications or limitations in the scoping summary because additional information or concerns may come to light over the course of the analysis that causes the City to require additional analysis or information. Ultimately, it is the applicant's responsibility to demonstrate compliance with the criteria in the Oregon City code.

The City Engineer reserves the right to require additional analysis, especially when the need for such analysis becomes evident from information gathered by or presented by the applicant. The applicant's engineer should be alert to this possibility and expand his/her scope of work to address issues, especially those of public safety, or at least advise the City of such issues if they arise.

The City Engineer may at his/her discretion expand the requirements and/or study area of a TIS or TAL if needed to address any issue that comes to light after the preparation of the scoping summary.

4.2.2 Time Limit on the Scoping Summary

The City's scoping summary and review requirements are to be considered valid for a reasonable period of time, but are not to be considered binding on the city. Applicants are advised that delays of more than a few months before submitting TAL or TIS documents significantly increases the likelihood that the City will need additional information to adequately evaluate the impacts of a proposed development.

4.3 COMPLETENESS REVIEW

Upon completion of the TIS or TAL, the applicant will submit the number of copies specified by the City in accordance with OCMC 17.50.080 to the City for review. At that time, City staff will perform an initial review of the document to determine whether there are obvious omissions or concerns. The City will rely upon and make use of the ~~completed and signed~~ TIS checklist, described in more detail in Section 9.0, ~~and which is to be incorporated as one of the first inside pages of the submittal to determine whether or not it is "complete."~~ The lack of a submission of a TIS or TAL will result in a determination of "Incomplete".

A determination of Completeness is not a determination that the applicant's data, methods, ~~of~~ accuracy of the analysis, or conclusions and recommendations are valid.

Once the overall development application, including the required TAL or TIS, as appropriate, is deemed "complete," the 120-day land use review process will begin.

4.4 TECHNICAL REVIEW

Once the land use review process is initiated, the City Engineer will conduct a technical review of the TIA~~S~~ to determine the adequacy and quality of the work including, but not limited to the study data sources, methods, findings and recommendations. The City Engineer and/or his/her designee(s) will provide findings for use by the City regarding expected transportation impacts from the proposed development.

If substantive errors or omissions are discovered during review, the applicant will be notified and asked to address the comments prior to a land use decision. The applicant should promptly rectify omissions and respond with any additional analysis or information; a delay or refusal to respond may result in the denial of an application if the information and analysis submitted is insufficient to show compliance with the applicable criteria.

The lack of specificity on the part of the City in the scoping summary or confusion in its interpretation does not alter the applicant's responsibility to perform a thorough and comprehensive transportation analysis nor does it preclude City decision maker from determining that a TAL or TIS that fully complies with the scoping requirement is insufficient to show compliance with all ~~applicable~~ criteria.

Issues or problems discovered during the Technical Review may, at the discretion of the City's decision maker, be resolved through the use of condition of approval.

5.0 TRANSPORTATION ANALYSIS LETTER CONTENTS

If the City determines based on information provided by the applicant and in accordance with the criteria specified in Section 3.1 that a TAL is the appropriate document to submit, the following requirements shall apply.

The TAL shall be prepared by or prepared under the direct supervision of a ~~Registered~~ Professional Engineer registered in the State of Oregon who shall sign and stamp the TAL.

The TAL shall include the following:

1. The expected trip generation of the proposed development including the AM peak hour, the PM peak hour, daily traffic, and other germane periods as may be appropriate, together with appropriate documentation and references.
2. Site plan showing the location of all access driveways, ~~or~~ private streets, or alleys where they intersect with public streets plus driveways of abutting properties and driveways on the opposite side of the street from the proposed development. Dimensions of driveway spacing as measured at the right of way from edge to edge of driveway shall be shown and shall meet or exceed the minimum driveway spacing standards.
3. ~~Documentation~~ Site plan showing width of all that all site access driveways ~~and shall~~ meet Oregon City ~~Private Access~~ Driveway Approach Size Width Standards.
4. ~~Documentation~~ Site plan showing that all ~~site access driveways~~ public roads meet Oregon City's ~~Minimum City Street Design Intersection Spacing~~ Standards including alignment, intersection angles, cul-de-sacs, and block standards.
5. Documentation that all new site accesses and/or public street intersections meet AASHTO intersection sight distance guidelines.
- ~~5.6.~~ Preliminary analysis that all new streets comply with traffic sight obstructions in OCMC 10.32.
- ~~6.7.~~ Documentation that there are no inherent safety issues associated with the design and location of the site access driveways.
- ~~7.8.~~ Documentation that the applicant has reviewed the City's TSP and that proposed streets and frontage improvements do or will comply with any applicable standards regarding the functional classification, typical sections, access management, traffic calming and other attributes as appropriate.
9. When required of the development, documentation that no inherent safety issues are associated with the design and location of pedestrian, bicycle, or transit safety.

6.0 TRANSPORTATION IMPACT STUDY (TIS) CONTENTS

The following information shall be included in each TIS submitted to the City. Additional ~~information~~ specified by the City in the scoping summary or through the pre-application meeting or other project meetings shall also be included.

- ~~1. Completed TIS checklist signed by the Professional Engineer responsible for the preparation of the TIS.~~
- ~~2.~~ 1. Table of Contents – Listings of all sections, figures, and tables included in the report.
- ~~3.~~ 2. Executive Summary – A summary of key points, findings, conclusions, and recommendations

including a mitigation plan.

~~4.3.~~ Introduction:

- Proposed land use action including site location, zoning, building size, and project scope.
- Map showing the proposed site, building footprint (s), access driveways, and or parking facilities.
- Map of the study area that shows site location and surrounding roadway facilities.

~~5.4.~~ Existing Conditions:

- Existing site conditions and adjacent land uses.
- Roadway characteristics of ~~important~~ transportation facilities ~~and modal opportunities~~ located within the study area, including roadway functional classifications, street cross-section, posted speeds, general sight distance, bicycle and pedestrian facilities, on-street parking, and transit facilities.
- Existing lane configurations and traffic control devices at the study area intersections.
- Existing traffic volumes and operational analysis of the study area roadways and intersections.
- Roadway and intersection crash history analysis.
- Intersection and stopping sight distance related to new and impacted (existing) driveways and intersections.

~~6.5.~~ Background Conditions ~~-(without the proposed land use action)~~

- Approved in-process developments and funded transportation improvements in the study area.
- Traffic growth assumptions.
- Addition of traffic from other planned developments.
- Background traffic volumes and operational analysis.

~~7.6.~~ Full Buildout Traffic Conditions (with the proposed land use action)

- Description of the proposed development plans.
- Trip generation characteristics of proposed project (including trip reduction documentation).
- Trip distribution assumptions.
- Full buildout traffic volumes and intersection operational analysis including the performance relative to the applicable mobility standards for each intersection.
- Site circulation and parking.
- ~~Intersection and site-access driveway queuing analysis.~~
- Recommended roadway and intersection mitigation measures (if necessary).

~~8.7.~~ Conclusions and recommendations

~~9.8.~~ Appendix- With dividers or tabs

- Traffic count summary sheets.
- Crash analysis summary sheets.

- Existing, Background, and Full Buildout traffic operational analysis worksheets with detail to review capacity calculations.
- Signal, left-turn, and right-turn lane warrant evaluation calculations.
- ~~—Signal timing sheets depicting the timing and phasing used in analysis.~~
- Intersection analysis – Roundabout vs. Traffic Signal
- Other analysis summary sheets such as queuing.

To present the information required to analyze the transportation impacts of development, the following figures shall be included in the TIS:

1. Vicinity Map
2. Existing Lane Configurations and Traffic Control Devices
3. Existing Traffic Volumes and Levels of Service for each required time period
4. Future Year Background Traffic Volumes and Levels of Service for each required time period
5. Proposed Site Plan, including access points for abutting parcels and for those across the street from the proposed development
6. Future Year Assumed Lane Configurations and Traffic Control Devices
7. Estimated Trip Distribution/Assignment Pattern
8. Trip reductions (pass-by trips at site access (es))
9. Site-Generated Traffic Volumes for each required time period
10. Full Buildout Traffic Volumes and Levels of Service for each required time period

7.0 STANDARDS AND PROCEDURES

To help ensure consistency in the preparation and review of each TIS and TAL, the City of Oregon City has established a set of guidelines and procedures. These standards and procedures include the following:

- Preparer qualifications
- TIS study area
- Analysis years and time periods
- Data collection guidelines
- Trip generation guidelines
- Trip distribution and assignment guidelines
- Minimum intersection operational standards
- Minimum access spacing standards
- Other analysis guidelines

7.1 PREPARER QUALIFICATIONS

Each TIS and TAL shall be prepared by or under the direct supervision of a Professional Traffic Engineer registered in the State of Oregon or a Professional Engineer registered in the State of Oregon qualified to perform traffic engineering as defined by OAR 820-040-0030. The engineer must have background and experience in the methods and concepts associated with transportation impact studies. Each TIS and TAL shall be sealed and signed by the Professional Engineer registered in the State of Oregon prior to acceptance by the City for a technical review.

7.2 TIS STUDY AREA

Each TIS shall include a vicinity map that shows the site, the study area, and the surrounding transportation system. A brief description of the site location and study area shall be provided. The study area shall be based on engineering judgement and an understanding of existing and future land use and traffic conditions in the vicinity of the site. The following considerations shall form the basis of establishing the study area.

The following facilities shall be included in the study area for all TIS's:

- All site-access points and intersections (signalized and unsignalized) adjacent to the proposed site. In particular, if the proposed site fronts an arterial or collector street, the analysis shall address all intersections and driveways along the site frontage, including those serving parcels on the opposite side of the street(s) and parcels directly adjacent to the proposed development.
- Roads through and adjacent to the proposed developmentsite.
- Any intersection of two streets, each with a classification of collector or arterial, where site traffic will exceed 20 vehicles during a peak hour or, in the case of a rezone, if the trip differential resulting from the rezone will exceed 20 vehicles during a peak hour.

- All intersections needed for signal progression analysis.

As indicated in Section 4.1, the applicant is encouraged to propose a study area at the pre-application meeting or in response to the discussions between the applicant and the City's representatives.

In addition to these requirements, the City Engineer may determine any additional intersections or roadway links that may be adversely affected as a result of the proposed development. The applicant reduces his risk of having an adverse staff report if the applicant reaches agreement with the City Engineer prior to the start of the transportation impact analysis.

7.3 ANALYSIS YEARS TO BE ANALYZED IN THE TIS

To adequately assess the impacts of a proposed land use action, several study periods should be addressed in the transportation impact analysis. These study periods or horizon years consist of the following:

- **Existing Year**
- **Background** – The conditions in the year in which the proposed land use action will be completed and occupied, but without the expected traffic from the proposed land use action. This analysis should include all in-process developments, or city approved developments that are expected to be fully built out in the proposed land use action horizon year. It should also account for all in-process/planned transportation system improvements.

Note: Depending on funding or project development issues, it may not be appropriate to assume that certain planned transportation system improvements will be in place on opening day. Applicants should contact the City Engineer to confirm appropriate assumptions.

- **Full Buildout** – The background condition plus traffic from the proposed land use action assuming full build-out and occupancy.
- **Phased Years of Completion** – If the project involves construction or occupancy in phases or for master plans, the applicant is expected to assess the expected roadway, intersection, and land use conditions resulting from major development phases. Phased years of analysis will be determined in coordination with City staff.
- **20-Year or TSP Horizon Year** – For master plans, zone changes, and conditional uses, the applicant shall assess the expected future roadway, intersection, and land use conditions resulting from deviations from approved comprehensive planning documents.

A twenty-year or TSP Horizon Year analysis will not be required for the following development proposals:

- For out-right permitted uses under the current zoning.
- For residential-to-residential rezoning proposals when the rezoning produces an increase of twenty-five (25) or fewer peak hour trips.

7.4 ANALYSIS PERIODS TO BE ANALYZED IN THE TIS

Within each analysis year, specific consideration should be directed to the time period(s) that experience the highest degree of network travel. These periods typically occur during the weekday morning (7:00AM to 9:00AM) and weekday evening (4:00 PM to 6:00 PM) peak commuting hours.

The TIS shall address the weekday AM and PM peak hours when the proposed land use action is

expected to generate 25 trips or more during the peak time periods. If the applicant can demonstrate that the peak hour trip generation of the proposed land use action is fewer than 25 trips during one of the two peak study periods and the peak trip generation of the land use action corresponds to the roadway system peak, then only the worse of the two peak periods must be analyzed. This does not mean, however, that all aspects of the other peak period can be ignored. The applicant should consider, for example, the possibility that inbound and outbound trips at the site driveway have specific operational issues that may need to be addressed for both peak hours.

Depending upon the proposed land use action and the expected trip generating characteristics of that development, other time periods may be specified, either as a substitute for, or in addition to the AM and PM peak hours. Examples of land uses that have non-typical trip generating characteristics include schools, restaurants, movie theatres, nightclubs, and churches. Applicants should assume that the City will require additional analysis periods for certain uses as summarized below:

- Schools – End of the school day (early afternoon) peak hour
- Churches and worship facilities – Peak period prior to and after worship services.
- Restaurants – Mid-day weekday peak hour
- Shopping centers, home improvement centers, superstores, and retail facilities of more than 60,000 square feet – Saturday peak hour.

When the additional hours for analysis are specified, the applicant need not necessarily carry the analysis through all steps if the data and the engineer's analysis shows that some time periods clearly represent the worst case. If, for example, the mid-day peak period traffic volumes at a restaurant are lower than the other peak periods, except at the site driveway, the mid-day peak need only be analyzed for the driveway location. The engineer preparing the TIS is advised to provide thorough documentation of the reasons for reducing the scope of the extra time periods. The applicant may choose to bring such issues to the attention of the City Engineer for discussion prior to submittal of the TIS.

The above list is not necessarily an all-inclusive list of uses for which additional analysis periods is required. The City Engineer and applicant should discuss the potential for additional study periods prior to the start of the transportation impact analysis.

7.5 APPLICATIONS INVOLVING ZONE CHANGES

In the case of a land use proposal involving a zone change, the TIS must analyze a 20-year horizon period as required by the Oregon Transportation Planning Rule (TPR) and may require interim years in the case of a master plan that also requires a zone change. Applicants seeking a rezoning are advised that in addition to any requirements specified by the City, it is their obligation to address requirements in OAR 660-12-0060. The City's exemption from the requirement for 20-year analysis for certain rezoning actions as specified in Section 7.3 may not exempt the applicant from addressing TPR requirements.

For proposals involving rezoning, the applicant shall compare the traffic generated by his/her development proposal, a reasonable worst-case development under the proposed zoning and a reasonable worst-case development under current zoning.

7.6 TRAFFIC COUNT REQUIREMENTS

Once the TIS study area and analysis periods have been determined, turning movement counts shall be collected at all study area intersections to determine the base traffic conditions. These turning

movement counts should typically be conducted during the weekday (Tuesday through Thursday) between 7:00 a.m. – 9:00 a.m. and 4:00 p.m. – 6:00 p.m. and for other periods depending upon the proposed and/or surrounding land uses. Historical turning movement counts may be used if the data is not more than 12 months old at the time the TIS is deemed complete for review. Historical counts shall be factored accordingly to meet the existing traffic conditions. In high traffic locations where congestion is present or traffic peaks early or late, extended or altered count periods may be required.

7.7 TRIP GENERATION FOR THE PROPOSED DEVELOPMENT

To determine the impacts of a proposed development on the surrounding transportation network, the trip generation characteristics of that development must be estimated. Trip generation characteristics should be obtained from one of the following acceptable sources:

- Institute of Transportation Engineers (ITE) *Trip Generation* (latest edition).
- Specific trip generation studies that have been conducted for the particular land use for the purposes of estimating peak hour trip generating characteristics, subject to approval by the City Engineer prior to their inclusion in the transportation impact analysis.

In addition to new site generated trips, several land uses typically generate additional trips that are not added to the adjacent traffic network. These trips include pass-by trips and internal trips and are considered to be separate from the total number of new trips generated by the proposed development. The procedures listed in the (ITE) *Trip Generation Handbook* should be used *where appropriate* (emphasis added) to account for pass-by trips and internal trips. The applicant's engineer shall not use any pass-by or internal trip reductions with prior approval of the method or data sources by the City Engineer.

Special Attention Items

The ITE *Trip Generation Handbook* maintains limited data regarding pass-by, diverted-linked, and internal shared trip-making characteristics. Professional judgment needs to be used in applying this data. For example, it is not appropriate to apply PM peak hour pass-by percentages to AM or daily periods where AM and daily percentages do not exist. Also, ITE's internal shared trip characteristics are based on a limited number of studies from the early 1990's in Florida. These sites included a mix of commercial, residential, retail, and other uses. For developments that contain only one or two of these uses, a maximum shared trip reduction of five (5) percent will be allowed without appropriate justification and supporting data from the applicant.

The ITE *Trip Generation Handbook* outlines specific guidelines for use of weighted average trip rates versus regression equations. These guidelines shall be followed unless the applicant provides valid justification for deviation.

7.8 TRIP DISTRIBUTION AND ASSIGNMENT

Estimated site generated traffic for the proposed development should be distributed and assigned to the existing or proposed arterial and collector street network. Trip distribution methods should be based on a reasonable assumption of local travel patterns and the locations of off-site origin/destination points within the site vicinity. Acceptable trip distribution methods should be based on one or more of the following procedures:

- A select zone analysis of the proposed site can be obtained from METRO's regional planning model. When using the regional planning model for distribution purposes, the engineer preparing the TIS should make sure that the model assumes the proper existing and future year land use and zoning designations and that he/she understands model load points (centroid).

- connectors). The applicant should also be aware that Metro's model is a regional model and that professional judgement must be applied when using it for specific developments.
- An analysis of local traffic patterns and intersection turning movement counts can be used as long as the data has been gathered within the previous twelve months.
- A detailed market study specific to the proposed development and surrounding land uses may be used to determine the specific influence area. Site generated traffic within the identified influence area should be distributed based on principles and concepts associated with the gravity model theory. Note that if a market study is to be used as a basis for trip distribution, the entire market study must be made available to the City and it shall become part of the public record and, as such, any client confidentiality is lost.

Special Attention Items

In the case of retail developments, the applicant shall clearly distinguish between pass-by and non-pass-by trips to allow the reviewer to understand how the pass-by trips were accounted for and applied throughout the study area. The treatment of pass-by trips at the site entrance may be most easily addressed through separate figures depicting the total site trips and the individual pass-by and non-pass-by components.

7.9 INTERSECTION OPERATIONAL STANDARDS

To assess the impacts of the proposed land use action on the transportation system, the TIS shall compare the existing, background, and full buildout intersection traffic volumes to the minimum intersection operational standards.

The City of Oregon City evaluates intersection operational performance based on the volume-to-capacity ratio (v/c) or the Level of Service (LOS) as defined in the *Highway Capacity Manual (HCM)* published by the Transportation Research Board depending on the specifics of the intersection and location.

~~LOS calculations for signalized intersections are based on the average control delay per vehicle, while LOS calculations for unsignalized intersections are based on the average control delay and volume-to-capacity (v/c) ratio for the worst or critical movement.~~ All LOS definitions should be consistent with the most recent version of the *HCM*. The v/c ratio used by Oregon City is based on the Oregon Department of Transportation's Analysis Procedures Manual.

7.9.1 Intersection Level of Service Standards

The City of Oregon City requires all intersections within the study area to maintain an acceptable ~~level of service (LOS)~~ performance upon full buildout of the proposed land use action as defined below.

~~Oregon City's minimum acceptable Level of Service (LOS) is defined as follows for signalized intersections in the city that are located outside the Regional Center (Downtown Community Plan) boundaries:~~

~~LOS "D" or better 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 critical movements.~~

~~For signalized intersections within the Regional Center boundaries, the following minimum LOS standards will be allowed:~~

~~LOS "D" can be exceeded during the AM and PM peak hour; however, during the second hour of each two-hour peak period, 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.~~

~~Oregon City's minimum acceptable LOS is defined as follows for unsignalized intersections throughout the city:~~

~~LOS "E" or better for the poorest operating and with no serving more than 20 peak hour vehicles operating at worse than LOS "E." In other words, LOS "F" will be tolerated for minor movements during a peak hour.~~

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.
- 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.

—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.

7.9.2 Intersection Design Features and Queuing Calculations

The TIS shall contain sufficient data and information derived from the traffic analysis to provide the roadway/intersection designer and City staff with information on which to assess intersection design features such as the length of storage required for lanes on each approach.

Queue lengths shall be calculated for each lane of all approaches to signalized intersections for the 95th percentile queue. Queue lengths shall also be calculated for unsignalized locations, such as site driveways, where standing queues can interfere with other movements, especially if such interference can contribute to safety problems. Appropriate analysis methods should be used that account for the actual arrivals of vehicles at an intersection.

Special Attention Items

The applicant's engineer shall use professional judgment in selecting the appropriate analysis tools and methods for evaluation of intersection operations. The HCM, for example, states "The [HCM] methodology does not take into account the potential impact of downstream congestion on intersection operation. Nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation." If these conditions are present or can reasonably be expected to exist as a result of the proposed development, the applicant's engineer shall supplement his/her initial analysis with other analysis tools and methods that account for such conditions.

The applicant's engineer also must use reasonable signal timing and consider corridor timing plans where appropriate.

When calculating queues, Poisson distribution may be used for locations subject to random arrivals. Other analysis methods shall be used where signal systems cause different arrival patterns and when congestion causes accumulation from one cycle to the next. Queue lengths shall be based on average vehicle length of twenty-five (25) feet, or longer where appropriate.

7.10 ACCESS SPACING STANDARDS

Access locations on roadway sections must be located to ensure safe and efficient travel along a transportation facility to limit potential conflicting turning movements, weaving maneuvers over short distances, and congestion along facilities. Access management standards vary depending upon the functional classification and purpose on a given roadway. Roadways in the upper echelon of the functional classification system (i.e. arterials) tend to have stringent spacing standards, while facilities ranked lower in the functional classification system allow more closely spaced accesses.

The applicant shall use the standards in [OCMC 16.12 Section 2.2—Access Management Standards of Oregon City's Design Standards Manual](#) and discuss whether the following standards are met through their proposed development:

- Minimum city street intersection spacing (the distance between adjacent intersections),
- Minimum private access spacing (the distance between adjacent driveways and between driveways and street intersections),
- Minimum traffic signal spacing (the distance between adjacent signalized intersections),
- Minimum private access driveway widths (the measurement of the individual driveway

surface)

Exception Process:

In cases where physical constraints or unique site characteristics limit the ability for the above access spacing standards to be met, the City decision maker may grant an access spacing exception. Typically, access exceptions are available only for a parcel whose roadway frontage, topography, or location would otherwise preclude issuance of a conforming permit and the parcel would either have no reasonable access or cannot otherwise obtain reasonable alternate access to the public road system. However, if the limitation or condition is one that the applicant or owner has contributed to by any previous subdivision of property, sale, building activity, or site development, the limitation or condition shall not constitute a basis for an access exception. Note also that the City may choose to prohibit some movements (e.g. left turns) at the site access location, especially if such access is in a location where an access exception is needed.

When an exception is required, the transportation impact analysis must show that the new access will not adversely impact the existing transportation system. A high burden is placed on the applicant and his/her engineer to prove that the system will not be adversely impacted and that public safety will not be compromised.

7.11 SIGHT DISTANCE

For all new proposed site driveways and public street intersections, an evaluation of stopping sight distance (SSD) and intersection sight distance (ISD) shall be conducted consistent with procedures outlined in the current version of the AASHTO *Policy on Geometric Design of Highways and Streets*. At the discretion of the City Engineer, the applicant may be exempted from a need to assess sight distance.

The City standard for new driveways and intersections requires that ISD meet the minimum distance specified in AASHTO. The applicant may apply for a design exception allowing a driveway or intersection that meets SSD rather than ISD. A high burden is placed on the applicant and his/her engineer to prove that the system will not be adversely impacted and that public safety will not be compromised. The City Engineer may grant a design exception if the following conditions are met:

1. ~~1.)~~ The intersection or driveway is proposed to intersect with a local or neighborhood collector street (not a major collector or arterial street), and
2. ~~2.)~~ The approach is forecast to serve fewer than forty (40) vehicles per day, and
3. ~~3.)~~ The intersection will not adversely impact the existing transportation system.

The City Engineer may also grant a design exception if the intersection is forecast to serve less than 100 vehicles per day for a period of not more than twenty-four (24) months. Should the City Engineer choose to grant a design exception, he/she may place additional conditions on the applicant, such as, but not limited to placement of warning signs or the use of flaggers for manual traffic control as prescribed by the *Manual on Uniform Traffic Control Devices* (MUTCD).

Special Attention Items

Under AASHTO procedures, intersection sight distance is evaluated based on the roadway design speed – not the roadway posted speed. Where design speed is not known, it shall be estimated using procedures outlined in the AASHTO *Policy on Geometric Design of Highways and Streets*. This generally results in a design speed anywhere from 5 to 10 mph above prevailing posted speed.

7.12 CRASH HISTORY

Within the study area for each TIS, a crash history evaluation shall be conducted for the most recent

~~four~~three-year period. The intent of the evaluation is to identify any apparent trends in the ~~data~~ that reflect a safety issue that may be exacerbated by the proposed development and to identify mitigation to resolve the issue(s). At a minimum, the analysis shall summarize the number of crashes per year ~~by~~ type and severity. Intersection crash rates shall be calculated and evaluated. The engineer shall assess the overall results of the safety analysis.

7.13 SAFE ROUTES TO SCHOOL

For proposed residential developments, the TIS shall include a brief discussion of routes to the nearest schools. The applicant shall identify the primary walking/biking route between the proposed development and the nearest elementary, middle, and high school. Specifically, the applicant shall describe the general bicycle and pedestrian environment between the proposed development and each school, including the presence and condition of pedestrian and bicycle facilities and the roadway environment (speed, lanes, etc.) along the routes. This section requires applicants to address the special need to link residential areas to area schools.

7.14 WARRANTS (TURN LANE, TRAFFIC CONTROL)

The following section provides guidance on evaluating turn lane and traffic signal warrants.

7.14.1 Traffic Control Warrants

An evaluation of traffic signal warrants shall be conducted for all unsignalized study area intersections where any approach is shown to operate at LOS E or worse under existing, background, or total traffic conditions. Signal warrant analysis shall be conducted in accordance with the current version of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD).

Warrants to evaluate conversions between yield control, two-way STOP control, and multi-way- STOP control shall, as deemed necessary by the applicant's traffic engineer, comply with the MUTCD.

Special Attention Items

The reduction of minor street right turns is an important factor in evaluating traffic signal warrants and care must be taken to ensure the practice is not overlooked or improperly applied as it can affect warrant determinations. Both the MUTCD and the National Cooperative Highway Research Program (NCHRP) Report 457- *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001 offer detailed discussions of the proper methods to address right turn reductions.

For state highways, ODOT's Transportation Planning Analysis Unit maintains specific guidelines regarding right turn reductions that shall be applied to highway intersections. Other methods such as delay-based reduction methods may be considered if reasonably explained and justified by the applicant.

The construction of a lane to accommodate right turns shall be considered as a mitigation measure before or in addition to the analysis of traffic signal warrants for the installation of a traffic signal.

Note that Warrant 3, Peak Hour according to the MUTCD "shall be applied only in unusual cases." The burden of proof is on the applicant that the case is truly unusual. The applicant must evaluate the conditions using other warrants before attempting to justify the use of the Peak Hour warrant.

7.14.2 Turn Lane Warrants

The provision of dedicated left- and right-turn lanes on the major approach to an unsignalized intersection can significantly improve operations and safety at an intersection. The provision of a

second lane on minor street approaches at unsignalized intersections can significantly reduce side street delay for right-turning motorists.

The applicant's engineer shall exercise professional judgement in evaluating the need for, and benefits of, providing dedicated left-turn and right-turn lanes. Documentation of the engineer's analysis of turn lanes shall be provided in the TIS.

The following is a non-exclusive list of conditions where an evaluation of turn lanes is appropriate:

- When no lane is currently provided for left turns and when left turn movements from the major street are predicted to increase because of the proposed development. This is especially appropriate when a turn lane is included as part of the standard cross-section for a street of this classification in the *Transportation System Plan*.
- When an intersection has a crash rate above 1.0 crashes per million entering vehicles and includes crash types subject to improvement from a turn lane.
- When the speed and volume of through traffic and increases predicted in right turn volumes raise concerns in the engineer's professional judgment about safety or about impeding through traffic.
- When only a single lane is provided for minor street approaches and the approach LOS is calculated to be "E" or worse.

The following are some of the references that should be considered by the applicant's engineer.

- **State Highways** – The Oregon Department of Transportation (ODOT) maintains criteria that shall be used for evaluating development of left- and right-turn lanes along state highways at Unsignalized Grade Intersections.
- **Local Streets** – Much of the published information regarding warrant criteria are centered on highway facilities and practitioners have therefore applied these criteria to local streets. The applicant shall refer to pages 686-89 of the 2001 *AASHTO Policy on Geometric Design of Highways and Streets* when evaluating turn lane warrants. Specifically, the applicant shall draw from other sources [see sources 2, 11, 12, and 13] cited by AASHTO. This criteria shall be updated coinciding with future revisions to the *AASHTO Policy*. An additional resource not cited by AASHTO is the National Cooperative Highway Research Program (NCHRP) Report 457- *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001.

8.0 COMMON ERRORS AND OMISSIONS

The following are some common errors and omissions-. Special care should be taken to address these items that are part of the TIS requirements identified herein.

- Failure to include a crash analysis.
- Failure to conduct a warrant analysis or incorrect methods, particularly a failure to account for right turns from minor streets.
- Failure to address access spacing.
- Lack of discussion of observed traffic flow.
- Failure to address intersection and/or stopping sight distance.
- Failure to discuss bicycle, pedestrian and transit facilities.
- Failure to present justification for some assumptions.
- Failure to account for downstream congestion, turn-pocket overflow, or signal timing of adjacent traffic signals (particularly with regard to the selection of software analysis tools)
- Use of unrealistic signal timing
- Use of inappropriate tools and assumptions for calculation of queues.

9.0 TIS CHECKLIST

All TISs submitted to the City of Oregon City must include the City's *Transportation Impact Study Checklist*. This checklist, presented on the following page, is designed to help the applicant address the City's requirements and to help the City staff determine whether it is complete as specified in Section 4.3.

The completed and signed checklist shall be incorporated into the bound TIS following the inside cover page and preceding the Table of Contents.

TRANSPORTATION IMPACT STUDY CHECKLIST

Project Name: _____

City Reference Code: _____

Provided? Yes No Page No. Study Required Comment: _____ Date: _____

BACKGROUND INFORMATION

Yes No _____ Oregon PE Stamp and Signature

INTRODUCTION AND SUMMARY

EXISTING CONDITIONS

Yes No _____ Roadway Network - summary of roadway classifications, lanes, speeds, transit service and facilities, alternative mode service and facilities (e.g., sidewalks, bike lanes, crosswalks) and description of study area

Yes No _____ Analysis Periods Correct (☐ AM, ☐ Mid-day, ☐ PM ☐ Afternoon, _____, Saturday _____,

Yes No _____ Existing Traffic Operations (Existing LOS, traffic volumes (new counts _____), speeds _____, crash data _____)

IMPACTS

Yes No _____ Trip Generation - Daily, peak hour trips generated by site development

Yes No _____ Level of Service Analysis -projected LOS with site build out, existing, and background traffic growth

Yes No _____ Future year 20-year analysis required for zone change or conditional use

Yes No _____ Signal Warrant Analysis

Yes No _____ Turn Lane Warrant Analysis

Yes No _____ Access Spacing Standards

Yes No _____ Analysis of intersection and stopping sight distance at frontage road access point(s)

Yes No _____ Identify safe route to school or school bus stop (Contact with school district)

Yes No _____ Analysis of safe pedestrian/bicycle access to nearest transit stop (if within 1/2 mile of project site)

Yes No _____ Identify accessibility to public transit

Yes No _____ Account for planned roadway improvements at future build year ☐ and 20-year horizon

MITIGATION

Yes No _____ Identify need for right/left turn lanes, storage capacity and length

Yes No _____ Identify possible corrections of any LOS deficiencies

Yes No _____ Identify any access deficiencies (including transit/pedestrian/bicycle connections)

Yes No _____ Identify any TDM measures

FIGURES

Yes No _____ Vicinity Map

Yes No _____ Site Plan

Yes No _____ Existing peak hour turn movement volumes (counts conducted within previous 12 months)

Yes No _____ Trip Distribution (%) including Added Project Peak Hour Traffic Volumes (see sample)

Yes No _____ Approved Projects Peak Hour Traffic Volumes (see sample)

Yes No _____ Programmed transportation improvements and transportation mitigation outlined in study

TABLES

Yes No _____ Intersection Performance Existing Conditions

Yes No _____ Project Trip Generation

Yes No _____ Intersection Level of Service

OTHER

Yes No _____ Technical appendix - sufficient material to convey complete understanding of traffic issues (e.g. HCM or similar analyses, trip generation calculations, signal warrant analyses, turn lane warrant analyses, queuing calculations, signal timing sheets, traffic counts, etc.)

Completed By: _____

[SEAL]

Date: _____

Summary of Proposed Draft Amendments to the Guidelines for Traffic Impact Analyses

For City Commission

This is a summary. Please notify staff of any errors or omissions.

Page Number / Section	Summary	Explanation
Cover Sheet		
Page 1	Added original adoption date and new revision date.	This is a date change to show the most recent version of the guideline
1.1 Transportation Planning and Transportation Impact Analyses		
Page 2	Update TSP Goals to plain language and add specificity.	Allow the goals of the Transportation System Plan which were included as a cross-reference to be more readable.
Page 2	Added the acronym TIA	TIA is the acronym for Traffic Impact Analyses and is a commonly used expression
Page 2	Added a statement about what transportation facilities are defined as.	This summarizes for applicants the entire list of modes of transportation that should be considered.
Page 2	Changed the Transportation System Plan (TSP) Goals. Expected growth from the TSP is through 2035.	Goals changed from 2001 to 2013. Updated the expected growth year.
Page 3	Added a statement on what to do when conflicts occur with other documents. Deleted general potential conflicts with OCMC	Allows OCMC to govern if/when a conflict exists rather than trying to list potential conflicts.
1.3 The Level of Analysis and Documentation		
Page 4	Adjusted reference of code.	Code reference has changed.
2.2 Content of Transportation Impact Analyses Generally		
Page 4-5	Added that the impacts are “multi” modal. Added that mobility standards shall be addressed. Added the TSP projects should be addressed. Added that phasing should be addressed.	These additions were items that have been regularly required by the City’s traffic consultant but were not listed within this document.
2.4 Responsibilities and Authority for the City		
Page 5	Added designated City staff and City consultant as authority persons for review using the document	This reflects current practices.
Page 5	Added that the City’s review of the TAL or TIS shall include a Professional Traffic Engineer registered in the State of Oregon or a	Requires city review of studies to include certification or qualification in transportation engineering.

	Professional Engineer registered in the State of Oregon qualified to perform traffic engineering as defined by OAR 820-040-0030.	
3.0 Transportation Impact Analysis Documents		
Page 5	Added ADUs, lot line adjustments and right of way permits as exempt from completing a Traffic Impact Analysis. Some clarification wording was also added.	The items of exemption have historically been exempted, but were not stated in the document. Cleaned up some wording for clarification.
3.1 Determining the Required Level of Transportation Analysis and Documentation		
Page 6	Changed multi-family review requirement to 42 or fewer units.	This has been changed to be in compliance with industry standards.
Page 6	Changed LOS to Mobility	This change was made to reflect what we now called Level of Service (LOS) standards which is Mobility Standards.
4.3 Completeness Review		
Page 8	Defined that incompleteness will result if no TIS or TAL is received as part of the application. Defined what completeness is.	This is the current process. This was provided for clarification.
5.0 Transportation Analysis Letter Contents		
Page 9	Added that all engineers preparing TALs should be registered in the State of Oregon	Provides clarification
Page 9	Added requirement to show driveway spacing.	Enhances study to capture all possible traffic conflicts and align with City Code
Page 9	Added requirement for driveway width	Enhances study to capture all possible traffic conflicts and align with City Code
Page 9	Added requirement to consider sight obstructions	Enhances study to capture all possible traffic conflicts and align with City Code
Page 9	Added requirement to address safety issues	Enhances study to capture all possible traffic conflicts and align with City Code
6.0 Transportation Impact Study Contents		
Page 9	Removed requirement to use a checklist	Current practice only recommends, does not require
Page 10	Added clarification language to existing conditions criteria	Based on current practice
Page 10	Added a reference of mobility standards to item 6	Mobility standards were added to the code since the creation of this guideline.

Page 11	Add an intersection analysis of roundabout vs. traffic signal	The TSP suggests intersection improvements but analysis has not been completed to determine the best solution for an intersection improvement
7.1 Preparer Qualifications		
Page 12	Required the preparer by a Professional Engineer registered in the State of Oregon	Creates consistency within document
7.2 TIS Study Area		
Page 12	Better defined the study area	Clarified the study area
7.9 Intersection Operational Standards		
Page 17	Clarifies situational standards as well as references the ODOT standard	Provides clarification
7.9.1. Intersection Level of Service Standards		
Pages 17-22	Replaced existing guideline with the most recently adopted Mobility Standards, line for line	Updates the guideline to current standards
7.10 Access Spacing Standards		
Page 23	Changed reference to City Code 16.12	Updates guideline to current reference and standard
7.12 Crash History		
Page 25	Changed crash history data to a four year period from a three year period	Updates to current industry standard
9.0 TIS Checklist		
End of document	Removed requirement to use a checklist	Updates to current practices

This is a summary. Please notify staff of any errors or omissions. Please refer to complete document for all changes.

MEMORANDUM

Date: June 16, 2020

To: Sang Pau, City of Oregon City
John Replinger, P.E., Replinger & Associates, LLC

From: Chris Brehmer, P.E., and Julia Kuhn, P.E.
Kittelson & Associates, Inc.

Cc: Pam Saftler, TVA Architects
Soo Anderson, JLL

Project: Advantis Credit Union Corporate Headquarters (PA 20-18)

Subject: Transportation Impact Analysis

Project #: 24790



INTRODUCTION

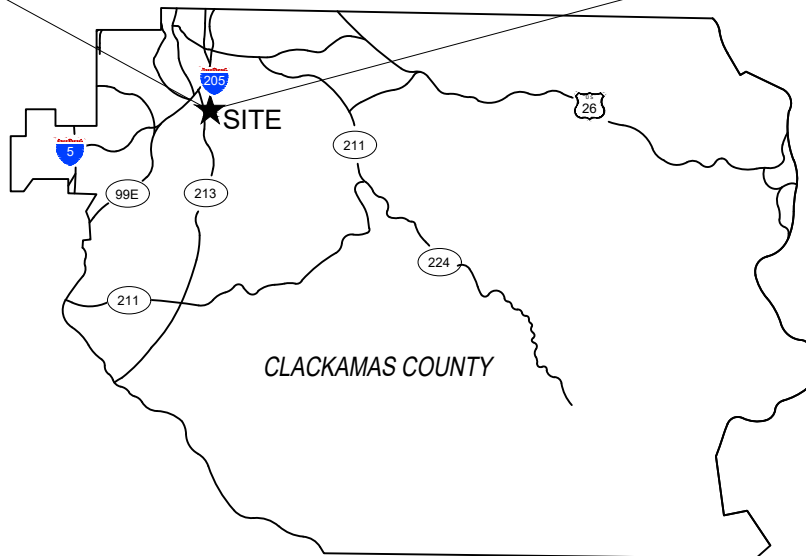
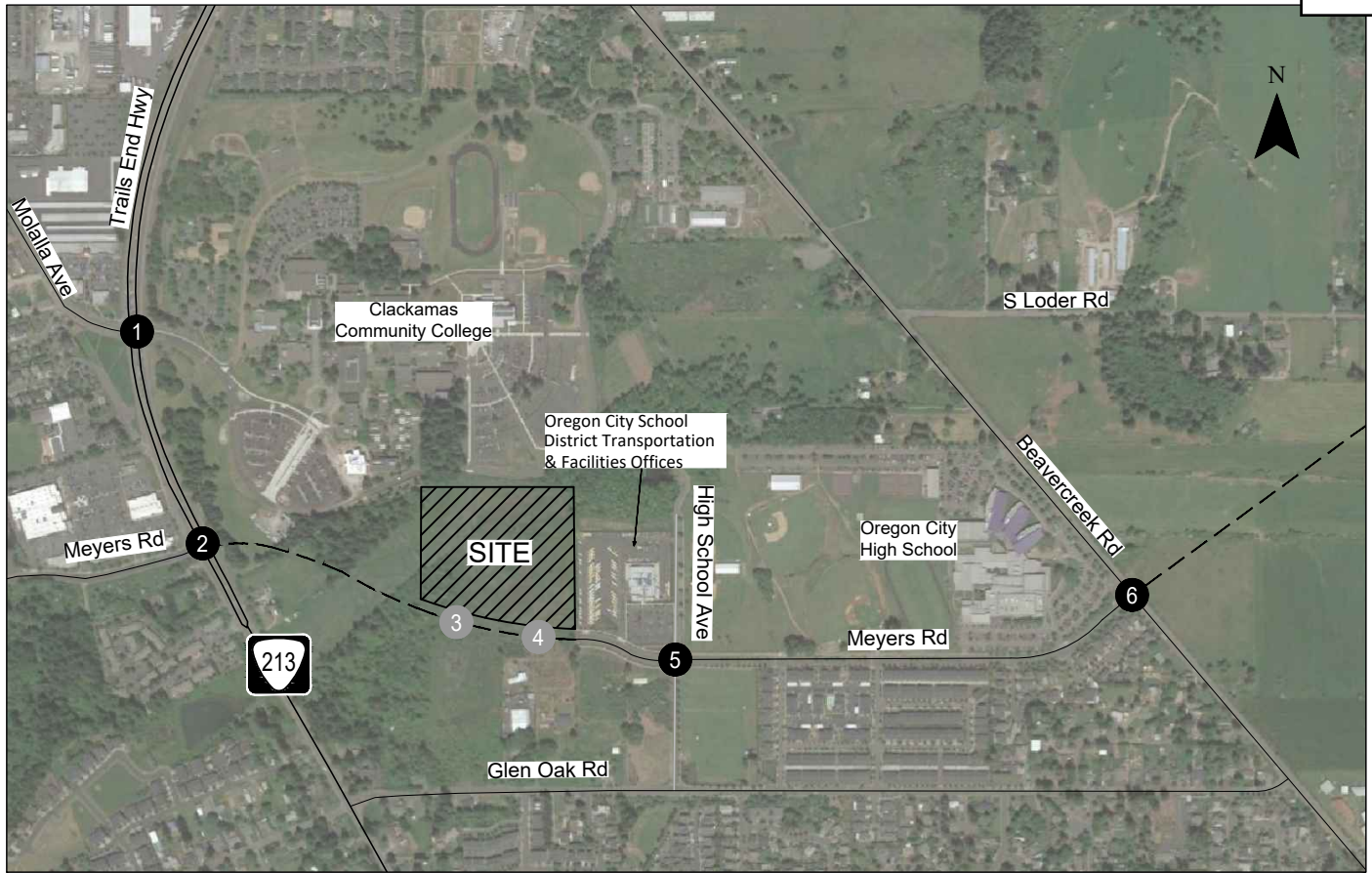
Advantis Credit Union is proposing to construct a corporate headquarters building to the north of Meyers Road, directly west of the Oregon City School District Transportation and Facilities offices. The property tax map location is 32E09C-00200. Figure 1 illustrates the site vicinity.

Two accesses to the headquarters will be provided along the planned Meyers Road extension. This roadway is currently being extended from the High School Avenue intersection west to OR 213 with construction completion anticipated in late 2021. Figure 2 illustrates a conceptual site plan. Occupancy of the headquarters site is expected to occur in 2022.

The results of this transportation impact analysis indicate that the proposed Advantis Credit Union Corporate Headquarters can be constructed while maintaining acceptable traffic operations at the study intersections and site driveways. No capacity-based mitigation needs were identified at the study intersections. Based on the analysis, the following improvements are recommended:

- The proposed development should pay its proportional share contribution for planned improvements at the Beavercreek Road/OR 213 intersection. Based on the City's existing fees of \$219 per weekday PM peak hour trip, the project's proportional share is estimated at \$8,103. Final contribution amounts will be determined by the City at the time of building permit.
- Landscaping, above ground utilities, and signing should be located and maintained along the site frontage and throughout the site in a manner that provides adequate intersection sight distance per City Code.

Additional details of the study methodology, findings, and recommendations are provided below.

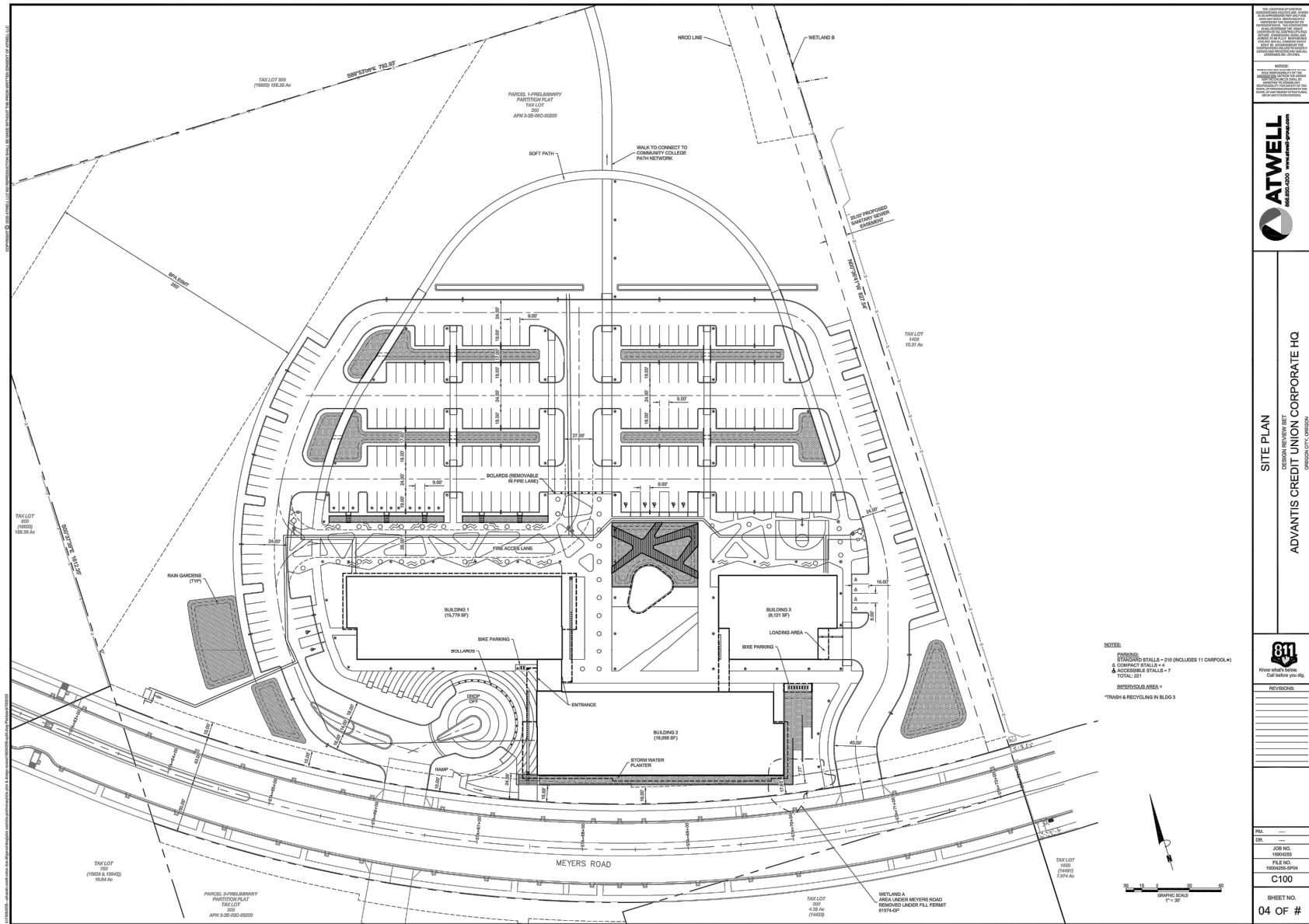


- # - Study Intersection
- # - Site Driveway

Site Vicinity Map
Oregon City, Oregon

Figure
1

C:\KAI Applications\Autodesk\TEMP\AcPublish_38208\24790_Avantis_Figures_NP_2020-06-16.dwg Jun 16, 2020 - 6:52pm - nick Layout Tab: 2-Proposed Site Plan



Site plan provided by Atwell, LLC., dated 06/15/2020

Site Plan
Oregon City, Oregon

Figure
2

STUDY METHODOLOGY

This analysis determines the transportation-related impacts associated with the proposed corporate headquarters building and was prepared in accordance with the City of Oregon City *Guidelines for Transportation Impact Analyses* (TIA Guidelines – Reference 1). The study intersections and scope of this report were based on the TIA Guidelines and direction provided by City and Oregon Department of Transportation (ODOT) staff. The key assumptions and methodologies associated with this study were documented in a scoping memorandum prepared by Kittelson & Associates, Inc. (Kittelson) in April 2020. *Appendix “A” includes the scoping memorandum that was reviewed and approved by City staff.*

STUDY INTERSECTIONS

Operational analyses of peak hour conditions were performed at the following intersections:

1. Molalla Avenue/OR 213
2. Meyers Road/OR 213
3. Meyers Road/Advantis Site Western Access (Future Intersection)
4. Meyers Road/Advantis Site Eastern Access (Future Intersection)
5. Meyers Road/High School Avenue
6. Meyers Road/Beavercreek Road

Per direction from City staff, site-generated trips were also tracked through the Beavercreek Road/OR 213 intersection for proportional share mitigation purposes.

ANALYSIS SCENARIOS

This report evaluates the following analysis scenarios:

- Year 2020 existing land-use and transportation-system conditions at the study intersections during the weekday AM and PM peak periods;
- Year 2022 background traffic conditions (without the proposed headquarters) at the study intersections during the weekday AM and PM peak periods; and,
- Year 2022 total traffic conditions (with the proposed headquarters) at the study intersections during the weekday AM and PM peak periods.

PERFORMANCE MEASURES & OPERATING STANDARDS

All analyses described in this report were performed in accordance with the procedures stated in the *Highway Capacity Manual* (HCM – Reference 2) using Vistro 2020 software. HCM 6th Edition methodologies were used to evaluate operations using the peak 15-minute flow rate that occurred during the weekday AM and PM peak hours.

Section 16.12.033 of the Oregon City Municipal Code (OCMC) identifies the City's mobility standards for signalized and unsignalized intersections on the Arterial and Throughway Network defined in the Regional Transportation Plan that are outside the Regional Center. Per the OCMC, 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 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.*

This study assumes the City-maintained all-way stop controlled intersection performance requires a maximum v/c ratio of 0.99 shall be maintained during the first hour on the poorest performing approach that has at least 20 vehicles in the peak hour.

ODOT operates and maintains OR 213 (Cascade Highway 160). ODOT's operating mobility target for signalized intersections along OR 213 is an intersection V/C ratio no greater than 0.99 during the peak 15-minutes per Table 7 of the *Oregon Highway Plan* (OHP – Reference 3).

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and the current physical and operational characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report.

Kittelson staff visited and inventoried the proposed development site and surrounding study area in May 2020. At that time, Kittelson collected information regarding site conditions, adjacent land uses, and transportation facilities in the study area; however, given the COVID-19 "Stay Home, Stay Safe" orders, traffic volumes were not representative of normal conditions when the field visit was performed.

Site Conditions and Adjacent Land Uses

The project site is located within city limits and is zoned Campus Industrial. The site is surrounded by a mix of institutional, residential, and commercial developments. Clackamas Community College is located to the north, the Oregon City School District Transportation and Facility office is located directly east of the site, and the Oregon City High School is located further east along Meyers Road. The planned Tyrone S. Woods Memorial Park is located southeast of the site across Meyers Road.

Transportation Facilities

Table 1 provides a summary of transportation facilities (including pedestrian and bicycle facilities) in the site vicinity while Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Table 1: Existing Transportation Facilities

Roadway	Functional Classification ¹	Number of Lanes	Posted Speed (MPH)	Sidewalks	Bicycle Lanes	On-Street Parking
OR 213	Major Arterial ²	2-4	45	No	Yes	No
Molalla Avenue	Major Arterial	2-3	35	Yes	Yes	No
Meyers Road	Minor Arterial	2-3 ³	30-35 ⁴	Yes	Yes	Yes ⁵
High School Avenue	Collector ⁶	2	Not Posted	Yes	No	Yes ⁷
Beavercreek Road	Major Arterial	2	40 ⁸	Yes	Yes	No

MPH = miles per hour

¹ 2013 Oregon City Transportation System Plan (TSP - Reference 4).

² Classified as an Expressway north of Molalla Avenue.

³ Three lanes along the future extension between OR 213 and High School Avenue.

⁴ Meyers Road is posted 35 MPH west of OR 213 and 30 MPH east of OR 213, with a 20 MPH school zone for the high school.

⁵ On-street parking along both sides of Meyers Road between High School Avenue and Sophia Court.

⁶ Classified as a local street north of Meyers Road.

⁷ North of Meyers Road.

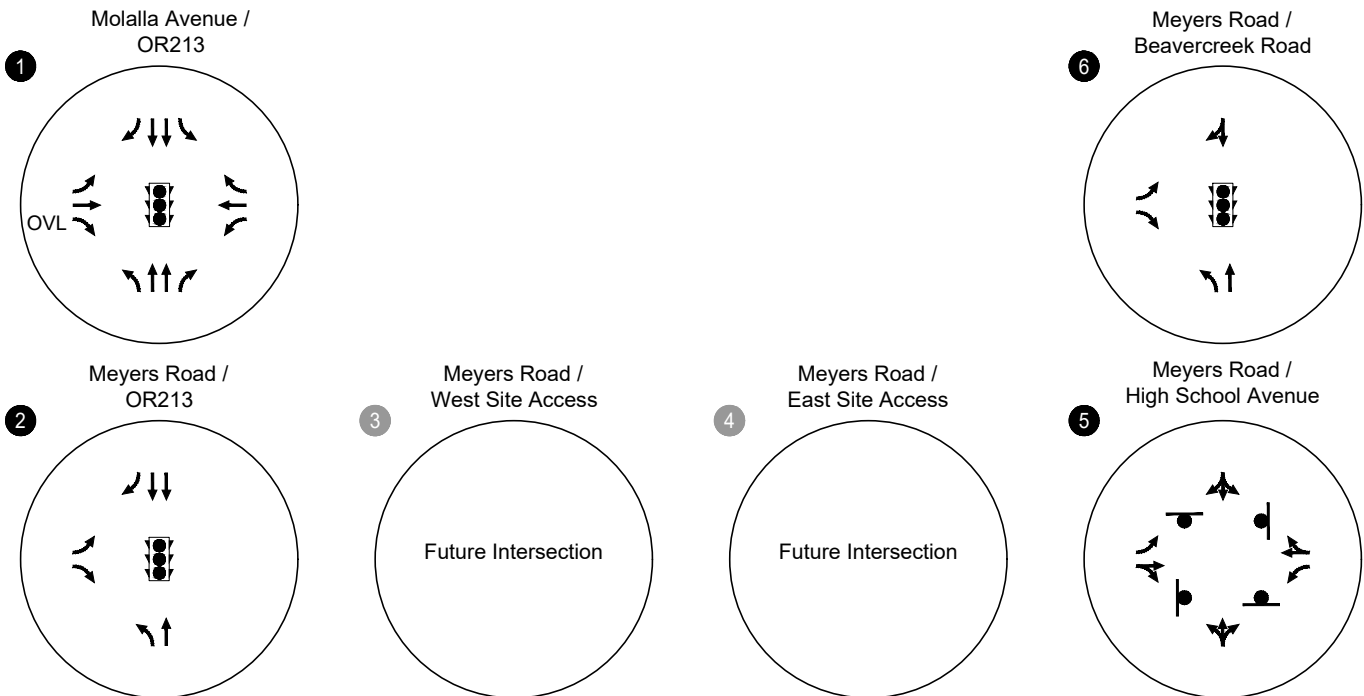
⁸ 20 MPH through the Beavercreek Road/Meyers Road intersection.

Pedestrian and Bicycle Facilities

Table 1 highlights pedestrian and bicycle facilities available in the larger area surrounding the site. The Meyers Road extension currently under construction between OR 213 and High School Avenue will provide sidewalks and bike lanes along on both sides of the new road segment.

Transit Facilities

Local transit service is provided in the site vicinity by TriMet. TriMet line 32 (Oatfield) provides weekday service between Clackamas Community College (CCC) and operates on approximately 30-minute headways. TriMet line 33 (McLoughlin/King Road) provides weekday service between CCC and Clackamas Town Center via downtown Milwaukie with stops along Molalla Avenue. Line 33 is a frequent service route and operates on approximately 15-minute headways most of the day with 30-minute headways in the early morning and late evening dependent on the day of the week. TriMet line 99 (Macadam/McLoughlin) only provides weekday AM and PM “rush hour” service between CCC and Portland City Center. During these periods, the route operates on approximately 15 to 30-minute headways. All three lines stop at Clackamas Community College.



- OVL - TRAFFIC SIGNAL OVERLAP
- STOP SIGN
- TRAFFIC SIGNAL
- FUTURE ROADWAY

Existing Lane Configurations
& Traffic Control Devices
Oregon City, Oregon

Figure
3

Traffic Volumes And Peak Hour Operations

Due to the current atypical traffic conditions associated with the COVID-19 pandemic, the existing conditions operations analysis of the study intersections was performed using historic traffic counts. Historic turning movement counts from 2016, 2017, and 2018 were adjusted to estimate typical conditions in 2020 in coordination with the City's traffic consultant. A two percent compounded annual growth rate was applied to the historic counts to approximate 2020 existing traffic volumes. The adjustment was applied to all intersection movements.

Figures 4 and 5 summarize the estimated year 2020 turning movement volumes at the study intersections during the weekday AM and PM peak hours.

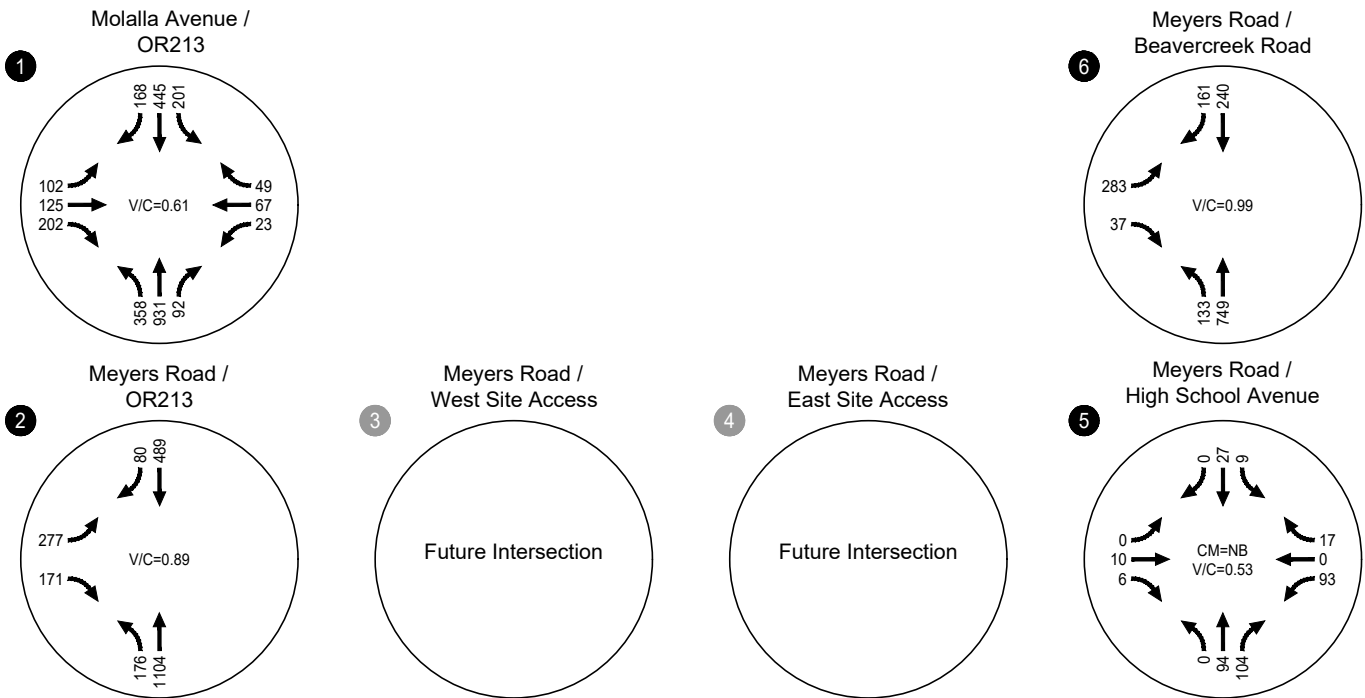
Appendix "B" includes the historic turning movement count data and volume development worksheets.

Current Intersection Operations

Figures 4 and 5 also summarize the existing traffic operations at the study intersections during the first hour of the weekday AM and PM peak periods. As shown, all of the study intersections currently operate acceptably during the first hour of each peak period per their applicable mobility standards and so the second hour was not analyzed. It should be noted that the Meyers Road/Beavercreek Road intersection is operating at the maximum 0.99 v/c threshold level during the weekday AM peak hour today. *Appendix "C" includes the existing traffic conditions worksheets.*

An assessment of 95th percentile queues under each of the analysis periods is provided in *Appendix "D"*. Queues were reported from Vistro. As indicated in the summary, all but the following 95th percentile queues can be accommodated within available storage:

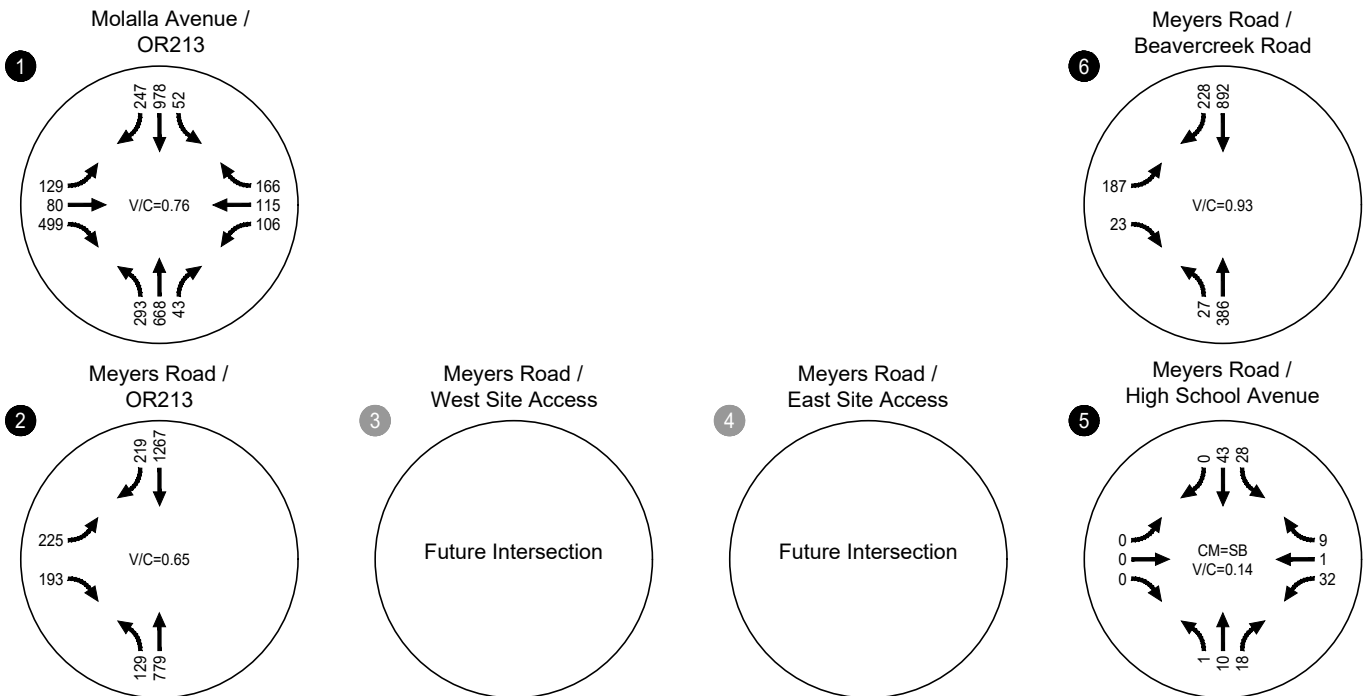
- The eastbound left-turn movement at the Molalla Avenue/OR 213 intersection (study intersection #1) extends beyond the striped 100-foot storage lane area during the weekday AM and weekday PM peak hour.
- The 95th percentile queue for the eastbound left turn movement at the Meyers Road/OR 213 intersection (study intersection #2) extends beyond the available 170-foot storage lane during the weekday AM and PM peak hours; however, additional storage is available in the two-way left-turn lane and no other movement is served by the left-turn lane today.



2020 Existing Traffic Conditions
Weekday AM Peak Hour
Oregon City, Oregon

Figure
4

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL



2020 Existing Traffic Conditions
Weekday PM Peak Hour
Oregon City, Oregon

Figure
5

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL

Traffic Safety

The recorded crash history at the study intersections was reviewed in an effort to identify potential safety issues in the site vicinity. ODOT provided crash data for the study intersections for the period from January 1, 2015, through December 31, 2017. Table 2 summarizes the crash data over the three-year period. *Appendix "E" contains the crash data provided by ODOT.*

Table 2: Intersection Crash History (January 1, 2015 through December 31, 2017)

Location	Collision Type					Severity			Total
	Rear-end	Turning	Angle	Pedestrian	Fixed Object	PDO ¹	Injury	Fatal	
1 Molalla Avenue/OR 213	13	6	1	0	1	10	11	0	21
2 Meyers Road/OR 213	11	4	0	1	0	7	9	0	16
5 Meyers Road/High School Avenue	0	0	0	0	0	0	0	0	0
6 Beaver Creek Road/Meyers Road	4	0	0	0	0	1	3	0	4

¹PDO – Property damage only

Critical crash rates were calculated for each of the study intersections following the analysis methodology presented in ODOT's *Analysis Procedures Manual* (APM - Reference 5). APM Chapter 4 provides 90th percentile crash rates per million entering vehicles at a variety of intersection configurations in Oregon based on number of approaches and traffic control types. In addition, a critical crash rate was identified for each study intersection following APM guidance. The critical crash rate is calculated for each intersection 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 Crash Rate Assessment (January 1, 2015 through December 31, 2017)

Location	Total Crashes	Observed Crash Rate ¹	90 th Percentile Rate by Intersection Type ^{1,2}	Observed Crash Rate > 90 th Percentile Rate	Critical Crash Rate by Intersection Type ³	Observed Crash Rate > Critical Crash Rate by Intersection
1 Molalla Avenue/OR 213	21	0.57	0.86	No	0.68	No
2 Meyers Road/OR 213	16	0.52	0.51	Yes	0.45	Yes
5 Meyers Road/High School Avenue	0	0.00	0.41	No	1.10	No
6 Beaver Creek Road/Meyers Road	4	0.21	0.51	No	0.50	No

¹ Crash rate – Crashes per million entering vehicles (MEV)

² Values shown obtained from APM Exhibit 4-1, Intersection Crash Rates per MEV by Land Type and Traffic Control

³ Values shown calculated per APM Section 4.3.4 and APM Example 4-4, HSM Critical Crash Rates for Intersections with Statewide Reference Population

As shown in Table 3, the observed crash rate exceeds the 90th percentile rate and the calculated critical crash rate at the Meyers Road/OR 213 intersection (study intersection #2) based on a statewide comparison. The crash trends and mitigation for this intersection are discussed further below.

ODOT SPIS List

ODOT provides an annual list of safety priority index system (SPIS) locations that are based on reported crash data. The intent of the SPIS list is to identify roadway segments exhibiting an unusually high occurrence of crashes and is used to select locations for investigation. The segment of OR 213 in the vicinity of Meyers Road is listed in ODOT Region 1's top 15 Percent SPIS Sites (with a 90 percent listing) in 2018 (i.e., the SPIS list available at the time this report was prepared).

Meyers Road/OR 213 Intersection Crashes and Configuration Changes

A detailed evaluation of the crashes at the Meyers Road/OR 213 intersection was performed given the observed crash rates exceed both the 90th percentile crash rates and the critical crash rate for the intersection as well as the SPIS listing.

Reported crashes with an injury severity of "A" (incapacitating injury – bleeding or broken bone) or "B" (non-incapacitating injury) were further evaluated to identify potential crash patterns. No Injury "A" were reported at the intersection. Two Injury "B" crashes occurred at the intersection. Both of these were the result of a southbound vehicle colliding with an eastbound right turn. One of the reported crashes occurred in the dark while raining and involved a pedestrian that was struck in a crosswalk by a vehicle making a right turn on red that reportedly did not see the pedestrian. No fatalities were reported at the intersection.

Reported crashes with type "rear end" were further evaluated based on the high percentage of total crashes. Eleven (11) of the total 16 crashes (69%) at the intersection were rear-end crashes. Six of the 11 "rear end" type crashes (55%) occurred for vehicles travelling from south to north along OR 213.

Oregon City and ODOT are collaborating to reconstruct the Meyers Road/OR 213 intersection in conjunction with the Meyers Road Extension Project. Intersection changes being implemented include a new traffic signal, the addition of a new eastern approach, construction of a second northbound through lane and addition of a southbound left-turn lane.

Based on the crash data review and in light of the upcoming upgrade, no additional safety related mitigation measures were identified at the Meyers Road/OR 213 intersection to support the future site development.

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system will operate in 2022, the year the proposed headquarters is expected to be fully built. The impact of traffic generated by the proposed Advantis Credit Union Corporate Headquarters was examined as follows:

- Developments and transportation improvements planned in the site vicinity were identified
- Year 2022 background traffic conditions (without the proposed development) were analyzed at the study intersections during the weekday AM and PM peak hours
- Site-generated trips were estimated for build-out of the site
- Site trips were assigned to the study intersections based on an assumed trip distribution pattern
- Year 2022 total traffic conditions (with build-out of the proposed headquarters development) were analyzed at the study intersections and site driveways during the weekday AM and PM peak hours
- On-site circulation and parking considerations were evaluated

YEAR 2022 BACKGROUND TRAFFIC CONDITIONS

The year 2022 background traffic conditions analysis identifies how the study area's transportation system will operate without the proposed corporate headquarters building. This analysis includes traffic attributed to rerouting due to new transportation facilities, planned developments within the study area and to general growth in the region but does not include traffic from the proposed development.

In-Process Developments

In-process developments identified by City staff and accounted for in this study include:

- Clackamas Community College Masterplan located north of the Advantis site
- Tyrone S. Woods Memorial Park located southeast of the Advantis site
- Villages at Beaver Creek (formerly known as the Beaver Creek Mixed-Use Housing Development) located east of the Beaver Creek Road/Meyers Road intersection

Planned Transportation Improvements

The following transportation improvements were included in the year 2022 background and total conditions scenarios per City staff direction:

- The Meyers Road West extension project (TSP Project # D46) is currently under construction and is expected to be completed in the late summer of 2021. Per the City, the project will consist of extending Meyers Road from OR 213 to High School Avenue and be classified as a Minor Arterial. The road will consist of a three-lane cross-section with bike lanes and

sidewalks on both sides of the road. Two curb cuts providing driveway access to the proposed corporate headquarters development site are included in the City road project.

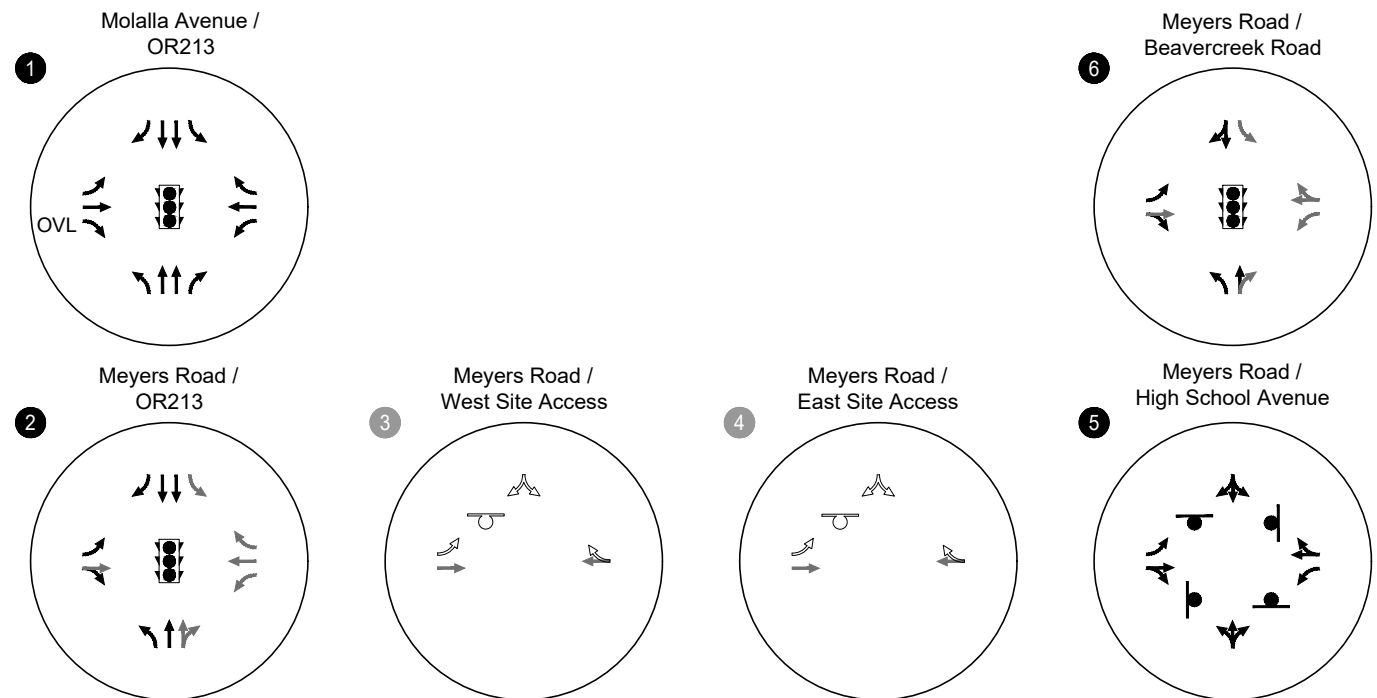
- The Meyers Road East extension project (TSP Project # D47). Per the TSP, the project will consist of extending Meyers Road from Beaver Creek Road to Meadow Lane and be classified as an Industrial Minor Arterial. Although planned to Meadow Lane, the roadway extension portion assumed by 2022 for the purposes of the corporate headquarters study only includes the segment planned for construction in conjunction with the Villages at Beaver Creek mixed-use housing development.

The above projects include signal modifications to the Meyers Road/OR 213 intersection (study intersection #2) and the Beaver Creek Road/Meyers Road (study intersection #6). Figure 6 shows the assumed lane configurations and traffic control devices at the study intersections under background and total traffic conditions. The anticipated traffic re-assignment due to the future roadway extensions were provided by the City of Oregon City's traffic consultant and were included in the future volume development.

Traffic Volumes

The year 2022 background traffic volumes were developed by applying a 2 percent annual growth rate to the 2020 traffic volumes shown in Figures 4 and 5. Traffic volumes from the in-process planned developments as well as the reassignment of existing traffic due to the Meyers Road extension were then added. Figures 7 and 8 illustrate the resulting forecast year 2022 background traffic volumes during the weekday AM and PM peak hours.

Appendix "B" includes volume development worksheets used to derive the projected 2022 background traffic volumes.

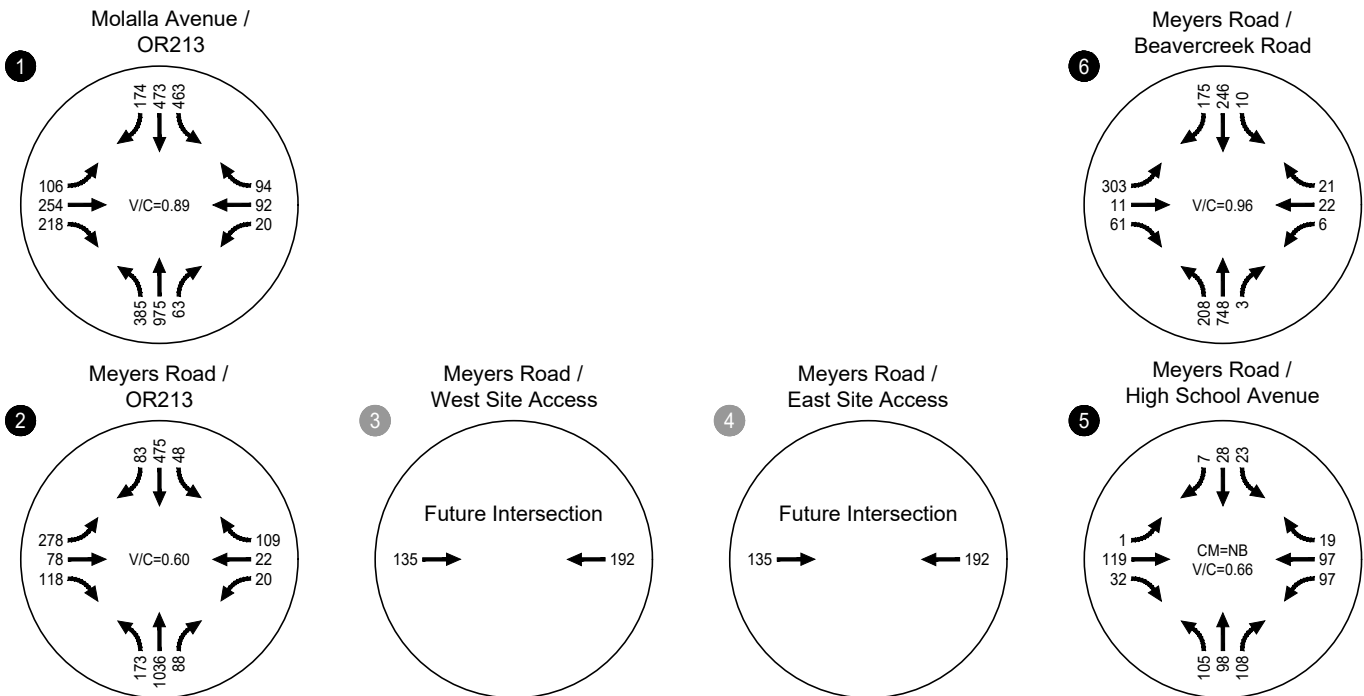


OVL - TRAFFIC SIGNAL OVERLAP
 - STOP SIGN
 - TRAFFIC SIGNAL

- EXISTING
 - PLANNED IMPROVEMENT
 - MOVEMENT/IMPROVEMENT ADDED WITH DEVELOPMENT

Future Lane Configurations
 & Traffic Control Devices
 Oregon City, Oregon

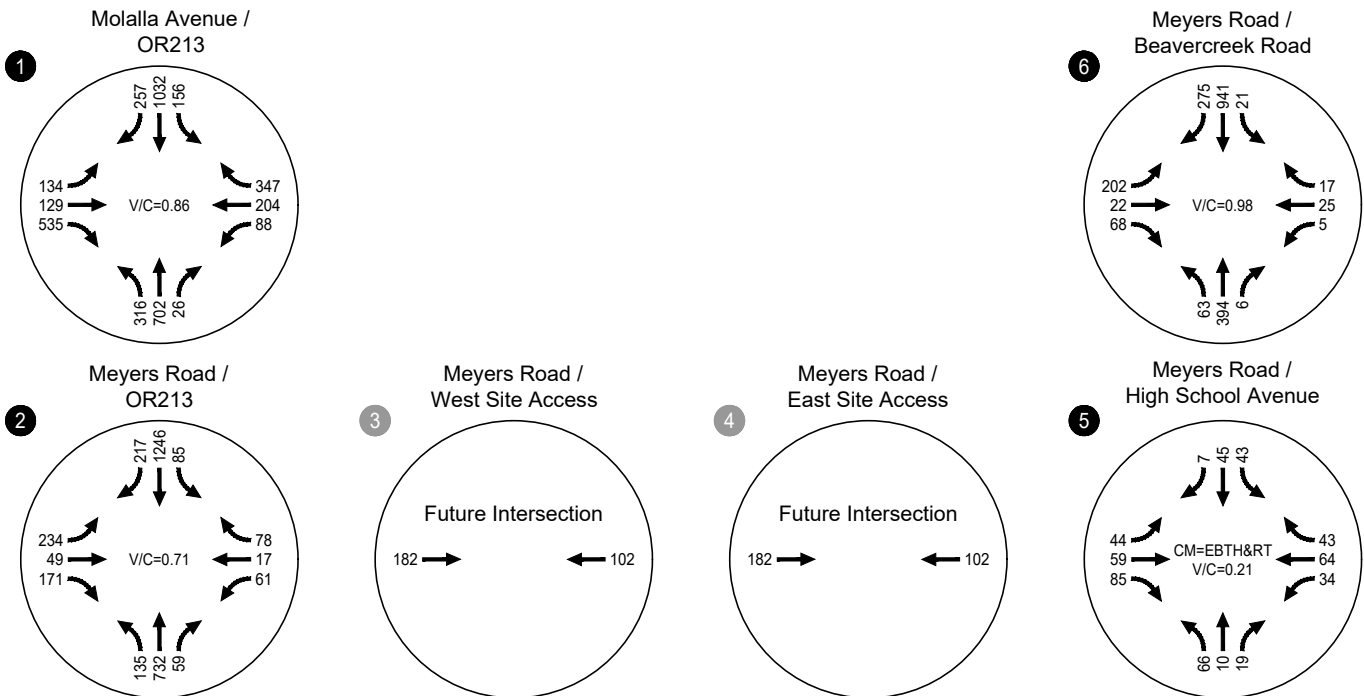
Figure
 6



2022 Background Traffic Conditions
Weekday AM Peak Hour
Oregon City, Oregon

Figure
7

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL



2022 Background Traffic Conditions
Weekday PM Peak Hour
Oregon City, Oregon

Figure
8

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
TWSC = TWO-WAY STOP CONTROL
AWS = ALL-WAY STOP CONTROL

Intersection Operations

The weekday AM and PM peak-hour turning-movement volumes shown in Figures 7 and 8 were used to conduct an operational analysis at the study intersections to determine the year 2022 background traffic conditions. The results of the analysis indicate that all the study intersections are forecast to operate acceptably during the weekday AM and PM peak hours per their applicable mobility standards. *Appendix "F" contains the year 2022 background traffic conditions worksheets.*

An assessment of 95th percentile queues under all scenarios is provided in *Appendix "D"*. As indicated in the summary, beyond the locations discussed under existing conditions, 95th percentile queues can be accommodated within available storage except for the following:

- The southbound left-turn movement at the intersection of Molalla Avenue/OR 213 (study intersection #1) extends beyond the 530-foot storage during the weekday AM and PM peak hour (additional median storage area is paved and available but is not striped for turn lane use).
- The eastbound thru movement at the intersection of Molalla Avenue/OR 213 (study intersection #1) extends beyond the adjacent intersection at Sebastian Way during the weekday AM peak hour.
- The northbound left-turn movement at the intersection of Meyers Road/Beavercreek Road (study intersection #6) extends beyond the 100-foot storage available during the weekday AM peak hour.
- The 95th percentile queue for the eastbound left-turn movement at the intersection of Meyers Road/Beavercreek Road (study intersection #6) extends beyond the 370-foot storage available before the Emerson Court driveway during the weekday AM peak hour (additional left-turn storage is available in the two-way left-turn lane).

Compared to existing conditions, the queue length for the northbound through movement at the intersection of Meyers Road/OR 213 (study intersection #2) is reduced during the weekday AM peak hour with the planned second through lane in place.

PROPOSED DEVELOPMENT PLAN

Advantis Credit Union is proposing to construct a corporate headquarters building with up to 80,000 square feet of space on the proposed development site. Access to the site will be via two driveways located on the Meyers Road extension that is currently under construction (the driveway locations were previously planned by the City and the two curb cuts being constructed with the City roadway extension project have been incorporated into the project site plan). Occupancy of the headquarters building is expected to occur in 2022.

Trip Generation

Trips associated with the proposed corporate headquarters were estimated based on rates contained in the *Trip Generation Manual, 10th Edition* as published by the Institute of Transportation Engineers (ITE – Reference 6). Table 4 summarizes the estimated site trips.

Table 4: Trip Generation Estimate*

Land Use	ITE Code	Size (Square feet)	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
General Office	710	80,000	853	102	88	14	92	15	77

*Trips generated by the site are based on the fitted curve equation for each of the time periods analyzed.

Trip Distribution/Trip Assignment

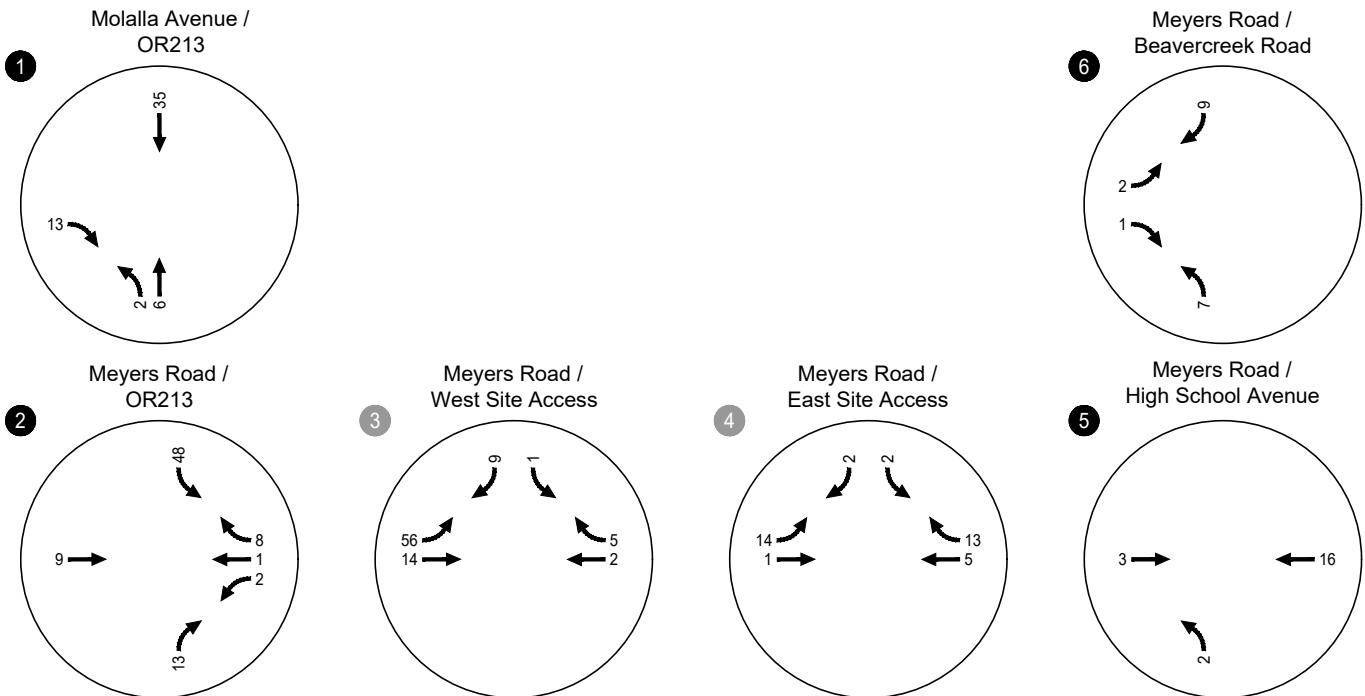
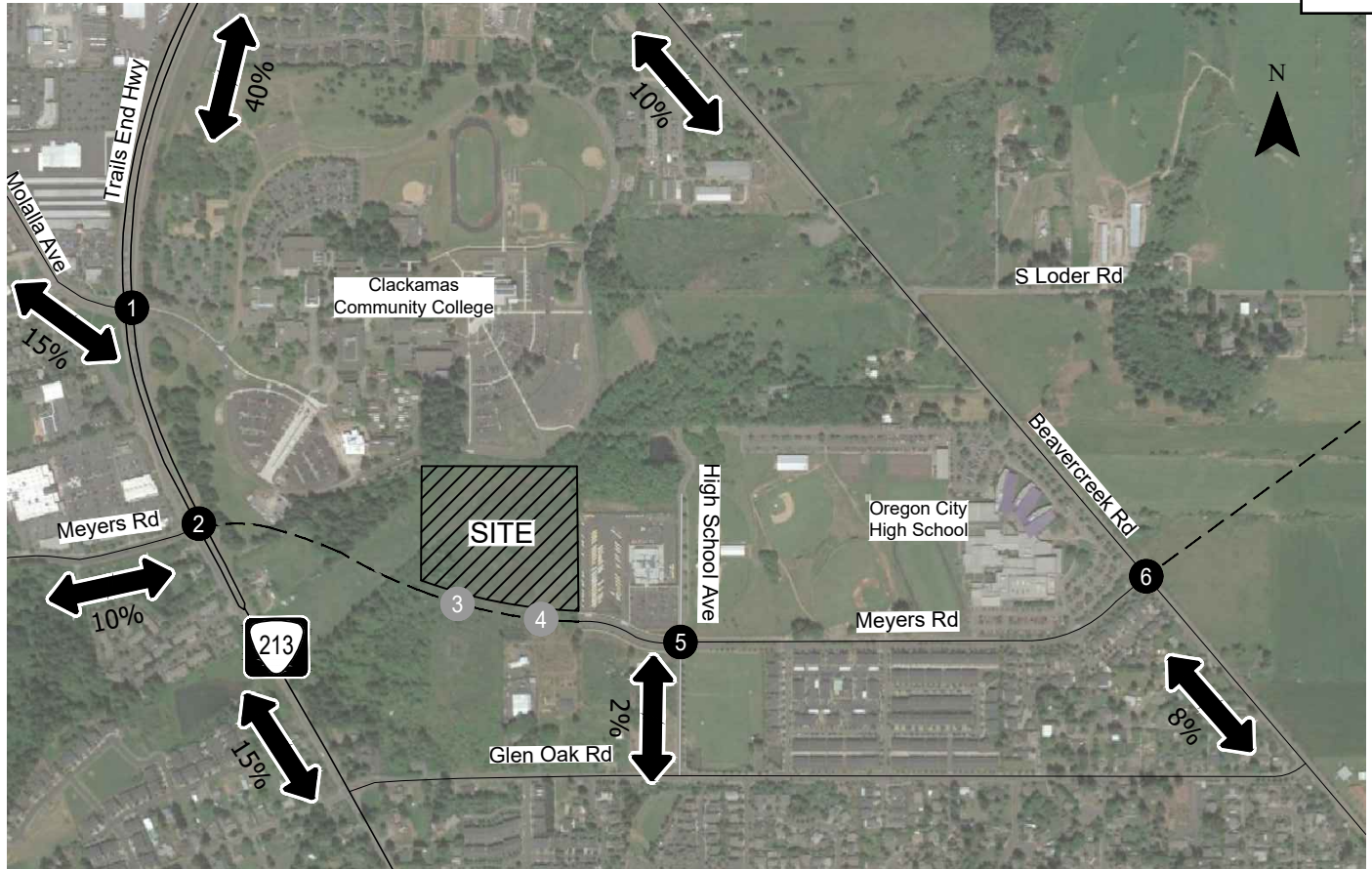
A trip distribution pattern was developed for the proposed headquarters based on existing traffic patterns, the location of major trip origins and destinations in the Oregon City area, and the regional use proposed. The peak hour site-generated trips shown in Table 4 were distributed to the study area roadways and assigned to the study intersections according to the trip distribution pattern as shown in Figures 9 and 10.

YEAR 2022 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by the proposed development. The year 2022 background traffic volumes shown in Figures 7 and 8 were added to the site-generated traffic shown in Figures 9 and 10 to arrive at the total traffic volumes shown in Figures 11 and 12.

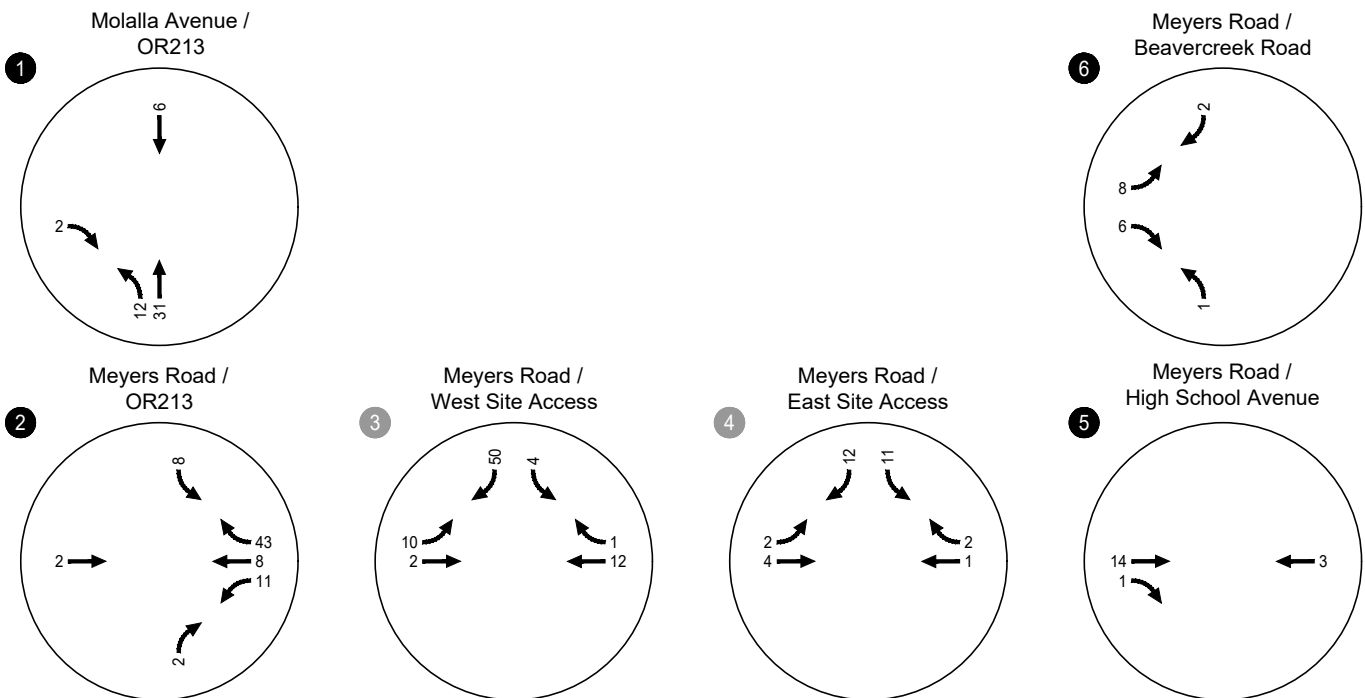
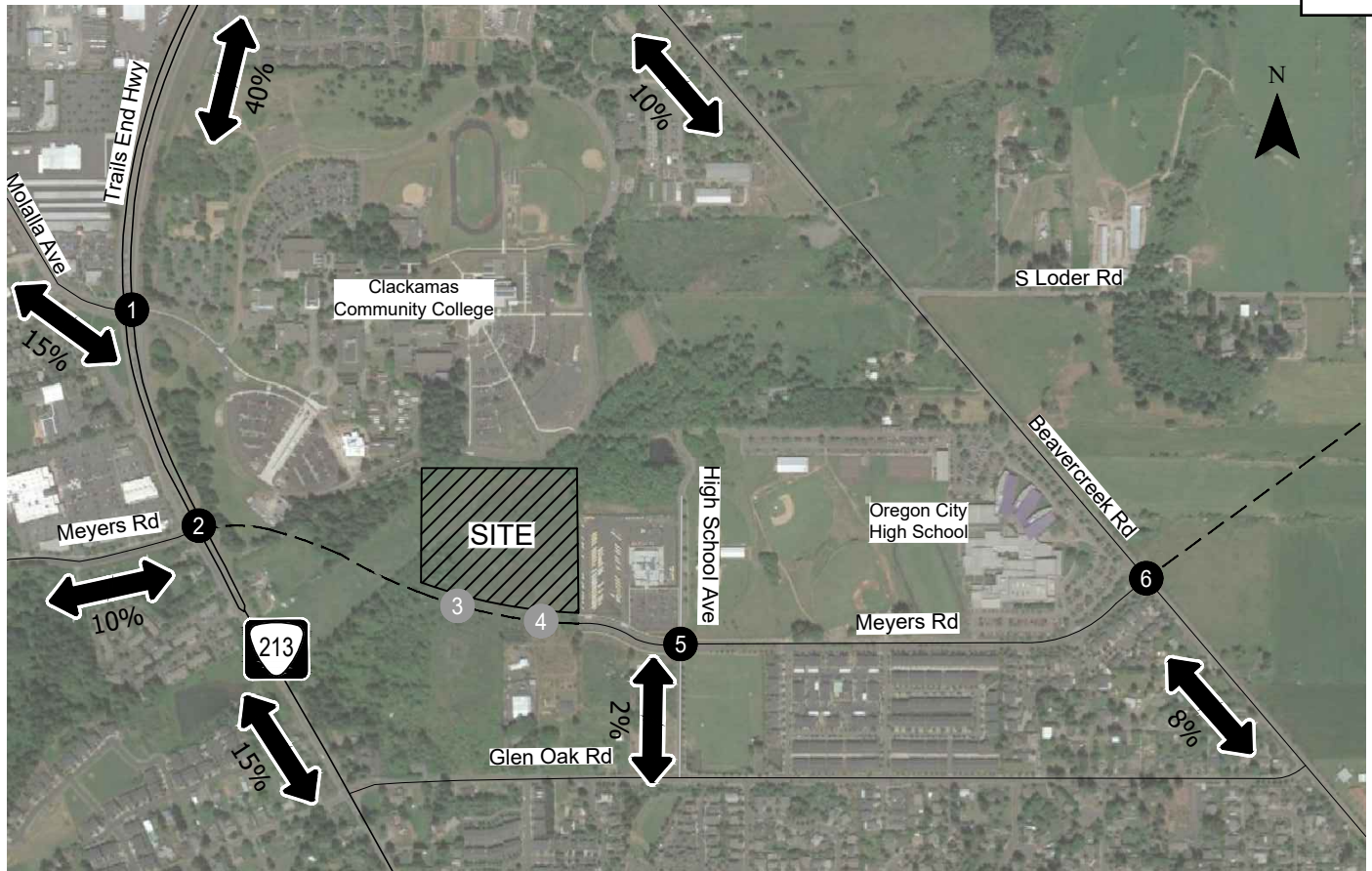
Intersection Operations

The weekday AM and PM peak hour turning-movement volumes shown in Figures 11 and 12 were used to conduct an operational analysis at the study intersections and site driveways to determine the year 2022 total traffic conditions. The results of the analysis indicate that all the study intersections and both site driveways are forecast to operate acceptably during the weekday AM and PM peak hours per their applicable mobility standards. *Appendix "G" contains the year 2022 total traffic conditions worksheets.*



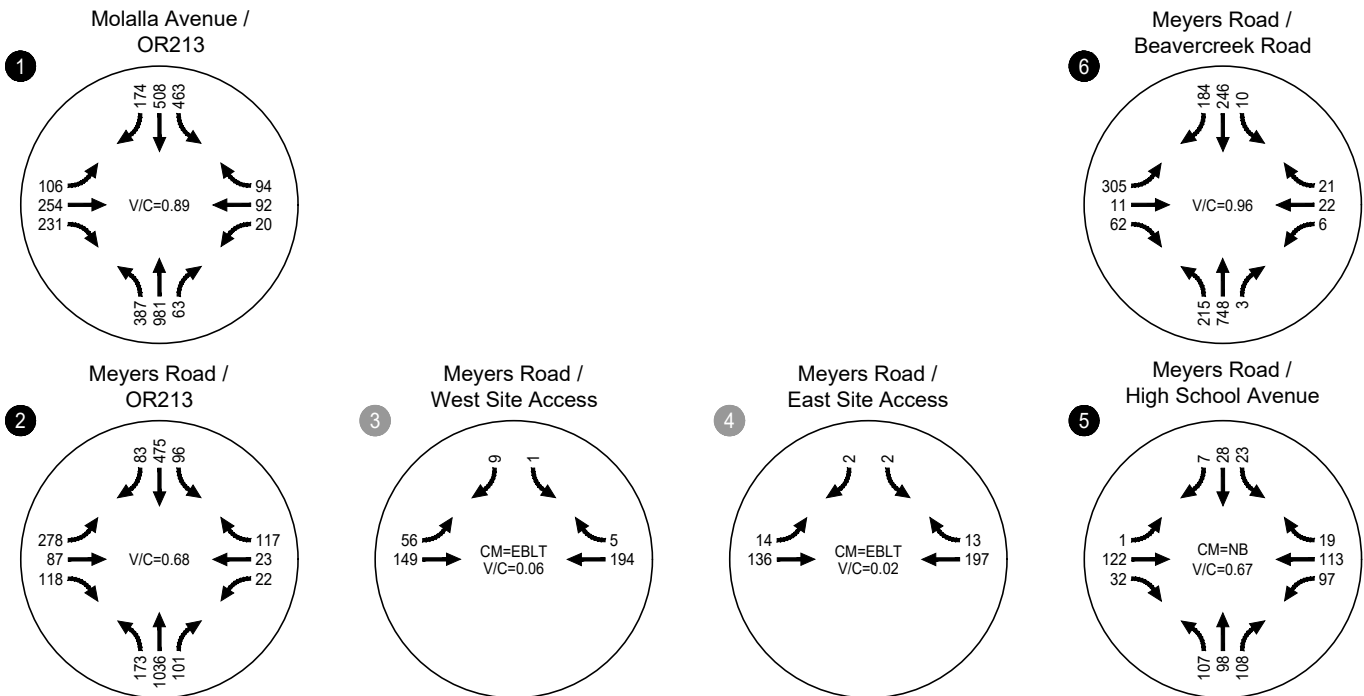
Estimated Trip Distribution Pattern & Site Generated Trips
Weekday AM Peak Hour
Oregon City, Oregon

Figure
9



Estimated Trip Distribution Pattern & Site Generated Trips
Weekday PM Peak Hour
Oregon City, Oregon

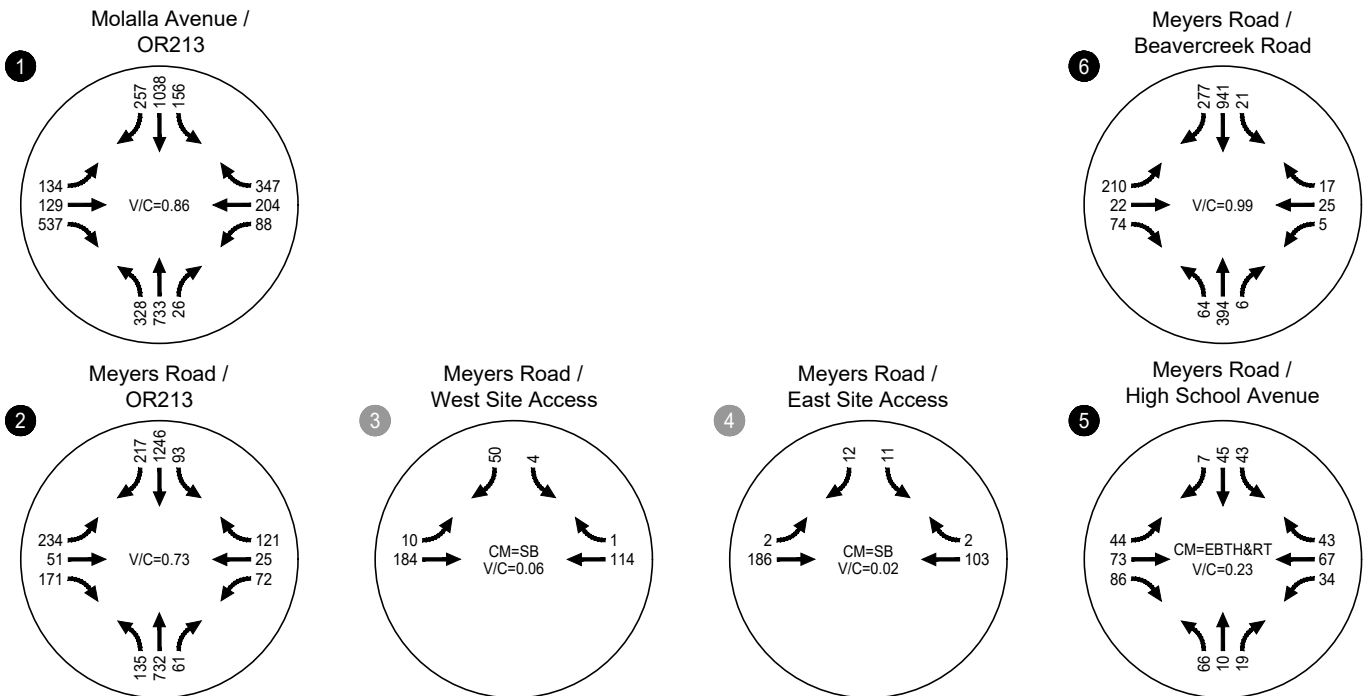
Figure
10



Year 2022 Total Traffic Conditions
Weekday AM Peak Hour
Oregon City, Oregon

Figure
11

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL



Year 2022 Total Traffic Conditions
Weekday PM Peak Hour
Oregon City, Oregon

Figure
12

CM = CRITICAL MOVEMENT (TWSC/AWSC)
V/C = INTERSECTION VOLUME-TO-CAPACITY RATIO (SIGNALIZED) /
CRITICAL VOLUME-TO-CAPACITY RATIO (TWSC/AWSC)
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AWSC = ALL-WAY STOP CONTROL

Queuing Assessment

An assessment of 95th percentile queues is provided in *Appendix "D"*. As indicated in the summary, two study intersections are projected to experience an increase in 95th percentile queues that exceed the available storage as a result of site-generated trips. First, the westbound through movement leaving Clackamas Community College at OR 213 (study intersection #1) is projected to grow by one car length and extend beyond the available 310 foot available before the N Douglas Loop intersection during the weekday PM peak hour. No site-generated trips are expected to travel along the westbound approach and no mitigation is recommended recognizing the large volume of in-process community college trips and that the westbound approach is a private roadway.

Second, the 95th percentile queue for the northbound left-turn from Beavercreek Road to Meyers Road is projected to increase by one vehicle length during the weekday AM and PM peak hours (the weekday AM peak hour length is projected to exceed the queue storage under background traffic conditions, presumably related primarily to high school activities). As shown in Figures 9 and 10, the proposed development is projected to add 7 northbound left-turns during the weekday AM peak hour and 1 left-turn during the weekday PM peak hour. Recognizing the relatively negligible increase in northbound left-turns due to site-generated trips, that the volume projections for the Meyers Road include significant assumed re-routing and future development, and that alternative site access is available via Glen Oak Road and High School Avenue, no mitigation is recommended.

While there are some other study intersection movements that are projected to have queues that exceed the available storage prior to the proposed site development, the development does not contribute to an increase in these queue lengths relative to the forecast background traffic conditions.

ON-SITE CIRCULATION/SITE-ACCESS OPERATIONS

Per the year 2022 total traffic analysis described above, the site driveways are expected to operate acceptably under stop control during the weekday AM and PM peak hours. The projected 95th percentile vehicle queues at the two driveways are projected to be one vehicle exiting the site and can be accommodated on-site. On-site parking is located in locations with sufficient throat depth such that parking vehicles should not interact with queues leaving the site driveways. In addition, intersection sight distance is expected to satisfy applicable City requirements at the driveway and are documented within the project civil engineering plans. Landscaping, above ground utilities, and signing should be located and maintained along the site frontage and throughout the site in a manner that provides adequate intersection sight distance the future per City Code.

ACCESS SPACING

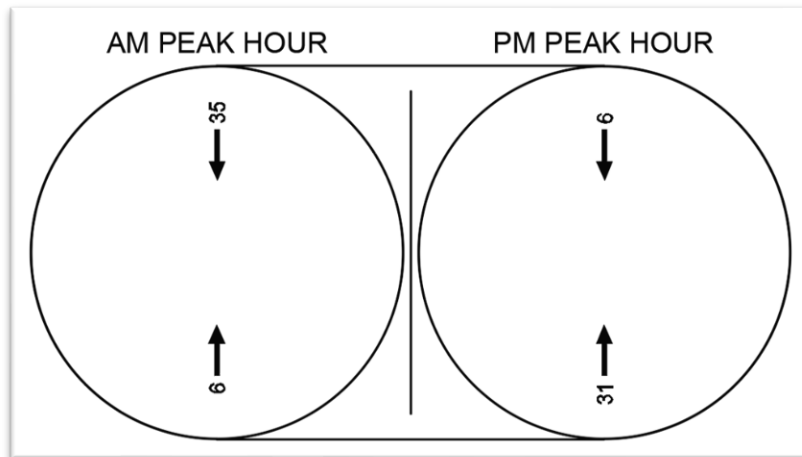
Meyers Road is classified as a Minor Arterial. Section 12.04.195 of the Oregon City Municipal Code requires that the minimum driveway spacing along a Minor Arterial is 175 feet. Both site driveways are located in positions previously determined by the City of Oregon City as part of the Meyers Road extension project. The proposed eastern driveway will be located approximately 175 feet west of the

existing west driveway for the Oregon City Transportation Maintenance Facility. The spacing between the two site driveways will be approximately 500 feet. Accordingly, access spacing will be in accordance with Oregon City Municipal Code.

BEAVERCREEK ROAD/OR 213 PROPORTIONATE SHARE TRIP TRACKING

Exhibit 1 illustrates the number of weekday peak hour site-generated peak hour trips that are projected to travel through the Beaver Creek Road/OR 213 intersection. This trip assignment is provided for proportional share mitigation purposes per direction from City staff.

Exhibit 1: Site Trips though Beaver Creek Road/OR 213 Intersection



The proposed development is expected to be assessed its proportional share contribution for planned improvements at the Beaver Creek Road/OR 213 intersection based on 37 weekday PM peak hour site-generated trips that are projected to use the intersection. Based on the anticipated \$219 cost per weekday PM peak hour trip¹, the proportional share fee is estimated at \$8,103. The City of Oregon City will determine the final fee amount at the time of building permit.

¹ A \$219 cost per weekday PM peak hour trip was identified by the City's traffic consultant in February 2020. The fee per trip was noted to be subject to change if a new cost estimate for the intersection project is developed in conjunction with an update of the City's capital improvement program prior to fee payment.

FINDINGS AND RECOMMENDATIONS

The results of the transportation impact analysis indicate that the proposed Advantis Credit Union Corporate Headquarters can be constructed while maintaining acceptable traffic operations at the study intersections. The findings of this analysis and our recommendations are discussed below.

Findings

- All the study intersections currently operate within adopted volume-to-capacity ratio requirements during the weekday AM and PM peak hours and are projected to continue to do so in 2022 before and with the proposed headquarters building.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with the proposed development. While the Meyers Road/OR 213 intersection area appears on ODOT Region 1's top 15% SPIS list, the intersection is currently being reconfigured in conjunction with the Meyers Road extension project.
- The two site driveways are in locations constructed with the Meyers Road extension project, are expected to operate acceptably under stop control and are projected to have 95th percentile queues of one vehicle or less entering and exiting the site.
- Intersection sight distance is expected to satisfy applicable City requirements at the site driveway and are documented within the proposed civil engineering design plans.

Recommendations

- The proposed development should pay its proportional share contribution for planned improvements at the Beaver Creek Road/OR 213 intersection based on 37 weekday PM peak hour site-generated trips that are projected to use the intersection. Based on the anticipated \$219 cost per weekday PM peak hour trip, the proportional share fee is estimated at \$8,103. The City of Oregon City will determine the final fee amount at the time of building permit.
- Landscaping, above ground utilities, and signing should be located and maintained along the site frontage and throughout the site in a manner that provides adequate intersection sight distance per City Code.

REFERENCES

1. City of Oregon City. *Guidelines for Transportation Impact Analyses*. 2005.
2. Transportation Research Board. *Highway Capacity Manual, 6th Edition*. 2016.
3. Oregon Department of Transportation. *Oregon Highway Plan*. 2015.
4. City of Oregon City. *Oregon City Transportation System Plan*. 2013.
5. Oregon Department of Transportation. *Analysis Procedures Manual Version 2*. Last Update April 2020.
6. Institute of Transportation Engineers. *Trip Generation Manual, 10th Edition*. 2017.

APPENDICES

- A. Scoping Memorandum
- B. Traffic Counts/Volume Development
- C. Existing Traffic Conditions Analysis Worksheets
- D. Queuing Analysis
- E. ODOT Crash Data
- F. Year 2022 Background Traffic Conditions Analysis Worksheets
- G. Year 2022 Total Traffic Conditions Analysis Worksheets

Appendix A Scoping Letter

MEMORANDUM

Date: April 3, 2020

Project #: 24790

To: John Replinger, Replinger Associates
Soo Anderson, JLL

From: Chris Brehmer and Julia Kuhn
Project: Advantis Credit Union
Subject: Traffic Impact Study Scope

Advantis Credit Union is proposing to construct an 80,000 square foot office building to the north of Meyers Road, directly west of the Oregon City School District Transportation offices. Based on the City's Guidelines, the anticipated vehicular trips associated with the construction and occupancy of this building requires the preparation of a Transportation Impact Analysis (TIA). Accordingly, this memo presents a scope for our TIA for the new building. For reference purposes, a draft conceptual site plan is attached to this memorandum to facilitate review of our proposed scope.

TRIP GENERATION

The trips associated with the office building were estimated based on rates contained in the 10th Edition of the *Trip Generation Manual* (2017, as published by the Institute of Transportation Engineers). This is shown in Table 1.

Table 1. Advantis Trip Generation

Land Use	ITE Code	Size	Total Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out
Office	710	80,000	854	102	88	14	92	15	77

TRIP DISTRIBUTION

We propose to use the trip distribution pattern shown in Exhibit 1.

Exhibit 1. Preliminary Trip Distribution Pattern

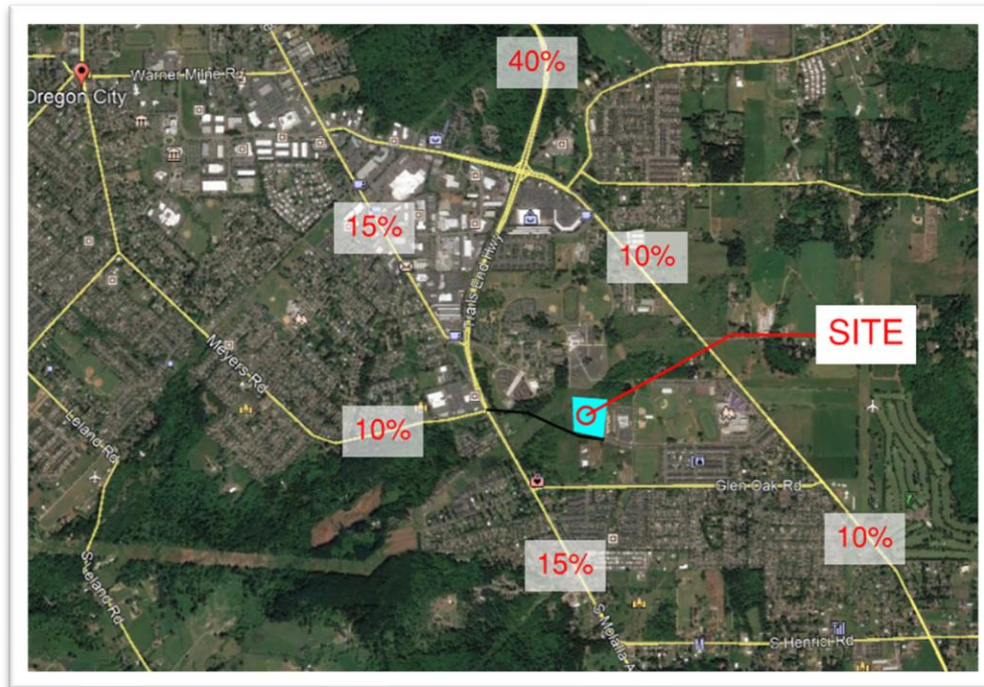


Image Source: Google Earth

STUDY INTERSECTIONS

Per Section 7.2 of the Oregon City Traffic Impact Guidelines, intersections anticipated to experience an increase of 20 or more peak hour trips should be studied. Using the above trip generation and distribution, we propose the following study intersections:

- Meyers Road /Highway 213;
- Molalla Avenue/Highway 213;
- Meyers Road/Advantis Site Access;
- Meyers Road/High School Avenue; and,
- Meyers Road/Beavercreek Road.

Due to the current atypical traffic conditions associated with the COVID-19 pandemic, we propose to develop an existing conditions analysis using historic traffic counts and engineering judgement. The historic turning movement counts will be used to form the basis of the study and will be adjusted to estimate typical conditions in 2020.

In addition, we will provide trip assignment to the Beavercreek Road/Highway 213 intersection for proportional share mitigation tracking purposes.

STUDY TIME PERIODS

We propose to include the following study periods in our analysis:

- Existing weekday AM and PM peak hour
- 2022 Background (pre-development) weekday AM and PM peak hour
- 2022 Total Traffic (with site development) weekday AM and PM peak hour

BACKGROUND GROWTH RATES AND IN-PROCESS TRAFFIC

Per previous TIAs, we propose to use a background growth rate of 0.5 percent per year. Can you please provide us with the relevant in-process traffic for inclusion in the 2022 analyses?

CRASH ANALYSIS

We will request the most recent five years of crash data at the study intersections from ODOT.

NEXT STEPS

We look forward to receiving your feedback on our proposed scope. We appreciate your assistance on this project.

Appendix B Traffic Counts/Volume Development

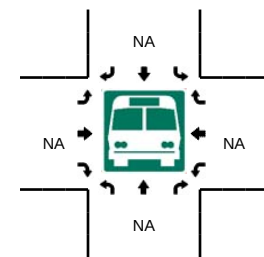
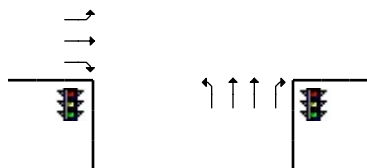
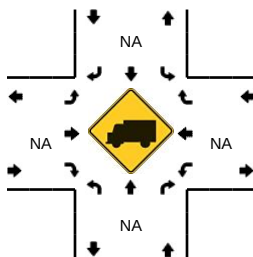
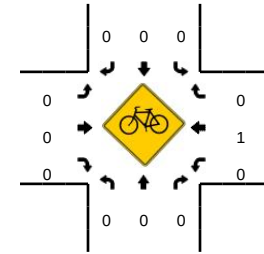
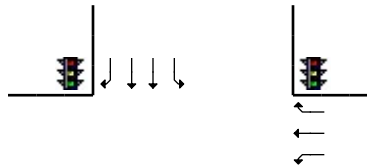
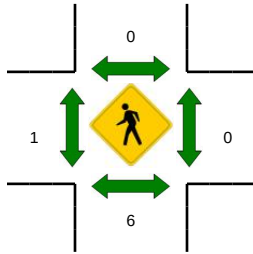
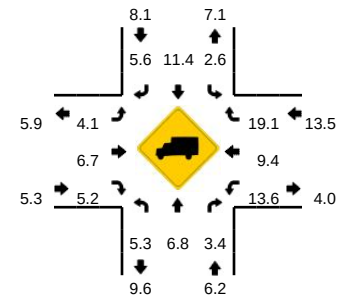
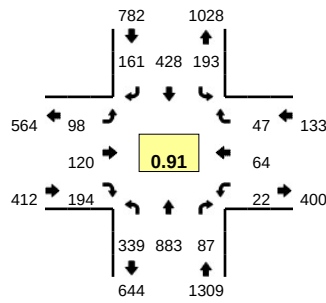
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- Molalla Ave
CITY/STATE: Oregon City, OR

QC JOB #: 14792815
DATE: Tue, Nov 13 2018

Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Molalla Ave (Eastbound)				Molalla Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	73	4	0	7	34	14	0	6	6	10	0	0	1	1	0	173	
7:05 AM	20	85	2	0	9	30	10	0	8	3	5	0	1	4	3	0	180	
7:10 AM	14	74	3	0	6	21	7	0	5	2	6	0	1	7	1	0	147	
7:15 AM	30	92	5	0	4	33	17	0	7	5	5	0	0	1	1	0	200	
7:20 AM	24	86	3	0	6	30	7	0	12	6	12	0	2	4	0	0	192	
7:25 AM	27	77	8	0	4	25	21	0	6	8	18	0	2	2	2	0	200	
7:30 AM	26	60	10	0	15	24	14	0	10	11	12	0	0	1	4	0	187	
7:35 AM	30	98	9	0	24	35	12	0	9	8	19	0	0	4	4	0	252	
7:40 AM	24	67	10	0	18	26	11	0	10	19	10	0	2	9	2	0	208	
7:45 AM	29	98	7	0	26	30	9	0	7	13	20	0	2	6	11	0	258	
7:50 AM	23	67	17	0	23	45	13	0	11	13	22	0	1	6	6	0	247	
7:55 AM	41	63	12	0	18	36	13	0	2	12	12	0	2	5	6	0	222	2466
8:00 AM	20	60	5	0	25	57	22	0	13	13	18	0	2	12	4	0	251	
8:05 AM	25	75	7	0	10	33	16	0	9	6	8	0	1	2	3	0	195	2559
8:10 AM	35	67	4	0	10	29	14	0	14	11	16	0	4	6	3	0	213	2625
8:15 AM	31	70	3	0	3	37	12	0	4	2	20	0	5	3	1	0	191	2616
8:20 AM	27	67	3	0	18	29	14	0	8	8	11	0	1	4	3	0	193	2617
8:25 AM	32	76	4	0	5	43	11	0	5	5	19	0	2	3	2	0	207	2624
8:30 AM	22	75	6	0	13	28	14	0	6	10	19	0	0	4	2	0	199	2636
8:35 AM	36	79	6	0	7	36	9	0	5	5	12	0	0	2	2	0	199	2583
8:40 AM	22	69	12	0	17	32	10	0	11	6	22	0	4	4	7	0	216	2591
8:45 AM	33	66	13	0	18	37	6	0	4	7	24	0	0	5	4	0	217	2550
8:50 AM	24	54	10	0	22	43	16	0	8	13	18	0	2	8	3	0	221	2524
8:55 AM	26	70	13	0	16	34	22	0	4	7	22	0	1	4	3	0	222	2524
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	372	912	144	0	268	444	140	0	80	152	216	0	20	68	92	0	2908	
Heavy Trucks	32	88	0		4	28	12		4	8	12		0	0	16		204	
Pedestrians		4				0				4				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

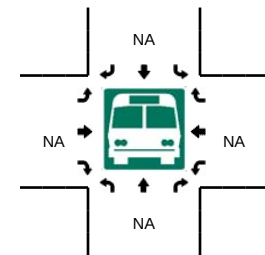
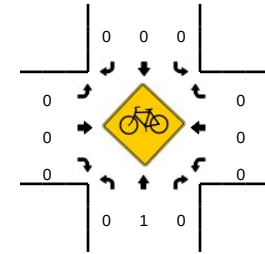
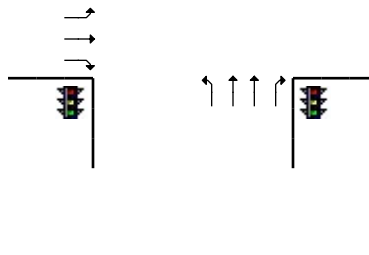
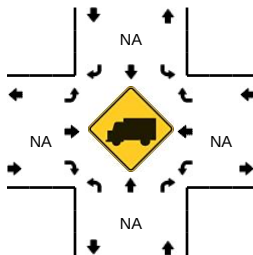
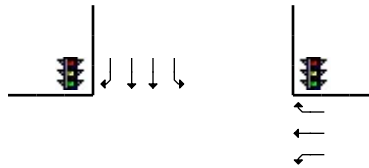
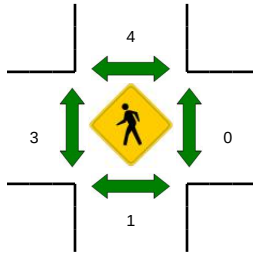
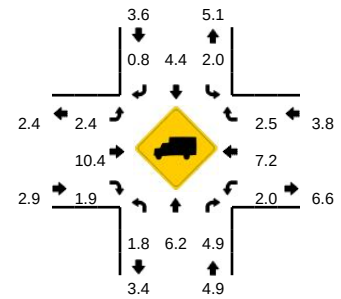
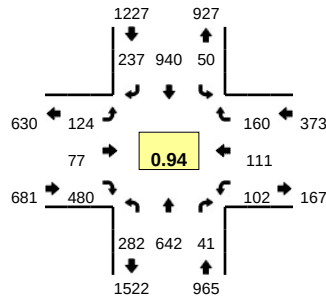
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- Molalla Ave
CITY/STATE: Oregon City, OR

QC JOB #: 14792816
DATE: Tue, Nov 13 2018

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

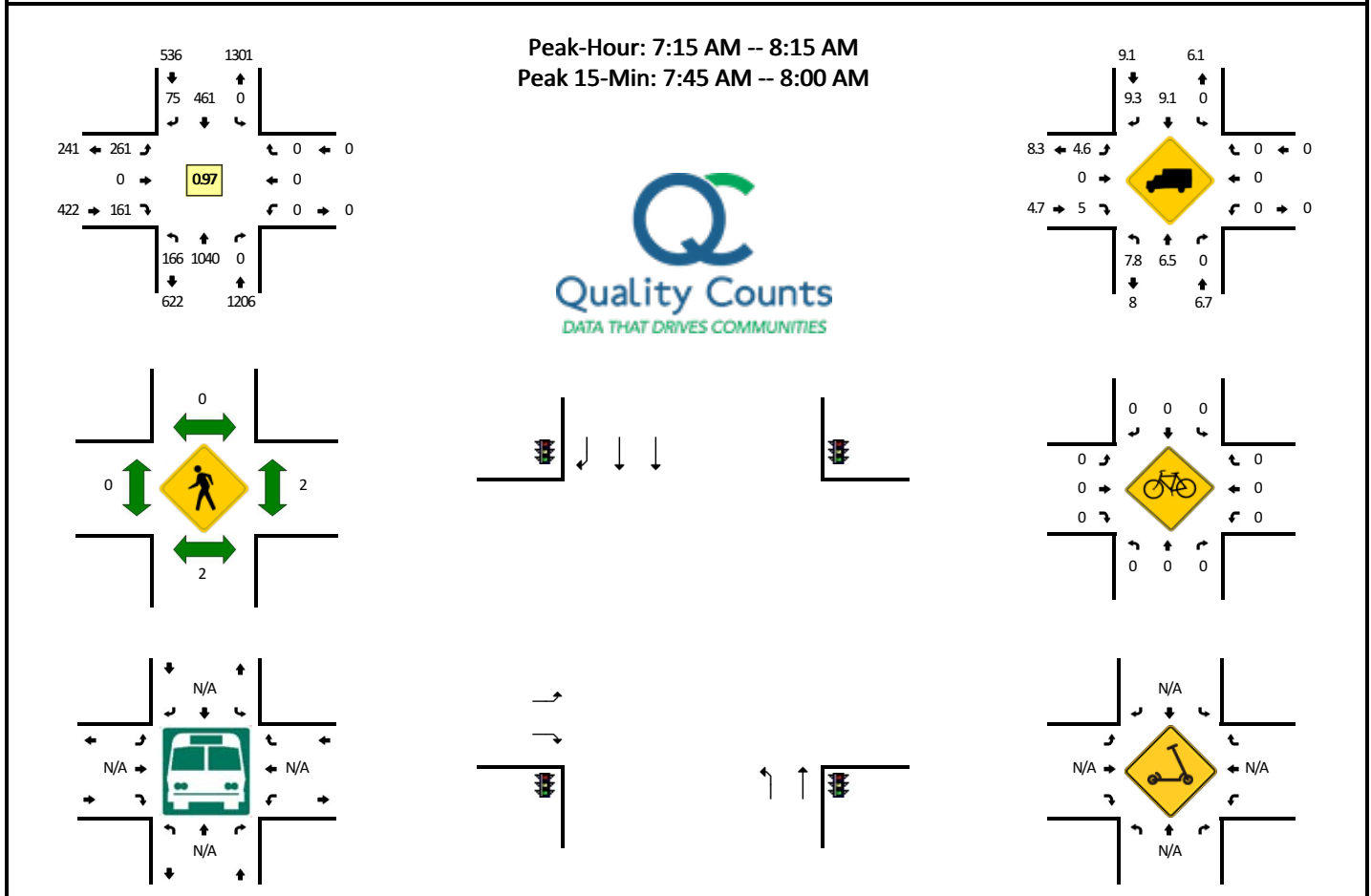


5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Molalla Ave (Eastbound)				Molalla Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	29	55	4	0	1	91	27	0	11	8	48	0	11	12	16	0	313	
4:05 PM	17	54	4	0	2	89	15	0	10	1	42	0	9	7	10	0	260	
4:10 PM	36	58	1	0	2	92	22	0	10	5	47	0	8	5	6	0	292	
4:15 PM	29	50	5	0	2	63	11	0	14	9	42	0	13	7	10	0	255	
4:20 PM	22	56	3	0	7	80	19	0	5	3	39	0	5	9	7	0	255	
4:25 PM	23	64	4	0	4	78	18	1	7	15	31	0	5	7	15	0	272	
4:30 PM	28	49	5	0	3	48	16	0	13	4	51	0	9	17	9	0	252	
4:35 PM	11	50	5	0	6	100	15	0	14	9	32	0	6	8	11	0	267	
4:40 PM	29	57	2	0	5	62	31	0	7	8	33	0	5	5	9	0	253	
4:45 PM	22	59	3	0	8	51	18	0	13	7	45	0	9	12	12	0	259	
4:50 PM	17	41	1	0	8	94	19	0	12	6	30	0	12	11	25	0	276	
4:55 PM	19	49	4	0	1	92	26	0	8	2	40	0	10	11	30	0	292	3246
5:00 PM	26	42	5	0	2	68	15	0	8	4	45	0	8	13	36	0	272	3205
5:05 PM	23	43	4	0	0	78	19	0	7	6	45	0	11	21	15	0	272	3217
5:10 PM	22	57	3	0	5	84	26	0	12	4	34	0	7	11	17	0	282	3207
5:15 PM	20	61	3	0	11	71	18	0	16	7	41	0	6	5	7	0	266	3218
5:20 PM	14	39	4	0	4	86	25	0	11	5	33	0	7	11	15	0	254	3217
5:25 PM	9	56	7	0	8	91	10	0	12	12	34	0	6	6	8	0	259	3204
5:30 PM	22	56	4	0	7	67	17	0	7	9	32	0	5	4	3	0	233	3185
5:35 PM	26	48	3	0	5	89	13	0	15	11	55	0	3	7	8	0	283	3201
5:40 PM	24	30	11	0	9	61	18	0	9	11	37	0	2	6	5	0	223	3171
5:45 PM	27	44	9	0	21	115	19	0	4	2	22	0	5	1	3	0	272	3184
5:50 PM	25	49	5	0	7	69	19	0	10	18	52	0	7	7	2	0	270	3178
5:55 PM	23	33	4	0	7	60	23	0	3	11	33	0	3	4	6	0	210	3096
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	328	668	36	0	20	1088	256	0	124	56	548	0	112	96	128	0	3460	
Heavy Trucks	8	36	0	0	0	48	0	0	12	12	24	0	0	8	4	0	152	
Pedestrians	0	0	0	0	0	8	0	0	0	4	0	0	0	0	0	0	12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Cascade Hwy -- Meyers Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14415403
DATE: Thu, May 11 2017

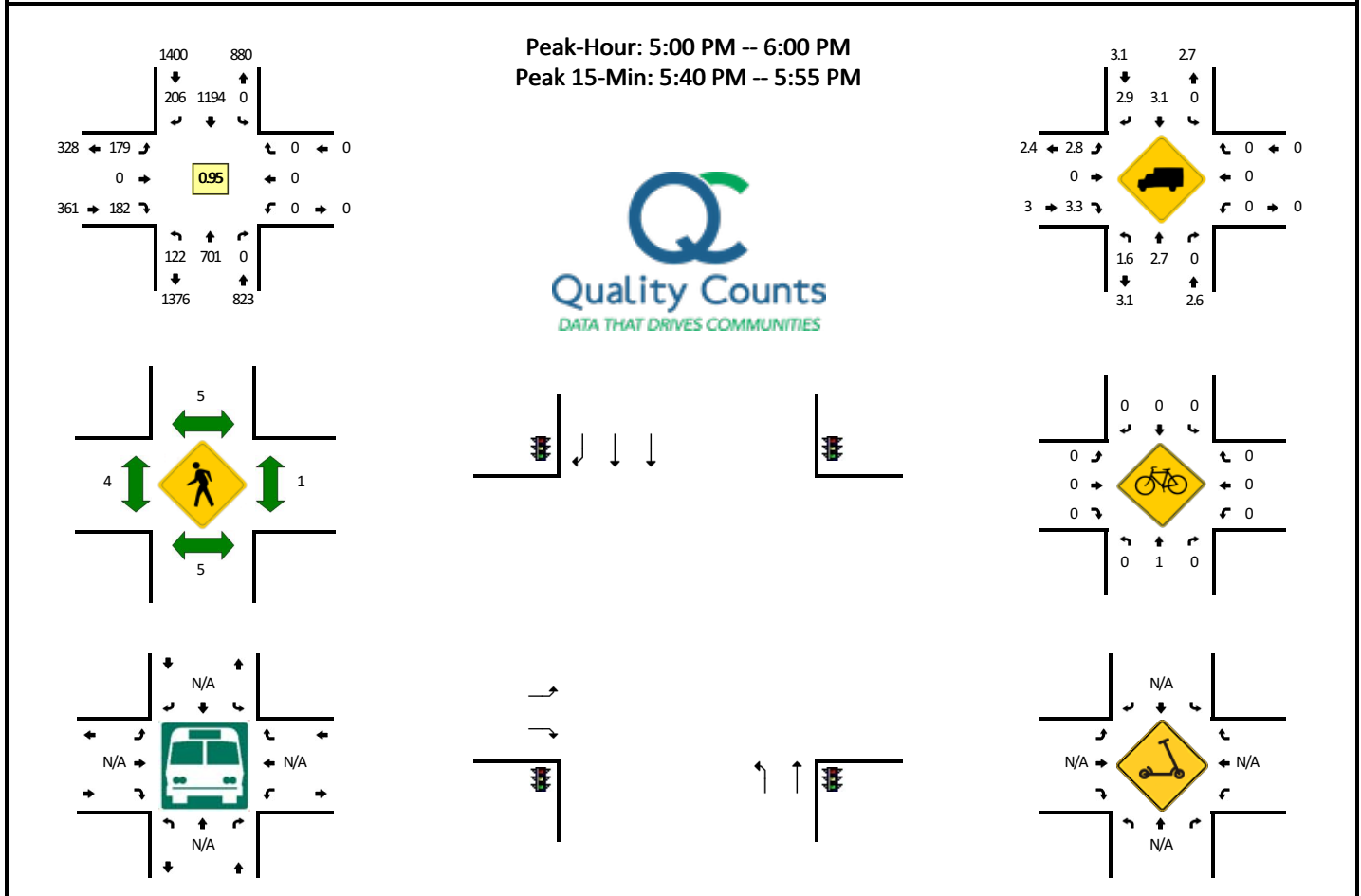


5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	74	0	0	0	31	7	0	27	0	13	0	0	0	0	0	152	
7:05 AM	6	103	0	0	0	28	8	0	16	0	8	0	0	0	0	0	169	
7:10 AM	5	78	0	0	0	35	2	0	15	0	20	0	0	0	0	0	155	
7:15 AM	9	103	0	0	0	36	2	0	17	0	18	0	0	0	0	0	185	
7:20 AM	13	83	0	0	0	30	5	0	19	0	21	0	0	0	0	0	171	
7:25 AM	18	86	0	0	0	24	10	0	19	0	25	0	0	0	0	0	182	
7:30 AM	13	88	0	0	0	36	8	0	29	0	21	0	0	0	0	0	195	
7:35 AM	11	89	0	0	0	36	4	0	16	0	20	0	0	0	0	0	176	
7:40 AM	18	77	0	0	0	32	5	0	24	0	16	0	0	0	0	0	172	
7:45 AM	22	90	0	0	0	48	8	0	21	0	7	0	0	0	0	0	196	
7:50 AM	7	90	0	0	0	33	3	0	28	0	4	0	0	0	0	0	165	
7:55 AM	19	83	0	0	0	63	6	0	16	0	7	0	0	0	0	0	194	2112
8:00 AM	13	82	0	0	0	32	3	0	30	0	4	0	0	0	0	0	164	2124
8:05 AM	15	91	0	0	0	50	9	0	16	0	6	0	0	0	0	0	187	2142
8:10 AM	8	78	0	0	0	41	12	0	26	0	12	0	0	0	0	0	177	2164
8:15 AM	10	84	0	0	0	33	11	0	16	0	7	0	0	0	0	0	161	2140
8:20 AM	14	70	0	0	0	44	4	0	23	0	6	0	0	0	0	0	161	2130
8:25 AM	16	82	0	0	0	38	7	0	10	0	7	0	0	0	0	0	160	2108
8:30 AM	8	85	0	0	0	41	7	0	18	0	3	0	0	0	0	0	162	2075
8:35 AM	6	95	0	0	0	45	9	0	12	0	9	0	0	0	0	0	176	2075
8:40 AM	12	75	0	0	0	38	4	0	20	0	8	0	0	0	0	0	157	2060
8:45 AM	12	83	0	0	0	36	14	0	9	0	13	0	0	0	0	0	167	2031
8:50 AM	5	82	0	0	0	36	4	0	19	0	18	0	0	0	0	0	164	2030
8:55 AM	8	78	0	0	0	53	5	0	12	0	4	0	0	0	0	0	160	1996
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	192	1052	0	0	0	576	68	0	260	0	72	0	0	0	0	0	2220	
Heavy Trucks	12	64	0	0	0	68	4	0	12	0	0	0	0	0	0	0	160	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

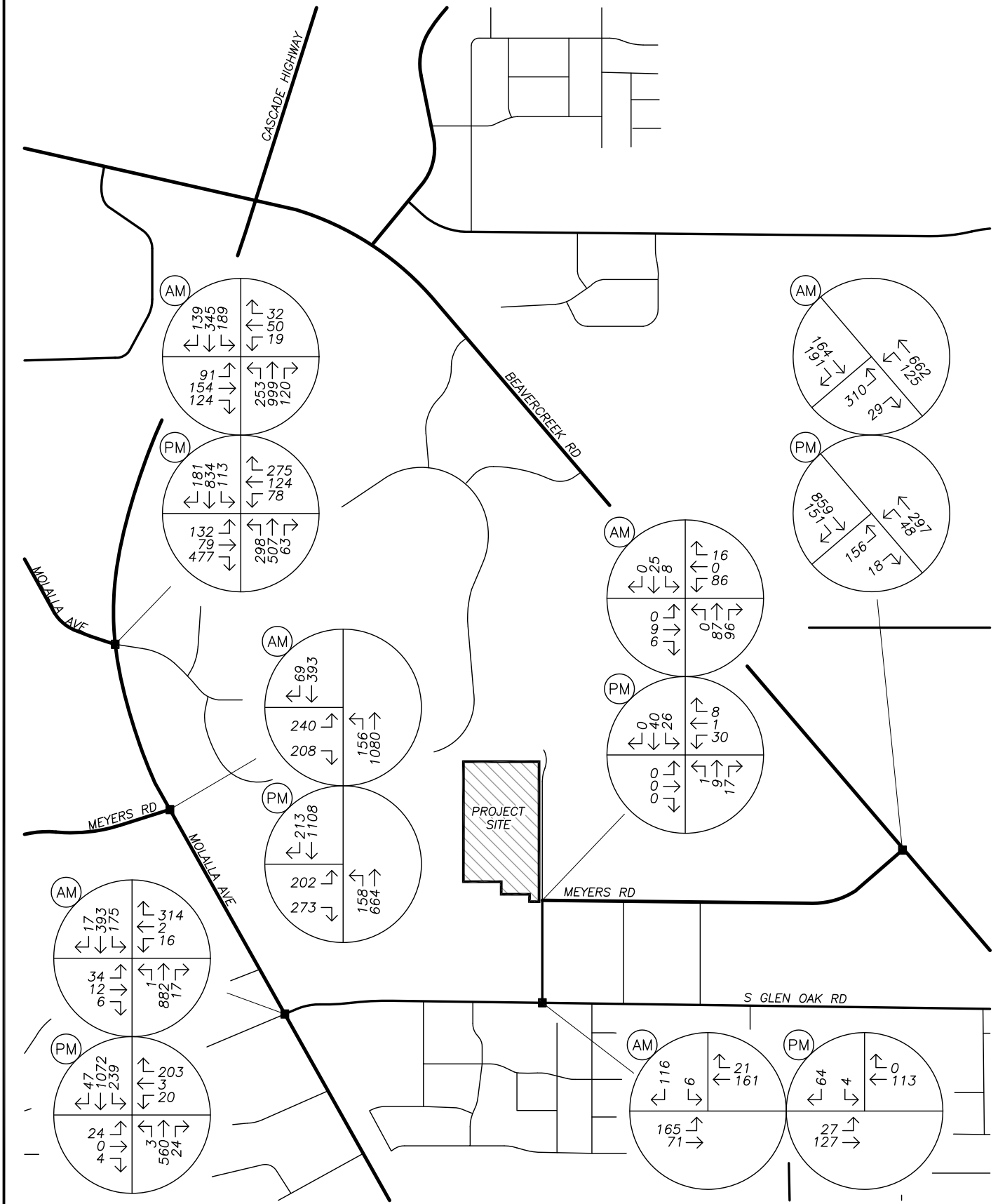
LOCATION: Cascade Hwy -- Meyers Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14415404
DATE: Thu, May 11 2017



5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	51	0	0	0	78	11	0	20	0	21	0	0	0	0	0	193	
4:05 PM	11	76	0	0	0	103	19	0	12	0	14	0	0	0	0	0	235	
4:10 PM	4	70	0	0	0	109	16	0	5	0	14	0	0	0	0	0	218	
4:15 PM	12	78	0	0	0	62	6	0	16	0	24	0	0	0	0	0	198	
4:20 PM	18	82	0	0	0	88	7	0	13	0	11	0	0	0	0	0	219	
4:25 PM	19	48	0	0	0	78	10	0	10	0	13	0	0	0	0	0	178	
4:30 PM	10	42	0	0	0	80	8	0	15	0	14	0	0	0	0	0	169	
4:35 PM	6	50	0	0	0	93	9	0	12	0	13	0	0	0	0	0	183	
4:40 PM	5	56	0	0	0	81	18	0	14	0	20	0	0	0	0	0	194	
4:45 PM	5	75	0	0	0	82	10	0	15	0	13	0	0	0	0	0	200	
4:50 PM	17	51	0	0	0	105	5	0	15	0	8	0	0	0	0	0	201	
4:55 PM	5	57	0	0	0	109	19	0	14	0	14	0	0	0	0	0	218	2406
5:00 PM	13	66	0	0	0	100	13	0	14	0	15	0	0	0	0	0	221	2434
5:05 PM	14	51	0	0	0	72	12	0	12	0	20	0	0	0	0	0	181	2380
5:10 PM	6	67	0	0	0	112	18	0	15	0	14	0	0	0	0	0	232	2394
5:15 PM	10	50	0	0	0	102	25	0	13	0	8	0	0	0	0	0	208	2404
5:20 PM	14	50	0	0	0	80	14	0	15	0	20	0	0	0	0	0	193	2378
5:25 PM	8	60	0	0	0	129	8	0	10	0	15	0	0	0	0	0	230	2430
5:30 PM	10	59	0	0	0	109	17	0	9	0	9	0	0	0	0	0	213	2474
5:35 PM	14	50	0	0	0	87	17	0	20	0	15	0	0	0	0	0	203	2494
5:40 PM	7	62	0	0	0	107	21	0	14	0	13	0	0	0	0	0	224	2524
5:45 PM	8	77	0	0	0	102	23	0	20	0	12	0	0	0	0	0	242	2566
5:50 PM	10	53	0	0	0	94	13	0	25	0	21	0	0	0	0	0	216	2581
5:55 PM	8	56	0	0	0	100	25	0	12	0	20	0	0	0	0	0	221	2584
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	100	768	0	0	0	1212	228	0	236	0	184	0	0	0	0	0	2728	
Heavy Trucks	0	40	0	0	0	44	8	0	8	0	0	0	0	0	0	0	100	
Buses																		
Pedestrians		8				8				4				4			24	
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4	
Scooters																		

Comments:



TRAFFIC VOLUMES
Year 2016 Background Plus Site Conditions
AM & PM Peak Hours

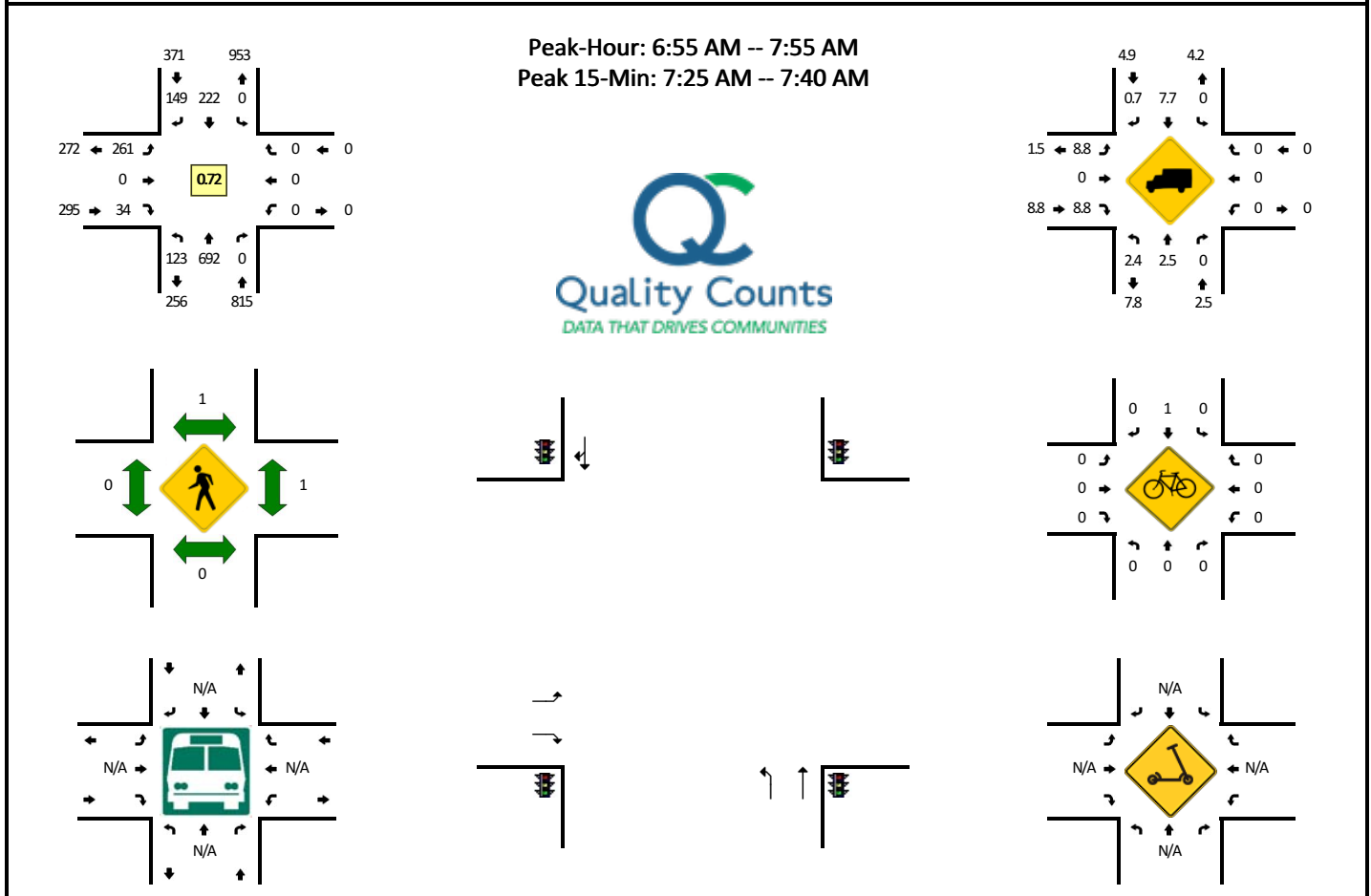


FIGURE 5

PAGE

LOCATION: S Beavercreek Rd -- Meyers Rd
CITY/STATE: Oregon City, OR

QC JOB #: 15225501
DATE: Tue, Feb 23 2016



5-Min Count Period Beginning At	S Beavercreek Rd (Northbound)				S Beavercreek Rd (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:00 AM	0	15	0	0	0	2	0	0	1	0	0	0	0	0	0	0	18	
5:05 AM	1	18	0	0	0	2	0	0	3	0	0	0	0	0	0	0	24	
5:10 AM	0	21	0	0	0	2	0	0	0	0	0	0	0	0	0	0	23	
5:15 AM	0	27	0	0	0	5	1	0	0	0	0	0	0	0	0	0	33	
5:20 AM	0	27	0	0	0	1	0	0	3	0	2	0	0	0	0	0	33	
5:25 AM	0	29	0	0	0	5	1	0	1	0	0	0	0	0	0	0	36	
5:30 AM	0	33	0	0	0	0	1	0	2	0	0	0	0	0	0	0	36	
5:35 AM	0	27	0	0	0	0	1	0	3	0	1	0	0	0	0	0	32	
5:40 AM	1	33	0	0	0	0	0	0	2	0	0	0	0	0	0	0	36	
5:45 AM	0	40	0	0	0	4	1	0	0	0	0	0	0	0	0	0	45	
5:50 AM	2	41	0	0	0	4	1	1	0	0	0	0	0	0	0	0	49	
5:55 AM	0	35	0	0	0	6	1	0	4	0	0	0	0	0	0	0	46	411
6:00 AM	0	45	0	0	0	3	2	0	5	0	0	0	0	0	0	0	55	448
6:05 AM	3	51	0	0	0	2	0	0	1	0	0	0	0	0	0	0	57	481
6:10 AM	2	48	0	0	0	2	1	0	7	0	0	0	0	0	0	0	60	518
6:15 AM	1	52	0	0	0	1	1	0	5	0	3	0	0	0	0	0	63	548
6:20 AM	0	51	0	0	0	13	5	0	7	0	2	0	0	0	0	0	78	593
6:25 AM	0	62	0	0	0	5	2	0	20	0	0	0	0	0	0	0	89	646
6:30 AM	3	52	0	0	0	4	4	0	11	0	0	0	0	0	0	0	74	684
6:35 AM	5	64	0	0	0	6	2	0	8	0	1	0	0	0	0	0	86	738
6:40 AM	2	64	0	0	0	4	2	0	11	0	0	0	0	0	0	0	83	785
6:45 AM	4	64	0	0	0	9	7	0	12	0	1	0	0	0	0	0	97	837
6:50 AM	3	51	0	0	0	10	3	0	9	0	3	0	0	0	0	0	79	867
6:55 AM	4	58	0	0	0	9	10	0	12	0	2	0	0	0	0	0	95	916
7:00 AM	9	46	0	0	0	7	4	0	13	0	1	0	0	0	0	0	80	941
7:05 AM	6	65	0	0	0	15	2	0	21	0	5	0	0	0	0	0	114	998
7:10 AM	9	52	0	0	0	16	8	0	22	0	2	0	0	0	0	0	109	1047
7:15 AM	9	44	0	0	0	16	12	0	24	0	1	0	0	0	0	0	106	1090
7:20 AM	12	61	0	0	0	17	21	0	29	0	2	0	0	0	0	0	142	1154
7:25 AM	30	51	0	0	0	22	30	0	18	0	7	0	0	0	0	0	158	1223
7:30 AM	19	66	0	0	0	26	28	0	33	0	5	0	0	0	0	0	177	1326
7:35 AM	18	69	0	0	0	34	19	0	36	0	3	0	0	0	0	0	179	1419
7:40 AM	5	52	0	0	0	18	10	0	27	0	3	0	0	0	0	0	115	1451
7:45 AM	1	71	0	0	0	24	2	0	15	0	3	0	0	0	0	0	116	1470
7:50 AM	1	57	0	0	0	18	3	0	11	0	0	0	0	0	0	0	90	1481
7:55 AM	2	55	0	0	0	15	3	0	4	0	1	0	0	0	0	0	80	1466
8:00 AM	3	53	0	0	0	16	3	0	9	0	1	0	0	0	0	0	85	1471
8:05 AM	3	63	0	0	0	13	5	0	7	0	0	0	0	0	0	0	91	

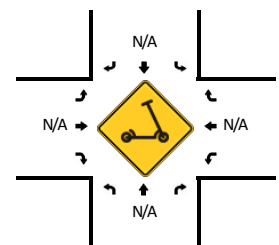
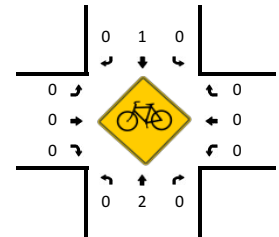
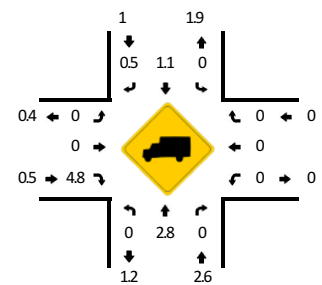
5-Min Count Period Beginning At	S Beavercreek Rd (Northbound)				S Beavercreek Rd (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Item 9a. Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
8:10 AM	4	51	0	0	0	9	2	0	8	0	0	0	0	0	0	0	74	1413
8:15 AM	0	50	0	0	0	13	3	0	8	0	0	0	0	0	0	0	74	1381
8:20 AM	1	61	0	0	0	18	2	0	2	0	0	0	0	0	0	0	84	1323
8:25 AM	1	43	0	0	0	13	2	0	7	0	1	0	0	0	0	0	67	1232
8:30 AM	0	45	0	0	0	14	3	0	2	0	0	0	0	0	0	0	64	1119
8:35 AM	2	44	0	0	0	14	2	0	4	0	0	0	0	0	0	0	66	1006
8:40 AM	1	38	0	0	0	28	5	0	6	0	2	0	0	0	0	0	80	971
8:45 AM	1	58	0	0	0	18	3	0	8	0	0	0	0	0	0	0	88	943
8:50 AM	0	29	0	0	0	24	4	0	8	0	0	0	0	0	0	0	65	918
8:55 AM	1	33	0	0	0	17	6	0	8	0	0	0	0	0	0	0	65	903
9:00 AM	0	29	0	0	0	15	4	0	6	0	0	0	0	0	0	0	54	872
9:05 AM	0	37	0	0	0	20	4	0	9	0	0	0	0	0	0	0	70	851
9:10 AM	0	24	0	0	0	17	0	0	7	0	0	0	0	0	0	0	48	825
9:15 AM	0	29	0	0	0	19	5	0	0	0	0	0	0	0	0	0	53	804
9:20 AM	1	55	0	0	0	16	2	0	5	0	1	0	0	0	0	0	80	800
9:25 AM	0	28	0	0	0	20	1	0	4	0	0	0	0	0	0	0	53	786
9:30 AM	1	41	0	0	0	15	3	0	4	0	1	0	0	0	0	0	65	787
9:35 AM	0	41	0	0	0	14	3	0	5	0	0	0	0	0	0	0	63	784
9:40 AM	0	37	0	0	0	16	0	0	2	0	0	0	0	0	0	0	55	759
9:45 AM	0	44	0	0	0	24	3	0	7	0	0	0	0	0	0	0	78	749
9:50 AM	0	30	0	0	0	13	3	0	4	0	0	0	0	0	0	0	50	734
9:55 AM	0	29	0	0	0	16	1	0	4	0	0	0	0	0	0	0	50	719
10:00 AM	1	20	0	0	0	17	8	0	3	0	0	0	0	0	0	0	49	714
10:05 AM	1	34	0	0	0	21	3	0	5	0	0	0	0	0	0	0	64	708
10:10 AM	1	22	0	0	0	13	7	0	5	0	0	0	0	0	0	0	48	708
10:15 AM	0	28	0	0	0	23	4	0	9	0	2	0	0	0	0	0	66	721
10:20 AM	0	37	0	0	0	15	6	0	41	0	6	0	0	0	0	0	105	746
10:25 AM	1	36	0	0	0	22	1	0	10	0	1	0	0	0	0	0	71	764
10:30 AM	0	32	0	0	0	25	5	0	5	0	1	0	0	0	0	0	68	767
10:35 AM	1	43	0	0	0	22	5	0	4	0	0	0	0	0	0	0	75	779
10:40 AM	0	22	0	0	0	27	6	0	7	0	0	0	0	0	0	0	62	786
10:45 AM	1	25	0	0	0	26	8	0	7	0	0	0	0	0	0	0	67	775
10:50 AM	1	30	0	0	0	33	6	0	7	0	0	0	0	0	0	0	77	802
10:55 AM	0	18	0	0	0	20	1	0	8	0	1	0	0	0	0	0	48	800
11:00 AM	0	37	0	0	0	23	4	0	11	0	0	0	0	0	0	0	75	826
11:05 AM	0	31	0	0	0	20	2	0	5	0	0	0	0	0	0	0	58	820
11:10 AM	0	29	0	0	0	17	2	0	5	0	0	0	0	0	0	0	53	825
11:15 AM	1	28	0	0	0	27	2	0	2	0	0	0	0	0	0	0	60	819
11:20 AM	0	30	0	0	0	29	2	0	5	0	0	0	0	0	0	0	66	780
11:25 AM	0	32	0	0	0	27	1	0	6	0	0	0	0	0	0	0	66	775
11:30 AM	0	32	0	0	0	11	1	0	6	0	1	0	0	0	0	0	51	758
11:35 AM	0	34	0	0	0	24	2	0	19	0	1	0	0	0	0	0	80	763
11:40 AM	3	32	0	0	0	26	3	0	26	0	1	0	0	0	0	0	91	792
11:45 AM	0	20	0	0	0	30	2	0	7	0	1	0	0	0	0	0	60	785
11:50 AM	0	34	0	0	0	34	3	0	4	0	1	0	0	0	0	0	76	784
11:55 AM	0	27	0	0	0	25	8	0	3	0	0	0	0	0	0	0	63	799
12:00 PM	5	19	0	0	0	39	8	0	2	0	3	0	0	0	0	0	76	800
12:05 PM	2	34	0	0	0	24	11	0	7	0	0	0	0	0	0	0	78	820
12:10 PM	1	21	0	0	0	29	9	0	6	0	1	0	0	0	0	0	67	834
12:15 PM	1	33	0	0	0	29	4	0	10	0	0	0	0	0	0	0	77	851
12:20 PM	0	28	0	0	0	32	2	0	8	0	0	0	0	0	0	0	70	855
12:25 PM	0	30	0	0	0	30	0	0	6	0	0	0	0	0	0	0	66	855
12:30 PM	0	27	0	0	0	32	2	0	4	0	1	0	0	0	0	0	66	870
12:35 PM	0	35	0	0	0	23	1	0	5	0	0	0	0	0	0	0	64	854
12:40 PM	1	20	0	0	0	36	2	0	5	0	0	0	0	0	0	0	64	827
12:45 PM	0	41	0	0	0	35	7	0	3	0	2	0	0	0	0	0	88	855
12:50 PM	0	38	0	0	0	24	7	0	6	0	1	0	0	0	0	0	76	855
12:55 PM	0	23	0	0	0	22	1	0	6	0	0	0	0	0	0	0	52	844
1:00 PM	0	26	0	0	0	29	2	0	2	0	2	0	0	0	0	0	61	829
1:05 PM	0	34	0	0	0	31	2	0	3	0	0	0	0	0	0	0	70	821
1:10 PM	1	33	0	0	0	35	0	0	5	0	0	0	0	0	0	0	74	828
1:15 PM	1	26	0	0	0	33	5	0	1	0	0	0	0	0	0	0	66	817
1:20 PM	0	29	0	0	0	26	2	0	3	0	2	0	0	0	0	0	62	809
1:25 PM	1	31	0	0	0	22	2	0	4	0	1	0	0	0	0	0	61	804
1:30 PM	2	34	0	0	0	25	2	0	9	0	1	0	0	0	0	0	73	811
1:35 PM	0	25	0	0	0	30	2	0	12	0	3	0	0	0	0	0	72	819
1:40 PM	1	38	0	0	0	47	2	0	12	0	0	0	0	0	0	0	100	855
1:45 PM	0	32	0	0	0	24	2	0	5	0	3	0	0	0	0	0	66	833
1:50 PM	0	23	0	0	0	36	4	0	4	0	0	0	0	0	0	0	67	824
1:55 PM	0	26	0	0	0	40	5	1	7	0	1	0	0	0	0	0	80	852
2:00 PM	0	29	0	0	0	30	3	0	1	0	1	0	0	0	0	0	64	855
2:05 PM	0	22	0	0	0	40	1	0	7	0	0	0	0	0	0	0	70	855
2:10 PM	0	29	0	0	0	33	5	0	1	0	0	0	0	0	0	0	68	849
2:15 PM	1	30	0	0	0	34	1	0	3	0	0	0	0	0	0	0	69	852
2:20 PM	1	16	0	0	0	47	6	0	6	0	0	0	0	0	0	0	76	866
2:25 PM	0	26	0	0	0	40	5	0	8	0	0	0	0	0	0	0	79	884
2:30 PM	4	37	0	0	0	23	6	0	7	0	0	0	0	0	0	0	77	888
2:35 PM	2	25	0	0	0	42	5	0	8	0	0	0	0	0	0	0	82	898
2:40 PM	1	25	0	0	0	44	10	0	6	0	3	0	0	0	0	0	89	887
2:45 PM	4	38	0	0	0	47	19	0	14	0	3	0	0	0	0	0	125	946
2:50 PM	3	31	0	0	0	57	12	0	17	0	5	0	0	0	0	0	125	1004
2:55 PM	3	26	0	0	0	54	10	0	50	0	8	0	0	0	0	0	151	1075
3:00 PM	3	38	0	0	0	48	7	0	59	0	5	0	0	0	0	0	160	1171
3:05 PM	0	24	0	0	0	42	12	0	53	0	7	0	0	0	0	0	138	1239
3:10 PM	1	34	0	0	0	55	14	0	34	0	2	0	0	0	0	0	140	1311
3:15 PM	0	28	0	0	0	53	8	0	17	0	2	0	0	0	0	0	108	1350
3:20 PM	0	36	0	0	0	39	8	0	20	0	2	0	0	0	0	0	105	1379
3:25 PM	0	28	0	0	0	37	9	0	16	0	3	0	0	0	0	0	93	
3:30 PM	3	28	0	0	0	59	7	0	10	0	3	0	0	0	0	0	11	

5-Min Count Period Beginning At	S Beavercreek Rd (Northbound)				S Beavercreek Rd (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Item 9a. Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:35 PM	1	28	0	0	0	60	8	0	4	0	2	0	0	0	0	0	103	1447
3:40 PM	2	37	0	0	0	51	7	0	28	0	2	0	0	0	0	0	127	1485
3:45 PM	2	52	0	0	0	59	14	0	12	0	3	0	0	0	0	0	142	1502
3:50 PM	4	24	0	0	0	65	11	0	18	0	3	0	0	0	0	0	125	1502
3:55 PM	1	31	0	0	0	71	15	0	13	0	3	0	0	0	0	0	134	1485
4:00 PM	2	39	0	0	0	64	9	0	11	0	3	0	0	0	0	0	128	1453
4:05 PM	1	25	0	0	0	49	11	0	17	0	3	0	0	0	0	0	106	1421
4:10 PM	4	30	0	0	0	70	14	0	7	0	0	0	0	0	0	0	125	1406
4:15 PM	5	32	0	0	0	74	15	0	7	0	4	0	0	0	0	0	137	1435
4:20 PM	2	32	0	0	0	65	14	0	13	0	2	0	0	0	0	0	128	1458
4:25 PM	1	24	0	0	0	66	11	0	7	0	2	0	0	0	0	0	111	1476
4:30 PM	0	36	0	0	0	80	13	0	5	0	0	0	0	0	0	0	134	1500
4:35 PM	3	34	0	0	0	66	11	0	5	0	2	0	0	0	0	0	121	1518
4:40 PM	1	25	0	0	0	78	12	0	6	0	1	0	0	0	0	0	123	1514
4:45 PM	0	30	0	0	0	70	13	0	8	0	0	0	0	0	0	0	121	1493
4:50 PM	1	28	0	0	0	64	11	0	8	0	1	0	0	0	0	0	113	1481
4:55 PM	2	36	0	0	0	63	8	0	4	0	3	0	0	0	0	0	116	1463
5:00 PM	1	21	0	0	0	77	13	0	5	0	3	0	0	0	0	0	120	1455
5:05 PM	1	42	0	0	0	67	17	0	4	0	4	0	0	0	0	0	135	1484
5:10 PM	0	20	0	0	0	76	12	0	8	0	2	0	0	0	0	0	118	1477
5:15 PM	3	26	0	0	0	68	10	0	9	0	0	0	0	0	0	0	116	1456
5:20 PM	4	22	0	0	0	65	19	0	18	0	1	0	0	0	0	0	129	1457
5:25 PM	2	37	0	0	0	77	17	0	9	0	1	0	0	0	0	0	143	1489
5:30 PM	3	36	0	0	0	68	24	0	9	0	2	0	0	0	0	0	142	1497
5:35 PM	1	34	0	0	0	59	23	0	19	0	1	0	0	0	0	0	137	1513
5:40 PM	2	26	0	0	0	68	15	0	14	0	1	0	0	0	0	0	126	1516
5:45 PM	3	23	0	0	0	73	18	0	18	0	2	0	0	0	0	0	137	1532
5:50 PM	2	39	0	0	0	62	18	0	23	0	3	0	0	0	0	0	147	1566
5:55 PM	3	32	0	0	0	60	16	0	26	0	2	0	0	0	0	0	139	1589
6:00 PM	1	32	0	0	0	77	19	0	9	0	2	0	0	0	0	0	140	1609
6:05 PM	1	30	0	0	0	71	20	0	11	0	4	0	0	0	0	0	137	1611
6:10 PM	0	25	0	0	0	48	9	0	5	0	0	0	0	0	0	0	87	1580
6:15 PM	0	28	0	0	0	45	11	0	8	0	1	0	0	0	0	0	93	1557
6:20 PM	4	23	0	0	0	51	9	0	2	0	0	0	0	0	0	0	89	1517
6:25 PM	5	37	0	0	0	67	8	0	5	0	1	0	0	0	0	0	123	1497
6:30 PM	3	32	0	0	0	48	6	0	8	0	0	0	0	0	0	0	97	1452
6:35 PM	1	18	0	0	0	37	10	0	20	0	4	0	0	0	0	0	90	1405
6:40 PM	0	24	0	0	0	44	12	0	8	0	3	0	0	0	0	0	91	1370
6:45 PM	1	21	0	0	0	52	12	0	15	0	2	0	0	0	0	0	103	1336
6:50 PM	1	29	0	0	0	27	13	0	7	0	1	0	0	0	0	0	78	1267
6:55 PM	0	8	0	0	0	38	6	0	2	0	0	0	0	0	0	0	54	1182
7:00 PM	3	26	0	0	0	47	12	0	2	0	1	0	0	0	0	0	91	1133
7:05 PM	2	15	0	0	0	36	11	0	6	0	0	0	0	0	0	0	70	1066
7:10 PM	2	10	0	0	0	46	10	0	7	0	0	0	0	0	0	0	75	1054
7:15 PM	0	10	0	0	0	21	6	0	5	0	0	0	0	0	0	0	42	1003
7:20 PM	3	12	0	0	0	34	8	0	3	0	1	0	0	0	0	0	61	975
7:25 PM	2	14	0	0	0	28	7	0	8	0	3	0	0	0	0	0	62	914
7:30 PM	2	9	0	0	0	30	14	0	27	0	5	0	0	0	0	0	87	904
7:35 PM	1	15	0	0	0	39	7	0	25	0	2	0	0	0	0	0	89	903
7:40 PM	1	16	0	0	0	26	9	1	15	0	1	0	0	0	0	0	69	881
7:45 PM	1	7	0	0	0	17	3	0	7	0	0	0	0	0	0	0	35	813
7:50 PM	0	14	0	0	0	27	3	0	9	0	1	0	0	0	0	0	54	789
7:55 PM	1	8	0	0	0	25	1	0	6	0	0	0	0	0	0	0	41	776
8:00 PM	1	14	0	0	0	31	4	0	5	0	1	0	0	0	0	0	56	741
8:05 PM	1	11	0	0	0	28	6	0	8	0	0	0	0	0	0	0	54	725
8:10 PM	1	11	0	0	0	17	3	0	7	0	1	0	0	0	0	0	40	690
8:15 PM	0	11	0	0	0	30	5	0	8	0	0	0	0	0	0	0	54	702
8:20 PM	0	10	0	0	0	23	1	0	5	0	1	0	0	0	0	0	40	681
8:25 PM	1	8	0	0	0	19	3	0	5	0	1	0	0	0	0	0	37	656
8:30 PM	1	8	0	0	0	18	2	0	9	0	2	0	0	0	0	0	40	609
8:35 PM	1	9	0	0	0	26	2	0	7	0	1	0	0	0	0	0	46	566
8:40 PM	1	12	0	0	0	19	3	0	8	0	1	0	0	0	0	0	44	541
8:45 PM	3	8	0	0	0	16	5	1	5	0	0	0	0	0	0	0	38	544
8:50 PM	2	9	0	0	0	9	0	0	2	0	2	0	0	0	0	0	24	514
8:55 PM	3	5	0	0	0	17	4	0	6	0	0	0	0	0	0	0	35	508
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	268	744	0	0	0	328	308	0	348	0	60	0	0	0	0	0	2056	
Heavy Trucks	0	8	0	0	0	28	4	0	4	0	4	0	0	0	0	0	48	
Buses																		
Pedestrians		0				4				0				4			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		
Comments:																		

Report generated on 6/1/2020 5:27 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

QC JOB #: 13715403
DATE: Tue, Feb 23 2016

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5-Min Count Period Beginning At	S Beavercreek Rd (Northbound)				S Beavercreek Rd (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Item 9a. Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
8:15 AM	0	50	0	0	0	13	3	0	8	0	0	0	0	0	0	0	74	1381
8:20 AM	1	61	0	0	0	18	2	0	2	0	0	0	0	0	0	0	84	1323
8:25 AM	1	43	0	0	0	13	2	0	7	0	1	0	0	0	0	0	67	1232
8:30 AM	0	45	0	0	0	14	3	0	2	0	0	0	0	0	0	0	64	1119
8:35 AM	2	44	0	0	0	14	2	0	4	0	0	0	0	0	0	0	66	1006
8:40 AM	1	38	0	0	0	28	5	0	6	0	2	0	0	0	0	0	80	971
8:45 AM	1	58	0	0	0	18	3	0	8	0	0	0	0	0	0	0	88	943
8:50 AM	0	29	0	0	0	24	4	0	8	0	0	0	0	0	0	0	65	918
8:55 AM	1	33	0	0	0	17	6	0	8	0	0	0	0	0	0	0	65	903
9:00 AM	0	29	0	0	0	15	4	0	6	0	0	0	0	0	0	0	54	872
9:05 AM	0	37	0	0	0	20	4	0	9	0	0	0	0	0	0	0	70	851
9:10 AM	0	24	0	0	0	17	0	0	7	0	0	0	0	0	0	0	48	825
9:15 AM	0	29	0	0	0	19	5	0	0	0	0	0	0	0	0	0	53	804
9:20 AM	1	55	0	0	0	16	2	0	5	0	1	0	0	0	0	0	80	800
9:25 AM	0	28	0	0	0	20	1	0	4	0	0	0	0	0	0	0	53	786
9:30 AM	1	41	0	0	0	15	3	0	4	0	1	0	0	0	0	0	65	787
9:35 AM	0	41	0	0	0	14	3	0	5	0	0	0	0	0	0	0	63	784
9:40 AM	0	37	0	0	0	16	0	0	2	0	0	0	0	0	0	0	55	759
9:45 AM	0	44	0	0	0	24	3	0	7	0	0	0	0	0	0	0	78	749
9:50 AM	0	30	0	0	0	13	3	0	4	0	0	0	0	0	0	0	50	734
9:55 AM	0	29	0	0	0	16	1	0	4	0	0	0	0	0	0	0	50	719
10:00 AM	1	20	0	0	0	17	8	0	3	0	0	0	0	0	0	0	49	714
10:05 AM	1	34	0	0	0	21	3	0	5	0	0	0	0	0	0	0	64	708
10:10 AM	1	22	0	0	0	13	7	0	5	0	0	0	0	0	0	0	48	708
10:15 AM	0	28	0	0	0	23	4	0	9	0	2	0	0	0	0	0	66	721
10:20 AM	0	37	0	0	0	15	6	0	41	0	6	0	0	0	0	0	105	746
10:25 AM	1	36	0	0	0	22	1	0	10	0	1	0	0	0	0	0	71	764
10:30 AM	0	32	0	0	0	25	5	0	5	0	1	0	0	0	0	0	68	767
10:35 AM	1	43	0	0	0	22	5	0	4	0	0	0	0	0	0	0	75	779
10:40 AM	0	22	0	0	0	27	6	0	7	0	0	0	0	0	0	0	62	786
10:45 AM	1	25	0	0	0	26	8	0	7	0	0	0	0	0	0	0	67	775
10:50 AM	1	30	0	0	0	33	6	0	7	0	0	0	0	0	0	0	77	802
10:55 AM	0	18	0	0	0	20	1	0	8	0	1	0	0	0	0	0	48	800
11:00 AM	0	37	0	0	0	23	4	0	11	0	0	0	0	0	0	0	75	826
11:05 AM	0	31	0	0	0	20	2	0	5	0	0	0	0	0	0	0	58	820
11:10 AM	0	29	0	0	0	17	2	0	5	0	0	0	0	0	0	0	53	825
11:15 AM	1	28	0	0	0	27	2	0	2	0	0	0	0	0	0	0	60	819
11:20 AM	0	30	0	0	0	29	2	0	5	0	0	0	0	0	0	0	66	780
11:25 AM	0	32	0	0	0	27	1	0	6	0	0	0	0	0	0	0	66	775
11:30 AM	0	32	0	0	0	11	1	0	6	0	1	0	0	0	0	0	51	758
11:35 AM	0	34	0	0	0	24	2	0	19	0	1	0	0	0	0	0	80	763
11:40 AM	3	32	0	0	0	26	3	0	26	0	1	0	0	0	0	0	91	792
11:45 AM	0	20	0	0	0	30	2	0	7	0	1	0	0	0	0	0	60	785
11:50 AM	0	34	0	0	0	34	3	0	4	0	1	0	0	0	0	0	76	784
11:55 AM	0	27	0	0	0	25	8	0	3	0	0	0	0	0	0	0	63	799
12:00 PM	5	19	0	0	0	39	8	0	2	0	3	0	0	0	0	0	76	800
12:05 PM	2	34	0	0	0	24	11	0	7	0	0	0	0	0	0	0	78	820
12:10 PM	1	21	0	0	0	29	9	0	6	0	1	0	0	0	0	0	67	834
12:15 PM	1	33	0	0	0	29	4	0	10	0	0	0	0	0	0	0	77	851
12:20 PM	0	28	0	0	0	32	2	0	8	0	0	0	0	0	0	0	70	855
12:25 PM	0	30	0	0	0	30	0	0	6	0	0	0	0	0	0	0	66	855
12:30 PM	0	27	0	0	0	32	2	0	4	0	1	0	0	0	0	0	66	870
12:35 PM	0	35	0	0	0	23	1	0	5	0	0	0	0	0	0	0	64	854
12:40 PM	1	20	0	0	0	36	2	0	5	0	0	0	0	0	0	0	64	827
12:45 PM	0	41	0	0	0	35	7	0	3	0	2	0	0	0	0	0	88	855
12:50 PM	0	38	0	0	0	24	7	0	6	0	1	0	0	0	0	0	76	855
12:55 PM	0	23	0	0	0	22	1	0	6	0	0	0	0	0	0	0	52	844
1:00 PM	0	26	0	0	0	29	2	0	2	0	2	0	0	0	0	0	61	829
1:05 PM	0	34	0	0	0	31	2	0	3	0	0	0	0	0	0	0	70	821
1:10 PM	1	33	0	0	0	35	0	0	5	0	0	0	0	0	0	0	74	828
1:15 PM	1	26	0	0	0	33	5	0	1	0	0	0	0	0	0	0	66	817
1:20 PM	0	29	0	0	0	26	2	0	3	0	2	0	0	0	0	0	62	809
1:25 PM	1	31	0	0	0	22	2	0	4	0	1	0	0	0	0	0	61	804
1:30 PM	2	34	0	0	0	25	2	0	9	0	1	0	0	0	0	0	73	811
1:35 PM	0	25	0	0	0	30	2	0	12	0	3	0	0	0	0	0	72	819
1:40 PM	1	38	0	0	0	47	2	0	12	0	0	0	0	0	0	0	100	855
1:45 PM	0	32	0	0	0	24	2	0	5	0	3	0	0	0	0	0	66	833
1:50 PM	0	23	0	0	0	36	4	0	4	0	0	0	0	0	0	0	67	824
1:55 PM	0	26	0	0	0	40	5	1	7	0	1	0	0	0	0	0	80	852
2:00 PM	0	29	0	0	0	30	3	0	1	0	1	0	0	0	0	0	64	855
2:05 PM	0	22	0	0	0	40	1	0	7	0	0	0	0	0	0	0	70	855
2:10 PM	0	29	0	0	0	33	5	0	1	0	0	0	0	0	0	0	68	849
2:15 PM	1	30	0	0	0	34	1	0	3	0	0	0	0	0	0	0	69	852
2:20 PM	1	16	0	0	0	47	6	0	6	0	0	0	0	0	0	0	76	866
2:25 PM	0	26	0	0	0	40	5	0	8	0	0	0	0	0	0	0	79	884
2:30 PM	4	37	0	0	0	23	6	0	7	0	0	0	0	0	0	0	77	888
2:35 PM	2	25	0	0	0	42	5	0	8	0	0	0	0	0	0	0	82	898
2:40 PM	1	25	0	0	0	44	10	0	6	0	3	0	0	0	0	0	89	887
2:45 PM	4	38	0	0	0	47	19	0	14	0	3	0	0	0	0	0	125	946
2:50 PM	3	31	0	0	0	57	12	0	17	0	5	0	0	0	0	0	125	1004
2:55 PM	3	26	0	0	0	54	10	0	50	0	8	0	0	0	0	0	151	1075
3:00 PM	3	38	0	0	0	48	7	0	59	0	5	0	0	0	0	0	160	1171
3:05 PM	0	24	0	0	0	42	12	0	53	0	7	0	0	0	0	0	138	1239
3:10 PM	1	34	0	0	0	55	14	0	34	0	2	0	0	0	0	0	140	1311
3:15 PM	0	28	0	0	0	53	8	0	17	0	2	0	0	0	0	0	108	1350
3:20 PM	0	36	0	0	0	39	8	0	20	0	2	0	0	0	0	0	105	1379
3:25 PM	0	28	0	0	0	37	9	0	16	0	3	0	0	0	0	0	93	
3:30 PM	3	28	0	0	0	59	7	0	10	0	3	0	0	0	0	0	11	

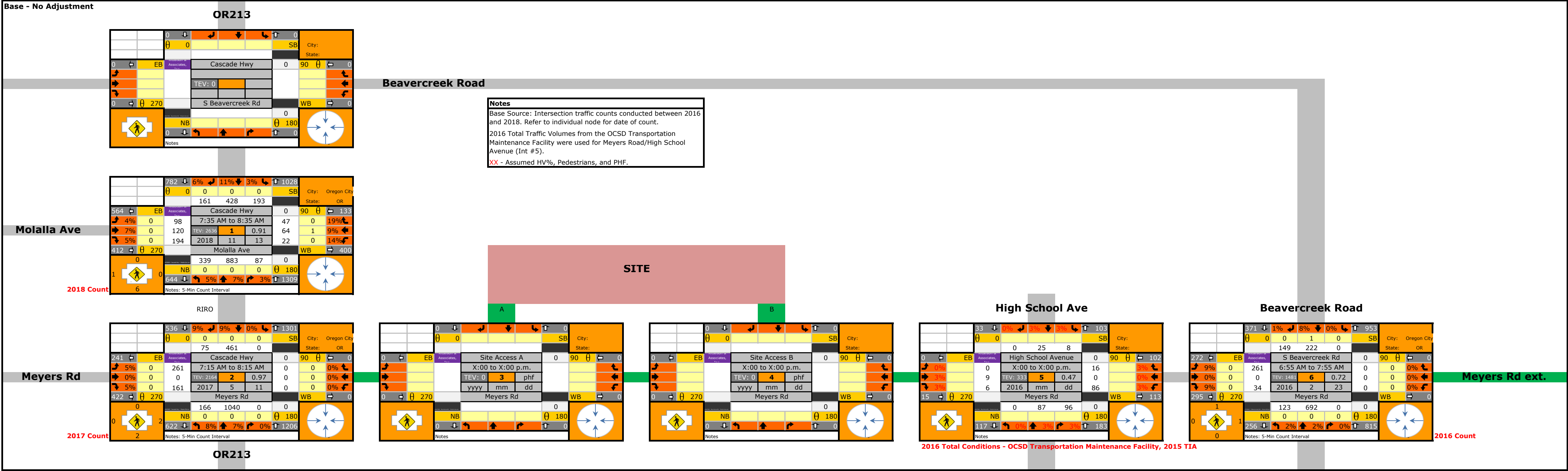
5-Min Count Period Beginning At	S Beavercreek Rd (Northbound)				S Beavercreek Rd (Southbound)				Meyers Rd (Eastbound)				Meyers Rd (Westbound)				Total	Item 9a. Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:35 PM	1	28	0	0	0	60	8	0	4	0	2	0	0	0	0	0	103	1447
3:40 PM	2	37	0	0	0	51	7	0	28	0	2	0	0	0	0	0	127	1485
3:45 PM	2	52	0	0	0	59	14	0	12	0	3	0	0	0	0	0	142	1502
3:50 PM	4	24	0	0	0	65	11	0	18	0	3	0	0	0	0	0	125	1502
3:55 PM	1	31	0	0	0	71	15	0	13	0	3	0	0	0	0	0	134	1485
4:00 PM	2	39	0	0	0	64	9	0	11	0	3	0	0	0	0	0	128	1453
4:05 PM	1	25	0	0	0	49	11	0	17	0	3	0	0	0	0	0	106	1421
4:10 PM	4	30	0	0	0	70	14	0	7	0	0	0	0	0	0	0	125	1406
4:15 PM	5	32	0	0	0	74	15	0	7	0	4	0	0	0	0	0	137	1435
4:20 PM	2	32	0	0	0	65	14	0	13	0	2	0	0	0	0	0	128	1458
4:25 PM	1	24	0	0	0	66	11	0	7	0	2	0	0	0	0	0	111	1476
4:30 PM	0	36	0	0	0	80	13	0	5	0	0	0	0	0	0	0	134	1500
4:35 PM	3	34	0	0	0	66	11	0	5	0	2	0	0	0	0	0	121	1518
4:40 PM	1	25	0	0	0	78	12	0	6	0	1	0	0	0	0	0	123	1514
4:45 PM	0	30	0	0	0	70	13	0	8	0	0	0	0	0	0	0	121	1493
4:50 PM	1	28	0	0	0	64	11	0	8	0	1	0	0	0	0	0	113	1481
4:55 PM	2	36	0	0	0	63	8	0	4	0	3	0	0	0	0	0	116	1463
5:00 PM	1	21	0	0	0	77	13	0	5	0	3	0	0	0	0	0	120	1455
5:05 PM	1	42	0	0	0	67	17	0	4	0	4	0	0	0	0	0	135	1484
5:10 PM	0	20	0	0	0	76	12	0	8	0	2	0	0	0	0	0	118	1477
5:15 PM	3	26	0	0	0	68	10	0	9	0	0	0	0	0	0	0	116	1456
5:20 PM	4	22	0	0	0	65	19	0	18	0	1	0	0	0	0	0	129	1457
5:25 PM	2	37	0	0	0	77	17	0	9	0	1	0	0	0	0	0	143	1489
5:30 PM	3	36	0	0	0	68	24	0	9	0	2	0	0	0	0	0	142	1497
5:35 PM	1	34	0	0	0	59	23	0	19	0	1	0	0	0	0	0	137	1513
5:40 PM	2	26	0	0	0	68	15	0	14	0	1	0	0	0	0	0	126	1516
5:45 PM	3	23	0	0	0	73	18	0	18	0	2	0	0	0	0	0	137	1532
5:50 PM	2	39	0	0	0	62	18	0	23	0	3	0	0	0	0	0	147	1566
5:55 PM	3	32	0	0	0	60	16	0	26	0	2	0	0	0	0	0	139	1589
6:00 PM	1	32	0	0	0	77	19	0	9	0	2	0	0	0	0	0	140	1609
6:05 PM	1	30	0	0	0	71	20	0	11	0	4	0	0	0	0	0	137	1611
6:10 PM	0	25	0	0	0	48	9	0	5	0	0	0	0	0	0	0	87	1580
6:15 PM	0	28	0	0	0	45	11	0	8	0	1	0	0	0	0	0	93	1557
6:20 PM	4	23	0	0	0	51	9	0	2	0	0	0	0	0	0	0	89	1517
6:25 PM	5	37	0	0	0	67	8	0	5	0	1	0	0	0	0	0	123	1497
6:30 PM	3	32	0	0	0	48	6	0	8	0	0	0	0	0	0	0	97	1452
6:35 PM	1	18	0	0	0	37	10	0	20	0	4	0	0	0	0	0	90	1405
6:40 PM	0	24	0	0	0	44	12	0	8	0	3	0	0	0	0	0	91	1370
6:45 PM	1	21	0	0	0	52	12	0	15	0	2	0	0	0	0	0	103	1336
6:50 PM	1	29	0	0	0	27	13	0	7	0	1	0	0	0	0	0	78	1267
6:55 PM	0	8	0	0	0	38	6	0	2	0	0	0	0	0	0	0	54	1182
7:00 PM	3	26	0	0	0	47	12	0	2	0	1	0	0	0	0	0	91	1133
7:05 PM	2	15	0	0	0	36	11	0	6	0	0	0	0	0	0	0	70	1066
7:10 PM	2	10	0	0	0	46	10	0	7	0	0	0	0	0	0	0	75	1054
7:15 PM	0	10	0	0	0	21	6	0	5	0	0	0	0	0	0	0	42	1003
7:20 PM	3	12	0	0	0	34	8	0	3	0	1	0	0	0	0	0	61	975
7:25 PM	2	14	0	0	0	28	7	0	8	0	3	0	0	0	0	0	62	914
7:30 PM	2	9	0	0	0	30	14	0	27	0	5	0	0	0	0	0	87	904
7:35 PM	1	15	0	0	0	39	7	0	25	0	2	0	0	0	0	0	89	903
7:40 PM	1	16	0	0	0	26	9	1	15	0	1	0	0	0	0	0	69	881
7:45 PM	1	7	0	0	0	17	3	0	7	0	0	0	0	0	0	0	35	813
7:50 PM	0	14	0	0	0	27	3	0	9	0	1	0	0	0	0	0	54	789
7:55 PM	1	8	0	0	0	25	1	0	6	0	0	0	0	0	0	0	41	776
8:00 PM	1	14	0	0	0	31	4	0	5	0	1	0	0	0	0	0	56	741
8:05 PM	1	11	0	0	0	28	6	0	8	0	0	0	0	0	0	0	54	725
8:10 PM	1	11	0	0	0	17	3	0	7	0	1	0	0	0	0	0	40	690
8:15 PM	0	11	0	0	0	30	5	0	8	0	0	0	0	0	0	0	54	702
8:20 PM	0	10	0	0	0	23	1	0	5	0	1	0	0	0	0	0	40	681
8:25 PM	1	8	0	0	0	19	3	0	5	0	1	0	0	0	0	0	37	656
8:30 PM	1	8	0	0	0	18	2	0	9	0	2	0	0	0	0	0	40	609
8:35 PM	1	9	0	0	0	26	2	0	7	0	1	0	0	0	0	0	46	566
8:40 PM	1	12	0	0	0	19	3	0	8	0	1	0	0	0	0	0	44	541
8:45 PM	3	8	0	0	0	16	5	1	5	0	0	0	0	0	0	0	38	544
8:50 PM	2	9	0	0	0	9	0	0	2	0	2	0	0	0	0	0	24	514
8:55 PM	3	5	0	0	0	17	4	0	6	0	0	0	0	0	0	0	35	508
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	24	412	0	0	0	796	212	0	232	0	28	0	0	0	0	0	1704	
Heavy Trucks	0	20	0	0	0	12	0	0	0	0	0	0	0	0	0	0	32	
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 4/22/2020 9:47 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

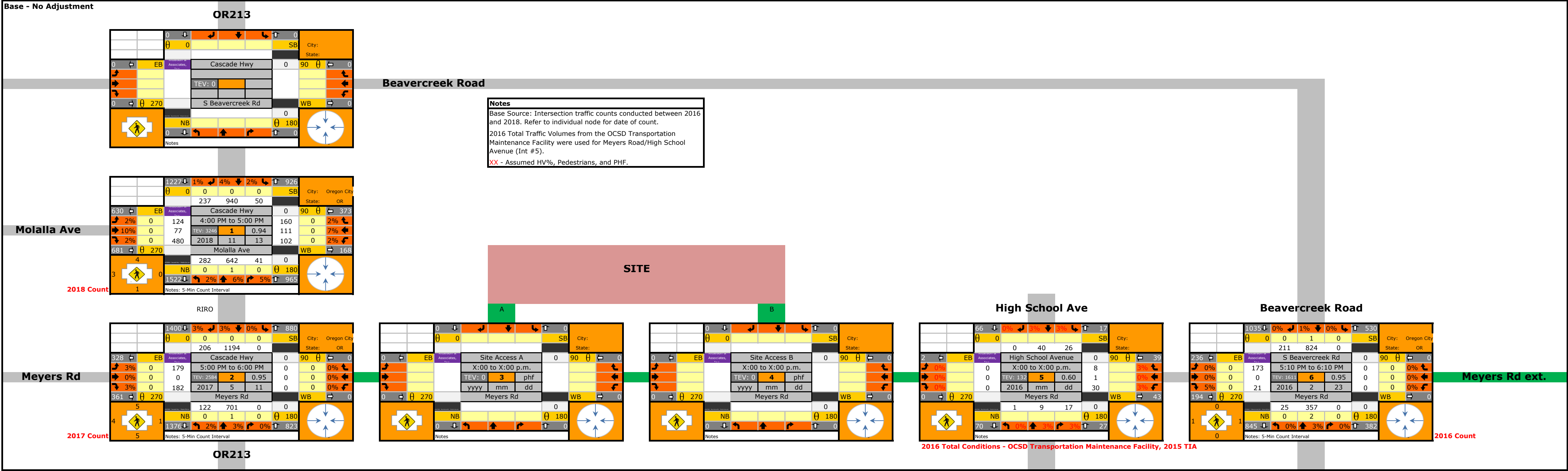
EXISTING WEEKDAY AM PEAK HOUR

Base - No Adjustment



EXISTING WEEKDAY PM PEAK HOUR

Base - No Adjustment



Growth Adjustment (2020 Volumes)	
2020	100
2021	100
2022	100
2023	100
2024	100
2025	100
2026	100
2027	100
2028	100
2029	100
2030	100
2031	100
2032	100
2033	100
2034	100
2035	100
2036	100
2037	100
2038	100
2039	100
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2085	100
2086	100
2087	100
2088	100
2089	100
2090	100
2091	100
2092	100
2093	100
2094	100
2095	100
2096	100
2097	100
2098	100
2099	100
2100	100

Beavercreek Road

Notes	
	A 2% compounded growth rate was applied to a all base counts (no adjustment) to determine 2020 existing traffic. The adjustment was applied to all intersection movements.
	Manual balancing to account for difference in northbound traffic volumes (+19 proportional to turning movement volumes).
XX	- Assumed HV%, Pedestrians, and PHF.

Molalla Ave

Counted	201
Present	202
Years	2
Growth Rate	2%
Growth Adjustment	1.04

0.67 0.07 Proportion for Balancing
0

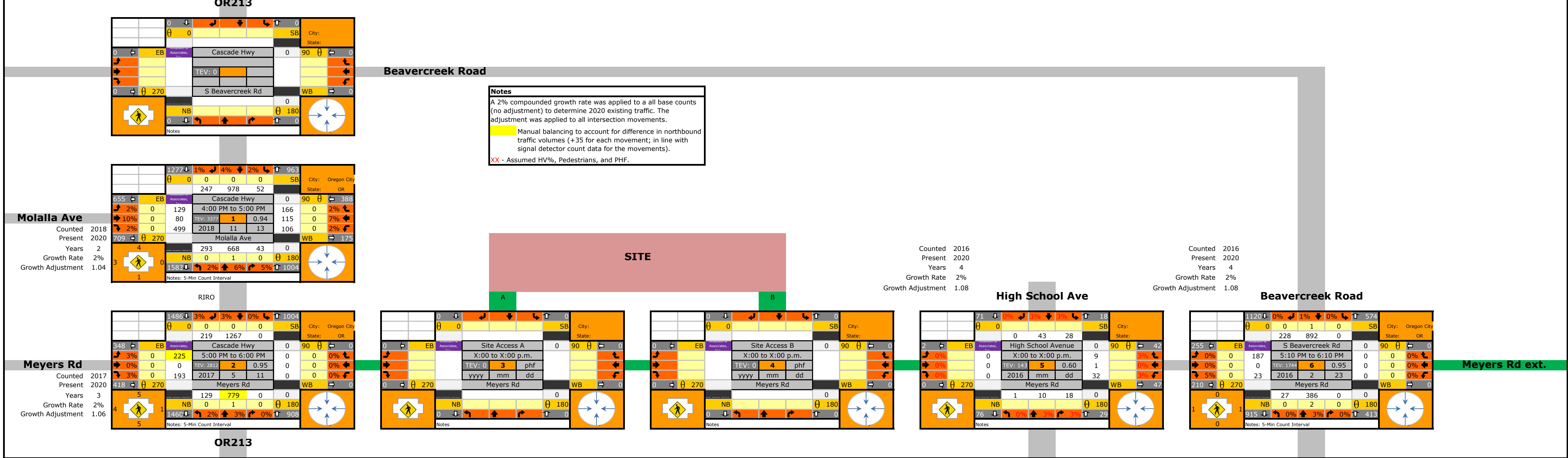
Meyers Rd

Counted	201
Present	202
Years	3
Growth Rate	2%
Growth Adjustment	1.06

OR213[illegible]

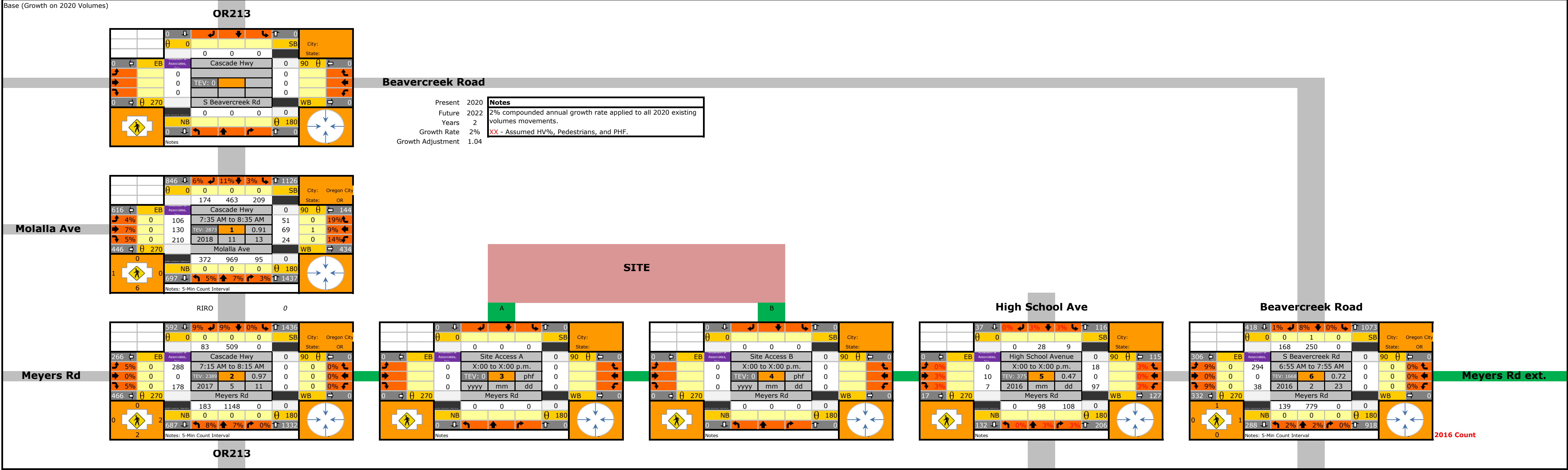
EXISTING WEEKDAY PM PEAK HOUR

Growth Adjustment and Balancing (2020 Volumes)					
Category	Volume	Weighted Volume	Adjusted Volume	Balanced Volume	Total Volume
Agriculture	100	100	100	100	100
Manufacturing	200	200	200	200	200
Services	300	300	300	300	300
Government	100	100	100	100	100
Healthcare	150	150	150	150	150
Educational Institutions	80	80	80	80	80
Retail	120	120	120	120	120
Food & Beverage	90	90	90	90	90
Transportation	70	70	70	70	70
Utilities	60	60	60	60	60
Real Estate	50	50	50	50	50
Finance	40	40	40	40	40
Insurance	30	30	30	30	30
Professional Services	20	20	20	20	20
Non-Profit Organizations	10	10	10	10	10
Military	5	5	5	5	5
Other	5	5	5	5	5
Total	1,000	1,000	1,000	1,000	1,000

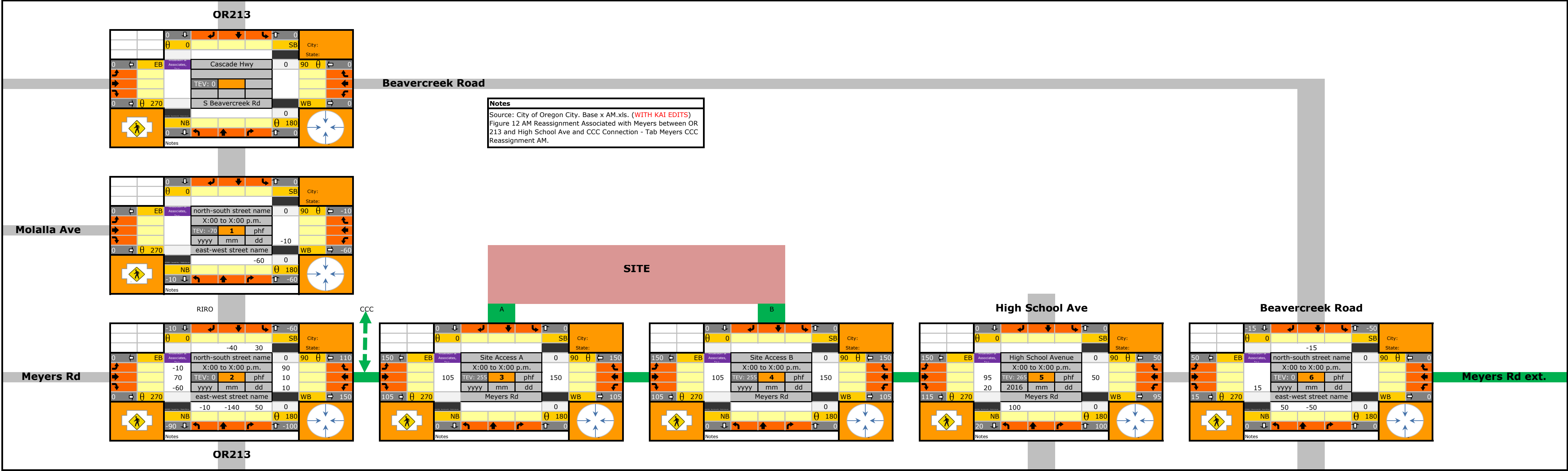


2022 BACKGROUND WEEKDAY AM PEAK HOUR

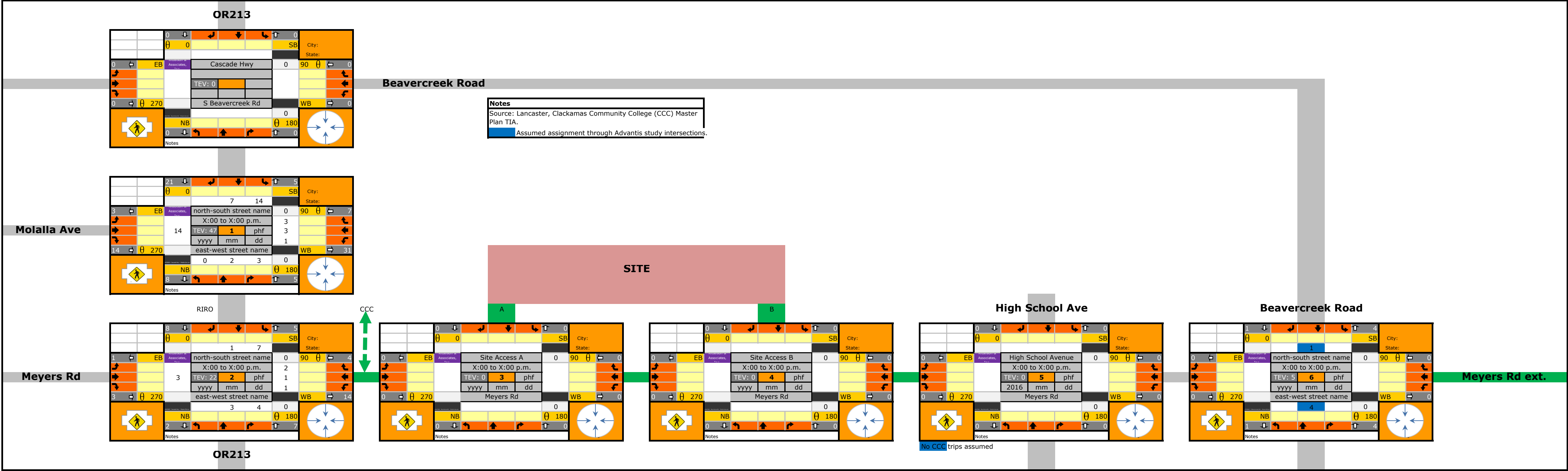
Base (Growth on 2020 Volumes)



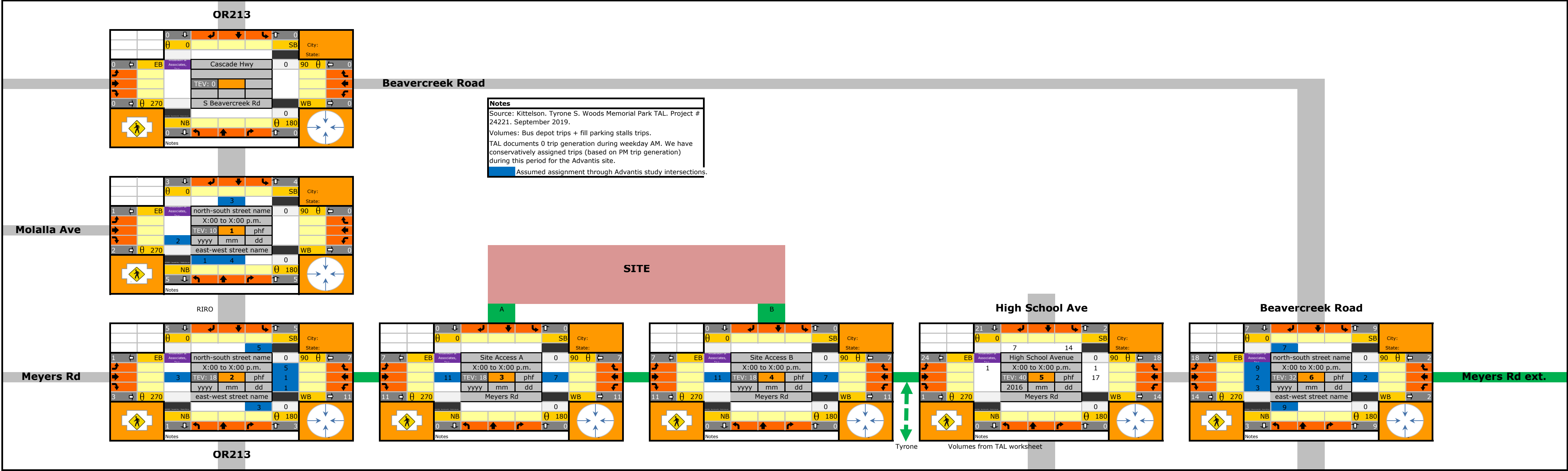
AM - Reassignment Associated with Meyers between OR 213 and High School Ave and CCC Connection



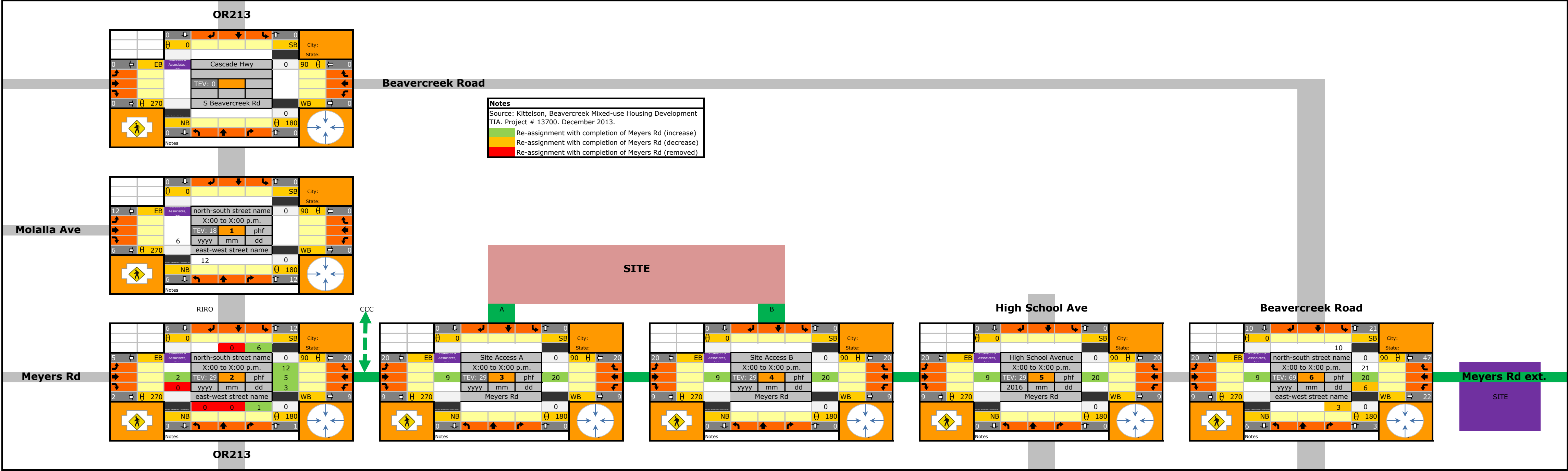
IN-PROCESS TRIPS - AM - CCC MASTER PLAN



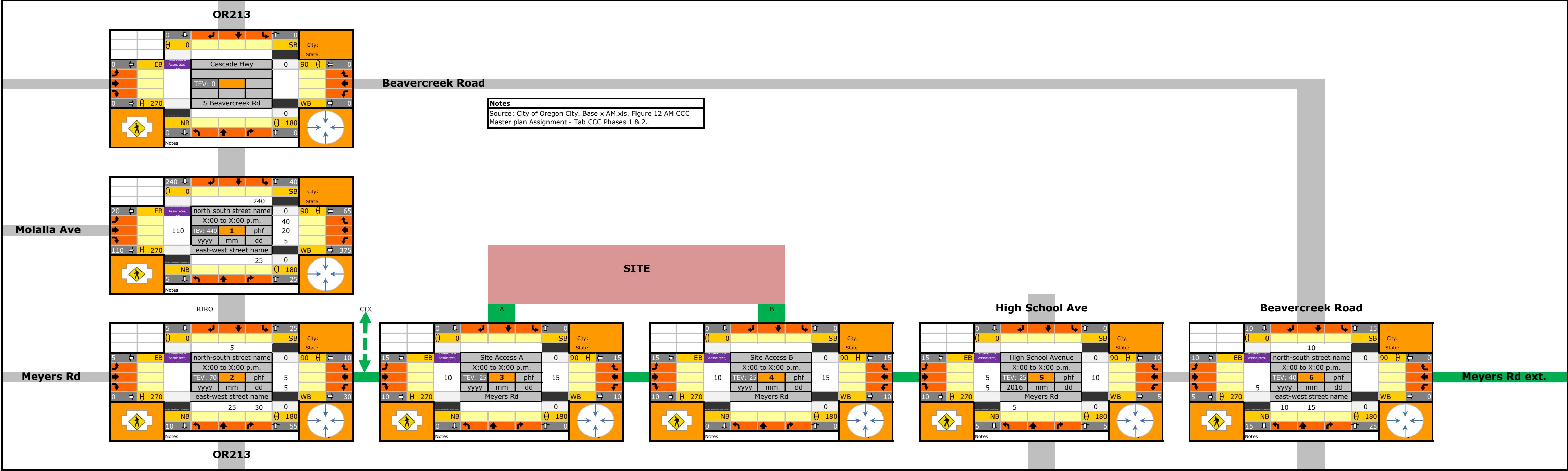
IN-PROCESS TRIPS - AM - TYRONE S. WOODS MEMORIAL PARK



IN-PROCESS TRIPS - AM - BEAVERCREEK MIXED-USE HOUSING DEVELOPMENT

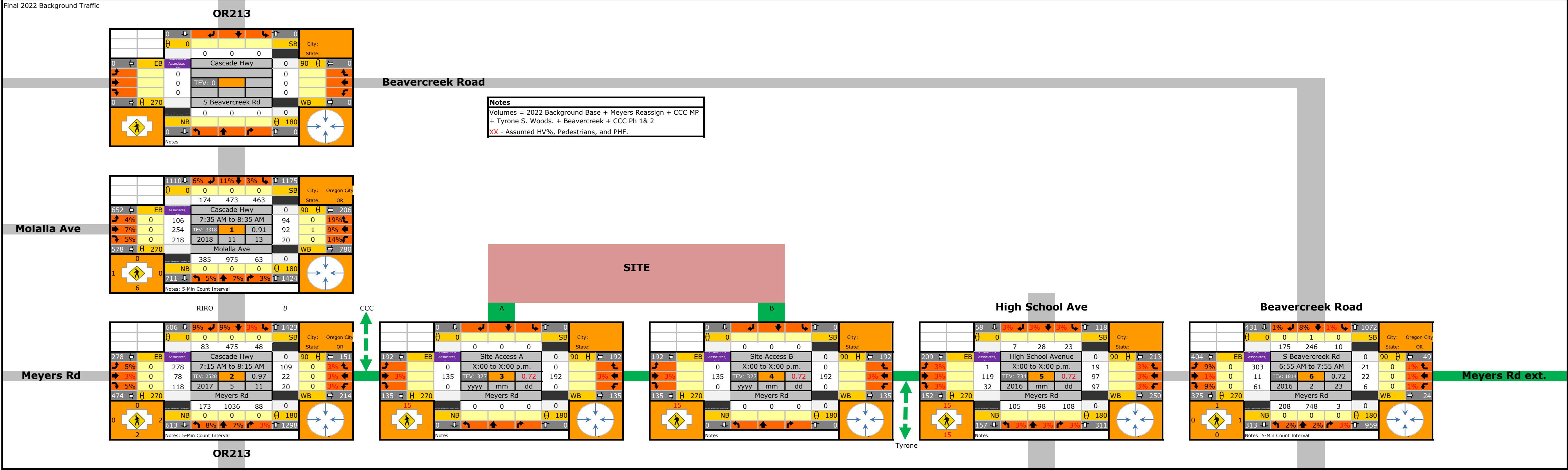


IN-PROCESS TRIPS - AM - CCC Phases 1 & 2



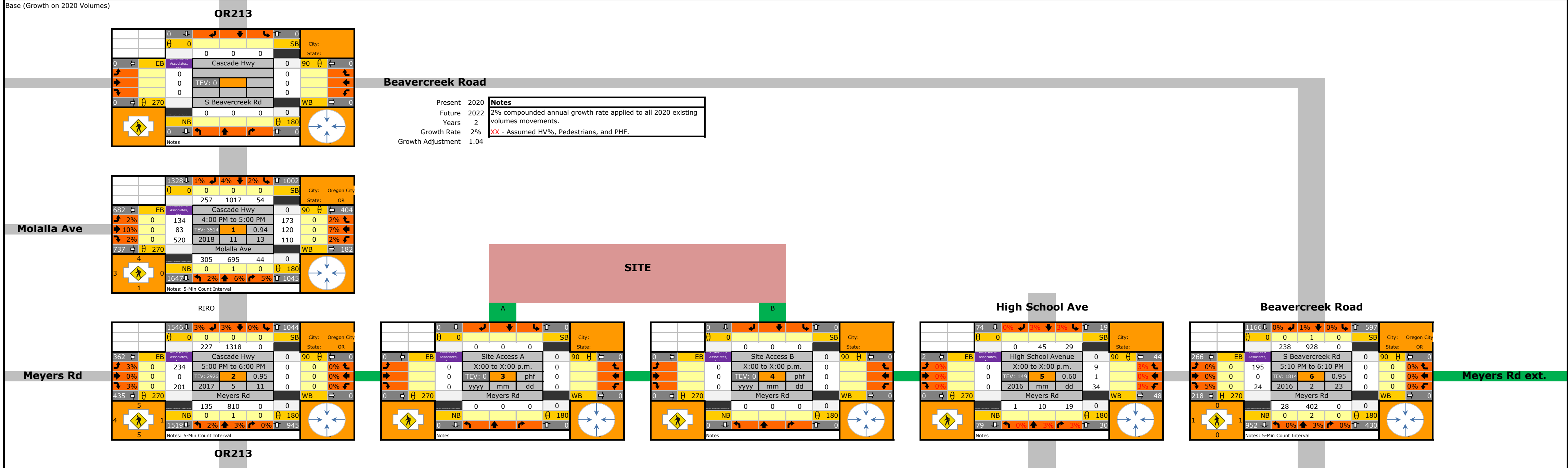
2022 BACKGROUND WEEKDAY AM PEAK HOUR

Final 2022 Background Traffic

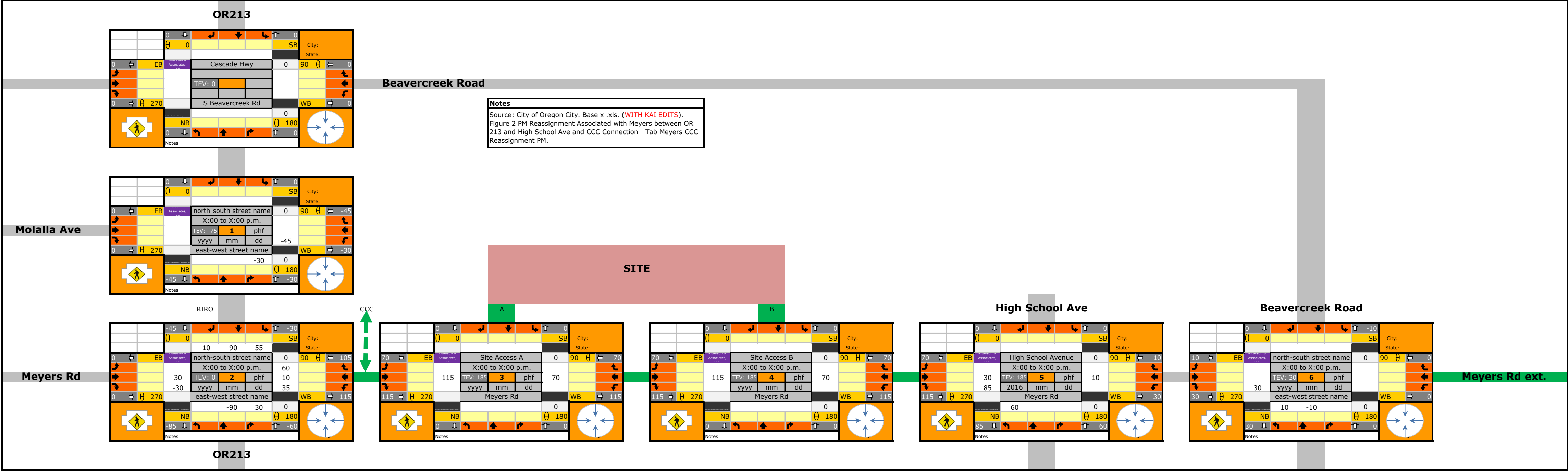


2022 BACKGROUND WEEKDAY PM PEAK HOUR

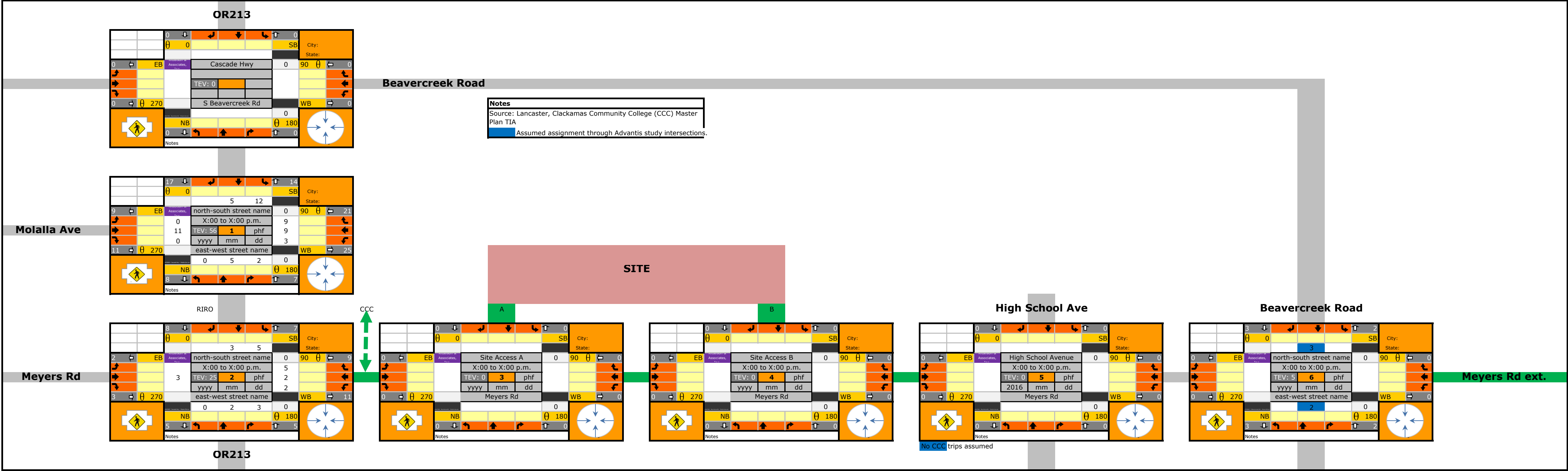
Base (Growth on 2020 Volumes)



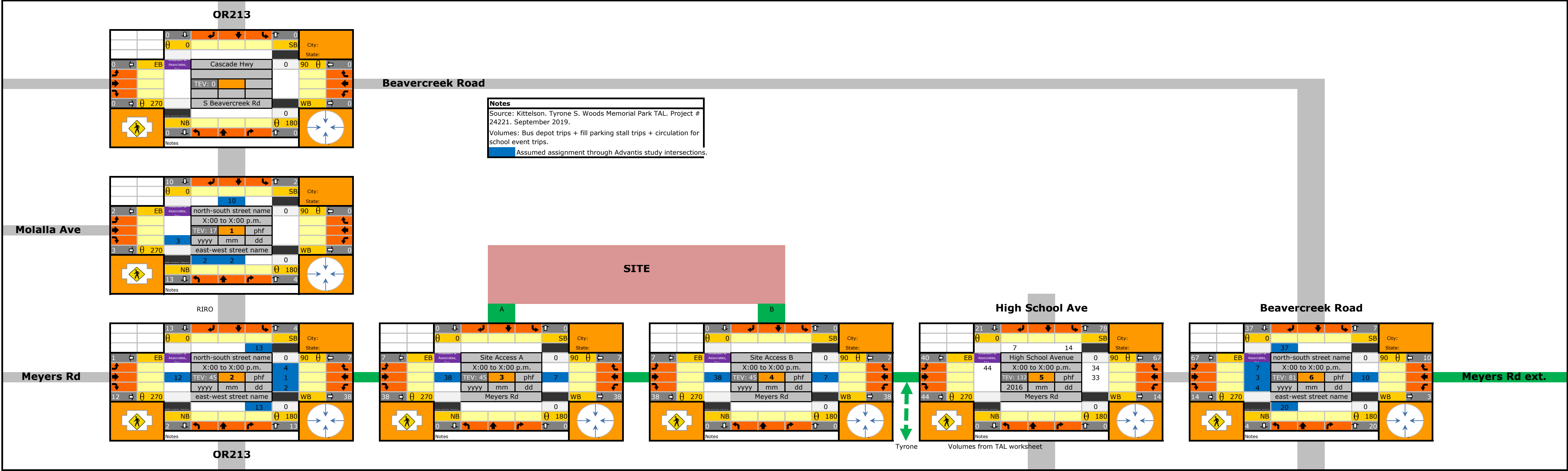
PM - Reassignment Associated with Meyers between OR 213 and High School Ave and CCC Connection



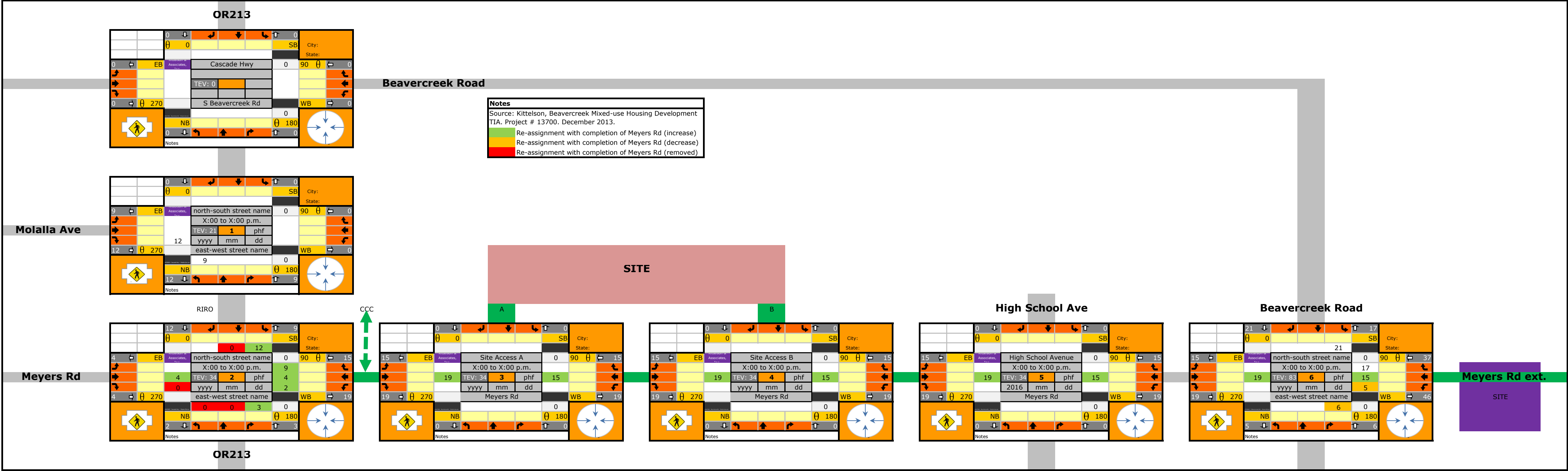
IN-PROCESS TRIPS - PM - CCC MASTER PLAN



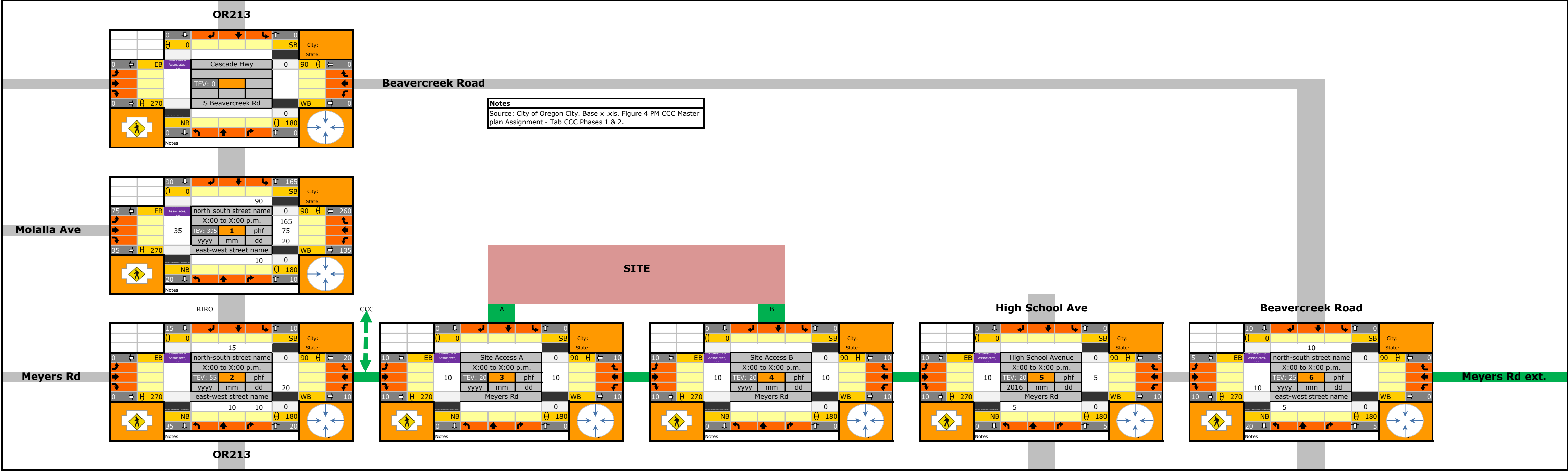
IN-PROCESS TRIPS - PM - TYRONE S. WOODS MEMORIAL PARK



IN-PROCESS TRIPS - PM - BEAVERCREEK MIXED-USE HOUSING DEVELOPMENT

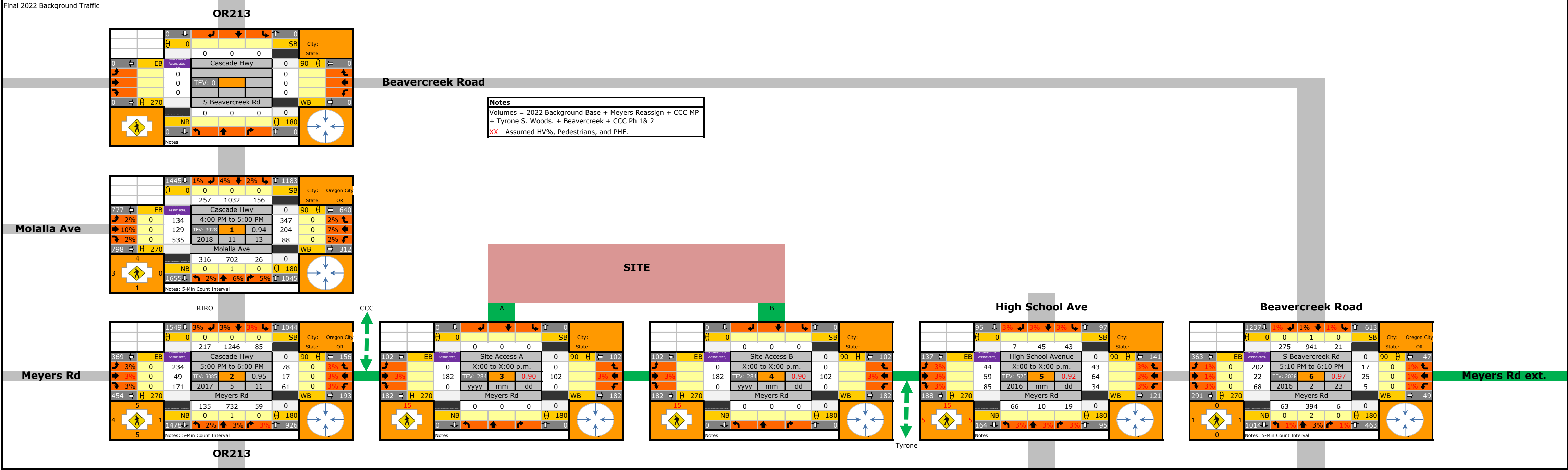


IN-PROCESS TRIPS - PM - CCC Phases 1 & 2



2022 BACKGROUND WEEKDAY PM PEAK HOUR

Final 2022 Background Traffic



Appendix C Existing Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 28.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.612

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	2	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	358	931	92	201	445	168	102	125	202	23	67	49
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 [%]	5.00	7.00	3.00	3.00	11.00	6.00	4.00	7.00	5.00	14.00	9.00	19.00
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	0	0	0	0	0	0	40	0	0	25
Total Hourly Volume [veh/h]	358	931	92	201	445	168	102	125	162	23	67	24
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]	98	256	25	55	122	46	28	34	45	6	18	7
Total Analysis Volume [veh/h]	393	1023	101	221	489	185	112	137	178	25	74	26
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	3			0			3			0		
v_di, Inbound Pedestrian Volume crossing in	3			0			3			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	70.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	34	54	0	26	36	0	12	22	34	12	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	38	48	0	30	40	0	16	26	38	16	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	29	67	67	17	55	55	10	15	48	2	7	7
g / C, Green / Cycle	0.24	0.56	0.56	0.14	0.46	0.46	0.08	0.12	0.40	0.02	0.06	0.06
(v / s)_i Volume / Saturation Flow Rate	0.23	0.30	0.06	0.13	0.15	0.12	0.06	0.08	0.11	0.02	0.04	0.02
s, saturation flow rate [veh/h]	1738	3418	1577	1767	3303	1537	1753	1796	1549	1612	1766	1354
c, Capacity [veh/h]	419	1899	876	249	1503	699	148	220	615	31	102	78
d1, Uniform Delay [s]	39.84	8.92	7.19	47.86	14.58	14.19	53.79	50.07	24.66	58.64	55.66	54.36
k, delay calibration	0.29	0.50	0.50	0.10	0.50	0.50	0.07	0.07	0.07	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	21.00	1.10	0.27	9.48	0.58	0.92	4.81	1.77	0.16	23.24	5.92	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.54	0.12	0.89	0.33	0.26	0.76	0.62	0.29	0.79	0.73	0.33
d, Delay for Lane Group [s/veh]	60.84	10.02	7.46	57.34	15.15	15.12	58.60	51.83	24.81	81.88	61.58	55.87
Lane Group LOS	E	B	A	E	B	B	E	D	C	F	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.50	4.34	0.75	6.60	3.00	2.31	3.48	3.99	3.45	0.97	2.41	0.80
50th-Percentile Queue Length [ft/ln]	312.57	108.45	18.77	165.07	74.94	57.72	86.97	99.69	86.16	24.30	60.20	20.04
95th-Percentile Queue Length [veh/ln]	18.30	7.75	1.35	10.82	5.40	4.16	6.26	7.18	6.20	1.75	4.33	1.44
95th-Percentile Queue Length [ft/ln]	457.54	193.84	33.78	270.42	134.89	103.89	156.55	179.44	155.08	43.74	108.35	36.07

Movement, Approach, & Intersection Results

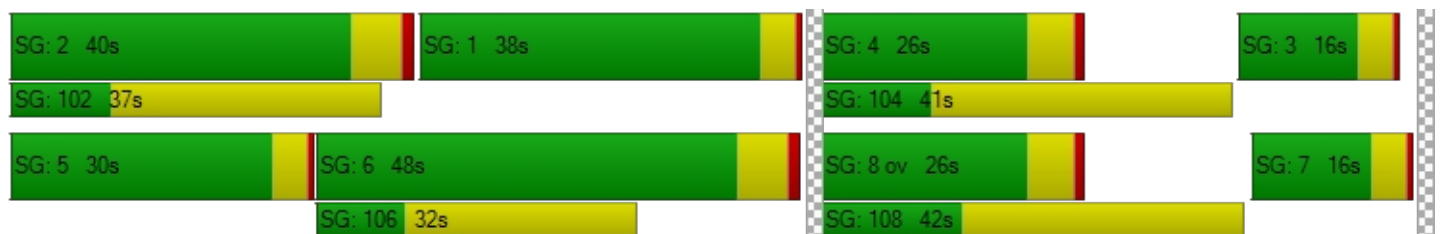
d_M, Delay for Movement [s/veh]	60.84	10.02	7.46	57.34	15.15	15.12	58.60	51.83	24.81	81.88	61.58	55.87
Movement LOS	E	B	A	E	B	B	E	D	C	F	E	E
d_A, Approach Delay [s/veh]	23.02			25.56			42.34			64.45		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	28.32											
Intersection LOS	C											
Intersection V/C	0.612											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0			15.0			14.0			13.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	2514.56			0.00			11051.57			0.00		
d_p, Pedestrian Delay [s]	43.35			45.94			46.82			47.70		
I_p,int, Pedestrian LOS Score for Intersection	3.010			2.971			2.518			2.278		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	700			567			343			343		
d_b, Bicycle Delay [s]	25.35			30.82			41.17			41.19		
I_b,int, Bicycle LOS Score for Intersection	2.811			2.298			2.330			1.807		
Bicycle LOS	C			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	OR213		OR213		Meyers Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
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	0	1
Entry Pocket Length [ft]	325.00	100.00	100.00	200.00	100.00	170.00
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]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	OR213		OR213		Meyers Rd	
Base Volume Input [veh/h]	176	1104	489	80	277	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	8.00	7.00	9.00	9.00	5.00	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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	1104	489	80	277	171
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	285	126	21	71	44
Total Analysis Volume [veh/h]	181	1138	504	82	286	176
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	1		0		1	
v_di, Inbound Pedestrian Volume crossing m	1		0		1	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	53.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	ProtPerm	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	1	6	2	0	8	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	10	10	0	6	0
Maximum Green [s]	17	89	68	0	23	0
Amber [s]	3.5	5.0	5.0	0.0	4.0	0.0
All red [s]	0.5	1.0	1.0	0.0	0.5	0.0
Split [s]	21	93	72	0	27	0
Vehicle Extension [s]	2.3	4.5	4.5	0.0	2.3	0.0
Walk [s]	0	0	8	0	8	0
Pedestrian Clearance [s]	0	0	19	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	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	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	4.0	0.0	2.5	0.0
Minimum Recall	No	Yes	Yes		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
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
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	4.50	4.50
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]	0.00	4.00	4.00	4.00	2.50	2.50
g_i, Effective Green Time [s]	88	88	80	80	22	22
g / C, Green / Cycle	0.73	0.73	0.66	0.66	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.20	0.63	0.15	0.05	0.16	0.11
s, saturation flow rate [veh/h]	910	1795	3360	1500	1738	1546
c, Capacity [veh/h]	731	1313	2231	996	315	280
d1, Uniform Delay [s]	0.48	0.55	2.46	2.36	48.16	45.38
k, delay calibration	0.50	0.50	0.50	0.50	0.30	0.10
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.81	7.89	0.24	0.16	22.32	2.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	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	0.25	0.87	0.23	0.08	0.91	0.63
d, Delay for Lane Group [s/veh]	1.29	8.45	2.70	2.52	70.48	47.46
Lane Group LOS	A	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.26	3.48	0.76	0.26	10.31	5.01
50th-Percentile Queue Length [ft/ln]	6.38	87.03	19.04	6.54	257.75	125.21
95th-Percentile Queue Length [veh/ln]	0.46	6.27	1.37	0.47	15.58	8.68
95th-Percentile Queue Length [ft/ln]	11.48	156.66	34.28	11.77	389.40	216.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	1.29	8.45	2.70	2.52	70.48	47.46
Movement LOS	A	A	A	A	E	D
d_A, Approach Delay [s/veh]	7.47		2.67		61.71	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	16.87					
Intersection LOS	B					
Intersection V/C	0.887					

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	4174.14	0.00	0.00
d_p, Pedestrian Delay [s]	48.60	48.60	48.60
I_p,int, Pedestrian LOS Score for Intersection	2.875	2.879	2.423
Crosswalk LOS	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1450	1100	375
d_b, Bicycle Delay [s]	4.54	12.15	39.61
I_b,int, Bicycle LOS Score for Intersection	3.736	2.043	1.560
Bicycle LOS	D	B	A

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type: All-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 11.8
 Level Of Service: B
 Volume to Capacity (v/c): 0.533

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	0	94	104	9	27	0	0	10	6	93	0	17
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	3.00	3.00	3.00	3.00	0.00	0.00	3.00	3.00	3.00	0.00	3.00
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	94	104	9	27	0	0	10	6	93	0	17
Peak Hour Factor	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700	0.4700
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	50	55	5	14	0	0	5	3	49	0	9
Total Analysis Volume [veh/h]	0	200	221	19	57	0	0	21	13	198	0	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	790	671	588	610	569	703
Degree of Utilization, x	0.53	0.11	0.00	0.06	0.35	0.05

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.20	0.38	0.00	0.18	1.55	0.16
95th-Percentile Queue Length [ft]	80.12	9.53	0.00	4.42	38.73	4.04
Approach Delay [s/veh]	12.65	9.05	8.95		11.71	
Approach LOS	B	A	A		B	
Intersection Delay [s/veh]	11.84					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.990

Intersection Setup

Name	Beavercreek Rd		Beavercreek Rd		Meyers Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	150.00
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]	20.00		20.00		20.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		Yes		Yes	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Beavercreek Rd		Beavercreek Rd		Meyers Rd	
Base Volume Input [veh/h]	133	749	240	161	283	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	8.00	1.00	9.00	9.00
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	0	0	31	0	0
Total Hourly Volume [veh/h]	133	749	240	130	283	37
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	260	83	45	98	13
Total Analysis Volume [veh/h]	185	1040	333	181	393	51
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		1		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	1		0		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]	90
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

Control Type	ProtPerm	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	1	6	2	0	8	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	10	10	0	6	0
Maximum Green [s]	25	45	45	0	40	0
Amber [s]	3.5	4.3	4.3	0.0	3.5	0.0
All red [s]	0.5	0.5	0.5	0.0	0.5	0.0
Split [s]	24	68	44	0	34	0
Vehicle Extension [s]	2.3	2.0	2.0	0.0	2.3	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	13	0	12	0
Delayed Vehicle Green [s]	0.0	0.0	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	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	2.8	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
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
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	R
C, Cycle Length [s]	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.80	4.80	4.80	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.80	2.80	2.00	2.00
g_i, Effective Green Time [s]	35	35	26	16	16
g / C, Green / Cycle	0.58	0.58	0.43	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.17	0.56	0.31	0.23	0.03
s, saturation flow rate [veh/h]	1064	1870	1662	1678	1500
c, Capacity [veh/h]	577	1091	722	452	404
d1, Uniform Delay [s]	8.19	11.68	13.83	20.80	16.49
k, delay calibration	0.07	0.22	0.04	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	10.03	0.49	3.32	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.95	0.71	0.87	0.13
d, Delay for Lane Group [s/veh]	8.38	21.71	14.32	24.12	16.58
Lane Group LOS	A	C	B	C	B
Critical Lane Group	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.95	13.50	5.26	5.37	0.52
50th-Percentile Queue Length [ft/ln]	23.82	337.52	131.43	134.32	12.98
95th-Percentile Queue Length [veh/ln]	1.72	19.53	9.02	9.17	0.93
95th-Percentile Queue Length [ft/ln]	42.88	488.16	225.44	229.35	23.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.38	21.71	14.32	14.32	24.12	16.58
Movement LOS	A	C	B	B	C	B
d_A, Approach Delay [s/veh]	19.70		14.32		23.26	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	19.16					
Intersection LOS	B					
Intersection V/C	0.990					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	12577.44	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.288	2.401	2.245
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1000	1000	889
d_b, Bicycle Delay [s]	11.25	11.26	13.89
I_b,int, Bicycle LOS Score for Intersection	3.581	2.459	1.560
Bicycle LOS	D	B	A

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 33.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.759

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	2	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	293	668	43	52	978	247	129	80	499	106	115	166
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	6.00	5.00	2.00	4.00	1.00	2.00	10.00	2.00	2.00	7.00	2.00
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	0	0	0	0	0	0	50	0	0	83
Total Hourly Volume [veh/h]	293	668	43	52	978	247	129	80	449	106	115	83
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]	78	178	11	14	260	66	34	21	119	28	31	22
Total Analysis Volume [veh/h]	312	711	46	55	1040	263	137	85	478	113	122	88
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	1			2			0			2		
v_di, Inbound Pedestrian Volume crossing in	0			2			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	31	55	0	21	45	0	16	22	31	16	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	35	59	0	25	49	0	20	26	35	20	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	25	75	75	5	55	55	18	21	50	10	13	13
g / C, Green / Cycle	0.19	0.57	0.57	0.04	0.42	0.42	0.14	0.16	0.38	0.08	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.18	0.21	0.03	0.03	0.30	0.16	0.08	0.05	0.30	0.06	0.07	0.06
s, saturation flow rate [veh/h]	1781	3446	1519	1781	3503	1597	1781	1751	1589	1781	1796	1570
c, Capacity [veh/h]	343	1977	872	72	1478	673	243	278	607	139	179	157
d1, Uniform Delay [s]	47.21	7.53	6.62	60.87	22.57	19.07	52.52	48.38	35.51	59.03	56.51	55.76
k, delay calibration	0.23	0.50	0.50	0.07	0.50	0.50	0.07	0.07	0.50	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	17.12	0.51	0.12	9.56	2.84	1.70	1.25	0.38	9.96	6.96	2.76	1.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.36	0.05	0.76	0.70	0.39	0.56	0.31	0.79	0.81	0.68	0.56
d, Delay for Lane Group [s/veh]	64.33	8.04	6.74	70.43	25.41	20.77	53.78	48.76	45.47	65.99	59.27	57.67
Lane Group LOS	E	A	A	E	C	C	D	D	D	E	E	E
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.62	2.74	0.33	1.93	10.08	4.25	4.25	2.47	14.81	3.99	4.07	2.89
50th-Percentile Queue Length [ft/ln]	265.59	68.62	8.29	48.29	252.09	106.28	106.29	61.65	370.32	99.84	101.87	72.15
95th-Percentile Queue Length [veh/ln]	15.97	4.94	0.60	3.48	15.29	7.63	7.63	4.44	21.12	7.19	7.33	5.19
95th-Percentile Queue Length [ft/ln]	399.22	123.51	14.92	86.92	382.28	190.81	190.83	110.98	528.12	179.71	183.37	129.86

Movement, Approach, & Intersection Results

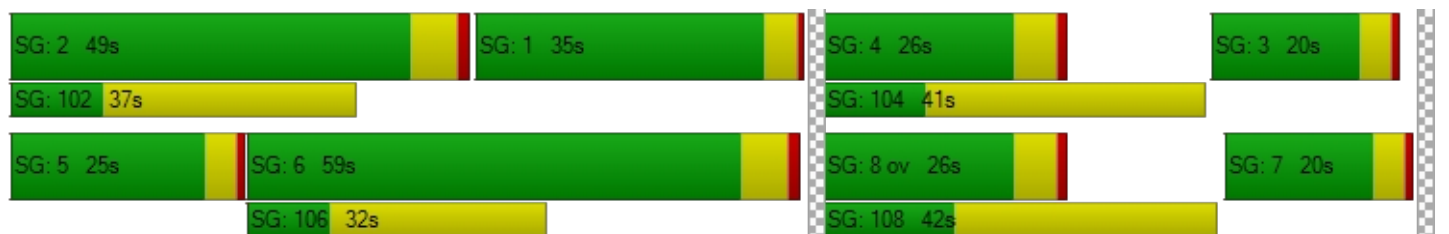
d_M, Delay for Movement [s/veh]	64.33	8.04	6.74	70.43	25.41	20.77	53.78	48.76	45.47	65.99	59.27	57.67
Movement LOS	E	A	A	E	C	C	D	D	D	E	E	E
d_A, Approach Delay [s/veh]	24.41			26.33			47.50			61.19		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	33.30											
Intersection LOS	C											
Intersection V/C	0.759											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0			15.0			14.0			13.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	10310.01			3066.53			3029.57			0.00		
d_p, Pedestrian Delay [s]	48.25			50.87			51.75			52.65		
I_p,int, Pedestrian LOS Score for Intersection	3.136			3.047			2.629			2.362		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	815			662			317			317		
d_b, Bicycle Delay [s]	22.82			29.11			46.03			46.03		
I_b,int, Bicycle LOS Score for Intersection	2.442			2.680			2.797			2.230		
Bicycle LOS	B			B			C			B		

Sequence

Ring 1	1	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	7	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	OR213		OR213		Meyers Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
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	0	1
Entry Pocket Length [ft]	325.00	100.00	100.00	200.00	100.00	170.00
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]	45.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	OR213		OR213		Meyers Rd	
Base Volume Input [veh/h]	129	779	1267	219	225	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	3.00	3.00	3.00	3.00
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	0	0	20	0	0
Total Hourly Volume [veh/h]	129	779	1267	199	225	193
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]	34	205	333	52	59	51
Total Analysis Volume [veh/h]	136	820	1334	209	237	203
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	3		3		2	
v_di, Inbound Pedestrian Volume crossing m	2		2		3	
v_co, Outbound Pedestrian Volume crossing	2		2		2	
v_ci, Inbound Pedestrian Volume crossing mi	3		2		2	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	1	6	2	0	8	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	10	10	0	6	0
Maximum Green [s]	20	94	70	0	28	0
Amber [s]	3.5	5.0	5.0	0.0	4.0	0.0
All red [s]	0.5	1.0	1.0	0.0	0.5	0.0
Split [s]	24	98	74	0	32	0
Vehicle Extension [s]	2.3	4.5	4.5	0.0	2.3	0.0
Walk [s]	0	0	8	0	8	0
Pedestrian Clearance [s]	0	0	19	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	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	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	4.0	0.0	2.5	0.0
Minimum Recall	No	Yes	Yes		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
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
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	6.00	4.50	4.50
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	4.00	4.00	4.00	2.50	2.50
g_i, Effective Green Time [s]	12	99	83	83	21	21
g / C, Green / Cycle	0.09	0.76	0.64	0.64	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.08	0.44	0.38	0.13	0.14	0.13
s, saturation flow rate [veh/h]	1781	1855	3532	1572	1739	1562
c, Capacity [veh/h]	162	1411	2257	1004	276	248
d1, Uniform Delay [s]	56.23	0.00	4.56	3.70	53.28	52.82
k, delay calibration	0.07	0.50	0.50	0.50	0.14	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.07	1.75	1.15	0.47	9.42	6.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	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	0.84	0.58	0.59	0.21	0.86	0.82
d, Delay for Lane Group [s/veh]	63.30	1.75	5.71	4.17	62.70	59.66
Lane Group LOS	E	A	A	A	E	E
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.48	0.69	3.41	0.99	8.27	6.88
50th-Percentile Queue Length [ft/ln]	111.88	17.19	85.18	24.63	206.75	172.01
95th-Percentile Queue Length [veh/ln]	7.94	1.24	6.13	1.77	12.99	11.18
95th-Percentile Queue Length [ft/ln]	198.61	30.94	153.32	44.33	324.66	279.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.30	1.75	5.71	4.17	62.70	59.66
Movement LOS	E	A	A	A	E	E
d_A, Approach Delay [s/veh]	10.51		5.50		61.29	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	15.48					
Intersection LOS	B					
Intersection V/C	0.650					

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0	12.0	12.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	1415.99	2053.61	1680.08
d_p, Pedestrian Delay [s]	53.55	53.55	53.55
I_p,int, Pedestrian LOS Score for Intersection	3.060	3.134	2.219
Crosswalk LOS	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1415	1046	423
d_b, Bicycle Delay [s]	5.56	14.78	40.41
I_b,int, Bicycle LOS Score for Intersection	3.137	2.849	1.560
Bicycle LOS	C	C	A

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type: All-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 7.9
 Level Of Service: A
 Volume to Capacity (v/c): 0.141

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	1	10	18	28	43	0	0	0	0	32	1	9
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	3.00	3.00	3.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00
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	10	18	28	43	0	0	0	0	32	1	9
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
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	4	8	12	18	0	0	0	0	13	0	4
Total Analysis Volume [veh/h]	2	17	30	47	72	0	0	0	0	53	2	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	923	844	728	728	665	839
Degree of Utilization, x	0.05	0.14	0.00	0.00	0.08	0.02

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.17	0.49	0.00	0.00	0.26	0.06
95th-Percentile Queue Length [ft]	4.20	12.24	0.00	0.00	6.48	1.55
Approach Delay [s/veh]	7.12	7.96	0.00		8.22	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	7.87					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	30.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Beavercreek Rd		Beavercreek Rd		Meyers Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	150.00
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]	20.00		20.00		20.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		Yes		Yes	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Beavercreek Rd		Beavercreek Rd		Meyers Rd	
Base Volume Input [veh/h]	27	386	892	228	187	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	1.00	0.00	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
Right Turn on Red Volume [veh/h]	0	0	0	15	0	0
Total Hourly Volume [veh/h]	27	386	892	213	187	23
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]	7	102	235	56	49	6
Total Analysis Volume [veh/h]	28	406	939	224	197	24
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		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		1	
v_ci, Inbound Pedestrian Volume crossing mi	0		1		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
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

Control Type	ProtPerm	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	1	6	2	0	8	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	4	10	10	0	6	0
Maximum Green [s]	20	40	40	0	30	0
Amber [s]	3.5	4.3	4.3	0.0	3.5	0.0
All red [s]	0.5	0.5	0.5	0.0	0.5	0.0
Split [s]	24	68	44	0	34	0
Vehicle Extension [s]	2.3	2.0	2.0	0.0	2.3	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	13	0	12	0
Delayed Vehicle Green [s]	0.0	0.0	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	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	2.8	0.0	2.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
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
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	R
C, Cycle Length [s]	63	63	63	63	63
L, Total Lost Time per Cycle [s]	4.80	4.80	4.80	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.80	2.80	2.00	2.00
g_i, Effective Green Time [s]	46	46	40	9	9
g / C, Green / Cycle	0.72	0.72	0.63	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.05	0.22	0.64	0.11	0.02
s, saturation flow rate [veh/h]	596	1855	1814	1810	1551
c, Capacity [veh/h]	290	1336	1145	255	218
d1, Uniform Delay [s]	15.89	3.17	11.69	26.25	23.76
k, delay calibration	0.07	0.04	0.45	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.09	0.05	29.25	3.09	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.30	1.02	0.77	0.11
d, Delay for Lane Group [s/veh]	15.97	3.22	40.94	29.34	23.90
Lane Group LOS	B	A	F	C	C
Critical Lane Group	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.08	1.30	21.80	3.02	0.32
50th-Percentile Queue Length [ft/ln]	1.93	32.49	544.96	75.54	7.93
95th-Percentile Queue Length [veh/ln]	0.14	2.34	29.84	5.44	0.57
95th-Percentile Queue Length [ft/ln]	3.47	58.48	746.08	135.98	14.28

Movement, Approach, & Intersection Results

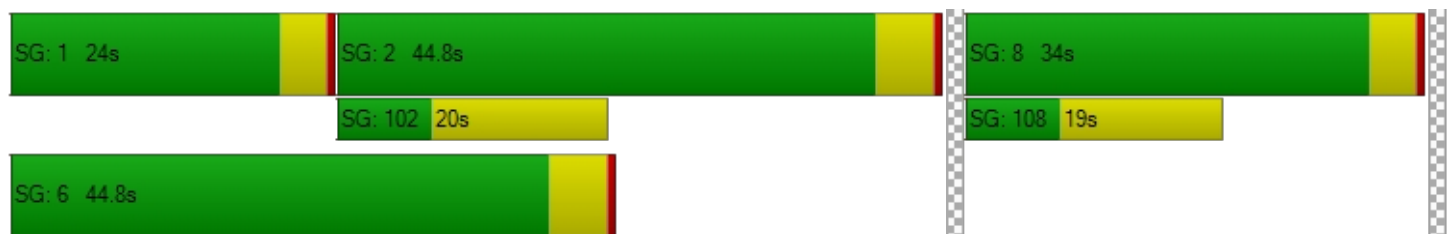
d_M, Delay for Movement [s/veh]	15.97	3.22	40.94	40.94	29.34	23.90
Movement LOS	B	A	D	D	C	C
d_A, Approach Delay [s/veh]	4.04		40.94		28.75	
Approach LOS	A		D		C	
d_I, Intersection Delay [s/veh]	30.65					
Intersection LOS	C					
Intersection V/C	0.932					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	7661.75
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.242	2.315	2.072
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	889	889	667
d_b, Bicycle Delay [s]	13.90	13.90	20.00
I_b,int, Bicycle LOS Score for Intersection	2.276	3.503	1.560
Bicycle LOS	B	D	A

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Name: OR 213 @ Molalla Ave / Douglas
Controller 122001.3 Channel: 210 Drop: 15
System: TransCore TransSuite TCS
Controller Type: Voyage
Revision - Version -
TransCore Unified Controller Manager 19.4.3

	Item 9a.

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Controller Function and Timing

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Security, Sequence and Timing (Next/2/1, Next/2/2/3/A, Next/2/2/5)				
Security Code	0	0 = disabled, or 1000-9999	First All Red	8.0 0.0 to 25.5 seconds
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag		
Power up Flash	0.0	0.0 - 25.5 seconds		

Initialization (Next/2/2/5)			Lead Lag (Next/2/2/3/A)			
Ring 1	Ring 2	Interval	Phases 1 - 2	Phases 3 - 4	Phases 5 - 6	Phases 7 - 8
1	5	0	2	2	2	2
Phase 1 - 8		0 = Red, 1 = Yel, 2 = Grn	0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

(Next/2/2/3)		Phase Functions		(Next/2/2/1)							
Phase Used	1 2 3 4 5 6 7 8		Yellow Lock	-	-	-	-	-	-	-	
Restricted Phases	- - - - - - - -		Min Recall	-	2	-	-	-	6	-	-
Exclusive Phases	- - - - - - - -		Max Recall	-	-	-	-	-	-	-	-
			Ped Recall	-	-	-	-	-	-	-	-
			Red Lock	-	-	-	-	-	-	-	-
			Max Out Recall Inhibit	1	2	3	4	5	6	7	8
			Soft Recall	-	-	-	-	-	-	-	-
			Free Walk Rest	-	-	-	-	-	-	-	-
			Conditional Ped	-	-	-	-	-	-	-	-
			Disable Inhibit Max Termination	-	-	-	-	-	-	-	-
			Call To Non-Act 1	-	-	-	-	-	-	-	-
			Call To Non-Act 2	-	-	-	-	-	-	-	-

Phase Times (Next/2/2/2)									
Phase	1	2	3	4	5	6	7	8	
Movement	NB to	SB	EB to	WB	SB to	NB	WB to	EB (SB	
Minimum Green	4	10	4	6	4	10	4	6	0 - 255 sec.
Passage	2.3	4.5	2.3	2.3	2.3	4.5	2.3	2.3	0.0 - 25.5 sec.
Yellow	3.5	5.0	3.5	4.7	3.5	5.0	3.5	4.7	0.0 - 25.5 sec.
Red Clearance	0.5	1.0	0.5	0.7	0.5	1.0	0.5	0.7	0.0 - 25.5 sec. or 0 - 255 sec.
Max 1	20	50	20	40	20	20	20	20	0 - 255 sec.
Max 2	20	50	20	40	20	20	20	20	0 - 255 sec.
Walk	0	10	0	11	0	9	0	14	0 - 255 sec.
Ped Clear	0	27	0	30	0	23	0	28	0 - 255 sec.
Seconds Per Actuation	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0 - 25.5 sec.
Time Before Reduction	8	10	8	8	8	10	8	8	0 - 255 sec.
Time to Reduce	3	10	3	3	3	10	3	3	0 - 255 sec.
Minimum Gap	0.5	2.5	0.5	0.5	0.5	2.5	0.5	0.5	0.0 - 25.5 sec.
Max Variable Initial	4	17	4	6	4	10	4	6	0 - 255 sec.
Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec.
Advanced walk	0	0	0	0	0	0	0	0	0 - 255 sec.

Phase Times (Next/2/2/9/5)									
Inhibit Min Yellow									X = On
Red Decimal Off									X = On

Dual Entry (Next/2/2/9/3)

Item 9a.

Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61
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Dual Entry Ph -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	0	0	0	0	0	0 = none, 1-8 = phase 1-8

Cond Service (Next/2/2/9/3/A)			5 Sec Head Logic (Next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap		Yellow Blanking LT		
Phase 1	0	0	X:Y		Trap Protected Phase	Next Phase	Phase		
Phase 3	0	0	6:1	0	1	0	< (5)	1	0
Phase 5	0	0	8:3	0	3	0	< (7)	3	0
Phase 7	0	0	2:5	0	5	0	< (1)	5	0
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4:7	0	7	0	< (3)	7	0
			0 = off, 1 = side call, 2 = no side call		X = On				

Other Controller Functions (Next/2/2/9/1, Next/2/2/9/5)

Inhibit Simultaneous Gap Out	1 - 3 4 5 - 7 8	
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage
Red Revert (+2seconds)	0.0	0 - 25.5 sec.
Auto Ped Clear	Off	X = On
FDW thru Yellow	Off	X = On
Red Rest Delay	0.0	0 - 25.5 sec.
Change Sequence	Off	X = On (After a download without a power on - off cycle)
Advanced Flash Rate	60 FPM	0 = Disabled (60 FPM), 1 = 120 FPM
Ped Push Button Time	null	0 = Disable, 0 - 5 Seconds

Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Local Detectors (Next/2/2/4/1)

Item 9a.

Detector Data

Detector	Description	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
1				1	1	0	0	2.0	0
2				1	1	0	0	0.0	0
3				3	3	0	0	2.0	0
4				3	3	0	0	0.0	0
5				5	5	0	0	2.0	0
6				5	5	0	0	0.0	0
7				7	7	0	0	2.0	0
8				7	7	0	0	0.0	0
9				2	2	0	0	1.0	0
10				2	2	0	0	1.0	0
11				2	2	0	0	0.0	0
12				2	2	0	0	0.0	0
13				2	2	0	0	0.0	0
14				4	4	0	3	2.0	0
15				4	4	0	0	2.0	0
16				4	4	0	0	0.0	0
17				4	4	0	0	0.0	0
18				4	4	0	10	0.0	0
19				6	6	0	0	1.0	0
20				6	6	0	0	1.0	0
21				6	6	0	0	0.0	0
22				6	6	0	0	0.0	0
23				6	6	0	0	0.0	0
24				8	8	0	3	2.0	0
25				8	8	0	0	2.0	0
26				8	8	0	0	0.0	0
27				8	8	0	0	0.0	0
28				8	8	0	10	0.0	0
29				0	0	0	0	0.0	0
30				0	0	0	0	0.0	0
31				0	0	0	0	0.0	0
32				0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 -12

Local Detectors 33 - 64 (Next/2/2/4/6)

Item 9a.

Detector Data

Detector	Description	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
33		N/A	N/A	0	0	N/A	N/A	N/A	N/A
34		N/A	N/A	0	0	N/A	N/A	N/A	N/A
35		N/A	N/A	0	0	N/A	N/A	N/A	N/A
36		N/A	N/A	0	0	N/A	N/A	N/A	N/A
37		N/A	N/A	0	0	N/A	N/A	N/A	N/A
38		N/A	N/A	0	0	N/A	N/A	N/A	N/A
39		N/A	N/A	0	0	N/A	N/A	N/A	N/A
40		N/A	N/A	0	0	N/A	N/A	N/A	N/A
41		N/A	N/A	0	0	N/A	N/A	N/A	N/A
42		N/A	N/A	0	0	N/A	N/A	N/A	N/A
43		N/A	N/A	0	0	N/A	N/A	N/A	N/A
44		N/A	N/A	0	0	N/A	N/A	N/A	N/A
45		N/A	N/A	0	0	N/A	N/A	N/A	N/A
46		N/A	N/A	0	0	N/A	N/A	N/A	N/A
47		N/A	N/A	0	0	N/A	N/A	N/A	N/A
48		N/A	N/A	0	0	N/A	N/A	N/A	N/A
49		N/A	N/A	0	0	N/A	N/A	N/A	N/A
50		N/A	N/A	0	0	N/A	N/A	N/A	N/A
51		N/A	N/A	0	0	N/A	N/A	N/A	N/A
52		N/A	N/A	0	0	N/A	N/A	N/A	N/A
53		N/A	N/A	0	0	N/A	N/A	N/A	N/A
54		N/A	N/A	0	0	N/A	N/A	N/A	N/A
55		N/A	N/A	0	0	N/A	N/A	N/A	N/A
56		N/A	N/A	0	0	N/A	N/A	N/A	N/A
57		N/A	N/A	0	0	N/A	N/A	N/A	N/A
58		N/A	N/A	0	0	N/A	N/A	N/A	N/A
59		N/A	N/A	0	0	N/A	N/A	N/A	N/A
60		N/A	N/A	0	0	N/A	N/A	N/A	N/A
61		N/A	N/A	0	0	N/A	N/A	N/A	N/A
62		N/A	N/A	0	0	N/A	N/A	N/A	N/A
63		N/A	N/A	0	0	N/A	N/A	N/A	N/A
64		N/A	N/A	0	0	N/A	N/A	N/A	N/A

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 -12

Detector Plans (Next/2/2/4/5)

Item 9a.

Loop Number										
Plan Detectors		0	0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 32 = detectors 1- 32
Detector Plan 1	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14
Detector Plan 2	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14
Detector Plan 3	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14

Detector Fail (Next/2/2/4/3)

Detector Fail Sample Period (all detectors)		0	0 - 255 minutes							
Dynamic Phase Length Fail Period		0	0 - 255 minutes							
Video Fail Inputs	1	2	3	4	5	6	7	8	0 = none, 1 - 8 = phase 1 - 8	
Phase Recalled	0	0	0	0	0	0	0	0		
System Detectors	1	2	3	4	5	6	7	8	0 = none, 1 - 32 = detector 1 - 32	
Local Detector	0	0	0	0	0	0	0	0		

Flash (Next/2/2/5)

Flash Entry			Flash Exit		
Ring 1	Ring 2	Interval	Ring 1	Ring 2	Interval
0	0	red	1	5	0
0 = none, phase 1 - 8		0 = red, 1 = yel, 2 = grn	0 = none, phase 1 - 8		0 = red, 1 = yel, 2 = grn

Soft Flash (Next/2/2/5/A)

Phase	1	2	3	4	5	6	7	8				
	0	0	0	0	0	0	0	0				
Overlap	A	B	C	D	E	F	G	H	I	J	K	L
	0	0	0	0	0	0	0	0	0	0	0	0
0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG												

Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Max Plans (Next/2/2/7)

Item 9a.

	Phase->	1	2	3	4	5	6	7	8	
MaxPlan 1	Normal Max	34	36	12	22	26	54	12	22	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 2	Normal Max	24	36	12	22	26	44	12	22	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 3	Normal Max	31	45	16	22	21	55	16	22	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 4	Normal Max	26	16	16	16	11	31	16	16	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec

CoordinationData			Item 9a.
Coordination Modes (Next/2/3/1)			
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire	
Coordination Plan Mode	34	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire	
Offset Seeking Mode	2	0=add only, 1=dwell, 2=fastway	
Late Ped	0	0 = off, 1 = on	
Coord Walk Rest	0	0 = off, 1 = on, 2 = by tod circuit 160, 3 = end of walk, 4 = coord ped during perms	
Zero Mode(TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144, 3 = first green	
(Next/2/3/4/1)			
Repeated Ped Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)	
Omit Phase During Repeated Phase	- - - - -	-- = service allowed ; # = service prevented	

Coordination Plans (Next/2/3/2)								
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Len Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1	2	6	120	70	0	0	0	1
2	2	6	110	70	0	0	0	2
3	2	6	130	71	0	0	0	3
4	2	6	90	35	0	0	0	4
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0
	0 - 8		0 - 255 sec				0 - 8	

Coordination Plans cont. (Next/2/3/2)

Item 9a.

Coord Plan	Use FO for timing	Force Off / Split Times (TS2)								Yield Points / Actuated Times (TS2)	
		1	2	3	4	5	6	7	8	Ring 1	Ring 2
1		38	40	16	26	30	48	16	26	0	38
2		28	40	16	26	30	38	16	26	0	28
3		35	49	20	26	25	59	20	26	0	35
4		30	20	20	20	15	35	20	20	0	0
5		0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0
		0 - 255 sec * = force offs and yield points									

Circuit Mapping (Next/2/3/3)

Item 9a.

Circuit Map	Coord Plan	Time Clock Circuit							
		1	2	3	4	5	6	7	8
1	1	97	98	100	0	0	0	0	0
2	2	97	98	100	0	0	0	0	0
3	3	97	98	100	0	0	0	0	0
4	4	98	100	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0

coord plan - 0 = free, 1 - 32 = coord plan 1 - 32, 33 = any, 34 none selected

time clock circuits - 0 = not used, or circuits 6 - 199

Dynamic Phase Lengths (Next/2/3/4/4)

Phase ->		1	2	3	4	5	6	7	8	
Back Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Lane Factor		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 = none, 0.5 - 5.0
Check Out Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	

Auto Permissive Min Green (Next/2/3/4/3)

Phase ->	1	2	3	4	5	6	7	8	
Auto Perm Min Green	0	0	0	0	0	0	0	0	0 - 255 sec.

Time of Day Data (Next/2/4/1)

Item 9a.

Day Program

	Day Prog	Time	Coord Plan or Circuit	Coord Plan # or Circuit #	Circuit Abbrev	State On/Off
1	1	06:00	Coord Plan	1	CL1	
2	1	09:30	Coord Plan	2	CL2	
3	1	14:30	Coord Plan	3	CL4	
4	1	18:30	Coord Plan	0	None / Coord Plan	
5	2	10:00	Coord Plan	4	CL8	
6	2	17:00	Coord Plan	0	None / Coord Plan	
7	0	00:00	Circuit	0	None / Coord Plan	
8	0	00:00	Circuit	0	None / Coord Plan	
9	0	00:00	Circuit	0	None / Coord Plan	
10	0	00:00	Circuit	0	None / Coord Plan	
11	0	00:00	Circuit	0	None / Coord Plan	
12	0	00:00	Circuit	0	None / Coord Plan	
13	0	00:00	Circuit	0	None / Coord Plan	
14	0	00:00	Circuit	0	None / Coord Plan	
15	0	00:00	Circuit	0	None / Coord Plan	
16	0	00:00	Circuit	0	None / Coord Plan	
17	0	00:00	Circuit	0	None / Coord Plan	
18	0	00:00	Circuit	0	None / Coord Plan	
19	0	00:00	Circuit	0	None / Coord Plan	
20	0	00:00	Circuit	0	None / Coord Plan	
21	0	00:00	Circuit	0	None / Coord Plan	
22	0	00:00	Circuit	0	None / Coord Plan	
23	0	00:00	Circuit	0	None / Coord Plan	
24	0	00:00	Circuit	0	None / Coord Plan	
25	0	00:00	Circuit	0	None / Coord Plan	
26	0	00:00	Circuit	0	None / Coord Plan	
27	0	00:00	Circuit	0	None / Coord Plan	
28	0	00:00	Circuit	0	None / Coord Plan	
29	0	00:00	Circuit	0	None / Coord Plan	
30	0	00:00	Circuit	0	None / Coord Plan	
31	0	00:00	Circuit	0	None / Coord Plan	
32	0	00:00	Circuit	0	None / Coord Plan	
33	0	00:00	Circuit	0	None / Coord Plan	
34	0	00:00	Circuit	0	None / Coord Plan	
35	0	00:00	Circuit	0	None / Coord Plan	
36	0	00:00	Circuit	0	None / Coord Plan	
37	0	00:00	Circuit	0	None / Coord Plan	
38	0	00:00	Circuit	0	None / Coord Plan	
39	0	00:00	Circuit	0	None / Coord Plan	
40	0	00:00	Circuit	0	None / Coord Plan	
	1 - 15	hh:mm	X = On = Coord Plan	coord plan 0 - 32 or circuit 1-199		X = On

CIRCUIT OVERRIDES 1 - 100 (Next/2/4/4)

Item 9a.

1 - Coord Line 1	CL1	2 = TOD	51 - Ped Omit 3	PO3	2 = TOD
2 - Coord Line 2	CL2	2 = TOD	52 - Ped Omit 4	PO4	2 = TOD
3 - Coord Line 4	CL4	2 = TOD	53 - Ped Omit 5	PO5	2 = TOD
4 - Coord Line 8	CL8	2 = TOD	54 - Ped Omit 6	PO6	2 = TOD
5 - Coord Line 16	C16	2 = TOD	55 - Ped Omit 7	PO7	2 = TOD
6 - Coordinated Operation	CRD	2 = TOD	56 - Ped Omit 8	PO8	2 = TOD
7 - Soft Flash	SFL	2 = TOD	57 - Conditional Service	CVS	2 = TOD
8 - Enable System Relays	ESR	2 = TOD	58 - Inhibit Simultaneous Gap Out	ISG	1 = On
9 - Call to Non Actuated Ring 1	CN1	2 = TOD	59 - Inhibit Hardwire	HWI	2 = TOD
10 - Call to Non Actuated Ring 2	CN2	2 = TOD	60 - Ped Override Mode	POM	1 = On
11 - Walk Rest Modifier	WRM	2 = TOD	61 - Dual Entry	DLE	1 = On
12 - Min Recall	MIN	2 = TOD	62 - Exclusive Ped	EPD	2 = TOD
13 - Max 2 Both Rings	MX2	2 = TOD	63 - Call to Time Clock Mode	CTC	2 = TOD
14 - Coord Inhibit Max Ring 1,2	IMT	2 = TOD	64 - Dual Enhanced Ped	DEP	2 = TOD
15 - Enable Service Log	ESL	2 = TOD	65 - Service Plan 1	SP1	2 = TOD
16 - Call to Free	CTF	2 = TOD	66 - Service Plan 2	SP2	2 = TOD
17 - TOD Output 1	TO1	2 = TOD	67 - Service Plan 3	SP3	2 = TOD
18 - TOD Output 2	TO2	2 = TOD	68 - Service Plan 4	SP4	2 = TOD
19 - TOD Output 3	TO3	2 = TOD	69 - Service Plan 5	SP5	2 = TOD
20 - TOD Output 4	TO4	2 = TOD	70 - Service Plan 6	SP6	2 = TOD
21 - TOD Output 5	TO5	2 = TOD	71 - Service Plan 7	SP7	2 = TOD
22 - TOD Output 6	TO6	2 = TOD	72 - Service Plan 8	SP8	2 = TOD
23 - TOD Output 7	TO7	2 = TOD	73 - Max Plan 1	MP1	2 = TOD
24 - TOD Output 8	TO8	2 = TOD	74 - Max Plan 2	MP2	2 = TOD
25 - Vehicle Call Phase 1	VC1	2 = TOD	75 - Max Plan 3	MP3	2 = TOD
26 - Vehicle Call Phase 2	VC2	2 = TOD	76 - Max Plan 4	MP4	2 = TOD
27 - Vehicle Call Phase 3	VC3	2 = TOD	77 - Max Plan 5	MP5	2 = TOD
28 - Vehicle Call Phase 4	VC4	2 = TOD	78 - Max Plan 6	MP6	2 = TOD
29 - Vehicle Call Phase 5	VC5	2 = TOD	79 - Max Plan 7	MP7	2 = TOD
30 - Vehicle Call Phase 6	VC6	2 = TOD	80 - Max Plan 8	MP8	2 = TOD
31 - Vehicle Call Phase 7	VC7	2 = TOD	81 - Transit Priority Max Group 1	TG1	2 = TOD
32 - Vehicle Call Phase 8	VC8	2 = TOD	82 - Transit Priority Max Group 2	TG2	2 = TOD
33 - Ped Call Phase 1	PC1	2 = TOD	83 - Transit Priority Max Group 3	TG3	2 = TOD
34 - Ped Call Phase 2	PC2	2 = TOD	84 - Transit Priority Max Group 4	TG4	2 = TOD
35 - Ped Call Phase 3	PC3	2 = TOD	85 - Transit Priority Max Group 5	TG5	2 = TOD
36 - Ped Call Phase 4	PC4	2 = TOD	86 - Transit Priority Max Group 6	TG6	2 = TOD
37 - Ped Call Phase 5	PC5	2 = TOD	87 - Transit Priority Max Group 7	TG7	2 = TOD
38 - Ped Call Phase 6	PC6	2 = TOD	88 - Transit Priority Max Group 8	TG8	2 = TOD
39 - Ped Call Phase 7	PC7	2 = TOD	89 - Inhibit Gap Reducing 1	GR1	2 = TOD
40 - Ped Call Phase 8	PC8	2 = TOD	90 - Inhibit Gap Reducing 2	GR2	2 = TOD
41 - Phase Omit 1	VO1	2 = TOD	91 - Inhibit Gap Reducing 3	GR3	2 = TOD
42 - Phase Omit 2	VO2	2 = TOD	92 - Inhibit Gap Reducing 4	GR4	2 = TOD
43 - Phase Omit 3	VO3	2 = TOD	93 - Inhibit Gap Reducing 5	GR5	2 = TOD
44 - Phase Omit 4	VO4	2 = TOD	94 - Inhibit Gap Reducing 6	GR6	2 = TOD
45 - Phase Omit 5	VO5	2 = TOD	95 - Inhibit Gap Reducing 7	GR7	2 = TOD
46 - Phase Omit 6	VO6	2 = TOD	96 - Inhibit Gap Reducing 8	GR8	2 = TOD
47 - Phase Omit 7	VO7	2 = TOD	97 - Lag 1	LG1	2 = TOD
48 - Phase Omit 8	VO8	2 = TOD	98 - Lag 3	LG3	2 = TOD
49 - Ped Omit 1	PO1	2 = TOD	99 - Lag 5	LG5	2 = TOD
50 - Ped Omit 2	PO2	2 = TOD	100 - Lag 7	LG8	2 = TOD

CIRCUIT OVERRIDES 101 - 200 (Next/2/4/4)

Item 9a.

101 - Inhibit Overlap A	OLA	2 = TOD	151 - Coord Hold 7	HD7	2 = TOD
102 - Inhibit Overlap B	OLB	2 = TOD	152 - Coord Hold 8	HD8	2 = TOD
103 - Inhibit Overlap C	OLC	2 = TOD	153 - PE Priority Return B	PRB	2 = TOD
104 - Inhibit Overlap D	OLD	2 = TOD	154 - PE Priority Return C	PRC	2 = TOD
105 - Enable Schedule A Phone 1	AT1	2 = TOD	155 - PE Priority Return D	PRD	2 = TOD
106 - Enable Schedule A Phone 2	AT2	2 = TOD	156 - PE Priority Return E	PRE	2 = TOD
107 - Enable Schedule B Phone 1	BT1	2 = TOD	157 - Platoon Inbound	PPI	2 = TOD
108 - Enable Schedule B Phone 2	BT2	2 = TOD	158 - Platoon Outbound	PPO	2 = TOD
109 - Enable Schedule C Phone 1	CT1	2 = TOD	159 - Platoon Spl 2	PS2	2 = TOD
110 - Enable Schedule C Phone 2	CT2	2 = TOD	160 - Coord Walk Rest	CWR	2 = TOD
111 - Enable Volume to Call Phone 1	VT1	2 = TOD	161 - Dynamic Phase Length Short Inhibit 1	SL1	2 = TOD
112 - Enable Volume to Call Phone 1	VT2	2 = TOD	162 - Dynamic Phase Length Short Inhibit 2	SL2	2 = TOD
113 - Enable Volume Logging	EVL	1 = On	163 - Dynamic Phase Length Short Inhibit 3	SL3	2 = TOD
114 - Enable MOE Logging	EML	1 = On	164 - Dynamic Phase Length Short Inhibit 4	SL4	2 = TOD
115 - Detector Low Threshold Inhibit	DLI	2 = TOD	165 - Dynamic Phase Length Short Inhibit 5	SL5	2 = TOD
116 - Detector Continue Presence Inhibit	DPI	2 = TOD	166 - Dynamic Phase Length Short Inhibit 6	SL6	2 = TOD
117 - Inhibit Detector Based On Programming	IND	2 = TOD	167 - Dynamic Phase Length Short Inhibit 7	SL7	2 = TOD
118 - Inhibit Detector Delay	IDD	2 = TOD	168 - Dynamic Phase Length Short Inhibit 8	SL8	2 = TOD
119 - Inhibit Conditional Ped	ICP	2 = TOD	169 - Coord Late Left Turn 1	CT1	2 = TOD
120 - Inhibit Transit Priority	ITP	2 = TOD	170 - Coord Late Left Turn 3	CT3	2 = TOD
121 - Red Rest Ring 1,2	RRM	2 = TOD	171 - Coord Late Left Turn 5	CT5	2 = TOD
122 - Enable Transcend	TRA	2 = TOD	172 - Coord Late Left Turn 7	CT7	2 = TOD
123 - Omit Red Clear Ring 1,2	ORC	2 = TOD	173 - Dynamic Phase Length Enable A	DPA	2 = TOD
124 - Enable Classification Logging	CLE	2 = TOD	174 - Dynamic Phase Length Enable B	DPB	2 = TOD
125 - Ped Recycle Ring 1,2	PCY	2 = TOD	175 - Dynamic Phase Length Enable C	DPC	2 = TOD
126 - Not Used"	N/U	2 = TOD	176 - Dynamic Phase Length Enable D	DPD	2 = TOD
127 - Enable MOE Log to Call Phone 1	MT1	2 = TOD	177 - Proactive Plan Select Average	PSA	2 = TOD
128 - Enable MOE Log to Call Phone 2	MT2	2 = TOD	178 - Proactive Plan Select Inbound	PSI	2 = TOD
129 - Transit Inhibit Short Time 1	IS1	2 = TOD	179 - Proactive Plan Select Outbound	PSO	2 = TOD
130 - Transit Inhibit Short Time 2	IS2	2 = TOD	180 - Split Variant Inbound	SVI	2 = TOD
131 - Transit Inhibit Short Time 3	IS3	2 = TOD	181 - Split Variant Outbound	SVO	2 = TOD
132 - Transit Inhibit Short Time 4	IS4	2 = TOD	182 - Disable Coord Walk Rest Ring 1	WR1	2 = TOD
133 - Transit Inhibit Short Time 5	IS5	2 = TOD	183 - Disable Coord Walk Rest Ring 2	WR2	2 = TOD
134 - Transit Inhibit Short Time 6	IS6	2 = TOD	184 - Proactive Plan Select New Look	NLK	2 = TOD
135 - Transit Inhibit Short Time 7	IS7	2 = TOD	185 - Disable Red Clearance Extension	DRX	2 = TOD
136 - Transit Inhibit Short Time 8	IS8	2 = TOD	186 - Detector Plan Line 1	DL1	2 = TOD
137 - Enable Transit Priority Logging	ETL	2 = TOD	187 - Detector Plan Line 2	DL2	2 = TOD
138 - Disable Flashing Yellow Arrow 1	DF1	2 = TOD	188 - Disable LRT 1 Vertical Flashing Bar	DV1	2 = TOD
139 - Disable Flashing Yellow Arrow 3	DF3	2 = TOD	189 - Disable LRT 2 Vertical Flashing Bar	DV2	2 = TOD
140 - Disable Flashing Yellow Arrow 5	DF5	2 = TOD	190 - Disable LRT 3 Vertical Flashing Bar	DV3	2 = TOD
141 - Disable Flashing Yellow Arrow 7	DF7	2 = TOD	191 - Disable LRT 4 Vertical Flashing Bar	DV4	2 = TOD
142 - Disable Auto Max	DAM	2 = TOD	192 - Datakey Enable	DKE	1 = On
143 - Disable Repeated Phase Service	DRS	2 = TOD	193 - Dynamic Phase Reversal Enable 1	DR1	2 = TOD
144 - End of Main Street	EMS	2 = TOD	194 - Dynamic Phase Reversal Enable 3	DR3	2 = TOD
145 - Coord Hold 1	HD1	2 = TOD	195 - Dynamic Phase Reversal Enable 5	DR5	2 = TOD
146 - Coord Hold 2	HD2	2 = TOD	196 - Dynamic Phase Reversal Enable 7	DR7	2 = TOD
147 - Coord Hold 3	HD3	2 = TOD	197 - Enable Coordination Log	ECL	1 = On
148 - Coord Hold 4	HD4	2 = TOD	198 - Disable Gap For FYLTA	DGF	2 = TOD
149 - Coord Hold 5	HD5	2 = TOD	199 - Coordination Auto Walk	CAW	2 = TOD
150 - Coord Hold 6	HD6	2 = TOD	200 - Enable Coordinated Auto Max	ECM	2 = TOD

PREEMPTION SEQUENCE 1 - 4 (Next/2/5)

Item 9a.

Seq	Interval	Instruction	Phases Serviced	Interval Time	Hold On Input	Output On	Output Mode	Instructions -
1	1	197	- 2 - - 5 - - -	0	On	- - - - - - - -	0	0 = service phases defined in phases location
	2	98	- - - - - - - -	0	Off	- - - - - - - -	0	1-9 = use special intervals 1-9
	3	0	- - - - - - - -	0	Off	- - - - - - - -	0	10 = preempt sequence allows fylta
	4	0	- - - - - - - -	0	Off	- - - - - - - -	0	11 = preempt interval disables fylta
	5	0	- - - - - - - -	0	Off	- - - - - - - -	0	15 = alternate trap protection
	6	0	- - - - - - - -	0	Off	- - - - - - - -	0	90 = go to all red
	7	0	- - - - - - - -	0	Off	- - - - - - - -	0	91 = turn cvm off
	8	0	- - - - - - - -	0	Off	- - - - - - - -	0	92 = turn cvm on
	9	0	- - - - - - - -	0	Off	- - - - - - - -	0	93 = enable ped service and phases defined in phases location
	10	0	- - - - - - - -	0	Off	- - - - - - - -	0	94 = disable ped service
2	1	197	- - - 4 - - 7 -	0	On	- - - - - - - -	0	96 = enable coordination w/peds
	2	98	- - - - - - - -	0	Off	- - - - - - - -	0	97 = enable coordination w/o peds
	3	0	- - - - - - - -	0	Off	- - - - - - - -	0	98 = return with no calls
	4	0	- - - - - - - -	0	Off	- - - - - - - -	0	99 = return with ped calls and phases defined in phases location
	5	0	- - - - - - - -	0	Off	- - - - - - - -	0	100 = jump to step defined in time location and input has to be active for jump
	6	0	- - - - - - - -	0	Off	- - - - - - - -	0	101 = use time as resettable gap timer and service phases defined in phases location
	7	0	- - - - - - - -	0	Off	- - - - - - - -	0	196 = coordination sync w/peds
	8	0	- - - - - - - -	0	Off	- - - - - - - -	0	197 = coordination sync w/o peds
	9	0	- - - - - - - -	0	Off	- - - - - - - -	0	200 = lrt phase service w/o peds
	10	0	- - - - - - - -	0	Off	- - - - - - - -	0	201 = lrt phase service w/peds
3	1	197	1 - - - - 6 - -	0	On	- - - - - - - -	0	202 = priority return-queue/delay
	2	98	- - - - - - - -	0	Off	- - - - - - - -	0	216 = lrt coordination sync w/peds
	3	0	- - - - - - - -	0	Off	- - - - - - - -	0	217 = lrt coordination sync w/o peds
	4	0	- - - - - - - -	0	Off	- - - - - - - -	0	Phases Serviced - phases 1 - 8
	5	0	- - - - - - - -	0	Off	- - - - - - - -	0	Interval Time - 0 - 255 sec or interval 1 - 10
	6	0	- - - - - - - -	0	Off	- - - - - - - -	0	Hold on Input:
	7	0	- - - - - - - -	0	Off	- - - - - - - -	0	0 = Do not hold
	8	0	- - - - - - - -	0	Off	- - - - - - - -	0	1 = Hold
	9	0	- - - - - - - -	0	Off	- - - - - - - -	0	2 = Ped Service to Rest in Walk
	10	0	- - - - - - - -	0	Off	- - - - - - - -	0	Outputs On - output 1 - 8
4	1	197	- - 3 - - - - 8	0	On	- - - - - - - -	0	Output Modes -
	2	98	- - - - - - - -	0	Off	- - - - - - - -	0	0 = all steady on
	3	0	- - - - - - - -	0	Off	- - - - - - - -	0	1 = all flash together
	4	0	- - - - - - - -	0	Off	- - - - - - - -	0	2 = odd flashes WIG, even flashes WAG
	5	0	- - - - - - - -	0	Off	- - - - - - - -	0	3 = 1 - 4 steady on, 5 - 8 all flash together
	6	0	- - - - - - - -	0	Off	- - - - - - - -	0	
	7	0	- - - - - - - -	0	Off	- - - - - - - -	0	
	8	0	- - - - - - - -	0	Off	- - - - - - - -	0	
	9	0	- - - - - - - -	0	Off	- - - - - - - -	0	
	10	0	- - - - - - - -	0	Off	- - - - - - - -	0	

SEQUENCE TIMING (Next/2/5/0)

Item 9a.

Sequence		1	2	3	4	5	6	7	8	
Input Memory										X = on
Input Priority		6	6	6	6	0	0	0	0	0 = lowest, - 8 = highest
Entry (Transition) Parameters	Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec 0.0 would time the normal function time
	Walk	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	
	Ped Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Overlap Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Overlap Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay to Preempt	0	0	0	0	0	0	0	0	0 - 255 sec
	Delay Ped Omit	0	0	0	0	0	0	0	0	
	Delay Phase Omit	0	0	0	0	0	0	0	0	
	Min Reservice	0	0	0	0	0	0	0	0	0 - 255 min
Overlap Inhibits		A								X = on
		B								
		C								
		D								
Exit Parameters	Exit to Coord Plan Offset by X	0	0	0	0	0	0	0	0	0 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	0	
	Exit Mode Time	0	0	0	0	0	0	0	0	

PRIORITY RETURN AND SPECIAL INTERVALS (Next/2/5/0/6, Next/2/5/9)

Phase / Overlap		1	2	3	4	5	6	7	8	A	B	C	D	
Priority Return	Enable	Off	0 = disabled; 1 = enabled; 2 = enabled and skip preempt phase on exit											
	A (max)	0	0	0	0	0	0	0	0	0 - 100% of currently used max				
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
	Ped Clear	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance				
Queue Delay Recovery		0	0	0	0	0	0	0	0	0 - 255 sec				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11 = flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	

LIGHT RAIL TRAIN (Next/2/5/0/7)

Light Rail Train	1	2	3	4	
Associated Preempt	0	0	0	0	0 = none, preempt 1 - 8
Time to Green	0	0	0	0	0 - 255 sec
Horizontal Bar Flash Time	0.0	0.0	0.0	0.0	
Vertical Bar Flash Time	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Min Duration	0	0	0	0	0 - 255 sec

COMMUNICATION DATA (Next/2/6)

1st Central Phone Number		2nd Central Phone Number	
Modem Setup String			
Intersection Name	2B1, OR 213 at Molalla Ave		
Central Port	6 = UDP/AB3418/C14S		
System Mode	0		
System Port	0		
System ID	0	AB3418 Physical Address	1
Local ID	0	AB3418 Group Address	0
Serial Port Parameters	Baud Rates	Flow	Ethernet Parameters 1, 2
Port1 (Slot A2 Upper)	0 = 1200	1	IP Address 10.11.17.210
Port2 (Slot A2 Lower)	0 = 1200	1	Gateway Address 10.11.17.209
Port3 (Slot A1 Upper)	0 = 1200	0	Subnet Mask 255.255.252.240 0 . 0 . 0 . 0
Port4 (Slot A1 :pwer pr C50S)	2 = 9600	Not Used	IP Port 25000 0
0 = 1200, 1 = 2400, 2 = 9600, 3 = 19200 baud			

COMMUNICATION REPORTS (Next/2/6/6, Next/2/6/7)

Volume Log Period	15	0 - 255 seconds or see below	MOE Log Period	15	See below
Volume OCC Period	15	0 - 255 seconds			
0 = disabled, 1,2,3,4,5,6,10,12,15,20,30,60 minutes					

Alarm 1	0	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R	Soft Flash	1	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R
Alarm 2	0		Manual Control Enable (MCE)	4	
Alarm 3	0		Emergency or Railroad Preempt	1	
Alarm 4	0		Light Rail Train (LRG)	0	
Alarm 5	0		Cycle Failure	2	
Not Used			Coordination Failure	2	
Not Used			Keyboard use /Data Changed	3	
Not Used			Coord Running / Free	2	
Power On / Off	1		Cabinet Door	3	
Checksum Failure	4		Extended Ped Pushbutton	2	
Video / Detector Failure	4	Monitor Status	4		
Master to Local Comm Lost	0	Red Extension	2		

Miscellaneous Data

Item 9a.

TRANSIT PRIORITY (Next/2/7)

	1	2	3	4	5	6	7	8	
Phases	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	Phases 1 - 8 (max of 2 compatible phases)
PE Enable (6.25Hz TP call on PE)	X	X	X	X	X	X	X	X	X = 6.25 Hz signal will activate TP
Priority	0	0	0	0	0	0	0	0	0 - 8, 8 = highest
Memory									X = on
Delay Time	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Reservice Time (per input)	0	0	0	0	0	0	0	0	0 - 255 min
Override Time	0	0	0	0	0	0	0	0	0 - 255 sec
Bus Extend	0	0	0	0	0	0	0	0	0 - 255 min
Minimum Reservice Time (all inputs)	0	0 - 255 min							
Free Operation Mode	0	0 = use shortest of max 1 or 2, 1 - 8 = use max time of group 1 - 8, 9 = use time of day circuit							

TRANSIT PRIORITY ALTERNATE FORCE OFF PLANS (Next/2/7/6)

Current Coord Plan	1	2	3	4	5	6	7	8	0 = none 17 - 32 = coord plan 17 - 32
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	
Current Coord Plan	9	10	11	12	13	14	15	16	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	

GROUP TIMING (Next/2/7/5)

	Phase -->	1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

TRUCK PRIORITY (Next/2/7/9)

Truck Priority -->	1	2	3	4	5	6	7	8	
Associated Transit Priority	0	0	0	0	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	0	0	0	0	
Stop Bar Distance	0	0	0	0	0	0	0	0	0 - 999 feet
Trap Distance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0	0	0	0	0 - 255 feet
Minimum Log Speed (mph)	0	0	0	0	0	0	0	0	
Minimum Log Length (feet)	0	0	0	0	0	0	0	0	
Downhill Grade (%)	0	0	0	0	0	0	0	0	0 - 20%
Uphill Grade (%)	0	0	0	0	0	0	0	0	
Undersized Vehicle									X = Enabled

CONTROLLER ID

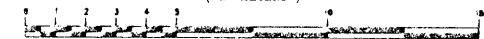
Item 9a.

Manufacturer ID	NORTHWEST SIGNAL
Model ID	Voyage-0 v05.03.04
Protocol Revision ID	AB3418E V1

SIGNAL MODIFICATION PLAN
OREGON CITY BYPASS AT CLACKAMAS COMMUNITY COLLEGE ACCESS
METRIC / ENGLISH

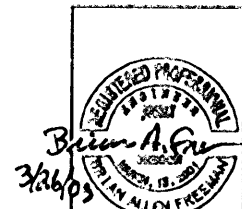
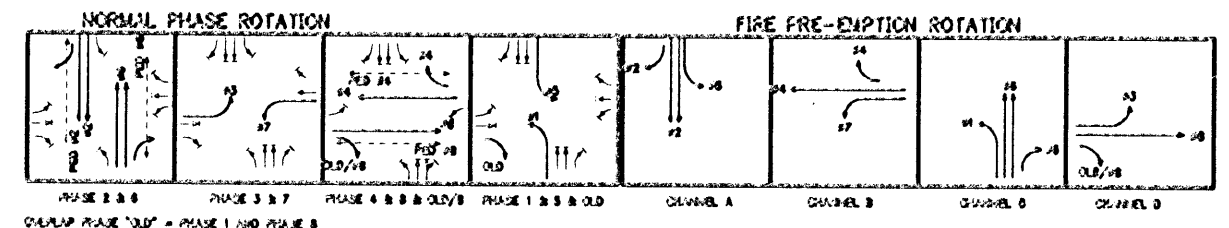
GRAPHIC SCALE

(IN METERS)



LEGEND

- Retain and protect existing signal 170 cabinet and 352 cabinet
 - Retain and protect existing traffic signal pole
 - Retain and protect existing phase (PH) side signal
 - Retain and protect existing phase (PH) programmed side signal
 - Retain and protect existing pedestrian signal push-button and instruction
 - Retain and protect existing interior illuminated sign
 - Retain and protect existing aluminum sign
 - Retain and protect existing street name sign
 - Retain and protect existing turn and advance
 - Retain and protect existing advance advance
 - Retain and protect existing master base
 - Retain and protect existing junction box
 - Retain and protect existing wiring
 - Retain and protect existing control cables
 - Retain and protect existing master cable
 - Retain and protect existing teller cable
 - Retain and protect existing electrical conduit
 - Retain and protect existing fire pre-emption detector unit
 - Retain and protect existing ref. camera system indicator
 - Retain existing aluminum sign
 - Install phase (PH) side signal with LED's
 - Install (C) control cables with (M) AMO No. (S) conductors
- S = 300mm R/LA, 300mm R/LA, 300mm O/LA
 PH = Phase ahead
 X = Number of cables shown
 M = Number shown
 S = AMO size shown



GROUP
MACKENZIE

DESIGNED BY: R. BOETTCHER
 CHECKED BY: B. FREEMAN
 DRAWN BY: R. BOETTCHER

TRAFFIC SIGNAL INSTALLATION
OREGON CITY BYPASS AT CLACKAMAS COMMUNITY COLLEGE ACCESS
CASCADE HIGHWAY SOUTH
CLACKAMAS COUNTY

DATE: 7-24-02
 ACCOMPANIED BY: DWS

TS-1

T.E. CNG. No. 12937

Intersection Name: OR213 @ Meyers Rd
Controller 122002.3 Channel: 210 Drop: 16
System: TransCore TransSuite TCS
Controller Type: Voyage
Revision - Version -
TransCore Unified Controller Manager 19.4.3

Item 9a.

Zero Tables

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Controller Function and Timing

Item 9a.

Security, Sequence and Timing (Next/2/1, Next/2/2/3/A, Next/2/2/5)				
Security Code	0	0 = disabled, or 1000-9999	First All Red	8.0 0.0 to 25.5 seconds
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag		
Power up Flash	0.0	0.0 - 25.5 seconds		

Initialization (Next/2/2/5)			Lead Lag (Next/2/2/3/A)			
Ring 1	Ring 2	Interval	Phases 1 - 2	Phases 3 - 4	Phases 5 - 6	Phases 7 - 8
1	0	0	2	2	2	2
Phase 1 - 8		0 = Red, 1 = Yel, 2 = Grn	0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

(Next/2/2/3)		Phase Functions		(Next/2/2/1)	
Phase Used	1 2 - - - 6 - 8		Yellow Lock	- - - - - - - -	
Restricted Phases	- - - - - - - -		Min Recall	- 2 - - - 6 - -	
Exclusive Phases	- - - - - - - -		Max Recall	- - - - - - - -	
			Ped Recall	- - - - - - - -	
			Red Lock	- - - - - - - -	
			Max Out Recall Inhibit	1 2 3 4 5 6 7 8	
			Soft Recall	- - - - - - - -	
			Free Walk Rest	- - - - - - - -	
			Conditional Ped	- - - - - - - -	
			Disable Inhibit Max Termination	- - - - - - - -	
			Call To Non-Act 1	- - - - - - - -	
			Call To Non-Act 2	- - - - - - - -	

Phase Times (Next/2/2/2)									
Phase	1	2	3	4	5	6	7	8	
Movement	NB to	SB				NB		EB	
Minimum Green	4	10	0	0	0	10	0	6	0 - 255 sec.
Passage	2.3	4.5	0.0	0.0	0.0	4.5	0.0	2.3	0.0 - 25.5 sec.
Yellow	3.5	5.0	0.0	0.0	0.0	5.0	0.0	4.0	0.0 - 25.5 sec.
Red Clearance	0.5	1.0	0.0	0.0	0.0	1.0	0.0	0.5	0.0 - 25.5 sec. or 0 - 255 sec.
Max 1	20	50	0	0	0	50	0	20	0 - 255 sec.
Max 2	20	50	0	0	0	50	0	20	0 - 255 sec.
Walk	0	8	0	0	0	0	0	8	0 - 255 sec.
Ped Clear	0	19	0	0	0	0	0	21	0 - 255 sec.
Seconds Per Actuation	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0 - 25.5 sec.
Time Before Reduction	8	10	0	0	0	10	0	8	0 - 255 sec.
Time to Reduce	3	10	0	0	0	10	0	3	0 - 255 sec.
Minimum Gap	0.5	2.5	0.0	0.0	0.0	2.5	0.0	0.5	0.0 - 25.5 sec.
Max Variable Initial	4	17	0	0	0	17	0	6	0 - 255 sec.
Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec.
Advanced walk	0	0	0	0	0	0	0	0	0 - 255 sec.

Phase Times (Next/2/2/9/5)									
Inhibit Min Yellow									X = On
Red Decimal Off									X = On

Dual Entry (Next/2/2/9/3)

Item 9a.

Mode	0	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61
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Dual Entry Ph -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	0	0	0	0	0	0 = none, 1-8 = phase 1-8

Cond Service (Next/2/2/9/3/A)			5 Sec Head Logic (Next/2/2/9/4)						
	Mode	CS Max Time	X Omits Y		Anti-Trap		Yellow Blanking LT		
Phase 1	0	0	X:Y		Trap Protected Phase	Next Phase	Phase		
Phase 3	0	0	6:1	0	1	0	< (5)	1	0
Phase 5	0	0	8:3	0	3	0	< (7)	3	0
Phase 7	0	0	2:5	0	5	0	< (1)	5	0
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			4:7	0	7	0	< (3)	7	0
			0 = off, 1 = side call, 2 = no side call		X = On				

Other Controller Functions (Next/2/2/9/1, Next/2/2/9/5)

Inhibit Simultaneous Gap Out	1 - 3 4 5 - 7 8	
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage
Red Revert (+2seconds)	0.0	0 - 25.5 sec.
Auto Ped Clear	Off	X = On
FDW thru Yellow	Off	X = On
Red Rest Delay	0.0	0 - 25.5 sec.
Change Sequence	Off	X = On (After a download without a power on - off cycle)
Advanced Flash Rate	60 FPM	0 = Disabled (60 FPM), 1 = 120 FPM
Ped Push Button Time	null	0 = Disable, 0 - 5 Seconds

Phase -->	1	2	3	4	5	6	7	8	
Red Clear Extension Detector	0	0	0	0	0	0	0	0	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

Local Detectors (Next/2/2/4/1)

Item 9a.

Detector Data

Detector	Description	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
1				1	1	0	0	2.0	0
2				1	1	0	0	0.0	0
3				3	3	0	0	0.0	0
4				3	3	0	0	0.0	0
5				5	5	0	0	0.0	0
6				5	5	0	0	0.0	0
7				7	7	0	0	0.0	0
8				7	7	0	0	0.0	0
9				2	2	0	0	1.0	0
10				2	2	0	0	1.0	0
11				2	2	0	0	0.0	0
12				2	2	0	0	0.0	0
13				2	2	0	0	0.0	0
14				4	4	0	0	0.0	0
15				4	4	0	0	0.0	0
16				4	4	0	0	0.0	0
17				4	4	0	0	0.0	0
18				4	4	0	0	0.0	0
19				6	6	0	0	1.0	0
20				6	6	0	0	0.0	0
21				6	6	0	0	0.0	0
22				6	6	0	0	0.0	0
23				6	6	0	0	0.0	0
24				8	8	0	3	2.0	0
25				8	8	0	0	2.0	0
26				8	8	0	0	0.0	0
27				8	8	0	10	0.0	0
28				8	8	0	0	0.0	0
29				0	0	0	0	0.0	0
30				0	0	0	0	0.0	0
31				0	0	0	0	0.0	0
32				0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 -12

Local Detectors 33 - 64 (Next/2/2/4/6)

Item 9a.

Detector Data

Detector	Description	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
33		N/A	N/A	0	0	N/A	N/A	N/A	N/A
34		N/A	N/A	0	0	N/A	N/A	N/A	N/A
35		N/A	N/A	0	0	N/A	N/A	N/A	N/A
36		N/A	N/A	0	0	N/A	N/A	N/A	N/A
37		N/A	N/A	0	0	N/A	N/A	N/A	N/A
38		N/A	N/A	0	0	N/A	N/A	N/A	N/A
39		N/A	N/A	0	0	N/A	N/A	N/A	N/A
40		N/A	N/A	0	0	N/A	N/A	N/A	N/A
41		N/A	N/A	0	0	N/A	N/A	N/A	N/A
42		N/A	N/A	0	0	N/A	N/A	N/A	N/A
43		N/A	N/A	0	0	N/A	N/A	N/A	N/A
44		N/A	N/A	0	0	N/A	N/A	N/A	N/A
45		N/A	N/A	0	0	N/A	N/A	N/A	N/A
46		N/A	N/A	0	0	N/A	N/A	N/A	N/A
47		N/A	N/A	0	0	N/A	N/A	N/A	N/A
48		N/A	N/A	0	0	N/A	N/A	N/A	N/A
49		N/A	N/A	0	0	N/A	N/A	N/A	N/A
50		N/A	N/A	0	0	N/A	N/A	N/A	N/A
51		N/A	N/A	0	0	N/A	N/A	N/A	N/A
52		N/A	N/A	0	0	N/A	N/A	N/A	N/A
53		N/A	N/A	0	0	N/A	N/A	N/A	N/A
54		N/A	N/A	0	0	N/A	N/A	N/A	N/A
55		N/A	N/A	0	0	N/A	N/A	N/A	N/A
56		N/A	N/A	0	0	N/A	N/A	N/A	N/A
57		N/A	N/A	0	0	N/A	N/A	N/A	N/A
58		N/A	N/A	0	0	N/A	N/A	N/A	N/A
59		N/A	N/A	0	0	N/A	N/A	N/A	N/A
60		N/A	N/A	0	0	N/A	N/A	N/A	N/A
61		N/A	N/A	0	0	N/A	N/A	N/A	N/A
62		N/A	N/A	0	0	N/A	N/A	N/A	N/A
63		N/A	N/A	0	0	N/A	N/A	N/A	N/A
64		N/A	N/A	0	0	N/A	N/A	N/A	N/A

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 -12

Detector Plans (Next/2/2/4/5)

Item 9a.

Loop Number										
Plan Detectors		0	0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 32 = detectors 1- 32
Detector Plan 1	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14
Detector Plan 2	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14
Detector Plan 3	Call Phase	0	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extended Phase	0	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0	0 - 255 seconds
	Stretch / Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 seconds
	Delay / Disconnect Mode	0	0	0	0	0	0	0	0	0 - 14

Detector Fail (Next/2/2/4/3)

Detector Fail Sample Period (all detectors)		0	0 - 255 minutes							
Dynamic Phase Length Fail Period		0	0 - 255 minutes							
Video Fail Inputs	1	2	3	4	5	6	7	8	0 = none, 1 - 8 = phase 1 - 8	
Phase Recalled	0	0	0	0	0	0	0	0		
System Detectors	1	2	3	4	5	6	7	8	0 = none, 1 - 32 = detector 1 - 32	
Local Detector	0	0	0	0	0	0	0	0		

Flash (Next/2/2/5)

Flash Entry			Flash Exit		
Ring 1	Ring 2	Interval	Ring 1	Ring 2	Interval
0	0	red	1	0	0
0 = none, phase 1 - 8		0 = red, 1 = yel, 2 = grn	0 = none, phase 1 - 8		0 = red, 1 = yel, 2 = grn

Soft Flash (Next/2/2/5/A)

Phase	1	2	3	4	5	6	7	8				
	0	0	0	0	0	0	0	0				
Overlap	A	B	C	D	E	F	G	H	I	J	K	L
	0	0	0	0	0	0	0	0	0	0	0	0
0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG												

Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Flashing Yellow Left Turn Arrow (FYLTA) (Next/2/2/8/6)

Item 9a.

Phase Pairs ->	1 - 2	3 - 4	5 - 6	7 - 8	
Enable	4	0	0	0	0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs
Even Omits Odd	0	0	0	0	0 / 1 / 2
Detector Switch Odd / Even	0	0	0	0	X = on, odd phase must be omitted
Red Transition	3.0	0.0	0.0	0.0	0.0 or 2.0 - 25.5 sec.
Red Extension	3.0	0.0	0.0	0.0	0.0 - 25.5 sec.
Return to GLTA	0	0	0	0	0 = off, 1 = max out, 2= yellow lock

Gap Dependent FYLTA					
Detector Input	0	0	0	0	0 = Disabled, 1 - 64 = Local Detector 1 - 64
Minimum Delay	0	0	0	0	0 - 255 seconds
Detector Gap Time	0.0	0.0	0.0	0.0	0 - 25.5 seconds.
Maximum Delay	0	0	0	0	0 - 255 seconds
Not Ped	2	0	0	0	

Dynamic Flashing Yellow Left Turn Arrow

Phase Pairs	1 - 2	3 - 4	5 - 6	7 - 8	
[Plan A] Detector Input	0	0	0	0	Detectors 1 - 64; 0 = disabled
Detector Gap Time	0.0	0.0	0.0	0.0	0.0 - 25.5
FYLTA Max Delay	0	0	0	0	0 - 255
FYLTA Min Delay	0	0	0	0	0 - 255
Not Ped Mode	0	0	0	0	0 - 4

[Plan B] Detector Input	0	0	0	0	Detectors 1 - 64; 0 = disabled
Detector Gap Time	0.0	0.0	0.0	0.0	0.0 - 25.5
FYLTA Max Delay	0	0	0	0	0 - 255
FYLTA Min Delay	0	0	0	0	0 - 255
Not Ped Mode	0	0	0	0	0 - 4

[Plan C] Detector Input	0	0	0	0	Detectors 1 - 64; 0 = disabled
Detector Gap Time	0.0	0.0	0.0	0.0	0.0 - 25.5
FYLTA Max Delay	0	0	0	0	0 - 255
FYLTA Min Delay	0	0	0	0	0 - 255
Not Ped Mode	0	0	0	0	0 - 4

[Plan D] Detector Input	0	0	0	0	Detectors 1 - 64; 0 = disabled
Detector Gap Time	0.0	0.0	0.0	0.0	0.0 - 25.5
FYLTA Max Delay	0	0	0	0	0 - 255
FYLTA Min Delay	0	0	0	0	0 - 255
Not Ped Mode	0	0	0	0	0 - 4

Max Plans (Next/2/2/7)

Item 9a.

	Phase->	1	2	3	4	5	6	7	8	
MaxPlan 1	Normal Max	17	68	0	0	0	89	0	23	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 2	Normal Max	17	58	0	0	0	79	0	23	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 3	Normal Max	20	70	0	0	0	94	0	28	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 4	Normal Max	11	42	0	0	0	57	0	25	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec
MaxPlan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Max Extend	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Auto Max	0	0	0	0	0	0	0	0	0 - 255 sec

CoordinationData			Item 9a.
Coordination Modes (Next/2/3/1)			
Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire	
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire	
Offset Seeking Mode	2	0=add only, 1=dwell, 2=fastway	
Late Ped	0	0 = off, 1 = on	
Coord Walk Rest	0	0 = off, 1 = on, 2 = by tod circuit 160, 3 = end of walk, 4 = coord ped during perms	
Zero Mode(TS2 only)	0	0=start of main street, 1=end of main street, 2=by TOD circuit 144, 3 = first green	
(Next/2/3/4/1)			
Repeated Ped Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)	
Omit Phase During Repeated Phase	- - - - -	-- = service allowed ; # = service prevented	

Coordination Plans (Next/2/3/2)								
Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Len Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1	2	6	120	53	0	0	0	1
2	2	6	110	53	0	0	0	2
3	2	6	130	61	0	0	0	3
4	2	6	90	32	0	0	0	4
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0
	0 - 8		0 - 255 sec				0 - 8	

Coordination Plans cont. (Next/2/3/2)

Item 9a.

Coord Plan	Use FO for timing	Force Off / Split Times (TS2)								Yield Points / Actuated Times (TS2)	
		1	2	3	4	5	6	7	8	Ring 1	Ring 2
1		21	72	0	0	0	93	0	27	0	0
2		21	62	0	0	0	83	0	27	0	0
3		24	74	0	0	0	98	0	32	0	0
4		15	46	0	0	0	61	0	29	0	0
5		0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points											

Circuit Mapping (Next/2/3/3)

Item 9a.

Circuit Map	Coord Plan	Time Clock Circuit							
		1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0	0	0
3	3	138	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0

coord plan - 0 = free, 1 - 32 = coord plan 1 - 32, 33 = any, 34 none selected
time clock circuits - 0 = not used, or circuits 6 - 199

Dynamic Phase Lengths (Next/2/3/4/4)

Phase ->		1	2	3	4	5	6	7	8	
Back Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Lane Factor		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 = none, 0.5 - 5.0
Check Out Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	

Auto Permissive Min Green (Next/2/3/4/3)

Phase ->	1	2	3	4	5	6	7	8	
Auto Perm Min Green	0	0	0	0	0	0	0	0	0 - 255 sec.

Time of Day Data (Next/2/4/1)

Item 9a.

Day Program

	Day Prog	Time	Coord Plan or Circuit	Coord Plan # or Circuit #	Circuit Abbrev	State On/Off
1	1	06:00	Coord Plan	1	CL1	
2	1	09:30	Coord Plan	2	CL2	
3	1	14:30	Coord Plan	3	CL4	
4	1	18:30	Coord Plan	0	None / Coord Plan	
5	2	10:00	Coord Plan	4	CL8	
6	2	17:00	Coord Plan	0	None / Coord Plan	
7	0	00:00	Circuit	0	None / Coord Plan	
8	0	00:00	Circuit	0	None / Coord Plan	
9	0	00:00	Circuit	0	None / Coord Plan	
10	0	00:00	Circuit	0	None / Coord Plan	
11	0	00:00	Circuit	0	None / Coord Plan	
12	0	00:00	Circuit	0	None / Coord Plan	
13	0	00:00	Circuit	0	None / Coord Plan	
14	0	00:00	Circuit	0	None / Coord Plan	
15	0	00:00	Circuit	0	None / Coord Plan	
16	0	00:00	Circuit	0	None / Coord Plan	
17	0	00:00	Circuit	0	None / Coord Plan	
18	0	00:00	Circuit	0	None / Coord Plan	
19	0	00:00	Circuit	0	None / Coord Plan	
20	0	00:00	Circuit	0	None / Coord Plan	
21	0	00:00	Circuit	0	None / Coord Plan	
22	0	00:00	Circuit	0	None / Coord Plan	
23	0	00:00	Circuit	0	None / Coord Plan	
24	0	00:00	Circuit	0	None / Coord Plan	
25	0	00:00	Circuit	0	None / Coord Plan	
26	0	00:00	Circuit	0	None / Coord Plan	
27	0	00:00	Circuit	0	None / Coord Plan	
28	0	00:00	Circuit	0	None / Coord Plan	
29	0	00:00	Circuit	0	None / Coord Plan	
30	0	00:00	Circuit	0	None / Coord Plan	
31	0	00:00	Circuit	0	None / Coord Plan	
32	0	00:00	Circuit	0	None / Coord Plan	
33	0	00:00	Circuit	0	None / Coord Plan	
34	0	00:00	Circuit	0	None / Coord Plan	
35	0	00:00	Circuit	0	None / Coord Plan	
36	0	00:00	Circuit	0	None / Coord Plan	
37	0	00:00	Circuit	0	None / Coord Plan	
38	0	00:00	Circuit	0	None / Coord Plan	
39	0	00:00	Circuit	0	None / Coord Plan	
40	0	00:00	Circuit	0	None / Coord Plan	
	1 - 15	hh:mm	X = On = Coord Plan	coord plan 0 - 32 or circuit 1-199		X = On

WEEK PROGRAM (Next/2/4/2)							
	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	1	1	1	1	1	2
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1

0 = none, 1 - 15 = day plan

Time Clock References (Next/2/4/5)		
Synch reference Mode	0	0 = timed, 1 = by event
Synch Reference Time	00:00	00:00 - 23:59
Daylight Saving Enable	Off	X = On
Reset Time	00:00	00:00 - 23:59

[illegible]

CIRCUIT OVERRIDES 1 - 100 (Next/2/4/4)

Item 9a.

1 - Coord Line 1	CL1	2 = TOD	51 - Ped Omit 3	PO3	2 = TOD
2 - Coord Line 2	CL2	2 = TOD	52 - Ped Omit 4	PO4	2 = TOD
3 - Coord Line 4	CL4	2 = TOD	53 - Ped Omit 5	PO5	2 = TOD
4 - Coord Line 8	CL8	2 = TOD	54 - Ped Omit 6	PO6	2 = TOD
5 - Coord Line 16	C16	2 = TOD	55 - Ped Omit 7	PO7	2 = TOD
6 - Coordinated Operation	CRD	2 = TOD	56 - Ped Omit 8	PO8	2 = TOD
7 - Soft Flash	SFL	2 = TOD	57 - Conditional Service	CVS	2 = TOD
8 - Enable System Relays	ESR	2 = TOD	58 - Inhibit Simultaneous Gap Out	ISG	1 = On
9 - Call to Non Actuated Ring 1	CN1	2 = TOD	59 - Inhibit Hardwire	HWI	2 = TOD
10 - Call to Non Actuated Ring 2	CN2	2 = TOD	60 - Ped Override Mode	POM	1 = On
11 - Walk Rest Modifier	WRM	2 = TOD	61 - Dual Entry	DLE	1 = On
12 - Min Recall	MIN	2 = TOD	62 - Exclusive Ped	EPD	2 = TOD
13 - Max 2 Both Rings	MX2	2 = TOD	63 - Call to Time Clock Mode	CTC	2 = TOD
14 - Coord Inhibit Max Ring 1,2	IMT	2 = TOD	64 - Dual Enhanced Ped	DEP	2 = TOD
15 - Enable Service Log	ESL	2 = TOD	65 - Service Plan 1	SP1	2 = TOD
16 - Call to Free	CTF	2 = TOD	66 - Service Plan 2	SP2	2 = TOD
17 - TOD Output 1	TO1	2 = TOD	67 - Service Plan 3	SP3	2 = TOD
18 - TOD Output 2	TO2	2 = TOD	68 - Service Plan 4	SP4	2 = TOD
19 - TOD Output 3	TO3	2 = TOD	69 - Service Plan 5	SP5	2 = TOD
20 - TOD Output 4	TO4	2 = TOD	70 - Service Plan 6	SP6	2 = TOD
21 - TOD Output 5	TO5	2 = TOD	71 - Service Plan 7	SP7	2 = TOD
22 - TOD Output 6	TO6	2 = TOD	72 - Service Plan 8	SP8	2 = TOD
23 - TOD Output 7	TO7	2 = TOD	73 - Max Plan 1	MP1	2 = TOD
24 - TOD Output 8	TO8	2 = TOD	74 - Max Plan 2	MP2	2 = TOD
25 - Vehicle Call Phase 1	VC1	2 = TOD	75 - Max Plan 3	MP3	2 = TOD
26 - Vehicle Call Phase 2	VC2	2 = TOD	76 - Max Plan 4	MP4	2 = TOD
27 - Vehicle Call Phase 3	VC3	2 = TOD	77 - Max Plan 5	MP5	2 = TOD
28 - Vehicle Call Phase 4	VC4	2 = TOD	78 - Max Plan 6	MP6	2 = TOD
29 - Vehicle Call Phase 5	VC5	2 = TOD	79 - Max Plan 7	MP7	2 = TOD
30 - Vehicle Call Phase 6	VC6	2 = TOD	80 - Max Plan 8	MP8	2 = TOD
31 - Vehicle Call Phase 7	VC7	2 = TOD	81 - Transit Priority Max Group 1	TG1	2 = TOD
32 - Vehicle Call Phase 8	VC8	2 = TOD	82 - Transit Priority Max Group 2	TG2	2 = TOD
33 - Ped Call Phase 1	PC1	2 = TOD	83 - Transit Priority Max Group 3	TG3	2 = TOD
34 - Ped Call Phase 2	PC2	2 = TOD	84 - Transit Priority Max Group 4	TG4	2 = TOD
35 - Ped Call Phase 3	PC3	2 = TOD	85 - Transit Priority Max Group 5	TG5	2 = TOD
36 - Ped Call Phase 4	PC4	2 = TOD	86 - Transit Priority Max Group 6	TG6	2 = TOD
37 - Ped Call Phase 5	PC5	2 = TOD	87 - Transit Priority Max Group 7	TG7	2 = TOD
38 - Ped Call Phase 6	PC6	2 = TOD	88 - Transit Priority Max Group 8	TG8	2 = TOD
39 - Ped Call Phase 7	PC7	2 = TOD	89 - Inhibit Gap Reducing 1	GR1	2 = TOD
40 - Ped Call Phase 8	PC8	2 = TOD	90 - Inhibit Gap Reducing 2	GR2	2 = TOD
41 - Phase Omit 1	VO1	2 = TOD	91 - Inhibit Gap Reducing 3	GR3	2 = TOD
42 - Phase Omit 2	VO2	2 = TOD	92 - Inhibit Gap Reducing 4	GR4	2 = TOD
43 - Phase Omit 3	VO3	2 = TOD	93 - Inhibit Gap Reducing 5	GR5	2 = TOD
44 - Phase Omit 4	VO4	2 = TOD	94 - Inhibit Gap Reducing 6	GR6	2 = TOD
45 - Phase Omit 5	VO5	2 = TOD	95 - Inhibit Gap Reducing 7	GR7	2 = TOD
46 - Phase Omit 6	VO6	2 = TOD	96 - Inhibit Gap Reducing 8	GR8	2 = TOD
47 - Phase Omit 7	VO7	2 = TOD	97 - Lag 1	LG1	2 = TOD
48 - Phase Omit 8	VO8	2 = TOD	98 - Lag 3	LG3	2 = TOD
49 - Ped Omit 1	PO1	2 = TOD	99 - Lag 5	LG5	2 = TOD
50 - Ped Omit 2	PO2	2 = TOD	100 - Lag 7	LG8	2 = TOD

CIRCUIT OVERRIDES 101 - 200 (Next/2/4/4)

Item 9a.

101 - Inhibit Overlap A	OLA	2 = TOD	151 - Coord Hold 7	HD7	2 = TOD
102 - Inhibit Overlap B	OLB	2 = TOD	152 - Coord Hold 8	HD8	2 = TOD
103 - Inhibit Overlap C	OLC	2 = TOD	153 - PE Priority Return B	PRB	2 = TOD
104 - Inhibit Overlap D	OLD	2 = TOD	154 - PE Priority Return C	PRC	2 = TOD
105 - Enable Schedule A Phone 1	AT1	2 = TOD	155 - PE Priority Return D	PRD	2 = TOD
106 - Enable Schedule A Phone 2	AT2	2 = TOD	156 - PE Priority Return E	PRE	2 = TOD
107 - Enable Schedule B Phone 1	BT1	2 = TOD	157 - Platoon Inbound	PPI	2 = TOD
108 - Enable Schedule B Phone 2	BT2	2 = TOD	158 - Platoon Outbound	PPO	2 = TOD
109 - Enable Schedule C Phone 1	CT1	2 = TOD	159 - Platoon Spl 2	PS2	2 = TOD
110 - Enable Schedule C Phone 2	CT2	2 = TOD	160 - Coord Walk Rest	CWR	2 = TOD
111 - Enable Volume to Call Phone 1	VT1	2 = TOD	161 - Dynamic Phase Length Short Inhibit 1	SL1	2 = TOD
112 - Enable Volume to Call Phone 1	VT2	2 = TOD	162 - Dynamic Phase Length Short Inhibit 2	SL2	2 = TOD
113 - Enable Volume Logging	EVL	1 = On	163 - Dynamic Phase Length Short Inhibit 3	SL3	2 = TOD
114 - Enable MOE Logging	EML	1 = On	164 - Dynamic Phase Length Short Inhibit 4	SL4	2 = TOD
115 - Detector Low Threshold Inhibit	DLI	2 = TOD	165 - Dynamic Phase Length Short Inhibit 5	SL5	2 = TOD
116 - Detector Continue Presence Inhibit	DPI	2 = TOD	166 - Dynamic Phase Length Short Inhibit 6	SL6	2 = TOD
117 - Inhibit Detector Based On Programming	IND	2 = TOD	167 - Dynamic Phase Length Short Inhibit 7	SL7	2 = TOD
118 - Inhibit Detector Delay	IDD	2 = TOD	168 - Dynamic Phase Length Short Inhibit 8	SL8	2 = TOD
119 - Inhibit Conditional Ped	ICP	2 = TOD	169 - Coord Late Left Turn 1	CT1	2 = TOD
120 - Inhibit Transit Priority	ITP	2 = TOD	170 - Coord Late Left Turn 3	CT3	2 = TOD
121 - Red Rest Ring 1,2	RRM	2 = TOD	171 - Coord Late Left Turn 5	CT5	2 = TOD
122 - Enable Transcend	TRA	2 = TOD	172 - Coord Late Left Turn 7	CT7	2 = TOD
123 - Omit Red Clear Ring 1,2	ORC	2 = TOD	173 - Dynamic Phase Length Enable A	DPA	2 = TOD
124 - Enable Classification Logging	CLE	2 = TOD	174 - Dynamic Phase Length Enable B	DPB	2 = TOD
125 - Ped Recycle Ring 1,2	PCY	2 = TOD	175 - Dynamic Phase Length Enable C	DPC	2 = TOD
126 - Not Used"	N/U	2 = TOD	176 - Dynamic Phase Length Enable D	DPD	2 = TOD
127 - Enable MOE Log to Call Phone 1	MT1	2 = TOD	177 - Proactive Plan Select Average	PSA	2 = TOD
128 - Enable MOE Log to Call Phone 2	MT2	2 = TOD	178 - Proactive Plan Select Inbound	PSI	2 = TOD
129 - Transit Inhibit Short Time 1	IS1	2 = TOD	179 - Proactive Plan Select Outbound	PSO	2 = TOD
130 - Transit Inhibit Short Time 2	IS2	2 = TOD	180 - Split Variant Inbound	SVI	2 = TOD
131 - Transit Inhibit Short Time 3	IS3	2 = TOD	181 - Split Variant Outbound	SVO	2 = TOD
132 - Transit Inhibit Short Time 4	IS4	2 = TOD	182 - Disable Coord Walk Rest Ring 1	WR1	2 = TOD
133 - Transit Inhibit Short Time 5	IS5	2 = TOD	183 - Disable Coord Walk Rest Ring 2	WR2	2 = TOD
134 - Transit Inhibit Short Time 6	IS6	2 = TOD	184 - Proactive Plan Select New Look	NLK	2 = TOD
135 - Transit Inhibit Short Time 7	IS7	2 = TOD	185 - Disable Red Clearance Extension	DRX	2 = TOD
136 - Transit Inhibit Short Time 8	IS8	2 = TOD	186 - Detector Plan Line 1	DL1	2 = TOD
137 - Enable Transit Priority Logging	ETL	2 = TOD	187 - Detector Plan Line 2	DL2	2 = TOD
138 - Disable Flashing Yellow Arrow 1	DF1	2 = TOD	188 - Disable LRT 1 Vertical Flashing Bar	DV1	2 = TOD
139 - Disable Flashing Yellow Arrow 3	DF3	2 = TOD	189 - Disable LRT 2 Vertical Flashing Bar	DV2	2 = TOD
140 - Disable Flashing Yellow Arrow 5	DF5	2 = TOD	190 - Disable LRT 3 Vertical Flashing Bar	DV3	2 = TOD
141 - Disable Flashing Yellow Arrow 7	DF7	2 = TOD	191 - Disable LRT 4 Vertical Flashing Bar	DV4	2 = TOD
142 - Disable Auto Max	DAM	2 = TOD	192 - Datakey Enable	DKE	1 = On
143 - Disable Repeated Phase Service	DRS	2 = TOD	193 - Dynamic Phase Reversal Enable 1	DR1	2 = TOD
144 - End of Main Street	EMS	2 = TOD	194 - Dynamic Phase Reversal Enable 3	DR3	2 = TOD
145 - Coord Hold 1	HD1	2 = TOD	195 - Dynamic Phase Reversal Enable 5	DR5	2 = TOD
146 - Coord Hold 2	HD2	2 = TOD	196 - Dynamic Phase Reversal Enable 7	DR7	2 = TOD
147 - Coord Hold 3	HD3	2 = TOD	197 - Enable Coordination Log	ECL	1 = On
148 - Coord Hold 4	HD4	2 = TOD	198 - Disable Gap For FYLTA	DGF	2 = TOD
149 - Coord Hold 5	HD5	2 = TOD	199 - Coordination Auto Walk	CAW	2 = TOD
150 - Coord Hold 6	HD6	2 = TOD	200 - Enable Coordinated Auto Max	ECM	2 = TOD

PREEMPTION SEQUENCE 1 - 4 (Next/2/5)

Item 9a.

Seq	Interval	Instruction	Phases Serviced	Interval Time	Hold On Input	Output On	Output Mode	Instructions -
1	1	197	- 2 - - - - -	0	On	- - - - -	0	0 = service phases defined in phases location
	2	98	- - - - -	0	Off	- - - - -	0	1-9 = use special intervals 1-9
	3	0	- - - - -	0	Off	- - - - -	0	10 = preempt sequence allows fylta
	4	0	- - - - -	0	Off	- - - - -	0	11 = preempt interval disables fylta
	5	0	- - - - -	0	Off	- - - - -	0	15 = alternate trap protection
	6	0	- - - - -	0	Off	- - - - -	0	90 = go to all red
	7	0	- - - - -	0	Off	- - - - -	0	91 = turn cvm off
	8	0	- - - - -	0	Off	- - - - -	0	92 = turn cvm on
	9	0	- - - - -	0	Off	- - - - -	0	93 = enable ped service and phases defined in phases location
	10	0	- - - - -	0	Off	- - - - -	0	94 = disable ped service
2	1	0	- - - - -	0	Off	- - - - -	0	96 = enable coordination w/peds
	2	0	- - - - -	0	Off	- - - - -	0	97 = enable coordination w/o peds
	3	0	- - - - -	0	Off	- - - - -	0	98 = return with no calls
	4	0	- - - - -	0	Off	- - - - -	0	99 = return with ped calls and phases defined in phases location
	5	0	- - - - -	0	Off	- - - - -	0	100 = jump to step defined in time location and input has to be active for jump
	6	0	- - - - -	0	Off	- - - - -	0	101 = use time as resettable gap timer and service phases defined in phases location
	7	0	- - - - -	0	Off	- - - - -	0	196 = coordination sync w/peds
	8	0	- - - - -	0	Off	- - - - -	0	197 = coordination sync w/o peds
	9	0	- - - - -	0	Off	- - - - -	0	200 = lrt phase service w/o peds
	10	0	- - - - -	0	Off	- - - - -	0	201 = lrt phase service w/peds
3	1	197	1 - - - - 6 - -	0	On	- - - - -	0	202 = priority return-queue/delay
	2	98	- - - - -	0	Off	- - - - -	0	216 = lrt coordination sync w/peds
	3	0	- - - - -	0	Off	- - - - -	0	217 = lrt coordination sync w/o peds
	4	0	- - - - -	0	Off	- - - - -	0	Phases Serviced - phases 1 - 8
	5	0	- - - - -	0	Off	- - - - -	0	Interval Time - 0 - 255 sec or interval 1 - 10
	6	0	- - - - -	0	Off	- - - - -	0	Hold on Input:
	7	0	- - - - -	0	Off	- - - - -	0	0 = Do not hold
	8	0	- - - - -	0	Off	- - - - -	0	1 = Hold
	9	0	- - - - -	0	Off	- - - - -	0	2 = Ped Service to Rest in Walk
	10	0	- - - - -	0	Off	- - - - -	0	Outputs On - output 1 - 8
4	1	197	- - - - - 8	0	On	- - - - -	0	Output Modes -
	2	98	- - - - -	0	Off	- - - - -	0	0 = all steady on
	3	0	- - - - -	0	Off	- - - - -	0	1 = all flash together
	4	0	- - - - -	0	Off	- - - - -	0	2 = odd flashes WIG, even flashes WAG
	5	0	- - - - -	0	Off	- - - - -	0	3 = 1 - 4 steady on, 5 - 8 all flash together
	6	0	- - - - -	0	Off	- - - - -	0	
	7	0	- - - - -	0	Off	- - - - -	0	
	8	0	- - - - -	0	Off	- - - - -	0	
	9	0	- - - - -	0	Off	- - - - -	0	
	10	0	- - - - -	0	Off	- - - - -	0	

SEQUENCE TIMING (Next/2/5/0)

Item 9a.

Sequence		1	2	3	4	5	6	7	8	
Input Memory										X = on
Input Priority		6	0	6	6	0	0	0	0	0 = lowest, - 8 = highest
Entry (Transition) Parameters	Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec 0.0 would time the normal function time
	Walk	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	
	Ped Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Overlap Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Overlap Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay to Preempt	0	0	0	0	0	0	0	0	0 - 255 sec
	Delay Ped Omit	0	0	0	0	0	0	0	0	
	Delay Phase Omit	0	0	0	0	0	0	0	0	0 - 255 min
	Min Reservice	0	0	0	0	0	0	0	0	
Overlap Inhibits		A								X = on
		B								
		C								
		D								
Exit Parameters	Exit to Coord Plan Offset by X	0	0	0	0	0	0	0	0	0 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	0	
	Exit Mode Time	0	0	0	0	0	0	0	0	

PRIORITY RETURN AND SPECIAL INTERVALS (Next/2/5/0/6, Next/2/5/9)

Phase / Overlap		1	2	3	4	5	6	7	8	A	B	C	D	
Priority Return	Enable	Off	0 = disabled; 1 = enabled; 2 = enabled and skip preempt phase on exit											
	A (max)	0	0	0	0	0	0	0	0	0 - 100% of currently used max				
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
	Ped Clear	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance				
Queue Delay Recovery		0	0	0	0	0	0	0	0	0 - 255 sec				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11 = flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	

LIGHT RAIL TRAIN (Next/2/5/0/7)

Light Rail Train	1	2	3	4	
Associated Preempt	0	0	0	0	0 = none, preempt 1 - 8
Time to Green	0	0	0	0	0 - 255 sec
Horizontal Bar Flash Time	0.0	0.0	0.0	0.0	
Vertical Bar Flash Time	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Min Duration	0	0	0	0	0 - 255 sec

COMMUNICATION DATA (Next/2/6)

1st Central Phone Number		2nd Central Phone Number	
Modem Setup String			
Intersection Name	2B2, OR213 at Meyers		
Central Port	6 = UDP/AB3418/C14S		
System Mode	0		
System Port	0		
System ID	53	AB3418 Physical Address	1
Local ID	11	AB3418 Group Address	0
Serial Port Parameters	Baud Rates	Flow	Ethernet Parameters 1, 2
Port1 (Slot A2 Upper)	3 =	1	IP Address 10.11.17.211
Port2 (Slot A2 Lower)	3 =	1	Gateway Address 10.11.17.209
Port3 (Slot A1 Upper)	3 =	1	Subnet Mask 255.255.252.240 0 . 0 . 0 . 0
Port4 (Slot A1 :pwer pr C50S)	3 =	Not Used	IP Port 25000 0
0 = 1200, 1 = 2400, 2 = 9600, 3 = 19200 baud			

COMMUNICATION REPORTS (Next/2/6/6, Next/2/6/7)

Volume Log Period	15	0 - 255 seconds or see below	MOE Log Period	15	See below
Volume OCC Period	15	0 - 255 seconds			
0 = disabled, 1,2,3,4,5,6,10,12,15,20,30,60 minutes					

Alarm 1	0	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R	Soft Flash	1	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R
Alarm 2	0		Manual Control Enable (MCE)	4	
Alarm 3	0		Emergency or Railroad Preempt	1	
Alarm 4	0		Light Rail Train (LRG)	0	
Alarm 5	0		Cycle Failure	2	
Not Used			Coordination Failure	2	
Not Used			Keyboard use /Data Changed	3	
Not Used			Coord Running / Free	2	
Power On / Off	1		Cabinet Door	3	
Checksum Failure	4		Extended Ped Pushbutton	3	
Video / Detector Failure	4	Monitor Status	4		
Master to Local Comm Lost	0	Red Extension	2		

Miscellaneous Data

Item 9a.

TRANSIT PRIORITY (Next/2/7)

	1	2	3	4	5	6	7	8	
Phases	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	Phases 1 - 8 (max of 2 compatible phases)
PE Enable (6.25Hz TP call on PE)	X	X	X	X	X	X	X	X	X = 6.25 Hz signal will activate TP
Priority	0	0	0	0	0	0	0	0	0 - 8, 8 = highest
Memory									X = on
Delay Time	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Reservice Time (per input)	0	0	0	0	0	0	0	0	0 - 255 min
Override Time	0	0	0	0	0	0	0	0	0 - 255 sec
Bus Extend	0	0	0	0	0	0	0	0	0 - 255 min
Minimum Reservice Time (all inputs)	0	0 - 255 min							
Free Operation Mode	0	0 = use shortest of max 1 or 2, 1 - 8 = use max time of group 1 - 8, 9 = use time of day circuit							

TRANSIT PRIORITY ALTERNATE FORCE OFF PLANS (Next/2/7/6)

Current Coord Plan	1	2	3	4	5	6	7	8	0 = none 17 - 32 = coord plan 17 - 32
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	
Current Coord Plan	9	10	11	12	13	14	15	16	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	

GROUP TIMING (Next/2/7/5)

	Phase -->	1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

TRUCK PRIORITY (Next/2/7/9)

Truck Priority -->	1	2	3	4	5	6	7	8	
Associated Transit Priority	0	0	0	0	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	0	0	0	0	
Stop Bar Distance	0	0	0	0	0	0	0	0	0 - 999 feet
Trap Distance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0	0	0	0	0 - 255 feet
Minimum Log Speed (mph)	0	0	0	0	0	0	0	0	0 - 20%
Minimum Log Length (feet)	0	0	0	0	0	0	0	0	
Downhill Grade (%)	0	0	0	0	0	0	0	0	
Uphill Grade (%)	0	0	0	0	0	0	0	0	
Undersized Vehicle									X = Enabled

170 OUTPUTS (Next/2/8/2)

Item 9a.

C1-2	0 - Use Default	C1-35	0 - Use Default
C1-3	0 - Use Default	C1-36	0 - Use Default
C1-4	0 - Use Default	C1-37	0 - Use Default
C1-5	0 - Use Default	C1-38	0 - Use Default
C1-6	0 - Use Default	C1-100	0 - Use Default
C1-7	0 - Use Default	C1-101	0 - Use Default
C1-8	0 - Use Default	C1-102	0 - Use Default
C1-9	215 - FYLTA, 1	C1-103	0 - Use Default
C1-10	0 - Use Default	C1-83	0 - Use Default
C1-11	0 - Use Default	C1-84	0 - Use Default
C1-12	0 - Use Default	C1-85	0 - Use Default
C1-13	0 - Use Default	C1-86	0 - Use Default
C1-15	0 - Use Default	C1-87	0 - Use Default
C1-16	0 - Use Default	C1-88	0 - Use Default
C1-17	221 - FYLTA CLR, 1	C1-89	0 - Use Default
C1-18	0 - Use Default	C1-90	0 - Use Default
C1-19	0 - Use Default	C1-91	0 - Use Default
C1-20	0 - Use Default	C1-93	0 - Use Default
C1-21	0 - Use Default	C1-94	0 - Use Default
C1-22	0 - Use Default	C1-95	0 - Use Default
C1-23	0 - Use Default	C1-96	0 - Use Default
C1-24	0 - Use Default	C1-97	0 - Use Default
C1-25	0 - Use Default	C1-98	0 - Use Default
C1-26	0 - Use Default	C1-99	0 - Use Default
C1-27	0 - Use Default	C11-1	0 - Use Default
C1-28	0 - Use Default	C11-2	0 - Use Default
C1-29	0 - Use Default	C11-3	0 - Use Default
C1-30	0 - Use Default	C11-4	0 - Use Default
C1-31	0 - Use Default	C11-5	0 - Use Default
C1-32	0 - Use Default	C11-6	0 - Use Default
C1-33	0 - Use Default	C11-7	0 - Use Default
C1-34	0 - Use Default	C11-8	0 - Use Default

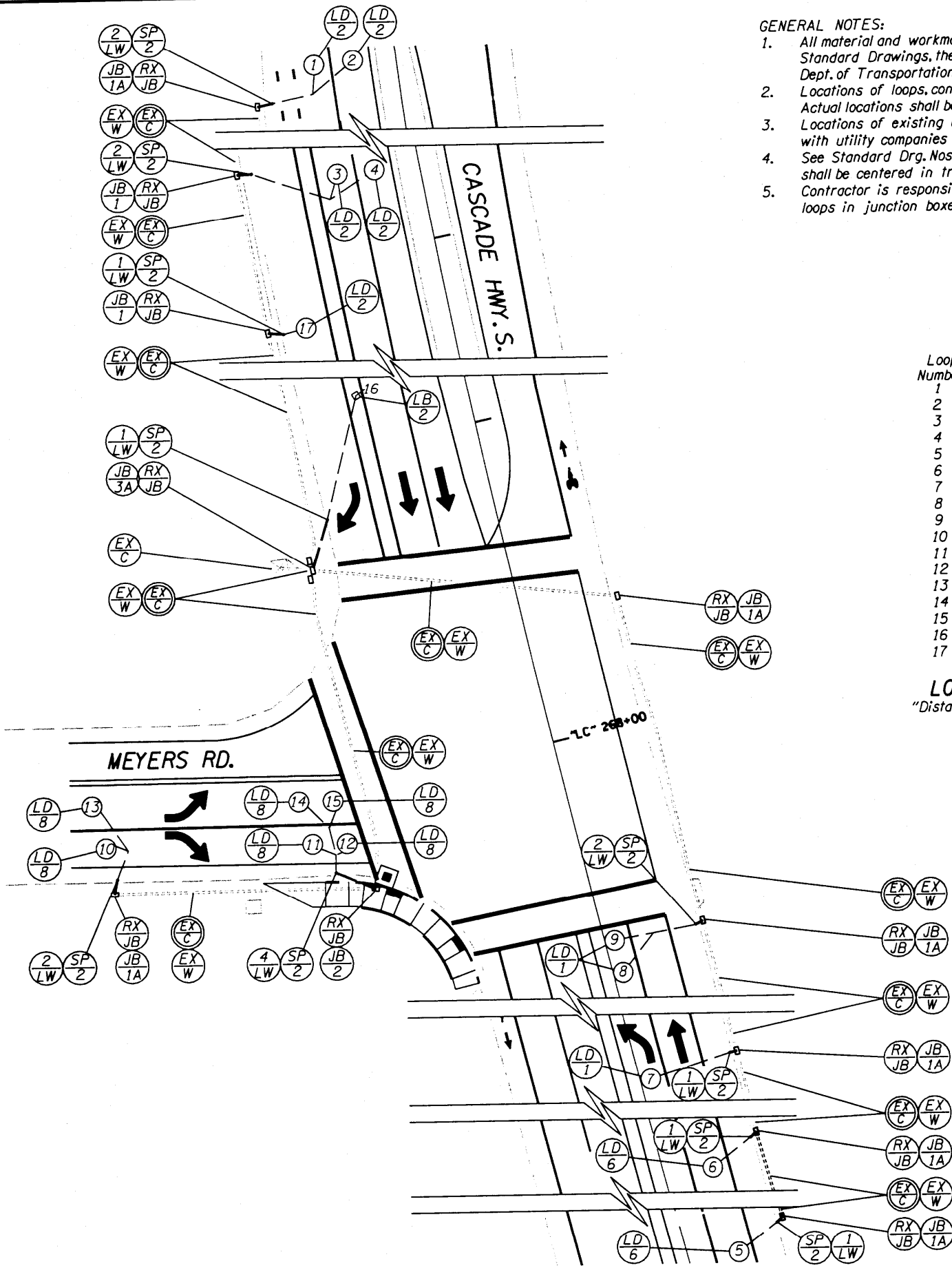
CONTROLLER ID

Item 9a.

Manufacturer ID	NORTHWEST SIGNAL
Model ID	Voyage-0 v05.03.03
Protocol Revision ID	AB3418E V1

LOOP REPLACEMENT PLAN
CASCADE HWY. SOUTH AT MEYERS RD.
ORE. 213 AT M.P. 3.81

- GENERAL NOTES:
1. All material and workmanship shall conform to the Oregon Dept. of Transportation Standard Drawings, the Standard Specification for Highway Construction (2002, Oregon Dept. of Transportation), and the Special Provisions for this contract.
 2. Locations of loops, conduits, and junction boxes (as shown on the plan) are approximate. Actual locations shall be designated in the field by the Engineer.
 3. Locations of existing utilities shall be verified by the Contractor. Coordinate all work with utility companies to eliminate conflicts.
 4. See Standard Drg. Nos. TM475 and TM480 for loop detector details. All detector loops shall be centered in travel lanes, or as shown.
 5. Contractor is responsible for re-wiring and re-numbering new and existing detector loops in junction boxes and cabinet to match wiring diagram.

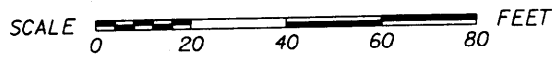


Loop Number	Distance Feet	Phase	Slot
1	320	2	I2U
2	320	2	I2L
3	160	2	I3U
4	160	2	I3L
5	320	6	J2U
6	160	6	J2L
7	75	1	I1U
8	15	1	I9U
9	5	8	J6U
10	75	8	J7L
11	15	8	J6L
12	5	8	J7U
13	75	2	I3L
14	15	3(2)	I5U
15	5		
16	50		
17	115		

LOOP DETECTOR WIRING DIAGRAM
"Distance" is from Stop Line to center of loop in feet

LEGEND

- EX C Retain and protect existing controller and cabinet
- EX C Retain and protect existing conduit
- EX W Retain and protect existing wiring
- JB 1A Install 17"x10"x12" (min. dimension) precast concrete junction box with concrete apron
- JB 1 Install 17"x10"x12" (min. dimension) precast concrete junction box
- LD Ph Install phase (Ph=phase) 6' round or 4' diamond vehicle detector loop
- N LW Install (N=number) pair of loop wires
- SP S Install 6" max. sand pocket block-out with (S=size) inch conduit to junction box
- LB Ph Install phase (Ph=phase) 2 1/2' diamond bicycle detector loop
- JB 2 Install 22"x12"x12" (min. dimension) precast concrete junction box
- JB 3A Install 30"x17"x12" (min. dimension) precast concrete junction box with concrete apron
- RX JB Remove existing junction box



REGISTERED PROFESSIONAL
ENGINEER
75516
FUSAN LIN
Nov. 9, 2004
Expires Dec. 31, 2008

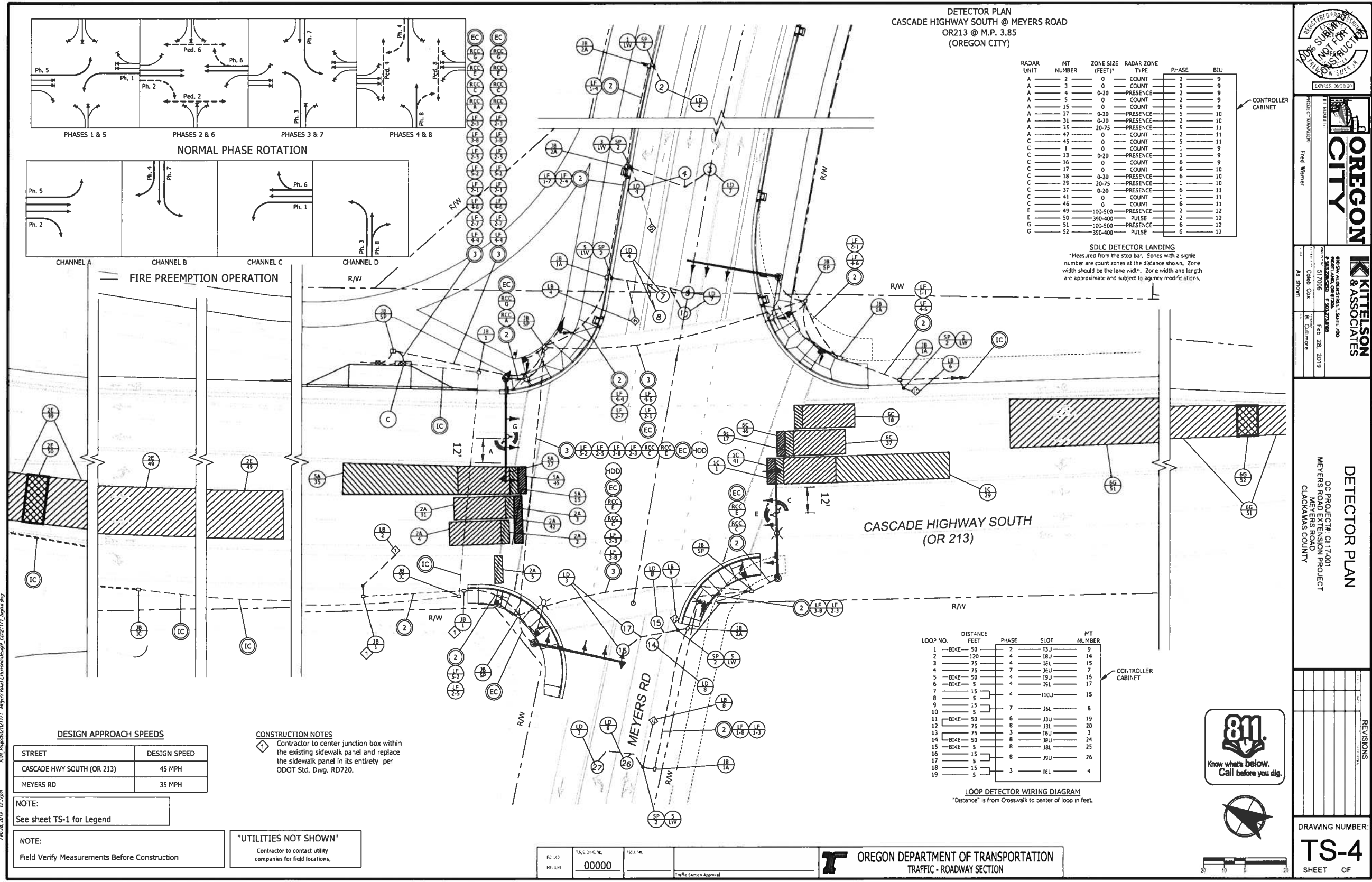
OREGON DEPARTMENT OF TRANSPORTATION
TRAFFIC - ROADWAY SECTION

HDR HDR Engineering, Inc.
OR213: E PORTLAND FWY-
CONWAY DR SEC.
CASCADE HIGHWAY SOUTH
CLACKAMAS COUNTY

DESIGNED BY: FL
REVIEWED BY: JB
DRAWN BY: JTB
FC: 160 MP: 13.81

DETECTOR PLAN

Str. ID. No. T.R.S. DWG. NO. 14870



Administration**MaxTime Timing Shee**

4 Phase, Ph 1 LT FYA

Item 9a.

Unit Information

Controller ID	7649
Main St.	Beavercreek Rd
Side St.	Meyers Rd

 Cross Black_White.jpg

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	DHCP
1	10.43.76.49	255.255.0.0	10.43.0.1	Disable	
2	10.43.76.49	255.255.0.0	10.43.0.1	Disable	

Serial Ports:

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Flash	1	Auto Ped Clr	Enable	Red Revert	5.0	Backup Time	600	Ext Mode	Disable
All Red Exit	0	Grn Flash Freq.	60	Yel Flash Freq.	60	MCE Enable	Enable	Free Seq.	1
MCE Seq.	1	Start Yellow	0.0	Start Red	0.0	Start Clear Hold	8		

Phase Parameters

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Walk Time	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	13	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	4	10	1	1	1	10	1	6	1	1	1	1	1	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	2.3	2.0	0.0	0.0	0.0	2.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	20	40	0	0	0	40	0	30	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	25	45	0	0	0	45	0	40	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.5	4.3	3.0	3.0	3.0	4.3	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.5	2.0	0.0	0.0	0.0	2.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	30	50	0	0	0	50	0	45	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	5.0	5.0	0.0	0.0	0.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Walk Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Min Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yel Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Options

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Enable																				
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II																				
Non Lock Mem																				
Min Veh Recall																				
Max Veh Recall																				
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Enable																				
Auto Flash Ent.																				
Auto Flash Exit																				
Non Actuated I																				
Non Actuated II																				
Non Lock Mem																				
Min Veh Recall																				
Max Veh Recall																				
Ped Recall																				
Soft Veh Recall																				
Dual Entry																				
Sim Gap Dis																				
Guaranteed Pass																				
Act Rest Walk																				
Cond Service																				
Add Initial																				

Additional Phase Options

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phases	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ped Clr During Yel																				
Ped Clr During Red																				
Cond Reservice																				
Yel Min Override																				
No Startup Call																				
Adv. Warn Flasher																				
No Ped Str Up Call																				
Ped Clr OVTG																				
Flash Exit Call																				
Flash Exit Ped Call																				
MinGreen2																				
MaxGreen2																				
MaxGreen3																				
Ped2																				
Ped Clear Pre Clear																				
Ped NA+ Mode																				
Red Rest																				
Serve Evy Oth Even																				
Serve Evy Oth Odd																				

Phase Configuration

Ph.	Startup	Ring	Concurrent	No Served Phases	Startup Min	Description
1	Phase Not On	1	5,6		0	NBL
2	Green Walk	1	5,6		0	SB
3	Phase Not On	1	7,8		0	
4	Phase Not On	1	7,8		0	
5	Phase Not On	2	1,2		0	
6	Green Walk	2	1,2		0	NB
7	Phase Not On	2	3,4		0	
8	Phase Not On	2	3,4		0	EB
9	None	0			0	
10	None	0			0	
11	None	0			0	
12	None	0			0	
13	None	0			0	
14	None	0			0	
15	None	0			0	
16	None	0			0	
17	None	0			0	
18	None	0			0	
19	None	0			0	
20	None	0			0	

21	None	0			0	
22	None	0			0	
23	None	0			0	
24	None	0			0	
25	None	0			0	
26	None	0			0	
27	None	0			0	
28	None	0			0	
29	None	0			0	
30	None	0			0	
31	None	0			0	
32	None	0			0	
33	None	0			0	
34	None	0			0	
35	None	0			0	
36	None	0			0	
37	None	0			0	
38	None	0			0	
39	None	0			0	
40	None	0			0	

Sequence Configuration

Sequence 1

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 2

Ring	Phases
1	2,1,a,3,4,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 3

Ring	Phases
1	1,2,a,4,3,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 4

Ring	Phases
1	2,1,a,4,3,b
2	5,6,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 5

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 6

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 7

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 8

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 9

Ring	Phases
1	1,2,a,3,4,b

Sequence 10

Ring	Phases
1	2,1,a,3,4,b

Sequence 11

Ring	Phases
1	1,2,a,4,3,b

Sequence 12

Ring	Phases
1	2,1,a,4,3,b

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

2	5,6,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 13

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 14

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 15

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 16

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	
5	
6	
7	
8	
9	
10	

Sequence 13

11	
12	
13	
14	
15	
16	

Sequence 14

11	
12	
13	
14	
15	
16	

Sequence 15

11	
12	
13	
14	
15	
16	

Sequence 16

11	
12	
13	
14	
15	
16	

Sequence 17

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 18

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 19

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Sequence 20

Ring	Phases
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Vehicle Detection Parameters

Det.	Call Phs	Call Ovl	Additional Call Phase	Switch Phase	Delay	Extend	Queue Limit	No Activity	Max Presence	Erratic Counts	Failed Time	Description
1	1	0	2	0	0.0	0.0	0	0	0	0	0	I1
2	2	0		0	0.0	0.0	0	0	0	0	0	I2U
3	2	0		0	0.0	0.0	0	0	0	0	0	I2L
4	2	0		0	0.0	0.0	0	0	0	0	0	I3U

5	2	0		0	0.0	0.0	0	0	0	0	0	I3L
6	2	0		0	0.0	0.0	0	0	0	0	0	I4
7	3	0		0	0.0	0.0	0	0	0	0	0	I5
8	4	0		0	0.0	0.0	0	0	0	0	0	I6U
9	4	0		0	0.0	0.0	0	0	0	0	0	I6L
10	4	0		0	0.0	0.0	0	0	0	0	0	I7U
11	4	0		0	0.0	0.0	0	0	0	0	0	I7L
12	4	0		0	0.0	0.0	0	0	0	0	0	I8
13	1	0	2	0	0.0	0.0	0	0	0	0	0	I9U
14	3	0		0	0.0	0.0	0	0	0	0	0	I9L
15	5	0		0	0.0	0.0	0	0	0	0	0	J1
16	6	0		0	0.0	0.0	0	0	0	0	0	J2U
17	6	0		0	0.0	0.0	0	0	0	0	0	J2L
18	6	0		0	0.0	0.0	0	0	0	0	0	J3U
19	6	0		0	0.0	0.0	0	0	0	0	0	J3L
20	6	0		0	0.0	0.0	0	0	0	0	0	J4
21	7	0		0	0.0	0.0	0	0	0	0	0	J5
22	8	0		0	6.0	2.0	0	0	0	0	0	J6U - EB RT Adv
23	8	0		0	0.0	2.0	0	0	0	0	0	J6L - EB LT Adv
24	8	0		0	10.0	0.0	0	0	0	0	0	J7U - EB RT Stopbar
25	8	0		0	2.0	0.0	0	0	0	0	0	J7L - EB LT Stopbar
26	8	0		0	2.0	0.0	0	0	0	0	0	J8 - EB Bike
27	5	0		0	0.0	0.0	0	0	0	0	0	J9U
28	7	0		0	0.0	0.0	0	0	0	0	0	J9L
29	0	0		0	0.0	0.0	0	0	0	0	0	
30	0	0		0	0.0	0.0	0	0	0	0	0	
31	0	0		0	0.0	0.0	0	0	0	0	0	
32	0	0		0	0.0	0.0	0	0	0	0	0	
33	0	0		0	0.0	0.0	0	0	0	0	0	
34	0	0		0	0.0	0.0	0	0	0	0	0	
35	0	0		0	0.0	0.0	0	0	0	0	0	
36	0	0		0	0.0	0.0	0	0	0	0	0	
37	0	0		0	0.0	0.0	0	0	0	0	0	
38	0	0		0	0.0	0.0	0	0	0	0	0	
39	0	0		0	0.0	0.0	0	0	0	0	0	
40	0	0		0	0.0	0.0	0	0	0	0	0	
41	0	0		0	0.0	0.0	0	0	0	0	0	
42	0	0		0	0.0	0.0	0	0	0	0	0	
43	0	0		0	0.0	0.0	0	0	0	0	0	
44	0	0		0	0.0	0.0	0	0	0	0	0	
45	0	0		0	0.0	0.0	0	0	0	0	0	
46	0	0		0	0.0	0.0	0	0	0	0	0	
47	0	0		0	0.0	0.0	0	0	0	0	0	
48	0	0		0	0.0	0.0	0	0	0	0	0	
49	0	0		0	0.0	0.0	0	0	0	0	0	
50	0	0		0	0.0	0.0	0	0	0	0	0	
51	0	0		0	0.0	0.0	0	0	0	0	0	
52	0	0		0	0.0	0.0	0	0	0	0	0	
53	0	0		0	0.0	0.0	0	0	0	0	0	
54	0	0		0	0.0	0.0	0	0	0	0	0	
55	0	0		0	0.0	0.0	0	0	0	0	0	
56	0	0		0	0.0	0.0	0	0	0	0	0	
57	0	0		0	0.0	0.0	0	0	0	0	0	
58	0	0		0	0.0	0.0	0	0	0	0	0	
59	0	0		0	0.0	0.0	0	0	0	0	0	
60	0	0		0	0.0	0.0	0	0	0	0	0	
61	0	0		0	0.0	0.0	0	0	0	0	0	
62	0	0		0	0.0	0.0	0	0	0	0	0	
63	0	0		0	0.0	0.0	0	0	0	0	0	
64	0	0		0	0.0	0.0	0	0	0	0	0	
65	0	0		0	0.0	0.0	0	0	0	0	0	
66	0	0		0	0.0	0.0	0	0	0	0	0	
67	0	0		0	0.0	0.0	0	0	0	0	0	
68	0	0		0	0.0	0.0	0	0	0	0	0	

69	0	0		0	0.0	0.0	0	0	0	0	0	
70	0	0		0	0.0	0.0	0	0	0	0	0	
71	0	0		0	0.0	0.0	0	0	0	0	0	
72	0	0		0	0.0	0.0	0	0	0	0	0	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Passage																				
Queue																				
Call																				
Terminate																				

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Passage																				
Queue																				
Call																				
Terminate																				

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock call																				
Passage																				
Queue																				
Call																				
Terminate																				

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock call												
Passage												
Queue												
Call												
Terminate												

Data Collection Period 60

Pedestrian Detectors

Det	Call Phase	Call Ovlp	No Act	Max Presence	Erratic Count
1	0	0	0	0	0
2	2	2	0	0	0
3	0	0	0	0	0
4	4	0	0	0	0
5	0	0	0	0	0
6	6	6	0	0	0
7	0	0	0	0	0
8	8	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0

Det	Call Phase	Call Ovlp	No Act	Max Presence	Erratic Count
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0
30	0	0	0	0	0
31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0

15	0	0	0	0	0
16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0

35	0	0	0	0	0
36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0

Overlaps

OLP	Type	Included Phases	Modifier Phases	Trail	Trail	Trail	Walk	Ped	Walk	Ped	Delay	Flash	Descriptions
				GRN	YEL	RED	1	Clr 1	2	Clr 2			
1	Custom 1	1		0	0.0	0.0	0	0	0	0	0.0	Off	
2	Normal	2		0	0.0	0.0	0	0	0	0	0.0	Off	
3	Custom 1	3		0	0.0	0.0	0	0	0	0	0.0	Off	
4	Normal	4		0	0.0	0.0	0	0	0	0	0.0	Off	
5	Custom 1	5		0	0.0	0.0	0	0	0	0	0.0	Off	
6	Normal	6		0	0.0	0.0	0	0	0	0	0.0	Off	
7	Custom 1	7		0	0.0	0.0	0	0	0	0	0.0	Off	
8	Normal	8		0	0.0	0.0	0	0	0	0	0.0	Off	
9	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
10	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
11	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
12	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
13	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
14	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
15	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
16	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
17	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
18	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
19	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
20	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
21	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
22	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
23	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
24	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
25	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
26	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
27	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
28	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
29	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
30	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
31	Off			0	0.0	0.0	0	0	0	0	0.0	Off	
32	Off			0	0.0	0.0	0	0	0	0	0.0	Off	

Coordination Parameters

Operational Mode	Correction Mode	Maximum Mode	Force Mode
Automatic	Shortway (Auto)	Per Pattern	Per Pattern

Patterns

Patt.	Cycle	Offset 1	Offset 2	Offset 2	Split	Sequence	Ref. Color	Max Mode	Phs	Det	Ped
									Pln	Pln	Pln
1	0	0	0	0	0	0	Yel	Inh	1	1	1
2	0	0	0	0	0	0	Yel	Inh	1	1	1
3	0	0	0	0	0	0	Yel	Inh	1	1	1
4	0	0	0	0	0	0	Yel	Inh	1	1	1
5	0	0	0	0	0	0	Yel	Inh	1	1	1
6	0	0	0	0	0	0	Yel	Inh	1	1	1
7	0	0	0	0	0	0	Yel	Inh	1	1	1
8	0	0	0	0	0	0	Yel	Inh	1	1	1
9	0	0	0	0	0	0	Yel	Inh	1	1	1
10	0	0	0	0	0	0	Yel	Inh	1	1	1
11	0	0	0	0	0	0	Yel	Inh	1	1	1
12	0	0	0	0	0	0	Yel	Inh	1	1	1
13	0	0	0	0	0	0	Yel	Inh	1	1	1
14	0	0	0	0	0	0	Yel	Inh	1	1	1
15	0	0	0	0	0	0	Yel	Inh	1	1	1
16	0	0	0	0	0	0	Yel	Inh	1	1	1

17	0	0	0	0	0	0	Yel	Inh	1	1	1
18	0	0	0	0	0	0	Yel	Inh	1	1	1
19	0	0	0	0	0	0	Yel	Inh	1	1	1
20	0	0	0	0	0	0	Yel	Inh	1	1	1
21	0	0	0	0	21	1	Yel	Max1	1	1	1
22	0	0	0	0	22	1	Yel	Max2	1	1	1
23	0	0	0	0	0	0	Yel	Inh	1	1	1
24	0	0	0	0	0	0	Yel	Inh	1	1	1
25	0	0	0	0	0	0	Yel	Inh	1	1	1
26	0	0	0	0	0	0	Yel	Inh	1	1	1
27	0	0	0	0	0	0	Yel	Inh	1	1	1
28	0	0	0	0	0	0	Yel	Inh	1	1	1
29	0	0	0	0	0	0	Yel	Inh	1	1	1
30	0	0	0	0	0	0	Yel	Inh	1	1	1
31	0	0	0	0	0	0	Yel	Inh	1	1	1
32	0	0	0	0	0	0	Yel	Inh	1	1	1
33	0	0	0	0	0	0	Yel	Inh	1	1	1
34	0	0	0	0	0	0	Yel	Inh	1	1	1
35	0	0	0	0	0	0	Yel	Inh	1	1	1
36	0	0	0	0	0	0	Yel	Inh	1	1	1
37	0	0	0	0	0	0	Yel	Inh	1	1	1
38	0	0	0	0	0	0	Yel	Inh	1	1	1
39	0	0	0	0	0	0	Yel	Inh	1	1	1
40	0	0	0	0	0	0	Yel	Inh	1	1	1
41	0	0	0	0	0	0	Yel	Inh	1	1	1
42	0	0	0	0	0	0	Yel	Inh	1	1	1
43	0	0	0	0	0	0	Yel	Inh	1	1	1
44	0	0	0	0	0	0	Yel	Inh	1	1	1
45	0	0	0	0	0	0	Yel	Inh	1	1	1
46	0	0	0	0	0	0	Yel	Inh	1	1	1
47	0	0	0	0	0	0	Yel	Inh	1	1	1
48	0	0	0	0	0	0	Yel	Inh	1	1	1
49	0	0	0	0	0	0	Yel	Inh	1	1	1
50	0	0	0	0	0	0	Yel	Inh	1	1	1
51	0	0	0	0	0	0	Yel	Inh	1	1	1
52	0	0	0	0	0	0	Yel	Inh	1	1	1
53	0	0	0	0	0	0	Yel	Inh	1	1	1
54	0	0	0	0	0	0	Yel	Inh	1	1	1
55	0	0	0	0	0	0	Yel	Inh	1	1	1
56	0	0	0	0	0	0	Yel	Inh	1	1	1
57	0	0	0	0	0	0	Yel	Inh	1	1	1
58	0	0	0	0	0	0	Yel	Inh	1	1	1
59	0	0	0	0	0	0	Yel	Inh	1	1	1
60	0	0	0	0	0	0	Yel	Inh	1	1	1
61	0	0	0	0	0	0	Yel	Inh	1	1	1
62	0	0	0	0	0	0	Yel	Inh	1	1	1
63	0	0	0	0	0	0	Yel	Inh	1	1	1
64	0	0	0	0	0	0	Yel	Inh	1	1	1
65	0	0	0	0	0	0	Yel	Inh	1	1	1
66	0	0	0	0	0	0	Yel	Inh	1	1	1
67	0	0	0	0	0	0	Yel	Inh	1	1	1
68	0	0	0	0	0	0	Yel	Inh	1	1	1
69	0	0	0	0	0	0	Yel	Inh	1	1	1
70	0	0	0	0	0	0	Yel	Inh	1	1	1
71	0	0	0	0	0	0	Yel	Inh	1	1	1
72	0	0	0	0	0	0	Yel	Inh	1	1	1
73	0	0	0	0	0	0	Yel	Inh	1	1	1
74	0	0	0	0	0	0	Yel	Inh	1	1	1
75	0	0	0	0	0	0	Yel	Inh	1	1	1
76	0	0	0	0	0	0	Yel	Inh	1	1	1
77	0	0	0	0	0	0	Yel	Inh	1	1	1
78	0	0	0	0	0	0	Yel	Inh	1	1	1
79	0	0	0	0	0	0	Yel	Inh	1	1	1

80	0	0	0	0	0	0	Yel	Inh	1	1	1
81	0	0	0	0	0	0	Yel	Inh	1	1	1
82	0	0	0	0	0	0	Yel	Inh	1	1	1
83	0	0	0	0	0	0	Yel	Inh	1	1	1
84	0	0	0	0	0	0	Yel	Inh	1	1	1
85	0	0	0	0	0	0	Yel	Inh	1	1	1
86	0	0	0	0	0	0	Yel	Inh	1	1	1
87	0	0	0	0	0	0	Yel	Inh	1	1	1
88	0	0	0	0	0	0	Yel	Inh	1	1	1
89	0	0	0	0	0	0	Yel	Inh	1	1	1
90	0	0	0	0	0	0	Yel	Inh	1	1	1
91	0	0	0	0	0	0	Yel	Inh	1	1	1
92	0	0	0	0	0	0	Yel	Inh	1	1	1
93	0	0	0	0	0	0	Yel	Inh	1	1	1
94	0	0	0	0	0	0	Yel	Inh	1	1	1
95	0	0	0	0	0	0	Yel	Inh	1	1	1
96	0	0	0	0	0	0	Yel	Inh	1	1	1
97	0	0	0	0	0	0	Yel	Inh	1	1	1
98	0	0	0	0	0	0	Yel	Inh	1	1	1
99	0	0	0	0	0	0	Yel	Inh	1	1	1
100	0	0	0	0	0	0	Yel	Inh	1	1	1
101	0	0	0	0	0	0	Yel	Inh	1	1	1
102	0	0	0	0	0	0	Yel	Inh	1	1	1
103	0	0	0	0	0	0	Yel	Inh	1	1	1
104	0	0	0	0	0	0	Yel	Inh	1	1	1
105	0	0	0	0	0	0	Yel	Inh	1	1	1
106	0	0	0	0	0	0	Yel	Inh	1	1	1
107	0	0	0	0	0	0	Yel	Inh	1	1	1
108	0	0	0	0	0	0	Yel	Inh	1	1	1
109	0	0	0	0	0	0	Yel	Inh	1	1	1
110	0	0	0	0	0	0	Yel	Inh	1	1	1
111	0	0	0	0	0	0	Yel	Inh	1	1	1
112	0	0	0	0	0	0	Yel	Inh	1	1	1
113	0	0	0	0	0	0	Yel	Inh	1	1	1
114	0	0	0	0	0	0	Yel	Inh	1	1	1
115	0	0	0	0	0	0	Yel	Inh	1	1	1
116	0	0	0	0	0	0	Yel	Inh	1	1	1
117	0	0	0	0	0	0	Yel	Inh	1	1	1
118	0	0	0	0	0	0	Yel	Inh	1	1	1
119	0	0	0	0	0	0	Yel	Inh	1	1	1
120	0	0	0	0	0	0	Yel	Inh	1	1	1
121	0	0	0	0	0	0	Yel	Inh	1	1	1
122	0	0	0	0	0	0	Yel	Inh	1	1	1
123	0	0	0	0	0	0	Yel	Inh	1	1	1
124	0	0	0	0	0	0	Yel	Inh	1	1	1
125	0	0	0	0	0	0	Yel	Inh	1	1	1
126	0	0	0	0	0	0	Yel	Inh	1	1	1
127	0	0	0	0	0	0	Yel	Inh	1	1	1
128	0	0	0	0	0	0	Yel	Inh	1	1	1

Split Parameters

Split 1		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None

Split 2		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None

12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 3		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 4		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 5		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 6		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 7		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 8		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 9

Split 10

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

PH.	Time	Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None

Split 9		Coord PH	Ref PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 10		Coord PH	Ref PH	Mode
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 11		Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 12		Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 13		Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 14		Coord PH	Ref PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 15		Coord PH	Ref PH	Mode
1	0			None
2	0			None

Split 16		Coord PH	Ref PH	Mode
1	0			None
2	0			None

3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 17		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 18		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 19		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 20		Coord	Ref	
PH.	Time	PH	PH	Mode
1	0			None
2	0			None
3	0			None
4	0			None
5	0			None
6	0			None

Split 19		Coord	Ref	
PH.	Time	PH	PH	Mode
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

Split 20		Coord PH	Ref PH	Mode
PH.	Time			
7	0			None
8	0			None
9	0			None
10	0			None
11	0			None
12	0			None
13	0			None
14	0			None
15	0			None
16	0			None

[illegible]

Day Plan		1																										
Month of Year			Days of Week				Days of Month																					
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

J	A	S	O	N	D

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Item 9a.

Day Plan 11

Month of Year						Days of Week							Days of Month																	
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			

Day Plan 12

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 13

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 14

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 15

Month of Year						Days of Week							Days of Month															
J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan 1

Event	Hour	Min.	Act
1	0	0	21
2	7	0	22
3	16	15	21
4	0	0	
5	0	0	

Day Plan 2

Event	Hour	Min.	Act
1	0	0	21
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan 3

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan 4

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	

Day Plan 1

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 2

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 3

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 4

Event	Hour	Min.	Act
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 5

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 6

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 7

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

Day Plan 8

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 9

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 10

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 11

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 12

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 13

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 14

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 15

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 16

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 17

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 18

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 19

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Day Plan 20

Event	Hour	Min.	Act
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	
9	0	0	
10	0	0	

Actions

Act	Pattern	Aux.			Special Functions							
		1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											
11	None											
12	None											
13	None											
14	None											
15	None											
16	None											
17	None											
18	None											
19	None											

Actions

Act	Pattern	Aux.			Special Functions							
		1	2	3	1	2	3	4	5	6	7	8
33	None											
34	None											
35	None											
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											
51	None											

20	None								
21	Pattern 21								
22	Pattern 22								
23	None								
24	None								
25	None								
26	None								
27	None								
28	None								
29	None								
30	None								
31	None								
32	None								

52	None								
53	None								
54	None								
55	None								
56	None								
57	None								
58	None								
59	None								
60	None								
61	None								
62	None								
63	None								
64	None								

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Link	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0
Min Duration	5	5	5	5	0	0	0	0
Min Green	3	3	3	3	0	0	0	0
Min Walk	0	0	0	0	0	0	0	0
Ent. Ped Clear	255	255	255	255	255	255	255	255
Track Green	0	0	0	0	0	0	0	0
Dwell Green	5	5	5	5	0	0	0	0
Max Presence	180	180	180	180	0	0	0	0
Enter Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Ent. Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Track Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Ped Clear	255	255	255	255	255	255	255	255
Exit Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Preempt	1	2	3	4	5	6	7	8
Non Lock Mem								
Not Override Flash								
NotOverrideNextPre								
Flash Dwell								

Preemption Configuration

Preempt	1	2	3	4	5	6	7	8
Track phase								
Dwell Phase	2	4,7	1,6	8				
Dwell Ped								
Exit Phase								
Track Overlap								
Dwell overlap								
Cycling phase								
Cycling Ped								
Cycling Overlap								

IO Modules

IO Mod	TYPE
1	ODOT 332
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None

Channel Configuration

Chan	Ctrl Type	Source
1	Olp	1
2	Olp	2
3	Phs Veh	3
4	Phs Veh	4
5	Phs Veh	5
6	Phs Veh	6
7	Phs Veh	7
8	Phs Veh	8
9	Olp	0
10	Olp	0

Chan	Ctrl Type	Source
11	Olp	0
12	Olp	0
13	Phs Ped	2
14	Phs Ped	4
15	Phs Ped	6
16	Phs Ped	8
17	Olp	0
18	Olp	0
19	None	0
20	None	0

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow																
Flash Red																
Alt Flash																
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Flash Yellow																
Flash Red																
Alt Flash																

Startup Clearance Hold Type

1=off, 2=On, 3=Flash and 4= Alt Flash

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Red																
Yellow																
Green																
Channel	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Red																
Yellow																
Green																

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	notActive	On	Off	Off	Red
2	dltGrn	On	Off	Off	Red
3	PreGrn	Off	Off	On	Green
4	minGrn	Off	Off	On	Green
5	grnExt	Off	Off	On	Green
6	grnDwell	Off	Off	On	Green
7	preClear	Off	Off	On	Green
8	yelChange	Off	On	Off	Yellow
9	redClear	On	Off	Off	Red
10	redDwell	On	Off	Off	Red
11	Barrier	On	Off	Off	Red
12					

Pedestrian Intervals

Interval	Description	DWK	CLR	Wlk	Type
1	notActive	On	Off	Off	Dont Walk
2	dltPed	On	Off	Off	Dont Walk
3	walk	Off	Off	On	Walk
4	walkDwell	Off	Off	On	Walk
5	flashDtWlk	Flash	On	Off	Ped Clear
6	dWalk	On	Off	Off	Dont Walk
7					
8					

Countdown Display

Display	Addr	Phase	Time
1			
2			
3			
4			
5			
6			
7			
8			

Display	Addr	Phase	Time
9			
10			
11			
12			
13			
14			
15			
16			

Display	Addr	Phase	Time
17			
18			
19			
20			
21			
22			
23			
24			

Display	Addr	Phase	Time
25			
26			
27			
28			
29			
30			
31			
32			

Manual Control Phase Groups

Grp 1	Grp 2	Grp 3	Grp 4	Grp 5	Grp 6	Grp 7	Grp 8
Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph
1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0
10	0	10	0	10	0	10	0
11	0	11	0	11	0	11	0
12	0	12	0	12	0	12	0
13	0	13	0	13	0	13	0
14	0	14	0	14	0	14	0
15	0	15	0	15	0	15	0
16	0	16	0	16	0	16	0

Prioritor Settings

Prioritor	Priority Ph	Output Dly
1		0
2		0
3		0
4		0
5		0

Enabled	Lock Out Time
No	0

6		0
7		0
8		0

Item 9a.

Loopback Functions

Func	Result Function Type	Index	Source Function Type	Index	Func	Result Function Type	Index	Source Function Type	Index
1					51				
2					52				
3					53				
4					54				
5					55				
6					56				
7					57				
8					58				
9					59				
10					60				
11					61				
12					62				
13					63				
14					64				
15					65				
16					66				
17					67				
18					68				
19					69				
20					70				
21					71				
22					72				
23					73				
24					74				
25					75				
26					76				
27					77				
28					78				
29					79				
30					80				
31					81				
32					82				
33					83				
34					84				
35					85				
36					86				
37					87				
38					88				
39					89				
40					90				
41					91				
42					92				
43					93				
44					94				
45					95				
46					96				
47					97				
48					98				
49					99				
50					100				

Peer Configuration

Ctrl	Peer ID	IP address	SNMP Port	Hot Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0		161	80	0	0	0	15	
2	0		161	80	0	0	0	15	
3	0		161	80	0	0	0	15	

4	0		161	80	0	0	0	15	
5	0		161	80	0	0	0	15	
6	0		161	80	0	0	0	15	
7	0		161	80	0	0	0	15	
8	0		161	80	0	0	0	15	
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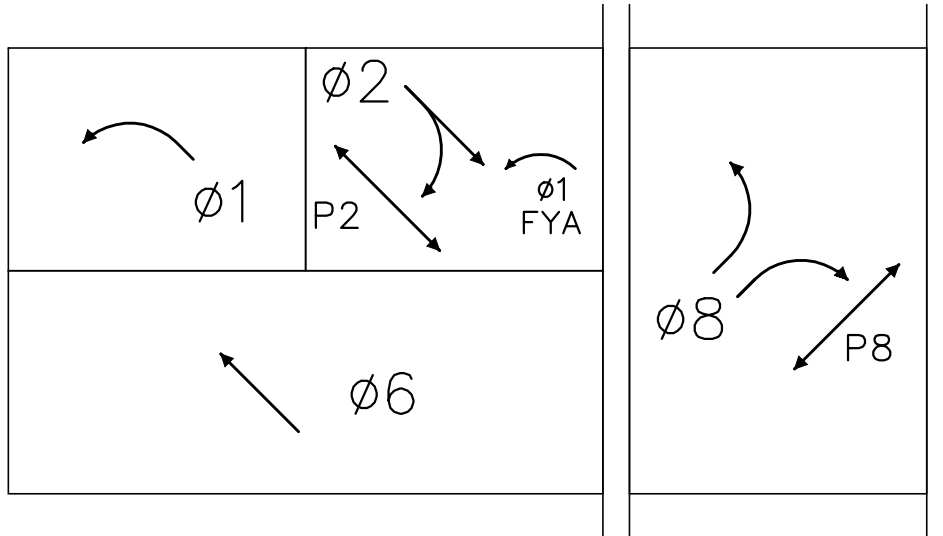
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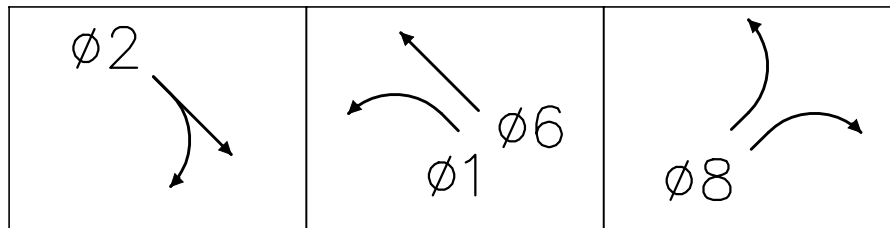
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3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	
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11	None	60	1	300	240	
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14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
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11	
12	
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29	
30	
31	
32	



NORMAL PHASE ROTATION



EVA

EVC

EVD

FIRE PRE-EMPTION OPERATION

7649 BEAVERCREEK RD & MEYERS RD



REVISION	DATE	BY	DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT	APPROVAL DATE:	SCALE: N.T.S.	STANDARD DRAWING
NEW DWG	8/13	CS	150 BEAVERCREEK ROAD OREGON CITY, OR 97045	BEAVERCREEK RD & MEYERS PHASE ROTATION		

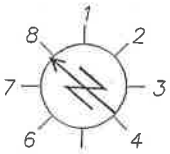
LEGEND

- EX WP Retain and protect existing wood pole & luminaire (signal power source)
 C 332 Install model HC11 controller in model 332 cabinet with riser frame, orient front (louvered) door as shown. Install at least 15' back from cross walk on Meyers Road
 AW Install 15"x14"x54" commercial meter pedestal, catalog #CMP 4111 MC-1-SS. Install 120/240 volt meter base for signals and illumination (see Special Provisions).
 TC Traffic signal poles shall have recessed terminal cabinets with Marathon #1112 or equal terminal blocks as connectors and copper neutral bar for neutral connections, per Clackamas County standards
 TCTV Install terminal cabinet for CCTV equipment on traffic signal pole
 HPS Install cobrahead-style luminaire, 250 watt high-pressure sodium type M-N-III, multi-tap ballast, 240 volt, full cut-off, flat lens
 MP Install Maintenance Pad (see ODOT Std. Dwg. TM434)
 MPL Install special (non-standard) traffic signal mast arm pole with luminaire pole extension (35' mounting height). See Special Provisions.
 MP X Install special (non-standard) traffic signal mast arm pole (see Special Provisions)
 MA L Install (L) foot traffic signal mast arm
 LA L Install (L) foot luminaire mast arm (35 foot mounting height)
 PP Install pedestrian signal pedestal with frangible base
 LP Install luminaire pole
 V Ph Install phase (Ph) vehicle signal with red and green LEDs (Dialight or Leotek brand)
 VT F Install lenon for future vehicle signal
 DC1 Ph Install vehicle detection camera for phase (Ph) on luminaire arm (see Special Provisions)
 DC2 Ph Install vehicle detection camera for phase (Ph) on mast arm (see Special Provisions)
 P/B Ph Install phase (Ph) pedestrian signal with filled hand/man symbol LED face (Dialight or Leotek brand), and 'H' style bracket with pushbutton
 PE 1 Install photoelectric cell on pole (20-35 feet above pole base)
 JB 2 Install 22" x 12" x 12" (min. dimension) precast concrete junction box
 JB 2A Install 22" x 12" x 12" (min. dimension) precast concrete junction box with concrete apron.
 JB 3 Install 30" x 17" x 12" (min. dimension) precast concrete junction box
 JB 3A Install 30" x 17" x 12" (min. dimension) precast concrete junction box with concrete apron.
 FN Ch Install channel (Ch), (N) barrel fire pre-emption detector unit
 FF Ch Install channel (Ch) fire pre-emption detector feeder cable
 AL 5L Install aluminum left arrow "ONLY" sign
 AL 5R Install aluminum right arrow "ONLY" sign
 AL 10 Install aluminum "LEFT TURN YIELD TO ONCOMING TRAFFIC" sign
 SN 1 Install street name sign ("MEYERS RD")
 SN 2 Install street name sign ("BEAVERCREEK RD")
 X-N G Install (X), (N) conductor, No. (G) traffic signal cable (type 19-1 IMSA)
 N DC Install (N), 6 twisted pair, 18 gauge shielded cable for detection cameras. (Belden 9556 or approved equivalent).
 S Install (S) inch electrical conduit
 W Install conduit and wire as required by power company
 T Install conduit and two phone lines as required by telephone company
 N-C Install (N) No. 8 type THWN (Signal system common)
 N-G Install (N) No. (G) type THWN or XHHW wires
 N-G Install (N) No. (G) gauge stranded bare copper grounding wire

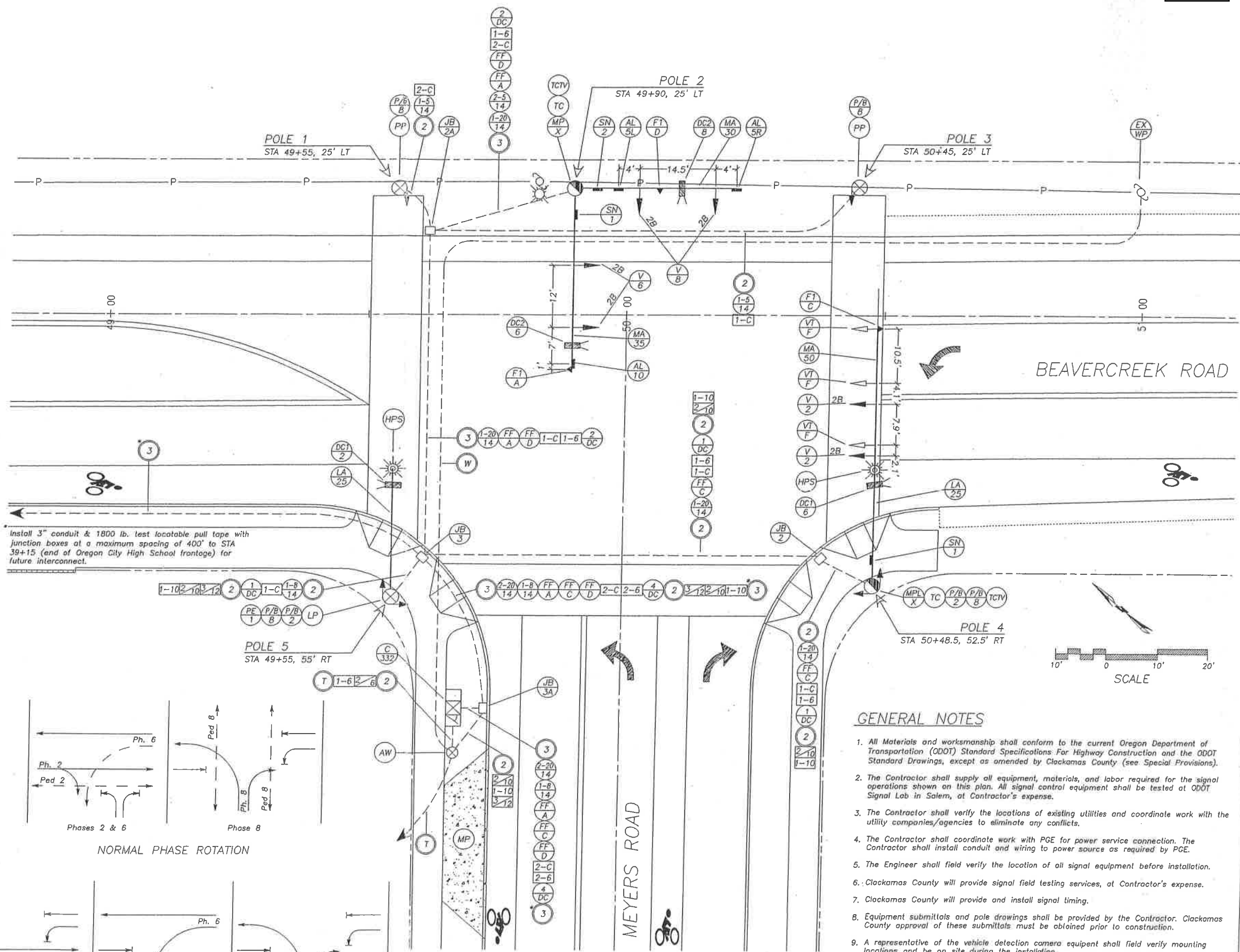
H = Height shown
 T = Type shown
 L = Length shown
 G = AWG size shown
 Ph = Phase shown
 N = Number shown
 S = Size Shown
 Ch = Channel shown
 2 = 12" R, 12" Y, 12" G
 B = Adjustable signal bracket (Tenon-mount Astro-Broc #AB-0149-L or approved equal.)

POLE ENTRANCE CHART

POLE	1	2	3	4	5
Terminal Cabinet	-	7	-	5	-
Pedestrian Signal	3	-	7	3	5
Pedestrian Pushbutton	5	-	5	1	3
Mast Arm	-	3	5	-	1
Luminaire Arm	-	-	-	1	1



Orientation looking down on pole



GENERAL NOTES

- All Materials and workmanship shall conform to the current Oregon Department of Transportation (ODOT) Standard Specifications For Highway Construction and the ODOT Standard Drawings, except as amended by Clackamas County (see Special Provisions).
- The Contractor shall supply all equipment, materials, and labor required for the signal operations shown on this plan. All signal control equipment shall be tested at ODOT Signal Lab in Salem, at Contractor's expense.
- The Contractor shall verify the locations of existing utilities and coordinate work with the utility companies/agencies to eliminate any conflicts.
- The Contractor shall coordinate work with PGE for power service connection. The Contractor shall install conduit and wiring to power source as required by PGE.
- The Engineer shall field verify the location of all signal equipment before installation.
- Clackamas County will provide signal field testing services, at Contractor's expense.
- Clackamas County will provide and install signal timing.
- Equipment submittals and pole drawings shall be provided by the Contractor. Clackamas County approval of these submittals must be obtained prior to construction.
- A representative of the vehicle detection camera equipment shall field verify mounting locations and be on site during the installation.



Union Station
 800 NW Sixth Avenue, Suite 206
 Portland, OR 97209
 Phone 503.248.0313
 Fax 503.248.9251

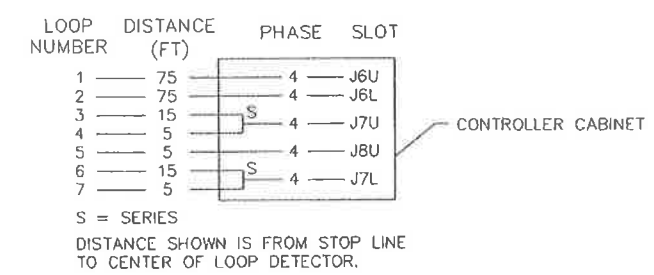
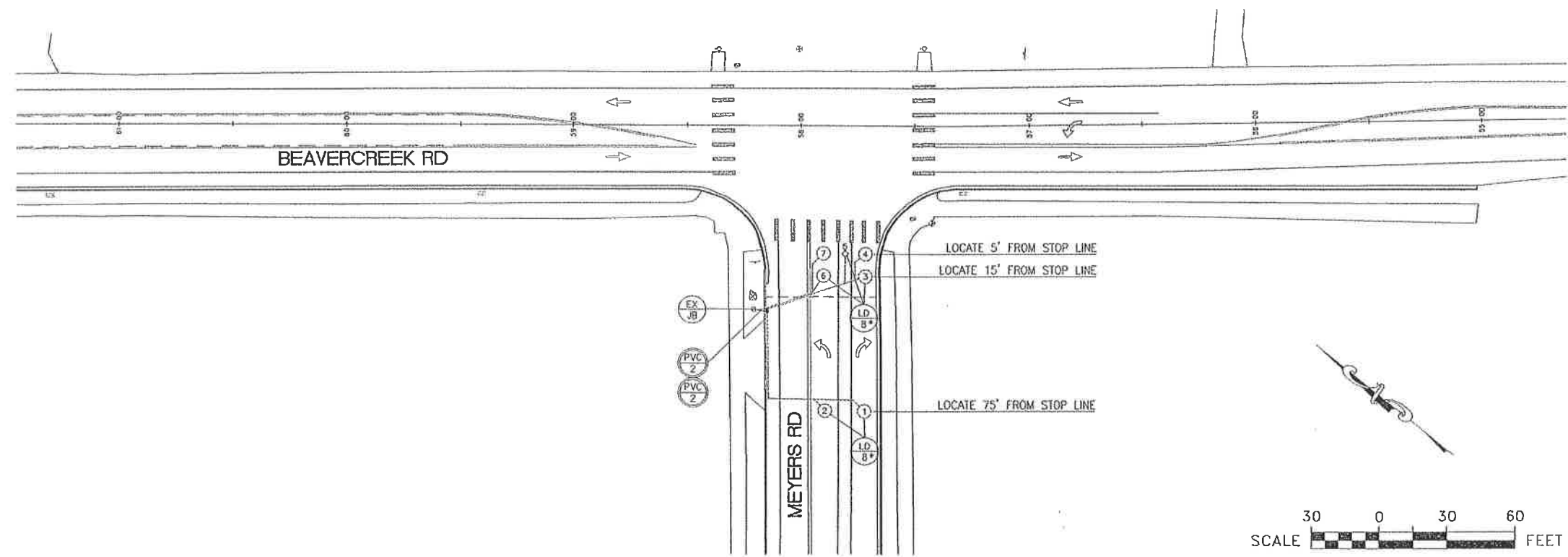
06	JOB No.		01134
	DESIGNED BY:		TEM
	DRAWN BY:		TEM
	CHECKED BY:		TRL
	DATE:		8/13/02
	REV	BY	DESCRIPTION

BEAVERCREEK ROAD AT MEYERS ROAD

SIGNALIZATION & DETECTION PLAN

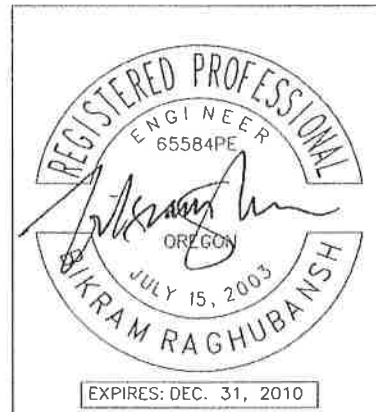
Page 832

DRAWING
NUMBER
1/



LOOP DETECTOR WIRING DIAGRAM

- LEGEND**
- LD PH: INSTALL PHASE (PH = PHASE) 6" ROUND VEHICLE DETECTOR LOOP. *EXTEND LOOP WIRE INTO CONTROLLER CABINET.
 - N LW: INSTALL (N = NUMBER) PAIR OF LOOP WIRES.
 - EX LD: RETAIN AND PROTECT EXISTING LOOP DETECTOR.
 - PVC S: INSTALL 6" X 14" PVC CONDUIT SLEEVE STREET ENTRANCE WITH (S) INCH CONDUIT TO JUNCTION BOX.
 - EX CS: RETAIN AND PROTECT EXISTING STUB-OUT.
 - EX JB: RETAIN AND PROTECT EXISTING JUNCTION BOX.
 - JB 1A: INSTALL 17" X 10" X 12" (MIN. DIMENSION) PRECAST CONCRETE POLYMER JUNCTION BOX WITH CONCRETE APRON.
 - EX JB: INSTALL MODEL 2070L CONTROLLER.



BID SET

CLACKAMAS COUNTY

BEAVERCREEK RD PRESERVATION:
HENRICI RD - MARJORIE LN
(CLACKAMAS CO)

REVIEWED BY - BR
DESIGNED BY - TR
DRAFTED BY - TR

LOOP DETECTION REPLACEMENT PLAN

PROJECT NO. CI-3-22176

SHEET NO. TS-2

REGISTERED PROFESSIONAL
ENGINEER
74207PE
Digitally Signed Jul 20 2018 9:13 AM
OREGON
July 8, 2008
FRED S. WISMER JR.
EXPIRES: 06/30/20
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

FILE NUMBER:
PROJECT MANAGER: Fred Wismer, P.E.

OREGON
CITY

KITELSON
& ASSOCIATES
851 SW 6TH AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5250 F 503.273.5699
DATE: July 25, 2018
DRAWN BY: Fred Wismer
CHECKED BY: Fred Wismer

Detection Plans
Villages at Beaver Creek
OC Project#: SP 14-01
Oregon City, Oregon
Clackamas County
97077

REV. NO.	DATE	DESCRIPTION

DRAWING NUMBER:
TS-3
SHEET ____ OF ____
Page 834

CONTROLLER
CABINET

LOOP NO.	DISTANCE FEET	PHASE	SLOT	VOYAGE
1	320	2	I2U	9
2	160	2	I2L	10
3	15	2	I3U	11
4	5	2	I3L	12
5	50	2	I3U	12
6	75	5	J1U	5
7	25	5	J9U	6
8	15	5	J9L	8
9	5	6	J2U	19
10	75	6	J2L	20
11	15	6	J3U	21
12	5	6	J3L	22
13	50	1	I1U	1
14	5	1	I9U	2
15	75	1	I9L	2
16	15	8	J6U	24
17	5	8	J6L	25
18	320	8	J7U	26
19	160	8	J7L	27
20	15	3	I5U	3
21	5	3	I9L	4
22	50	3	I9L	4
23	75	3	I9L	4
24	25	3	I9L	4
25	15	3	I9L	4
26	5	3	I9L	4
27	75	3	I9L	4
28	15	3	I9L	4
29	5	3	I9L	4
30	50	3	I9L	4
31	5	3	I9L	4
32	75	3	I9L	4
33	15	3	I9L	4
34	5	3	I9L	4

LOOP DETECTOR WIRING DIAGRAM
"Distance" is from Crosswalk to center of loop in feet.

"I" FILE	UPPER								
	1	2	3	4	5	6	7	8	9
PH1	PH2	PH2			PH3	PH4	PH4		PH1
C1-56	C1-39	C1-63			C1-58	C1-41	C1-65		C1-60
VD 1	VD 9	VD 11			VD 3	VD 14	VD 16		VD 2
"J" FILE	UPPER								
	1	2	3	4	5	6	7	8	9
PH5	PH6	PH6			PH7	PH8	PH8		PH5
C1-55	C1-40	C1-64			C1-57	C1-42	C1-66		C1-59
VD 5	VD 19	VD 21			VD 7	VD 24	VD 26		VD 6
"I" FILE	LOWER								
	1	2	3	4	5	6	7	8	9
PH6	PH6				PH8	PH8			PH7
C1-44	C1-77				C1-46	C1-79			C1-61
VD 20	VD 22				VD 25	VD 27			VD 8

332 DETECTION INPUT FILE DETAILS
FOR 2070 CONTROLLER
WITHOUT A C11 CONNECTOR

DESIGN APPROACH SPEEDS	
STREET	DESIGN SPEED
SW BEAVERCREEK RD	45 MPH
SW MEYER RD	35 MPH

NOTE:

See Sheets TS-1 Legend

NOTE:

Field Verify Measurements Before Construction

CONSTRUCTION NOTES

1 Contractor to replace all disturbed sidewalk panels from conduit & junction box installations per Clackamas County Standard Sidewalk Detail 5960.

NOTE:

The contractor is responsible for rewiring and renumbering of new and existing loops and loop feeders in junction boxes and cabinet to match wiring diagram.

Appendix D Queuing Analysis

Appendix D: Queueing Analysis

Advantis Credit Union Corporate Headquarters

June 2020

Project #: 24790

Intersection		Movement	Queue Storage (feet)	Future Queue Storage (feet)	95th-percentile Queue (feet)						Queue Storage Adequate?
					2020 Existing Conditions		2022 Background Conditions		2022 Total Conditions		
					AM	PM	AM	PM	AM	PM	
1	OR213/Molalla Ave	NB LT	630	630	475	400	500	450	500	475	Yes
		NB TH	1050	1050	200	125	375	200	375	225	Yes
		NB RT	100	100	50	<=25	50	<=25	50	<=25	Yes
		SB LT	530	530	275	100	1050	250	1050	250	No
		SB TH	-	-	150	400	200	450	200	475	Yes
		SB RT	350	350	125	200	150	225	150	225	Yes
		EB LT	100	100	175	200	175	225	175	225	No
		EB TH	310	310	200	125	375	200	375	200	No
		EB RT	215	215	175	550	150	500	175	500	No
		WB LT	270	270	50	200	50	150	50	150	Yes
		WB TH	310	310	125	200	150	300	150	325	No
		WB RT	425	425	50	150	75	275	75	275	Yes
2	OR213/Meyers Rd	NB LT	325	325	<=25	200	50	225	225	225	Yes
		NB TH	375	375	175	50	225	175	275	175	Yes
		NB TH/RT*		310			225	175	275	175	Yes
		SB LT		200			<=25	150	200	175	Yes
		SB TH	470	470	50	175	100	300	125	325	Yes
		SB RT	200	200	<=25	50	50	100	50	125	Yes
		EB LT	170	170	400	325	325	300	475	400	No
		EB TH**/RT	555	555	225	300	250	325	250	325	Yes
		WB LT		305			<=25	75	50	125	Yes
		WB TH		-			50	50	50	50	Yes
		WB RT		305			100	75	100	100	Yes
		3	Future Western Site Access/Meyers Rd	SB LT/RT		-				<=25	<=25
EB LT				100				<=25	<=25	Yes	
EB TH				-				<=25	<=25	Yes	
WB TH/RT				-				<=25	<=25	Yes	
4	Future Eastern Site Access/Meyers Rd	SB LT/RT		-				<=25	<=25	Yes	
		EB LT		100				<=25	<=25	Yes	
		EB TH		-				<=25	<=25	Yes	
		WB TH/RT		-				<=25	<=25	Yes	
5	Meyers Rd/High School Avenue	NB LT/TH/RT	-	-	100	<=25	125	<=25	150	<=25	Yes
		SB LT/TH/RT	-	-	<=25	<=25	<=25	<=25	<=25	<=25	Yes
		EB LT	80	80	<=25	<=25	<=25	<=25	<=25	<=25	Yes
		EB TH/RT	-	-	<=25	<=25	50	<=25	50	<=25	Yes
		WB LT	80	80	50	<=25	50	<=25	50	<=25	Yes
		WB TH/RT	-	-	<=25	<=25	50	<=25	50	<=25	Yes
6	Beavercreek Rd/Meyers Rd	NB LT	100	100	50	<=25	400	100	425	125	No
		NB TH/RT*	1200	1200	500	75	1025	200	1025	200	Yes
		SB LT		100			<=25	50	<=25	50	Yes
		SB TH/RT	1800	1800	250	750	500	1400	525	1425	Yes
		EB LT	370	370	250	150	475	300	475	300	No
		EB TH**/RT	150	150	<=25	<=25	125	75	125	75	Yes
		WB LT		110			<=25	<=25	<=25	<=25	Yes
		WB TH/RT		-			75	50	75	50	Yes

*RT movement under future scenarios

**TH movement under future scenarios

Queues are rounded up to the nearest vehicle length (approximately 25 feet).

Appendix E ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2017														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
REAR-END	0	2	2	4	0	2	1	3	1	3	1	4	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2017 TOTAL	0	3	3	6	0	3	1	3	3	4	2	6	0	1
YEAR: 2016														
REAR-END	0	1	3	4	0	1	0	1	3	3	1	4	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	1	1	2	0	0
2016 TOTAL	0	1	5	6	0	1	0	2	4	4	2	6	0	0
YEAR: 2015														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	4	1	5	0	4	0	4	0	5	0	5	0	0
TURNING MOVEMENTS	0	2	1	3	0	5	0	2	1	1	2	3	0	0
2015 TOTAL	0	7	2	9	0	10	0	7	1	7	2	9	0	0
FINAL TOTAL	0	11	10	21	0	14	1	12	8	15	6	21	0	1

Disclaimers: Effective 2016, collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

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160 CASCADE HWY SOUTH
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Intersection Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

[illegible]

160 CASCADE HWY SOUTH

Intersection Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

SER#	P E A / C O	G S W DATE	COUNTY	RD#	FC	CONN #	RD CHAR	INT-TYP	INT-REL	OFFRD	WTHR	CRASH TYP	SPCL USE	MOVE	A S	PED	CAUSE				
UNLOC?	D C J L K	LAT/LONG	CITY	MILEPNT	SECOND	STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL TYP	TRLR QTY	FROM	G E	LICNS	ERROR				
			URBAN AREA	LRS	INTERSECTION	SEQ#	LOCTN	(#LANES)	CNTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	P#	TYPE	SVRTY				
													02	NONE	9	STOP					
													N/A	N S							
													PSNGR	CAR		01	DRVR				
																NONE	00				
																U	UNK				
																	000				
																	000				
																	000				
05579	N N N	12/26/2017	CLACKAMAS	1	14		INTER	CROSS	N		Y	SNOW	FIX	OBJ	01	NONE	9	STRGHT		124,040	10
NONE	N	Tue 12A	OREGON CITY	MN	0	CASCADE HY SOUTH	E		TRF	SIGNAL	N	ICE	FIX		N/A		W E			001	00
			PORTLAND UA	3.59		MOLALLA AVE	04	0			N	DARK	PDO		PSNGR	CAR		01	DRVR		000
No	45 19	25.01 -122 34 43.78		016000100S00			1											U	UNK		000
																					000
01966	N N N	03/05/2015	CLACKAMAS	1	14		INTER	CROSS	N		N	CLR	S-1STOP		01	NONE	0	STRGHT			29
NONE	N	Thu 9A	OREGON CITY	MN	0	CASCADE HY SOUTH	SE		TRF	SIGNAL	N	DRY	REAR		PRVTE		SE NW			000	00
			PORTLAND UA	3.59		MOLALLA AVE	06	0			N	DAY	INJ		PSNGR	CAR		01	DRVR		000
No	45 19	25.01 -122 34 43.78		016000100S00			1											19	F	OR-Y	026
																			OR<25		000
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160 CASCADE HWY SOUTH
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Intersectional Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

[illegible]


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160 CASCADE HWY SOUTH
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Intersectional Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

SER#	P INVEST UNLOC?	E L C	A J L K	/ O DATE	CITY DAY/TIME	COUNTY	RD# CMPT/MILEPNT	FC CONNECTION	FIRST STREET	SECOND STREET	RD CHAR DIRECT	INT-TYP (MEDIAN) LEGS TRAF-	INT-REL	OFFRD RDNBT	WTHR SURF	CRASH COLL TYP	SPCL USE OWNER	TLRL QTY	MOVE FROM		PRTC INJ	A S G E	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05340	N N N			12/12/2015	Oregon City Sat 7P	Clackamas	1 MN	14 0	Cascade Hy South		INTER CN	CROSS	N TRF SIGNAL		N WET	O-1 L-TURN	01 NONE PRVTE	0	TURN-L S W									04 00
No	45	19	25.01	-122	34 43.78	Portland UA	3.59	MOLALLA AVE		01		0			N DLIT	INJ	PSNGR CAR			01	DRVR	NONE	56 F	OR-Y OR<25		003	000	04
																	02 NONE PRVTE	0	STRGHT S N								000	00
																	PSNGR CAR			01	DRVR	INJB	53 M	OR-Y OR<25		000	000	00
																				02	PSNG	INJB	18 M			000	000	00
03566	N N N			09/01/2015	Oregon City Tue 2P	Clackamas	1 MN	14 0	Cascade Hy South		INTER CN	CROSS	N TRF SIGNAL		N DRY	ANGL-OTH ANGL	01 NONE PRVTE	0	STRGHT NW SE									04 00
No	45	19	25.01	-122	34 43.78	Portland UA	3.59	MOLALLA AVE		02		0			N DAY	INJ	PSNGR CAR			01	DRVR	NONE	43 M	OR-Y OR<25		000	000	00
																	02 NONE PRVTE	0	STRGHT S N								000	00
																	PSNGR CAR			01	DRVR	INJB	27 M	OR-Y OR<25		020	000	04
05532	N N N			11/28/2016	Oregon City Mon 5A	Clackamas	1 MN	14 0	Cascade Hy South		INTER CN	CROSS	N UNKNOWN		N WET	S-1TURN TURN	01 NONE N/A	9	TURN-R S E									08 00
No	45	19	25.01	-122	34 43.78	Portland UA	3.59	N DOUGLAS LP		04		0			N DLIT	PDO	PSNGR CAR			01	DRVR	NONE	00 U	UNK UNK		000	000	00
																	02 NONE N/A	9	STRGHT S N								000	00
																	PSNGR CAR			01	DRVR	NONE	00 U	UNK UNK		000	000	00

CITY OF OREGON CITY, CLACKAMAS COUNTY

Intersectional Crashes at OR-213, Cascade Hwy #160 & Molalla Ave / Douglas Lp
January 1, 2015 through December 31, 2017

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

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January 1, 2015 through December 31, 2017

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YEAR: 2017														
REAR-END	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2017 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2016														
PEDESTRIAN	0	1	0	1	0	1	0	0	1	0	1	1	0	0
REAR-END	0	2	3	5	0	4	0	2	3	4	1	5	0	0
TURNING MOVEMENTS	0	3	1	4	0	5	0	3	1	3	1	4	0	0
2016 TOTAL	0	6	4	10	0	10	0	5	5	7	3	10	0	0
YEAR: 2015														
REAR-END	0	2	2	4	0	2	0	4	0	4	0	4	0	0
2015 TOTAL	0	2	2	4	0	2	0	4	0	4	0	4	0	0
FINAL TOTAL	0	9	7	16	0	13	0	11	5	13	3	16	0	0

Disclaimers: Effective 2016, collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

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160 CASCADE HWY SOUTH
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S U
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Intersectional Crashes at OR-213, Cascade Hwy #160 & Meyers Rd
January 1, 2015 through December 31, 2017

SER#	P	G	S	W	DATE	COUNTY	RD#	FC	CONN #	INT-TYP	INT-REL	OFFRD	WTHR	CRASH	TYP	SPCL	USE	A	S	PED	CAUSE							
INVEST	E	L	M	H	R	CITY	CMPT/MLG	FIRST	STREET	(MEDIAN)	TRAF-	RNDBT	SURF	COLL	TYP	OWNER	QTY	G	E	LOC	ERROR							
UNLOC?	D	C	J	L	K	LAT/LONG	LRS	INTERSECTION	SEQ#	LOCTN	(#LANES)	DRVWY	LIGHT	SVRTY	V#	VEH	TYPE	TO	P#	TYPE	SVRTY	EX	RES	LOC	ERROR	ACTN	EVENT	CAUSE
01480	N	N	N		04/21/2015	CLACKAMAS	1	14		INTER	3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT			013	29						
NONE		N			Tue 8A	OREGON CITY	MN	0	CASCADE HY SOUTH	SE			N DRY	REAR		PRVTE		SE NW				000						
						PORTLAND UA		3.81	MEYERS RD	06	0		N DAY	INJ		PSNGR	CAR		01	DRVR	NONE	46	M	OR-Y	026	000		29
No	45	19	13.68	-122	34	38.97	016000100S00		1													OR>25						
																02	NONE	0	STOP						011	013	00	
																PSNGR	CAR		01	DRVR	NONE	55	M	OR-Y	000	000		00
																						OR<25					00	
																03	NONE	0	STOP						022		00	
																PSNGR	CAR		01	DRVR	NONE	33	M	OR-Y	000	000		00
																						OR<25					00	
																			02	PSNG	INJC	30	F		000	000		00
02898	N	N	N		07/18/2015	CLACKAMAS	1	14		INTER	3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT			013	29						
NO RPT		N			Sat 7P	OREGON CITY	MN	0	CASCADE HY SOUTH	SE			N DRY	REAR		PRVTE		SE NW				000					00	
						PORTLAND UA		3.81	MEYERS RD	06	0		N DAY	INJ		PSNGR	CAR		01	DRVR	NONE	47	F	OTH-Y	026	038		29
No	45	19	13.68	-122	34	38.97	016000100S00		1													N-RES						
																			02	PSNG	INJC	15	F		000	000		00
																02	NONE	0	STOP						011	013	00	
																PSNGR	CAR		01	DRVR	NONE	33	M	OR-Y	000	000		00
																						OR<25					00	
																03	NONE	0	STOP						022		00	
																PSNGR	CAR		01	DRVR	NONE	33	M	OR-Y	000	000		00
																						OR<25					00	
03157	N	N	N		08/04/2015	CLACKAMAS	1	14		INTER	3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT				29						
NONE		N			Tue 7A	OREGON CITY	MN	0	CASCADE HY SOUTH	SE			N DRY	REAR		PRVTE		SE NW				000					00	
						PORTLAND UA		3.81	MEYERS RD	06	0		N DAY	PDO		PSNGR	CAR		01	DRVR	NONE	19	M	OR-Y	026	000		29
No	45	19	13.68	-122	34	38.97	016000100S00		1													OR>25						
																02	NONE	0	STOP						011		00	
																PSNGR	CAR		01	DRVR	NONE	00	M	UNK	000	000		00
																						OR>25					00	
01244	N	N	N		04/02/2017	CLACKAMAS	1	14		INTER	3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT				29						
NONE		N			Sun 10A	OREGON CITY	MN	0	CASCADE HY SOUTH	SE			N DRY	REAR		PRVTE		SE NW				000					00	
						PORTLAND UA		3.81	MEYERS RD	06	0		N DAY	INJ		PSNGR	CAR		01	DRVR	NONE	54	M	OR-Y	026	000		
No	45	19	13.68	-122	34	38.97	016000100S00		1													OR<25						

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CDS380		4/23/2020		OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT CONTINUOUS SYSTEM CRASH LISTING																				PAGE: 2									
160 CASCADE HWY SOUTH										Intersectional Crashes at OR-213, Cascade Hwy #160 & Meyers Rd January 1, 2015 through December 31, 2017																							
D R S U P G S W																																	
SER#	E A	/	C O	DATE	COUNTY	RD#	FC	CONN #	INT-TYP	SPCL USE	A S																						
INVEST	E L	M H	R	DAY/TIME	CITY	CMPT/MLG	FIRST	STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH TYP	TRLR QTY	MOVE	G E	LICNS	PED														
UNLOC?	D C	J L	K	LAT/LONG	URBAN AREA	MILEPNT	SECOND	STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM	E X	RES	LOC	ERROR													
											(#LANES)	CNTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	ACTN EVENT	CAUSE										
																02	NONE	0	STOP														
																PRVTE	SE	NW															
																PSNGR	CAR		01	DRVR	INJC	20	F	OR-Y	000	000	00						
																					OR<25												
05663	N	N	N	12/08/2017	CLACKAMAS	1	14		INTER	3-LEG	N		N	CLR	S-1STOP	01	NONE	9	STRGHT														
NONE			N	Fri	3P	MN	0	CASCADE HY SOUTH	SE		TRF SIGNAL		N	DRY	REAR		N/A		SE	NW	000	000	29										
																							00										
																								00									
No	45	19	13.68	-122	34 38.97	3.81		MEYERS RD	06	0			N	DAY	PDO	PSNGR	CAR	01	DRVR	NONE	00	U	UNK	000	000	00							
										016000100S00		1											UNK										
																02	NONE	9	STOP														
																N/A		SE	NW														
																PSNGR	CAR		01	DRVR	NONE	00	U	UNK	000	000	00						
																						UNK											
05276	N	N	N	11/13/2016	CLACKAMAS	1	14		INTER	3-LEG	N		N	RAIN	PED	01	NONE	0	TURN-R														
CITY			N	Sun	5P	MN	0	CASCADE HY SOUTH	SW		TRF SIGNAL		N	WET	PED		PRVTE		SW	SE	016	000	02,19										
																								00									
																								02									
No	45	19	13.68	-122	34 38.97	3.81		MEYERS RD	06	0			N	DLIT	INJ	PSNGR	CAR	01	DRVR	NONE	78	M	OR-Y	029	000	00							
										016000100S00		1											OR<25	01	000	035	19						
04608	N	N	N	10/06/2016	CLACKAMAS	1	14		INTER	3-LEG	N		N	RAIN	O-1 L-TURN	01	NONE	9	TURN-L														
NO RPT			N	Thu	8P	MN	0	CASCADE HY SOUTH	NW		TRF SIGNAL		N	WET	TURN		N/A		SE	SW	000	000	02,08										
																								00									
No	45	19	13.68	-122	34 38.97	3.81		MEYERS RD	01	0			N	DLIT	PDO	PSNGR	CAR	01	DRVR	NONE	00	U	UNK	000	000	00							
										016000100S00		1											UNK										
																02	NONE	9	STRGHT														
																N/A		NW	SE														
																PSNGR	CAR		01	DRVR	NONE	00	U	UNK	000	000	00						
																						UNK											
01102	N	N	N	02/29/2016	CLACKAMAS	1	14		INTER	3-LEG	N		N	RAIN	S-1STOP	01	NONE	9	STRGHT														
NO RPT			N	Mon	7A	MN	0	CASCADE HY SOUTH	NW		TRF SIGNAL		N	WET	REAR		N/A		NW	SE	000	000	29										
																							00										
No	45	19	13.68	-122	34 38.97	3.81		MEYERS RD	06	0			N	DAY	PDO	PSNGR	CAR	01	DRVR	NONE	00	U	UNK	000	000	00							
										016000100S00		1											UNK										
																02	NONE	9	STOP														
																N/A		NW	SE														
																PSNGR	CAR		01	DRVR	NONE	00	U	UNK	000	000	00						
																						UNK											
01300	N	N	N	03/19/2016	CLACKAMAS	1	14		INTER	3-LEG	N		N	CLR	S-1STOP	01	NONE	9	STRGHT														
NO RPT			N	Sat	3P	MN	0	CASCADE HY SOUTH	NW		TRF SIGNAL		N	DRY	REAR		N/A		NW	SE	000	000	29										
																							00										
No	45	19	13.68	-122	34 38.97	3.81		MEYERS RD	06	0			N	DAY	PDO	PSNGR	CAR	01	DRVR	NONE	00	U	UNK	000	000	00							
										016000100S00		1											UNK										

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160 CASCADE HWY SOUTH
      D
      R
    S  U
    P  G S W

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Intersectional Crashes at OR-213, Cascade Hwy #160 & Meyers Rd
January 1, 2015 through December 31, 2017

[illegible]

160 CASCADE HWY SOUTH

Intersectional Crashes at OR-213, Cascade Hwy #160 & Meyers Rd
January 1, 2015 through December 31, 2017

SER#	E A / C O	DATE	COUNTY	RD#	FC	CONN #	INT-TYP	SPCL USE										
INVEST	E L M H R	DAY/TIME	CITY	CMPT/MLG	FIRST	STREET	RD CHAR	TRLR QTY	MOVE									
UNLOC?	D C J L K	LAT/LONG	URBAN AREA	MILEPNT	SECOND	STREET	DIRECT	OWNER	FROM	PRTC	INJ	A S	G E	LICNS	PED			
				LRS	INTERSECTION	SEQ#	LOCTN	(#LANES)	CNTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY
01992	N N N	05/03/2016	CLACKAMAS	1	14		INTER	3-LEG	N	N CLR	ANGL-OTH	01	NONE	0	TURN-R			
NO RPT	N	Tue 6P	OREGON CITY	MN	0	CASCADE HY SOUTH	CN		TRF SIGNAL	N DRY	TURN		PRVTE	SW SE			016	00
			PORTLAND UA	3.81		MEYERS RD	03	0		N DAY	INJ		PSNGR CAR			01	DRVR	NONE
No	45 19	13.68 -122 34	38.97	016000100S00			1											25 F OR-Y
																		OR<25
													02	NONE	0	STRGHT		
													PRVTE	NW SE			000	00
													PSNGR CAR			01	DRVR	INJC
																		23 F OR-Y
																		OR<25
																02	PSNG	INJB
																		25 F
																		000
																	000	00

CITY OF OREGON CITY, CLACKAMAS COUNTY

Intersection Crashes at OR-213, Cascade Hwy #160 & Meyers Rd
January 1, 2015 through December 31, 2017

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes at Meyers Rd & High School Ave
 January 1, 2015 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimers: Effective 2016, collection of “Property Damage Only” (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes at Meyers Rd & Beavercreek Rd
January 1, 2015 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2017														
REAR-END	0	1	1	2	0	2	0	2	0	1	1	2	0	0
2017 TOTAL	0	1	1	2	0	2	0	2	0	1	1	2	0	0
YEAR: 2016														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2015														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2015 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	3	1	4	0	4	0	4	0	3	1	4	0	0

Disclaimers: Effective 2016, collection of “Property Damage Only” (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

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CITY OF OREGON CITY, CLACKAMAS COUNTY

Intersectional Crashes at Meyers Rd & Beaver Creek Rd
January 1, 2015 through December 31, 2017

SER# INVEST UNLOC?	P E A / C O D C J L K				DATE	FC DISTNC	CITY STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE TRLR QTY OWNER	MOVE FROM TO	A S G E LICNS X RES				PED LOC	ERROR	ACTN	EVENT	CAUSE
	LAT/LONG				INTERSECTION SEQ #		TRAF-		RNDBT	SURF	COLL TYP	V#	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACTN	EVENT	CAUSE	
							CONTL		DRVWY	LIGHT	SVRTY													
04532 CITY No	Y	N	N	N	10/03/2016 Mon 7A	16 0	S BEAVERCREEK RD MEYERS RD	INTER SE	3-LEG	N		N	CLR DRY	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0 SE NW						013 000 000	01,07,29 00 01,07,29	
	45	19	11.14	-122 33 28.50			1	06	0		N	DAY	INJ				01	DRVR	NONE	19 M	OR-Y OR<25	047,043,026	000	
															02 NONE PRVTE PSNGR CAR	0 SE NW						011 013 000	00 00	
																	01	DRVR	INJC	22 F	OR-Y OR<25	000	000	00
															03 NONE PRVTE PSNGR CAR	0 NW SE						000 000	00 00	
																	01	DRVR	NONE	38 M	OR-Y OR<25	000	000	00
															04 NONE PRVTE PSNGR CAR	0 SE NW						022 000	00 00	
																	01	DRVR	NONE	26 F	OR-Y OR<25	000	000	00
																	02	PSNG	NO<5	04 F		000	000	00
01589 NONE No	N	N	N		03/07/2017 Tue 8A	16 0	S BEAVERCREEK RD MEYERS RD	INTER SE	3-LEG	N		N	CLR DRY	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0 SE NW						000 000	29 00	
	45	19	11.14	-122 33 28.50			1	06	0		N	DAWN	INJ				01	DRVR	NONE	46 F	OR-Y OR<25	026	000	29
															02 NONE PRVTE PSNGR CAR	0 SE NW						012 000	00 00	
																	01	DRVR	INJC	53 M	OR-Y OR<25	000	000	00
																	02	PSNG	INJC	19 M		000	000	00
00827 NONE No	N	N	N		03/02/2017 Thu 10A	16 0	S BEAVERCREEK RD MEYERS RD	INTER SW	3-LEG	N		N	CLR DRY	S-1STOP REAR	01 NONE N/A PSNGR CAR	9 NE SW						000 000	29 00	
	45	19	11.14	-122 33 28.50			1	06	0		N	DAY	PDO				01	DRVR	NONE	00 U	UNK UNK	000	000	00
															02 NONE N/A PSNGR CAR	9 NE SW						011 000	00 00	
																	01	DRVR	NONE	00 U	UNK UNK	000	000	00
01850 NONE No	N	N	N	Y	05/15/2015 Fri 7A	16 0	S BEAVERCREEK RD MEYERS RD	INTER NW	3-LEG	N		N	CLR DRY	S-1STOP REAR	01 NONE PRVTE PSNGR CAR	0 NW SE						000 000	29 00	
	45	19	11.14	-122 33 28.50			1	06	0		N	DAY	INJ				01	DRVR	NONE	45 M	OR-Y OR<25	026	000	29
															02 NONE PRVTE PSNGR CAR	0 NW SE						011 000	00 00	
																	01	DRVR	INJC	40 F	OR-Y OR<25	000	000	

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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	TURNUED FROM WRONG LANE
007	TO WRONG	TURNUED INTO WRONG LANE
008	ILLEG U	U-TURNUED 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/ VEHICLE)
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	JACKKNIFE	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 CONVEYANCE
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OBJECT
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN OBJECT
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	OFCCR/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
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, MOTOR BIKE
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
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 F Year 2022 Background
Traffic Conditions Analysis
Worksheets

Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 60.2
 Level Of Service: E
 Volume to Capacity (v/c): 0.889

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	385	975	63	463	473	174	106	254	218	20	92	94
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 [%]	5.00	7.00	3.00	3.00	11.00	6.00	4.00	7.00	5.00	14.00	9.00	19.00
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	0	0	0	0	0	0	44	0	0	47
Total Hourly Volume [veh/h]	385	975	63	463	473	174	106	254	174	20	92	47
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]	106	268	17	127	130	48	29	70	48	5	25	13
Total Analysis Volume [veh/h]	423	1071	69	509	520	191	116	279	191	22	101	52
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	3			0			3			0		
v_di, Inbound Pedestrian Volume crossing in	3			0			3			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	70.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	34	54	0	26	36	0	12	22	34	12	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	38	48	0	30	40	0	16	26	38	16	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	31	52	52	26	47	47	14	21	56	2	9	9
g / C, Green / Cycle	0.26	0.43	0.43	0.22	0.39	0.39	0.12	0.17	0.46	0.02	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.24	0.31	0.04	0.29	0.16	0.12	0.07	0.16	0.12	0.01	0.06	0.04
s, saturation flow rate [veh/h]	1738	3418	1577	1767	3303	1536	1753	1796	1549	1612	1766	1355
c, Capacity [veh/h]	448	1478	682	382	1292	601	202	308	717	29	132	101
d1, Uniform Delay [s]	38.60	20.24	14.94	42.72	20.22	19.53	50.37	48.79	19.79	58.71	54.54	53.44
k, delay calibration	0.34	0.50	0.50	0.50	0.50	0.50	0.07	0.27	0.07	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	23.72	3.13	0.30	165.91	0.93	1.39	1.58	20.37	0.12	21.34	5.61	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.72	0.10	1.33	0.40	0.32	0.58	0.91	0.27	0.76	0.77	0.51
d, Delay for Lane Group [s/veh]	62.32	23.36	15.23	208.63	21.16	20.92	51.95	69.16	19.91	80.05	60.15	55.90
Lane Group LOS	E	C	B	F	C	C	D	E	B	F	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	13.69	9.26	0.87	27.82	4.06	3.01	3.37	9.84	3.25	0.85	3.25	1.61
50th-Percentile Queue Length [ft/ln]	342.26	231.38	21.84	695.52	101.58	75.27	84.20	246.02	81.30	21.22	81.30	40.15
95th-Percentile Queue Length [veh/ln]	19.76	14.24	1.57	41.96	7.31	5.42	6.06	14.99	5.85	1.53	5.85	2.89
95th-Percentile Queue Length [ft/ln]	493.96	356.11	39.31	1049.10	182.84	135.48	151.56	374.64	146.34	38.19	146.34	72.27

Movement, Approach, & Intersection Results

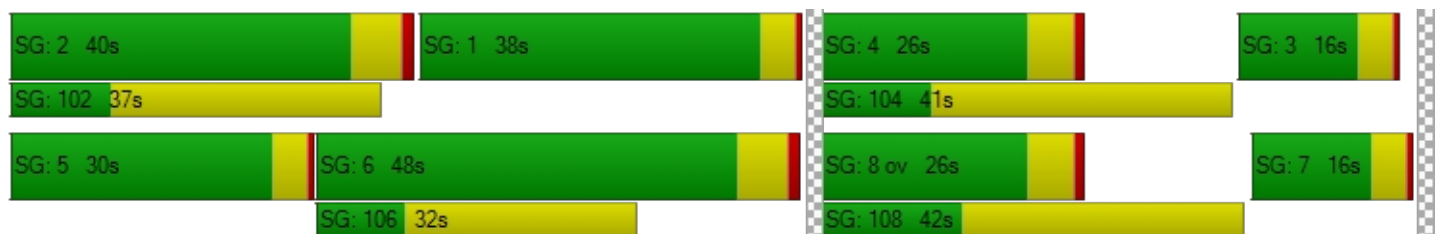
d_M, Delay for Movement [s/veh]	62.32	23.36	15.23	208.63	21.16	20.92	51.95	69.16	19.91	80.05	60.15	55.90
Movement LOS	E	C	B	F	C	C	D	E	B	F	E	E
d_A, Approach Delay [s/veh]	33.55			99.34			49.70			61.39		
Approach LOS	C			F			D			E		
d_I, Intersection Delay [s/veh]	60.24											
Intersection LOS	E											
Intersection V/C	0.889											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0			15.0			14.0			13.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	2489.55			0.00			10979.30			0.00		
d_p, Pedestrian Delay [s]	43.35			45.94			46.82			47.70		
I_p,int, Pedestrian LOS Score for Intersection	3.032			3.074			2.588			2.386		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	700			567			343			343		
d_b, Bicycle Delay [s]	25.35			30.82			41.17			41.19		
I_b,int, Bicycle LOS Score for Intersection	2.849			2.566			2.599			1.926		
Bicycle LOS	C			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.599

Intersection Setup

Name	OR213			OR213			Meyers Rd			Meyers 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	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	325.00	100.00	310.00	200.00	100.00	200.00	170.00	100.00	100.00	305.00	100.00	305.00
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]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	173	1036	88	48	475	83	278	78	118	20	22	109
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	7.00	3.00	3.00	9.00	9.00	5.00	3.00	5.00	3.00	3.00	3.00
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	0	0	0	0	0	0	0	0	0	55
Total Hourly Volume [veh/h]	173	1036	88	48	475	83	278	78	118	20	22	54
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
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]	45	267	23	12	122	21	72	20	30	5	6	14
Total Analysis Volume [veh/h]	178	1068	91	49	490	86	287	80	122	21	23	56
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	53.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	41	63	0	5	27	0	20	29	0	26	30	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.0	0.0	3.5	4.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0
Split [s]	45	67	0	11	33	0	24	34	0	8	18	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	8	0	0	8	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	19	0	0	21	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.0	0.0	2.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	4.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	76	69	69	76	68	68	33	27	33	9	9
g / C, Green / Cycle	0.64	0.58	0.58	0.64	0.57	0.57	0.27	0.22	0.27	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.19	0.33	0.33	0.09	0.15	0.06	0.18	0.12	0.02	0.01	0.04
s, saturation flow rate [veh/h]	934	1795	1746	569	3360	1500	1605	1676	1245	1855	1577
c, Capacity [veh/h]	639	1034	1006	385	1899	848	512	371	303	144	123
d1, Uniform Delay [s]	3.75	7.76	7.78	5.10	7.09	6.66	38.11	41.36	32.89	51.69	52.93
k, delay calibration	0.09	0.50	0.50	0.50	0.50	0.50	0.48	0.07	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	0.20	2.25	2.34	0.68	0.33	0.24	4.21	0.76	0.06	0.31	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.57	0.57	0.13	0.26	0.10	0.56	0.54	0.07	0.16	0.46
d, Delay for Lane Group [s/veh]	3.96	10.02	10.11	5.78	7.42	6.90	42.32	42.12	32.95	52.00	54.54
Lane Group LOS	A	B	B	A	A	A	D	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.70	4.77	4.68	0.25	1.74	0.61	7.95	5.38	0.46	0.66	1.67
50th-Percentile Queue Length [ft/ln]	17.48	119.19	116.99	6.23	43.38	15.13	198.81	134.42	11.49	16.54	41.83
95th-Percentile Queue Length [veh/ln]	1.26	8.35	8.23	0.45	3.12	1.09	12.58	9.18	0.83	1.19	3.01
95th-Percentile Queue Length [ft/ln]	31.46	208.72	205.68	11.22	78.08	27.23	314.43	229.50	20.68	29.77	75.29

Movement, Approach, & Intersection Results

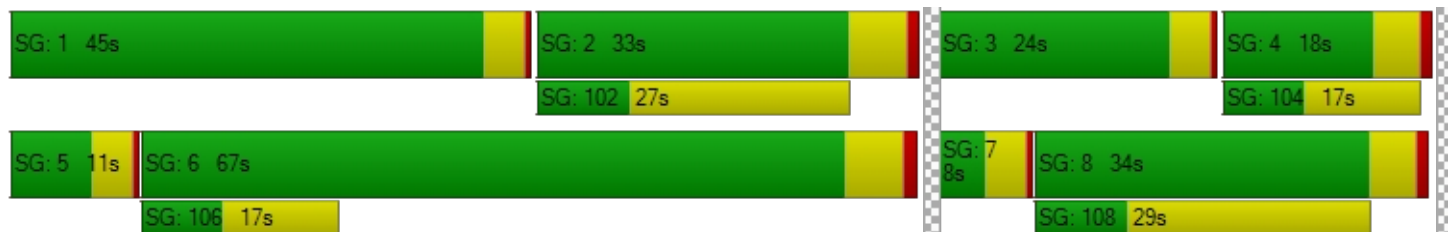
d_M, Delay for Movement [s/veh]	3.96	10.06	10.11	5.78	7.42	6.90	42.32	42.12	42.12	32.95	52.00	54.54
Movement LOS	A	B	B	A	A	A	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	9.25			7.22			42.24			49.42		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	16.65											
Intersection LOS	B											
Intersection V/C	0.599											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0			11.0			12.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	48.60			49.50			48.60			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.896			3.015			2.402			2.370		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1017			450			483			217		
d_b, Bicycle Delay [s]	14.50			36.04			34.50			47.70		
I_b,int, Bicycle LOS Score for Intersection	2.663			2.075			2.366			1.815		
Bicycle LOS	B			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type:	All-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	105	98	108	23	28	7	1	119	32	97	97	19
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 [%]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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]	105	98	108	23	28	7	1	119	32	97	97	19
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
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]	36	34	38	8	10	2	0	41	11	34	34	7
Total Analysis Volume [veh/h]	146	136	150	32	39	10	1	165	44	135	135	26
Pedestrian Volume [ped/h]	0			15			5			5		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	659	569	506	557	515	565
Degree of Utilization, x	0.66	0.14	0.00	0.38	0.26	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.88	0.49	0.01	1.73	1.04	1.17
95th-Percentile Queue Length [ft]	122.11	12.34	0.15	43.30	26.08	29.17
Approach Delay [s/veh]	18.29	10.37	12.97		11.84	
Approach LOS	C	B	B		B	
Intersection Delay [s/veh]	14.69					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	44.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.955

Intersection Setup

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers 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	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	110.00	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]	20.00			20.00			20.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	208	748	3	10	246	175	303	11	61	6	22	21
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	2.00	1.00	1.00	8.00	1.00	9.00	1.00	9.00	1.00	1.00	1.00
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	0	0	0	16	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	748	3	10	246	159	303	11	61	6	22	21
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
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]	72	260	1	3	85	55	105	4	21	2	8	7
Total Analysis Volume [veh/h]	289	1039	4	14	342	221	421	15	85	8	31	29
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	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing	0			0			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
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]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	20	70	0	20	70	0	20	40	0	20	40	0
Amber [s]	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Split [s]	24	68	0	0	44	0	0	34	0	0	0	0
Vehicle Extension [s]	2.3	2.0	0.0	2.3	2.0	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	13	0	0	13	0	0	12	0	0	12	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

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	L	C
C, Cycle Length [s]	111	111	111	111	111	111	111	111
L, Total Lost Time per Cycle [s]	4.00	4.80	4.00	4.80	4.80	4.80	4.80	4.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.80	2.00	2.80	0.00	2.80	0.00	2.80
g_i, Effective Green Time [s]	20	63	1	45	33	28	33	9
g / C, Green / Cycle	0.18	0.57	0.01	0.41	0.29	0.25	0.29	0.08
(v / s)_i Volume / Saturation Flow Rate	0.16	0.56	0.01	0.34	0.27	0.06	0.01	0.03
s, saturation flow rate [veh/h]	1781	1869	1795	1649	1546	1639	1348	1731
c, Capacity [veh/h]	317	1067	23	669	508	410	430	134
d1, Uniform Delay [s]	44.77	23.12	54.52	29.76	37.74	33.26	27.93	48.92
k, delay calibration	0.34	0.36	0.07	0.06	0.50	0.07	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.81	18.70	15.23	1.64	14.48	0.19	0.01	1.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	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

Lane Group Results

X, volume / capacity	0.91	0.98	0.61	0.84	0.83	0.24	0.02	0.45
d, Delay for Lane Group [s/veh]	69.58	41.82	69.75	31.40	52.22	33.45	27.94	50.34
Lane Group LOS	E	D	E	C	D	C	C	D
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.08	31.01	0.49	13.88	12.89	2.22	0.15	1.64
50th-Percentile Queue Length [ft/ln]	252.09	775.37	12.28	346.94	322.36	55.58	3.82	41.01
95th-Percentile Queue Length [veh/ln]	15.29	40.15	0.88	19.99	18.78	4.00	0.28	2.95
95th-Percentile Queue Length [ft/ln]	382.28	1003.71	22.11	499.68	469.59	100.05	6.88	73.81

Movement, Approach, & Intersection Results

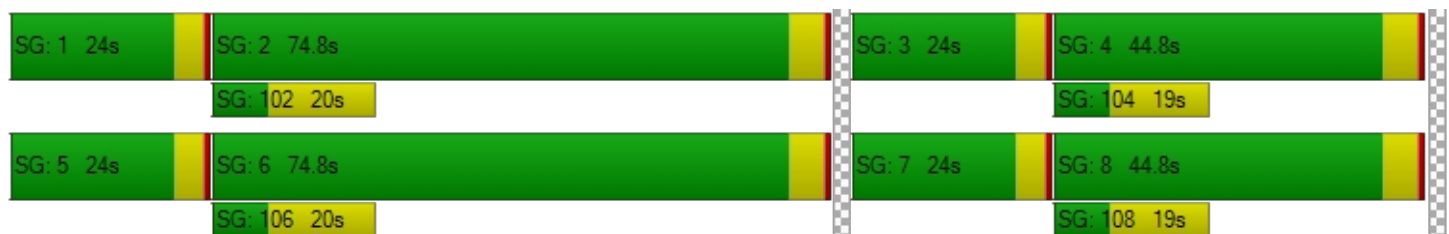
d_M, Delay for Movement [s/veh]	69.58	41.82	41.82	69.75	31.40	31.40	52.22	33.45	33.45	27.94	50.34	50.34
Movement LOS	E	D	D	E	C	C	D	C	C	C	D	D
d_A, Approach Delay [s/veh]	47.84			32.33			48.61			47.70		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	44.41											
Intersection LOS	D											
Intersection V/C	0.955											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			10598.22			0.00			12705.99		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.326			2.495			2.173			1.973		
Crosswalk LOS	B			B			B			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1556			1556			889			889		
d_b, Bicycle Delay [s]	2.22			2.22			13.89			13.89		
I_b,int, Bicycle LOS Score for Intersection	3.757			2.538			2.419			1.672		
Bicycle LOS	D			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 37.9
 Level Of Service: D
 Volume to Capacity (v/c): 0.856

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	316	702	26	156	1032	257	134	129	535	88	204	347
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	6.00	5.00	2.00	4.00	1.00	2.00	10.00	2.00	2.00	7.00	2.00
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	0	0	0	0	0	0	107	0	0	174
Total Hourly Volume [veh/h]	316	702	26	156	1032	257	134	129	428	88	204	173
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]	84	187	7	41	274	68	36	34	114	23	54	46
Total Analysis Volume [veh/h]	336	747	28	166	1098	273	143	137	455	94	217	184
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	1			2			0			2		
v_di, Inbound Pedestrian Volume crossing in	0			2			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	31	55	0	21	45	0	16	22	31	16	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	35	59	0	25	49	0	20	26	35	20	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	27	65	65	14	52	52	12	21	51	11	19	19
g / C, Green / Cycle	0.20	0.50	0.50	0.11	0.40	0.40	0.10	0.16	0.39	0.09	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.02	0.09	0.31	0.17	0.08	0.08	0.29	0.05	0.12	0.12
s, saturation flow rate [veh/h]	1781	3446	1519	1781	3503	1596	1781	1751	1589	1781	1796	1577
c, Capacity [veh/h]	365	1718	757	192	1406	641	170	278	627	153	267	235
d1, Uniform Delay [s]	46.21	13.15	11.06	54.76	25.67	21.20	57.83	49.95	33.41	57.37	53.59	53.28
k, delay calibration	0.28	0.50	0.50	0.09	0.50	0.50	0.07	0.07	0.50	0.07	0.11	0.10
l, 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
d2, Incremental Delay [s]	20.14	0.80	0.09	9.32	4.37	2.07	6.70	0.83	7.19	2.45	6.20	5.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.43	0.04	0.86	0.78	0.43	0.84	0.49	0.73	0.61	0.81	0.78
d, Delay for Lane Group [s/veh]	66.34	13.95	11.15	64.08	30.04	23.27	64.54	50.78	40.60	59.82	59.79	58.47
Lane Group LOS	E	B	B	E	C	C	E	D	D	E	E	E
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	11.69	4.42	0.29	5.51	12.18	4.77	4.91	4.12	13.22	3.14	7.45	6.23
50th-Percentile Queue Length [ft/ln]	292.33	110.59	7.35	137.86	304.56	119.31	122.84	102.97	330.42	78.51	186.24	155.76
95th-Percentile Queue Length [veh/ln]	17.30	7.87	0.53	9.37	17.91	8.36	8.55	7.41	19.18	5.65	11.93	10.32
95th-Percentile Queue Length [ft/ln]	432.53	196.82	13.22	234.14	447.66	208.88	213.73	185.35	479.48	141.32	298.15	258.10

Movement, Approach, & Intersection Results

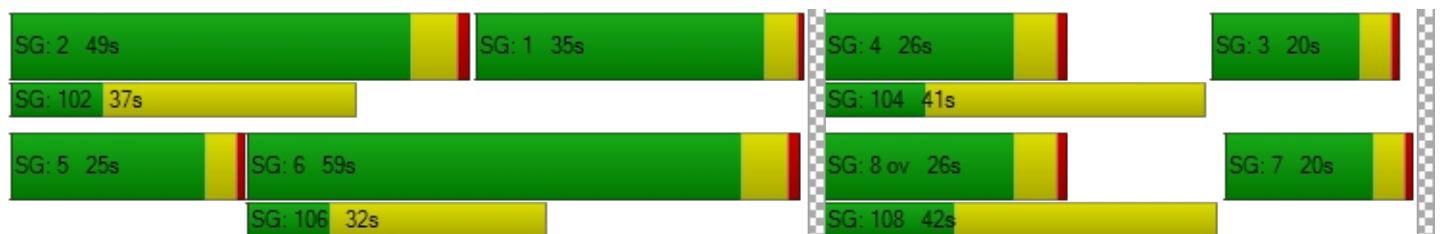
d_M, Delay for Movement [s/veh]	66.34	13.95	11.15	64.08	30.04	23.27	64.54	50.78	40.60	59.82	59.79	58.47
Movement LOS	E	B	B	E	C	C	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	29.73			32.51			47.15			59.30		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	37.91											
Intersection LOS	D											
Intersection V/C	0.856											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0			15.0			14.0			13.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	10575.63			2800.41			2989.43			0.00		
d_p, Pedestrian Delay [s]	48.25			50.87			51.75			52.65		
I_p,int, Pedestrian LOS Score for Intersection	3.164			3.147			2.773			2.557		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	815			662			317			317		
d_b, Bicycle Delay [s]	22.82			29.11			46.03			46.03		
I_b,int, Bicycle LOS Score for Intersection	2.476			2.828			2.949			2.663		
Bicycle LOS	B			C			C			B		

Sequence

Ring 1	1	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	7	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 22.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.711

Intersection Setup

Name	OR213			OR213			Meyers Rd			Meyers 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	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	325.00	100.00	310.00	200.00	100.00	200.00	170.00	100.00	100.00	305.00	100.00	305.00
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]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	135	732	59	85	1246	217	234	49	171	61	17	78
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	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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	0	0	0	0	0	0	0	0	0	39
Total Hourly Volume [veh/h]	135	732	59	85	1246	217	234	49	171	61	17	39
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]	36	193	16	22	328	57	62	13	45	16	4	10
Total Analysis Volume [veh/h]	142	771	62	89	1312	228	246	52	180	64	18	41
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	3			3			2			2		
v_di, Inbound Pedestrian Volume crossing m	2			2			3			3		
v_co, Outbound Pedestrian Volume crossing	0			2			2			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			2			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	20	54	0	20	54	0	26	28	0	26	28	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.0	0.0	3.5	4.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0
Split [s]	24	58	0	24	58	0	22	26	0	22	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.5	4.5	0.0	2.5	2.3	0.0	2.5	2.5	0.0
Walk [s]	0	8	0	0	8	0	0	8	0	0	8	0
Pedestrian Clearance [s]	0	19	0	0	19	0	0	21	0	0	21	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.0	0.0	2.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	12	74	74	8	70	70	32	23	32	11	11
g / C, Green / Cycle	0.09	0.57	0.57	0.06	0.54	0.54	0.25	0.18	0.25	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.08	0.23	0.23	0.05	0.37	0.15	0.15	0.14	0.05	0.01	0.03
s, saturation flow rate [veh/h]	1781	1855	1800	1767	3532	1571	1616	1621	1280	1855	1548
c, Capacity [veh/h]	168	1059	1028	112	1909	849	478	290	246	153	128
d1, Uniform Delay [s]	55.98	7.87	7.88	58.72	12.10	9.27	42.50	51.23	39.26	55.30	56.22
k, delay calibration	0.07	0.50	0.50	0.08	0.50	0.50	0.25	0.07	0.08	0.08	0.08
l, 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
d2, Incremental Delay [s]	7.10	1.12	1.16	9.01	2.04	0.78	2.01	3.60	0.41	0.25	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.40	0.40	0.79	0.69	0.27	0.51	0.80	0.26	0.12	0.32
d, Delay for Lane Group [s/veh]	63.07	8.99	9.04	67.73	14.14	10.05	44.51	54.83	39.67	55.55	57.28
Lane Group LOS	E	A	A	E	B	B	D	D	D	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.66	3.52	3.44	3.05	7.44	2.16	7.19	7.54	1.64	0.56	1.31
50th-Percentile Queue Length [ft/ln]	116.58	87.96	85.99	76.30	186.08	53.94	179.75	188.58	40.92	14.03	32.81
95th-Percentile Queue Length [veh/ln]	8.20	6.33	6.19	5.49	11.92	3.88	11.59	12.05	2.95	1.01	2.36
95th-Percentile Queue Length [ft/ln]	205.12	158.34	154.78	137.33	297.94	97.09	289.69	301.18	73.66	25.25	59.06

Movement, Approach, & Intersection Results

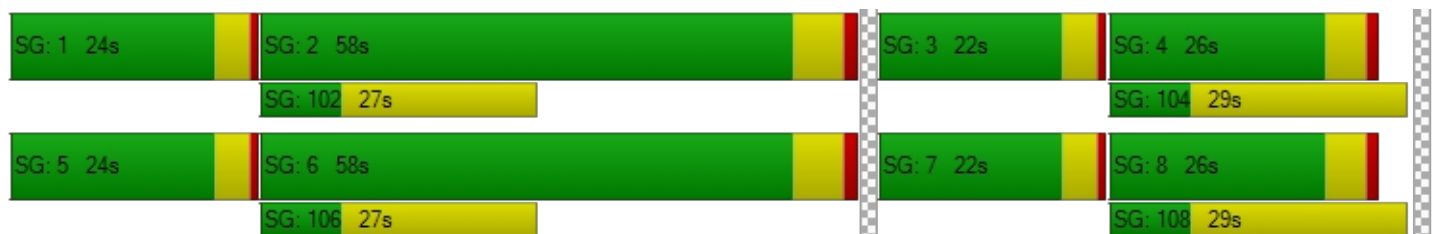
d_M, Delay for Movement [s/veh]	63.07	9.01	9.04	67.73	14.14	10.05	44.51	54.83	54.83	39.67	55.55	57.28
Movement LOS	E	A	A	E	B	B	D	D	D	D	E	E
d_A, Approach Delay [s/veh]	16.89			16.50			49.52			47.87		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.74											
Intersection LOS	C											
Intersection V/C	0.711											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0			12.0			12.0			12.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	1494.02			1887.47			1602.99			9247.53		
d_p, Pedestrian Delay [s]	53.55			53.55			53.55			53.55		
I_p,int, Pedestrian LOS Score for Intersection	3.075			3.168			2.239			2.292		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			323			323		
d_b, Bicycle Delay [s]	23.41			23.40			45.70			45.70		
I_b,int, Bicycle LOS Score for Intersection	2.364			2.904			2.348			1.827		
Bicycle LOS	B			C			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type: All-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 8.8
 Level Of Service: A
 Volume to Capacity (v/c): 0.210

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	66	10	19	43	45	7	44	59	85	34	64	43
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 [%]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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]	66	10	19	43	45	7	44	59	85	34	64	43
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]	18	3	5	12	12	2	12	16	23	9	17	12
Total Analysis Volume [veh/h]	72	11	21	47	49	8	48	64	92	37	70	47
Pedestrian Volume [ped/h]	0			15			5			5		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	725	722	624	743	619	717
Degree of Utilization, x	0.14	0.14	0.08	0.21	0.06	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.50	0.50	0.25	0.79	0.19	0.58
95th-Percentile Queue Length [ft]	12.48	12.56	6.22	19.72	4.75	14.53
Approach Delay [s/veh]	8.80	8.83	8.86		8.75	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	8.81					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	45.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.981

Intersection Setup

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers 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	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	110.00	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]	20.00			20.00			20.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	63	394	6	21	941	275	202	22	68	5	25	17
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 [%]	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	1.00
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	0	0	0	9	0	0	39	0	0	7
Total Hourly Volume [veh/h]	63	394	6	21	941	266	202	22	29	5	25	10
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
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]	16	102	2	5	243	69	52	6	7	1	6	3
Total Analysis Volume [veh/h]	65	406	6	22	970	274	208	23	30	5	26	10
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
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]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	15	87	0	10	82	0	10	20	0	10	20	0
Amber [s]	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Split [s]	24	68	0	0	44	0	0	34	0	0	0	0
Vehicle Extension [s]	2.3	2.0	0.0	2.3	2.0	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	13	0	0	13	0	0	12	0	0	12	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

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	L	C
C, Cycle Length [s]	123	123	123	123	123	123	123	123
L, Total Lost Time per Cycle [s]	4.00	4.80	4.00	4.80	4.80	4.80	4.80	4.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.80	2.00	2.80	0.00	2.80	0.00	2.80
g_i, Effective Green Time [s]	6	86	2	82	21	16	21	7
g / C, Green / Cycle	0.05	0.70	0.02	0.67	0.17	0.13	0.17	0.06
(v / s)_i Volume / Saturation Flow Rate	0.04	0.22	0.01	0.69	0.13	0.03	0.00	0.02
s, saturation flow rate [veh/h]	1795	1850	1795	1805	1616	1714	1417	1797
c, Capacity [veh/h]	85	1292	32	1207	345	231	296	106
d1, Uniform Delay [s]	57.71	7.18	59.88	20.32	47.67	47.40	42.11	55.44
k, delay calibration	0.07	0.04	0.07	0.50	0.50	0.07	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.25	0.05	14.81	34.08	7.61	0.31	0.01	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	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

Lane Group Results

X, volume / capacity	0.76	0.32	0.69	1.03	0.60	0.23	0.02	0.34
d, Delay for Lane Group [s/veh]	65.97	7.23	74.69	54.40	55.28	47.70	42.12	56.60
Lane Group LOS	E	A	E	F	E	D	D	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.22	4.16	0.82	43.55	6.78	1.50	0.13	1.11
50th-Percentile Queue Length [ft/ln]	55.46	103.99	20.55	1088.67	169.54	37.44	3.20	27.64
95th-Percentile Queue Length [veh/ln]	3.99	7.49	1.48	55.91	11.05	2.70	0.23	1.99
95th-Percentile Queue Length [ft/ln]	99.83	187.19	36.99	1397.83	276.30	67.39	5.75	49.74

Movement, Approach, & Intersection Results

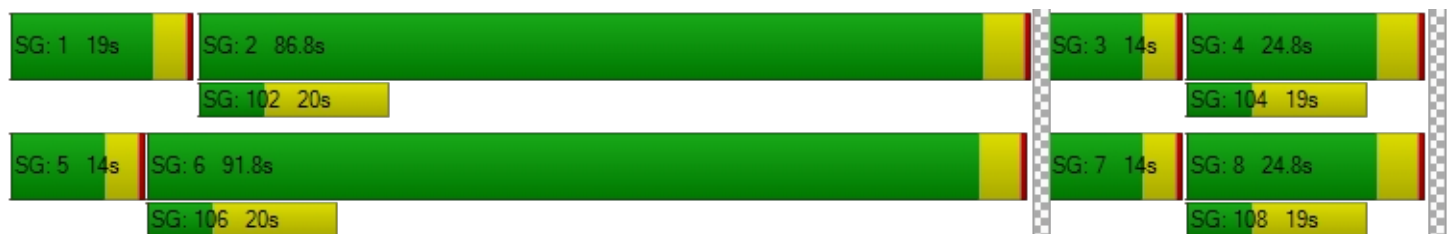
d_M, Delay for Movement [s/veh]	65.97	7.23	7.23	74.69	54.40	54.40	55.28	47.70	47.70	42.12	56.60	56.60
Movement LOS	E	A	A	E	D	D	E	D	D	D	E	E
d_A, Approach Delay [s/veh]	15.23			54.75			53.74			54.83		
Approach LOS	B			D			D			D		
d_I, Intersection Delay [s/veh]	45.41											
Intersection LOS	D											
Intersection V/C	0.981											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			6997.81			12663.71		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.270			2.388			2.141			1.982		
Crosswalk LOS	B			B			B			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1933			1822			444			444		
d_b, Bicycle Delay [s]	0.05			0.36			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	2.347			3.663			2.055			1.639		
Bicycle LOS	B			D			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Appendix G Year 2022 Total Traffic Conditions Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 59.8
 Level Of Service: E
 Volume to Capacity (v/c): 0.891

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	385	975	63	463	473	174	106	254	218	20	92	94
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 [%]	5.00	7.00	3.00	3.00	11.00	6.00	4.00	7.00	5.00	14.00	9.00	19.00
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]	2	6	0	0	35	0	0	0	13	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	0	0	0	0	0	0	46	0	0	47
Total Hourly Volume [veh/h]	387	981	63	463	508	174	106	254	185	20	92	47
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]	106	270	17	127	140	48	29	70	51	5	25	13
Total Analysis Volume [veh/h]	425	1078	69	509	558	191	116	279	203	22	101	52
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	3			0			3			0		
v_di, Inbound Pedestrian Volume crossing in	3			0			3			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	70.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	34	54	0	26	36	0	12	22	34	12	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	38	48	0	30	40	0	16	26	38	16	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	31	52	52	26	47	47	14	21	56	2	9	9
g / C, Green / Cycle	0.26	0.43	0.43	0.22	0.39	0.39	0.12	0.17	0.46	0.02	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.24	0.32	0.04	0.29	0.17	0.12	0.07	0.16	0.13	0.01	0.06	0.04
s, saturation flow rate [veh/h]	1738	3418	1577	1767	3303	1536	1753	1796	1549	1612	1766	1355
c, Capacity [veh/h]	450	1478	682	382	1289	599	202	308	718	29	132	101
d1, Uniform Delay [s]	38.51	20.30	14.94	42.72	20.59	19.63	50.37	48.79	19.88	58.71	54.54	53.45
k, delay calibration	0.34	0.50	0.50	0.50	0.50	0.50	0.07	0.27	0.07	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	23.86	3.20	0.30	165.91	1.06	1.40	1.58	20.37	0.13	21.34	5.61	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.73	0.10	1.33	0.43	0.32	0.58	0.91	0.28	0.76	0.77	0.51
d, Delay for Lane Group [s/veh]	62.37	23.50	15.23	208.63	21.65	21.03	51.95	69.16	20.01	80.05	60.15	55.91
Lane Group LOS	E	C	B	F	C	C	D	E	C	F	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	13.76	9.37	0.87	27.82	4.43	3.02	3.37	9.84	3.48	0.85	3.25	1.61
50th-Percentile Queue Length [ft/ln]	344.11	234.18	21.84	695.52	110.74	75.55	84.20	246.02	86.96	21.22	81.30	40.15
95th-Percentile Queue Length [veh/ln]	19.85	14.39	1.57	41.96	7.88	5.44	6.06	14.99	6.26	1.53	5.85	2.89
95th-Percentile Queue Length [ft/ln]	496.23	359.66	39.31	1049.10	197.03	135.98	151.56	374.64	156.53	38.19	146.34	72.27

Movement, Approach, & Intersection Results

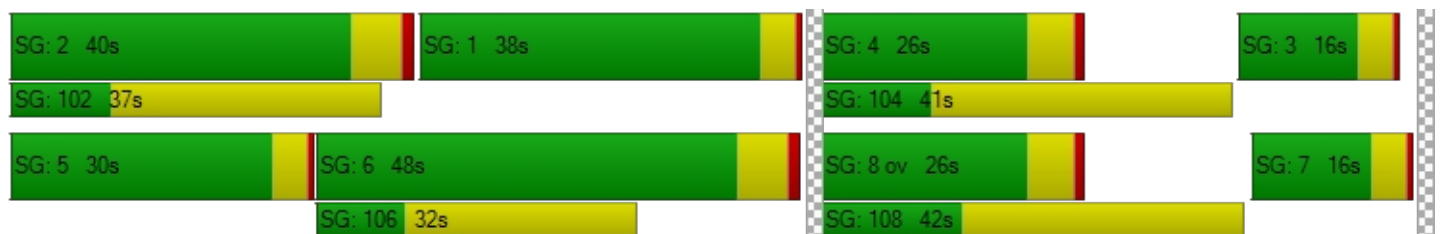
d_M, Delay for Movement [s/veh]	62.37	23.50	15.23	208.63	21.65	21.03	51.95	69.16	20.01	80.05	60.15	55.91
Movement LOS	E	C	B	F	C	C	D	E	C	F	E	E
d_A, Approach Delay [s/veh]	33.65			97.21			49.14			61.39		
Approach LOS	C			F			D			E		
d_I, Intersection Delay [s/veh]	59.76											
Intersection LOS	E											
Intersection V/C	0.891											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0			15.0			14.0			13.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	2466.46			0.00			10979.30			0.00		
d_p, Pedestrian Delay [s]	43.35			45.94			46.82			47.70		
I_p,int, Pedestrian LOS Score for Intersection	3.047			3.085			2.595			2.386		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	700			567			343			343		
d_b, Bicycle Delay [s]	25.35			30.82			41.17			41.19		
I_b,int, Bicycle LOS Score for Intersection	2.857			2.597			2.622			1.926		
Bicycle LOS	C			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 33.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.683

Intersection Setup

Name	OR213			OR213			Meyers Rd			Meyers 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	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	325.00	100.00	310.00	200.00	100.00	200.00	170.00	100.00	100.00	305.00	100.00	305.00
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]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	173	1036	88	48	475	83	278	78	118	20	22	109
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	7.00	3.00	3.00	9.00	9.00	5.00	3.00	5.00	3.00	3.00	3.00
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	13	48	0	0	0	9	0	2	1	8
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	0	0	0	0	0	0	0	0	0	59
Total Hourly Volume [veh/h]	173	1036	101	96	475	83	278	87	118	22	23	58
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
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]	45	267	26	25	122	21	72	22	30	6	6	15
Total Analysis Volume [veh/h]	178	1068	104	99	490	86	287	90	122	23	24	60
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	53.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	41	63	0	5	27	0	20	29	0	26	30	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.0	0.0	3.5	4.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0
Split [s]	45	67	0	11	33	0	24	34	0	8	18	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	8	0	0	8	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	19	0	0	21	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.0	0.0	2.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.00	4.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.00	2.00	3.00	3.00
g_i, Effective Green Time [s]	15	65	65	7	57	57	20	27	2	10	10
g / C, Green / Cycle	0.12	0.54	0.54	0.06	0.48	0.48	0.17	0.23	0.02	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.11	0.33	0.33	0.06	0.15	0.06	0.17	0.13	0.01	0.01	0.04
s, saturation flow rate [veh/h]	1695	1795	1740	1767	3360	1500	1738	1684	1767	1855	1577
c, Capacity [veh/h]	206	965	935	103	1592	711	289	382	34	148	126
d1, Uniform Delay [s]	49.37	10.74	10.76	55.31	13.11	12.14	50.01	41.09	58.53	51.53	52.88
k, delay calibration	0.07	0.50	0.50	0.28	0.50	0.50	0.41	0.07	0.07	0.07	0.07
l, 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
d2, Incremental Delay [s]	6.57	2.94	3.07	57.87	0.50	0.35	46.29	0.77	12.82	0.31	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.62	0.62	0.96	0.31	0.12	0.99	0.55	0.67	0.16	0.48
d, Delay for Lane Group [s/veh]	55.94	13.67	13.83	113.18	13.61	12.49	96.30	41.86	71.35	51.84	54.58
Lane Group LOS	E	B	B	F	B	B	F	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.24	6.19	6.06	4.51	2.77	0.94	12.29	5.64	0.82	0.69	1.80
50th-Percentile Queue Length [ft/ln]	130.91	154.66	151.50	112.69	69.20	23.53	307.13	140.91	20.45	17.24	44.89
95th-Percentile Queue Length [veh/ln]	8.99	10.27	10.10	7.99	4.98	1.69	18.03	9.53	1.47	1.24	3.23
95th-Percentile Queue Length [ft/ln]	224.73	256.64	252.42	199.74	124.56	42.36	450.84	238.24	36.82	31.03	80.80

Movement, Approach, & Intersection Results

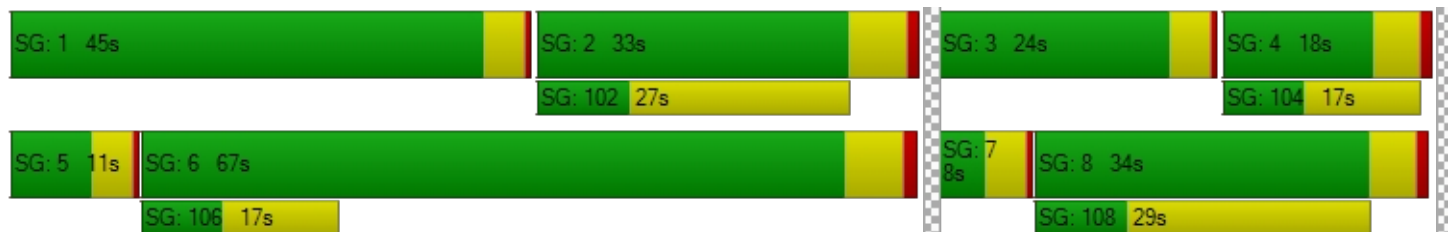
d_M, Delay for Movement [s/veh]	55.94	13.74	13.83	113.18	13.61	12.49	96.30	41.86	41.86	71.35	51.84	54.58
Movement LOS	E	B	B	F	B	B	F	D	D	E	D	D
d_A, Approach Delay [s/veh]	19.31			28.07			73.17			57.57		
Approach LOS	B			C			E			E		
d_I, Intersection Delay [s/veh]	33.33											
Intersection LOS	C											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0			11.0			12.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	48.60			49.50			48.60			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.894			2.990			2.209			2.341		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1017			450			483			217		
d_b, Bicycle Delay [s]	14.50			36.04			34.50			47.70		
I_b,int, Bicycle LOS Score for Intersection	2.673			2.116			2.383			1.834		
Bicycle LOS	B			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Meyers Rd/Western Access

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name			Meyers Rd			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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	Yes		No		No	

Volumes

Name			Meyers Rd			
Base Volume Input [veh/h]	0	0	0	135	192	0
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	3.00	3.00	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]	1	9	56	14	2	5
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	9	56	149	194	5
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	19	52	67	2
Total Analysis Volume [veh/h]	1	13	78	207	269	7
Pedestrian Volume [ped/h]	15		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	0.02	0.06	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.02	9.93	8.04	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.20	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.52	1.52	4.93	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.22		2.20		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.34					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Meyers Rd/Eastern Access

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Southbound		Eastbound		Meyers Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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	Yes		No		No	

Volumes

Name	Southbound		Eastbound		Meyers Rd	
Base Volume Input [veh/h]	0	0	0	135	192	0
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	3.00	3.00	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]	2	2	14	1	5	13
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	2	14	136	197	13
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	5	47	68	5
Total Analysis Volume [veh/h]	3	3	19	189	274	18
Pedestrian Volume [ped/h]	15		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	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.24	9.96	7.93	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.76	0.76	1.16	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.10		0.72		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type: All-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 15.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.671

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	105	98	108	23	28	7	1	119	32	97	97	19
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 [%]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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]	2	0	0	0	0	0	0	3	0	0	16	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]	107	98	108	23	28	7	1	122	32	97	113	19
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
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]	37	34	38	8	10	2	0	42	11	34	39	7
Total Analysis Volume [veh/h]	149	136	150	32	39	10	1	169	44	135	157	26
Pedestrian Volume [ped/h]	0			15			5			5		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	649	559	501	550	511	560
Degree of Utilization, x	0.67	0.14	0.00	0.39	0.26	0.33

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	5.13	0.50	0.01	1.82	1.05	1.41
95th-Percentile Queue Length [ft]	128.13	12.60	0.15	45.38	26.31	35.33
Approach Delay [s/veh]	19.10	10.53	13.29		12.23	
Approach LOS	C	B	B		B	
Intersection Delay [s/veh]	15.17					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.955

Intersection Setup

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers 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	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	110.00	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]	20.00			20.00			20.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	208	748	3	10	246	175	303	11	61	6	22	21
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	2.00	1.00	1.00	8.00	1.00	9.00	1.00	9.00	1.00	1.00	1.00
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]	7	0	0	0	0	9	2	0	1	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	0	0	0	18	0	0	0	0	0	0
Total Hourly Volume [veh/h]	215	748	3	10	246	166	305	11	62	6	22	21
Peak Hour Factor	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200	0.7200
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]	75	260	1	3	85	58	106	4	22	2	8	7
Total Analysis Volume [veh/h]	299	1039	4	14	342	231	424	15	86	8	31	29
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	0			1			0			0		
v_di, Inbound Pedestrian Volume crossing in	0			0			0			1		
v_co, Outbound Pedestrian Volume crossing	0			0			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
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]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	20	70	0	20	70	0	20	40	0	20	40	0
Amber [s]	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Split [s]	24	68	0	0	44	0	0	34	0	0	0	0
Vehicle Extension [s]	2.3	2.0	0.0	2.3	2.0	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	13	0	0	13	0	0	12	0	0	12	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

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	L	C
C, Cycle Length [s]	111	111	111	111	111	111	111	111
L, Total Lost Time per Cycle [s]	4.00	4.80	4.00	4.80	4.80	4.80	4.80	4.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.80	2.00	2.80	0.00	2.80	0.00	2.80
g_i, Effective Green Time [s]	20	63	1	45	33	28	33	9
g / C, Green / Cycle	0.18	0.57	0.01	0.40	0.29	0.25	0.29	0.08
(v / s)_i Volume / Saturation Flow Rate	0.17	0.56	0.01	0.35	0.27	0.06	0.01	0.03
s, saturation flow rate [veh/h]	1781	1869	1795	1646	1546	1639	1347	1731
c, Capacity [veh/h]	321	1067	23	664	508	409	429	134
d1, Uniform Delay [s]	44.82	23.12	54.52	30.29	37.86	33.28	27.94	48.92
k, delay calibration	0.37	0.36	0.07	0.07	0.50	0.07	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.95	18.70	15.23	2.25	14.94	0.19	0.01	1.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	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

Lane Group Results

X, volume / capacity	0.93	0.98	0.61	0.86	0.84	0.25	0.02	0.45
d, Delay for Lane Group [s/veh]	73.77	41.82	69.75	32.54	52.80	33.47	27.95	50.34
Lane Group LOS	E	D	E	C	D	C	C	D
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.78	31.01	0.49	14.44	13.06	2.25	0.15	1.64
50th-Percentile Queue Length [ft/ln]	269.53	775.37	12.28	360.99	326.58	56.18	3.82	41.01
95th-Percentile Queue Length [veh/ln]	16.17	40.15	0.88	20.67	18.99	4.04	0.28	2.95
95th-Percentile Queue Length [ft/ln]	404.15	1003.70	22.11	516.79	474.76	101.12	6.88	73.81

Movement, Approach, & Intersection Results

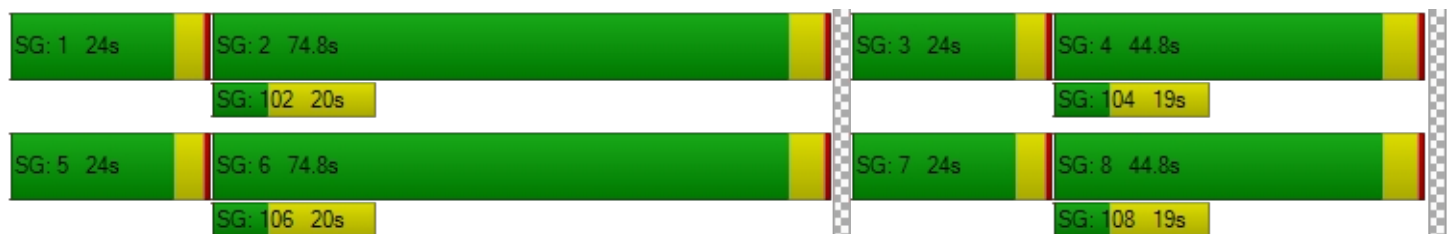
d_M, Delay for Movement [s/veh]	73.77	41.82	41.82	69.75	32.54	32.54	52.80	33.47	33.47	27.95	50.34	50.34
Movement LOS	E	D	D	E	C	C	D	C	C	C	D	D
d_A, Approach Delay [s/veh]	48.94			33.43			49.09			47.70		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	45.32											
Intersection LOS	D											
Intersection V/C	0.955											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			10529.54			0.00			12705.99		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.328			2.506			2.179			1.973		
Crosswalk LOS	B			B			B			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1556			1556			889			889		
d_b, Bicycle Delay [s]	2.22			2.22			13.89			13.89		
I_b,int, Bicycle LOS Score for Intersection	3.774			2.558			2.426			1.672		
Bicycle LOS	D			B			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 1: Molalla Ave/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 38.3
 Level Of Service: D
 Volume to Capacity (v/c): 0.860

Intersection Setup

Name	OR213			OR213			Molalla Ave			CCC Access		
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	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	630.00	100.00	100.00	530.00	100.00	350.00	100.00	100.00	100.00	270.00	100.00	280.00
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]	45.00			45.00			35.00			20.00		
Grade [%]	0.00			0.00			-2.50			-2.50		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Molalla Ave			CCC Access		
Base Volume Input [veh/h]	316	702	26	156	1032	257	134	129	535	88	204	347
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	6.00	5.00	2.00	4.00	1.00	2.00	10.00	2.00	2.00	7.00	2.00
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]	12	31	0	0	6	0	0	0	2	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	0	0	0	0	0	0	107	0	0	174
Total Hourly Volume [veh/h]	328	733	26	156	1038	257	134	129	430	88	204	173
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]	87	195	7	41	276	68	36	34	114	23	54	46
Total Analysis Volume [veh/h]	349	780	28	166	1104	273	143	137	457	94	217	184
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	1			2			0			2		
v_di, Inbound Pedestrian Volume crossing m	0			2			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	1	7	4	0
Auxiliary Signal Groups									1,8			
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	4	10	0	4	10	0	4	6	4	4	6	0
Maximum Green [s]	31	55	0	21	45	0	16	22	31	16	22	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.7	3.5	3.5	4.7	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.7	0.5	0.5	0.7	0.0
Split [s]	35	59	0	25	49	0	20	26	35	20	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.3	4.5	0.0	2.3	2.3	2.3	2.3	2.3	0.0
Walk [s]	0	9	0	0	10	0	0	14	0	0	11	0
Pedestrian Clearance [s]	0	23	0	0	27	0	0	28	0	0	30	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.4	2.0	2.0	3.4	0.0
Minimum Recall	No	Yes		No	Yes		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.40	5.40	4.00	5.40	5.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.40	0.00	2.00	3.40	3.40
g_i, Effective Green Time [s]	28	65	65	14	51	51	12	21	52	11	19	19
g / C, Green / Cycle	0.21	0.50	0.50	0.11	0.40	0.40	0.10	0.16	0.40	0.09	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.02	0.09	0.32	0.17	0.08	0.08	0.29	0.05	0.12	0.12
s, saturation flow rate [veh/h]	1781	3446	1519	1781	3503	1596	1781	1751	1589	1781	1796	1577
c, Capacity [veh/h]	377	1719	758	192	1383	630	170	278	637	153	267	234
d1, Uniform Delay [s]	45.67	13.28	11.05	54.76	26.56	21.85	57.83	49.95	32.74	57.39	53.61	53.30
k, delay calibration	0.30	0.50	0.50	0.09	0.50	0.50	0.07	0.07	0.50	0.07	0.13	0.11
l, 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
d2, Incremental Delay [s]	21.75	0.87	0.09	9.32	4.88	2.16	6.71	0.83	6.80	2.46	7.01	5.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.45	0.04	0.86	0.80	0.43	0.84	0.49	0.72	0.62	0.81	0.79
d, Delay for Lane Group [s/veh]	67.42	14.14	11.14	64.08	31.44	24.01	64.54	50.78	39.54	59.85	60.61	59.25
Lane Group LOS	E	B	B	E	C	C	E	D	D	E	E	E
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.28	4.66	0.29	5.51	12.67	4.88	4.91	4.12	13.09	3.14	7.51	6.28
50th-Percentile Queue Length [ft/ln]	307.06	116.39	7.34	137.86	316.75	121.99	122.85	102.97	327.20	78.54	187.76	157.03
95th-Percentile Queue Length [veh/ln]	18.03	8.19	0.53	9.37	18.51	8.50	8.55	7.41	19.02	5.65	12.00	10.39
95th-Percentile Queue Length [ft/ln]	450.75	204.85	13.21	234.14	462.69	212.56	213.74	185.35	475.53	141.37	300.12	259.78

Movement, Approach, & Intersection Results

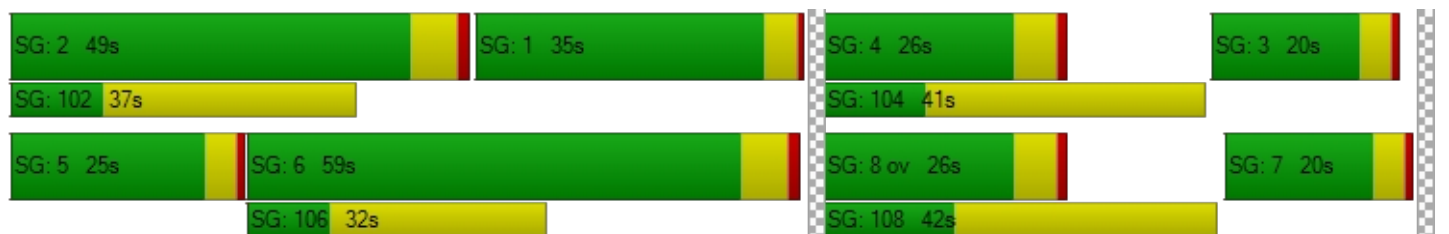
d_M, Delay for Movement [s/veh]	67.42	14.14	11.14	64.08	31.44	24.01	64.54	50.78	39.54	59.85	60.61	59.25
Movement LOS	E	B	B	E	C	C	E	D	D	E	E	E
d_A, Approach Delay [s/veh]	30.14			33.64			46.48			59.96		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	38.33											
Intersection LOS	D											
Intersection V/C	0.860											

Other Modes

g_Walk,mi, Effective Walk Time [s]	18.0	15.0	14.0	13.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	10552.53	2800.41	2989.43	0.00
d_p, Pedestrian Delay [s]	48.25	50.87	51.75	52.65
I_p,int, Pedestrian LOS Score for Intersection	3.177	3.156	2.777	2.557
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	815	662	317	317
d_b, Bicycle Delay [s]	22.82	29.11	46.03	46.03
I_b,int, Bicycle LOS Score for Intersection	2.514	2.833	2.952	2.663
Bicycle LOS	B	C	C	B

Sequence

Ring 1	1	2	4	3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	7	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Meyers Rd/OR213

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 28.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.728

Intersection Setup

Name	OR213			OR213			Meyers Rd			Meyers 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	1	1	0	1	1	0	0	1	0	1
Entry Pocket Length [ft]	325.00	100.00	310.00	200.00	100.00	200.00	170.00	100.00	100.00	305.00	100.00	305.00
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]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	OR213			OR213			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	135	732	59	85	1246	217	234	49	171	61	17	78
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	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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	2	8	0	0	0	2	0	11	8	43
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	0	0	0	0	0	0	0	0	0	61
Total Hourly Volume [veh/h]	135	732	61	93	1246	217	234	51	171	72	25	60
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]	36	193	16	24	328	57	62	13	45	19	7	16
Total Analysis Volume [veh/h]	142	771	64	98	1312	228	246	54	180	76	26	63
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	3			3			2			2		
v_di, Inbound Pedestrian Volume crossing m	2			2			3			3		
v_co, Outbound Pedestrian Volume crossing	0			2			2			1		
v_ci, Inbound Pedestrian Volume crossing mi	1			2			2			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	20	54	0	20	54	0	26	28	0	26	28	0
Amber [s]	3.5	5.0	0.0	3.5	5.0	0.0	3.5	4.0	0.0	3.5	4.0	0.0
All red [s]	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	1.0	0.0
Split [s]	24	58	0	24	58	0	22	26	0	22	26	0
Vehicle Extension [s]	2.3	4.5	0.0	2.5	4.5	0.0	2.5	2.3	0.0	2.5	2.5	0.0
Walk [s]	0	8	0	0	8	0	0	8	0	0	8	0
Pedestrian Clearance [s]	0	19	0	0	19	0	0	21	0	0	21	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.0	0.0	2.0	4.0	0.0	2.0	3.0	0.0	2.0	3.0	0.0
Minimum Recall	No	Yes		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	6.00	6.00	4.00	6.00	6.00	4.00	5.00	4.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	4.00	4.00	2.00	4.00	4.00	2.00	3.00	2.00	3.00	3.00
g_i, Effective Green Time [s]	12	73	73	9	69	69	18	22	7	11	11
g / C, Green / Cycle	0.09	0.56	0.56	0.07	0.53	0.53	0.14	0.17	0.06	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.08	0.23	0.23	0.06	0.37	0.15	0.14	0.14	0.04	0.01	0.04
s, saturation flow rate [veh/h]	1781	1855	1798	1767	3532	1571	1767	1622	1767	1855	1550
c, Capacity [veh/h]	168	1035	1004	122	1883	837	245	278	98	163	136
d1, Uniform Delay [s]	55.98	8.75	8.76	58.21	12.80	9.77	56.04	52.24	60.63	54.89	56.37
k, delay calibration	0.07	0.50	0.50	0.08	0.50	0.50	0.20	0.10	0.08	0.08	0.08
l, 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
d2, Incremental Delay [s]	7.10	1.20	1.24	8.79	2.16	0.80	37.48	6.56	9.16	0.33	1.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.33	1.33	1.33	1.33	1.33	1.33	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	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.41	0.41	0.80	0.70	0.27	1.00	0.84	0.77	0.16	0.46
d, Delay for Lane Group [s/veh]	63.07	9.95	10.00	67.00	14.96	10.57	93.51	58.80	69.79	55.22	58.17
Lane Group LOS	E	A	B	E	B	B	F	E	E	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.66	3.82	3.73	3.34	7.92	2.24	10.59	7.91	2.73	0.81	2.04
50th-Percentile Queue Length [ft/ln]	116.58	95.59	93.37	83.44	197.98	56.04	264.82	197.68	68.31	20.21	51.06
95th-Percentile Queue Length [veh/ln]	8.20	6.88	6.72	6.01	12.53	4.03	15.95	12.52	4.92	1.46	3.68
95th-Percentile Queue Length [ft/ln]	205.12	172.06	168.07	150.20	313.36	100.87	398.85	312.98	122.95	36.38	91.91

Movement, Approach, & Intersection Results

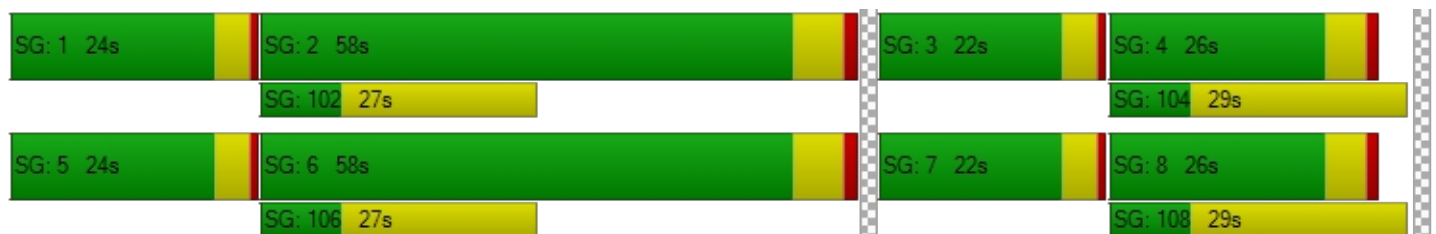
d_M, Delay for Movement [s/veh]	63.07	9.97	10.00	67.00	14.96	10.57	93.51	58.80	58.80	69.79	55.22	58.17
Movement LOS	E	A	B	E	B	B	F	E	E	E	E	E
d_A, Approach Delay [s/veh]	17.69			17.46			76.59			63.06		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	28.55											
Intersection LOS	C											
Intersection V/C	0.728											

Other Modes

g_Walk,mi, Effective Walk Time [s]	12.0			12.0			12.0			12.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	1530.14			1892.90			1602.99			9216.84		
d_p, Pedestrian Delay [s]	53.55			53.55			53.55			53.55		
I_p,int, Pedestrian LOS Score for Intersection	3.061			3.147			2.242			2.343		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	800			800			323			323		
d_b, Bicycle Delay [s]	23.41			23.40			45.70			45.70		
I_b,int, Bicycle LOS Score for Intersection	2.366			2.911			2.352			1.933		
Bicycle LOS	B			C			B			A		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Meyers Rd/Western Access

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name			Meyers Rd			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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	Yes		No		No	

Volumes

Name			Meyers Rd			
Base Volume Input [veh/h]	0	0	0	182	102	0
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	3.00	3.00	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]	4	50	10	2	12	1
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]	4	50	10	184	114	1
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	14	3	51	32	0
Total Analysis Volume [veh/h]	4	56	11	204	127	1
Pedestrian Volume [ped/h]	15		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	0.06	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.10	9.32	7.53	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.53	5.53	0.58	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.44		0.39		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Meyers Rd/Eastern Access

Control Type: Two-way stop
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 10.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.019

Intersection Setup

Name					Meyers Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	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	Yes		No		No	

Volumes

Name					Meyers Rd	
Base Volume Input [veh/h]	0	0	0	182	102	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	3.00	3.00	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]	11	12	2	4	1	2
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]	11	12	2	186	103	2
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]	3	3	1	52	29	1
Total Analysis Volume [veh/h]	12	13	2	207	114	2
Pedestrian Volume [ped/h]	15		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	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.75	9.13	7.51	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.55	2.55	0.10	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.91		0.07		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Meyers Rd/High School Ave

Control Type:	All-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.234

Intersection Setup

Name	High School Ave			High School Ave			Meyers Rd			Meyers 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	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	80.00	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]	20.00			20.00			20.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	High School Ave			High School Ave			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	66	10	19	43	45	7	44	59	85	34	64	43
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 [%]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
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	14	1	0	3	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]	66	10	19	43	45	7	44	73	86	34	67	43
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]	18	3	5	12	12	2	12	20	23	9	18	12
Total Analysis Volume [veh/h]	72	11	21	47	49	8	48	79	93	37	73	47
Pedestrian Volume [ped/h]	0			15			5			5		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	718	714	624	736	617	712
Degree of Utilization, x	0.14	0.15	0.08	0.23	0.06	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.50	0.51	0.25	0.90	0.19	0.60
95th-Percentile Queue Length [ft]	12.62	12.70	6.23	22.57	4.77	15.07
Approach Delay [s/veh]	8.86	8.90	9.05		8.81	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	8.92					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Meyers Rd/Beavercreek Rd

Control Type:	Signalized	Delay (sec / veh):	46.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.988

Intersection Setup

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers 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	1	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	150.00	110.00	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]	20.00			20.00			20.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	Yes			Yes			Yes			Yes		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Beavercreek Rd			Beavercreek Rd			Meyers Rd			Meyers Rd		
Base Volume Input [veh/h]	63	394	6	21	941	275	202	22	68	5	25	17
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 [%]	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00	1.00	1.00
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]	1	0	0	0	0	2	8	0	6	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	0	0	0	9	0	0	44	0	0	7
Total Hourly Volume [veh/h]	64	394	6	21	941	268	210	22	30	5	25	10
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
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]	16	102	2	5	243	69	54	6	8	1	6	3
Total Analysis Volume [veh/h]	66	406	6	22	970	276	216	23	31	5	26	10
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	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			1			1		
v_ci, Inbound Pedestrian Volume crossing	1			1			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
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]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	10	0	4	10	0
Maximum Green [s]	15	87	0	10	82	0	10	20	0	10	20	0
Amber [s]	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0	3.5	4.3	0.0
All red [s]	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.5	0.5	0.0
Split [s]	24	68	0	0	44	0	0	34	0	0	0	0
Vehicle Extension [s]	2.3	2.0	0.0	2.3	2.0	0.0	2.3	2.3	0.0	2.3	2.3	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	13	0	0	13	0	0	12	0	0	12	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0	2.0	2.8	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
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
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

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	L	C
C, Cycle Length [s]	123	123	123	123	123	123	123	123
L, Total Lost Time per Cycle [s]	4.00	4.80	4.00	4.80	4.80	4.80	4.80	4.80
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.80	2.00	2.80	0.00	2.80	0.00	2.80
g_i, Effective Green Time [s]	6	86	2	82	21	16	21	7
g / C, Green / Cycle	0.05	0.70	0.02	0.67	0.17	0.13	0.17	0.06
(v / s)_i Volume / Saturation Flow Rate	0.04	0.22	0.01	0.69	0.13	0.03	0.00	0.02
s, saturation flow rate [veh/h]	1795	1850	1795	1804	1616	1712	1416	1797
c, Capacity [veh/h]	87	1292	32	1206	345	230	295	105
d1, Uniform Delay [s]	57.71	7.17	59.93	20.36	48.06	47.47	42.15	55.48
k, delay calibration	0.07	0.04	0.07	0.50	0.50	0.07	0.07	0.07
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.18	0.05	14.82	34.95	8.36	0.32	0.01	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	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

Lane Group Results

X, volume / capacity	0.76	0.32	0.69	1.03	0.63	0.23	0.02	0.34
d, Delay for Lane Group [s/veh]	65.88	7.22	74.75	55.31	56.41	47.79	42.17	56.64
Lane Group LOS	E	A	E	F	E	D	D	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.25	4.16	0.82	43.84	7.12	1.53	0.13	1.11
50th-Percentile Queue Length [ft/ln]	56.29	104.01	20.57	1095.94	178.08	38.21	3.20	27.66
95th-Percentile Queue Length [veh/ln]	4.05	7.49	1.48	56.38	11.50	2.75	0.23	1.99
95th-Percentile Queue Length [ft/ln]	101.33	187.21	37.02	1409.49	287.50	68.78	5.76	49.79

Movement, Approach, & Intersection Results

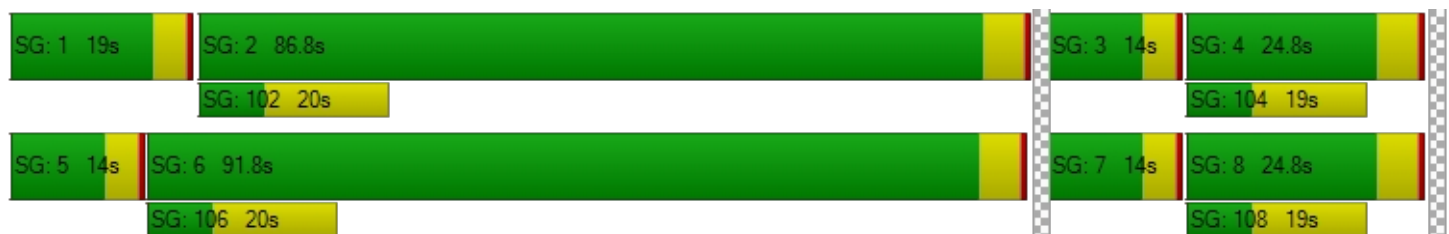
d_M, Delay for Movement [s/veh]	65.88	7.22	7.22	74.75	55.31	55.31	56.41	47.79	47.79	42.17	56.64	56.64
Movement LOS	E	A	A	E	E	E	E	D	D	D	E	E
d_A, Approach Delay [s/veh]	15.32			55.65			54.69			54.88		
Approach LOS	B			E			D			D		
d_I, Intersection Delay [s/veh]	46.14											
Intersection LOS	D											
Intersection V/C	0.988											

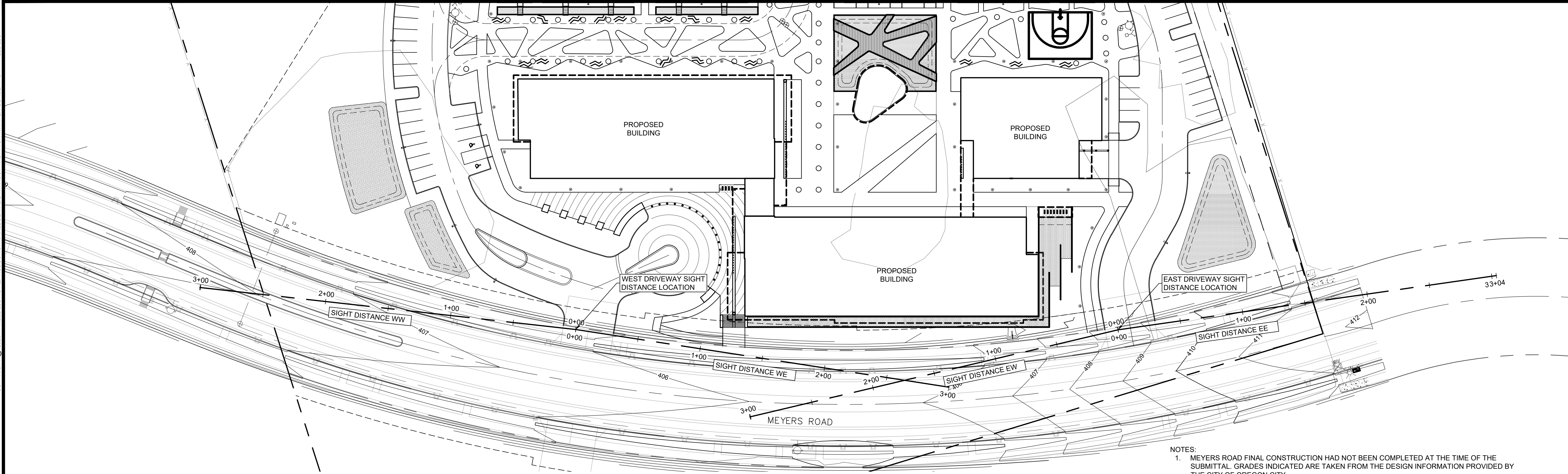
Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			6955.53			12663.71		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.272			2.391			2.152			1.982		
Crosswalk LOS	B			B			B			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1933			1822			444			444		
d_b, Bicycle Delay [s]	0.05			0.36			27.22			27.22		
I_b,int, Bicycle LOS Score for Intersection	2.348			3.667			2.078			1.639		
Bicycle LOS	B			D			B			A		

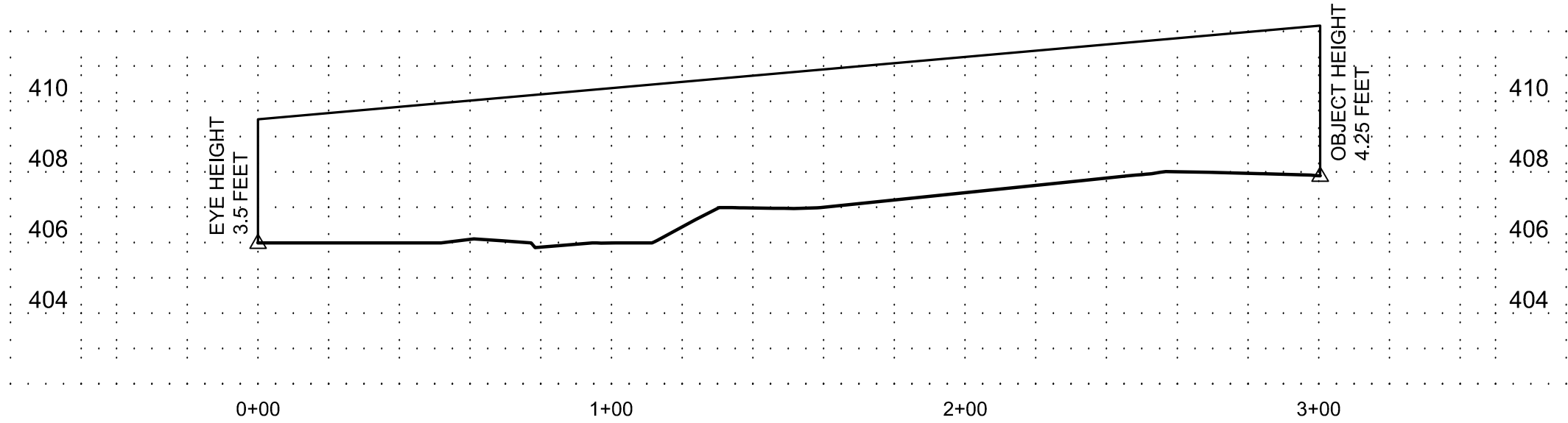
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

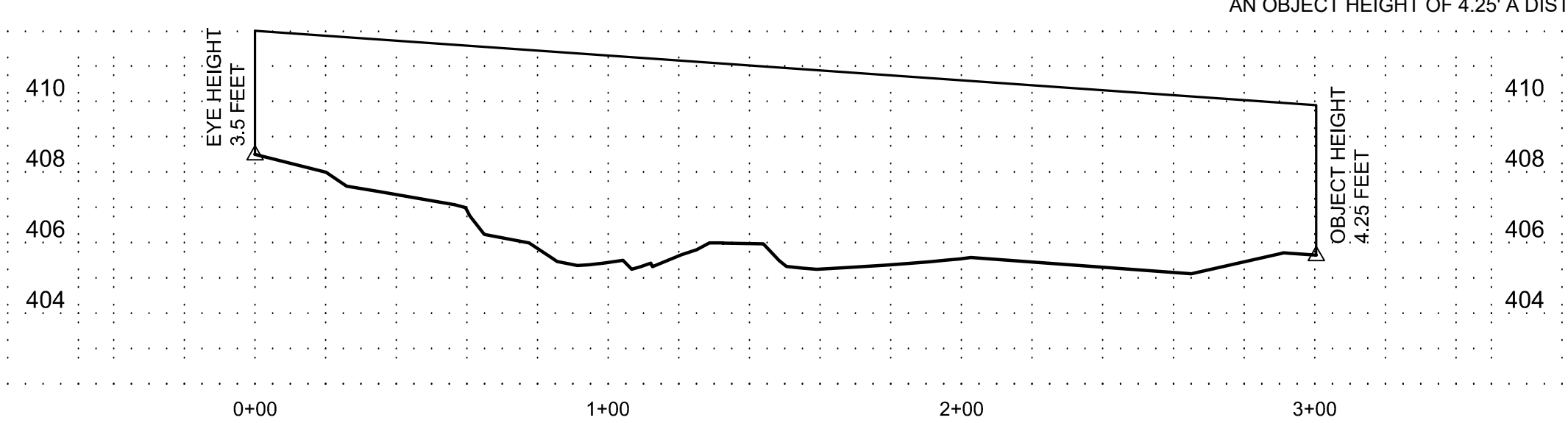




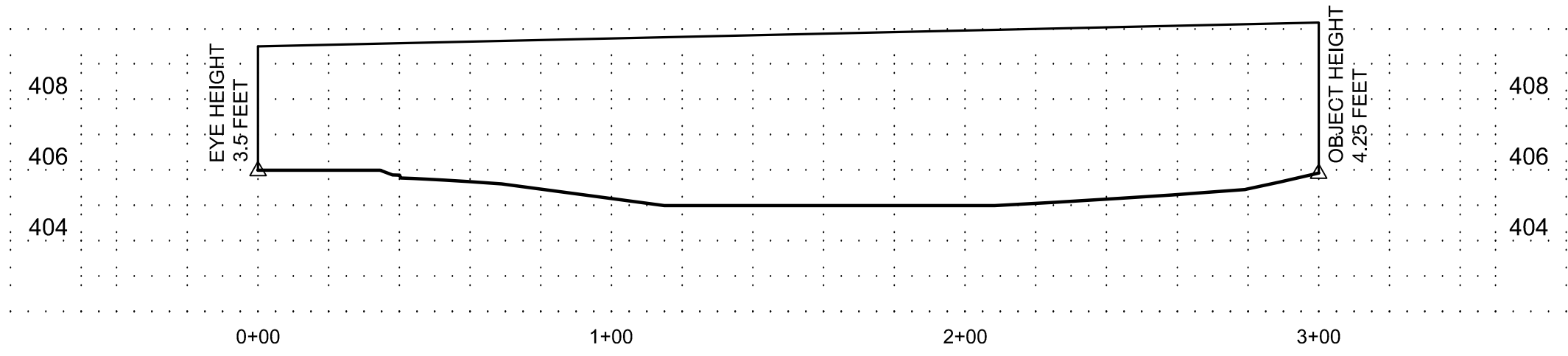
- NOTES:
1. MEYERS ROAD FINAL CONSTRUCTION HAD NOT BEEN COMPLETED AT THE TIME OF THE SUBMITTAL. GRADES INDICATED ARE TAKEN FROM THE DESIGN INFORMATION PROVIDED BY THE CITY OF OREGON CITY.
 2. THIS IS A PRELIMINARY SIGHT DISTANCE CERTIFICATION THAT INDICATES THAT THEIR SHOULD NOT BE AN ISSUE WITH SIGHT DISTANCE FROM EITHER DRIVEWAY. A FINAL SIGHT DISTANCE CERTIFICATION WILL BE MADE AT THE CONCLUSION OF CONSTRUCTION TO VERIFY THIS PRELIMINARY CERTIFICATION AND IDENTIFY POTENTIAL VEGETATION CONFLICTS THAT MAY BE INTRODUCED IN THE FINAL PUBLIC IMPROVEMENTS.
 3. SIGHT DISTANCE IS TAKEN FROM 15' BACK OF THE FACE OF CURB AT A EYE HEIGHT OF 3.5' TO AN OBJECT HEIGHT OF 4.25' A DISTANCE OF 300' FROM THE DRIVEWAY.



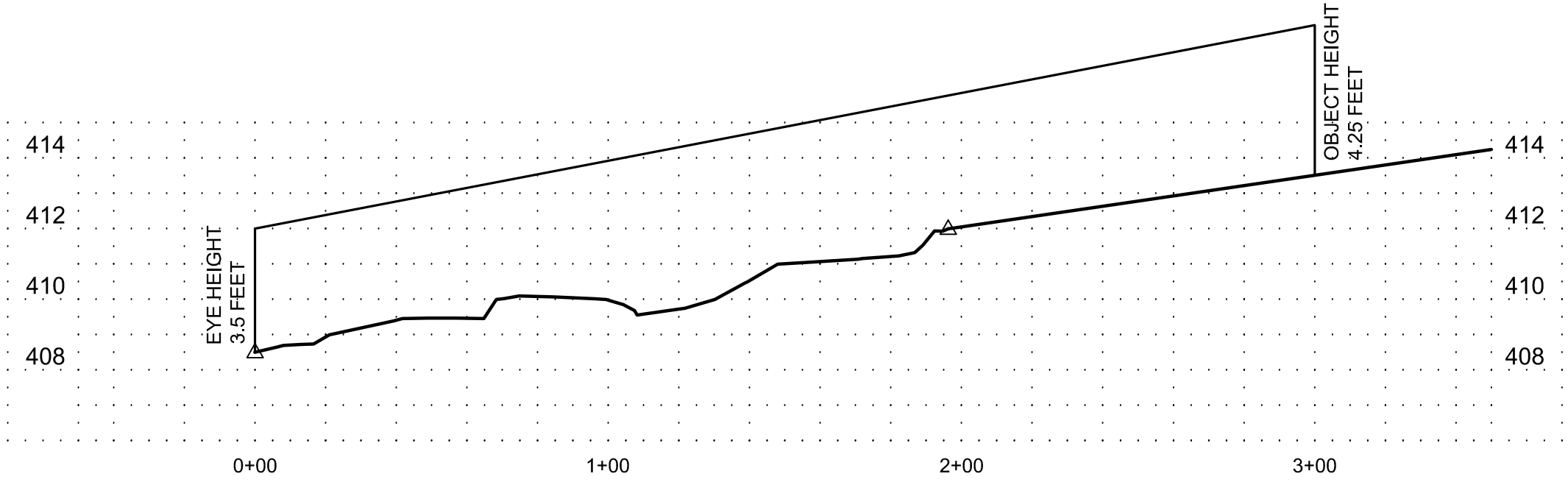
SIGHT DISTANCE WW PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



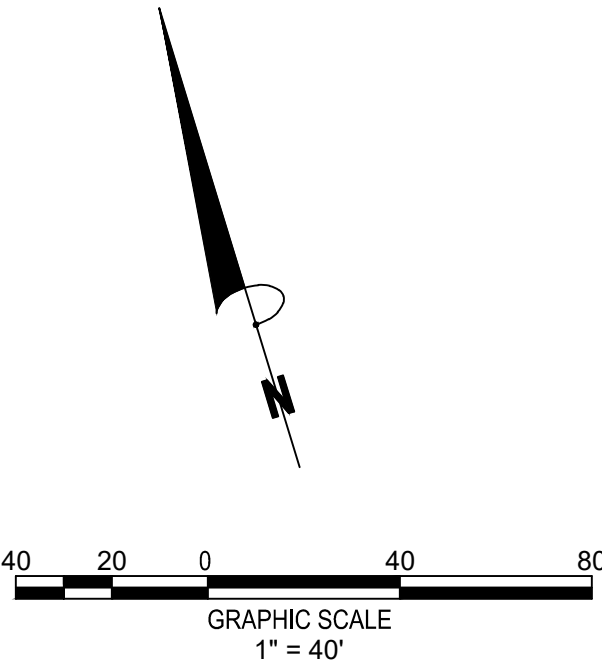
SIGHT DISTANCE EW PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



SIGHT DISTANCE WE PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



SIGHT DISTANCE EE PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.



PRELIM. SIGHT DIST. CERT.
ADVANTIS CU HQ
OREGON CITY, OREGON



REVISIONS:	

PM.	BLB
DR.	BLB
JOB NO.	19904255
FILE NO.	19004255-EX-03

SHEET NO.
01 OF 01



December 15, 2019

Brian Lee, P.E.
Pace Engineers
4500 Kruse Way, Suite 250
Lake Oswego, OR 97035

Subject: Traffic analysis letter for Hunter Avenue 10 lot subdivision

Dear Mr. Lee,

The purpose of this letter is to address the requirements of the City of Oregon City's Traffic Analysis Letter ("TAL") in support of the proposed construction of a 10 lot residential subdivision. The subject property is 2.39 acres and located at 16276 Hiram Avenue in Oregon City, Oregon.

The City requires a TAL to include the information listed below. The requirements are provided below in bold italics, while our responses are provided in regular typeface.

The expected trip generation of the proposed development including the AM peak hour, the PM peak hour, daily traffic, and other germane periods as may be appropriate, together with appropriate documentation and references.

Currently the site is occupied by a single-family home that will be retained. The trip generation presented below in Table 1 is based upon the net increase of nine single-family homes and the 10th Edition of the Institute of Transportation Engineers *Trip Generation Manual*.

Table 1. Projected Trip Generation

ITE Land Use	Dwelling Units	Weekday						
		Average Daily Traffic	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Single-Family Detached Housing (#210)	9							
Total Trips		113	11	3	8	10	6	4

Site plan showing the location of all access driveways or private streets where they intersect with public streets plus driveways of abutting properties and driveways on the opposite side of the street from the proposed development.

A preliminary site plan is included in Appendix A. The preliminary site plan illustrates driveway locations that are subject to change.

The existing access to Hiram Avenue that serves the existing single-family home will be retained. Lot 3 will also have direct access to Hiram Avenue.

Lots 2 and 4-8 will access directly onto an extension of Laurel Ridge Avenue. Currently, Laurel Ridge Avenue intersects Cleveland Street and terminates at the boundary of the subject property. The preliminary site plan illustrates an extension of Laurel Ridge Avenue that will terminate in a turnaround as part of this subdivision. The preliminary site plan also illustrates a conceptual extension of Laurel Ridge Avenue to Hunter Avenue that is not part of this subdivision.

Lots 9 and 10 will have direct access to Hunter Avenue.

Hiram Avenue, Hunter Avenue and Laurel Ridge Avenue are all classified as local streets. Each of these local streets serve only single-family residential uses.

3. Documentation that all site access driveways meet Oregon City Private Access Driveway Width Standards.

Section 12.04.025 of the Oregon City Municipal Code (“OCMC”) addresses the requirements for minimum and maximum driveway width. The table provided in Section 12.04.025 is provided below.

Property Use	Minimum Driveway Width at sidewalk or property line	Maximum Driveway Width at sidewalk or property line
Single or two-family dwelling with one car garage/parking space	10 feet	12 feet
Single or two-family dwelling with two car garage/parking space	12 feet	24 feet
Single or two-family dwelling with three or more car garages/parking space	18 feet	30 feet
Nonresidential or multi-family residential driveway access	15 feet	40 feet

All new site driveways to Hiram Avenue, Hunter Avenue and the extension of Laurel Ridge Avenue will comply with the above requirements.

4. Documentation that all site access driveways meet Oregon City’s Minimum City Street Intersection Spacing Standards.

In review of OCMC Table 12.04.195.B, the City does not have standards for intersection spacing along local residential streets. Therefore, any proposed spacing is adequate.

5. Documentation that all new site accesses and/or public street intersections meet AASHTO intersection sight distance guidelines.

As described above, the site access locations are subject to change. However, adequate intersection sight distance can be provided to each of the proposed lots.

A site visit was conducted to determine compliance with sight distance standards at the proposed Hiram Avenue and Hunter Avenue site access locations. Hunter Avenue and Hiram Avenue are both posted with a speed limit of 25 MPH. The Laurel Ridge Avenue extension will be constructed as part of the subdivision, so no sight distance observations were documented.

According to AASHTO's *A Policy on Geometric Design of Highways and Streets*, recommended intersection sight distance is 280 feet along a road with a design speed of 25 MPH.

From an observation point of 14.5 feet back from the edge of Hunter Avenue at each of the two conceptual site access locations to lots 9 and 10, intersection sight distance looking to the north and along Hunter Avenue exceeds 280 feet.



On Hunter Avenue looking south



On Hunter Avenue looking north

From an observation point of 14.5 feet back from the edge of Hiram Avenue at the conceptual site access location for lot 3, intersection sight distance looking to the north and south along Hiram Avenue can exceed 280 feet. However, attention should be placed when determining the final location of this driveway to ensure that vegetation does not limit intersection sight distance. Looking to the south, an existing tree on lot 3 may limit sight distance while an existing bush on lot 1 may limit intersection sight distance looking to the north.



On Hiram Avenue looking south



On Hiram Avenue looking north

While not a new intersection, the Cleveland Street/Laurel Ridge Avenue intersection was evaluated for intersection sight distance as the proposed development will increase trips at this location. From an observation point of 14.5 feet back from the edge of Cleveland

Street, intersection sight distance looking to the east and west along Cleveland Street exceeds 280 feet.



View from Laurel Ridge Avenue looking west along Cleveland Street



View from Laurel Ridge Avenue looking east along Cleveland Street

The Laurel Ridge Avenue extension south of the existing terminus will be constructed with a tight horizontal curve and is illustrated with a conceptual second tight horizontal curve that

may be constructed in the future. For the lots that access the north/south extension of Laurel Ridge Avenue, there will be visibility to the intersection of Cleveland Street/Laurel Ridge Avenue and to the first tight horizontal curve. For the lots that access the east/west extension of Laurel Ridge Avenue, there will be visibility to the first and second tight horizontal curves. In the future, when Laurel Ridge Avenue is extended, there will be visibility to the third tight horizontal curve to the south for lots 7 and 8 that access in the second tight horizontal curve. The anticipated operating speeds through these tight horizontal curves are each 15 MPH.

Given the planned length and function of Laurel Ridge Avenue, it is very likely that this roadway will meet the requirements of a very low volume roadway. AASHTO has published a document entitled “Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT $\leq$ 400)” which provides alternative sight distance guidelines for very low volume roads. For roads with a design speed of 25 MPH, AASHTO recommends up to 125 feet of sight distance. For roads with a design speed of 15 MPH, AASHTO recommends 65 feet of sight distance. Each site access to the proposed lots will have a minimum of 65 to 125 feet of intersection sight distance.

6. Documentation that there are no inherent safety issues associated with the design and location of the site access driveways.

All new driveways to Hiram Avenue, Laurel Ridge Avenue, and Hunter Avenue will have adequate intersection sight distance.

The City has no intersection spacing standards for local residential streets like Hunter Avenue, Hiram Avenue and Laurel Ridge Avenue.

A review of the crash history of Hunter Avenue and Hiram Avenue from Cleveland Street to Holcomb Boulevard did not illustrate a robust history of traffic crashes. The crash history report of Hunter Avenue and Hiram Avenue are included in Appendix B.

7. Documentation that the applicant has reviewed the City’s TSP and that proposed streets and frontage improvements do or will comply with any applicable standards regarding the functional classification, typical sections, access management, traffic calming and other attributes as appropriate.

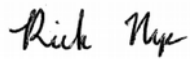
The applicant has reviewed the City’s TSP and will comply or seek the approval of the City with respect to the planned frontage improvements and other features.

Conclusion

It is recommended that vegetation be continually managed to ensure that intersection sight distance can be achieved at each site driveway.

We trust that this letter addresses the criteria of the City's "Traffic Analysis Letter" requirements. There are no safety issues associated with this proposed development and the requirements of the city can be met. Should you have any questions, please contact me at rick@greenlightengineering.com or 503-317-4559.

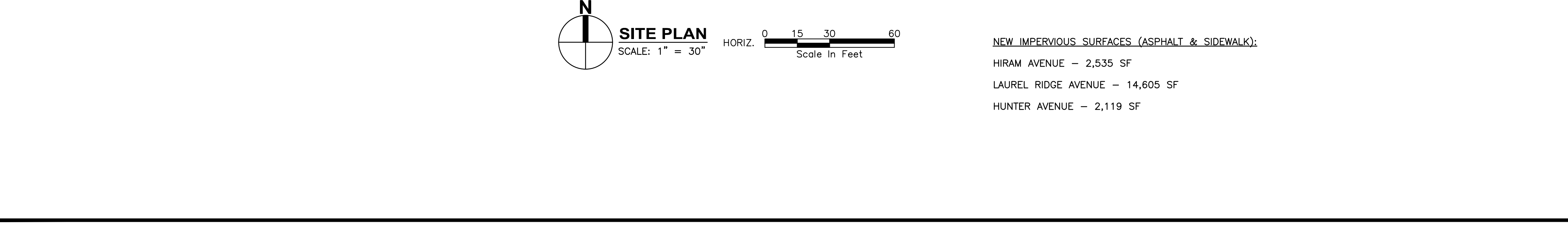
Sincerely,



Rick Nys, P.E.
Principal Traffic Engineer



Appendix A
Preliminary Site Plan



HIRAM 10-LOT
SUBDIVISION

Page 9

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||| Survey

Appendix B
Crash History

CITY OF OREGON CITY, CLACKAMAS COUNTY

HUNTER AVE and Intersectional Crashes at HUNTER AVE, City of Oregon City, Clackamas County, 01/01/2009 to 02/28/2018

	S	D	M																										
SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE						SPCL USE														
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	A S										
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED						
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE

CITY OF OREGON CITY, CLACKAMAS COUNTY

HUNTER AVE and Intersectional Crashes at HUNTER AVE, City of Oregon City, Clackamas County, 01/01/2009 to 02/28/2018



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Public Works Director John M. Lewis, PE

Agenda Date: 05/19/2021

SUBJECT:

Resolution No. 21-18, Establishing a Minimum Equivalent Residential Unit Monthly Rate to be Charged for Stormwater Service Provided to Customers Served by Oregon City's Stormwater System

STAFF RECOMMENDATION:

Adopt Resolution No. 21-18, increasing stormwater rates in accordance with the City Conclusions as in the FCS Stormwater Utility Rate Study (Draft Report - March 2021) for the Stormwater Rate Study.

EXECUTIVE SUMMARY:

A continuation of the discussion from the April 2021 City Commission Meeting. The City Commission has requested City staff to investigate a rate scenario that considers a funding allocation from the American Rescue Plan and provide recalculated stormwater rates if grant funding were applied. City Commission also heard testimony from a commercial property owner and fittingly requested more detail on the impacts the proposed rate increases would have on the City's non-residential customers.

Stormwater rates are in place, in part, to support the City's Capital Improvement Plan (CIP) and maintenance needs. Three levels of services funded by cash or debt issuances were presented in the March 2021 Commission Meeting. The Commission unanimously, and guardedly favored the option pursuing Level of Service 2, cash funded option.

The stormwater rate and SDC study is in alignment with Goal 5 from the City's 2019-2021 Goals, Priorities and Milestones. This goal addresses maintaining fiscal health and long-term stability and tasks the City with completing a rate study and SDC analysis and adopting appropriate charges to implement projects identified in the Stormwater Master Plan.

BACKGROUND:

The citywide Stormwater Master Plan guides stormwater-related priorities and capital improvement projects (CIPs) over the next 15-20 years. The City is currently managing more than 174 miles of stormwater infrastructure, including significant areas of aging systems. The Master Plan was developed to address immediate capacity needs, replace aging infrastructure, and provide regional solutions to larger flooding and water quality challenges. The updated CIP list and selected programmatic approaches included in this plan will facilitate prioritization of the City's resources and support future resource and financial planning.

The City contracted with FCS Group in March 2020 to gather information from the Stormwater Master Plan, analyze customer revenue and expense data, and run rate analysis to support funding the improvements necessary to remedy system deficiencies and accommodate future growth. FCS Group has incorporated the findings included in the plan, reviewed current and expected operations cost, and incorporated base assumptions for financial targets.

At the March 11, 2021, City Commission Work Session, FCS Group presented three rate scenarios: baseline, moderate capital, and full capital. The scenarios are determined by the amount of annual revenue necessary to fund all financial obligations and is associated with differing rate increases and is evaluated with and without the use of debt.

1. **Baseline Level of Service (LOS)** includes only critical maintenance needs and critical master plan projects at an average of \$1.7 million per year.
2. **Moderate Capital LOS** includes the baseline of critical maintenance needs with some deferred maintenance and funds all master plan projects at an average of \$2.4 million per year.
3. **Full capital LOS** is all-inclusive of funding all master plan projects and all known deferred maintenance needs at an average of \$3.2 million per year.

The Commission recommended staff to move forward with Moderate Capital LOS (LOS 2) cash funded.

The proposed stormwater rate charges are summarized below:

- Current rate per Equivalent Residential Unit (ERU) is \$10.86.
- Effective July 1, 2021, the proposed new rate per ERU will be \$12.54.
- Effective July 1, 2022, the proposed new rate per ERU will be \$14.48.
- Effective July 1, 2023, the proposed new rate per ERU will be \$16.73.
- Effective July 1, 2024, and annually thereafter, the monthly rate shall increase by 3%.

At the April 7, 2021, City Commission Meeting, the Commission requested City Staff and the consultant to investigate the American Rescue Plan package. The spending guidance on the ARP is still rolling out but remains undefined, however staff has made some assumptions that the City will receive \$7 to \$7.4 million ARP dollars and beyond that we have assumed \$1.4 to \$1.8 million ARP would be available for general fund

reimbursement which leaves the remaining \$5.6 million which the City could decide to allocate toward utilities. In response to the City Commissions April direction, the rate scenario applies the maximum grant amount to the proposed LOS 2 stormwater rate charges to the City Commission can see a comparison of the two options.

The proposed stormwater rate charges with the American Rescue Plan grant applied are summarized below:

- Effective July 1, 2021, the proposed new rate per Equivalent Residential Unit (ERU) will be \$12.19; (\$0.35 less than the LOS 2 cash funded scenario)
- Effective July 1, 2022, the proposed new rate per ERU will be \$13.68; (\$0.80 less than the LOS 2 cash funded scenario)
- Effective July 1, 2023, the proposed new rate per ERU will be \$15.35. (\$1.38 less than the LOS 2 cash funded scenario)
- Effective July 1, 2024, and annually thereafter, the monthly rate shall increase by 3%.

Assignment of ERU's to classes of service shall be as follows:

- Residential Dwelling = 1 ERU
- Non-Residential = 1 ERU per storm unit

The Commission also requested City Staff to provide more detail on impacts to non-residential customers. In response to this request the staff, working together with the Utility Billing Division and FCS Group have evaluated non-single-family residential accounts which will be explained in the presentation.

However, as an introduction of the topic, understand that the City's stormwater rate structure for non-single family residential rates apply the ERU to every 2500 square feet of lot size and apply a development intensity factor to non-residential land use or zoning. Overall, the non-single family residential make-up in Oregon City includes over 1100 stormwater accounts made up of over 13,000 equivalent dwelling units (2,500 sf equivalent areas).

Due to the variety of account lot sizes and the various land uses, please review to the Customer Examples Table as a snapshot of the impacts of the proposed LOS 2 rate increase scenarios.

OPTIONS:

1. Approve Resolution No. 21-18.
2. Approve Resolution No. 21-18 with American Rescue Plan grant applied.
3. Deny Resolution No. 21-18. If the Commission chooses to deny the Resolution, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount:

FY(s): Not Applicable

Funding Source(s): Stormwater Fund

RESOLUTION NO. 21-18

A RESOLUTION ESTABLISHING A MINIMUM MONTHLY RATE TO BE CHARGED FOR STORMWATER SERVICE PROVIDED TO EACH CUSTOMER SERVICED BY OREGON CITY'S STORMWATER SYSTEM

WHEREAS, the Oregon City Municipal Code establishes the setting of the City's stormwater charges; and

WHEREAS, the City provides stormwater service to nearly 36,000 people spread across an area of approximately 10.27 square miles; and

WHEREAS, the City commissioned Brown and Caldwell to prepare the "Stormwater Master Plan," dated July 2019; and

WHEREAS, the City Commission adopted the Stormwater Master Plan through the execution of Ordinance 19-1014 which became effective April 17, 2020; and

WHEREAS, the City determined the need to update the stormwater charges; and

WHEREAS, in March 2021, FCS Group Final Model and Recommendations for the Stormwater Rate Study was completed to determine stormwater charges needed to meet the maintenance and capital needs of the Stormwater Utility.

NOW, THEREFORE, OREGON CITY RESOLVES by the City Commission of Oregon City, a municipal corporation of the State of Oregon, that the monthly stormwater charges shall be as follows:

Section 1. The monthly stormwater service charge shall be the following and take effect July 1 of each year noted:

Customer Type	2021	2022	2023
Residential Dwelling Unit Charge	\$12.54	\$14.48	\$16.73
Non-Residential Equivalent Unit Charge	\$12.54	\$14.48	\$16.73

Section 2. Effective July 1, 2024, and annually thereafter, the monthly stormwater service charge adopted in Section 1 shall be adjusted to account for inflation in an amount of no more than 3 percent.

Approved and adopted at a regular meeting of the City Commission held on the 19th day of May 2021.

RACHEL LYLES SMITH
Mayor

Attested to this 19th day of May 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

City of Oregon City

STORMWATER UTILITY RATE STUDY

DRAFT REPORT
March 2021

Washington

7525 166th Avenue NE, Ste. D215
Redmond, WA 98052
425.867.1802

Oregon

5335 Meadows Road, Ste. 330
Lake Oswego, OR 97035
503.841.6543

Colorado

1320 Pearl St, Ste 120
Boulder, CO 80302
719.284.9168

www.fcsgroup.com

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FCS GROUP
Solutions-Oriented Consult

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Section I. INTRODUCTION

Utility Background

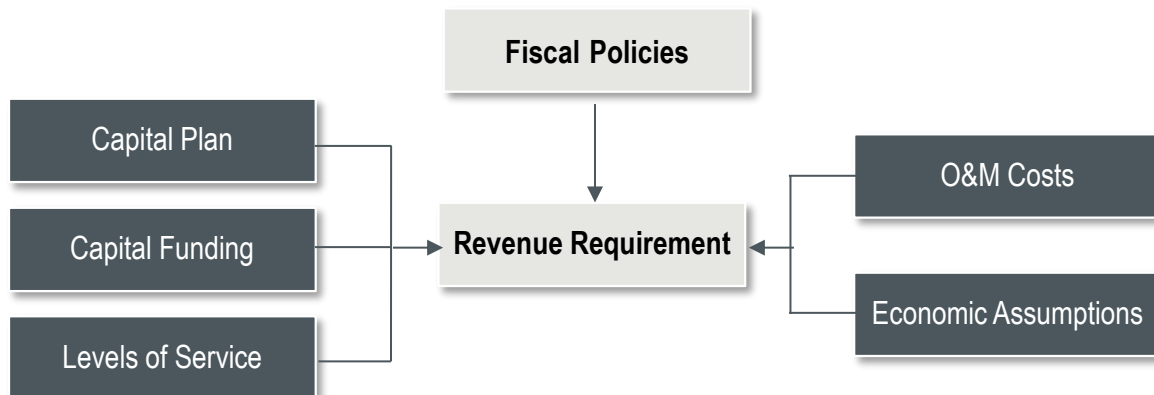
The City of Oregon City (City) stormwater utility prevents damage to people and property and maintains and enhances the City's natural environment. Stormwater utility services include surface water development review and inspections, maintaining public stormwater systems, inspecting privately maintained stormwater systems, monitoring natural waterways, permit compliance, and providing stormwater education and outreach.

The City bills monthly fees to property owners within the City limits to provide resources needed to plan, manage, design, construct, maintain, revise, and upgrade the storm drainage and surface water runoff systems within the corporate limits of the City. The City contracted with FCS GROUP to perform a stormwater utility rate study, the main purpose of which is to ensure that the City has the resources to continue to provide these valuable services into the future.

Rate Study

The main purpose of this rate study is to develop a funding plan ("revenue requirement") for the City's stormwater utility. The revenue requirement identifies the total revenue needed to fully fund the utility on a standalone basis considering operating and maintenance expenditures, fiscal policy achievement, and the capital project needs of the utility.

Exhibit 1: Revenue Requirement Overview



Issue Papers

In support of the rate study, three issue papers were developed and have been included in **Appendix C** of this report: *Issue Paper #1: Fiscal Policies*, *Issue Paper #2: Rate Structures*, and *Issue Paper #3: Rate Credits*.

Section II. FISCAL POLICIES

The basic framework for evaluating utility revenue needs includes sound fiscal policies. Several policy topics are important to consider as part of managing the finances of the stormwater utility, including: Cash Reserves, Capital Funding, and Rate Funded System Reinvestment. These policies were initially documented and reviewed with City staff in *Issue Paper #1*.

When evaluating fund reserve levels and objectives, it is important to recognize that the value of reserves lies in their potential use. A reserve strategy that deliberately avoids any use of reserves negates their purpose. The fluctuation of reserve levels may indicate that the system is working, while lack of variation over many years strongly suggests that the reserves are, in fact, unnecessary.

Operating Reserves

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. The most common operating reserve minimum balance target for stormwater utilities with monthly or bi-monthly billing is between 30 days to 45 days of operating expenses.

Recommended Policy: Achieve a year-end minimum balance target of **45 days** of total annual operating expenditures. This equates to a target of **\$350,000** in 2020 based on 2020 budgeted expenditures totaling \$2.85 million.

Capital Reserve

This reserve provides a source of emergency funding for unexpected asset failures or other unanticipated capital needs. This capital reserve policy is not intended to guard against catastrophic system failure or extreme acts of nature. Minimum balances for capital reserves are often based on a percentage (commonly 1% to 2%) of the original cost of utility fixed assets or an amount determined sufficient to fund an emergency capital project or equipment failure.

Recommended Policy: Achieve a year-end minimum balance target of **1%** of the original cost of all plant-in-service. This equates to a target of **\$100,000** in 2020 based on a total original cost basis of \$9.80 million.

Debt Related Policies

The City does not currently have any outstanding stormwater utility debt. Based on discussions with City staff, it is the City's preference that the stormwater utility continues to primarily cash-fund capital projects during the study period.

Debt Reserve

A debt reserve is most often required as a condition of bond issuance, though some loan programs also require a reserve. The reserve intends to protect bondholders (or the agency issuing loans) from the risk of the borrower defaulting on their payments and is most often linked to either average annual debt service or maximum annual debt service.

Recommended Policy: The policy should be dictated by terms outlined in contracts for debt obligations if the stormwater utility chooses to utilize debt in the future.

Debt Service Coverage

Debt service coverage is typically a requirement associated with revenue bonds, and it is an important benchmark to measure the riskiness of a utility's capital funding plans. Coverage is most easily understood as a factor applied to annual debt service. In such a case, if it issues revenue bonds, the stormwater utility agrees to collect enough revenue to meet operating expenses and not only pay debt service but to collect an additional 25% above bonded debt service. The extra revenue is a "cushion" that makes bondholders more confident that debt service will be paid on time.

Recommended Policy: While 1.25 is a common legal minimum coverage for revenue bonds, FCS GROUP recommends a more conservative internal policy coverage target of at least 1.50 to 2.00 should the stormwater utility choose to utilize debt in the future.

Rate Funded System Reinvestment

Rate funded system reinvestment is the funding of long-term infrastructure replacement needs through a regular (annual) and predictable rate provision, which helps minimize reliance on debt.

Recommended Policy: The City desires to continue to cash-fund its capital program. Therefore, the utility should strive to generate revenues to cover both operating costs and the annual average capital program. The level of rate funded system reinvestment will depend on the Commission's selected level of service.

Exhibit 2 provides a summary of the recommended fiscal policies for the stormwater utility.

Exhibit 2: Summary of Fiscal Policies

Policy	Recommended Target
Operating Reserve	45 Days of O&M: \$350,000 based on the 2020 budget
Capital Reserve	1% of plant-in-service original cost: \$100,000 in 2020.
Debt Service Coverage	If debt is issued, an internal policy target of at least 1.50 to 2.00 would be prudent
Rate Funded System Reinvestment	Set rates to allow the utility to cash fund its capital program

Section III. REVENUE REQUIREMENT

This section presents the revenue requirement results for the stormwater utility. The forecasts within this section generate the revenue needed under each level of service to fund the utility on a standalone basis, considering operating and maintenance expenditures, fiscal policy achievement, and a portion of the capital projects identified in the City's six-year capital plan for the stormwater utility.

Levels of Service (Without Debt Issuances)

Three levels of service (LOS) have been developed for consideration: Baseline, Moderate Capital, and Full Capital. Each successive level of service introduced two new full time employee positions: a utility maintenance worker and a stormwater engineer, both to be introduced in 2022. Planned capital expenses were portrayed as a 'capital budget' for use on capital projects in the City's capital improvement program (CIP). The three levels of service incorporated annual capital budgets of approximately \$1,700,000 (Baseline), \$2,400,000 (Moderate Capital), and \$3,200,000 (Full Capital). The Baseline level of service will fund all critical master plan and critical capital maintenance needs projects, the Moderate Capital level of service will fund all master plan projects, critical capital maintenance needs, and some additional capital maintenance, and the Full Capital level of service will fund all master plan projects and known capital maintenance needs. **Exhibit 3** summarizes the programs that would be funded under each level of service as well as the monthly rate impacts if the City does not issue debt to fund the capital program.

Exhibit 3: Levels of Service (Cash Funded)

Level of Service Matrix	Single Family Monthly Rate				Capital Projects	Cash Funded / Debt Funded Capital
	Existing	Year 1	Year 2	Year 3		
LOS 1: Baseline	\$10.86	\$11.95	\$13.14	\$14.45	Avg. \$1,700,000 / year in Capital Expenditures \$1.2M - critical master plan projects \$500k - critical maintenance needs	\$32,000,000 Cash Funded \$0 Debt Funded
	\$ change:	\$1.09	\$1.19	\$1.31		
LOS 2: Moderate Capital	\$10.86	\$12.54	\$14.48	\$16.73	Avg. \$2,400,000 / year in Capital Expenditures \$1.6M - Fund all master plan projects \$800k - critical maintenance needs and some additional maintenance	\$46,000,000 Cash Funded \$0 Debt Funded
	\$ change:	\$1.68	\$1.94	\$2.25		
LOS 3: Full Capital	\$10.86	\$13.14	\$15.89	\$19.24	Avg. \$3,200,000 / year in Capital Expenditures \$1.6M - Fund all master plan projects \$1.6M - Fund all known maintenance needs projects	\$60,100,000 Cash Funded \$0 Debt Funded
	\$ change:	\$2.28	\$2.75	\$3.35		

Economic & Inflation Factors

The operating and maintenance expenditure forecast largely relies on the City's 2020 adopted budget for the stormwater and SDC funds. The line items in the budget are then adjusted each year by utilizing one of the following factors:

- General Cost Inflation – assumed to be 2.0 percent per year based on the 20-City CPI index.
- Construction Cost Inflation – assumed to be 3.0 percent per year based on the historical Engineering News-Record's Construction Cost Index (20-City Average).
- Labor Cost Inflation – assumed to be 2.0 percent per year based on the Employment Cost Index – Wages and Salaries, as well as a discussion with City staff.
- Benefits Cost Inflation – assumed to be 5.0 percent per year based on the Employment Cost Index – Benefits, as well as a discussion with City staff.
- Taxes – City franchise fee rate of 6.0 percent.
- Fund Earnings – assumed to be 0.50 percent per year based on the Local Government Investment Pool (LGIP) for Oregon.
- Growth in Rate Revenue before Increases – the City is assumed to add approximately 120 new dwelling units per year, per the City's 2019 Housing Needs Assessment. This results in a growth rate of approximately 0.5 percent per year.

Fund Balances

The stormwater utility has separate funds for tracking operating and capital activity. The combined beginning July 1, 2020 cash and investments balance was \$1,100,000. Of that total, City finance staff noted that \$739,000 was operating cash in Fund 410 and \$371,000 was reserved for capital expenditures in Fund 412, as shown in **Exhibit 4**.

Exhibit 4: Stormwater Utility Fund Cash Balances

Description	Beginning 2020 Cash Balances
Operating Reserve	\$1,064,212
Capital Reserve	\$336,122
SDC Reserve – Reimbursement	\$305,601
SDC Reserve – Improvement	\$85,138
Total Beginning Cash January 1, 2020	\$1,791,073

Existing Debt Obligations

As noted previously, the City does not have any existing stormwater-related debt obligations. In the following sections, no new debt issuances are assumed.

Revenue Requirement Results – Baseline LOS

Exhibit 5 graphically represents the revenue requirement forecast through 2029 for the Baseline Capital LOS scenario. Detailed observations are provided below:

- **Solid line:** Revenue at existing rates.

Total revenue is expected to be roughly \$3,150,000 in 2020 and is expected to increase 0.50 percent per year with customer growth, before future rate adjustments.

- **Dashed line:** Revenues with rate increases.

As the operating and capital costs associated with the Baseline LOS are incorporated into the forecast, rate revenue must increase to cover those obligations. Total revenues are expected to grow to just over \$5,050,000 per year by 2029.

- **Dark blue bar:** Operating and maintenance expense (O&M).

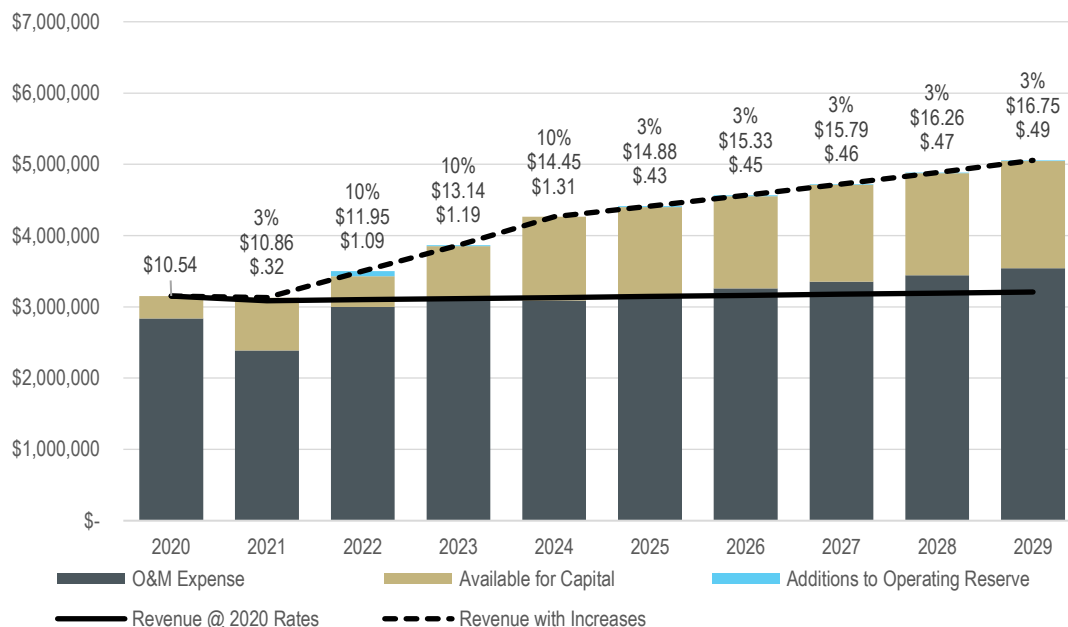
Operating expenses are based on the adopted 2020 budget plus the additional costs associated with the Baseline Capital LOS. Operating expenses are expected to grow to \$3,500,000 by 2029. The one-time 'drop' in operating expenses in 2021 is related to transfers out to other City funds.

- **Tan bar:** Available for capital.

This amount increases gradually after 2021 as revenues increase with rate increases. By 2029, \$1,500,000 per year would be available for capital projects.

- **Light blue bar:** Additions to the operating reserve to keep pace with escalating O&M.

Exhibit 5: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Baseline LOS)



**The graph labels show the monthly revenue adjustment, the single-family monthly rate, and the monthly change to the single-family rate.*

Revenue Requirement Results – Moderate Capital LOS

Exhibit 6 graphically represents the revenue requirement forecast through 2029 for the Moderate Capital LOS scenario. Detailed observations are provided below:

- **Solid line:** Revenue at existing rates.

Total revenue is expected to be roughly \$3,150,000 in 2020 and is expected to increase 0.50 percent per year with customer growth, before future rate adjustments.

- **Dashed line:** Revenues with rate increases.

As the operating and capital costs associated with the Moderate Capital LOS are incorporated into the forecast, rate revenue must increase to cover those obligations. Total revenues are expected to grow to \$5,800,000 per year by 2029.

- **Dark blue bar:** Operating and maintenance expense (O&M).

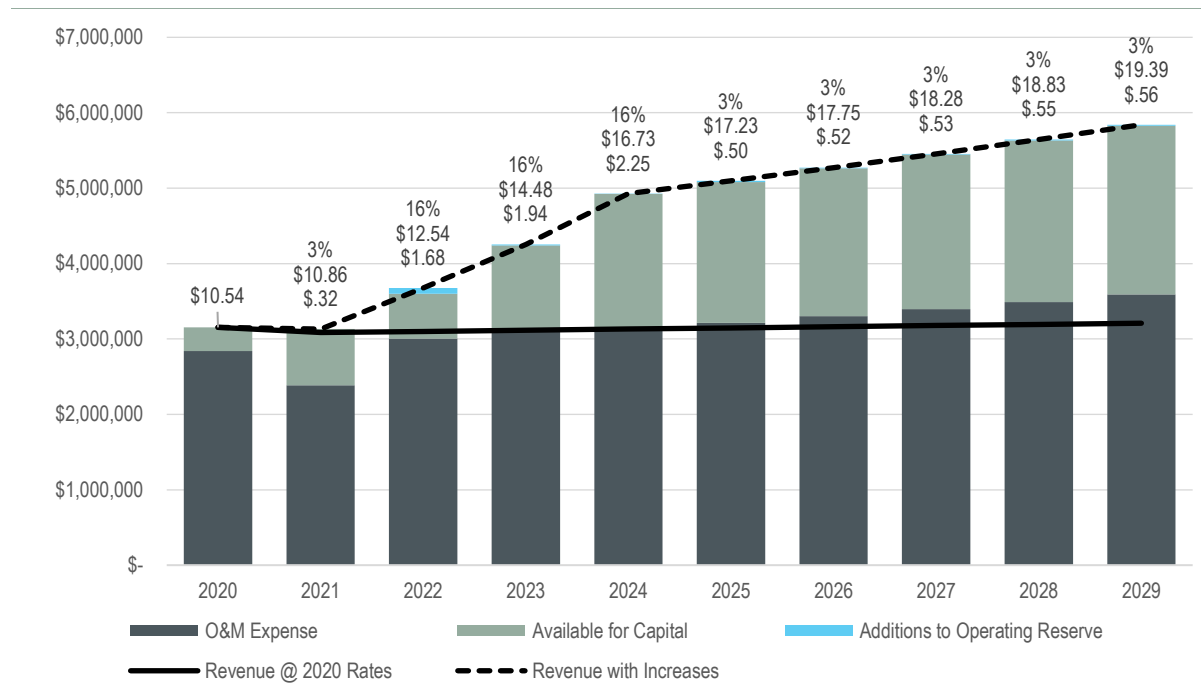
Operating expenses are based on the adopted 2020 budget plus the additional costs associated with the Moderate Capital LOS. Operating expenses are expected to grow to \$3,600,000 by 2029. The one-time ‘drop’ in operating expenses in 2021 is related to transfers out to other City funds.

- **Green bar:** Available for capital.

This amount increases gradually after 2021 as revenues increase with rate increases. By 2029, \$2,200,000 per year would be available for capital projects.

- **Light blue bar:** Additions to the operating reserve to keep pace with escalating O&M.

Exhibit 6: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Moderate Capital LOS)



*The graph labels show the monthly revenue adjustment, the single-family monthly rate, and the monthly change to the single-family rate.

Revenue Requirement Results – Full Capital LOS

Exhibit 7 graphically represents the revenue requirement forecast through 2029 for the Full Capital LOS scenario. Detailed observations are provided below:

- **Solid line:** Revenue at existing rates.

Total revenue is expected to be roughly \$3,150,000 in 2020 and is expected to increase 0.50 percent per year with customer growth, before future rate adjustments.

- **Dashed line:** Revenues with rate increases.

As the operating and capital costs associated with the Full Capital LOS are incorporated into the forecast, rate revenue must increase to cover those obligations. Total revenues are expected to grow to \$6,700,000 per year by 2029.

- **Dark blue bar:** Operating and maintenance expense (O&M).

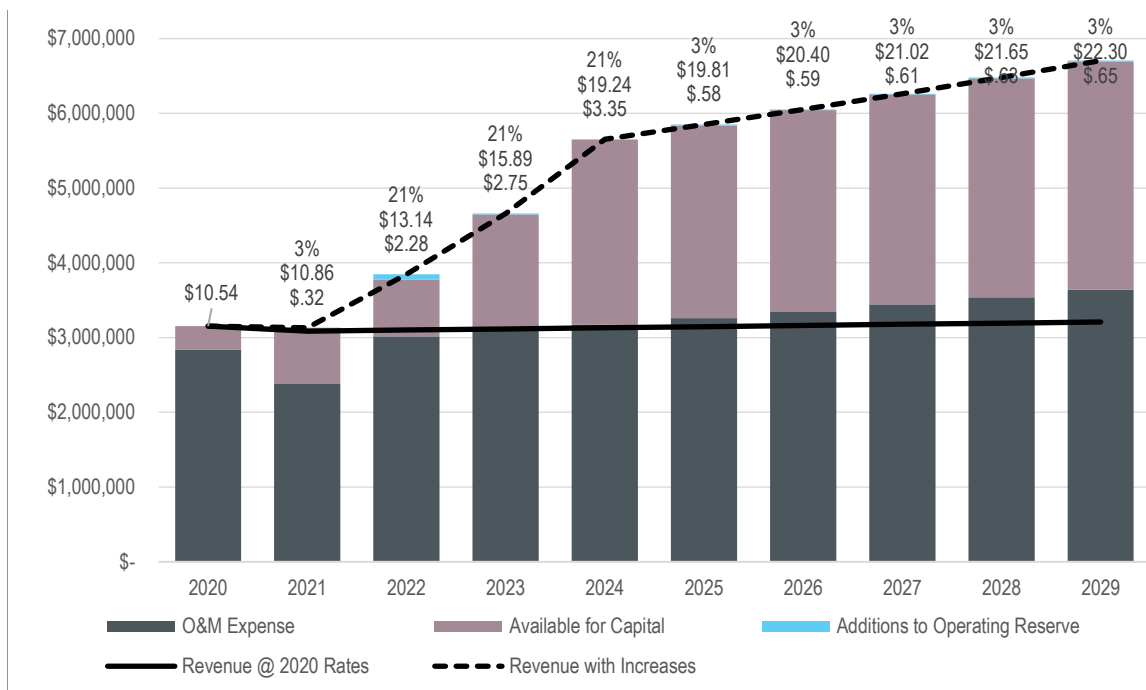
Operating expenses are based on the adopted 2020 budget plus the additional costs associated with the Full Capital LOS. Operating expenses are expected to grow to \$3,650,000 by 2029. The one-time ‘drop’ in operating expenses in 2021 is related to transfers out to other City funds.

- **Lavender bar:** Available for capital.

This amount increases gradually after 2021 as revenues increase with rate increases. By 2029, \$3,050,000 per year would be available for capital projects.

- **Light blue bar:** Additions to the operating reserve to keep pace with escalating O&M.

Exhibit 7: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Full Capital LOS)



*The graph labels show the monthly revenue adjustment, the single-family annual rate, and the monthly change to the single-family rate.

Levels of Service (With Debt Issuances)

Alternative scenarios were prepared which assume the issuance of debt to fund some capital projects, rather than funding capital projects entirely through rates. The levels of service in these debt issuance scenarios are the same as assumed in the previous cash-funded scenarios. **Exhibit 8** summarizes the rate impacts if the City issues debt to fund the capital program; these rates may be directly compared to those in the previous section showing the impact of issuing debt.

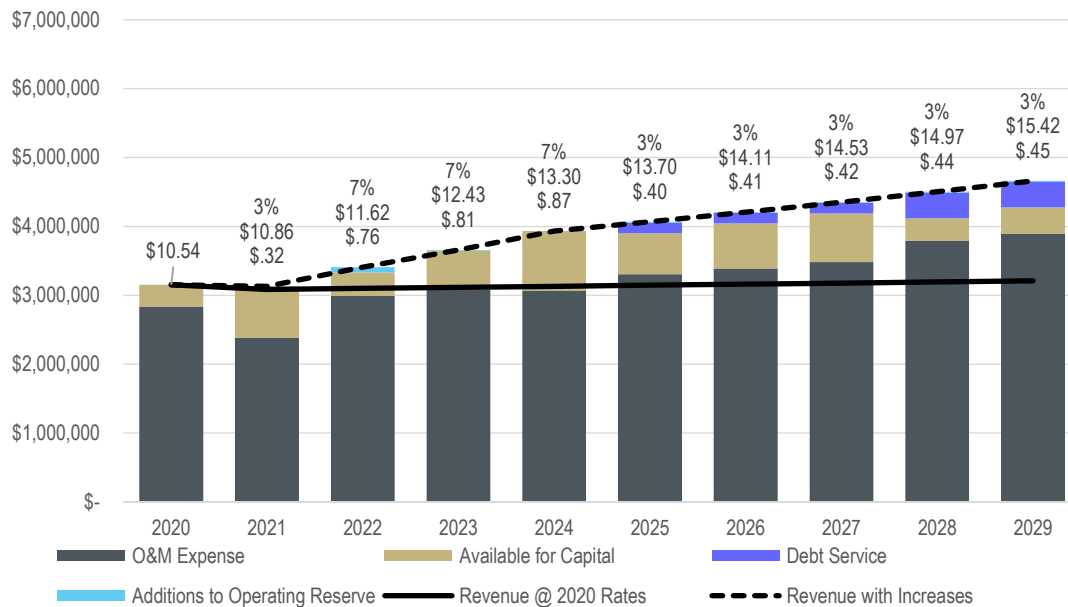
Exhibit 8: Levels of Service (Debt Funded)

Level of Service Matrix	Single Family Monthly Rate				Capital Projects	Cash Funded / Debt Funded Capital
	Existing	Year 1	Year 2	Year 3		
LOS 1: Baseline	\$10.86	\$11.62	\$12.43	\$13.30	Avg. \$1,700,000 / year in Capital Expenditures \$1.2M - critical master plan projects \$500k - critical maintenance needs	\$14,200,000 Cash Funded <u>\$17,800,000 Debt Funded</u> \$32,000,000 Total Capital
	\$ change:	\$0.76	\$0.81	\$0.87		
LOS 2: Moderate Capital	\$10.86	\$12.16	\$13.62	\$15.25	Avg. \$2,400,000 / year in Capital Expenditures \$1.6M - Fund all master plan projects \$800k - critical maintenance needs and some additional maintenance	\$21,300,000 Cash Funded <u>\$24,700,000 Debt Funded</u> \$46,000,000 Total Capital
	\$ change:	\$1.30	\$1.46	\$1.63		
LOS 3: Full Capital	\$10.86	\$12.49	\$14.36	\$16.51	Avg. \$3,200,000 / year in Capital Expenditures \$1.6M - Fund all master plan projects \$1.6M - Fund all known maintenance needs projects	\$24,500,000 Cash Funded <u>\$35,600,000 Debt Funded</u> \$60,100,000 Total Capital
	\$ change:	\$1.63	\$1.87	\$2.15		

Revenue Requirement Results – With Debt Issuances

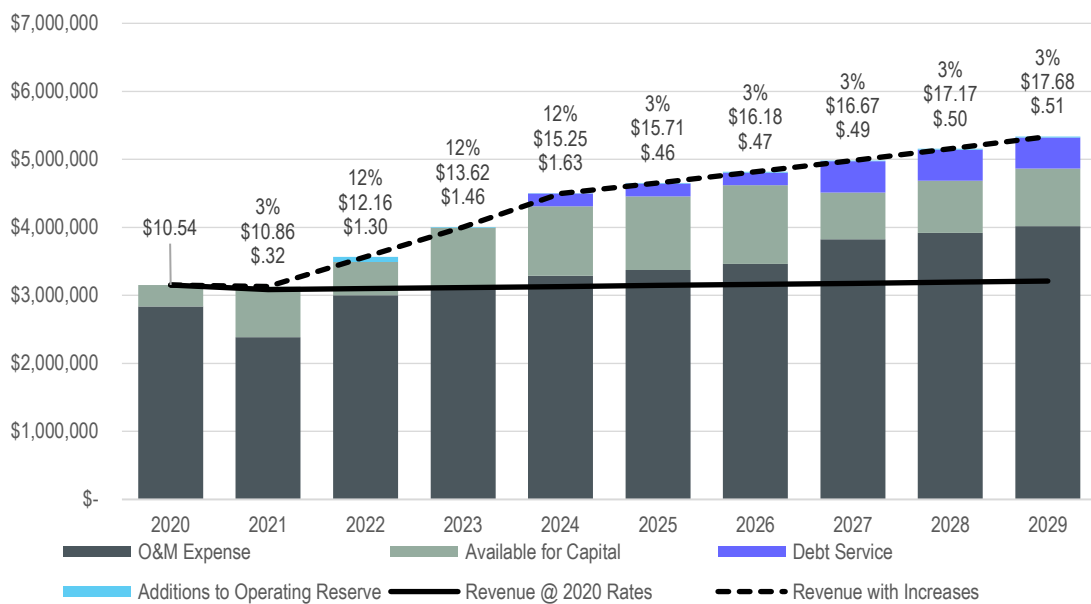
Exhibits 9, 10, and 11 graphically represent the revenue requirement forecast through 2029 for the each of the previously discussed levels of service, assuming the City issues debt at the levels presented in each scenario.

Exhibit 9: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Baseline LOS)



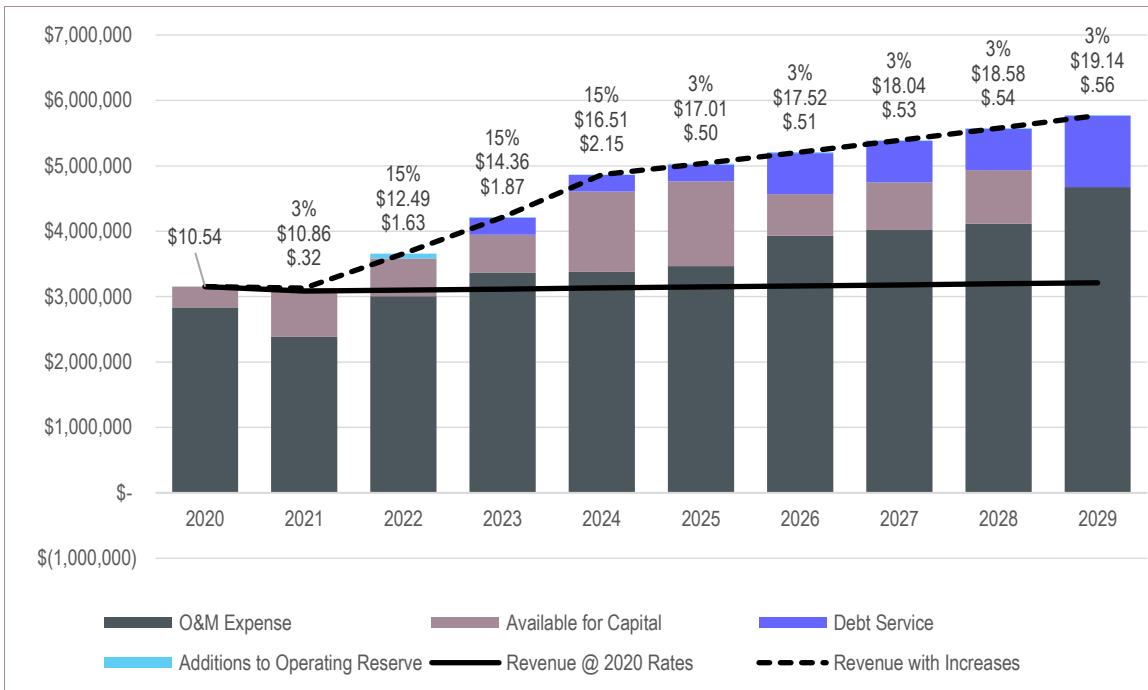
For the Baseline LOS, the total debt issuance is assumed to be \$17,800,000, resulting in annual debt service payments of \$375,000 by 2029.

Exhibit 10: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Moderate Capital LOS)



For the Moderate Capital LOS, the total debt issuance is assumed to be \$24,700,000, resulting in annual debt service payments of \$450,000 by 2029.

Exhibit 11: Monthly Stormwater Utility Revenue Requirement Forecast 2020-29* (Full Capital LOS)



For the Full Capital LOS, the total debt issuance is assumed to be \$35,600,000, resulting in annual debt service payments of \$1,100,000 by 2029.

Section IV. RATE CREDITS

A stormwater customer who provides onsite mitigation that is over and above the City’s minimum requirements can reduce the utility’s costs. Providing a rate credit for this additional mitigation can therefore be an appropriate incentive. This section provides an analytically-based maximum rate credit that the City may offer (if it offers one at all). For administrative practicality, if the City does decide to offer rate credits, we recommend that only commercial properties should be considered eligible for credits.

After calculating the total revenue requirement for the utility, we determined the maximum rate credit using the following approach. Each category of stormwater program costs was allocated between base and use. “Base” costs are not avoidable even with universal onsite mitigation. “Use” costs are theoretically avoidable with sufficient onsite mitigation. Results are shown in **Exhibit 12** below.

Exhibit 12: Base and Use Categorization

Expense Description	% Base	% Use
Personnel Services	92%	8%
Materials and Services	78%	22%
Transfers Out	100%	0%
Cash Funded Capital	33%	67%

These allocations of the FY 2021-22 projected costs resulted in approximately 71 percent of expenses classified as base costs 29 percent classified as use costs.

The maximum rate credit was determined by dividing each component cost by the expected number of ESUs to be charged. It was assumed that up to 10 percent of all ESUs would be lost to credits, or refinements to their chargeable area based on updated measurements. The calculation of the maximum credit amount is summarized in **Exhibit 13** below.

Exhibit 13: Calculation of Maximum Credit

	Base	Use	Total (\$)
Total \$	2,419,925	\$ 1,018,774	\$ 3,438,698
Storm Units	24,195	24,195	
Credit Qualifying (10%)		(1,379)	
Chargeable Storm Units	24,195	22,816	
Annual Charge per Unit \$	100.02	\$ 44.65	\$ 144.67
<i>Maximum Credit Provided</i>		31%	

The result of the credit calculation is a maximum rate credit of 31 percent for qualifying on-site mitigation.

Section V. SUMMARY

A review of the rates for each scenario (baseline, moderate capital, full capital, with and without debt) is provided as shown in **Exhibit 14**.

Exhibit 14: Rate Increase Scenarios

LOS Matricies	Existing	Year 1	Year 2	Year 3
LOS 1: Cash funded	\$10.86	\$11.95	\$13.14	\$14.45
\$ change		\$1.09	\$1.19	\$1.31
LOS 2: Cash funded	\$10.86	\$12.54	\$14.48	\$16.73
\$ change		\$1.68	\$1.94	\$2.25
LOS 3: Cash funded	\$10.86	\$13.14	\$15.89	\$19.24
\$ change		\$2.28	\$2.75	\$3.35
LOS 1: Debt funded	\$10.86	\$11.62	\$12.43	\$13.30
\$ change		\$0.76	\$0.81	\$0.87
LOS 2: Debt funded	\$10.86	\$12.16	\$13.62	\$15.25
\$ change		\$1.30	\$1.46	\$1.63
LOS 3: Debt funded	\$10.86	\$12.49	\$14.36	\$16.51
\$ change		\$1.63	\$1.87	\$2.15

Commission Decision

Results of this study were presented to the City Commission on March 11th, 2021. The commission indicated a preference for the cash-funded LOS 2. **Exhibits 15, 16, and 17** show the forecasted rate increases and reserve balances in this scenario.

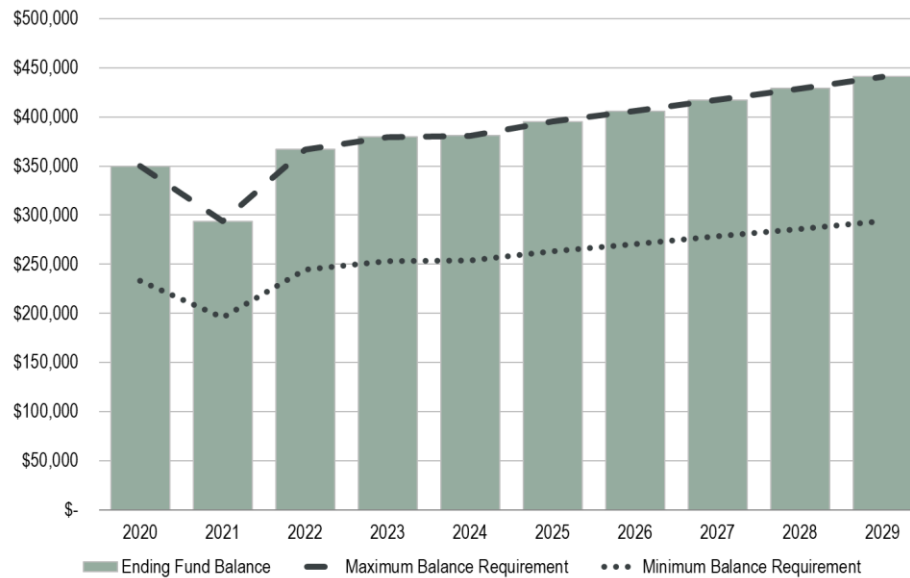
Exhibit 15: Summary Results of the Revenue Requirement Forecast – Selected LOS

Summary of Rate Adjustments	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Annual Rate Adjustments	\$10.86	\$12.54	\$14.48	\$16.73	\$17.23	\$17.75	\$18.28	\$18.83	\$19.39

Forecasted Reserves – LOS 2 Cash Funded

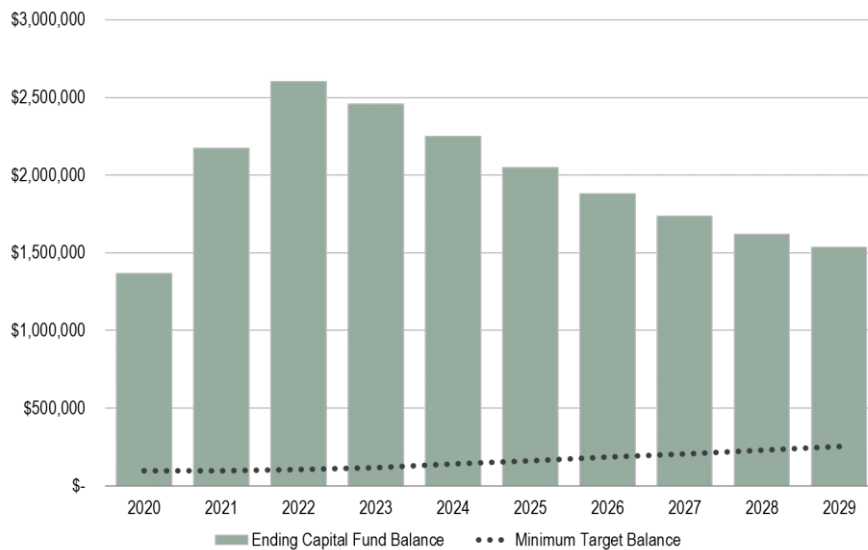
Operating Reserve

Exhibit 16: Operating Reserve Forecast



Capital Reserve

Exhibit 17: Capital Reserve Forecast



The rate strategy does forecast a drawing down of the capital reserve over the twenty-year timeline, as indicated in **Exhibit 17**. Depending on the timing associated with the execution of capital projects, this capital reserve will fluctuate from year-to-year but does not fall below the minimum target balance.

Section VI. CONCLUSION

Revenue Requirement & Rate Schedule

The recommended rate increases in **Exhibit 18** allow the stormwater utility to accomplish the following:

- Continue to fund existing and planned operating expenses, plus inflation;
- Allow the utility to fund \$15.6 million in capital projects 2020-2029 (escalated dollars);
- Generate nearly \$2.2 million per year for rate-funded capital by 2029; and
- Maintain utility reserves at a healthy level throughout the forecast.

Exhibit 18 shows the recommended rate adjustments applied to the City's existing rate structure.

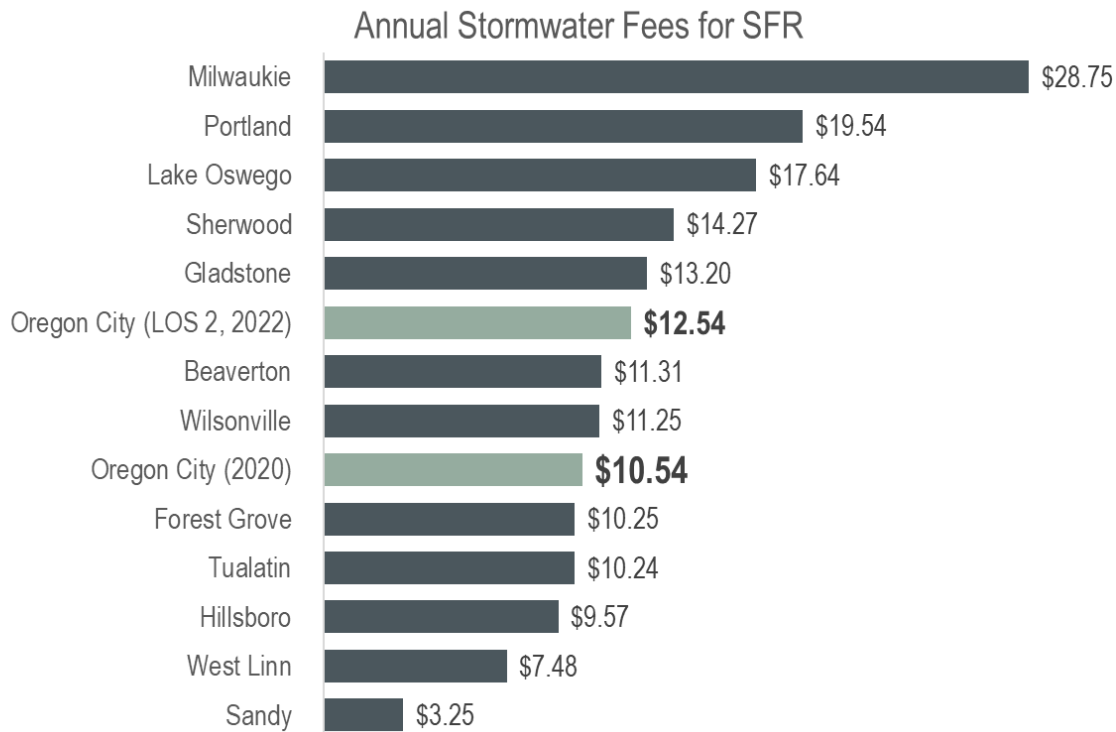
Exhibit 18: Rate Schedule Forecasts

Existing Rate Structure	FY 2020	Existing FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Annual Increases		\$0.32	\$1.68	\$1.94	\$2.24	\$0.50	\$0.52	\$0.53	\$0.55	\$0.56
Single Family Residential (per parcel)	\$10.54	\$10.86	\$12.54	\$14.48	\$16.73	\$17.23	\$17.75	\$18.28	\$18.83	\$19.39
Multi-Family Residential (per ERU)	\$10.54	\$10.86	\$12.54	\$14.48	\$16.73	\$17.23	\$17.75	\$18.28	\$18.83	\$19.39
Commercial Class 1 (per Storm Unit)	\$10.54	\$10.86	\$12.54	\$14.48	\$16.73	\$17.23	\$17.75	\$18.28	\$18.83	\$19.39

Single-Family Residential Rate Comparison

As a resource to the City and its customers, a rate survey of regional stormwater utilities is provided below. **Exhibit 19** shows each jurisdiction's 2020 monthly single-family residential rate. Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics that can have a significant impact on rates.

Exhibit 19: Monthly 2020 Single-Family Residential Stormwater Rates



Updating This Study's Findings

It is recommended that the City revisit the study findings during the forecast period to check that the assumptions used are still appropriate and that no significant changes have occurred that would alter the results of the study. The City should use the study findings as a living document, routinely comparing the study outcomes to actual revenues and expenses. Any significant or unexpected changes may require adjustments to the rate strategy recommended in this report.

Section VII. APPENDICES

Appendix A - Issue Papers

STORMWATER FISCAL POLICIES

BACKGROUND

The basic framework for evaluating utility revenue needs includes sound fiscal policies. Intended to promote long-term financial viability for the utility, these policies can address a variety of topics including cash management, a capital funding strategy, and financial performance.

There are several policy topics that can be important to consider further as part of managing the finances of the Oregon City Stormwater Division:

- Cash Reserves;
- Debt Management;
- Capital Funding; and
- Replacement Reserve Funding.

When evaluating fund reserve levels and objectives, it is important to recognize that the value of reserves lies in their potential use. A reserve strategy that deliberately avoids any use of reserves negates their purpose. Fluctuation of reserve levels may indicate that the system is working, while lack of variation over many years strongly suggests that the reserves are, in fact, unnecessary.

CASH RESERVES

Reserves are a key component of any utility financial strategy, as they provide the flexibility to manage variations in costs and revenues that could otherwise have an adverse impact on ratepayers. For the purpose of rate and financial planning, resources are commonly separated into the following distinct accounts or funds:

- Operating Reserves,
- Capital Reserves,
- SDC Reserves, and
- Debt Reserves.

Operating Reserves

An operating reserve is designed to provide a liquidity cushion; it protects the utility from the risk of short-term variation in the timing of revenue collection or payment of expenses. Like other types of reserves, operating reserves can help smooth rate increases over time.

Target balances for an operating reserve are generally expressed as a certain number of days of operating expenses (less transfers), with the minimum target varying with expected revenue volatility. Industry practice for utility operating reserves typically ranges from 30 days (8%) to 120 days (33%) of operating expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end of the range more appropriate for utilities with significant seasonal or consumption-based fluctuations.

The most common operating reserve target for stormwater management utilities with monthly billing schedules, like Oregon City, is between 30 days to 60 days of operating expenses (Table 1).

Table 1. Operating Reserve Policy Recommendation

Policy	Common Target	Recommended Target
Operating Reserve	30 to 60 Days of O&M	30 to 60 Days of O&M

In any year where operating reserves exceed the maximum days (i.e., 30-60 days) of operating expenses, it is assumed that the excess cash can be used to help pay for capital projects. This can be accomplished by calculating the target balance and comparing it against the actual existing cash balance. If the actual balance is greater than the target, the difference can be designated as a capital resource.

Capital Reserves

The capital reserve consists of cash that has been set aside for capital purposes. Resources can include utility rate revenue, grants, and debt proceeds. This fund provides a source of emergency funding for unexpected asset failures or other unanticipated capital needs. It can also help the utility address cash flow issues related to capital projects. For example, grants that the utility may rely upon to meet its capital needs may have a local cash matching requirement.

Given these different purposes, there are a variety of potential benchmarks for setting a minimum balance for this reserve. Some potential options include:

- A percentage (commonly 1 to 2%) of the original cost of fixed assets (Table 2);
- A rolling multi-year average of capital improvement program (CIP) costs; or
- An amount determined sufficient to fund an equipment failure.

However, this capital reserve policy is not intended to guard against catastrophic system failure or extreme acts of nature.

Table 2. Capital Reserve Policy Recommendation

Policy	Common Target	Recommended Target
Capital Reserve	1 to 2% of Original Cost of Assets	1 to 2% of Original Cost of Assets

System Development Charge Reserves

System development charge (SDC) revenue includes both reimbursement and improvement fee receipts. Revenue from each fee should be held in a separate reserve account. These funds are used to pay for capital projects, with the improvement fee balance to be used only for projects that expand the capacity of the system.

DEBT MANAGEMENT

Debt Reserve

The debt reserve is most often required as a condition of bond issuance, though some loan programs also require a reserve. The intent of the reserve is to protect bondholders (or the agency issuing loans) from the risk of the borrower defaulting on their payments.

The minimum balance for this reserve (typically specified in the bond/loan agreement) is most often linked to either average annual debt service, maximum annual debt service, or the amount issued (Table 3).

Table 3. Debt Reserve Policy Recommendation

Policy	Common Target	Recommended Target
Debt Reserve	Depends on type of debt issued.	Policy should be dictated by terms outlined in contracts for debt obligations, if applicable.

Debt Service Coverage

Debt service coverage is typically a requirement associated with revenue bonds and some state loans, and it is an important benchmark to measure the riskiness of the utility's capital funding plans. Coverage is most easily understood as a factor applied to annual debt service. In such a case, if it sells revenue bonds, the utility agrees to collect enough revenue to meet operating expenses and not only pay debt service, but collect an additional 25% increment above bonded debt service.

The extra revenue is a "cushion" that makes bondholders more confident that debt service will be paid on time. The extra revenue can be used for capital expenditures, to build reserves for future asset replacement, or for debt service on subordinate debt. Depending on the targeted rating level, some rating agencies suggest an annual debt service coverage target of 1.70 or greater (*Moody's Rating Methodology, US Municipal Utility Revenue Debt, October 2017*) (Table 4). Achieving a bonded debt service coverage level greater than the minimum required level is a positive signal that bond rating agencies notice, and can result in more favorable terms if the utility goes to the market for bonds.

Table 4. Debt Service Coverage Policy Recommendation

Policy	Common Target	Recommended Target
Debt Service Coverage	Depends on type of debt issued and targeted debt rating level (e.g., Aaa, Aa, A, etc.)	According to Moody's, a target range of between 1.25x and 1.70x might contribute towards an "A" rating. A range of 1.70x and 2.00x; an "Aa" rating.

CAPITAL FUNDING

Utilities can typically draw funds for capital improvement projects from a variety of sources, such as grants, system development charges, utility rates, and debt. While grants and developer contributions would logically be applied to project costs first, the next choice in the funding “hierarchy” is not necessarily apparent. A list of considerations is provided below.

Debt Funding

Debt mitigates the financial impact of capital investment on ratepayers, but comes with issuance and interest costs. A utility’s ability to meet coverage and other debt-related requirements may limit the amount of additional debt that it can issue. Additionally, excessive amounts of outstanding debt can affect a utility’s credit rating (and its ability to secure low-interest debt).

Cash Funding

Capital cash resources (e.g., system development charges, replacement reserve funding) can be applied to project costs directly, or they can be held in reserve or used toward annual debt service payments.

Resulting Considerations

The specific decision regarding whether to fund projects by debt or by cash is an important policy decision that will likely be driven by a number of considerations. While cash funding will be cheaper in the long run because there is no interest cost, debt funding may be the more practical option since it allows for the payment of costs over an extended period of time. Using debt to spread the cost over time also promotes “generational equity,” ensuring that future customers pay for their fair share of system costs.

The overlay of other financial policies related to coverage and replacement reserve funding can implicitly define equity generation through rates and system development charges, automatically constraining the need for debt to reasonable levels. In this case, a new policy related to debt financing may not provide added value to financial planning or viability.

Across the Industry

Drawing from a report from Black & Veatch, “*2018 Stormwater Utility Survey*”, of the 75 participants surveyed (from 21 states), the weighted funding profile for surface water and stormwater utility capital projects was approximately 87% cash versus 13% with debt. This result is up from 85% cash in 2014.

REPLACEMENT RESERVE FUNDING (RRF)

The concept of replacement reserve funding is essentially funding long-term infrastructure replacement needs through a regular and predictable rate provision. An RRF program can be structured to take into account the defined funding source (rate revenue), accumulation of funds when funding exceeds near-term needs, and augmentation of funds (e.g., through debt) when replacement needs exceed available cash resources.

Specific benchmarks for annual funding might include any of the following:

- Original cost depreciation expense;
- Replacement cost depreciation expense;
- Asset management plan; and
- Directly budgeted replacement project expenditures.

Each of these benchmarks are described in more detail in the following subsections.

Original Cost Depreciation Expense

This approach fully funds the decline in asset value attributable to the wear and tear from routine use, as measured by original construction costs. It avoids decline in system asset value (financial integrity) by replacing physical assets with cash assets.

However, as the General Finance Officers Association (GFOA) notes in their capital asset management recommendations, “Simply budgeting for the historical acquisition value of the asset may not take into account changes in price for a new asset or cases where the asset may not need full replacement based on the condition assessment,” (*Recommendation 7*).

Replacement Cost Depreciation Expense

This approach estimates the replacement cost of the system, and bases the funding target on this higher cost. This approach more closely conforms to the true cost of replacing the system or asset.

Asset Management Plan

This approach identifies a specific dollar amount of funding to be budgeted annually, ideally based on an asset management plan. An asset management plan is typically based on an accurate asset inventory, supplemented by routine asset condition assessments.

Directly Budgeted Replacement Project Expenditures.

By budgeting replacement expenditures as they occur, this approach does not attempt to anticipate or accumulate toward replacement needs and is likely to provide highly variable annual requirements.

Summary

Of these various approaches, only the Asset Management Plan approach is actually designed to ensure full funding of replacement needs, assuming the accuracy of assumptions used (Table 5). All of the others are intended to provide reasonable contributions toward meeting replacement needs, but do not ensure the adequacy of such funding.

Most commonly, utilities that have addressed replacement funding needs have used historical (original cost) depreciation expense as the basis for a reasonable level of reinvestment in the system. This strategy and level of funding satisfies several standards for reasonable rates:

- It avoids decline in system asset value (financial integrity);

- It charges customers commensurate with their consumption of facility useful lives and avoids the possibility of charging customers more than the current cost to provide service (rate equity); and
- It provides a substantial source of funding for replacement (capital funding adequacy).

Table 5. Replacement Reserve Funding Recommendation

Policy	Common Target	Recommended Target
Replacement Reserve Funding	Based on original cost or replacement cost depreciation. Asset management plans are becoming more popular—and important—and would provide a more-detailed funding strategy beyond what annual depreciation would suggest.	Implement an asset management plan. Absent that, fund at least 100% of original cost depreciation. Consider building rates over time to fund replacement cost depreciation.

RECOMMENDATIONS

We recommend that the City consider the following fiscal policies for the Stormwater Management utility.

Table 6. Summary of Recommendations

Policy	Common Target	Recommended Target
Operating Reserve	30 to 60 Days of O&M	30 to 60 Days of O&M
Capital Reserve	1 to 2% of Original Cost of Assets	1 to 2% of Original Cost of Assets
SDC Reserve	Account for reimbursement and improvement fees separately	
Debt Service Coverage	Minimum required: 1.25x	If debt is issued, an internal policy target of 2.00x may be prudent.
Replacement Reserve Funding	Asset management plans are becoming more popular. Otherwise, a percentage of depreciation (original cost or replacement cost).	Develop Asset Management Plan. Or fund at least 100% of original cost depreciation.

STORMWATER RATE STRUCTURE ALTERNATIVES

ISSUE

The City of Oregon City imposes monthly storm drainage charges on properties within the City limits. The City has requested an evaluation to determine whether or not the current rate structure is optimal, given the City's policy objectives.

RATE STRUCTURE ALTERNATIVES

There are a number of potential rate structure alternatives that can be considered for a stormwater utility, several of which are evaluated below. When evaluating these structures, it is important to balance equity and administrative feasibility. For example, if a rate structure is considered to be very equitable but is cost prohibitive to setup and maintain, a less "perfect" approach may be more desirable if it is less costly to administer.

Option 1: Impervious Surface Area / Equivalent Service Unit (Recommended for Consideration)

The most common stormwater rate approach is to charge customers based on impervious surface area, the hard surface area that prevents or impedes the permeation of water into the ground. Impervious surface area is widely accepted as an appropriate measure of a property's contribution of runoff, providing a rational nexus to service received from a stormwater management utility. Given the diversity that exists among non-single-family residential properties, it is common to charge these customers based on actual measured impervious surface area. Because tracking parcel-specific measurements of impervious area for single-family customers would add considerable administrative effort and complexity to the rate structure, the more common practice is to impose a uniform rate on single-family residences based on an estimated average amount of impervious surface area. Though this approach may overcharge smaller residences and undercharge larger residences, it is widely considered to be an acceptable compromise between equity and practicality.

Option 2: Density of Development (City of Oregon City's Existing Rate Structure)

An alternative measurement of runoff contribution involves applying "density factors" to gross parcel size, adjusting charges depending on the percentage of the parcel covered by hard surface. This approach can acknowledge that, for example, 3,000 square feet of impervious area on a 5,000 square foot lot more directly impacts the public system than an equivalent impervious area on a one-acre lot. As with the approach based on impervious surface area, this approach is an appropriate charge basis because it adequately quantifies the relationship between the rate paid and the level of service received.

Option 3: Runoff Coefficients

This approach is similar to the "density of development" approach in that it can be used to adjust a parcel's charge based on its runoff characteristics; however, it is more closely associated with a parcel's physical properties. When applied to lot size, runoff coefficients are generally accepted as a measure of runoff contribution (and service received). Implementing this approach requires

information relating to the basic characteristics of land (e.g., slope and soil type), land use, and lot size. Depending on slope variables and soil characteristics, undeveloped parcels may also be subject to charges under this approach. In measuring runoff contributions by evaluating property-specific characteristics that may impact those contributions, this approach rationally recovers the costs of several aspects of the stormwater utility.

Option 4: Land Use

Alternatively, runoff characteristics can be linked to types of land use. For example, empirical analysis may find that industrial land use has a more significant contribution to water quality problems from surface water runoff than undeveloped land (justifying a proportionately higher industrial rate to equitably recover program costs).

Option 5: Trip Generation

While most rate structure options focus on runoff contribution, a structure based on trip generation relates automobile traffic to non-point-source pollution contributed by properties. The Institute of Transportation Engineers' *Trip Generation* Manual assigns a number of daily trips to specific categories of land use – this information could be used to recover the costs of water quality activities within the surface water management program. Customer land uses and floor area would also be required in order to calculate equitable rates.

CITY OF OREGON CITY'S EXISTING RATE STRUCTURE

The City currently utilizes the Density of Development (Option 2) rate structure, as defined in Oregon City Municipal Code (OCMC) Section 13.16.020. The City's storm drainage rate is a fixed charge per equivalent residential unit (ERU). Each residential account is considered one ERU while ERUs for all non-residential accounts are determined by two factors:

- Area Range Number (ARN): ranges of gross area square footages are used to classify non-residential properties into groups of similar parcel size. For example, parcels with gross areas of one to two thousand five hundred square feet are assigned an area range number of 1. Parcels with gross areas of two thousand five hundred to five thousand square feet have an ARN of 2. These increments continue on so that each additional range of two thousand five hundred square feet is counted as an additional ARN of 1.
- Development Intensity Factor (DIF): this factor is indicative of the land use or assumed impervious coverage of each property.

Table 1 represents the DIFs for each of the existing land uses and zoning to be used in determination of non-residential ERUs.

Table 1. Development Intensity Factors (DIFs)

Nonresidential Land Use or Zoning	Development Intensity Factor
LOC limited office conditional	0.70
LO limited office	0.80
NC neighborhood commercial	0.80
HC historic commercial	0.70
LC limited commercial	0.70
C general commercial	0.90
CBD central business district	0.90
M1 light industrial	0.70
M2 heavy industrial	0.80
Conditional use or nonconforming	Apply a composite runoff factor

The equivalent residential units (ERUs) for a non-residential property are computed by the following formula:

$$\text{ERUs} = \text{ARN} \times \text{DIF}$$

As of January 1, 2020, the City charges \$10.54 per ERU on a monthly basis.

CONSIDERATIONS FOR CITY

Density of Development: Equity Issues at Edges of Non-Residential Area Ranges

While this structure charges more for properties with larger gross square footages with an applied development intensity factor, the structure can perpetuate inequities among customers at the extreme ends of each area range number.

For example, a non-residential property that is 4,900 gross square feet would pay significantly less than a similarly sized property that is 5,100 gross square feet, with the same development intensity factor, even though they have comparable amounts of gross square footage. Meanwhile, a non-residential property that is 7,400 gross square feet would pay the same as a property that is 5,100 gross square feet. Table 2 demonstrates this inequity with three hypothetical non-residential accounts.

Table 2. Inequities for Accounts at Edge of Area Ranges

Gross Parcel Size	ARN	DIF	Monthly Charge	\$ Per Gross Square Foot
4,900 SF	2	0.80	\$16.86	\$.0034
5,100 SF	3	0.80	\$25.30	\$.0050
7,400 SF	3	0.80	\$25.30	\$.0034

Consideration of Other Rate Structures

While the Density of Development rate basis is generally supported and accepted, it is still worthwhile to consider alternatives that might address the equity issues that the Density of Development structure creates. The City could consider a fee structure that administers charges based on actual, **measured impervious surface area** (Option 1) rather than using ranges of gross square footages with a density factor applied. This impervious-based approach is also known as the equivalent service unit, or ESU approach).

The City could also incorporate a **runoff coefficient** (Option 3). This approach would require a relatively extensive data collection effort on the part of the City. It is also less defensible as a fee basis because it incorporates physical land characteristics over which the customer has minimal control.

While administratively simple compared to an impervious-area approach, an approach based on **land use** (Option 4) is typically used only when property-specific data is unavailable.

Trip generation (Option 5), while a supportable means of recovering costs related to water quality, provides little if any advantage over impervious surface area at greater administrative effort and associated cost. A trip generation rate structure should be reserved for communities that primarily deal with water quality issues (more so than water quantity issues).

RECOMMENDATIONS

An ideal fee basis creates a standard of charging that quantifies how the amount of impervious surface area impacts the environment through flooding, changes in water quality, and habitat degradation. Therefore, the fee structure basis should proportionately charge customers their share of the system's cost burden and provide an equitable, defensible means of cost recovery. The City's current rate structure generally meets these criteria by charging more for a higher percentage of assumed impervious surface area to total surface area for non-residential parcels. However, to address previously noted equity issues at the edges of the area ranges, we recommend the City consider implementing an ESU rate structure, which is outlined below. As mentioned earlier in this discussion, the City will need to weigh the increase in equity achieved through a revised rate structure against the cost to compile the needed data and administer the charge.

Equivalent Service Unit Approach (Option 1)

The rate itself is most commonly calculated as a dollar amount per ESU. This rate structure would improve the equity over that of the City’s existing rate structure by charging each non-residential property based on their actual measured impervious surface area.

Non-Residential Properties

The charge basis for all non-residential customer types is generally actual measured impervious surface area, expressed as a number of ESUs (a single ESU representing the average single-family residential customer). In order to implement this rate structure shift the City would need to gather data for measured impervious surface area on all non-residential properties.

As an example, assume that the average single-family parcel has 3,000 impervious square feet. If a commercial parcel had 12,000 impervious square feet, that parcel would be charged for 4 ESUs (12,000 divided by 3,000), as shown in **Figure 1** below.

Single Family Parcels

Rather than compute ESUs for every single-family parcel, as a simplification, it would be possible to group them into rate tiers. For example, single family parcels could be grouped into “Small”, “Medium”, “Large”, and “Measured” impervious footprints. Parcels with comparatively large impervious footprints, the “Measured” tier, would be charged like other developed property – based on the measured amount of impervious surface area. However, implementation of even a hybrid approach would require the same initial data collection to determine tier placement for each property, without significantly improving equity among rate payers.

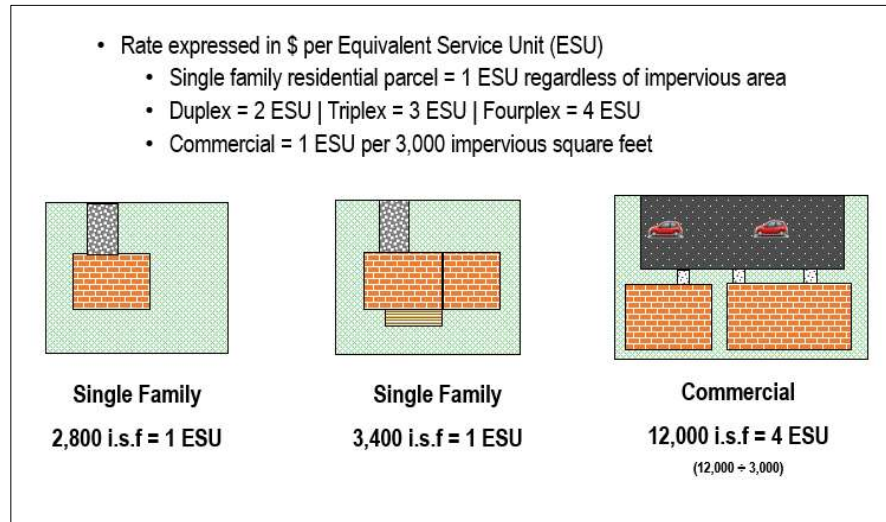
To minimize administrative and data collection costs, it is recommended that the City continue to charge a uniform rate for single family residential customers.

Summary

It is recommended that the City apply the ESU approach for non-residential properties and charge a uniform rate for single family residential customers. The ESU value to be incorporated into the non-residential properties (e.g., 3,000 impervious square feet) would be determined by using an average amount of assumed impervious surface area per developed residential property (based on a relevant sample size within the City). All single-family properties would have the same, flat charge.

It is important to note that the City could compile needed impervious data over a period of time, and schedule the transition to an ESU approach, if desired, for later years.

Figure 1. ESU Rate Structure Example (Assuming 1 ESU = 3,000 impervious square feet)



STORMWATER RATE CREDITS & ADJUSTMENTS

ISSUE

This paper discusses when it may be reasonable (or required) to provide rate credits or adjustments for Stormwater Management utility customers who mitigate their stormwater impacts – and the rational basis for such credits.

EXISTING OREGON CITY RATE CREDITS & ADJUSTMENTS

The City of Oregon City currently grants a couple types of rate credits and adjustments, as outlined in Oregon City Municipal Code (OCMC), Section 13.16.100 *Exemptions, reductions and appeal*. The code language is shown below.

(1) Vacant and unimproved properties.

Vacant and unimproved properties within the city are exempt from the charges in Section 13.16.050;

(2) Stormwater retention.

Any other person seeking an exemption or reduction in the storm drainage fee, or appealing therefrom, may do so pursuant to a demonstration to the city manager or the manager's designee that the public storm drain service does not receive stormwater from property used or occupied by that person. Such demonstration shall include evidence of legal disposal of stormwater to a private retention system, private storm drain system, public water body, or other receiving facility.

RATE CREDIT METHODOLOGY

There are several elements to review when considering the implementation of a credit(s) program:

- “Should the City offer rate credits?” If yes, “How much should the credit(s) be?”
- “Should credits be offered to single family residential properties, or just non-single family properties?”
- “Should credits be given for meeting current development requirements?” Or, “Should rate credits only be given for exceeding current development requirements?”
- “What activities could warrant a rate credit?”

Should the City offer Rate Credits?

When considering if, and how much to charge or credit different types of customers, it is important to remember that a storm drainage rate is a fee for service, not a tax. As such, the level of a customer's charge must somewhat relate to that customer's proportionate share of the utility's costs. Overly “generous” credit policies which provide credits that are not cost-based have the potential to move a utility away from the rational linkage between service delivered and the fee amount, so the utility

should bear in mind the financial ramifications, as well as the equity and legal defensibility of any existing or proposed credits.

How Much Should the Credit(s) Be?

A Stormwater Management utility's service to its customers and the community can be analyzed in two functional categories: controlling and reducing stormwater runoff (i.e., water quantity), and controlling and managing pollutants (i.e., water quality). The broader questions to address in establishing credits are (1) whether a rate payer helps the utility reduce its costs, or to avoid additional costs, by providing certain mitigation measures in these two functional areas, and (2) if yes, how much of a cost savings is provided. Comparatively, properties with on-site mitigation have a reduced effect on the public system compared to similar properties lacking this mitigation. Therefore, it might be argued that to the extent that such facilities reduce costs to the utility, they may warrant a rate credit. In contrast, granting rate credits for on-site activities that do not reduce utility costs simply reduces the amount of resources available for basic services to the remainder of the customer base.

Should Credits be Offered to Single Family Properties, or Just Non-Single Family Properties?

Stormwater Management utilities often exclude single family residential customers from a credit program (if credits are offered at all) due to the administrative burden needed to maintain such a system. The City currently offers credits to residential properties, with qualifying retention facilities. The City may wish to review the administrative time and cost associated with providing credits to all customers, even residential customers.

Should Credits be Given for Simply Meeting Current Development Requirements?

Rate credits may be structured to reward customers who provide mitigation that meets or exceeds current development standards, while offering lesser or no credits for mitigation that does not meet or exceed current development standards. Currently, the OCMC does not offer credits for properties that develop stormwater facilities that meet or exceed development standards.

It could be argued that the cost of meeting current City standards and constructing on-site mitigation should be considered a cost of developing within the service area, with no offsetting credits or assistance, since on-site mitigation only partially neutralizes the impact of developing the property in the first place.

What Activities Could Warrant a Rate Credit?

Once it has been determined if credits will be provided for, and if qualifying applicants must meet and or exceed development standards, the next logical question is, "What activities could warrant a rate credit?" We recommend that the City evaluate the overall amount of revenue forgone by offering credits and compare that to the cumulative cost savings associated with the credit programs. Rate credits for on-site mitigation are not required but are discussed in the following sections.

ACROSS THE INDUSTRY

A review of potential credit approaches reveals a number of alternatives used across the industry.

On-site Retention and / or Detention

Many jurisdictions allow credits for developments that provide on-site retention and or detention facilities as a condition of development, often maintaining such facilities as well.

Low Impact Development, Green Building, and Rainwater Harvesting

Low impact development (LID) best management practices (BMPs), such as rainwater harvesting, permeable pavement, bioretention swales and rain gardens could also be worthy of credits. Other LID BMPs, such as vegetated roofs, may change the effective impervious area of a development or home if properly maintained because they reduce and filter runoff.

Green building techniques include site planning to take greater advantage of natural site features, achieving Leadership in Energy and Environmental Design (LEED) or Built Green certification, planting drought-resistant native landscaping, amending soils with compost, reducing impervious surface area, minimizing site disturbance during development, and previously noted LID features. Implementing these techniques will result in increased natural resource conservation, lower home operating costs, and better stewardship of the City's natural environment. Other than its LID aspects, green building techniques are not strongly linked to a reduction in Stormwater Management utility costs. Aspects that could be directly related to smaller service requirements are the minimization of impervious surface area and improved water quality.

A credit for LID would recognize the fact that effective impervious area can be much smaller than the impervious surface area that is measured from aerial photographs (due to roof rainwater collection systems, permeable paving, vegetated roofs, etc.).

Dedicated Open Space

Developments may incorporate design techniques that concentrate residences or other buildings in a compact area of the development site (lot clustering) and provide open space and natural areas elsewhere, protected by an easement. Such techniques can reduce runoff and mitigate surface water quality issues.

Open space developments have many benefits in comparison to the conventional subdivisions that they replace: they can reduce impervious surface area, surface water pollutants, construction costs, grading, and the loss of natural areas. In addition to the minimization of impervious surface area, the preserved natural areas and tree canopy can significantly mitigate the surface water runoff created by the buildings onsite. Therefore, although affected by the slope characteristics of the property, the preserved portion of the site acts to reduce the effective impervious area of the development and provides a meaningful benefit to the public system when runoff is adequately dispersed.

Rate Penalties

Rate penalties have been considered in other agencies to address private surface water management facilities that are not being properly maintained to City standards. In those locations, it has been concluded that simply offering a rate credit is not effective at encouraging a majority of customers to comply with utility design and maintenance standards.

A basic rationale for a rate penalty may be that when a property does not maintain its on-site infrastructure to a minimum standard, it can create additional inspection, maintenance, and or capital costs that must be borne by the City. If no action is taken to correct deficient infrastructure, that could create a higher risk of localized flooding or water contamination events, which can also create additional costs.

POLICY CHOICES

Rate Credit Framework

Table 1 summarizes the key policy items that City stakeholders should agree on, before revisiting which activities should qualify for a rate credit.

Table 1. General Rate Credit Policy Items for Discussion

Policy Items for Discussion		
1	Should the City offer rate credits?	Should rate credits be offered at all?
2	Should credits be offered to single family properties?	In our experience, rate credits are rarely offered to single family properties due to the administrative burden. The exception would be low-income, senior citizen exemptions.
3	How much should the rate credit(s) be?	Maximum credit (typically expressed as a percentage) should be analytically based, but be simple enough that it is feasible to implement.
4	What level of achievement qualifies for a rate credit?	Are credits offered for meeting regulations? Or only offered for properties that exceed regulations?
5	What activities could warrant a rate credit?	In our experience, rate credits are typically related to one of the following: onsite retention / detention; dedicated open spaces; or occasionally LID.

Qualifying Activities within the Rate Credit Framework

Table 2 summarizes the activities within the service area that the City currently provides credits for. The City should review and consider whether these credit programs align with current Stormwater Management utility goals and priorities.

Table 2. Activities Currently Qualifying for a Rate Credit or Penalty

#	Program	Currently Offered by the City?	Amount of Current Credit
1	Vacant, unimproved properties	Yes	100%
2	Onsite Retention	Yes	100%

RECOMMENDATIONS

Develop Maximum Rate Credit Percentage to Offer for Qualifying Activities

Many of the Stormwater Management utility's costs are essentially "fixed" and do not decrease no matter what services customers provide on-site. As a first step, we recommend that the City determine the portion of program costs which can be reduced by the on-site activities of the customer base. Once an allocation of program revenue requirements between fixed, or "base," program costs, and variable, or "use," program costs has been made, these component shares of the Stormwater Management utility charge can be determined.

The utility will then be able to determine a theoretical maximum credit to be provided for qualifying on-site mitigation. The above recommendations ensure that properties eligible for rate credits would be reducing the average cost of Stormwater Management utility operations, as well as possibly allowing the City to delay capital projects. As a result, the utility would be able to reduce its costs by implementing the recommended credit policies. The maximum credit approach is more easily applied to an ESU-based rate structure (see Issue Paper #2), but could be considered under the City's existing approach as well.

This maximum credit approach could apply to any or some of the following activities, and should not be "stackable":

- Onsite Retention / Detention Facilities;
- Drainage Basis Plans; and
- Water Treatment / Individual NPDES Permit Holders.

An impervious-based approach is philosophically charging for the impact of developed area on increased runoff. As such, it is not consistent with that approach to charge undeveloped land. Vacant developed property should be charged, as it does generate runoff.

A credit approach based on on-site mitigation would not preclude the City from fully exempting low-income, senior customers.

LOS 2: Cash Funded

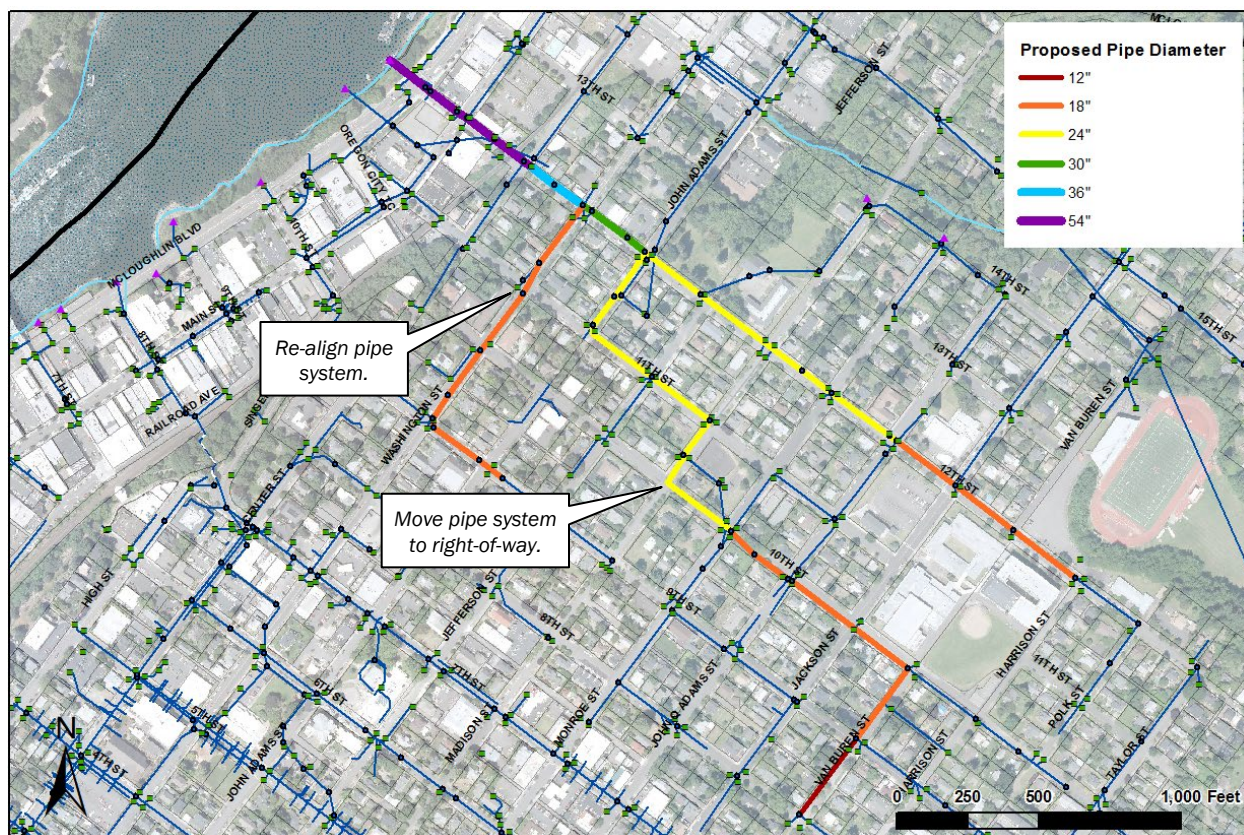
CUSTOMER	EXISTING	YEAR 1	YEAR 2	YEAR 3	SUM
	\$10.86	\$12.54	\$14.48	\$16.73	
Pioneer Ridge Apartments (297 DU)	\$3,225	\$3,724	\$4,301	\$4,969	
<i>Yearly Increase</i>		\$499	\$576	\$668	\$1,743
Fred Meyer Shopping Center (270 DU)	\$2,932	\$3,386	\$3,910	\$4,517	
<i>Yearly Increase</i>		\$454	\$524	\$608	\$1,585
Metro Transfer Station (134 DU)	\$1,455	\$1,680	\$1,940	\$2,242	
<i>Yearly Increase</i>		\$225	\$260	\$302	\$787
Living Hope Church (78 DU)	\$847	\$978	\$1,129	\$1,305	
<i>Yearly Increase</i>		\$131	\$151	\$176	\$458
Gardiner Middle School (76 DU)	\$825	\$953	\$1,100	\$1,271	
<i>Yearly Increase</i>		\$128	\$147	\$171	\$446
Post Office (57.6 DU)	\$626	\$722	\$834	\$964	
<i>Yearly Increase</i>		\$97	\$112	\$130	\$338
Providence Willamette Falls II (53 DU)	\$576	\$665	\$767	\$887	
<i>Yearly Increase</i>		\$89	\$103	\$119	\$311
OC Evangelical Church (37.7 DU)	\$409	\$473	\$546	\$631	
<i>Yearly Increase</i>		\$63	\$73	\$85	\$221
Park Place Evangelical Church (16.8 DU)	\$182	\$211	\$243	\$281	
<i>Yearly Increase</i>		\$28	\$33	\$38	\$99
Kimberly Ann Apartments (9 DU)	\$98	\$113	\$130	\$151	
<i>Yearly Increase</i>		\$15	\$17	\$20	\$53

LOS 2: Cash Funded with ARP

CUSTOMER	EXISTING	YEAR 1	YEAR 2	YEAR 3	SUM
	\$10.86	\$12.19	\$13.68	\$15.35	
Pioneer Ridge Apartments (297 DU)	\$3,225	\$3,620	\$4,063	\$4,559	
<i>Yearly Increase</i>		\$395	\$443	\$496	\$1,334
Fred Meyer Shopping Center (270 DU)	\$2,932	\$3,291	\$3,694	\$4,145	
<i>Yearly Increase</i>		\$359	\$402	\$451	\$1,212
Metro Transfer Station (134 DU)	\$1,455	\$1,633	\$1,833	\$2,057	
<i>Yearly Increase</i>		\$178	\$200	\$224	\$602
Living Hope Church (78 DU)	\$847	\$951	\$1,067	\$1,197	
<i>Yearly Increase</i>		\$104	\$116	\$130	\$350
Gardiner Middle School (76 DU)	\$825	\$926	\$1,040	\$1,167	
<i>Yearly Increase</i>		\$101	\$113	\$127	\$341
Post Office (57.6 DU)	\$626	\$702	\$788	\$884	
<i>Yearly Increase</i>		\$77	\$86	\$96	\$259
Providence Willamette Falls II (53 DU)	\$576	\$646	\$725	\$814	
<i>Yearly Increase</i>		\$70	\$79	\$89	\$238
OC Evangelical Church (37.7 DU)	\$409	\$460	\$516	\$579	
<i>Yearly Increase</i>		\$50	\$56	\$63	\$169
Park Place Evangelical Church (16.8 DU)	\$182	\$205	\$230	\$258	
<i>Yearly Increase</i>		\$22	\$25	\$28	\$75
Kimberly Ann Apartments (9 DU)	\$98	\$110	\$123	\$138	
<i>Yearly Increase</i>		\$12	\$13	\$15	\$40

Appendix F: CIP Fact Sheets

- CIP 1 John Adams Basin Capacity Improvements
- CIP 2 South End Road Stormwater Improvement
- CIP 3 Division Street Infrastructure Improvements
- CIP 4 Rivercrest Neighborhood Infrastructure Improvements
- CIP 5 Harding Boulevard Sanitary Disconnect
- CIP 6 Pebble Beach Pond Retrofit
- CIP 7 Hiefield Court Culvert Improvements
- CIP 8 The Cove Water Quality Improvements



Project Identifier	CIP 1
Project Name	John Adams Basin Capacity Improvements
Detailed Location	Taylor Street to Main Street between 8 th Street and 12 th Street
Model File	Model FU3_JA2.xp
Objective(s) Addressed	Flood Reduction, Aging Infrastructure

Project Background

The primary problems identified in the John Adams basin are flooding and infrastructure age. Secondary problems include mismatched infrastructure and pipes located in private property. Areas near 9th and Monroe Streets and 8th and Van Buren have reported to have flooding in the past. There are several locations where downstream pipe segments are smaller than upstream pipes leading to surcharging and flooding. Modeling of the storm system revealed significant flooding beginning at the 2-year storm event. Pipe sections are currently undersized and will require replacement to alleviate flooding issues.

In addition, the storm pipes in this basin are among the oldest in the City and well past the expected life. Portions of the stormwater system were previously part of a combined stormwater/sanitary system which will be removed.

Project Description

Upsize drainage system in the John Adams Basin by installing 340 LF of 12-inch pipe, 4,000 LF of 18-inch pipe, 2,300 LF of 24-inch pipe, 240 LF of 30-inch pipe, 300 LF of 36-inch pipe, 130 LF of 48-inch pipe (represented as 54-inch in the figure), and 460 LF of 54-inch pipe. Pipe sizing recommendations are based on providing capacity for 25-year peak flows under full build-out conditions. The project includes the installation of an estimated 40 manhole structures, 21 connections to existing structures and 78 catch basins.

It is suspected that much of this basin does not have private stormwater laterals connected to the existing conveyance system. Stormwater runoff from roof drains may be contributing to the sanitary sewer collection system. Existing private stormwater laterals should be connected to the new stormwater system. Properties without stormwater laterals or downspout disconnection may have a combined lateral (sanitary and storm together) which may be addressed through coordination with the sanitary I/I abatement program. The number and cost for private lateral connection is unknown and therefore is not included in the cost estimate but is recommended as part of the CIP.

Design Considerations

Drainage system installation should be coordinated with roadway reconstruction projects to avoid multiple impacts to the same roadway segments. Detailed topographic survey is needed to conduct final engineering evaluation to determine the appropriate invert elevations and pipe diameters to maintain necessary cover depth in this flat terrain. Investigative work prior to design is necessary to determine appropriate handling of private laterals. Planning level design assumes most proposed structures are located near or at the same location as existing structures.

Comprehensive design effort across all four project phases is suggested to maintain continuity in design.

Phase 1 Planning-level Cost Estimate (Outfall to 12th/John Adams)

Capital Expense Total (including contingency)	\$1,656,000
Engineering and Permitting (40%)	\$663,000
Market Climate (10%)	\$166,000
Construction Administration (15%)	\$248,000
Capital Project Implementation Cost Total*	\$2,733,000

Phase 2 Planning-level Cost Estimate (12th/John Adams to 12th/Harrison)

Capital Expense Total (including contingency)	\$1,271,000
Engineering and Permitting (15%)	\$191,000
Market Climate (10%)	\$127,000
Construction Administration (15%)	\$191,000
Capital Project Implementation Cost Total*	\$1,780,000

Phase 3 Planning-level Cost Estimate (12th/John Adams to 8th/Van Buren)

Capital Expense Total (including contingency)	\$1,928,000
Engineering and Permitting (15%)	\$289,000
Market Climate (10%)	\$193,000
Construction Administration (5%)	\$289,000
Capital Project Implementation Cost Total*	\$2,699,000

Phase 4 Planning-level Cost Estimate (12th/Washington to 9th/John Adams)

Capital Expense Total (including contingency)	\$959,000
Engineering and Permitting (15%)	\$144,000
Market Climate (10%)	\$96,000
Construction Administration (5%)	\$144,000
Capital Project Implementation Cost Total*	\$1,343,000

*Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Project cost does not include property or easement acquisitions.

Additional Project Information

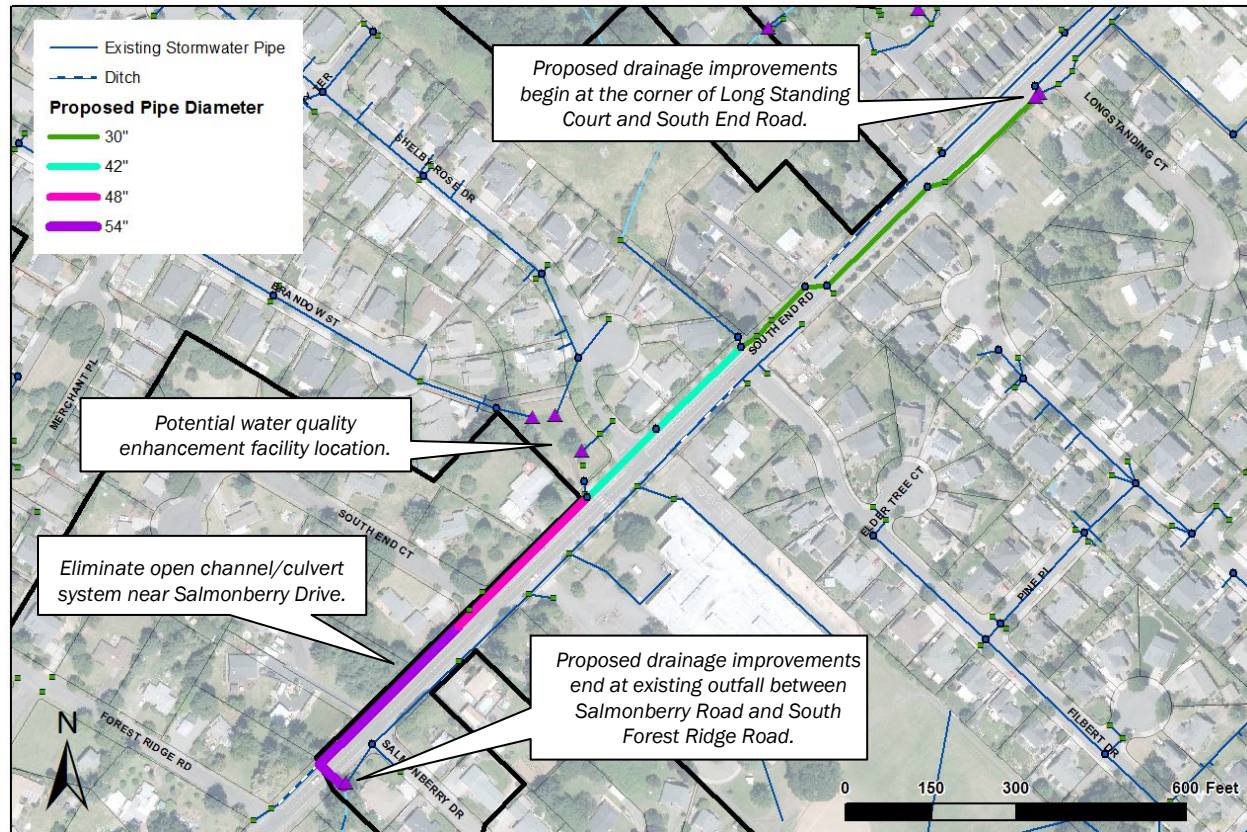
The table below is provided to show the details of the planning level design and estimates for pipe size and invert elevations (this information should be considered planning level only and a formal design and analysis is needed). The table is color coded based on proposed pipe diameter.

Planning Level Infrastructure Data							
Link	Existing Diameter (in)	Proposed Diameter (in)	Proposed Length (ft)	US Node	DS Node	US Invert (ft)	DS Invert (ft)
Phase 1							
804813	12	30	157.0	33520	43469	82.29	72.34
804814	18	30	78.8	33519	33520	92.03	86.51
804815	18	36	124.1	33521	34704_WN_0300	68.67	65.37
806471	18	48	131.0	37118	37139_WN_0100	50.10	45.95
806474	18	54	123.1	37139_WN_0100	37142	45.72	45.03
808623	18	54	41.5	37142	41009	44.93	44.67
808624	18	54	19.1	43300	43301	43.51	43.61
812692	18	54	119.5	41009	43300	44.57	43.61
812695	18	54	158.3	43301	39733	43.51	14.40
812816	18	36	39.8	43469	33521	72.10	68.87
Link54	18	36	132.7	34704_WN_0300	37118	65.33	50.40
Phase 2							
804969	8	24	247.9	33513_JA_0300	33519	115.62	92.23
806396	8	24	444.2	37054	33513_JA_0300	156.65	115.82
806401	8	24	131.5	37059	37054	173.67	156.85
806402	8	24	255.5	37062	37059	199.01	173.87
806406	8	24	30.6	37064	37062	202.22	199.21
Link45	N/A	18	276.4	34692_JA_1300	37087	242.56	238.80
Link46	N/A	18	256.7	37087	33491_JA_0200	238.60	228.79
Link47	N/A	18	259.8	33491_JA_0200	37064	227.98	202.42

Planning Level Infrastructure Data							
Link	Existing Diameter (in)	Proposed Diameter (in)	Proposed Length (ft)	US Node	DS Node	US Invert (ft)	DS Invert (ft)
Phase 3							
800781	18	24	159.3	34313	33514	159.19	152.53
801568	8	12	335.0	33504	33474	257.58	243.99
801573	12	18	15.0	33473	34769	220.25	215.90
804841	12	18	513.2	33475_JA_1000	33473	235.76	220.69
804846	12	18	64.5	33469	33508	185.00	179.71
804848	24	24	150.6	33514	33515	152.33	144.73
804851	18	24	256.1	33515	34191_JA_0100	144.53	116.45
808704	12	18	305.9	33474	33475_JA_1000	243.75	236.34
Link48	12	18	262.9	34769	33469	215.75	185.20
Link49	12	18	225.3	33508	34313	179.51	159.14
Link58	18	24	291.0	34191_JA_0100	34192	116.25	109.60
Link59	12	24	121.6	34192	41014	109.22	101.00
Link60	12	24	192.3	41014	33519	100.71	92.13
Phase 4							
804860	12	18	101.6	33517_WN_0400	33516	178.61	174.95
804861	12	18	211.6	33523	33517_WN_0400	192.64	178.81
804867	12	18	274.3	34311_WN_0500	33523	199.70	192.86
812475	12	18	29.8	36378	34534	163.75	162.54
812477	12	18	198.1	33516	36378	172.70	163.95
812478	12	18	100.6	34534	43051	162.24	159.21
812479	12	18	194.4	43051	43050	159.11	150.99
Link55	12	18	249.5	43050	Node58	150.49	123.22
Link56	12	18	122.1	Node58	Node59	123.02	110.16
Link57	12	18	257.4	Node59	33521	109.96	83.08

Capital Project Fact Sheet

Project Name: South End Road Stormwater Improvement



Project Identifier	CIP 2
Project Name	South End Road Stormwater Improvement
Detailed Location	South End Road between Rose Road and South Forest Ridge Road Structures 33535 to 39582
Model File	Model FU3_SE4.xp
Objective(s) Addressed	Flood Reduction

Project Background

Flooding issues along South End Road were identified during the watershed problem identification workshop and as part of the City asset review. Near Rose Road, the existing pipe system transitions from a 30 Inch pipe down to a 12 Inch pipe, possibly as a prior flow control mechanism. Modeling of the storm system revealed significant flooding, especially in areas where downstream pipe segments were smaller than upstream pipes. Flooding occurs in the open channels when modeled with the 2-year storm event.

Project Description

Replace the existing open channel/culvert system with a closed pipe from Rose Road to the outfall between Salmonberry Drive and South Forest Ridge Road. Upsize and extend the drainage system to convey the 25-year peak flows for full buildout. The project will eliminate the existing open channel/culvert system near Salmonberry Drive.

Planning level design assumes proposed structures will be placed in the same locations as the existing manholes, spaced no more than 400 feet apart. The project includes installation of 800 LF of 30 inch pipe, 380 LF of 42 inch pipe, 325 LF of 48 inch pipe, and 400 LF of 54 inch pipe. The project includes 7 manhole structures, 2 are proposed and 5 existing manholes will be utilized. The project also assumes installation of 7 catch basins with a total of 140 feet of 12-inch connecting laterals to accommodate future road widening.

Capital Project Fact Sheet

Project Name: South End Road Stormwater Improvement

Design Considerations

South End Road is identified as an area for future roadway improvements. The drainage system installation should be planned as part of roadway reconstruction project or drainage system design should account for future roadway widths and curb/sidewalk locations. Detailed topographic survey is needed to conduct final engineering evaluation to determine the appropriate invert elevations and pipe diameters to maintain necessary cover depth in this flat terrain.

The downstream open channel, south of South End Road will require a capacity assessment prior to upsizing. Due to the existing undersized pipe system, the open channel is currently not experiencing peak flows and may need additional stabilization to manage peak flows.

This project has also been identified as a possible location for a water quality enhancement facility, which has been included in the cost estimate as a lump sum item. The enhancement could include an upgrade to the tract adjacent to South End Road or the installation of dispersed facilities along the roadway alignment.

Planning-level Cost Estimate

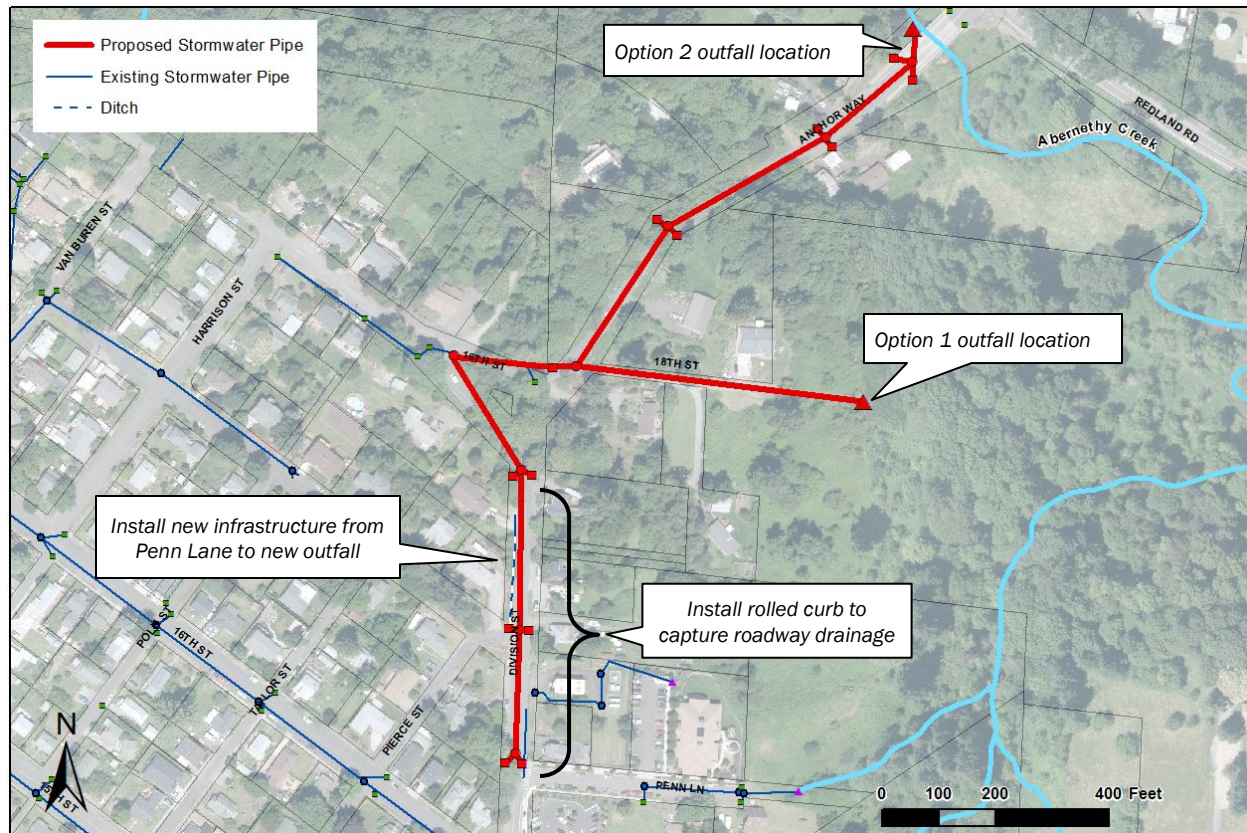
Capital Expense Total (including contingency)	\$2,292,000
Engineering and Permitting (15%)	\$344,000
Market Climate (10%)	\$229,000
Construction Administration (15%)	\$344,000
Capital Project Implementation Cost Total*	\$3,209,000

* Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Project cost does not include property or easement acquisitions.

Additional Project Information

The table below is provided to show the details of the planning level design and estimates for pipe size and invert elevations (this information should be considered planning level only and a formal design and analysis is needed).

Planning Level Infrastructure Data							
Link	Existing Diameter (in)	Proposed Diameter (in)	Proposed Length (ft)	US Node	DS Node	US Invert (ft)	DS Invert (ft)
800101	Open Channel	30	220	38963	30628	450.92	449.2
800102	Open Channel	30	60	40224	28962	448.92	448.12
800823	30	30	250	33801	33800	446.64	440.73
800824	18	30	35	30628	33801	448.12	446.74
801783	12	30	40	33800	42854	440.52	439.65
802787	18	30	35	38962	38963	449.2	448.92
Link31	12	30	160	42854	34365_SE_1100	439.45	435.74
Link41	54	42	380	34365_SE_1100	34761_SE_0900	434.74	431.57
Link42	48	48	325	34761_SE_0900	38973_SE_0800	431.07	428.38
Link43	Open Channel	54	340	38973_SE_0800	Node75	427.88	426.16
Link44	36	54	60	Node75	Node76	425.95	425.66



Project Identifier	CIP 3
Project Name	Division Street Infrastructure Improvements
Detailed Location	Division Street from Penn Lane to S Anchor Way
Model Connection	N/A
Objective(s) Addressed	Insufficient Infrastructure

Project Background

The City has identified insufficient infrastructure along Division Street near Penn Lane. Roadway drainage is currently managed through a series of ditches and culverts routing flow northward down Division Street, Anchor Way and 18th Street. Roadways occasionally experience flooding.

Project Description

The proposed project would pipe runoff from Division, Anchor Way and the associated catchments to one of two potential outfall locations toward Abernethy Creek. Both options include the same proposed infrastructure from Penn Lane downstream to the intersection of 18th Street and Anchor Way.

From the 18th Street and Anchor Way intersection, the Option 1 outfall location routes the storm system east of Anchor Way along 18th Street towards Abernethy Creek. 18th Street is an unimproved easement or existing right-of-way which will enable pipe and outfall to be constructed. Site conditions at the east end of 18th Street appear favorable for an outfall location. With this option, the proposed infrastructure will include the installation of approximately 1400 LF of 12-inch pipe, 7 catch basins with an associated 140 LF of inlet leads, 4 manholes, and an outfall structure. The project will require installation of rolled asphalt curbs along both sides of Division Street from Penn Lane to 18th Street.

The Option 2 outfall location routes the storm system northeast along Anchor Way towards the outfall at Abernethy Creek. In addition to the infrastructure necessary for option 1, this option will require the installation of an additional 500 LF of 12-inch pipe, 6 catch basins with an associated 120 LF of inlet leads, and 3 manholes.

Design Considerations

Option 1 would require slope stability analysis to verify that the proposed outfall would not contribute to hillside erosion. Option 2 is the preferred option because it uses an existing right-of-way alignment. Option 2 could also include improvements to address drainage concerns and pavement condition along Anchor Way.

Only preliminary calculations have been performed to identify conceptual pipe sizing. Design should verify pipe capacity needs, pipe location in right of way, outfall location and limits of rolled curb.

Detailed topographic survey is needed to conduct final engineering evaluation to determine the appropriate invert elevations and pipe diameters to maintain necessary cover depth.

Planning-level Cost Estimate (Option 1 Outfall Location)

Capital Expense Total (including contingency)	\$550,000
Engineering and Permitting (15%)	\$82,000
Market Climate (10%)	\$56,000
Construction Administration (15%)	\$82,000
Capital Project Implementation Cost Total*	\$770,000

Planning-level Cost Estimate (Option 2 Outfall Location)

Capital Expense Total (including contingency)	\$701,000
Engineering and Permitting (15%)	\$105,000
Market Climate (10%)	\$70,000
Construction Administration (15%)	\$105,000
Capital Project Implementation Cost Total*	\$981,000

* Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Does not include property or easement acquisitions.

Additional Project Information

Images of the study area are included below.



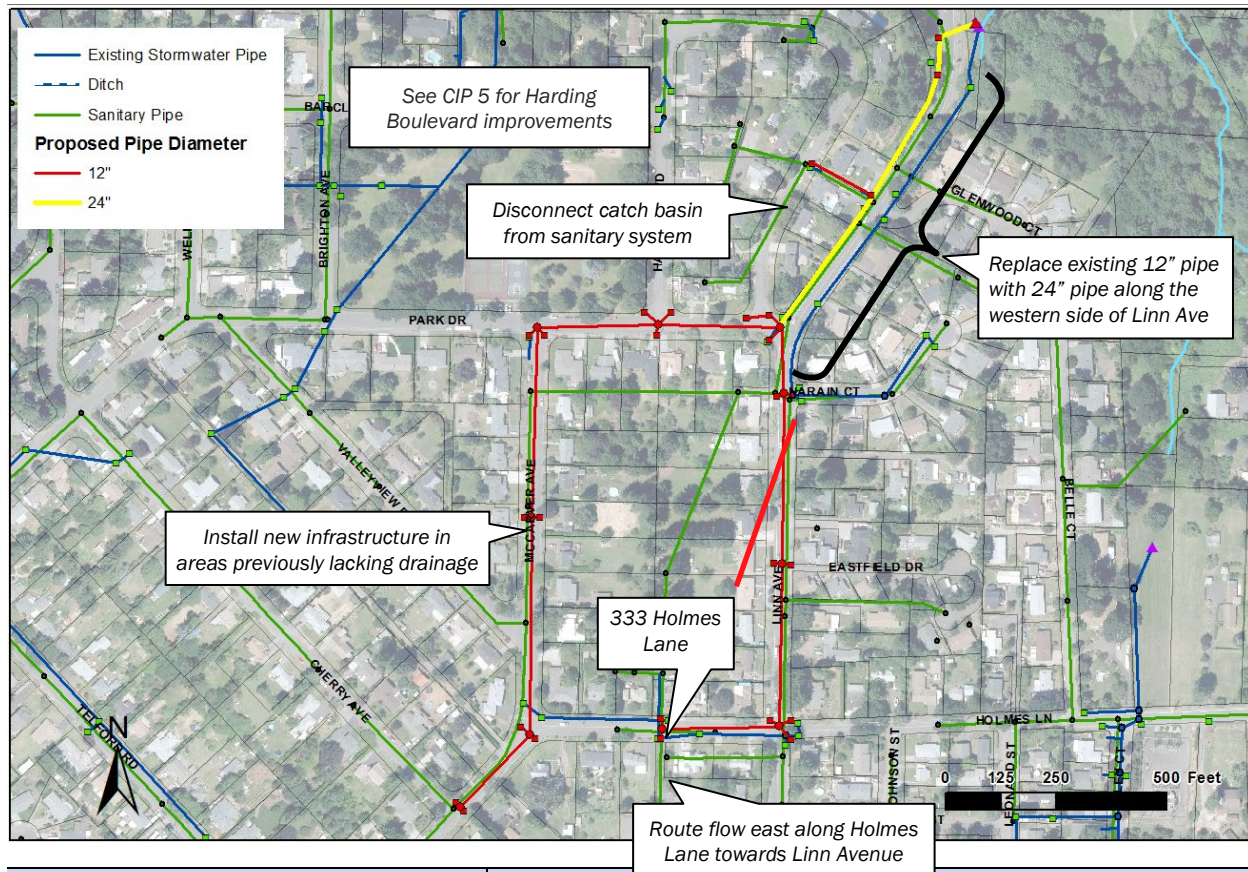
Figure 1: Option 1 outfall location



Figure 2: View from Option 2 outfall location west towards Anchor Way

Capital Project Fact Sheet

Project Name: Rivercrest Neighborhood Infrastructure Improvements



Project Identifier	CIP 4
Project Name	Rivercrest Neighborhood Infrastructure Improvements
Detailed Location	Linn Avenue between Holmes Lane and Park Drive
Model File	N/A
Objective(s) Addressed	Insufficient Infrastructure

Project Background

Portions of the Rivercrest Neighborhood lack a storm drain system. Drainage along Holmes Lane between McCarver and Linn Avenue currently discharges to an open channel near the northwest corner of 333 Holmes Lane. This open channel flows, to the north, through multiple backyards approximately along the existing sanitary sewer line and terminates near the intersection of Linn Ave and Park Drive. Two existing 12-inch stormwater pipes, providing stormwater conveyance along Linn Avenue north of Park Drive do not have capacity for the catchment based on modeling results.

Project Description

New storm infrastructure is proposed along Linn Ave, McCarver Avenue, Holmes Lane and Park Drive. The drainage discharging at 333 Holmes Lane will be rerouted east along Holmes Lane to a structure at the intersection with Linn Avenue where it will flow north towards Park Drive. The existing conveyance line in Linn Avenue will be replaced with a single, larger pipe along the west side of the road which will discharge into Singer Creek. The western side of Linn Avenue is the preferred drainage route because it has the wider roadway shoulder.

In addition, the single catch basin on Harding Blvd will be disconnected from the sanitary sewer and routed south east between the two homes to Linn Avenue.

The project includes 2,800 LF of 12-inch pipe along McCarver Avenue, Park Drive, Holmes Ln, and Linn Avenue and 900 LF of 24-inch pipe on Linn Avenue north of Park Drive. A total of 10 manhole structures will be installed, with the manhole at the intersection of Linn Avenue and Holmes Ln reaching a depth of approximately 15-20 feet. 27 catch basins and 440 feet of 12-inch inlet leads will also be installed.

Design Considerations

Capital Project Fact Sheet**Project Name: Rivercrest Neighborhood Infrastructure Improvements**

Only planning level calculations have been performed to identify conceptual sizing. Detailed topographic survey is needed to conduct final engineering evaluation to determine the appropriate invert elevations and pipe diameters to maintain necessary cover depth in this flat terrain.

Outfall inspections may be necessary for the proposed 24" pipe across Linn Avenue due to the increased flow associated with the additional infrastructure. A more suitable outfall location may be considered if the current proposed location is not stable enough to accommodate the larger peak flows.

Coordination with the SS Master Plan is recommended to avoid utility conflicts and multiple impacts to the same roadway segments.

Planning-level Cost Estimate

Capital Expense Total (including contingency)	\$1,734,000
Engineering and Permitting (15%)	\$260,000
Market Climate (10%)	\$174,000
Construction Administration (15%)	\$260,000
Capital Project Implementation Cost Total*	\$2,428,000

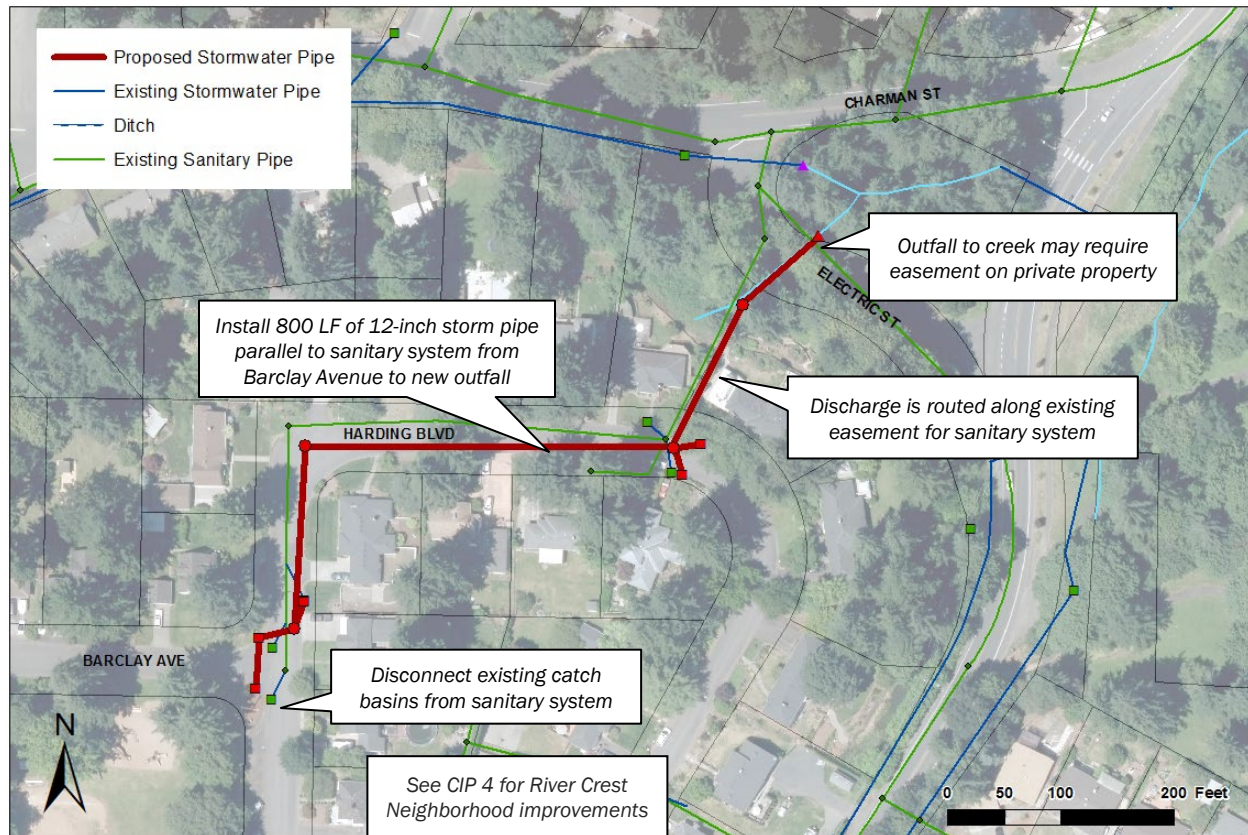
* Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Project cost does not include property or easement acquisitions.

Additional Project Information

Figure 1: Drainage outfall location behind 333 Holmes Lane

Capital Project Fact Sheet

Project Name: Harding Boulevard Sanitary Disconnect



Project Identifier	CIP 5
Project Name	Harding Boulevard Sanitary Disconnect
Detailed Location	Harding Blvd from Barclay Ave to Linn Ave
Model File	N/A
Objective(s) Addressed	Disconnect stormwater from sanitary collection system

Project Background

Five catch basins are currently connected to the sanitary system along Harding Boulevard north of Barclay Avenue. This area has been identified as a contributor to sanitary sewer infiltration and inflow. This area is adjacent to CIP 4, which includes the installation of new stormwater infrastructure in the River Crest Neighborhood.

Project Description

Five catch basins will be disconnected from the sanitary collection system, redirecting roadway runoff and associated drainage to a proposed stormwater conveyance system with an outfall to Singer Creek. 800 LF of 12-inch will be installed parallel to the existing sanitary system. The project will include 4 manholes and assumes installation of 5 inlet structures with a total of 100 LF of 12-inch connecting laterals.

Design Considerations

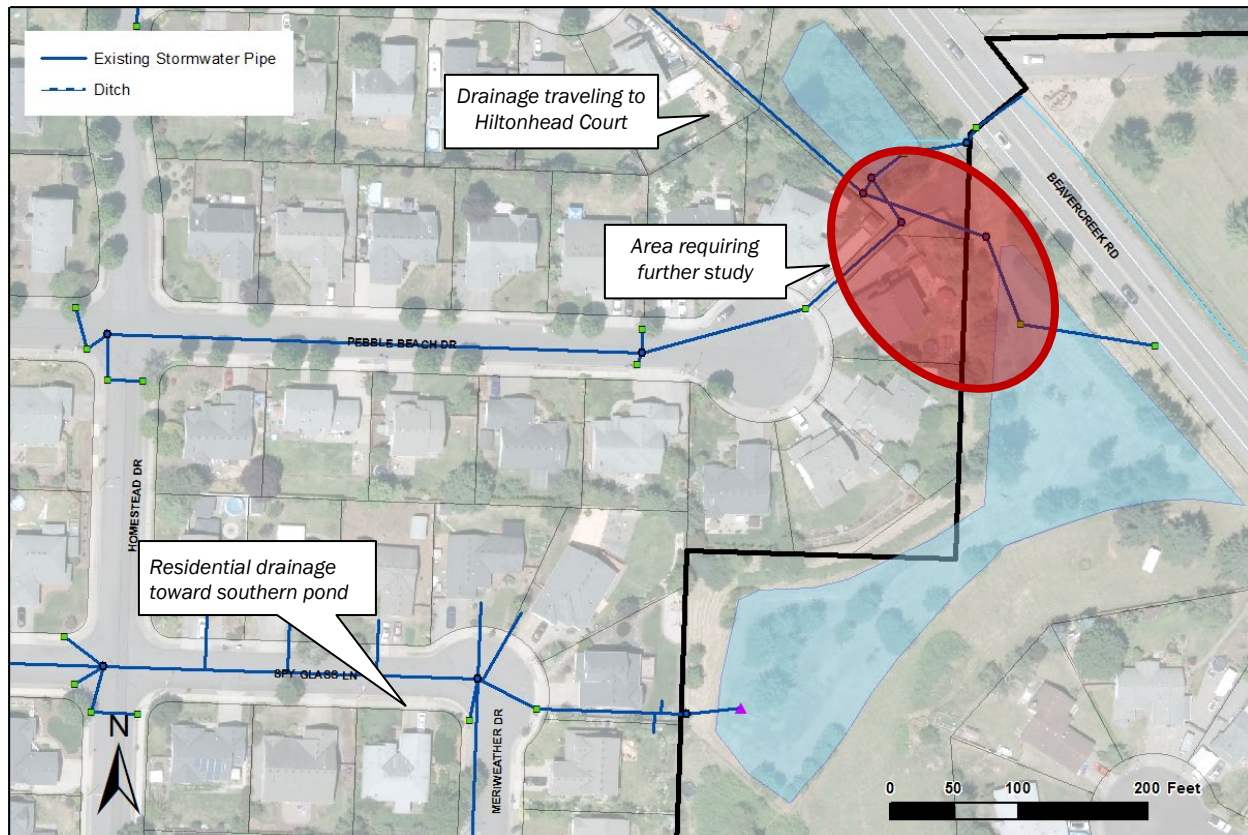
The outfall will discharge to private property at the corner of Electric St and Linn Ave. An easement exists between 170 Harding Blvd and 178 Harding Blvd for the sanitary system which will be used for the new stormwater pipes. However, a new easement may be needed for the outfall at Electric St. A new easement may be necessary for the private property outfall north of Electric Street.

Detailed topographic survey is needed to conduct final engineering evaluation to determine the appropriate invert elevations and pipe diameters to maintain necessary cover depth in this flat terrain. Final design will need to address potential utility conflicts and proposed catch basin locations.

Capital Project Fact Sheet**Project Name: Harding Boulevard Sanitary Disconnect**

Planning-level Cost Estimate	
Capital Expense Total (including contingency)	\$331,000
Engineering and Permitting (15%)	\$50,000
Market Climate (10%)	\$33,000
Construction Administration (15%)	\$50,000
Capital Project Implementation Cost Total*	\$464,000

**Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Does not include property or easement acquisitions.*



Project Identifier	CIP 6
Project Name	Pebble Beach Pond Retrofit
Detailed Location	Near 15083 Pebble Beach Road
Model Connection	N/A
Objective(s) Addressed	Flooding
Project Background	

Two stormwater management ponds are located near Thayer Court, adjacent to Beaver Creek Road. During the watershed problem identification workshop, City staff indicated that the ponds are not working as intended with only one pond filling during storm events. During a site visit in March 2017, the small pond appeared to have a plugged outlet, as the water elevation was high and the emergency overflow was moving water into the outlet structure. The larger pond did not have any standing water and does not appear to provide detention or flow control.

Residential stormwater from the south contributes to the larger pond and from one inlet along Beaver Creek Road. Most Beaver Creek Road runoff contributes to the smaller pond. A portion of residential stormwater from Pebble Beach Drive discharges to the outfall structure of the small pond and therefore receives no treatment via the pond. The two ponds are isolated hydraulically but share a manhole, downstream of each pond, prior to being conveyed northwest toward Hiltonhead Court. Both ponds have deep risers in the emergency overflow structure with an orifice at the bottom.

Project Description

These two ponds could be optimized/retrofit to improve water quality treatment and flow control. The goals of optimization include: better utilization of storage for flow control, increase water quality treatment capacity and improve maintenance access. Further study is recommended for these ponds to determine the nature of the inputs and existing infrastructure to appropriately inform a design that would increase water quality treatment, reduce flooding, reduce maintenance and provide some flow control by updating the orifice structures.

Design Considerations

There are no design recommendations.

Planning-level Cost Estimate

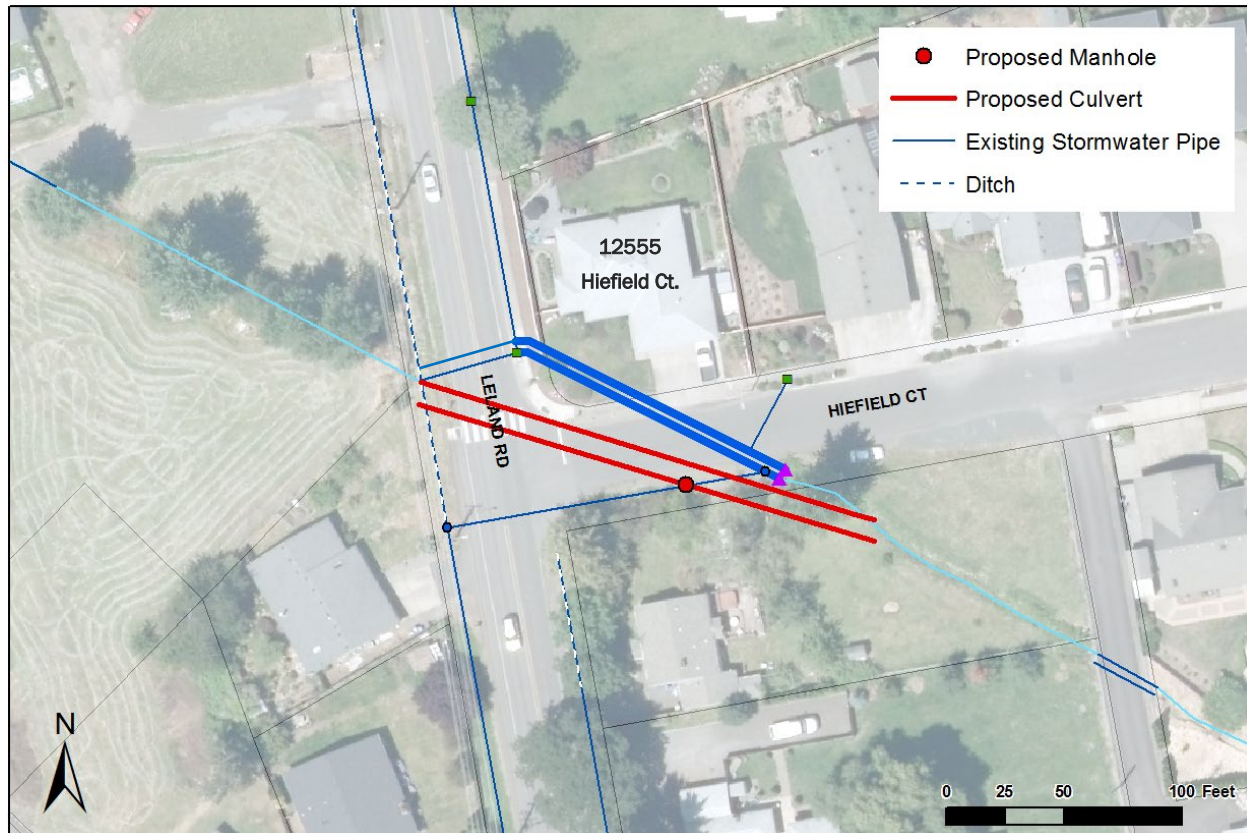
Capital Expense Total (including contingency)	\$460,000
Engineering and Permitting (30%)* *	\$138,000
Market Climate (10%)	\$46,000
Construction Administration (15%)	\$69,000
Capital Project Implementation Cost Total*	\$713,000

* Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Cost does not include property or easement acquisitions.

** Engineering and Permitting is 30% to allow for hydrologic and hydraulic assessment prior to engineering.

Capital Project Fact Sheet

Project Name: Hiefield Court Culvert Improvements



Project Identifier	CIP 7
Project Name	Hiefield Court Culvert Improvements
Detailed Location	Culvert crossing at Hiefield Court and Leland Road
Model File	N/A
Objective(s) Addressed	Localized flooding
Project Background	

The two existing culverts across Hiefield Court and Leland Road are prone to flooding at the inlet along Leland Road. The dual culvert begins on the west side of Leland Road with two 24" pipes. The culverts appear to have very low slope and minimal cover. The north 24" inch drains to a large structure at the east side of Leland Road where the system transitions to 30". The 30" pipe conveys runoff under the corner of the adjacent private lot to the outfall on the south side of Hiefield Court. The south 24" pipe drains to an inlet structure and is parallel to the north line. A 30" pipe exits the inlet structure and parallels the north line to the outlet. Just before the outlet a 24" pipe enters the southern 30" as shown in the figure above.

The inlet of the two 24" culverts is not optimized to reduce inlet losses and the sharp bend in the structure on the east side of Leland Road does not optimize the movement of water downstream. Updating the channel alignment and reducing entrance/structure losses may alleviate the flooding currently occurring along the west side of Leland Road.

Project Description

Potential improvements include:

- Updating the inlet with wing walls to reduce head loss and reworking the pipe alignment such that the channel is in line with the culverts to facilitate the movement of water downstream,
- Adjusting the location of the 24" pipe that connects to the 30" such that the pipe has a separate outfall to the open channel drainage system.
- Replacing existing culverts with upsized culverts as shown in figure above.

The project should include a detailed hydrologic and hydraulic analysis (model) of this culvert system to determine the existing capacity and the optimal configuration and ensure that the proposed design can convey the design event for the contributing catchment.

Capital Project Fact Sheet**Project Name: Hiefield Court Culvert Improvements****Design Considerations**

Any overtopping of the culverts should be directed to Hiefield Court and away from the home at 12555 Hiefield Court. Limited cover over the culvert may be a considerable design constraint.

Planning-level Cost Estimate

Capital Expense Total (including contingency)**	\$460,000
Engineering and Permitting (25%)	\$138,000
Market Climate (10%)	\$46,000
Construction Administration (15%)	\$69,000
Capital Project Implementation Cost Total*	\$713,000

* Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Does not include property or easement acquisitions.

** Cost estimate based on culvert replacement.

Additional Project Information

Images of the study area are included below.



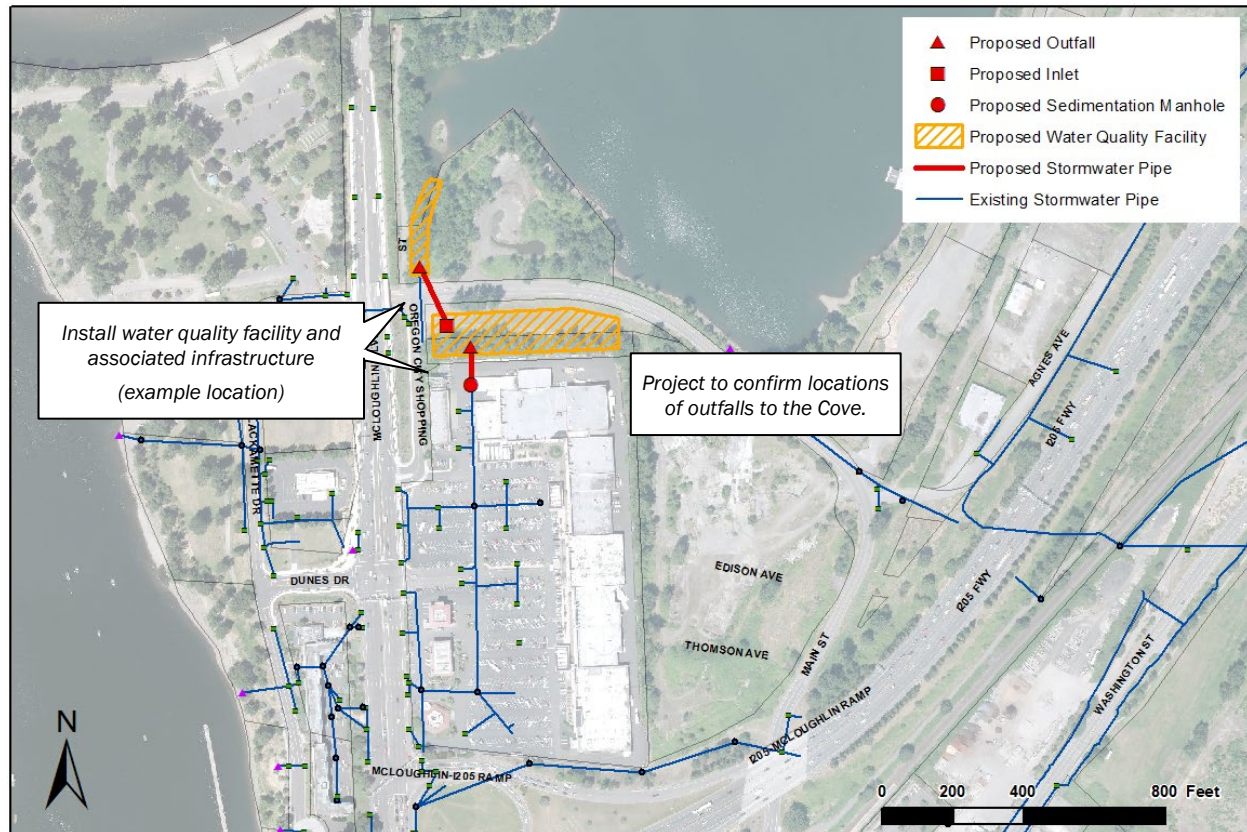
Figure 1: Downstream end of culverts south of Hiefield Court



Figure 2: Inlet of culverts west of Leland Road

Capital Project Fact Sheet

Project Name: The Cove Water Quality Improvements



Project Identifier	CIP 8
Project Name	The Cove Water Quality Improvements
Detailed Location	Linn Avenue between Holmes Lane and Park Drive
Model File	N/A
Objective(s) Addressed	Water Quality

Project Background

Stormwater entering Clackamette Cove is primarily runoff from industrial, commercial and other land use that can generate high pollutant loads. The areas were developed prior to water quality requirements, so the discharge entering the cove is primarily untreated.

Previous studies have identified significant water quality concerns in the cove, including algal blooms. Limited connection to the Clackamas River results in little circulation and turnover which contributes to the water quality concerns.

The area surrounding the cove is of high interest for development and redevelopment, due to the proximity to the rivers and large land parcels. As the surrounding property redevelops, more attention is placed on this water body and its use for recreation and habitat enhancement. Improving water quality from the contributing catchments has become a priority.

Project Description

Water quality treatment of Oregon City Shopping Center, located at the intersection of McLoughlin Blvd and Dunes Dr., will be the primary goal of this project. Treatment may occur along the north sides of the shopping center and/or to the north, across Main Street, prior to the outfall into Clackamette Cove. Preliminary water quality facility sizing, utilizing the BMP sizing tool, for the entire shopping center results in a treatment area of 11,000 square feet.

The water quality area shown in the figure above is not intended to show this size but to provide potential areas for facility placement. Existing onsite drainage infrastructure should be determined prior to formal adoption of where treatment will occur. Treatment of the parking lot drainage will be key to making significant change to the effluent water quality discharging to The Cove, which should be the priority for treatment and rerouting of existing storm infrastructure to the proposed water quality facility.

Capital Project Fact Sheet**Project Name: The Cove Water Quality Improvements****Design Considerations**

The location and depth of existing stormwater infrastructure will be critical to the success of rerouting runoff to a treatment facility. Survey will be required. Wetland delineation and permitting may be needed for the area north of Main St. if wetlands exist in the area identified for a water quality facility.

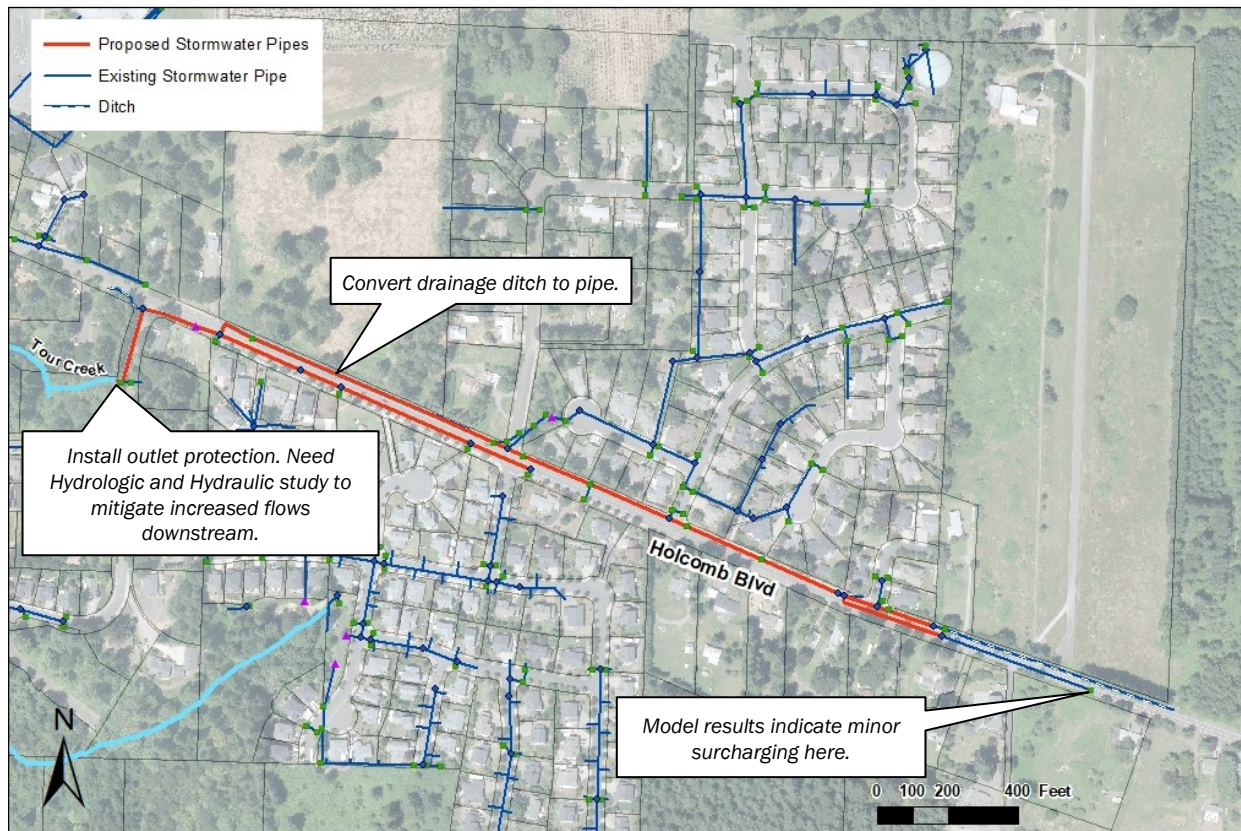
The specific design for the water quality retrofit could include a large regional facility as shown above. Other options include dispersed treatment filters throughout the parking area, a smaller rain garden or planters throughout the contributing drainage basin, or a combination of these. The area shown above is one such concept, developed to establish a cost estimate.

Planning-level Cost Estimate

Capital Expense Total (including contingency)*	\$406,000
Engineering and Permitting (25%)	\$101,000
Market Climate (10%)	\$40,000
Construction Administration (15%)	\$61,000
Capital Project Implementation Cost Total**	\$608,000

*Includes hydrologic & hydraulic modeling and survey. Does not include property or easement acquisitions.

**Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand.



Project Identifier	CIP 9
Project Name	Holcomb Boulevard Capacity Improvements
Detailed Location	Holcomb Blvd from Kittyhawk Ave to Outfall at Tour Creek
Model File	FU3_H01_v2019_25yr.xp
Objective(s) Addressed	Provide conveyance for the 25-year storm event and mitigate for future development

Project Background

Private development at Abernethy Landing recently made stormwater improvements to this stretch of Holcomb, adding a parallel conveyance line tied into the existing drainage system. Hydrologic and Hydraulic analysis of this area has revealed deficiencies in both the recently installed segments, as well as with existing infrastructure to the west. This area has projected future development and potential connections from Park Place Concept area. The Holcomb Boulevard system culminates with discharge to Tour Creek.

Project Description

The project includes the upsizing of approximately 4000 linear feet of pipe, as well as outlet and channel protection for Tour Creek. The new conveyance system will range from 24-inch pipe east of Jada Way and increase to 42-inch pipe at the outlet, as well as upsizing to the drainage line on the south side of Holcomb, from 12- to 15-inches. The project would replace approximately 550 LF of open channel with a closed conveyance system, allowing for future upgrades to Holcomb Boulevard. Portions of the drainage system between Jada Way, and the previously open channel segment are steep (between 4.5 and 12%), causing the upper end of the watershed to drain quickly, but putting added conveyance needs on the lower, flatter, portion of the system.

Design Considerations

Preliminary model results indicate a significant increase to the peak flow to Tour Creek, which warrants further study in order to confirm these results, as well as to provide a basis for mitigating the downstream impacts of the project. Project design should include detailed hydrologic evaluation to predict flow volumes and velocities for the design of outlet/erosion control measures.

Modeling results indicated minor surcharging at most upstream node along south-side main line on Holcomb (see callout) during 25-year event. This segment can be upsized from 15" to 18" to eliminate this surcharging and meet Oregon City design standards for a cost of approximately \$90,000. Final design of system should consider refining pipe size, material, slopes, and depth to find most cost-effective solution to meet design objectives.

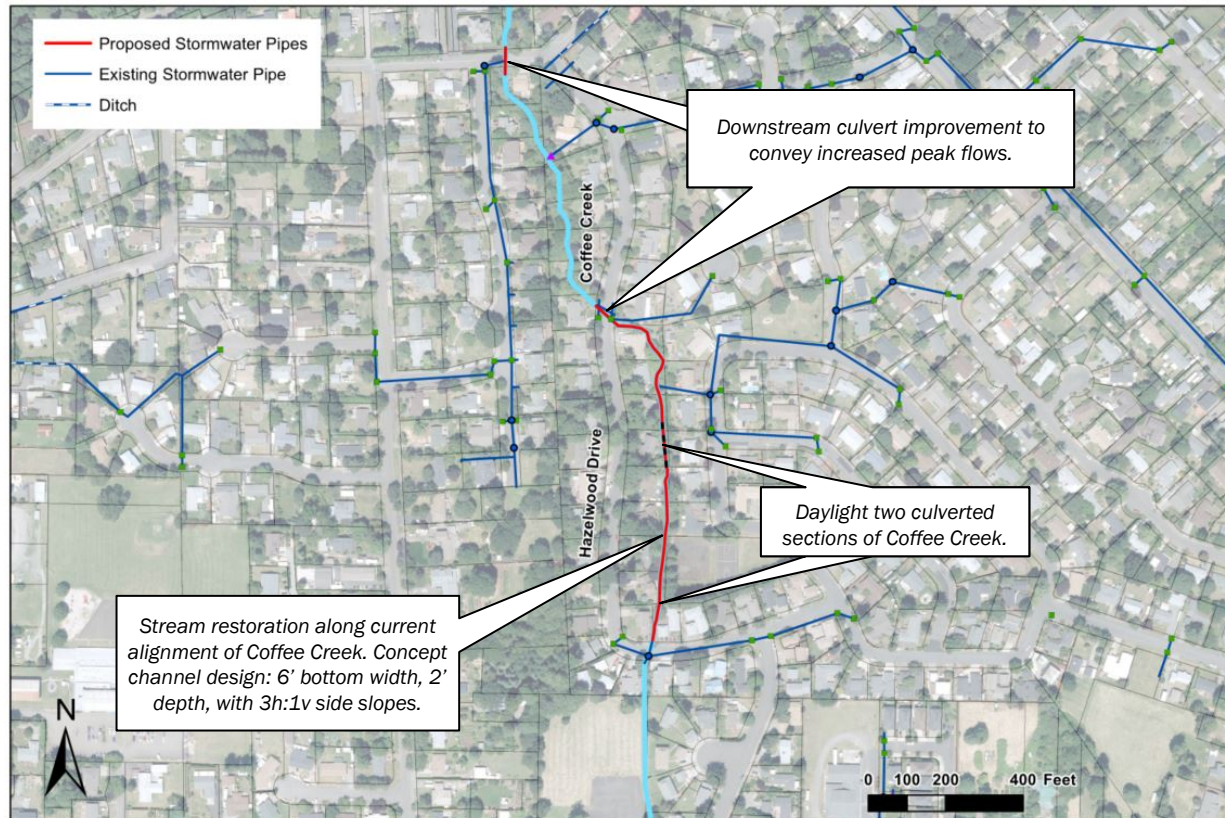
Planning-level Cost Estimate

Capital Expense Total (including contingency)	\$2,781,000
Engineering and Permitting (15%)	\$417,000
Market Climate (10%)	\$278,000
Construction Administration (15%)	\$417,000
Capital Project Implementation Cost Total*	\$3,893,000

**Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Does not include property or easement acquisitions.*

Capital Project Fact Sheet

Project Name: Coffee Creek Capacity Improvements



Project Identifier	CIP 10
Project Name	Coffee Creek Stream Restoration
Detailed Location	Coffee Creek through Hazelwood Drive neighborhood between two Hazelwood Drive culverts.
Model File	FU3_CO1_Alt3_v05.xp
Objective(s) Addressed	Restore stream for improved water quality and stream stability. Provide additional conveyance during larger storm events to mitigate flooding issues on residential properties.

Project Background

Residents in the Hazelwood neighborhood have regularly complained of flooding issues during storm events. Due to prior development around Coffee Creek, the stream is routed through a series of pipes, culverts, and man-made channels of varying size. The existing system is located on private property, and is constricted through culverts twice within this stretch, creating uncertainty around maintenance responsibility and access. The system ranges from 48-inches in diameter at the upstream (southern) culvert crossing Hazelwood Drive, down to 24-inches at some points, causing chokepoints and localized flooding. The existing system has several unique drainage structures that are susceptible to debris accumulation.

In order to provide some relief for residents in this vicinity, the City is proposing a stream restoration project through the existing Coffee Creek alignment to provide additional channel capacity, stabilize the creek, and improve water quality.

Project Description

The project includes the removal of two culverts along the Coffee Creek alignment on private property with a combined length of approximately 120 feet. The preliminary concept design is based on installation of a uniform channel cross section, sized to have a 6 foot bottom width, 2 foot depth, and 3h:1v side slopes. Final design should include adjustments to channel cross section to match individual lot topography and create a varied and meandering channel.

The project includes approximately 870 linear feet of stream restoration, as well as downstream improvements to increase culvert sizes at the Hazelwood and Barker Ave crossings.

Capital Project Fact Sheet

Project Name: Coffee Creek Capacity Improvements

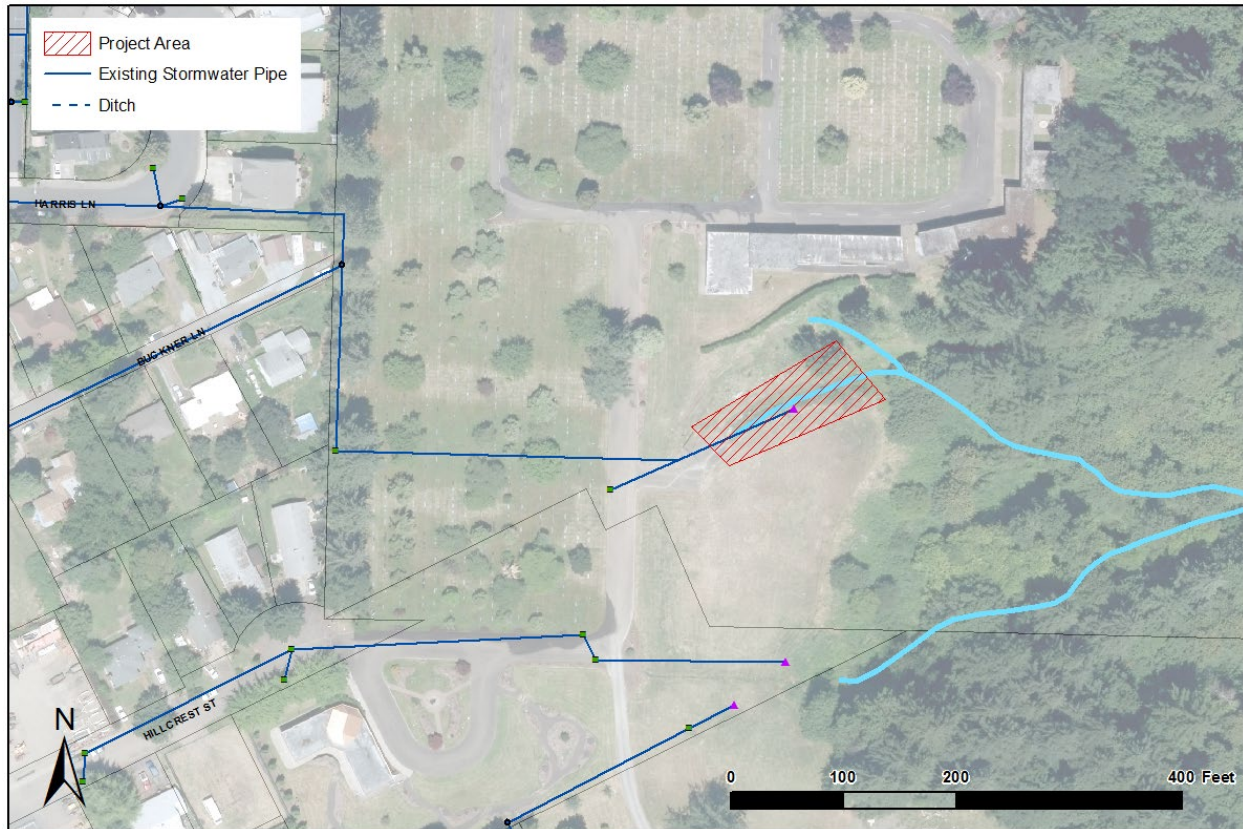
Design Considerations

The concept channel designed here is sized to provide conveyance for the 25-year design storm. A complete design is contingent upon survey of the area and space constraints. Buy-in from local residents will be necessary to complete construction on private property. Downstream impacts from an increased peak flow rate will need to be mitigated through upstream green infrastructure, up-sizing of downstream infrastructure, the installation of in-line flood storage, or a combination of these. Previous sanitary system work on Hazelwood Drive should provide valuable information on local geology that may impact construction costs and methods.

Planning-level Cost Estimate

Capital Expense Total (including contingency)	\$783,000
Engineering and Permitting (15%)	\$117,000
Market Climate (10%)	\$79,000
Construction Administration (15%)	\$117,000
Capital Project Implementation Cost Total*	\$1,096,000

*Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Does not include property or easement acquisitions.



Project Identifier	CIP 11
Project Name	Scattering Canyon Stormwater Improvement
Detailed Location	Mountain View Cemetery (500 Hilda Street)
Model File	N/A
Objective(s) Addressed	Erosion, Infrastructure Needs, Water Quality

Project Background

Scattering Canyon is located along a tributary to Newell Creek in the Mountain View Cemetery property. This area is often a place where ashes are scattered in the creek and is used by family and friends of the deceased. The creek has been experiencing hydromodification in the form of severe incision near the outfall and erosion further downstream resulting in a less than desirable setting. The pipe outfall at the start of the tributary conveys stormwater from roads and residential areas upstream.

Project Description

The project will consist of multiple improvements to Scattering Canyon. The current eroding channel will be modified to provide water quality treatment with 195 LF of 6-inch perforated underdrain pipe in the canyon to enhance water quality treatment. A diversion structure and pollution control manhole will direct water quality flows to the swale and divert high flows to an outfall further downstream via a new stormwater conveyance system consisting of two manholes and 250 LF of 12-inch pipe. Large boulders and vegetation will be placed near the existing outfall to prevent further incision. Multiple boulder check dams or steps will be installed in the swale for flow control to reduce erosive energy and provide a more approachable setting for visitors. The existing dirt road will have some minor regrading and will be paved with geo-grid grass pavers. Native trees and vegetation will also be planted with temporary irrigation as part of this project.

Design Considerations

Only 30% level design has been performed to identify conceptual plans. Detailed topographic survey and hydraulic modeling is needed to conduct final engineering evaluation to determine the appropriate invert elevations and verify pipe diameters to maintain necessary cover and convey the design event for the stormwater system.

Planning-level Cost Estimate

General Requirements	\$60,000
Earthwork	\$170,000
Storm Utilities	\$65,000
Landscaping/Irrigation	\$65,000
Site Furniture	\$19,000
10% Contingency	\$38,000
Capital Project Implementation Cost Total*	\$417,000
Engineering and Permitting (20%)	\$83,000
Construction Administration (5%)	\$21,000
Capital Project Implementation Cost Total*	\$521,000

*Planning level cost estimates estimated in 2019 dollars, rounded to the nearest thousand. Project cost does not include property or easement acquisitions.

Additional Project Information

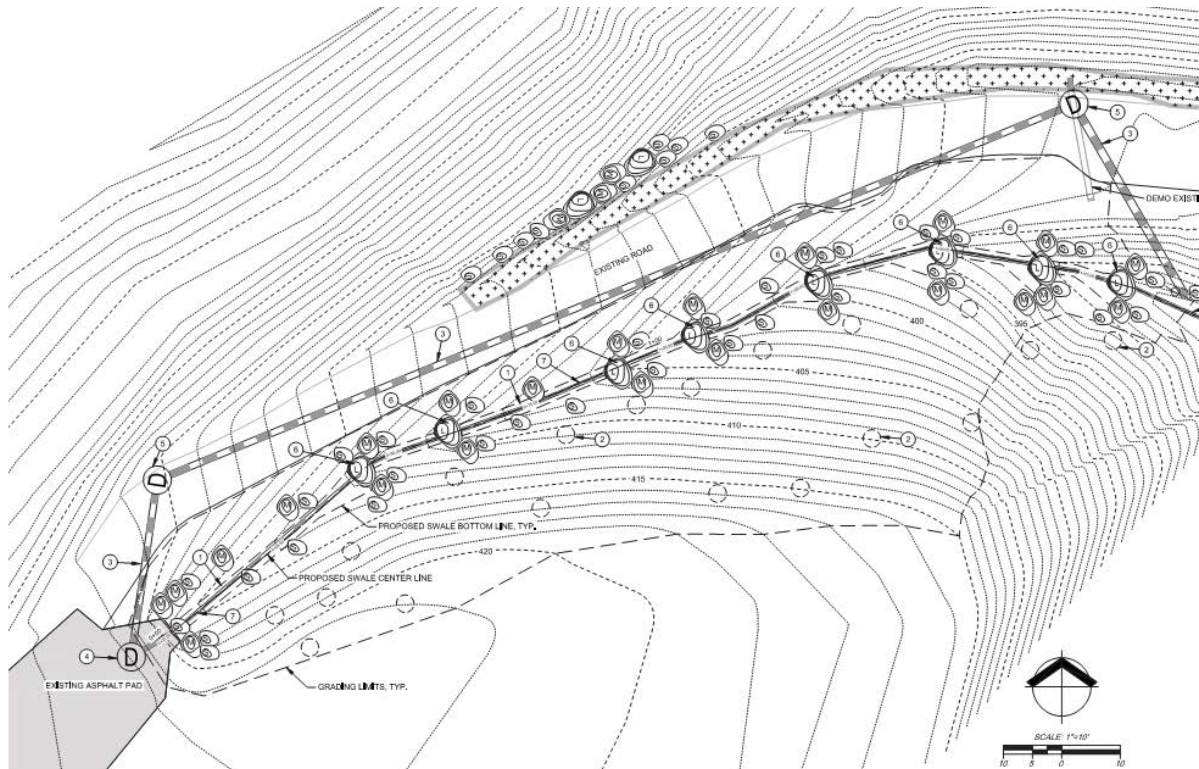
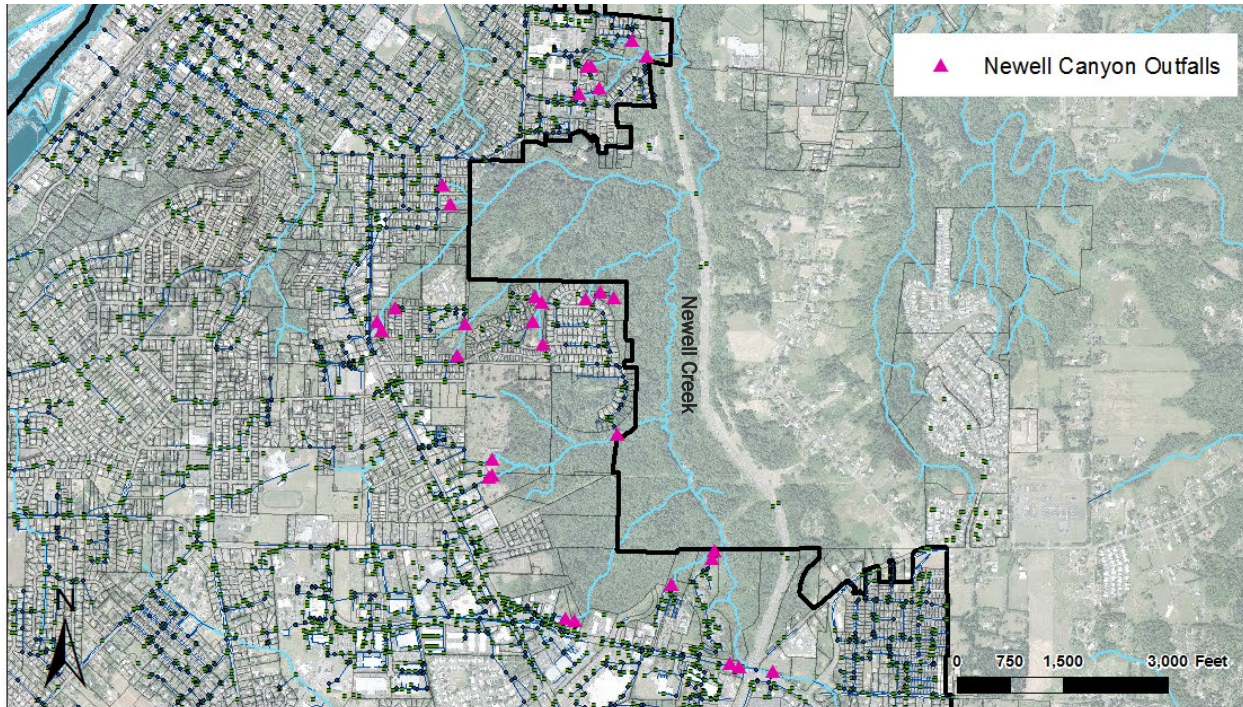


Image 1. Conceptual plan for Scattering Canyon



Project Identifier	CIP 12
Project Name	Newell Canyon Outfall Assessment
Detailed Location	Newell Creek
Model File	N/A
Objective(s) Addressed	Natural Systems, Infrastructure

Project Background

The area around Newell Creek, commonly referred to as Newell Canyon, has several locations where erosion, bank sloughing, and landslides have occurred during and following storm events. The canyon is largely protected from development because of Metro ownership and protection. However, prior development of the drainage area contributing to Newell Canyon has resulted in some degradation of the natural systems.

Newell Canyon has been established as a problem area that is characterized by steep slopes, erodible soils, and numerous stormwater outfalls and small drainage tributaries. The development in this watershed is generally lacks stormwater management facilities. The combination of development without flow control and highly erodible soils has resulted in observed stream incision, erosion at the outfalls, and severely altered stream channels. Newell Canyon hillsides have also experienced sloughing and small landslides, though those problems cannot be attributed solely to stormwater runoff. Newell Creek has some areas of severe downcutting and incision in the upper reaches of the creek but lower reaches of the creek through the base of the canyon seem to be well preserved.

Stream surveys and site visits in 2015 and 2016 by Brown and Caldwell staff documented areas where stormwater outfalls showed noticeable degradation. Outfalls showed visible increases in erosion and degradation over the course of 12 months. There is concern that ongoing degradation may lead to more significant bank and hillside stability problems.

Project Description

Further study is needed to evaluate the stormwater outfalls in the Newell Canyon area. This project includes conducting a widespread outfall assessment to evaluate stormwater outfalls, identify significant problem locations, and develop concept plans to stabilize degrading systems. The assessment should include the following:



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Parks & Recreation Director Kendall Reid

Agenda Date: 05/19/2021

SUBJECT:

Resolution No. 21-26, Adoption of Policy for Naming or Changing Names of Parks, Recreation/Cemetery Facilities

STAFF RECOMMENDATION:

Approve Resolution No. 21-26, Adopting the Policy for Naming or Changing Names of Parks, Recreation/Cemetery Facilities.

EXECUTIVE SUMMARY:

The purpose of this policy is to provide guidelines that outline the criteria and procedures for official naming and/or renaming of City parks, as well as park and cemetery facilities and recreation centers.

BACKGROUND:

Oregon City Parks have traditionally been named for locations (Park Place) or special features (Canemah), or the acquired name from common usage (Carnegie Library to Carnegie Center). Occasionally parks, or amenities within a park or cemetery, are named in honor of a particular individual or group who has made a significant contribution to the facility.

Most recreation or community centers and facilities bear a name with historical significance (Pioneer, End of the Oregon Trail), or identify their role like the Oregon City Swim Pool. Some parks and facilities have the name of where they are located, and others contain the name of the geographic area. However, there is also a precedent for naming recreational facilities after citizens who have made a significant contribution to their community (Ermatinger House).

From time to time, individuals, community organizations and neighborhood associations petition the City requesting the naming or renaming of a facility, or park, to honor a particular individual. The following policy will formalize the consideration of these requests and assure reasonable commemorative opportunities for the community.

OPTIONS:

1. Approve Resolution No. 21-26.
2. Provide feedback to incorporate into the naming policy and bring updated draft policy to the next City Commission meeting for approval
3. Do not approve the Policy for Naming or Changing Names of Parks, Recreation/Cemetery Facilities.

RESOLUTION NO. 21-26

A RESOLUTION ADOPTING A POLICY FOR NAMING OR CHANGING NAMES OF PARKS, RECREATION FACILITIES, AND CEMETERY FACILITIES

WHEREAS, on March 15, 2001 Parks and Recreation staff had created a policy for naming or changing the name of parks, recreation facilities and cemetery facilities; and

WHEREAS, the City and the Parks & Recreation Advisory Committee has continued to use this policy from time to time for the intended purpose including, but not limited to the Carnegie Library Park name change to Library Park; and

WHEREAS, although this is an internal policy for City staff to use when naming a park or facility and/or changing the name of a park or facility there is usually a public process and staff feels it would be appropriate to ask for the City Commission to formally adopt the policy.

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. The City Commission would like to formally adopt the City's Policy for Naming or Changing the Names of Parks, Recreation Facilities, and Cemetery Facilities through this resolution with the policy attached as Exhibit A.

Section 2. This resolution shall take effect immediately upon its adoption by the City Commission.

Approved and adopted at a regular meeting of the City Commission held on the 19th day of May 2021.

RACHEL LYLES SMITH, Mayor

Attested to this 19th day of May 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney



Oregon City Parks and Recreation
POLICY

**TITLE: POLICY FOR NAMING OR
CHANGING NAMES OF PARKS,
RECREATION/CEMETERY FACILITIES**
Page 1 of 4

EFFECTIVE DATE: March 15, 2001

AUTHORIZED: Dee L. Craig, Director

POL 102

**POLICY FOR NAMING OR CHANGING NAMES OF
PARKS, RECREATION/CEMETERY FACILITIES**

PURPOSE

To outline the criteria and procedures for official naming and/or renaming of City parks, as well as park and cemetery facilities and recreation centers.

BACKGROUND

Oregon City Parks have traditionally been named for locations (Park Place) or special features (Canemah), or the acquired name from common usage (Carnegie Library to Carnegie Center). Occasionally parks, or amenities within a park or cemetery are named in honor of a particular individual or group who has made a significant contribution the facility.

Most recreation or community centers and facilities bear a name with some historical significance (Pioneer, End of the Trail) or identify their role (OC Pool) some the name of where they are located; and others the name of the geographic area. However, there is also a precedent for naming recreational facilities after citizens who have made a significant contribution to their community (Ermatinger House).

From time to time, individuals, community organizations and neighborhood associations petition the City requesting a naming or renaming of a facility to honor a particular individual. The following policy will formalize consideration of these requests and assure reasonable commemorative opportunities for the community along with minimal confusion and maximum access to the general public.

Policy

Designation of names for parks, cemetery, and recreation facilities shall be in accordance with criteria and procedures set forth below.

NAMING PARKS, CEMETERY, AND RECREATION FACILITIES

The naming of parks, cemetery, and recreation areas and facilities should be approached with patience and deliberation.

Confusion should be minimized by avoiding names that are similar to those of existing parks and playgrounds in the system, or geographic areas, which are so broad that they could encompass many sites.

Conditions and stipulations of original property donation or deed shall be honored regarding the name of a park, cemetery or recreation/community center.

Consideration in naming parks shall first be given to geographical location (unless this would be so vague as to cause confusion), natural or geological features, and names in common usage;

Park, cemetery, and park facilities, or community/recreation centers may be named for an individual under the following conditions: The person has made a significant contribution to the citizens of the City of Oregon City or to Oregon City Parks, Recreation and Cemetery; the individual is deceased and approval is granted by the next of kin; or the individual is still living and grants permission for the use of their name.

Recreation/Community Centers shall be named, whenever possible, for the unique geographic location that gives identity to the community or the park in which it is located unless in doing so it would create confusion with other facilities located in the area which may or may not be on the same property.

RENAMING PARKS, CEMETERY, AND RECREATION FACILITIES

Parks meet open space and recreation needs within the entire community. They are intentionally named for significant feature, which will identify them with a particular neighborhood or site because

- a) The site name is familiar to most of the residents; and
- b) Throughout the city any resident can more easily locate any park if it is named by location or significant feature.

There are instances when it is the overwhelming desire of the community to memorialize an individual. Renaming a park, park or cemetery facility or recreation/community center in memory of an individual is a significant permanent City honor and will be done carefully and deliberately. Each application must follow the process listed below.

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The proposal must be reviewed by a standing committee* through a specific process which will include:

verification of documentation showing that the individual has been a figure of historic significance to the City or Oregon City Parks, Recreation and Cemetery and has not been appropriately honored locally in some other way;

Verification of documentation showing that the individual is deceased for at least two years and that the proposal meets the approval of the individual's surviving spouse, children or parents, if any, or documented approval of the individual, if living;

review of documentation relating to appropriateness of specific site proposed for renaming, and;

recommendation through PRAC to the City Commission regarding the individual as a candidate for honor or memorialization.

*The standing committee shall include the Director of Parks and Recreation, two members of PRAC, and the staff liaison to the Neighborhood Associations or CICC.

Review of the standing committee clears the application for the remainder of the process;

Parks renamed after individuals will retain the geographic location as part of the name;

Existing park, park or cemetery facilities or recreation/community center names, which are considered historically significant, will not usually be changed;

Exceptions to these criteria may be considered by the City Commission if renaming a park, park or cemetery facility or recreation/community center has been made a condition of accepting a donation of more than 51% of the total costs of land purchase, full development of any park, renovating or building onto a recreation center. (i.e.: addition of a pool to an existing center, covering an existing pool, adding a gymnasium or making other significant building improvements);

In all cases, the City Commission shall have the prerogative of accepting or rejecting the proposed name change, and;

Bestowing an individual's name on a park or park, cemetery or recreation/community facility shall be considered permanent.

OTHER OPTIONS FOR MEMORIALIZATION

Parks are not intended to be memorial gardens and the proliferation of plaques and markers detracts from the purpose for which parks are established. However, there are instances in which the community's wish to memorialize an individual or event may be appropriately accommodated. Historical markers are traditional examples. Others include plaques affixed to denote significant gifts to a particular park. The wish to memorialize individuals and events

within each generation certainly exceeds the number of parks to be named. Oregon City Parks and Recreation will establish policy accepting memorial plaques to be displayed in the main

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areas of Recreation/Community Centers on the recommendation of a neighborhood association according to the criteria outlined below:

The sponsoring group or individual provides the plaque and replaces it if defaced or stolen;

Oregon City Parks and Recreation offers routine maintenance and care of the plaque, and;

Placement of all plaques is subject to the discretion of Oregon City Parks and Recreation, however, they will all be placed together in a prominent location.