



CITY OF OREGON CITY

CITY COMMISSION REGULAR MEETING

AGENDA

Virtual Meeting

Wednesday, January 20, 2021 at 7:00 PM

EXECUTIVE SESSION: To immediately follow the regular meeting of the City Commission.

- i. PURSUANT TO ORS 192.660(2)(h): To consult with counsel concerning the legal rights and duties of a public body with regard to current litigation or litigation likely to be filed.

VIRTUAL MEETING OF THE CITY COMMISSION:

This meeting will be held online via Zoom; please contact recorderteam@orccity.org for the meeting link.

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 sign-up to be called during the meeting to provide over-the-phone testimony.*
- *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, PROCLAMATIONS, AND PRESENTATIONS

3a. Planning Commission Annual Update

[3b.](#) 2020 Community Satisfaction Survey Results

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. ADOPTION OF THE AGENDA**6. PUBLIC HEARINGS**

[6a.](#) Appeal Fee Waiver Request

[6b.](#) First Reading of Ordinance No. 21-1001, Amendments to the Water Master Plan (GLUA 20-00033; LEG-19-00002)

[6c.](#) First and Second Reading of Ordinance No. 21-1004, Amending Oregon City Municipal Code Chapter 8.26, Section 8.26.050 – Business Food Waste Requirements and Declaring an Emergency

[6d.](#) First Reading of Ordinance No. 21-1003, Amending the Oregon City Municipal Code; Title 12: Streets, Sidewalks, and Public Places, Title 13: Public Services, and Title 17: Zoning (GLUA 20-33, LEG 20-01, Public Works Code Amendments Package #1)

7. GENERAL BUSINESS

[7a.](#) Resolution No.21-06, Declaring an Emergency and Exempting a Temporary Warming Shelter at The Father's Heart Street Ministry from Planning Code Requirements (January 21, 2021 until March 31, 2021)

8. 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.

[8a.](#) Resolution No. 21-04, Letter of Support for the McLoughlin Canemah Trail Grant Application

[8b.](#) Resolution No. 21-07, Calling for a Special Election for the Electors of the City of Oregon City to Select a New Mayor

[8c.](#) Change Order No. 1 for the Noble Ridge Pump Station Upgrade (CI 19-005)

[8d.](#) OLCC: Liquor License Application – Off-Premises, applying as Lowden, Inc. (dba Pioneer Pizza), 13559 S Redland Road, Oregon City

[8e.](#) Minutes of the November 4, 2020 Work Session

[8f.](#) Minutes of the September 9, 2020 Special Meeting

[8g.](#) Minutes of the August 27, 2020 Special Meeting

9. COMMUNICATIONS

City Manager

Commissioners**Mayor****10. 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
From: City Manager Tony Konkol

Agenda Date: 01/20/2021

SUBJECT:

2020 Community Satisfaction Survey Results

STAFF RECOMMENDATION:

This is just a presentation.

EXECUTIVE SUMMARY:

The purpose of the survey was to help ensure that the City's priorities continue to match the needs and desires of residents. The information provided will be used to improve existing services and help the City better understand the evolving needs of residents. This is the second survey ETC Institute has administered for Oregon City; the first was conducted in 2018.

BACKGROUND:

The seven-page survey, cover letter, and postage-paid return envelope were mailed to a random sample of households in the City of Oregon City. The cover letter explained the purpose of the survey and encouraged residents to either return their survey by mail or complete the survey online. At the end of the online survey, residents were asked to enter their home address; this was done to ensure that only responses from residents who were part of the random sample were included in the final survey database.

Ten days after the surveys were mailed, ETC Institute sent emails and placed phone calls to the

households that received the survey to encourage participation. The emails contained a link to the online version of the survey to make it easy for residents to complete the survey. To prevent people who were not residents of Oregon City from participating, everyone who completed the survey online was required to enter their home address prior to submitting the survey. ETC Institute then matched the addresses that were entered online with the addresses that were originally selected for the random sample. If the address from a survey completed online did not match one of the addresses

selected for the sample, the online survey was not counted. The goal was to obtain completed surveys from at least 300 residents. The goal was exceeded, with a total of 321 residents completing the survey. The overall results for the sample of 321 households have a precision of at least +/-5.4% at the 95% level of confidence.

OPTIONS:

1. Consider information for future decision making, planning, and budgeting.

BUDGET IMPACT:

Amount: \$16,500

FY(s): 2020-2021

Funding Source(s): General Fund

City of Oregon City Community Survey

Findings Report

...helping organizations make better decisions since 1982

2020

Submitted to the City of Oregon City, Oregon

by:

ETC Institute
725 W. Frontier Lane,
Olathe, Kansas
66061

January 2021



ETC
INSTITUTE

Contents

Executive Summary	i
Section 1: Charts and Graphs	1
Section 2: Benchmarking Analysis	51
Section 3: Importance-Satisfaction Analysis	62
Section 4: Tabular Data	71
Section 5: Survey Instrument	150

2020 City of Oregon City Community Survey

Executive Summary

Purpose and Methodology

ETC Institute administered a survey to residents of the City of Oregon City during the fall of 2020. The purpose of the survey was to help ensure that the City's priorities continue to match the needs and desires of residents. The information provided will be used to improve existing services and help the City better understand the evolving needs of residents. This is the second survey ETC Institute has administered for Oregon City; the first was conducted in 2018.

The seven-page survey, cover letter and postage-paid return envelope were mailed to a random sample of households in the City of Oregon City. The cover letter explained the purpose of the survey and encouraged residents to either return their survey by mail or complete the survey online. At the end of the online survey, residents were asked to enter their home address; this was done to ensure that only responses from residents who were part of the random sample were included in the final survey database.

Ten days after the surveys were mailed, ETC Institute sent emails and placed phone calls to the households that received the survey to encourage participation. The emails contained a link to the online version of the survey to make it easy for residents to complete the survey. To prevent people who were not residents of Oregon City from participating, everyone who completed the survey online was required to enter their home address prior to submitting the survey. ETC Institute then matched the addresses that were entered online with the addresses that were originally selected for the random sample. If the address from a survey completed online did not match one of the addresses selected for the sample, the online survey was not counted.

The goal was to obtain completed surveys from at least 300 residents. The goal was exceeded, with a total of 321 residents completing the survey. The overall results for the sample of 321 households have a precision of at least +/-5.4% at the 95% level of confidence.

The percentage of "don't know" responses has been excluded from many of the graphs shown in this report to facilitate valid comparisons of the results from Oregon City with the results from other communities in ETC Institute's *DirectionFinder*® database. Since the number of "don't know" responses often reflect the utilization and awareness of City services, the percentage of "don't know" responses have been provided in the tabular data section of this report. When the "don't know" responses have been excluded, the text of this report will indicate that the responses have been excluded with the phrase *"who had an opinion."*

This report contains:

- An executive summary of the methodology for administering the survey and major findings,
- charts showing the overall results for most questions on the survey, including comparisons to results from the 2018 survey,
- benchmarking data that show how the results for Oregon City compare to other communities,
- Importance-Satisfaction analysis: this analysis was done to determine priority actions for the City to address based upon the survey results,
- tables that show the results of the random sample for each question on the survey,
- a copy of the survey instrument.

Overall Satisfaction with Major Categories of City Services

The major categories of City services that had the highest levels of satisfaction, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: the overall quality of police services (76%), the overall quality of the City’s public library services (75%), and the overall quality of City parks/trails/open space (69%). The major categories of City services that respondent households indicated should receive the most emphasis over the next two years were: the overall maintenance of City streets (50%), the overall effectiveness of City economic development efforts (36%), and the overall quality of police services (31%).

Overall Satisfaction with Perceptions of the City

The highest levels of satisfaction with items that influence perceptions of the City, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: the overall quality of services provided by the City (66%), the overall feeling of safety in the City (64%), the overall image of the City (52%), and the availability of training or educational opportunities (39%).

Ratings of Oregon City

The highest overall ratings of Oregon City, based upon the combined percentage of “excellent” and “good” responses among residents *who had an opinion*, were: Oregon City as a place to live (86%), as a place to raise children (77%), the overall quality of life in the City (75%), and a place to connect & interact with neighbors (66%).

Satisfaction with Specific City Services

- **Parks and Recreation.** The highest levels of satisfaction with parks and recreation services, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: proximity of parks to home (74%), the appearance and maintenance of existing City parks (71%), and the quality of facilities (66%).

The parks and recreation services that should receive the most emphasis over the next two years, based upon the sum of respondents' top two choices, were: appearance and maintenance of existing City parks (27%), quantity of City trails (27%), quality of recreational areas for dogs (21%), and quality of facilities (21%).

- **Public Safety.** The highest levels of satisfaction with public safety services, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: the visibility of police in the community (71%), how quickly police respond to emergencies (65%), the City’s overall efforts to prevent crime (62%), and enforcement of local traffic laws (57%). The public safety services that should receive the most emphasis over the next two years, based upon the sum of the respondents’ top two choices, were: response to issues with transients (57%), the City’s overall efforts to prevent crime (24%), and the level of community outreach (20%).
- **City Communication.** The highest levels of satisfaction with City communication, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: the availability of information about City programs and services (36%) and the overall quality of the City’s website (35%).
 - The top four news and information sources that respondent households have used to receive information about city programs, services and events, were: “Trail News” quarterly publication (71%), social media (46%), friends (36%), and Nextdoor (34%). The sources from which respondents indicated they would most prefer to receive their information were: “Trail News” quarterly publication (39%) and social media (20%).
 - The most popular frequency that respondent households would like to receive information from the City, based on the sum of their top two choices, was monthly (73%).
 - The types of information that respondent households indicated they would like to receive from the City were: public safety (70%) and public works (70%).
- **Code Enforcement.** The highest levels of satisfaction with City code enforcement, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: enforcing sign regulation (36%) and enforcing codes designed to protect public safety (36%). The two code enforcement items that respondents indicated should receive the most emphasis over the next two years were: enforcing cleanup of litter & debris on private property (62%) and enforcing codes designed to protect public safety (47%).
- **Transportation and Infrastructure.** The highest levels of satisfaction with City street maintenance/service items, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: adequacy of City street lighting in neighborhoods (65%), snow and ice response on major City streets (61%) and

maintenance of neighborhood streets (52%). The two transportation and infrastructure services that respondents indicated should receive the most emphasis over the next two years were: the maintenance of major City streets (35%) and the maintenance of neighborhood streets (29%).

- **Public Library.** The highest levels of satisfaction with the City’s public library services, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: selection of physical resources available (70%), selection of digital resources available online (64%), and access to computers and library Wi-Fi (61%). The three highest rated items that respondents indicated should receive the most emphasis over the next two years were: selection of physical resources available (20%), selection of digital resources available online (14%), and the library as a hub of community information (14%).
 - Forty-one percent (41%) of respondent households indicated they receive their information about the library from “Trail News”.
- **Customer Service.** Thirty-eight percent (38%) of respondents indicated they have called, emailed, or visited the City with a question, problem, or complaint during the past year. Of those who contacted the City, 34% indicated it was “very easy,” 43% indicated it was “somewhat easy,” 13% indicated it was “difficult,” and 8% indicated it was “very difficult” to contact the person they needed to reach. Of the 38% of respondents who contacted the City during the past year, 40% contacted Code Enforcement, 24% contacted Public Works, and 23% contacted Building and Planning. Eighty-five percent (85%) of respondents who contacted the City indicated that City employees were always (45%) or usually (40%) courteous & polite.
- **Water Quality.** The highest levels of satisfaction with the City’s water quality, based upon the combined percentage of “very satisfied” and “satisfied” responses among residents *who had an opinion*, were: reliability of water service (89%), water clarity (84%), and water pressure (79%).
 - Forty percent (40%) of respondent households were “very willing” (11%) or “willing” (29%) to pay additional taxes or higher water rates to repair and replace the aging water system; 23% were “neutral,” 18% were “not willing,” and 18% were “not at all willing.”

Additional Findings

- Respondent households were asked their willingness to pay additional taxes/fees to acquire, develop, and maintain parks, recreation, and trail facilities. Nine percent (9%) indicated they were “very willing,” 30% were “willing,” 19% were “neutral,” 15% were “not willing,” and 28% were “not at all willing.”

- The capital investment items that are of top priorities to respondent households, based upon the sum of the respondents' five choices, were: road maintenance/pavement preservation (69%) and traffic congestion relief (53%).
- The highest levels of service expectations provided by the City, based upon the combined percentage of "much higher" and "a little higher" responses among residents *who had an opinion*, were: transportation facilities & programs (72%), parks, trails, & open space (58%), and utility infrastructure (48%).
- Forty-two percent (42%) of respondent households indicated they would be willing to pay more in taxes or fees to support an increase in the service level.
- The highest ratings for land development and growth management by the City, based upon the "just right" responses among residents *who had an opinion*, were: office development (63%), apartments (51%), and single family homes (50%).

Investment Priorities

Recommended Priorities for the Next Two Years. In order to help the City identify investment priorities for the next two years, ETC Institute conducted an Importance-Satisfaction (I-S) analysis. This analysis examined the importance residents placed on each City service and the level of satisfaction with each service. By identifying services of high importance and low satisfaction, the analysis identified which services will have the most impact on overall satisfaction with City services over the next two years. If the City wants to improve its overall satisfaction rating, the City should prioritize investments in services with the highest Importance Satisfaction (I-S) ratings. Details regarding the methodology for the analysis are provided in Section 3 of this report.

Overall Priorities for the City by Major Category. This analysis reviewed the importance of and satisfaction with major categories of City services. This analysis was conducted to help set the overall priorities for the City. Based on the results of this analysis, the major services that are recommended as the top priorities for investment over the next two years to raise the City's overall satisfaction rating are listed below:

- o Overall maintenance of City streets (IS=0.2640)
- o Overall effectiveness of City economic development efforts (IS=0.2365)
- o Overall enforcement of City codes & ordinances (IS=0.1226)
- o Overall effectiveness of City communication with the public (IS=0.1089)

The table on the following page shows the Importance-Satisfaction rating for all 13 major categories of City services that were assessed.

2020 Importance-Satisfaction Rating

Oregon City, OR

Major Categories of City Services

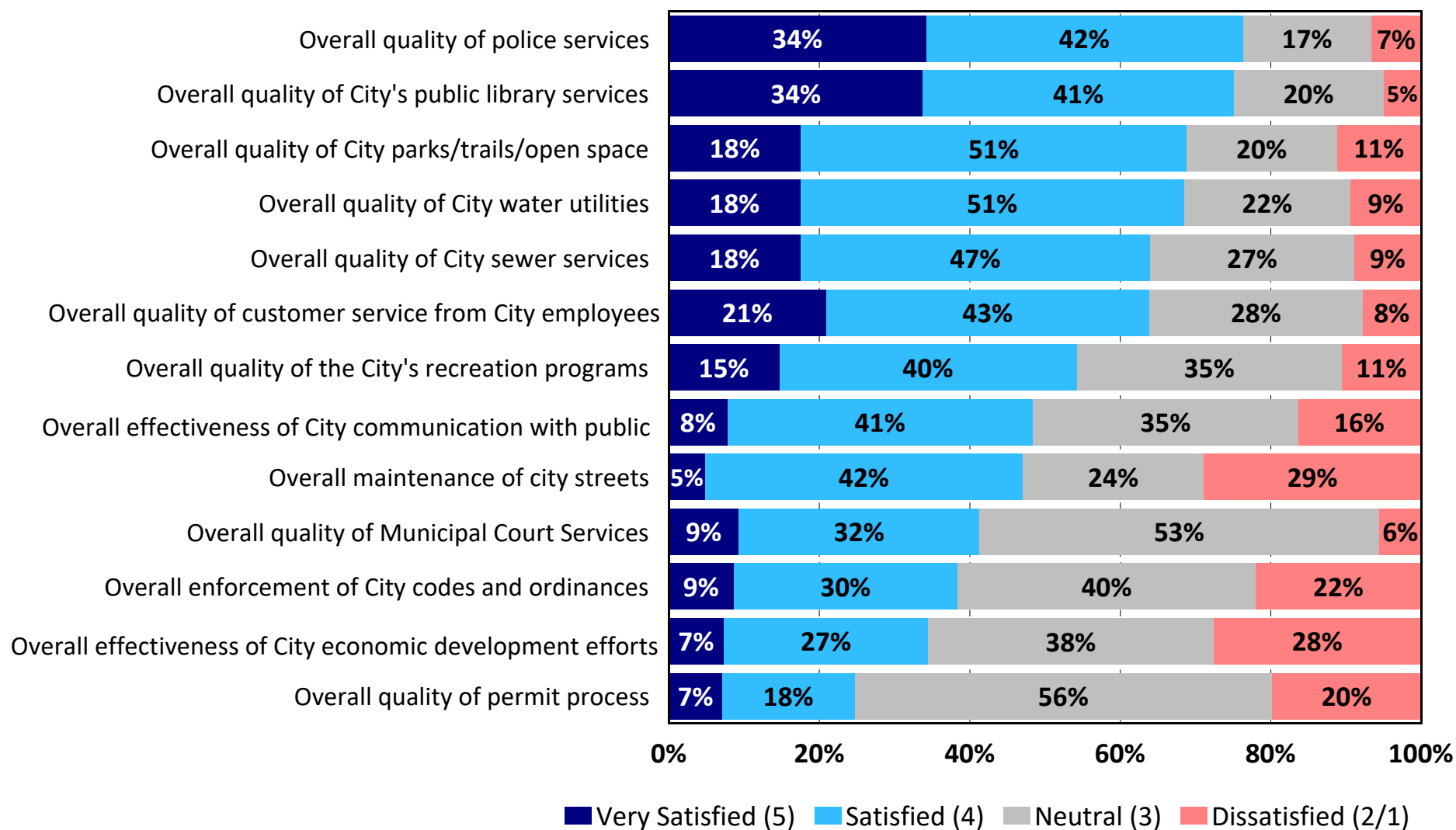
Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance- Satisfaction Rating	I-S Rating Rank
Very High Priority (IS >.20)						
Overall maintenance of city streets	50%	1	47%	9	0.2640	1
Overall effectiveness of City economic development efforts	36%	2	35%	12	0.2365	2
High Priority (IS .10-.20)						
Overall enforcement of City codes and ordinances	20%	6	38%	11	0.1226	3
Overall effectiveness of City communication with the public	21%	5	48%	8	0.1089	4
Medium Priority (IS <.10)						
Overall quality of City parks/trails/open space	31%	4	69%	3	0.0952	5
Overall quality of permit process	11%	9	25%	13	0.0798	6
Overall quality of police services	31%	3	76%	1	0.0739	7
Overall quality of the City's recreation programs	14%	8	54%	7	0.0641	8
Overall quality of City water utilities	16%	7	69%	4	0.0488	9
Overall quality of Municipal Court Services	5%	13	41%	10	0.0270	10
Overall quality of City sewer services	7%	11	64%	5	0.0256	11
Overall quality of customer service from City employees	6%	12	64%	6	0.0213	12
Overall quality of City's public library services	8%	10	75%	2	0.0192	13

Section 1

Charts and Graphs

Q1. Overall Satisfaction With City Services by Major Category

by percentage of respondents (excluding don't knows)

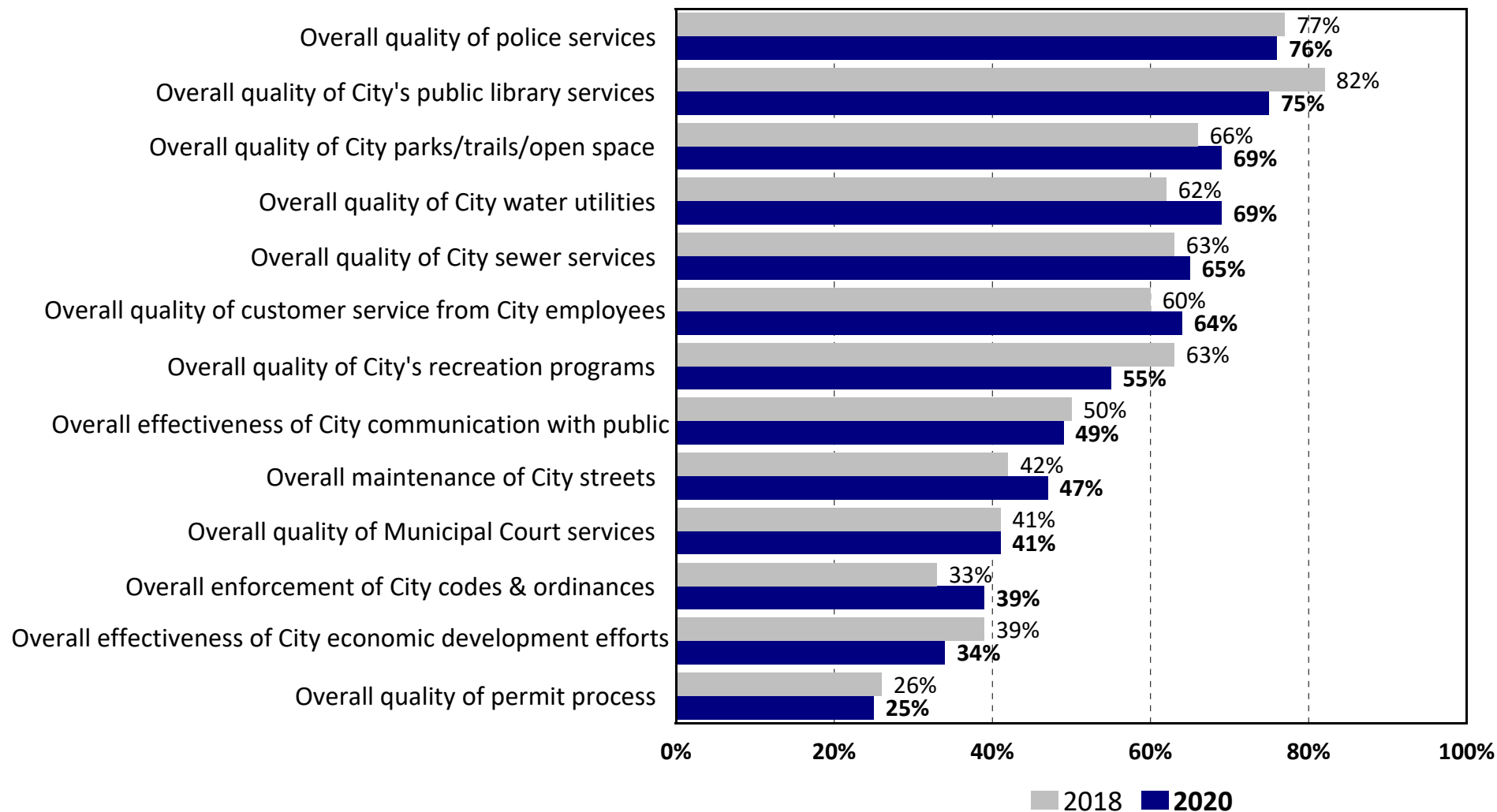


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Overall Satisfaction with City Services by Major Category - 2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

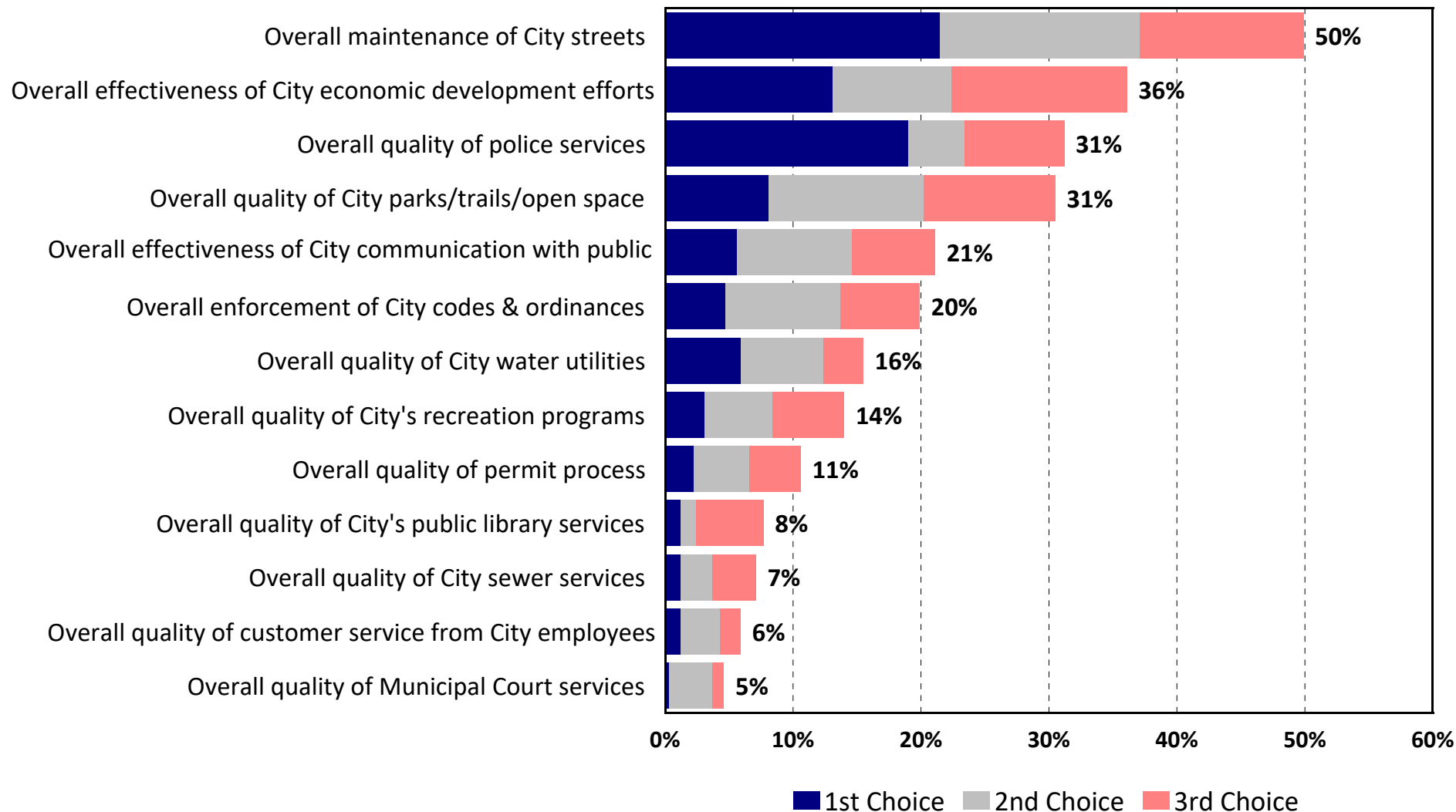


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q2. City Services That Should Receive the Most Emphasis from City Leaders Over the Next Two Years

by percentage of respondents who selected the item as one of their top three choices

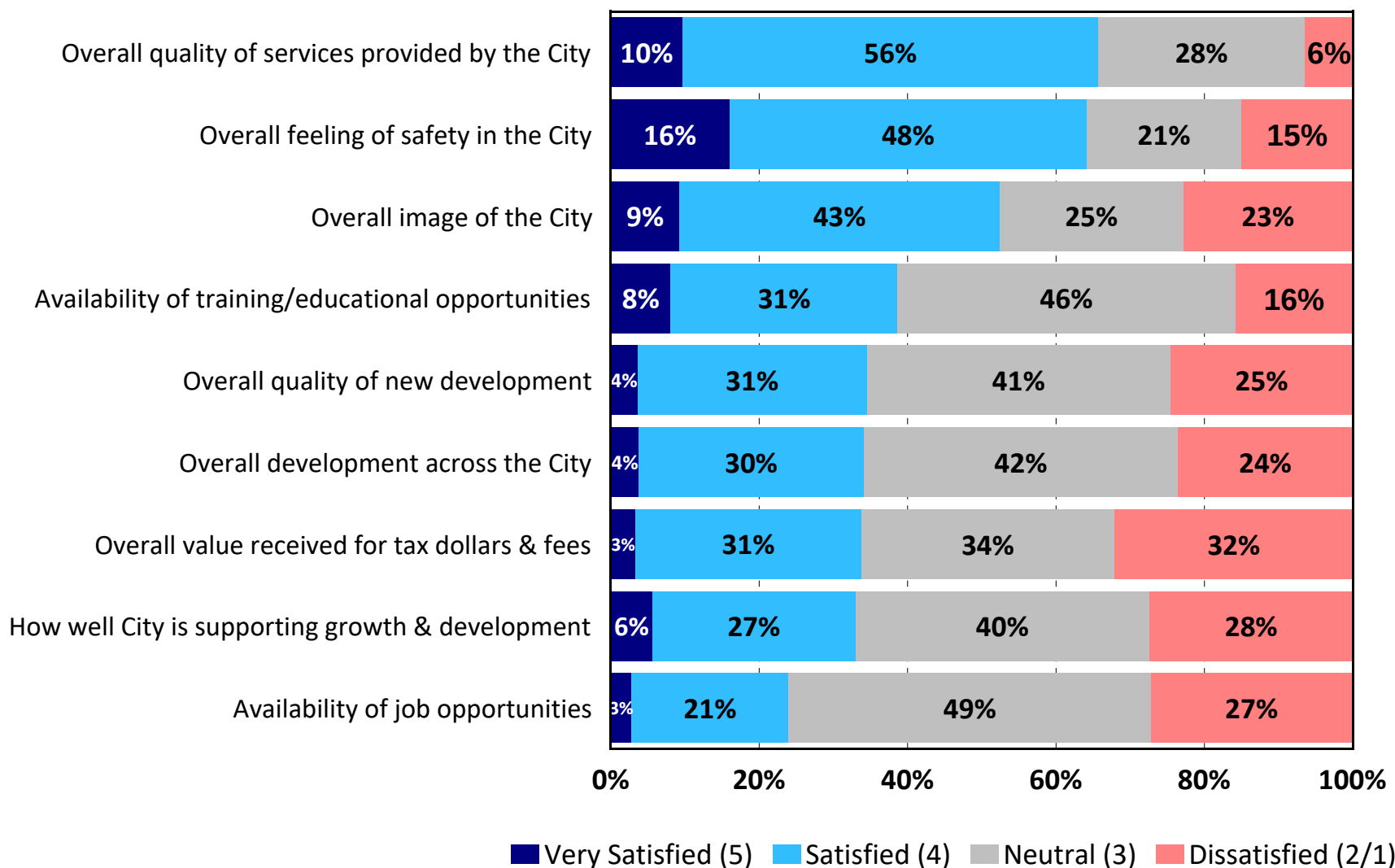


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q3. Satisfaction With Items That Influence Perceptions of the City

by percentage of respondents (excluding don't knows)

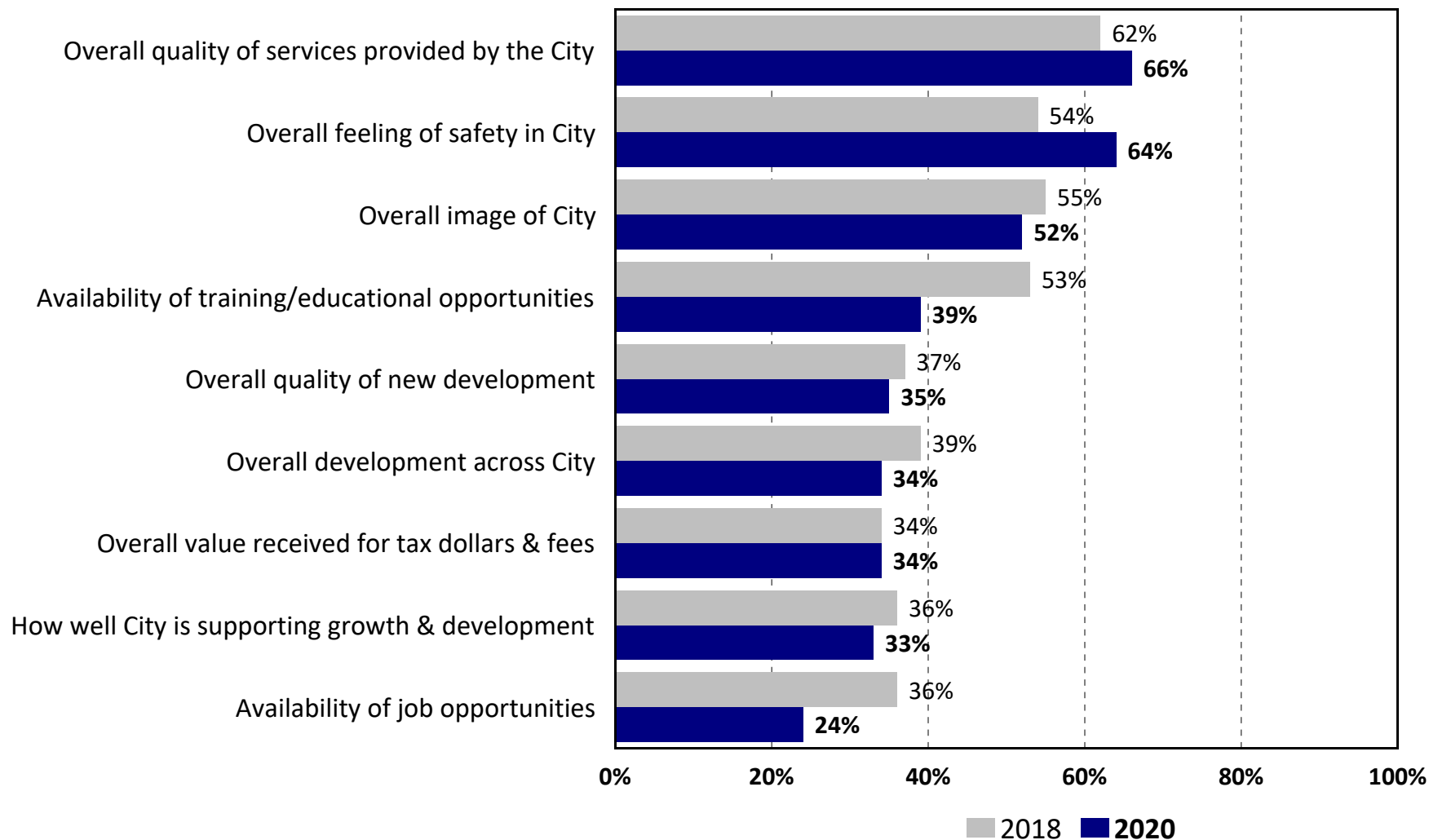


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction With Items That Influence Perceptions of the City - 2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

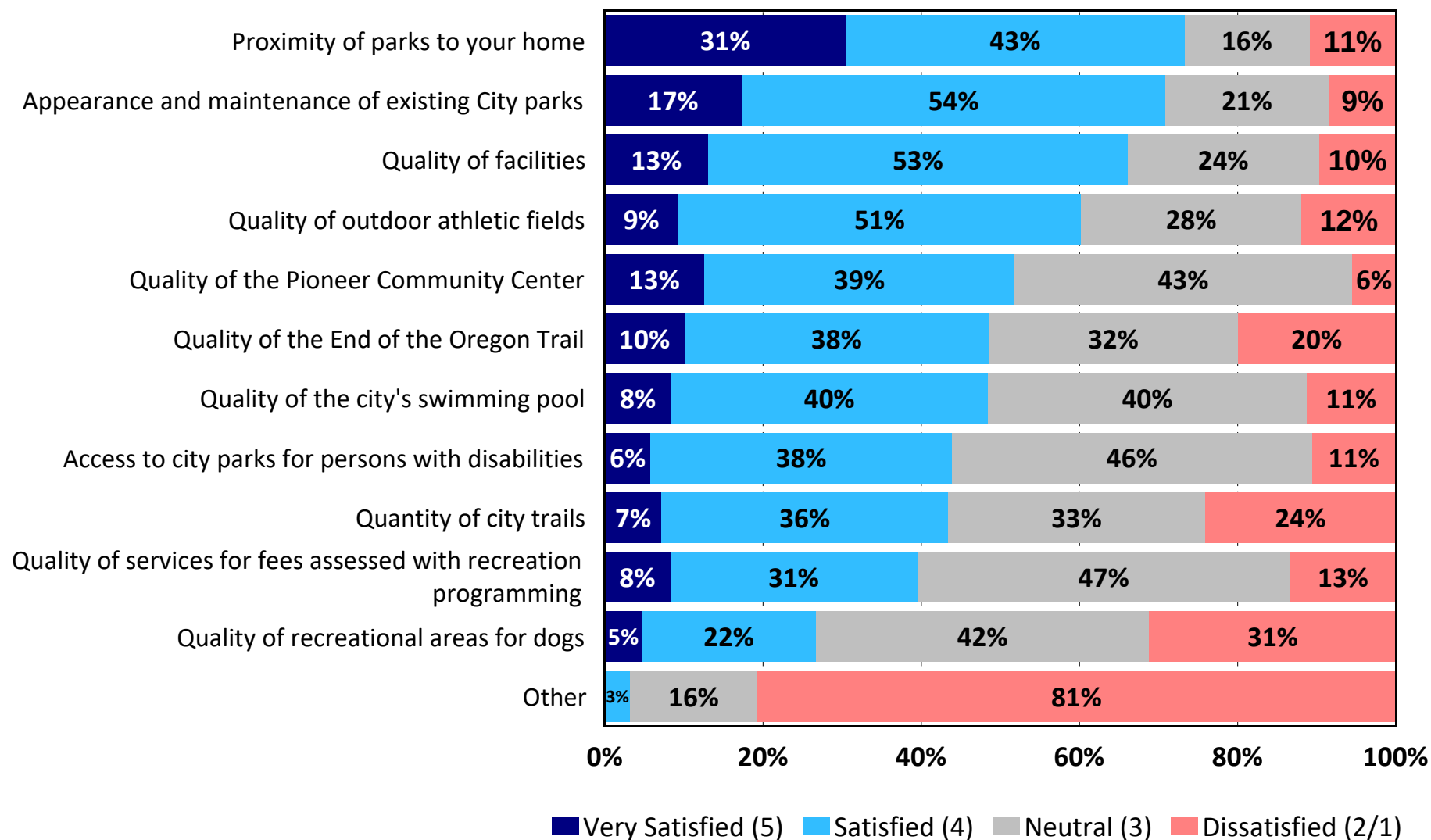


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q4. Satisfaction With Parks and Recreation Services

by percentage of respondents (excluding don't knows)



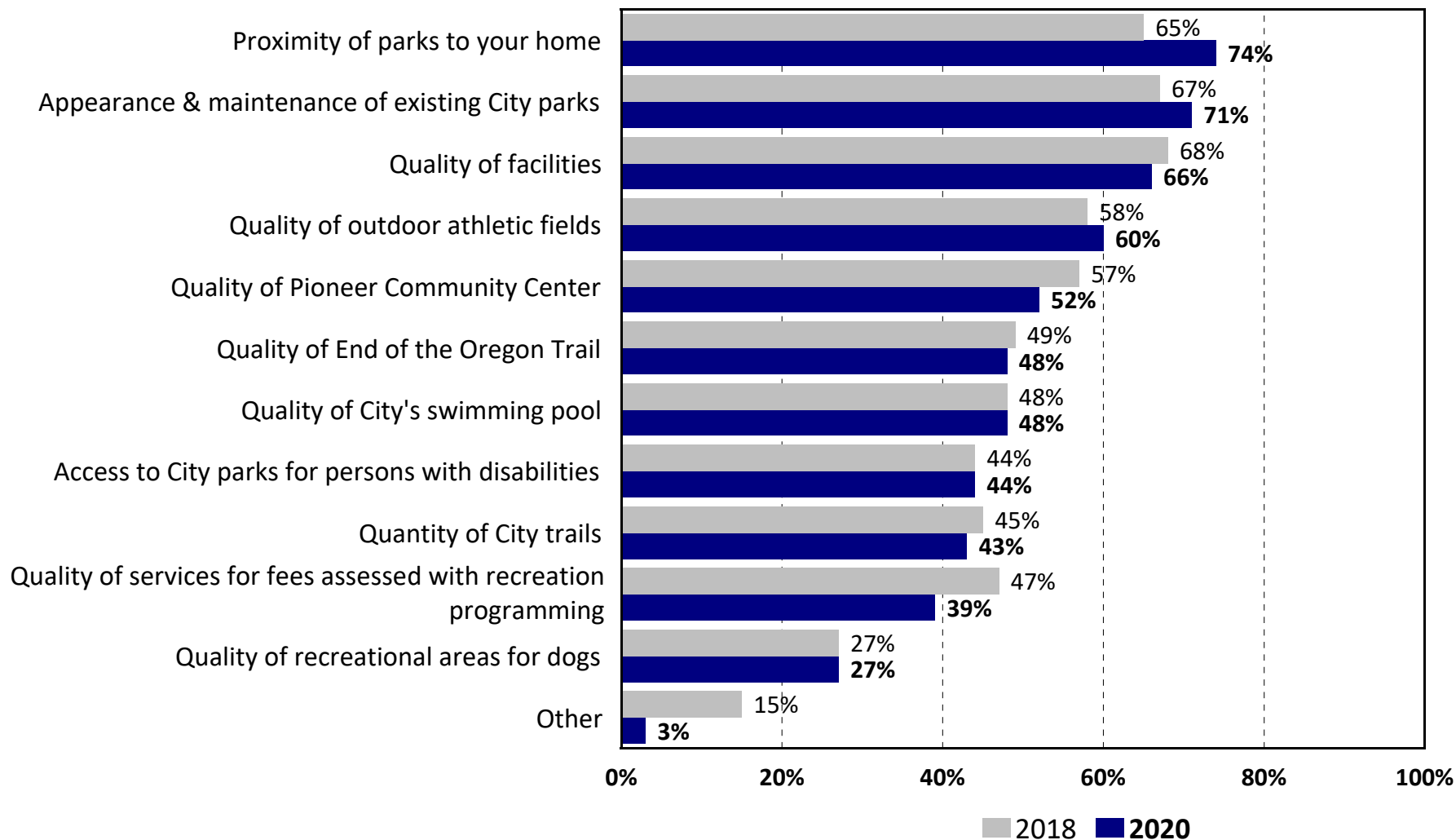
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction with Parks and Recreation Services

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

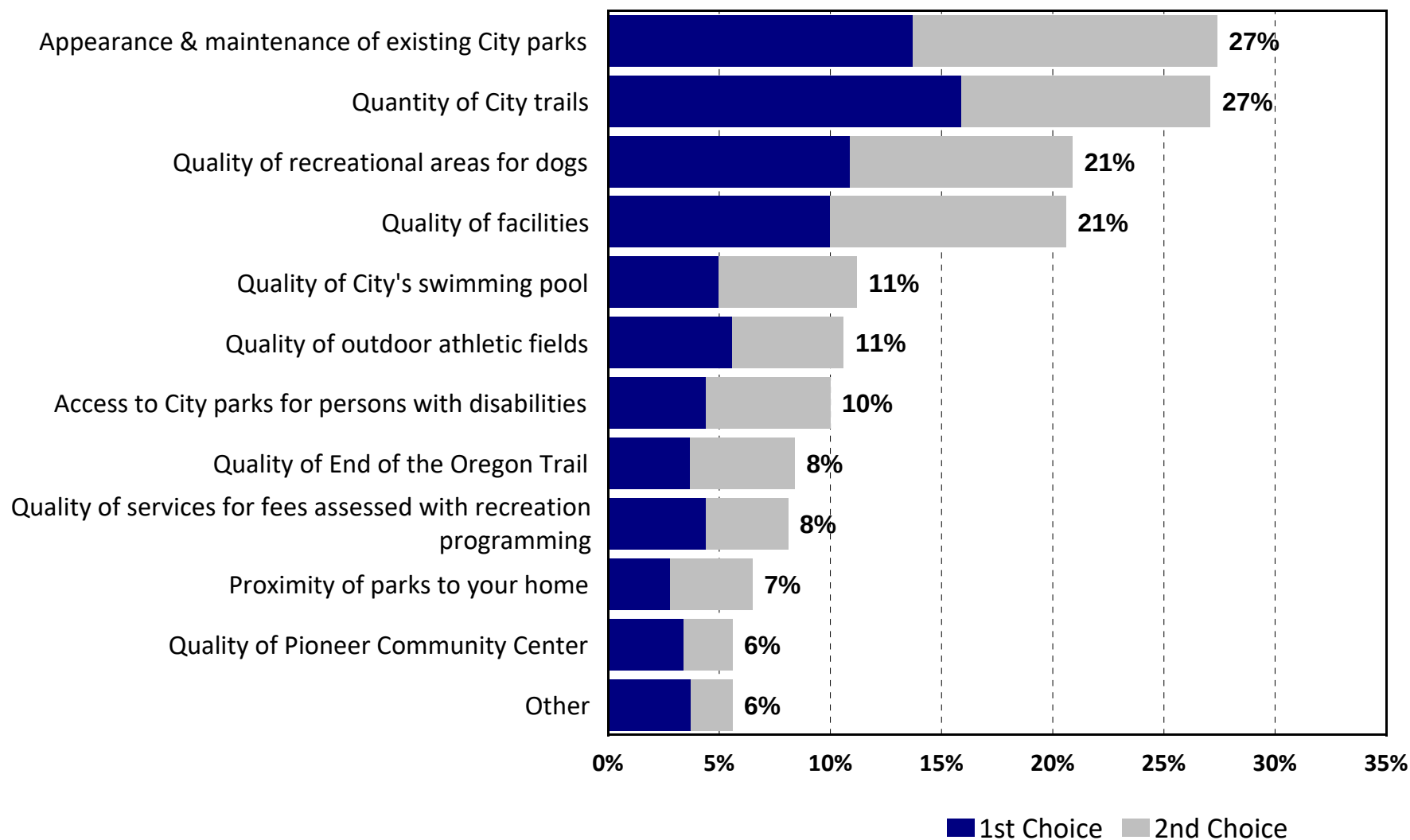


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q5. Parks and Recreation Services That Should Receive the Most Emphasis from City Leaders Over the Next Two Years

by percentage of respondents who selected the item as one of their top two choices



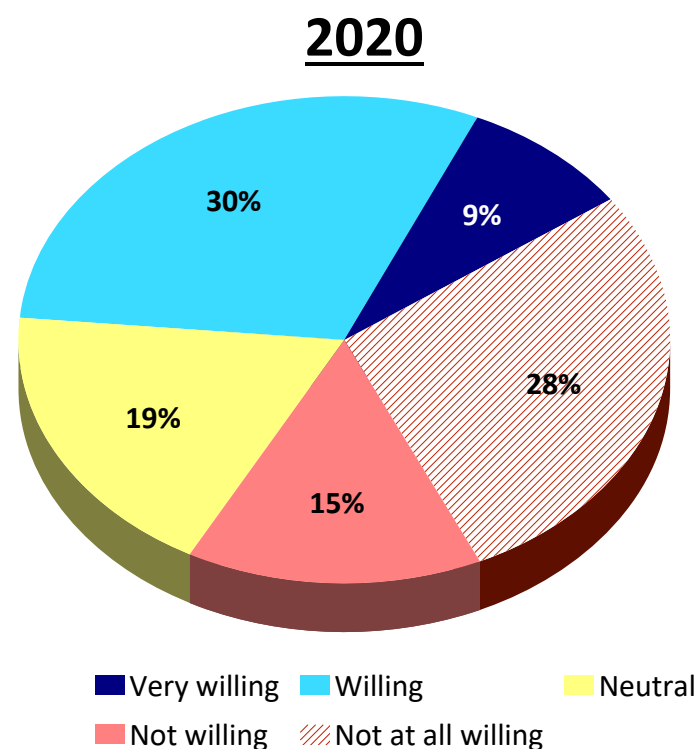
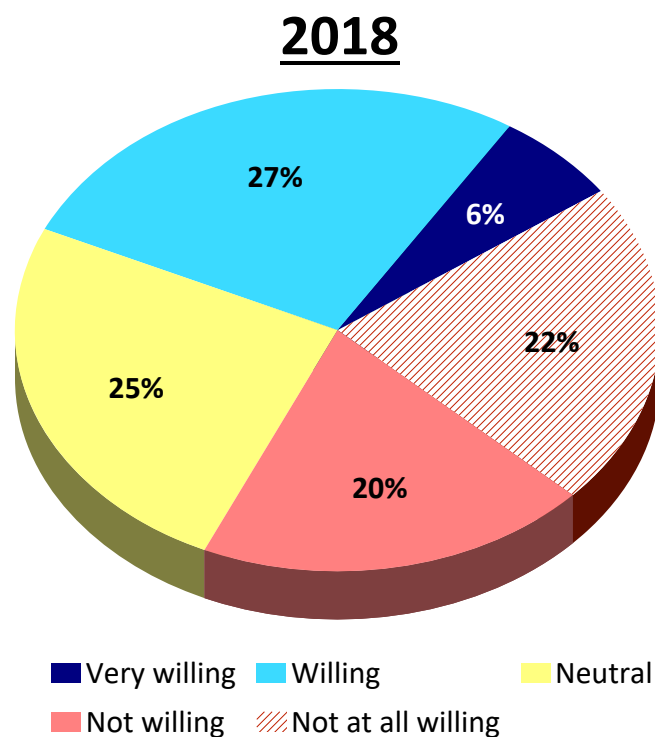
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q6. Willingness to Pay Additional Taxes or Fees to Acquire, Develop, and Maintain Parks, Recreation, and Trail Facilities

by percentage of respondents (excluding don't knows)

TRENDS

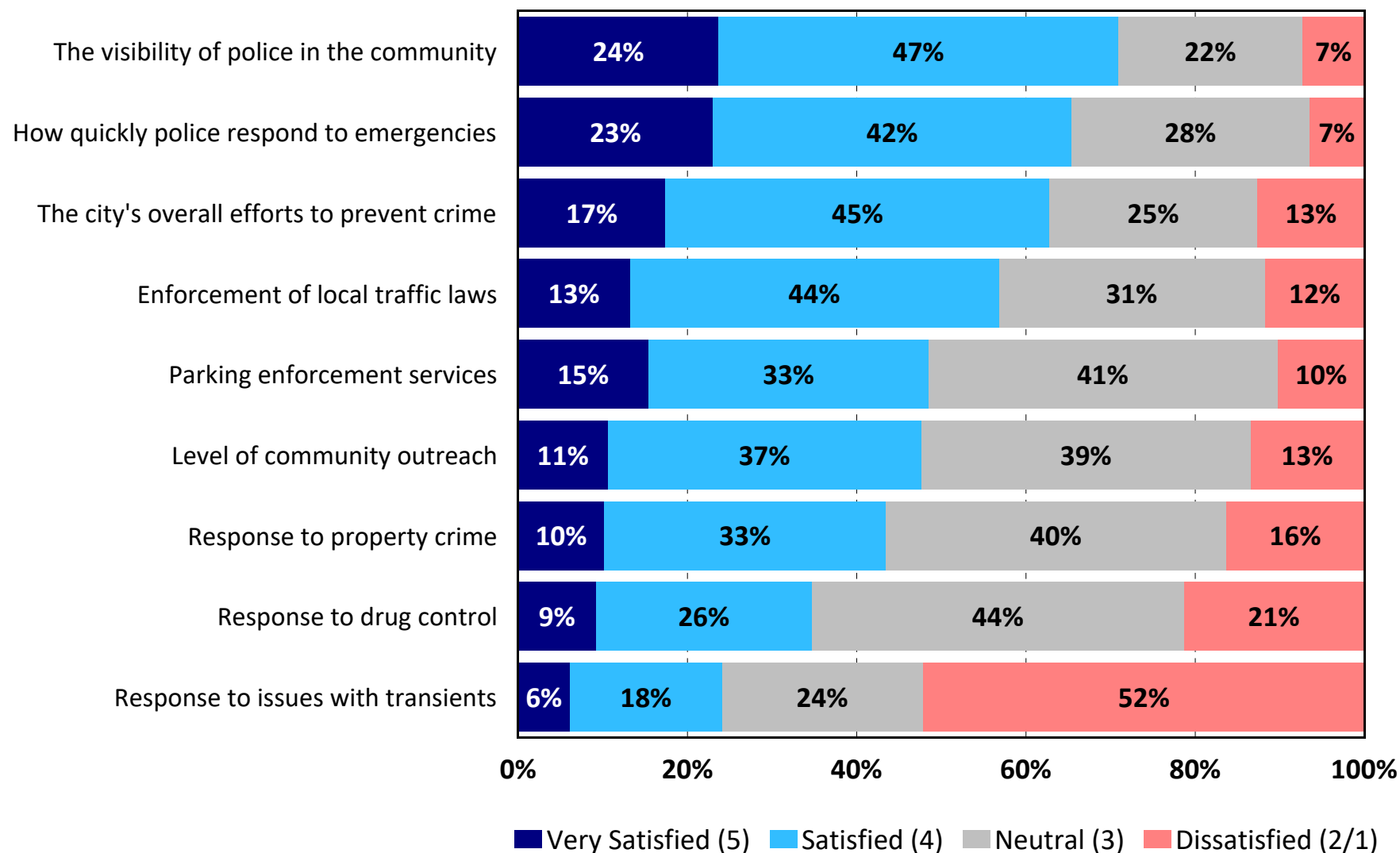


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q8. Satisfaction With Public Safety Services

by percentage of respondents (excluding don't knows)



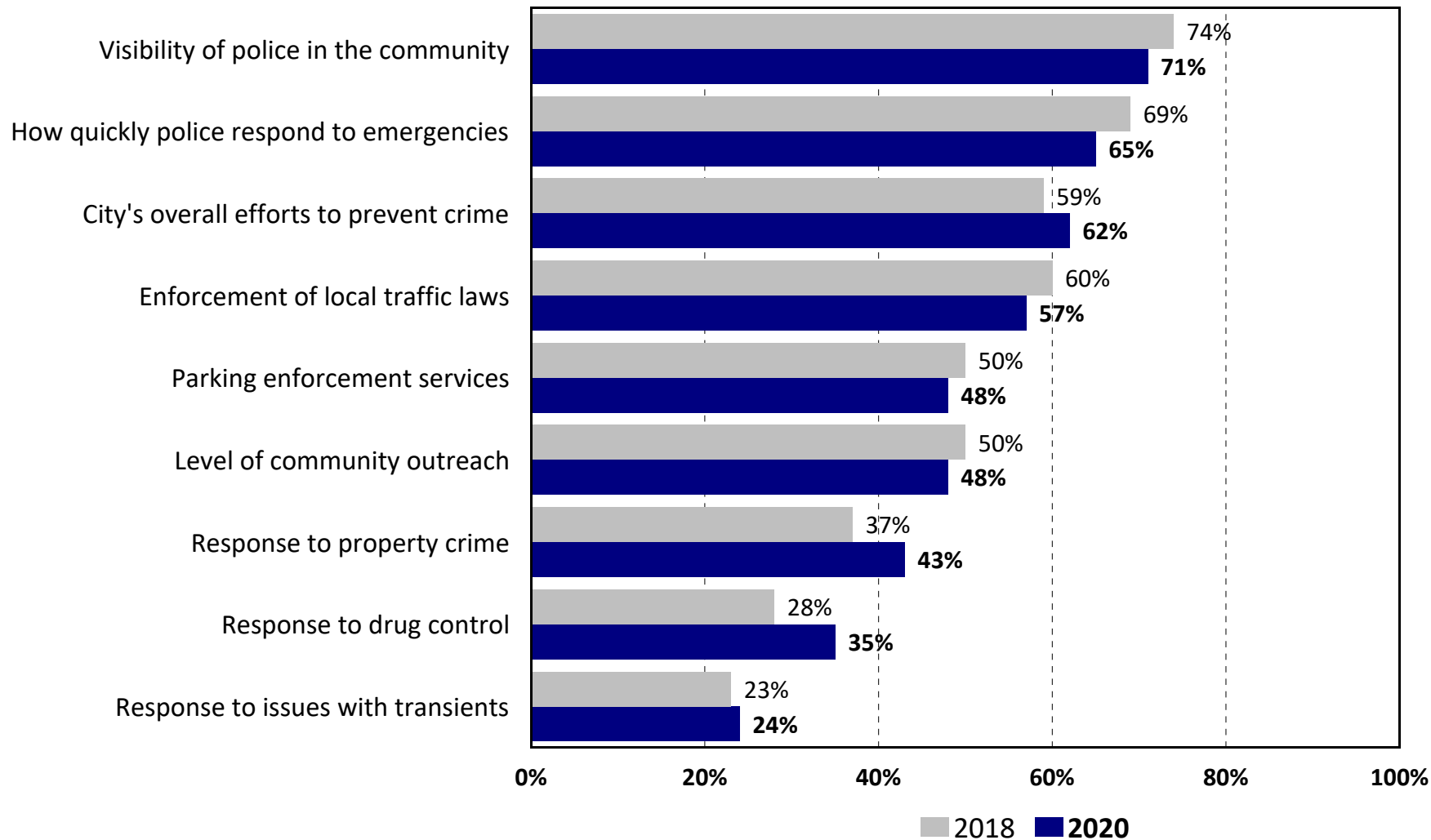
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction with Public Safety Services

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

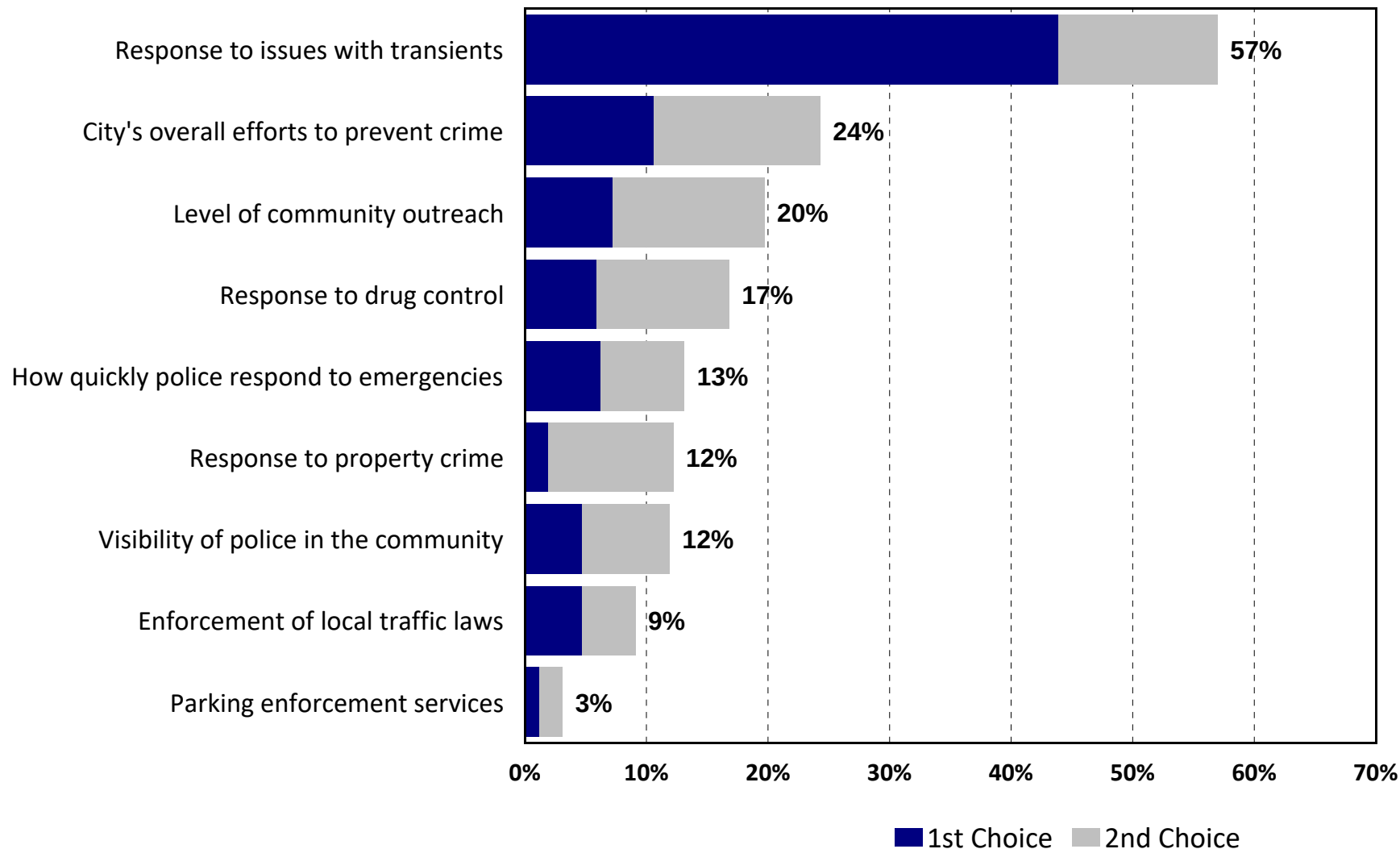


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q9. Public Safety Services That Should Receive the Most Emphasis from City Leaders Over the Next Two Years

by percentage of respondents who selected the item as one of their top two choices

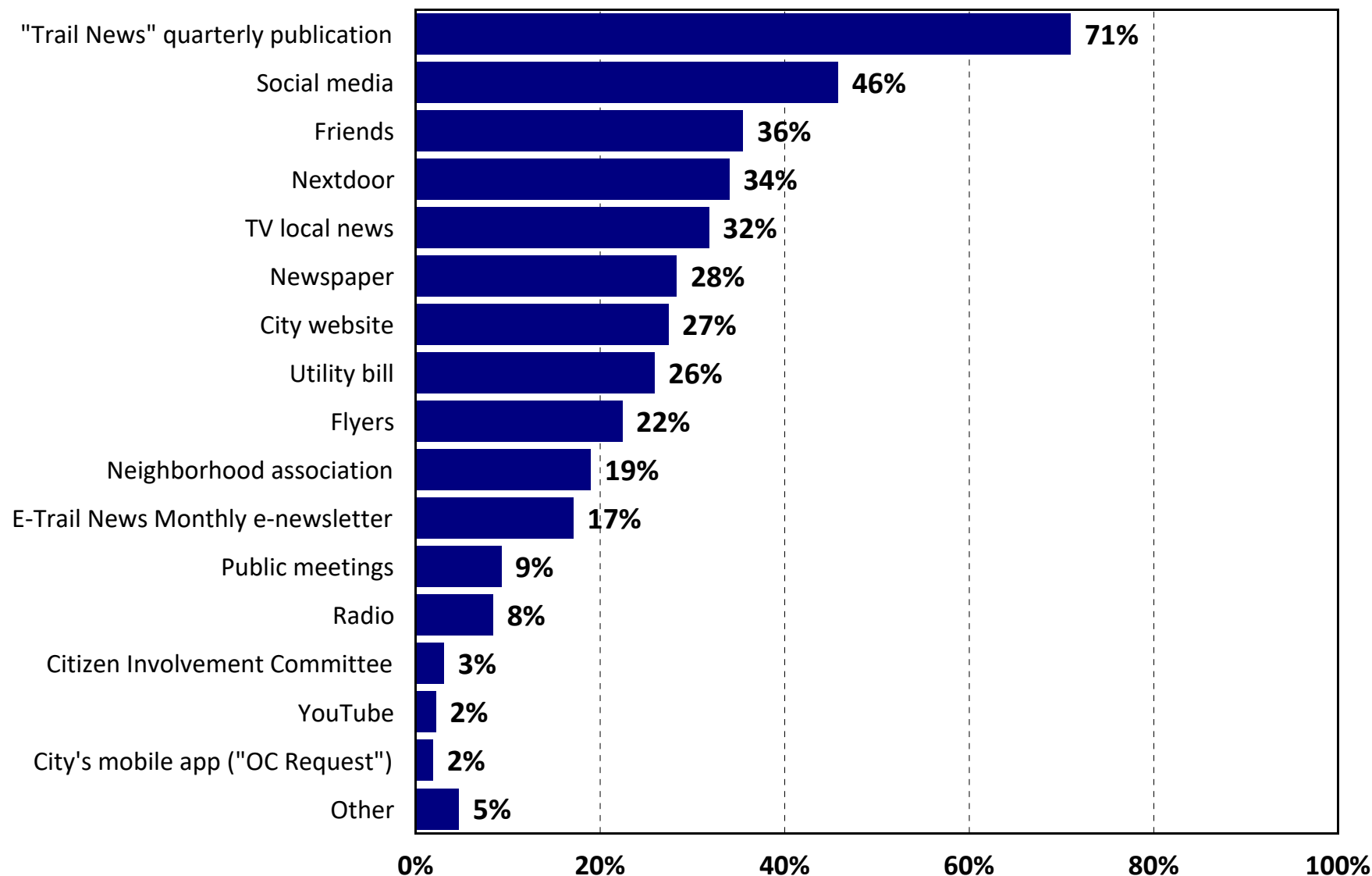


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q10. Where do you currently get news and information about City programs, services, and events?

by percentage of respondents (multiple choices could be made)

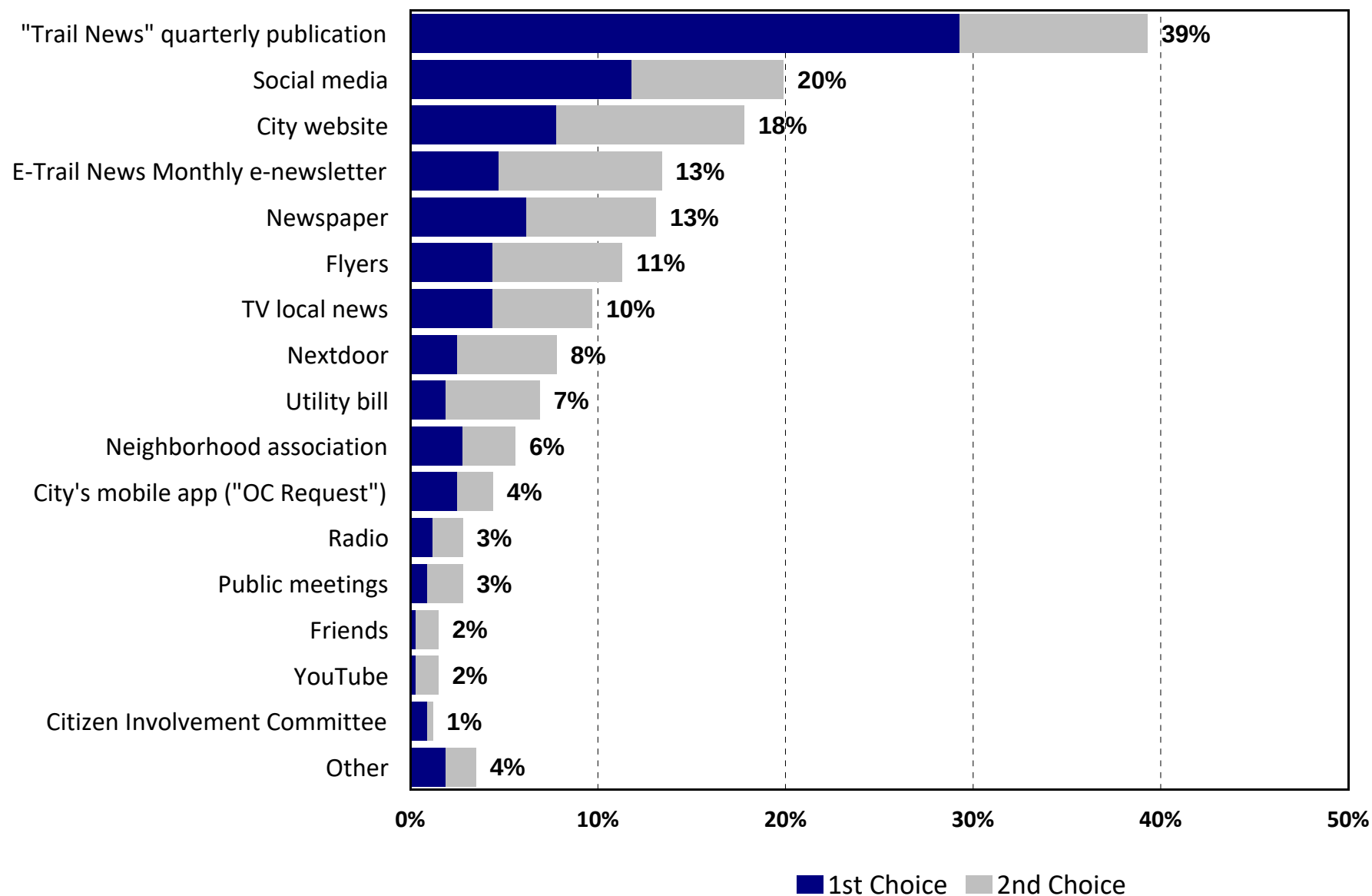


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q10a. Most Preferred Way to Get Information From the City

by percentage of respondents who selected the item as one of their top two choices

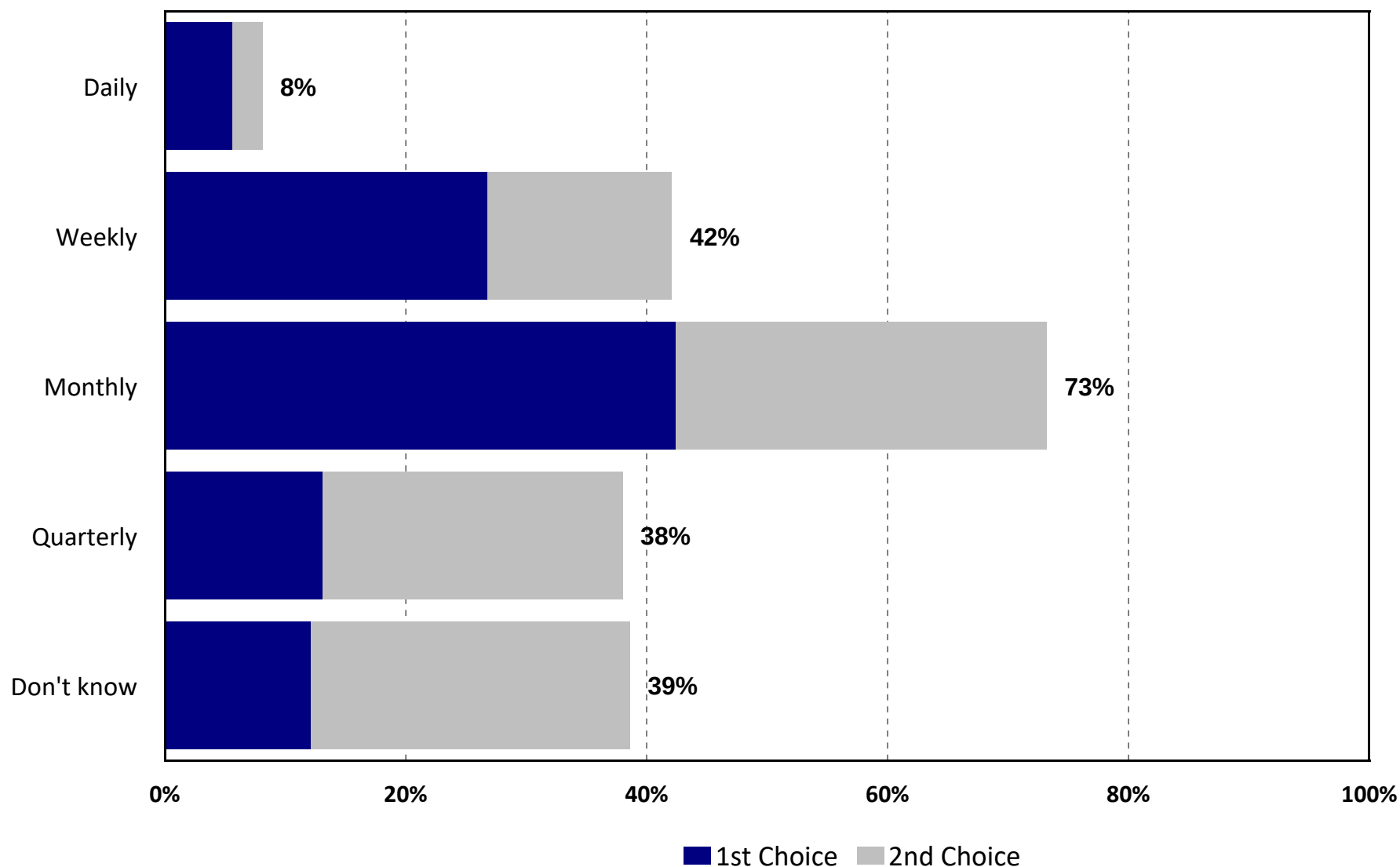


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q10b. How Frequently Respondents Would Like to Receive Information From the City

by percentage of respondents who selected the item as one of their top two choices

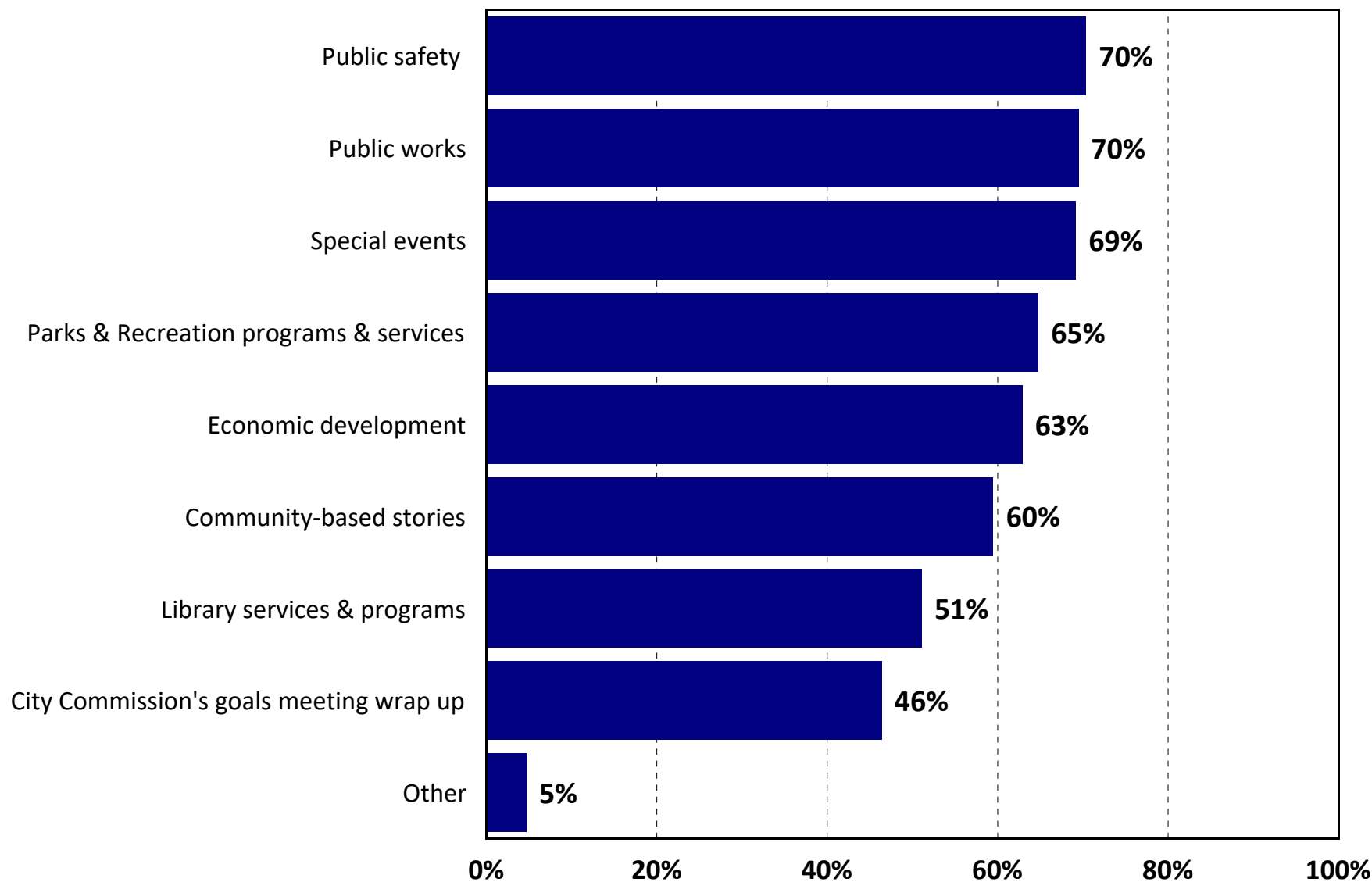


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q11. Types of Information Would Like to Receive From the City of Oregon City

by percentage of respondents (multiple choices could be made)

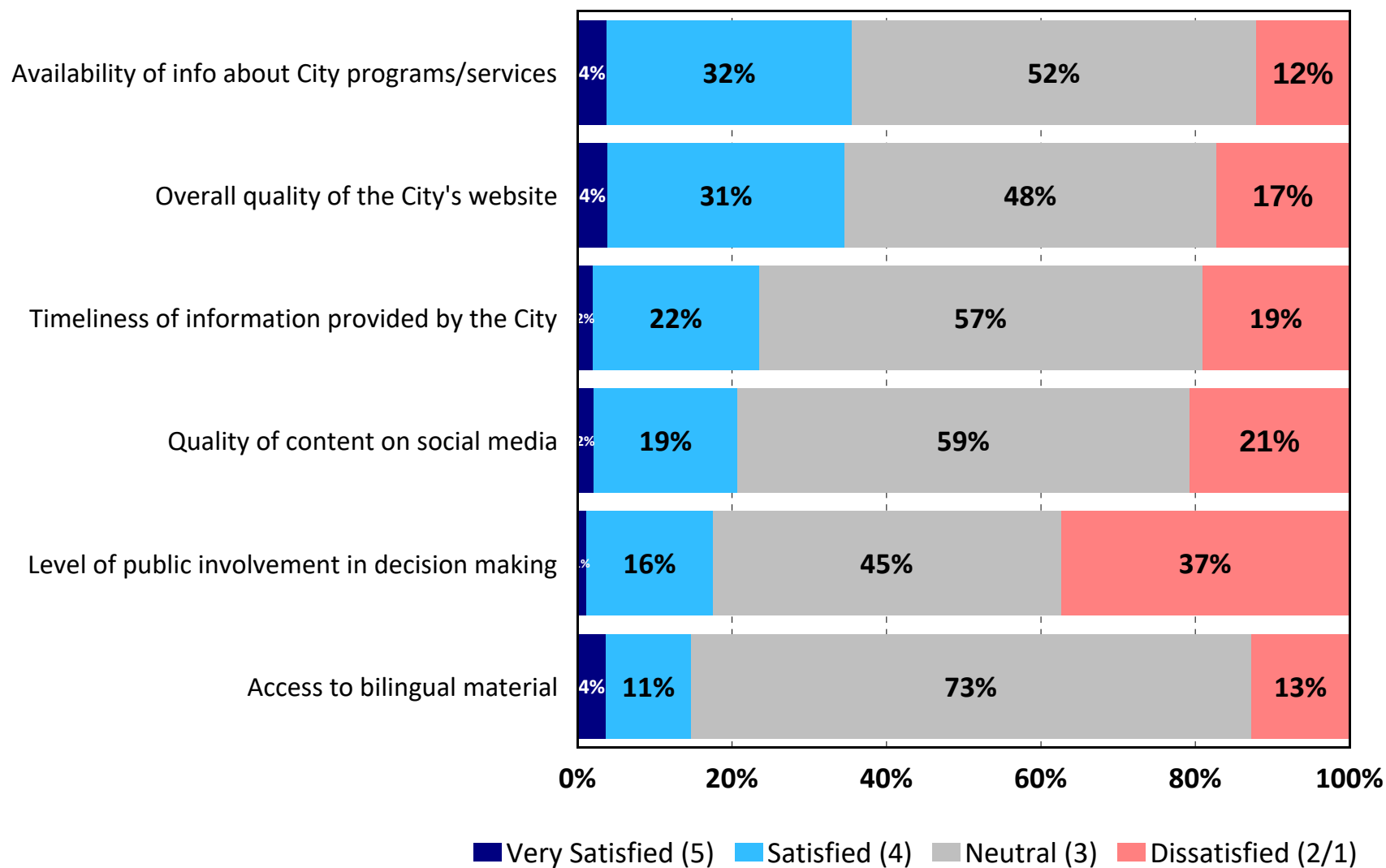


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q12. Satisfaction With City Communication

by percentage of respondents (excluding don't knows)



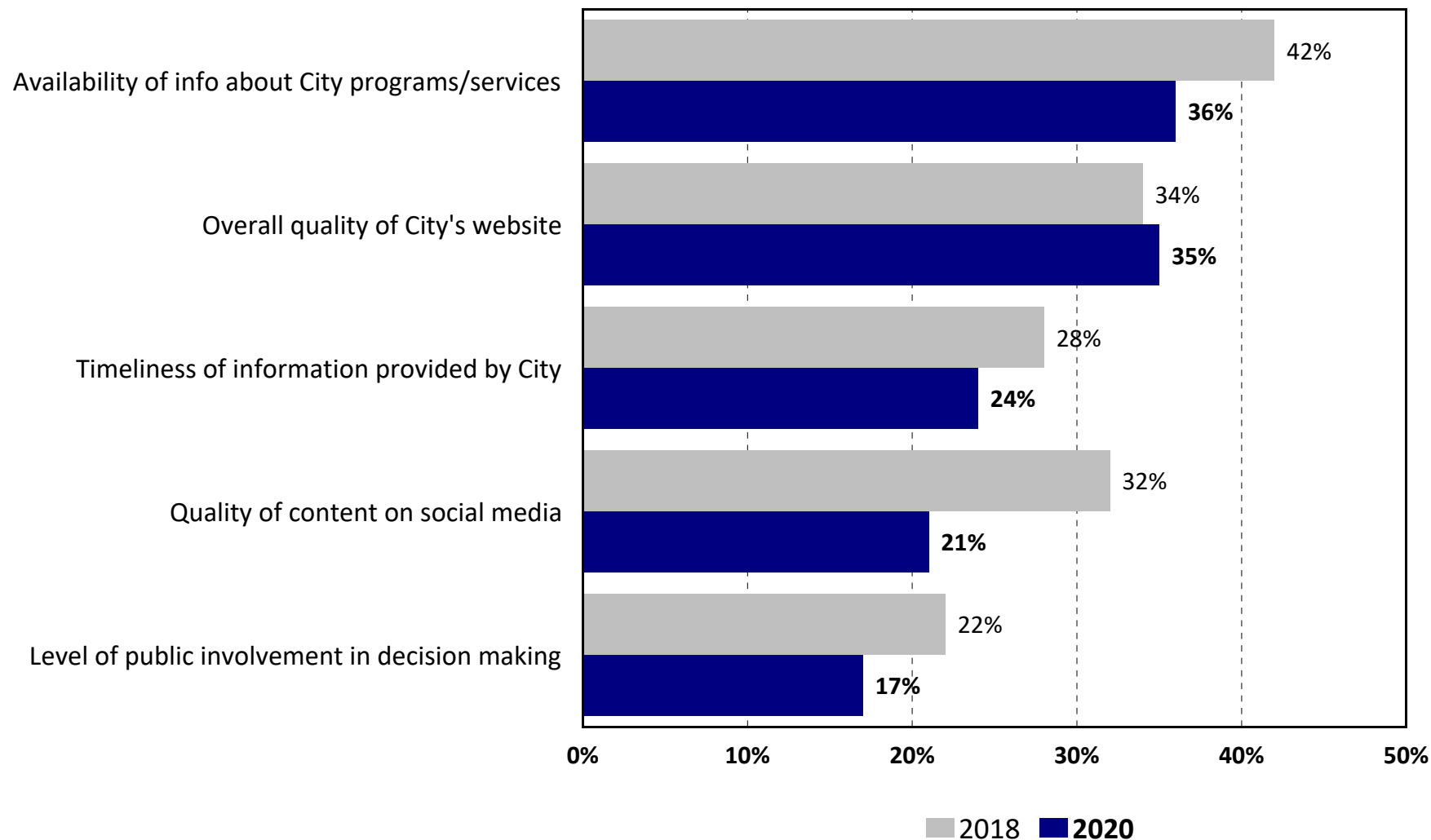
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction With City Communication

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

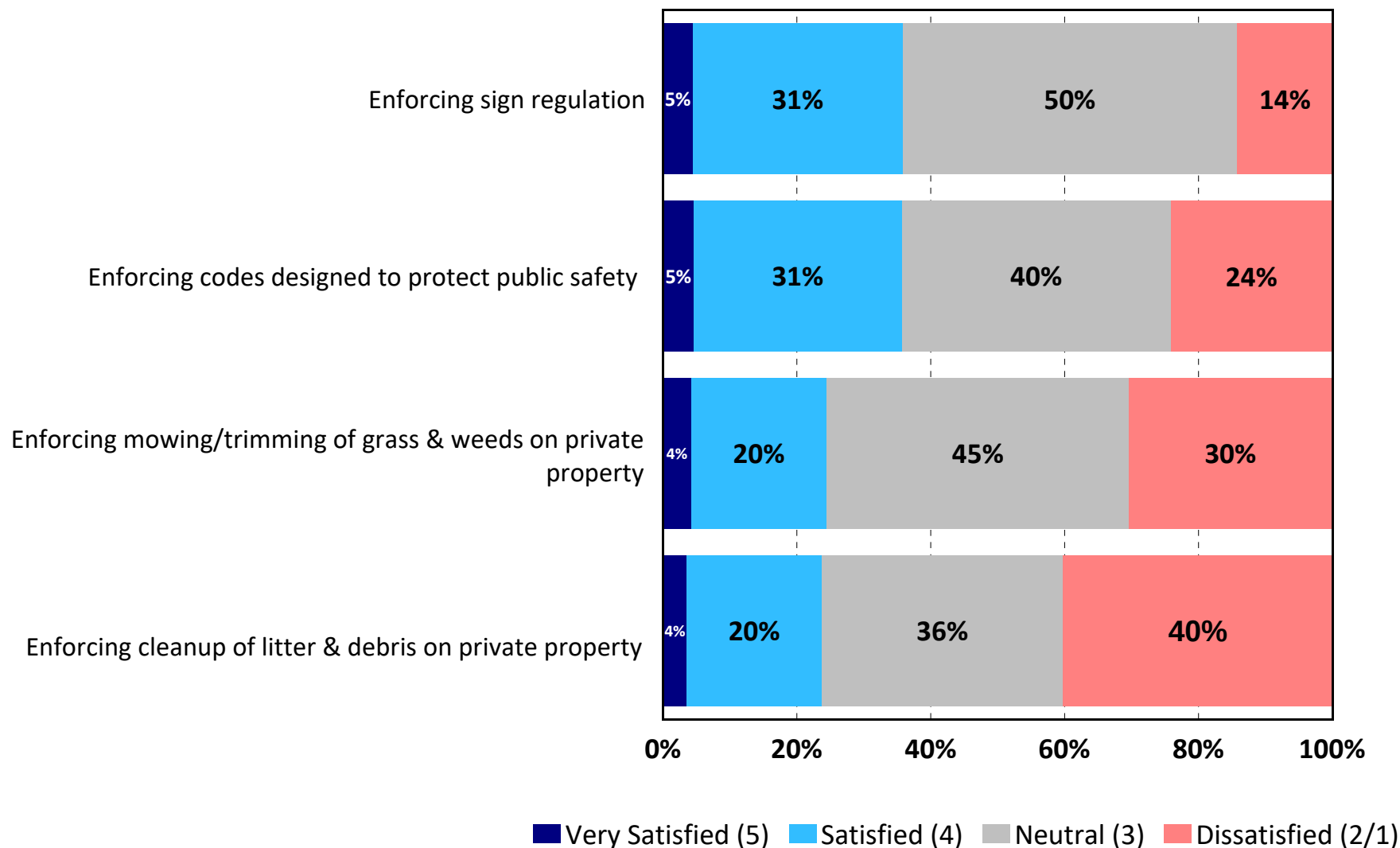


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q13. Satisfaction With Code Enforcement

by percentage of respondents (excluding don't knows)



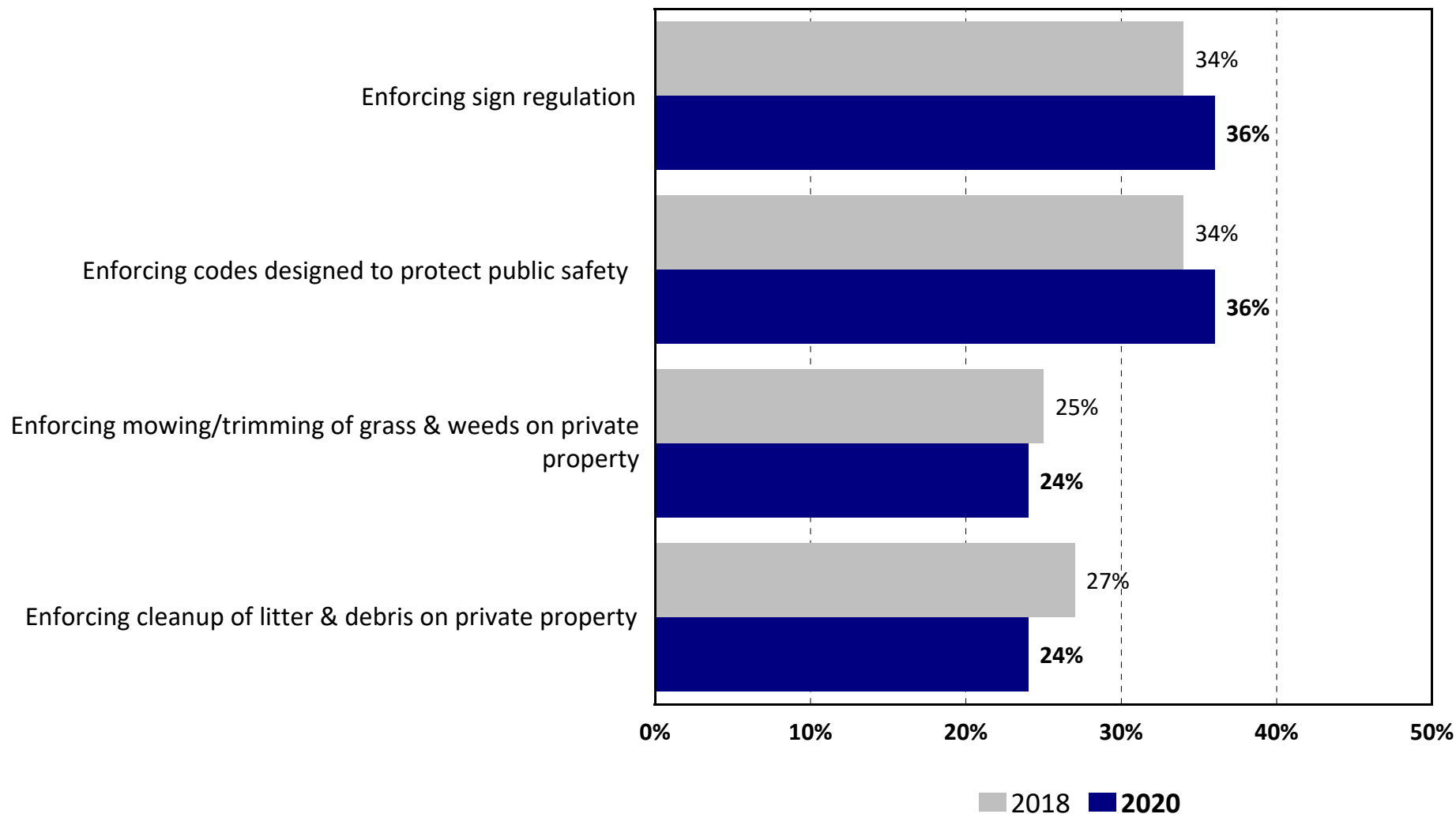
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction With Code Enforcement

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

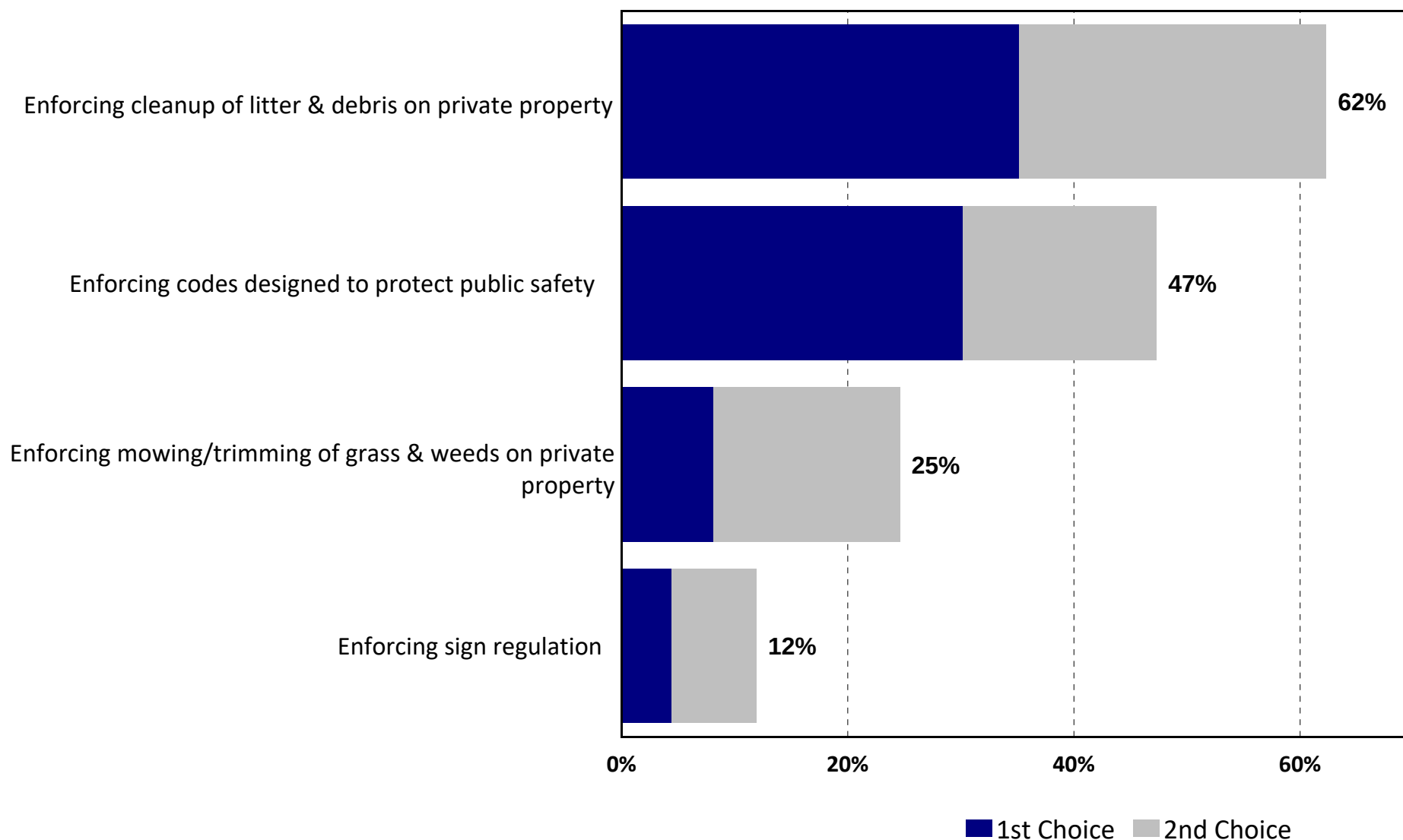


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q14. Code Enforcement Services That Should Receive the Most Emphasis Over the Next Two Years

by percentage of respondents who selected the item as one of their top two choices

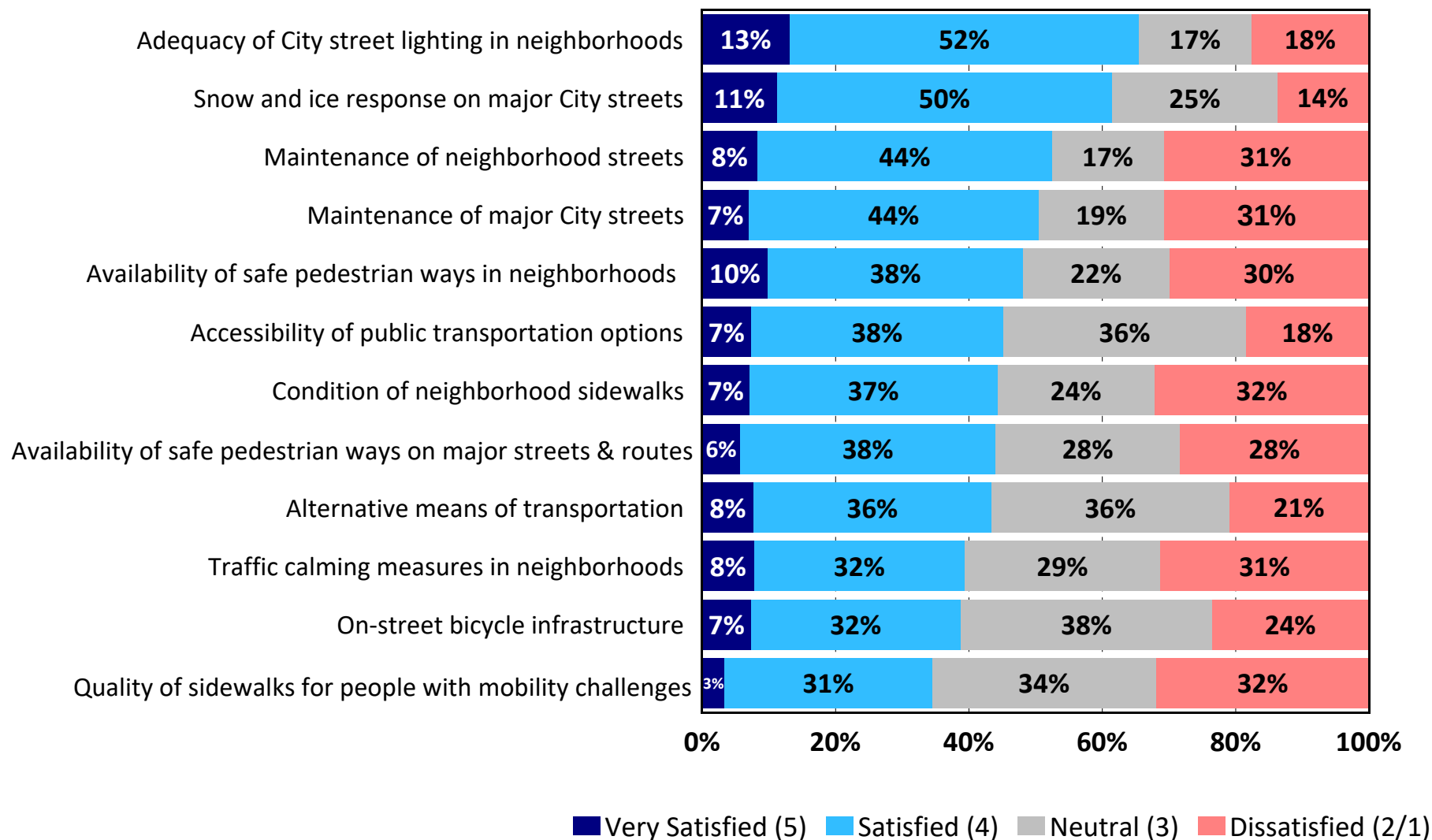


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q15. Satisfaction With Traffic and Infrastructure Services

by percentage of respondents (excluding don't knows)



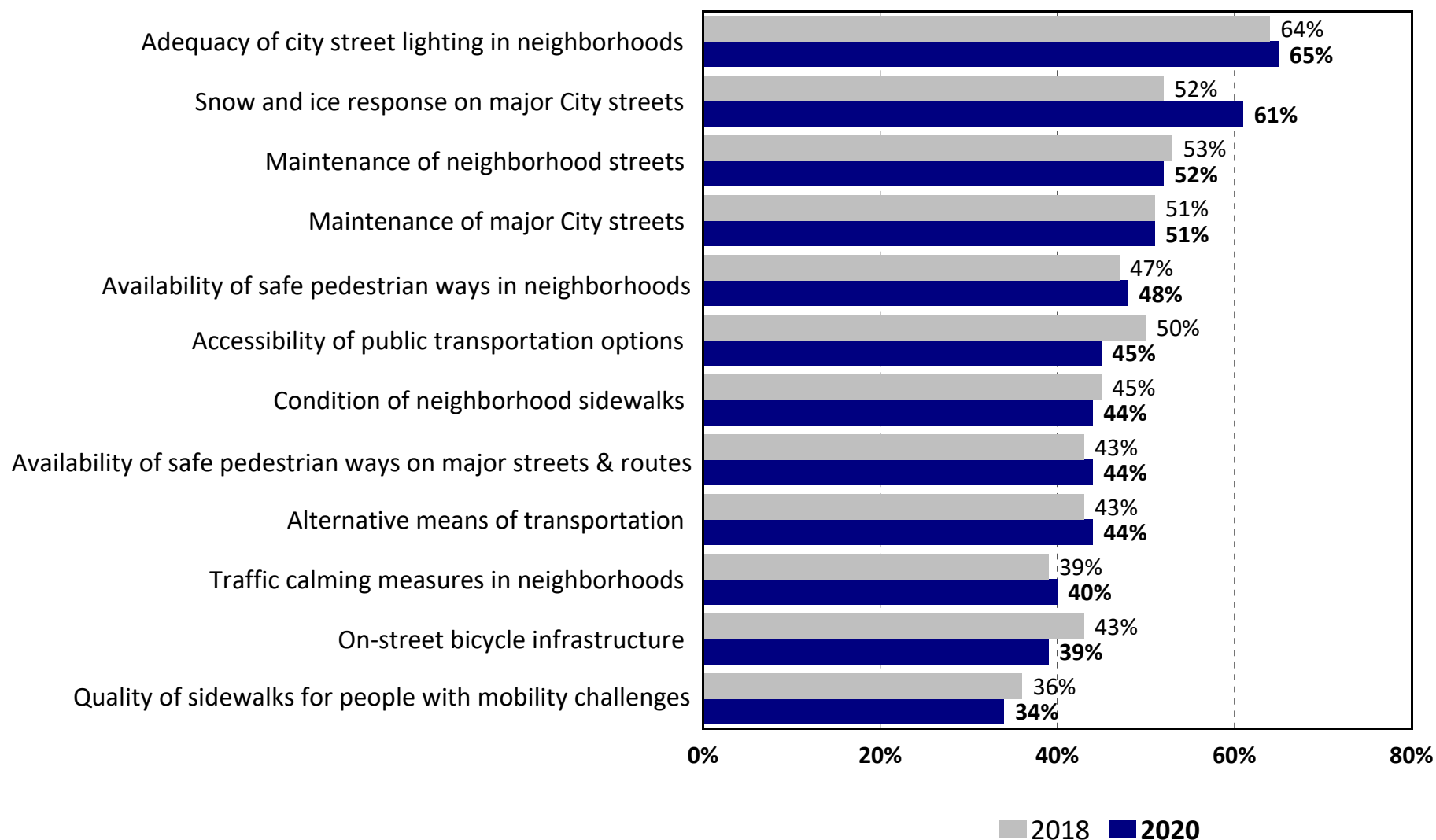
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction With Traffic and Infrastructure Services

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

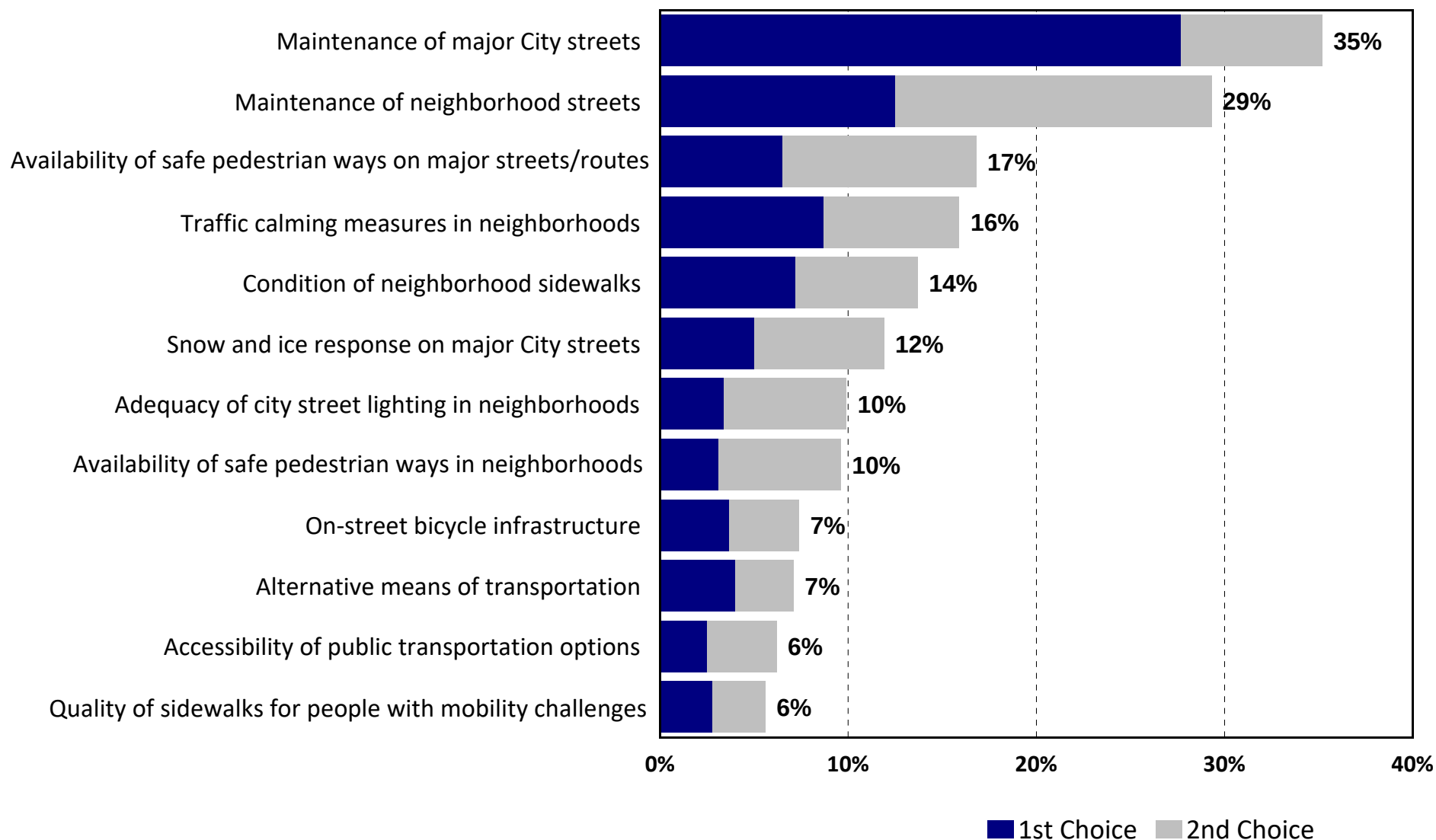


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q16. Traffic and Infrastructure Services That Should Receive the Most Emphasis Over the Next Two Years

by percentage of respondents who selected the item as one of their top two choices

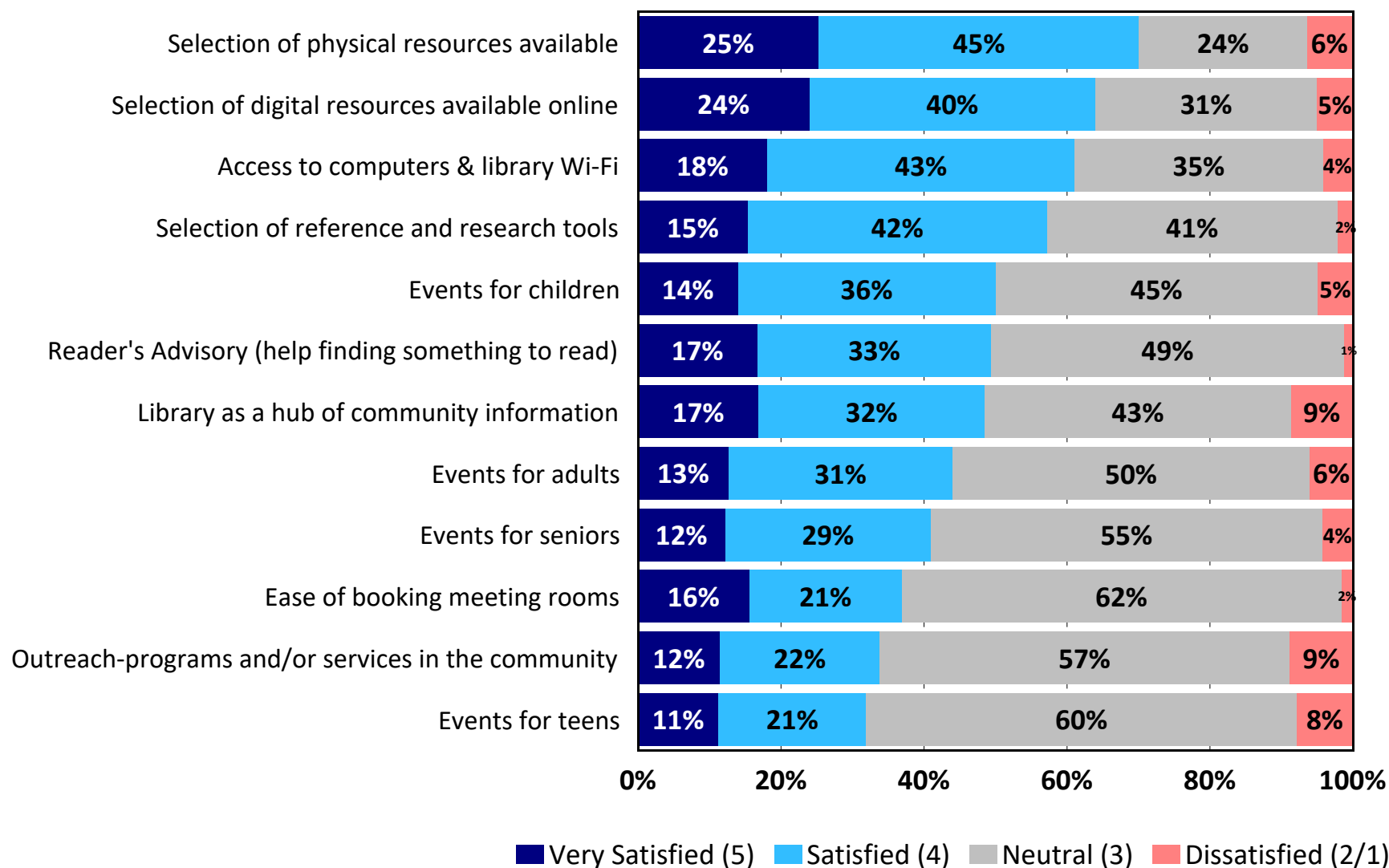


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q17. Satisfaction With Public Library Services

by percentage of respondents (excluding don't knows)



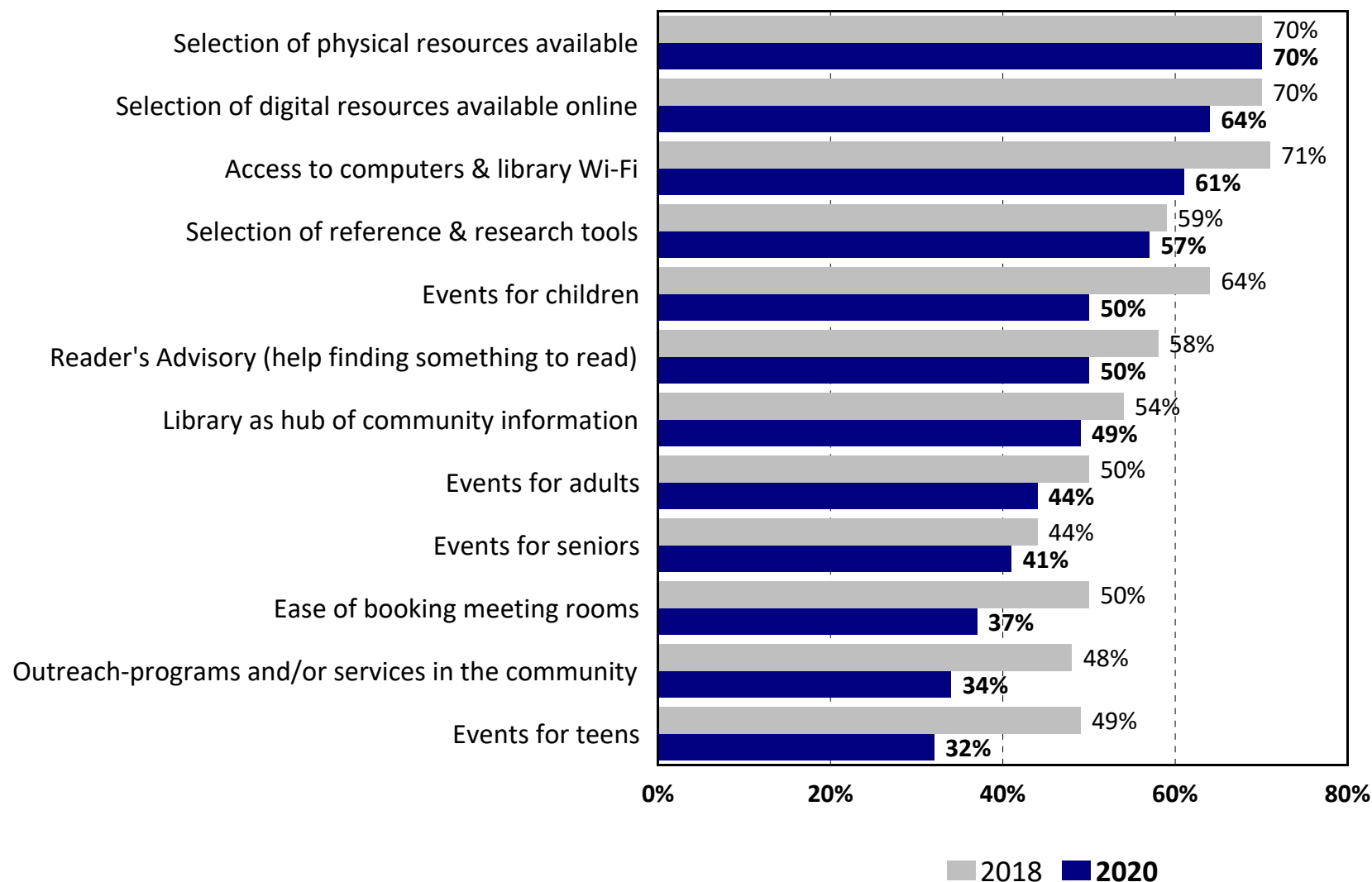
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Satisfaction With Public Library Services

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute (2020 - Oregon City, OR)

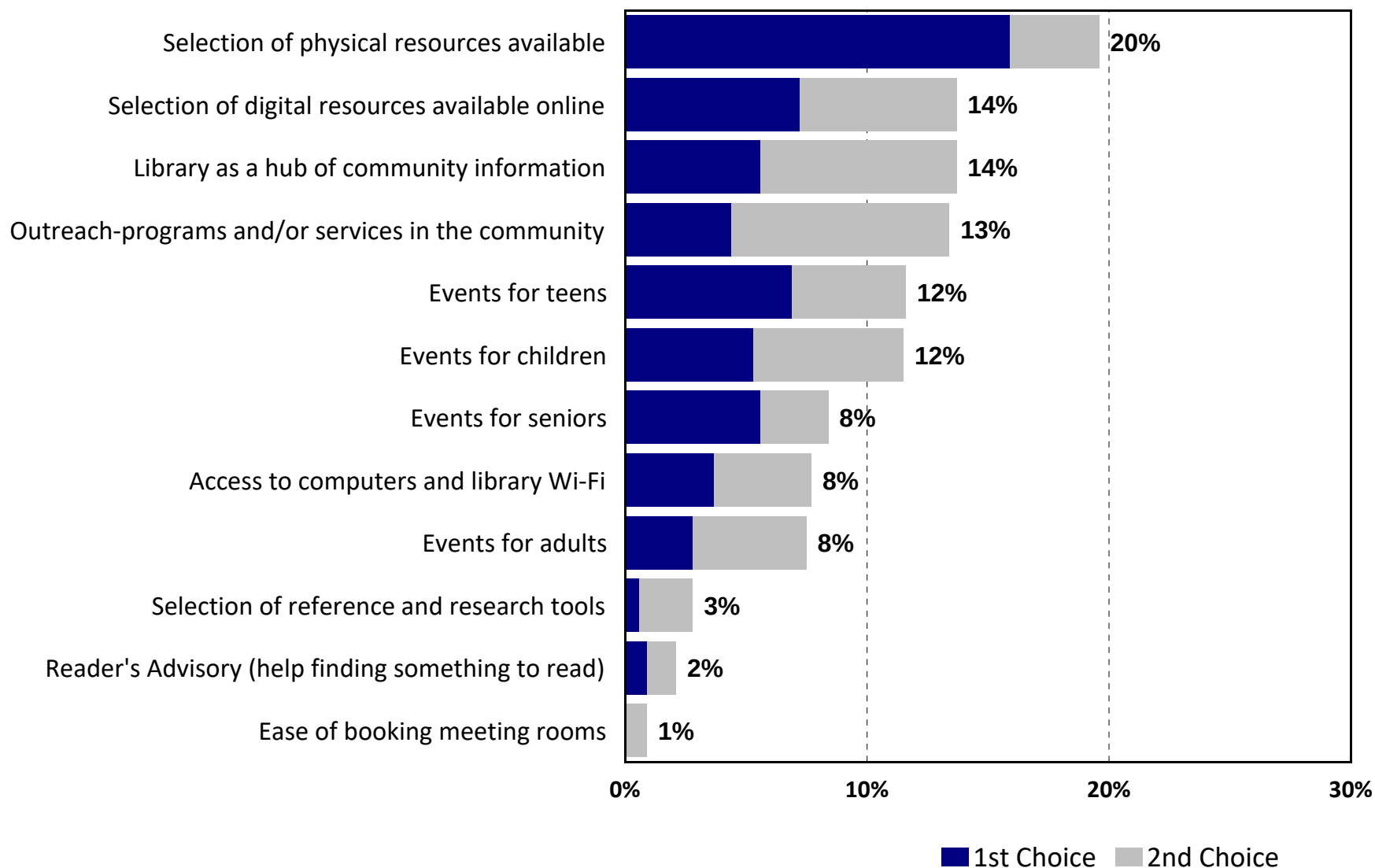
ETC Institute (2020)

Page 27

Page 40

Q18. Public Library Services That Should Receive the Most Emphasis Over the Next Two Years

by percentage of respondents who selected the item as one of their top two choices

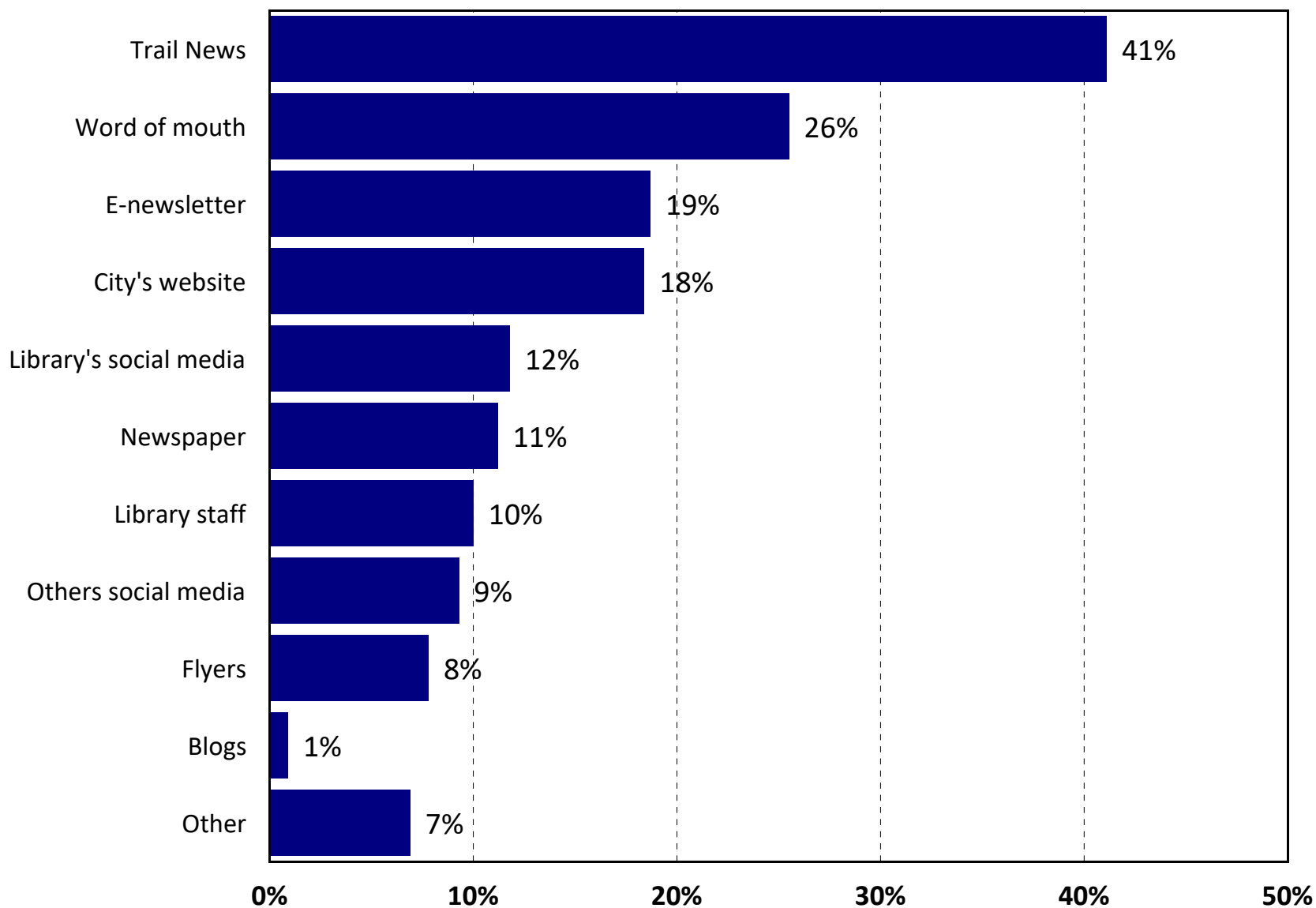


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q19. How do you get information about the library?

by percentage of respondents (multiple choices could be made)

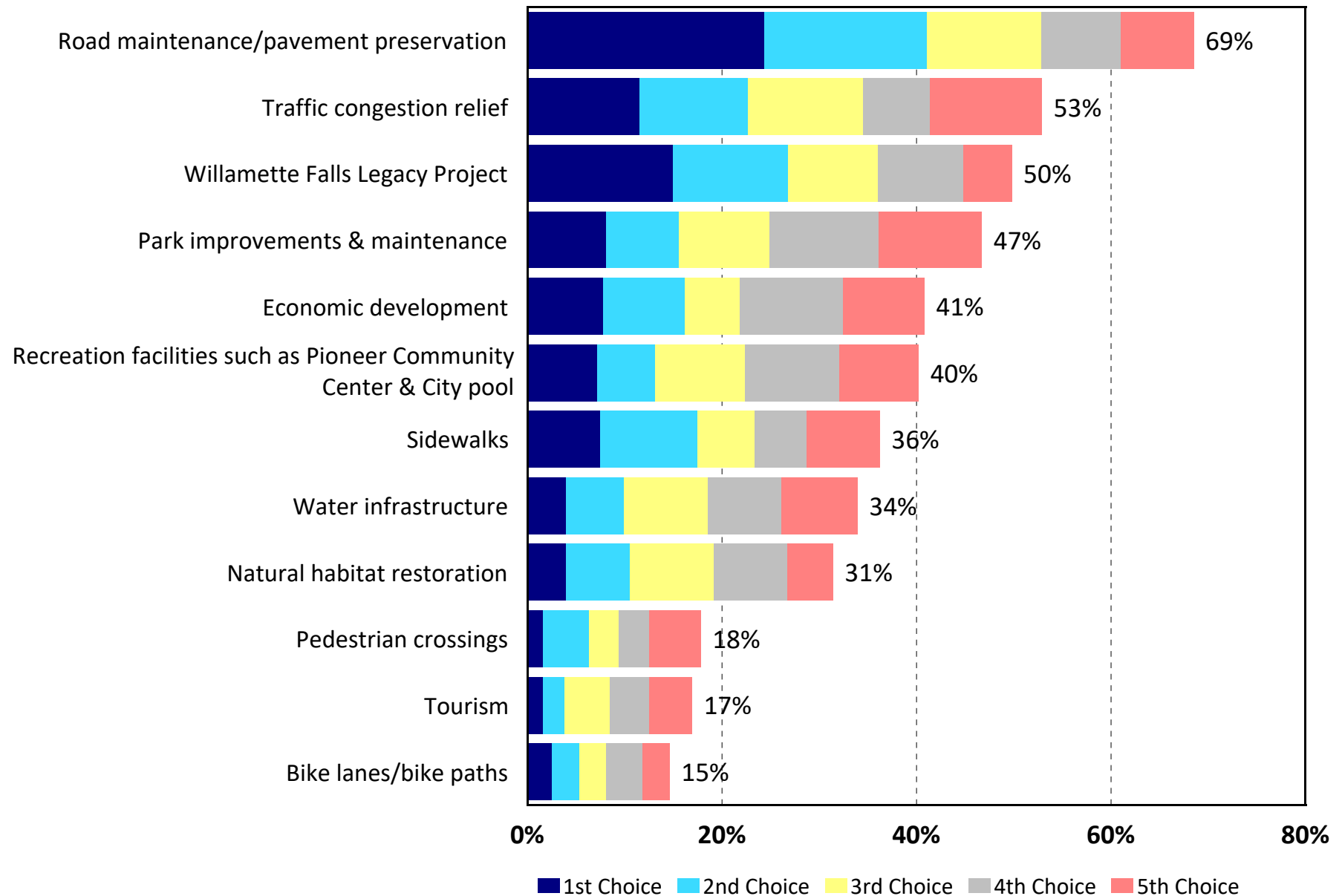


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q20. Top Capital Investment Priorities

by percentage of respondents who selected the item as one of their top five choices

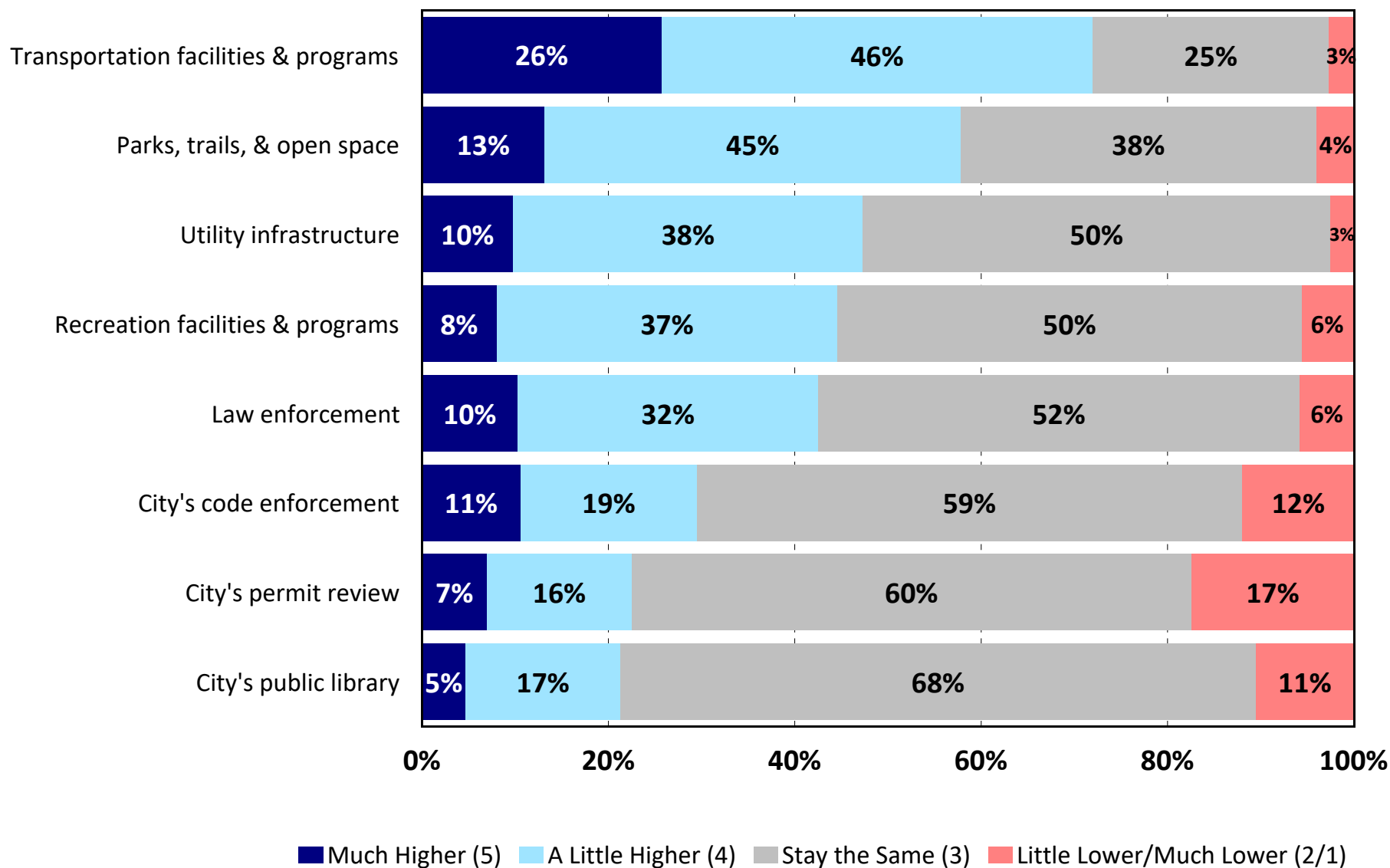


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q21. Level of Change in Service Expectations

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)

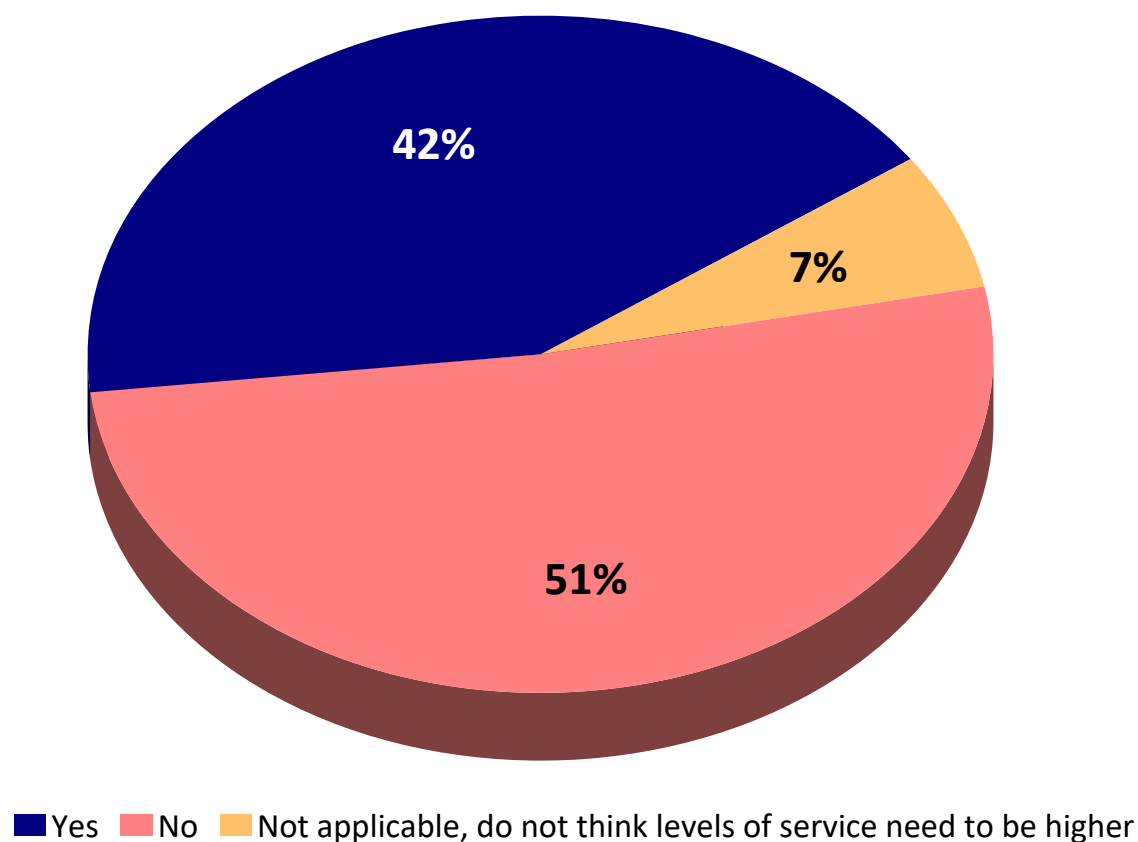


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q21a. Would you be willing to pay more in taxes or fees to support an increase in the service level?

by percentage of respondents

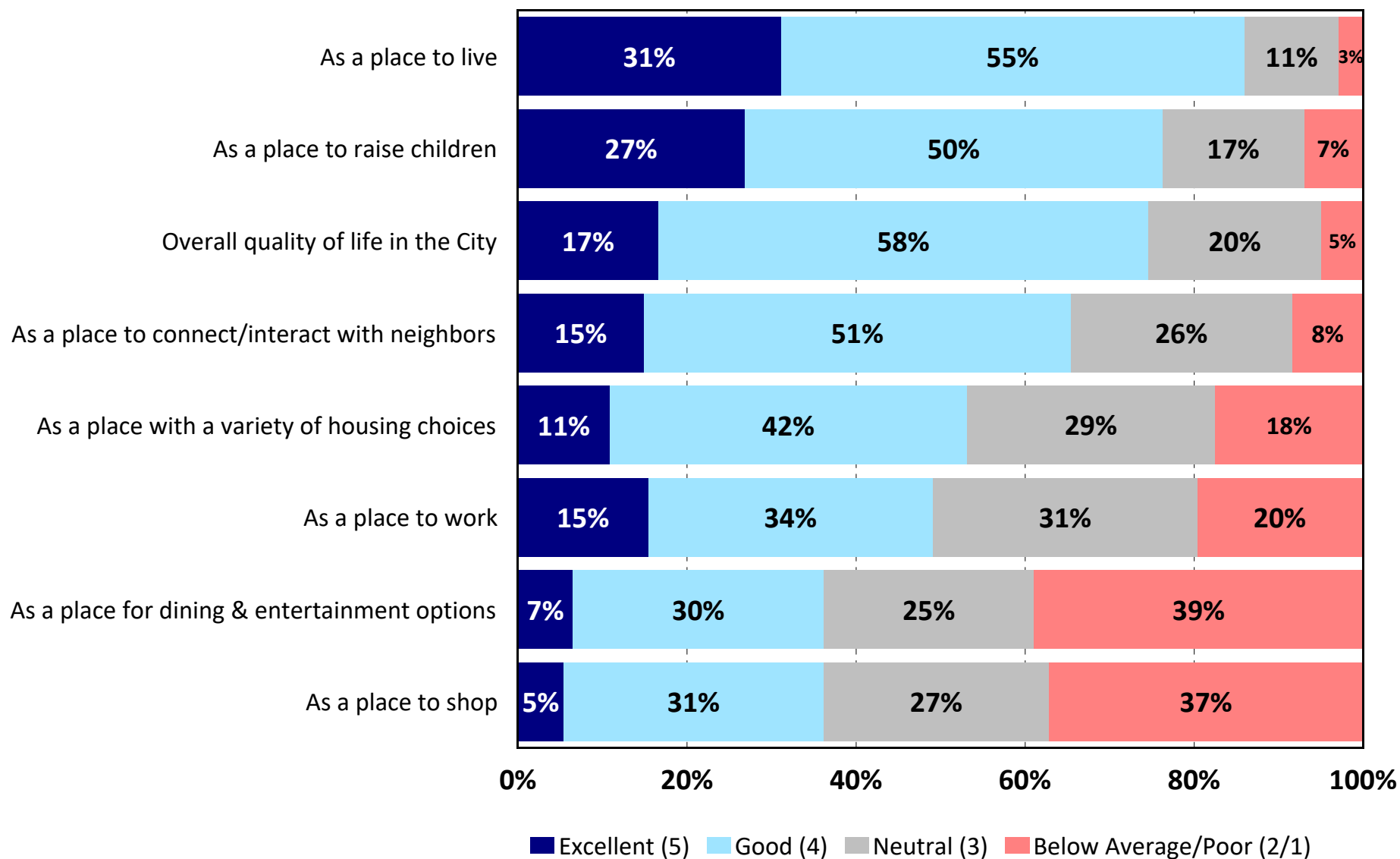


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q22. Ratings of Oregon City

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



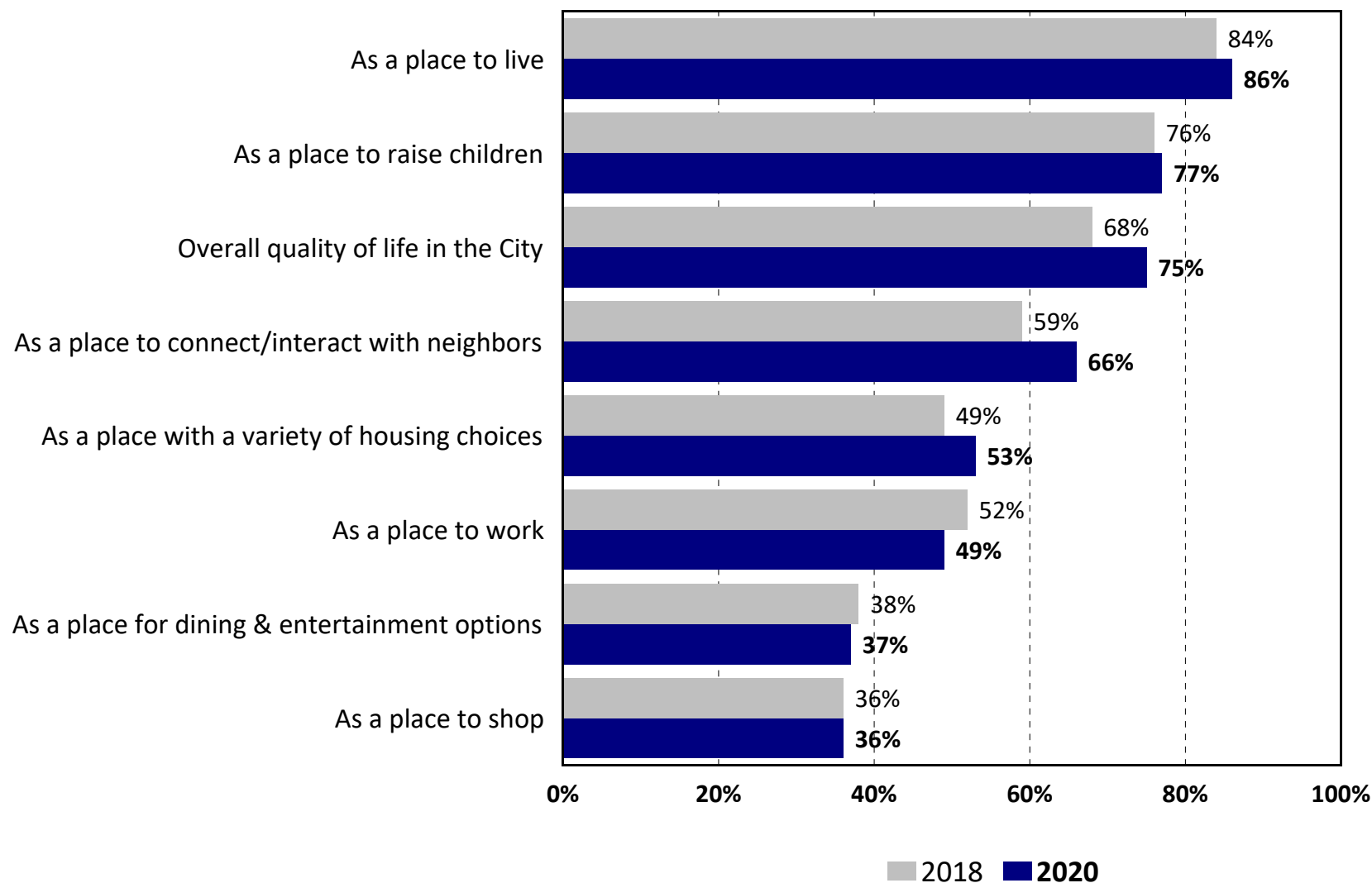
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Ratings of Oregon City

2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)



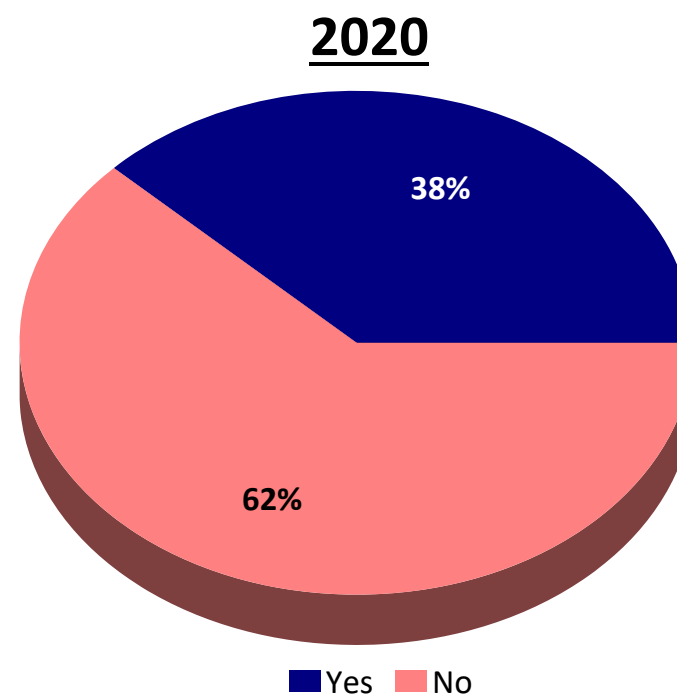
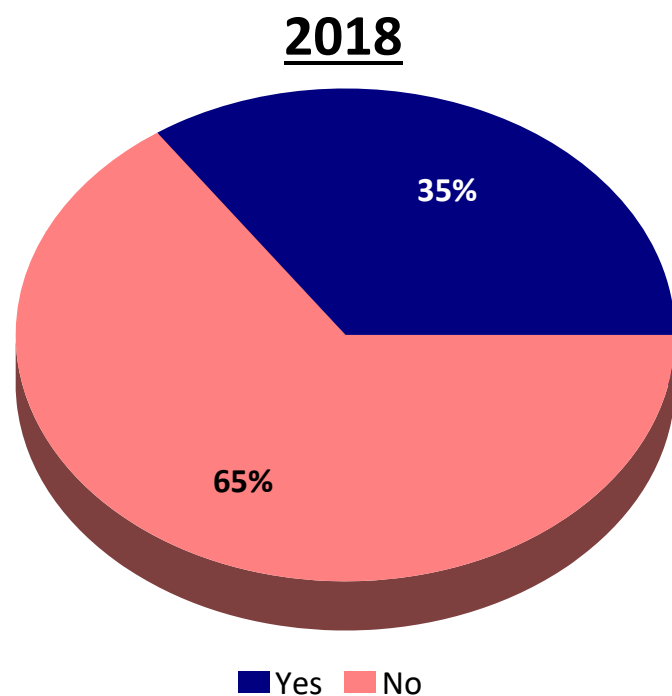
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q23. Have you called, emailed, or visited the city with a question, problem, or complaint during the past year?

by percentage of respondents (excluding don't knows)

TRENDS



Source: ETC Institute (2020 - Oregon City, OR)

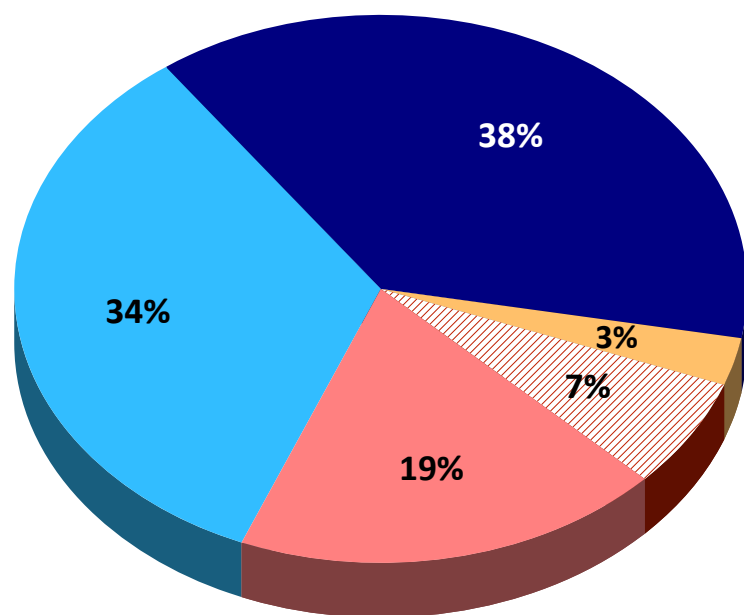
ETC Institute (2020)

Q23a. How easy was it to contact the person you needed to reach?

by percentage of respondents who have contacted the City in the past year

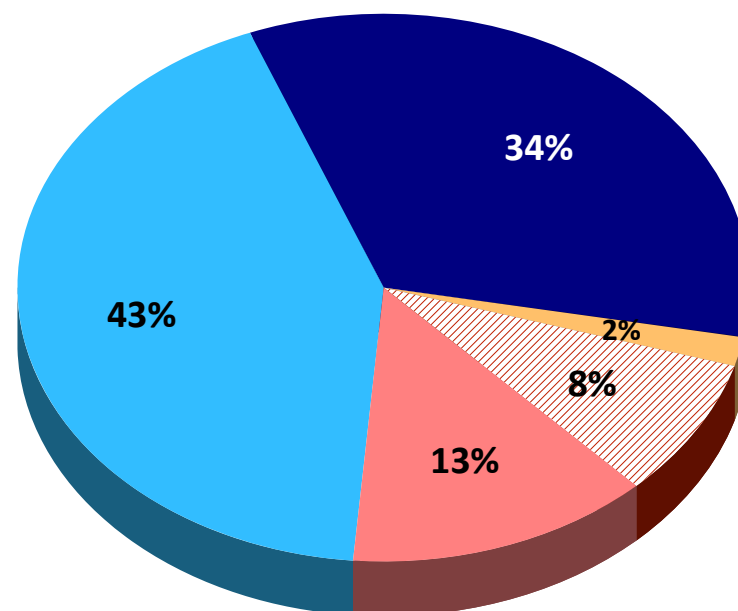
TRENDS

2018



Very easy Somewhat easy Difficult
Very difficult Don't know

2020



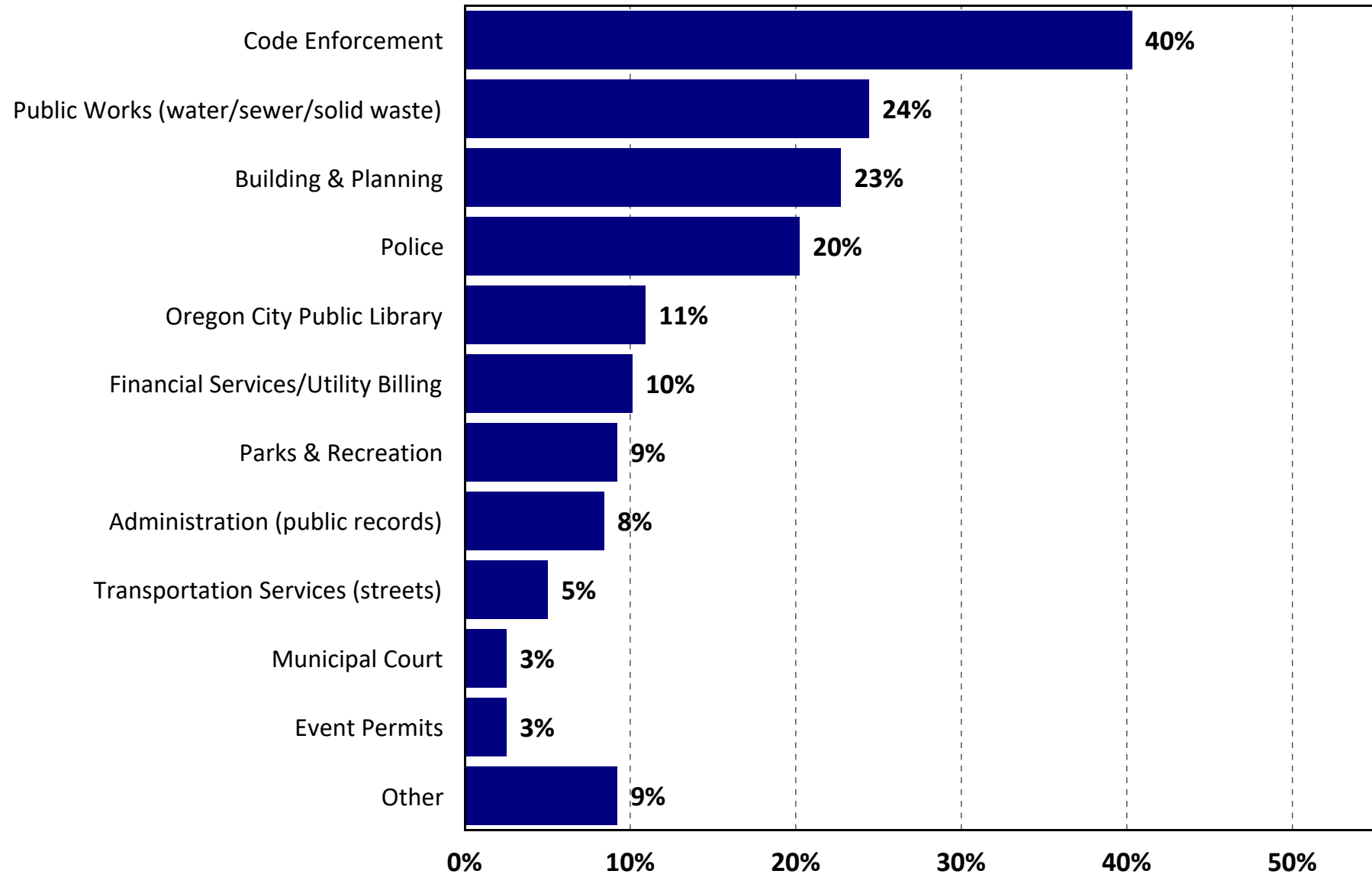
Very easy Somewhat easy Difficult
Very difficult Don't know

Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q23b. What department did you contact?

by percentage of respondents who have contacted the City in the past year
(multiple choices could be made)



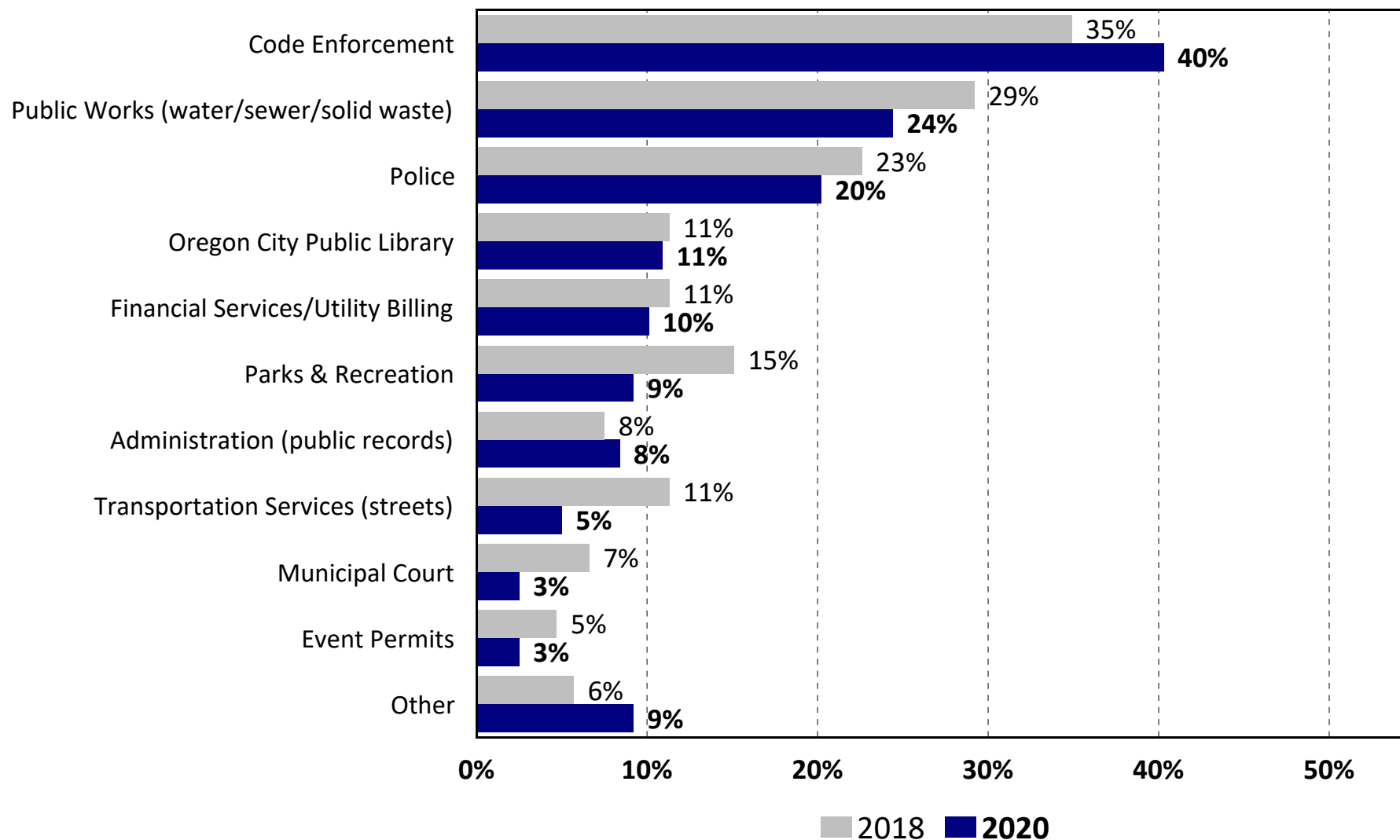
Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: What department did you contact?

2018 vs. 2020

by percentage of respondents who have contacted the City in the past year (multiple choices could be made)

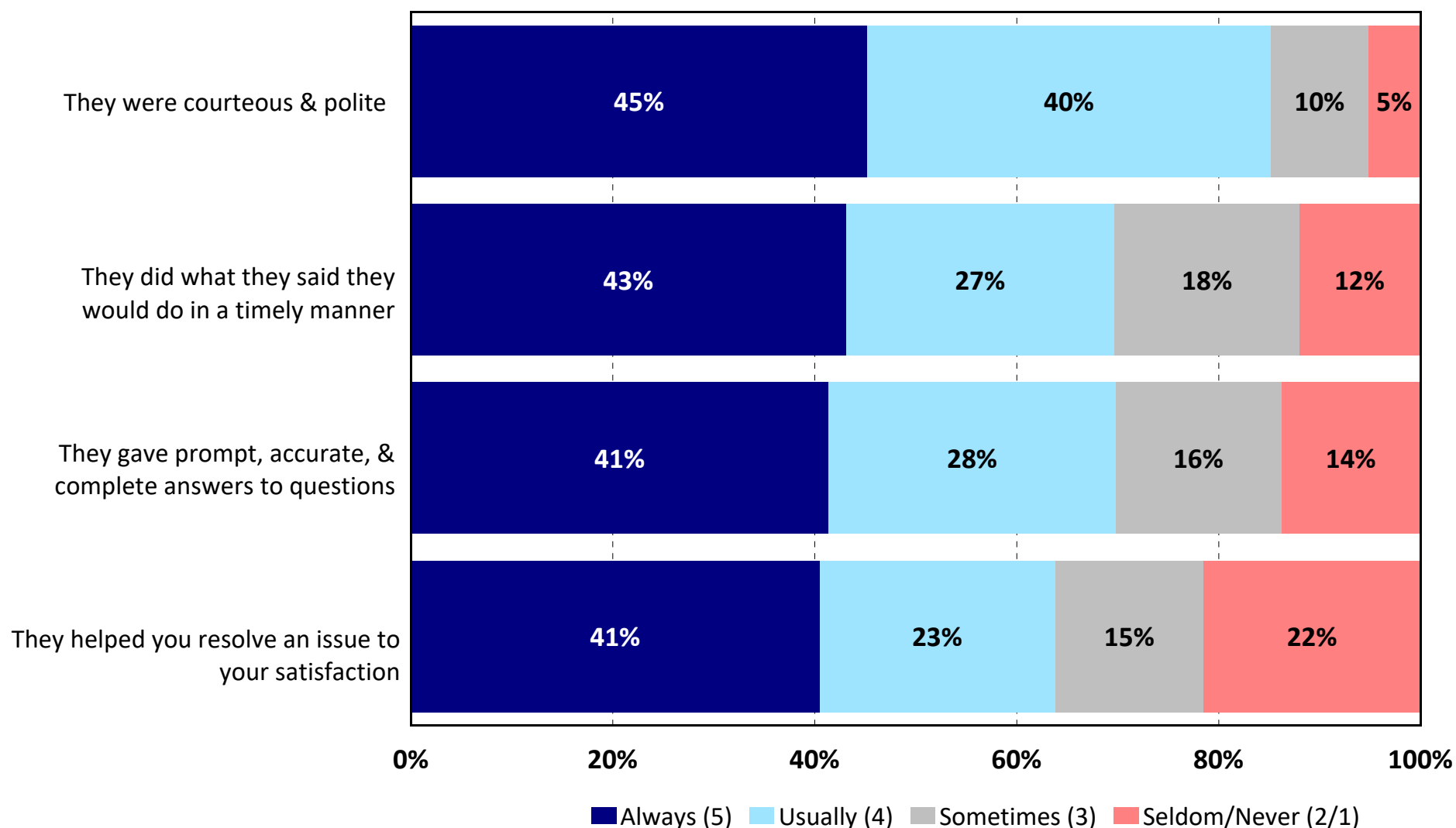


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q23c. Perception of the Quality of Customer Service From City Employees

by percentage of respondents who contacted the City in the past year and rated the item as a 1 to 5 on a 5-point scale
(excluding don't knows)

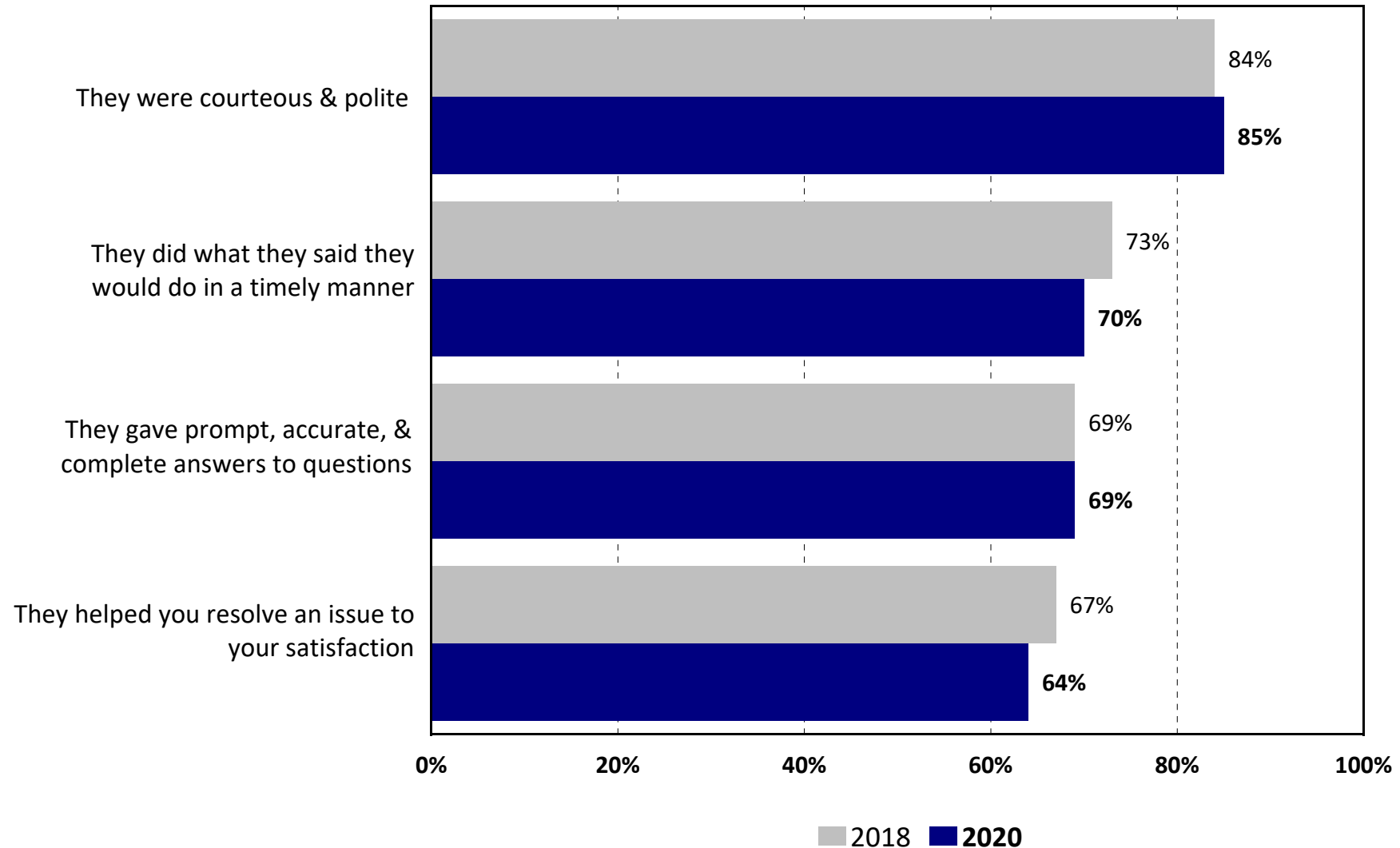


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

TRENDS: Perception of the Quality of Customer Service From City Employees 2018 vs. 2020

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)

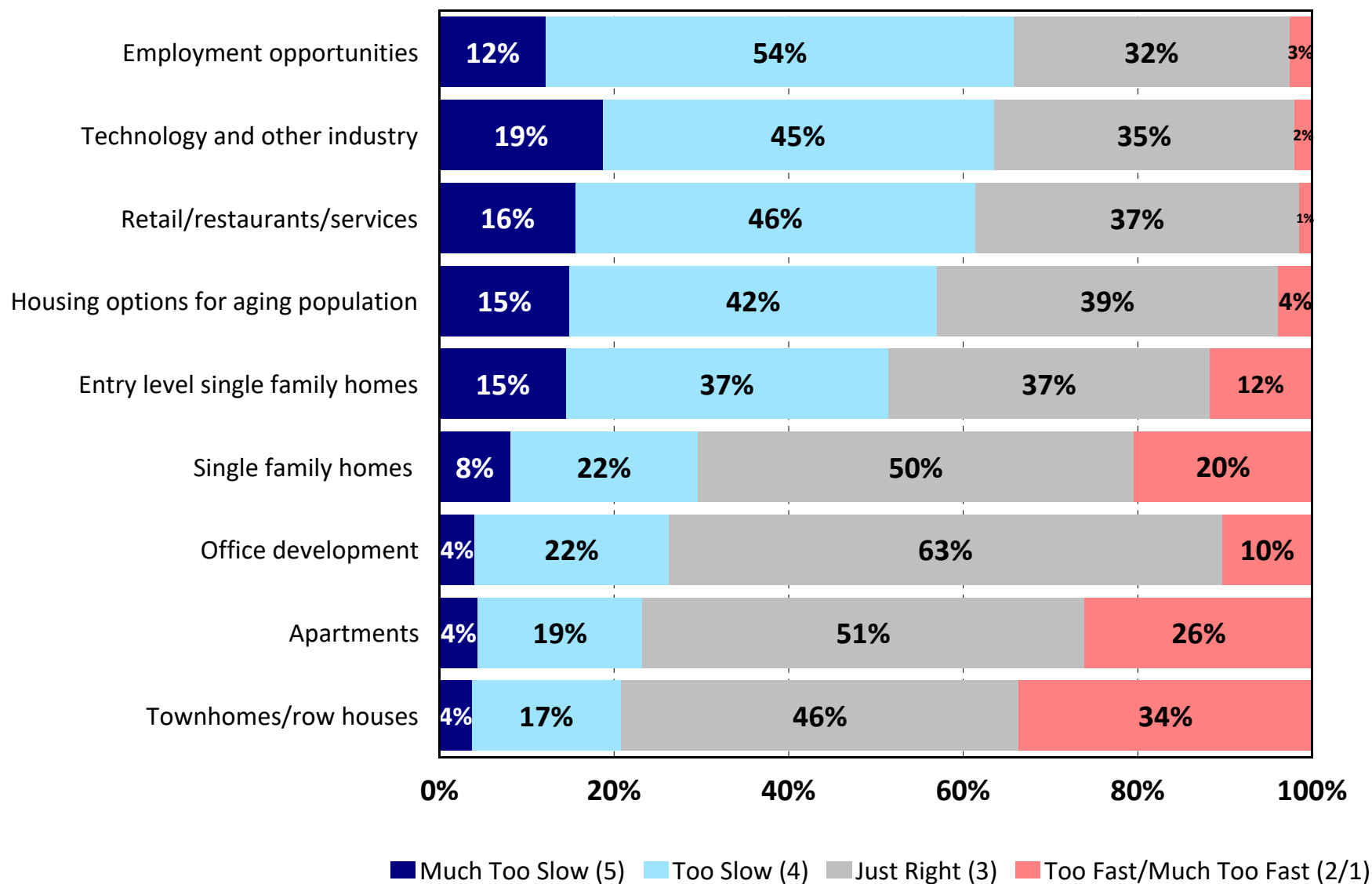


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q24. Ratings of City's Current Pace of Land Development

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)

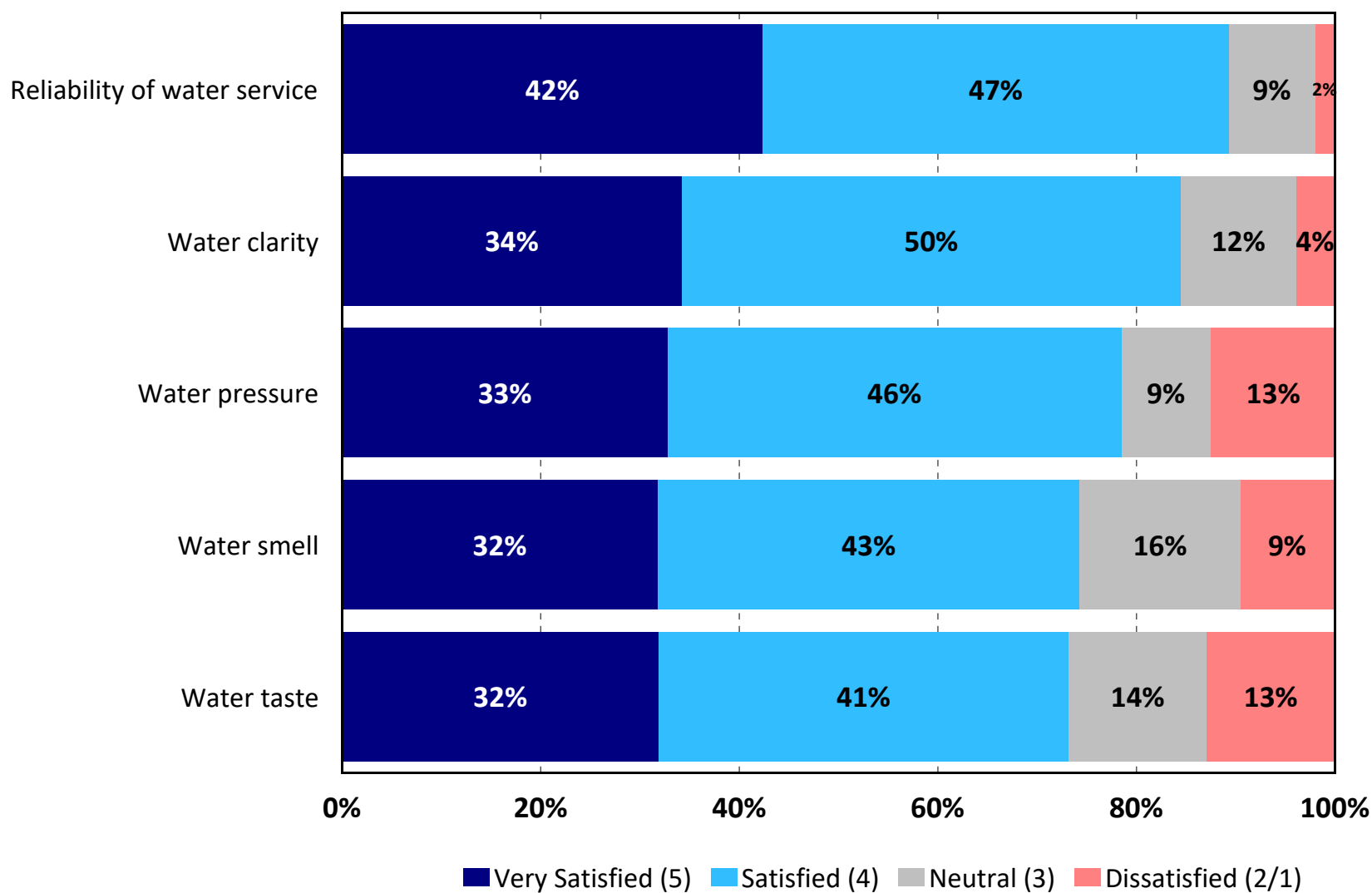


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q25. Satisfaction With Water Quality

by percentage of respondents (excluding don't knows)

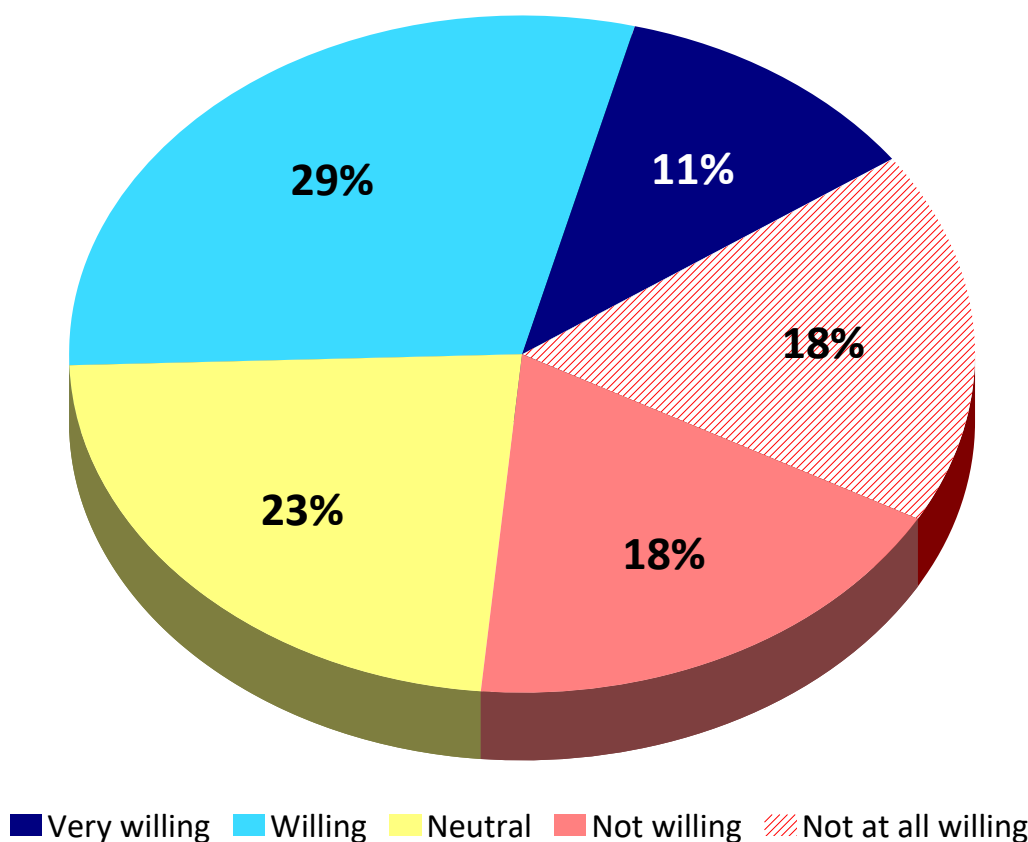


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q25a. Willingness to Pay Additional Taxes or Higher Water Rates to Repair and Replace Aging Water System

by percentage of respondents

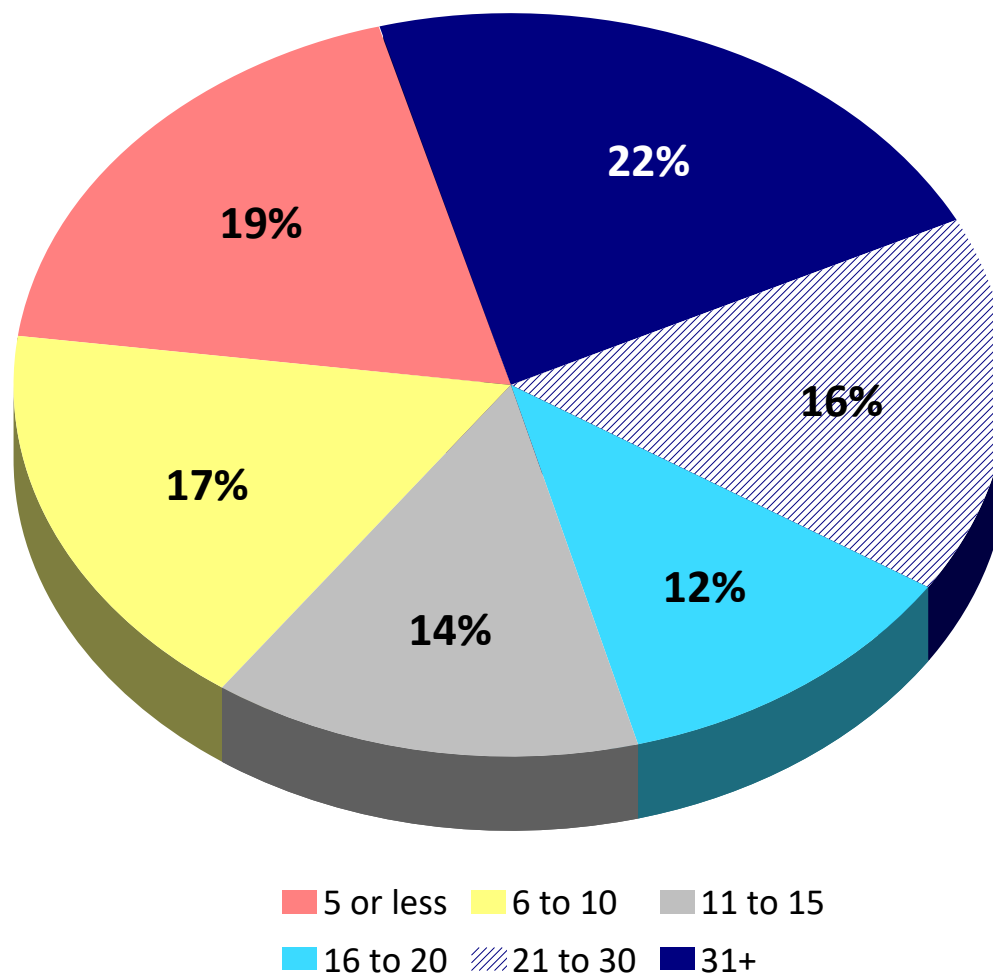


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q26. Demographics: Approximately how many years have you lived in Oregon City?

by percentage of respondents

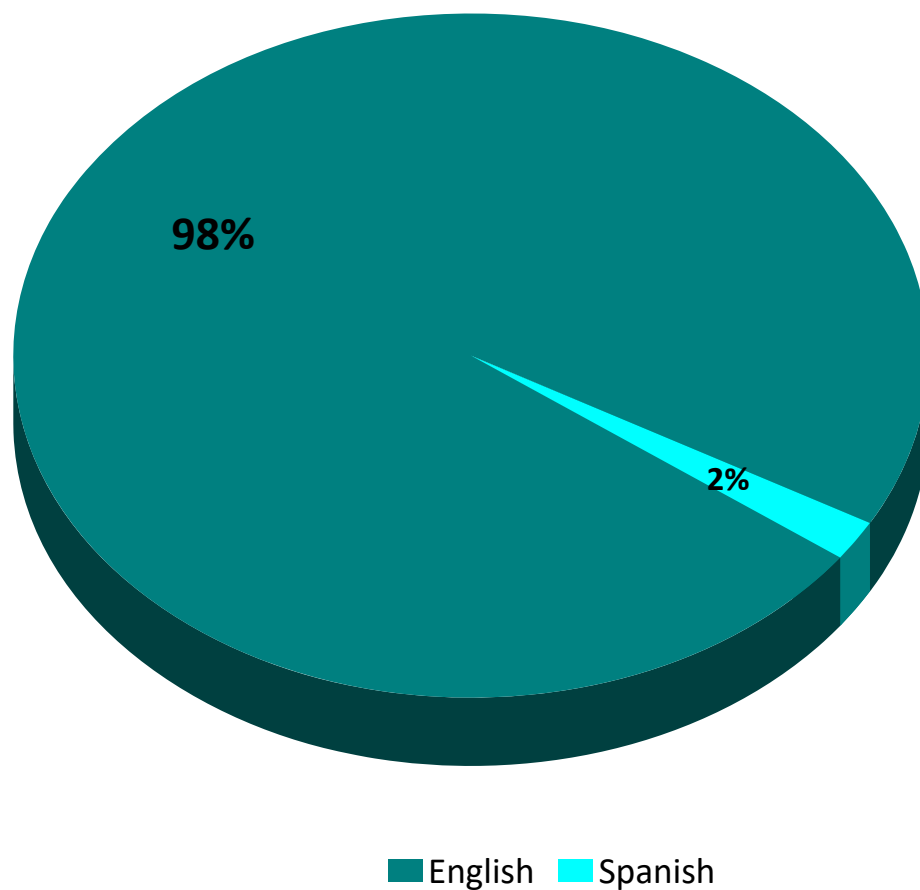


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q27. Demographics: What is the preferred language spoken in your home?

by percentage of respondents



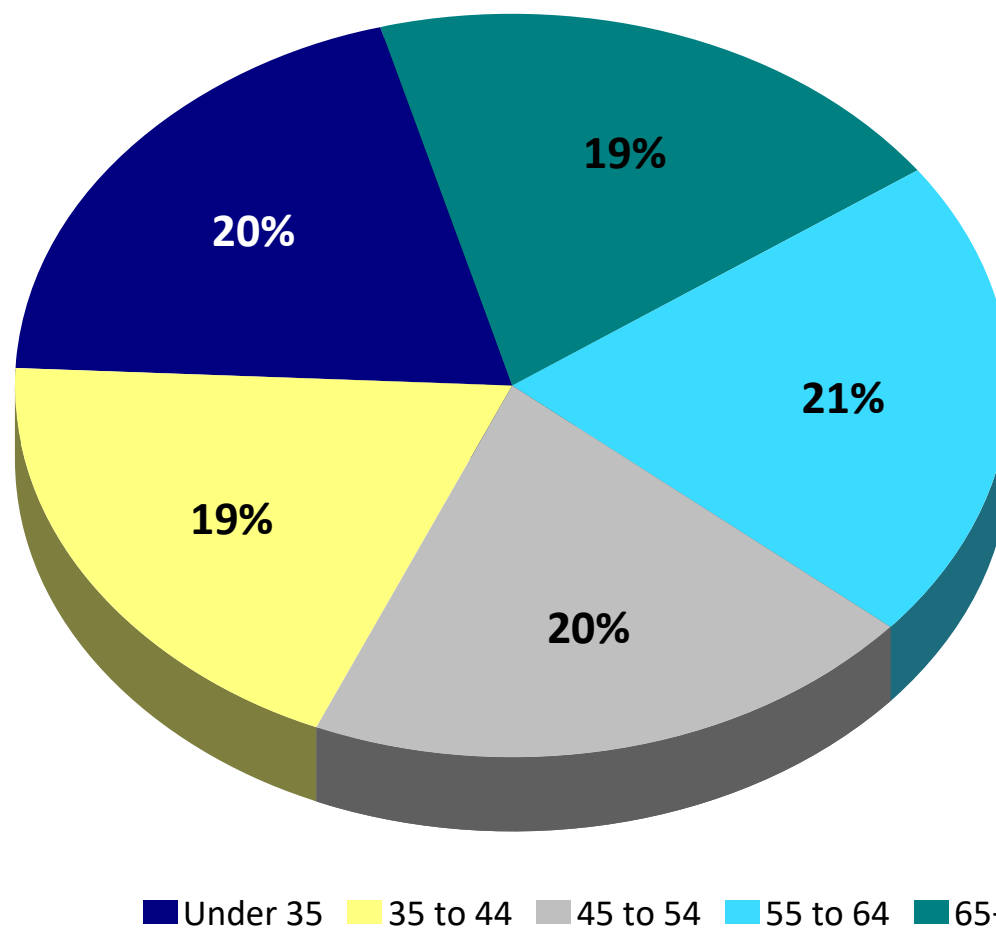
Arabic was selected by 0.3% of respondents

Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q28. Demographics: Age of Respondent

by percentage of respondents

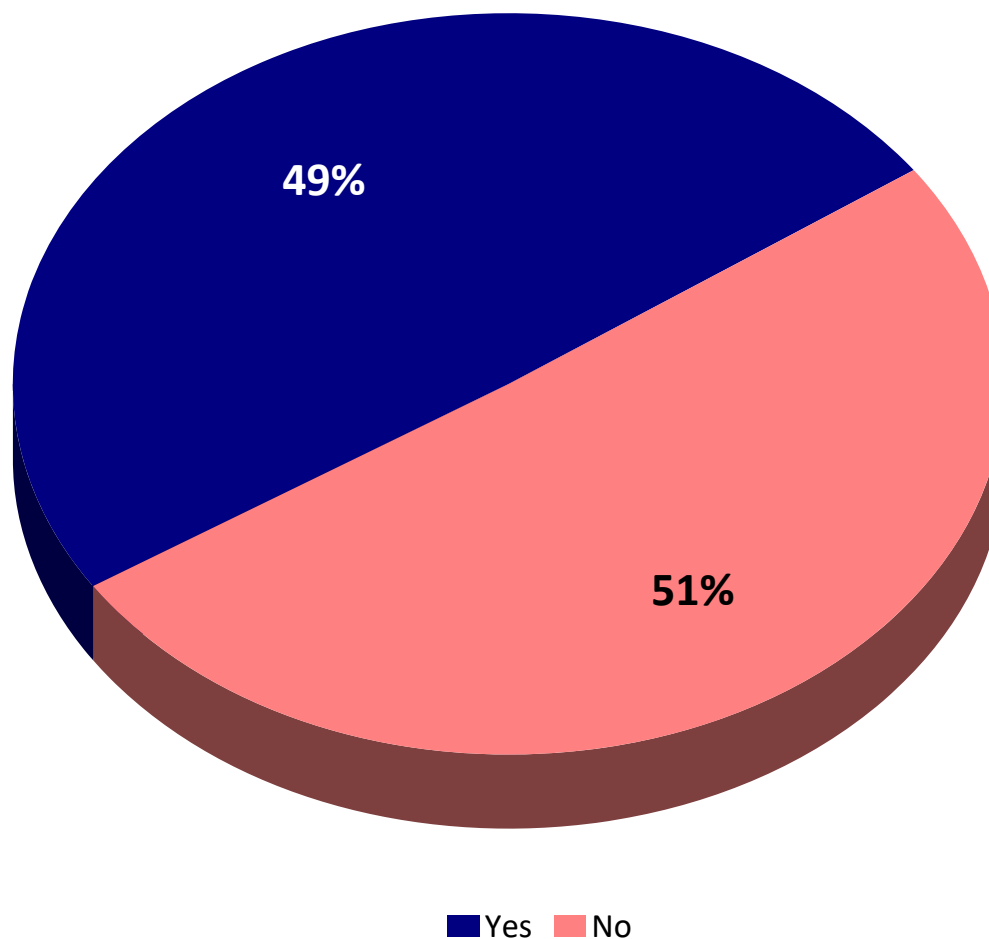


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q29. Do you work outside of Oregon City?

by percentage of respondents

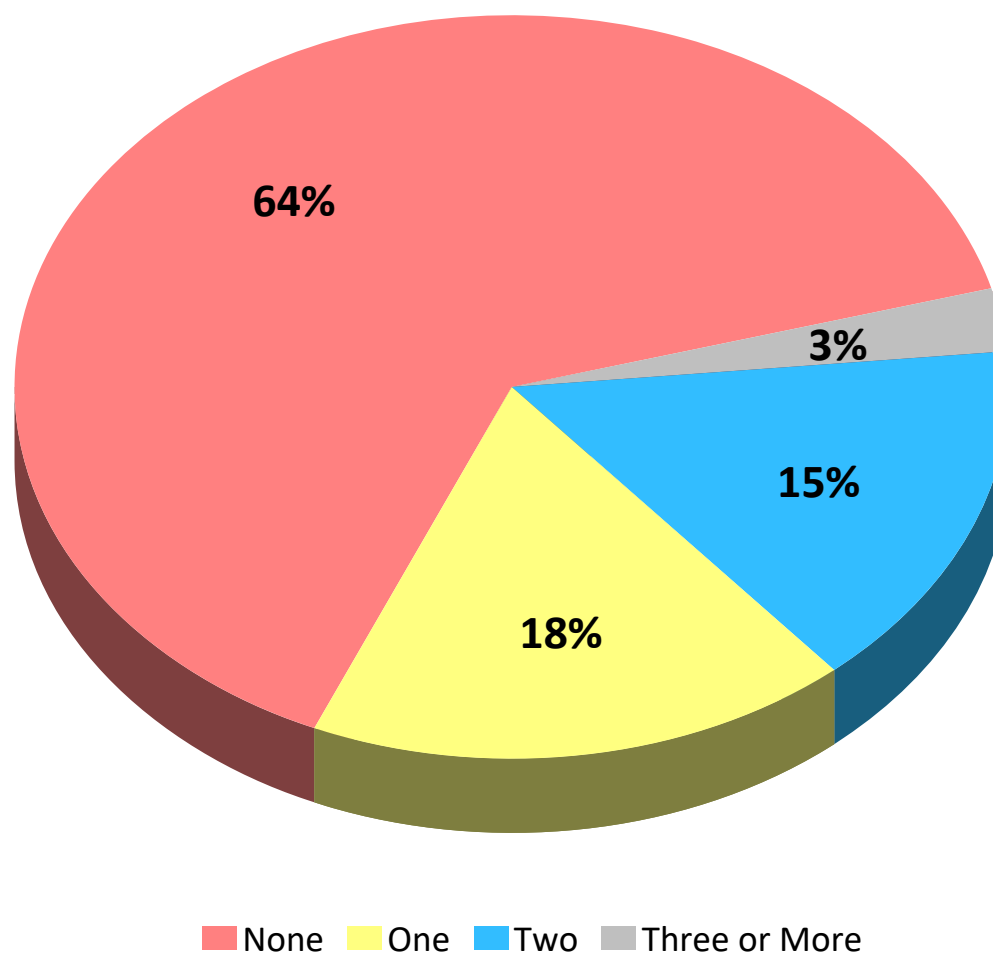


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q30. Demographics: How many children under age 18 live in your household?

by percentage of respondents

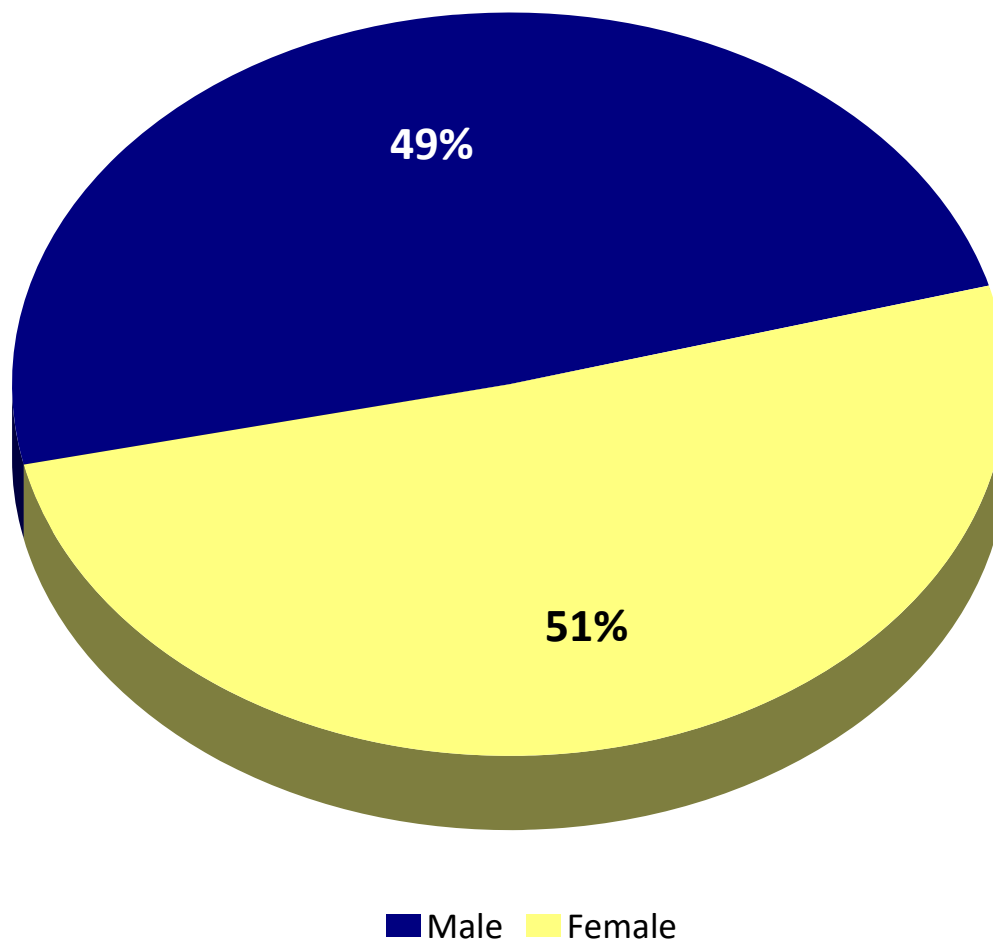


Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q31. Demographics: Gender

by percentage of respondents



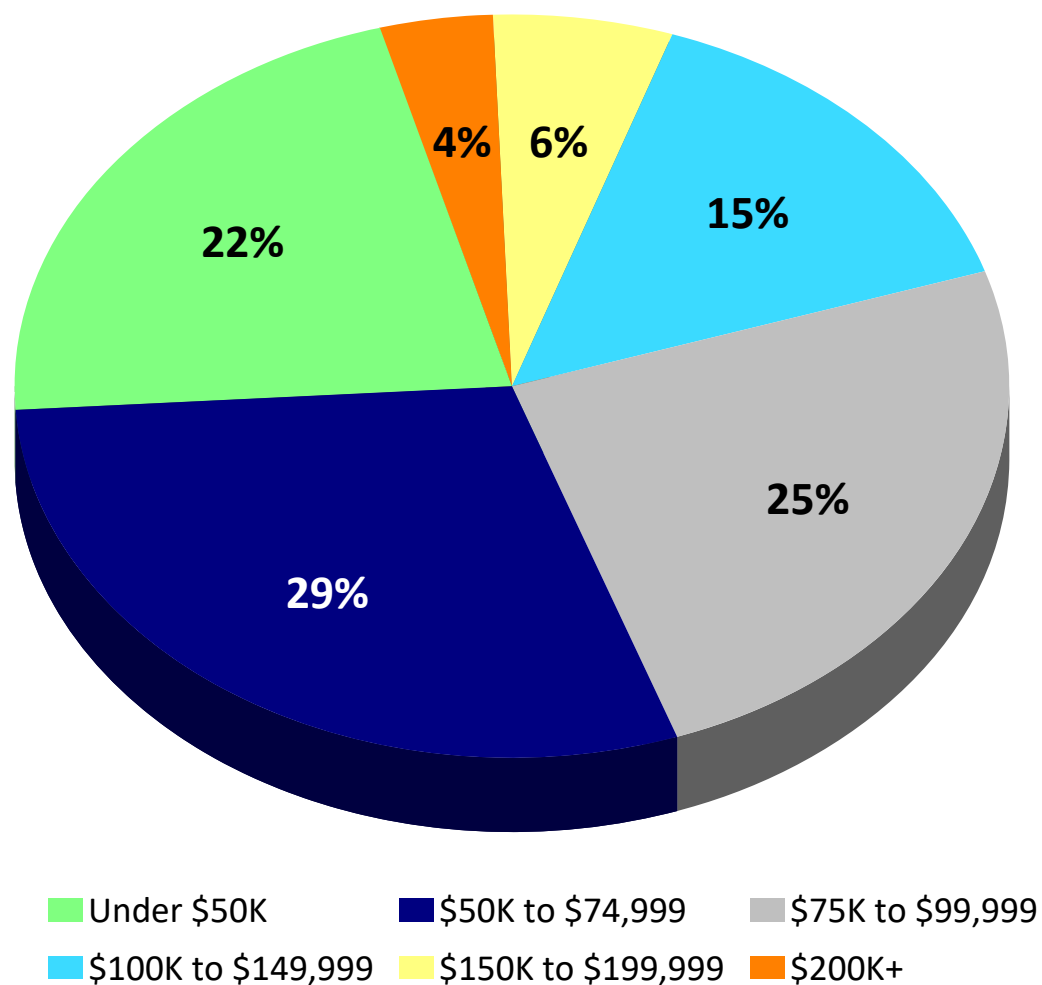
Non-binary was selected by 0.3% of respondents

Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Q32. Demographics: Annual Household Income

by percentage of respondents



Source: ETC Institute (2020 - Oregon City, OR)

ETC Institute (2020)

Section 2

Benchmarking Analysis

Benchmarking Summary Report

City of Oregon City, Oregon

Overview

ETC Institute's *DirectionFinder* program was originally developed in 1999 to help community leaders across the United States use statistically valid community survey data as a tool for making better decisions. Since November of 1999, the survey has been administered in more than 300 cities in 49 states. Most participating cities conduct the survey on an annual or biennial basis.

This report contains benchmarking data from two sources: (1) a national survey that was administered by ETC Institute during the summer of 2019 to a random sample of more than 4,000 residents across the United States, and (2) a survey administered by ETC Institute in the summer of 2019 to over 300 residents living in the Northwest Region, which includes Oregon and Washington.

Interpreting the Charts

National Benchmarks. The charts on the following pages show how the overall ratings for Oregon City compare to the national average based on the results of an annual survey that was administered by ETC Institute to a random sample of more than 4,000 U.S. residents. The blue bar shows the ratings for Oregon City, the red bar for the United States, and the yellow bar for the Northwest Region.

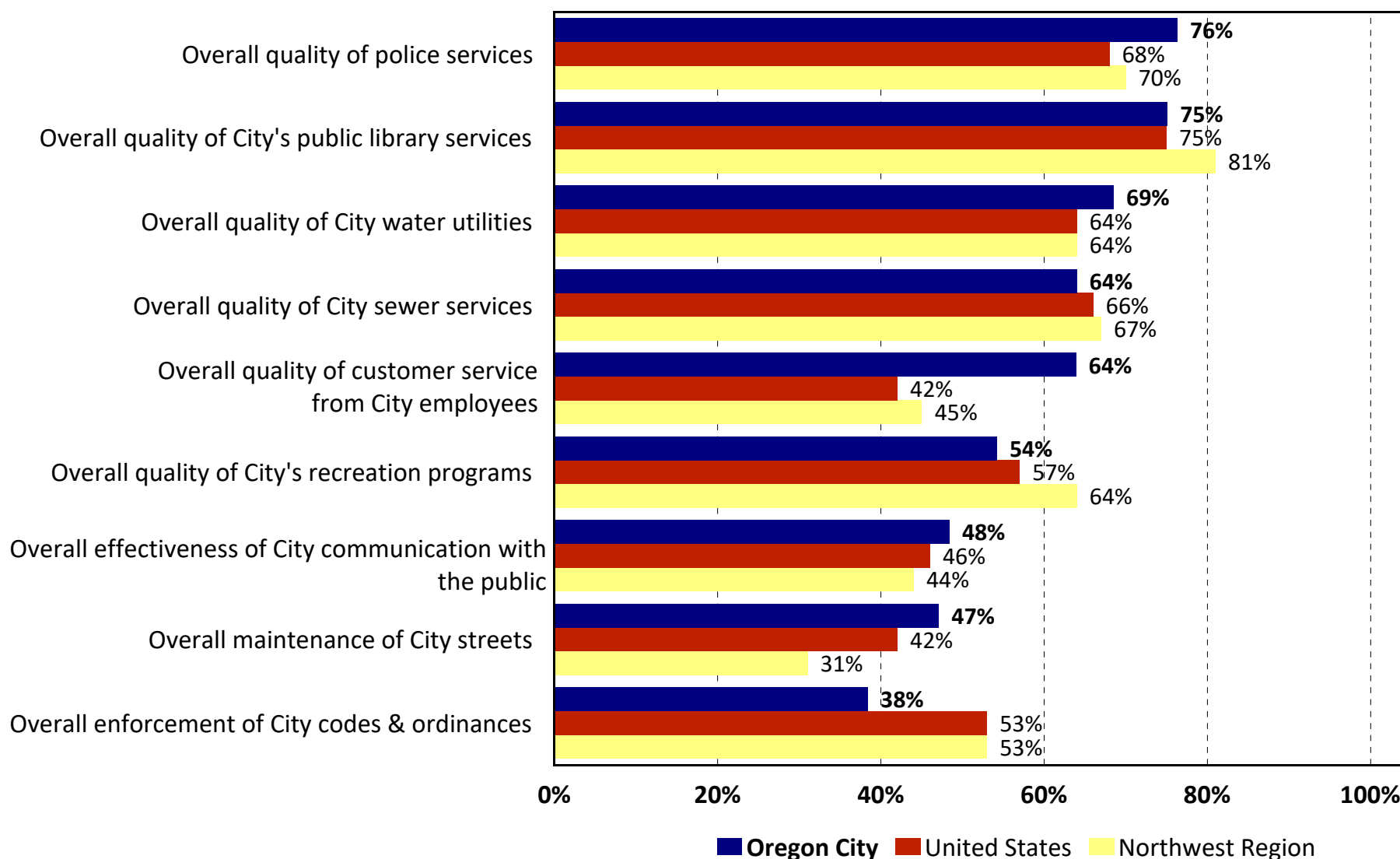
National and Regional Benchmarks

Note: The benchmarking data contained in this report is protected intellectual property. Any reproduction of the benchmarking information in this report by persons or organizations not directly affiliated with the City of Oregon City is not authorized without written consent from ETC Institute.

Overall Satisfaction with Major Categories of City Services

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



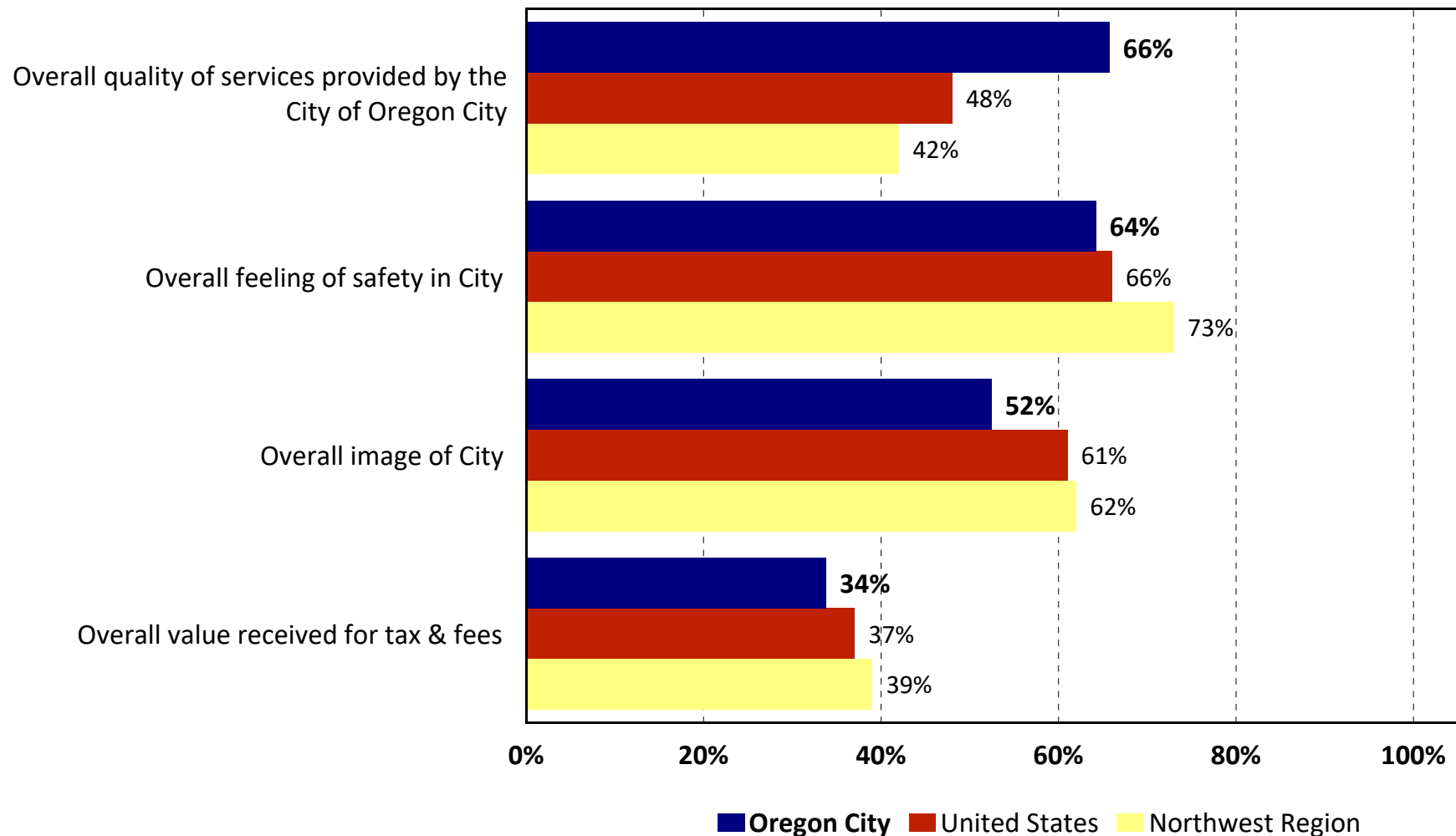
Source: ETC Institute (2020)

ETC Institute (2020)

Satisfaction with Items that Influence Perceptions of the Community

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



Source: ETC Institute (2020)

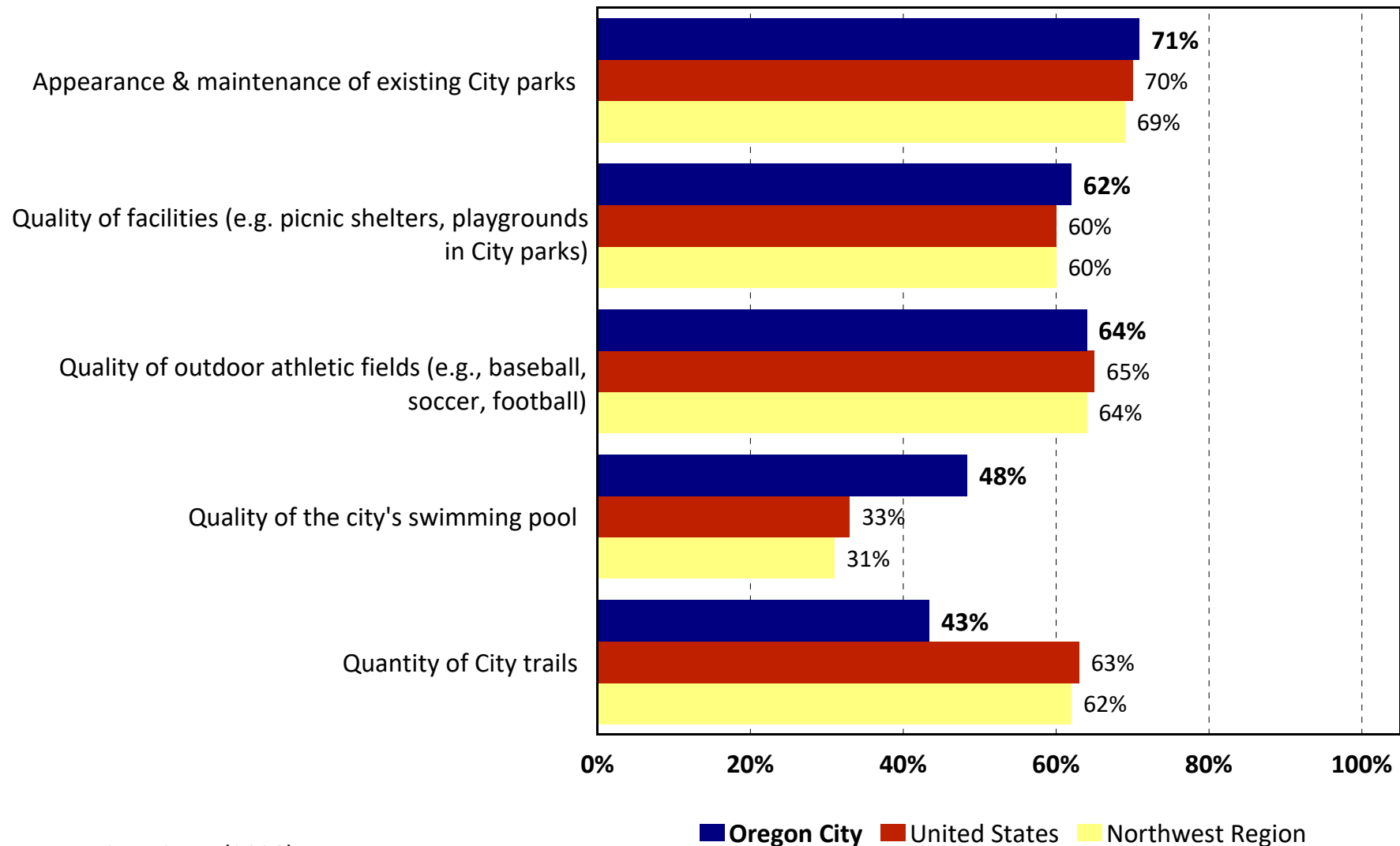
ETC Institute (2020)

Page 55

Page 68

Overall Satisfaction with Parks and Recreation Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



Source: ETC Institute (2020)

ETC Institute (2020)

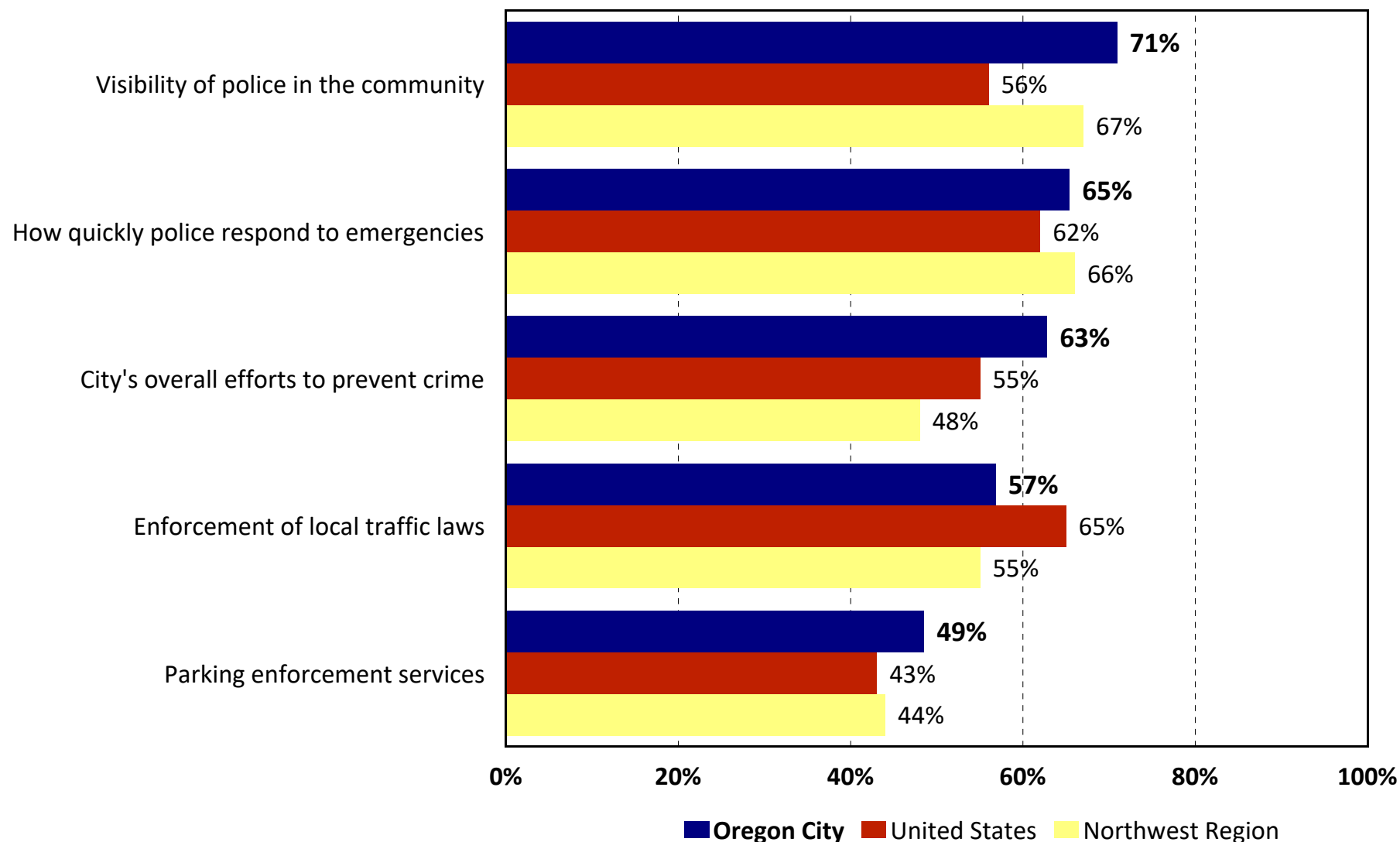
Page 56

Page 69

Overall Satisfaction with Public Safety

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



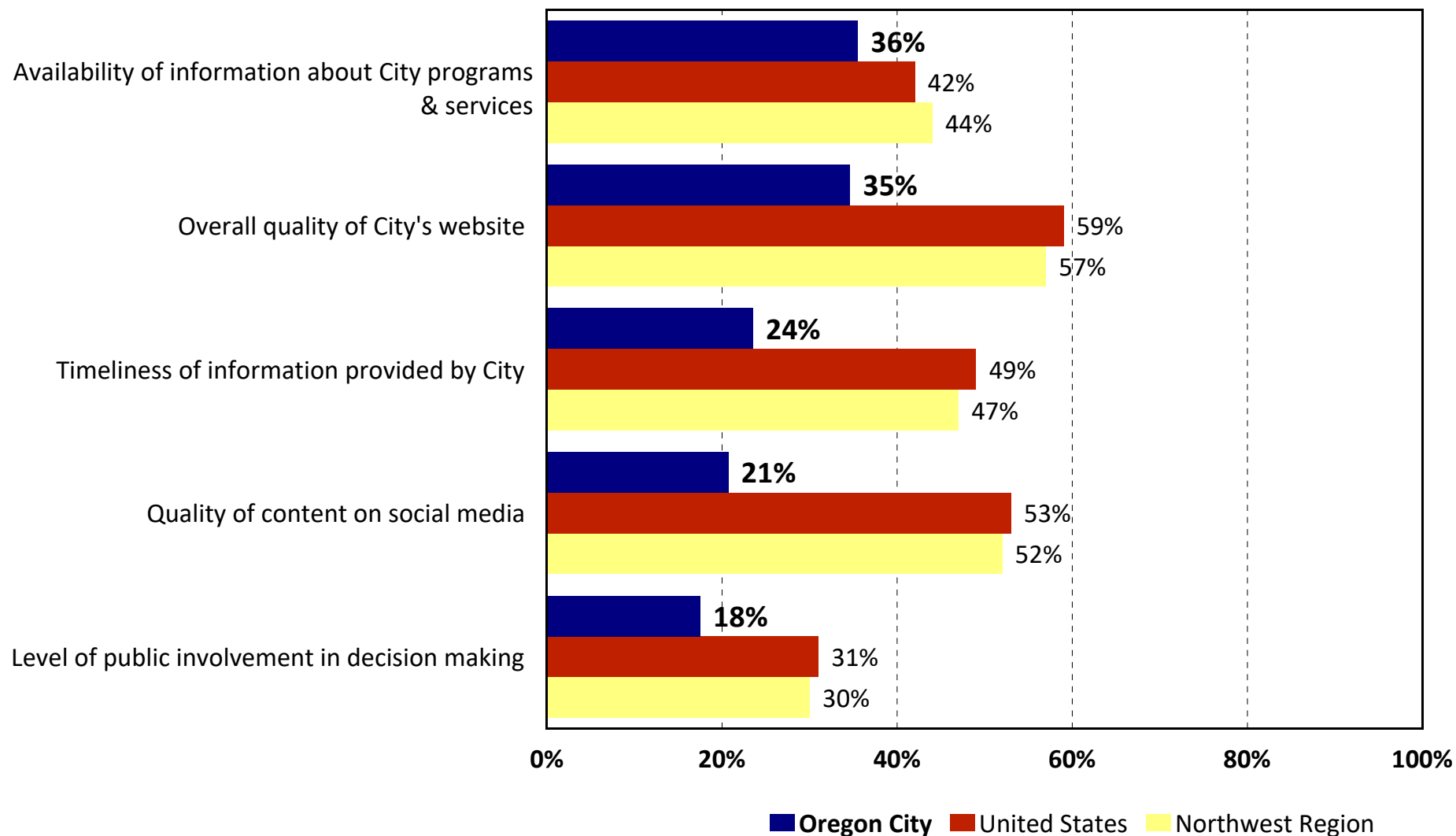
Source: ETC Institute (2020)

ETC Institute (2020)

Overall Satisfaction with Communication

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



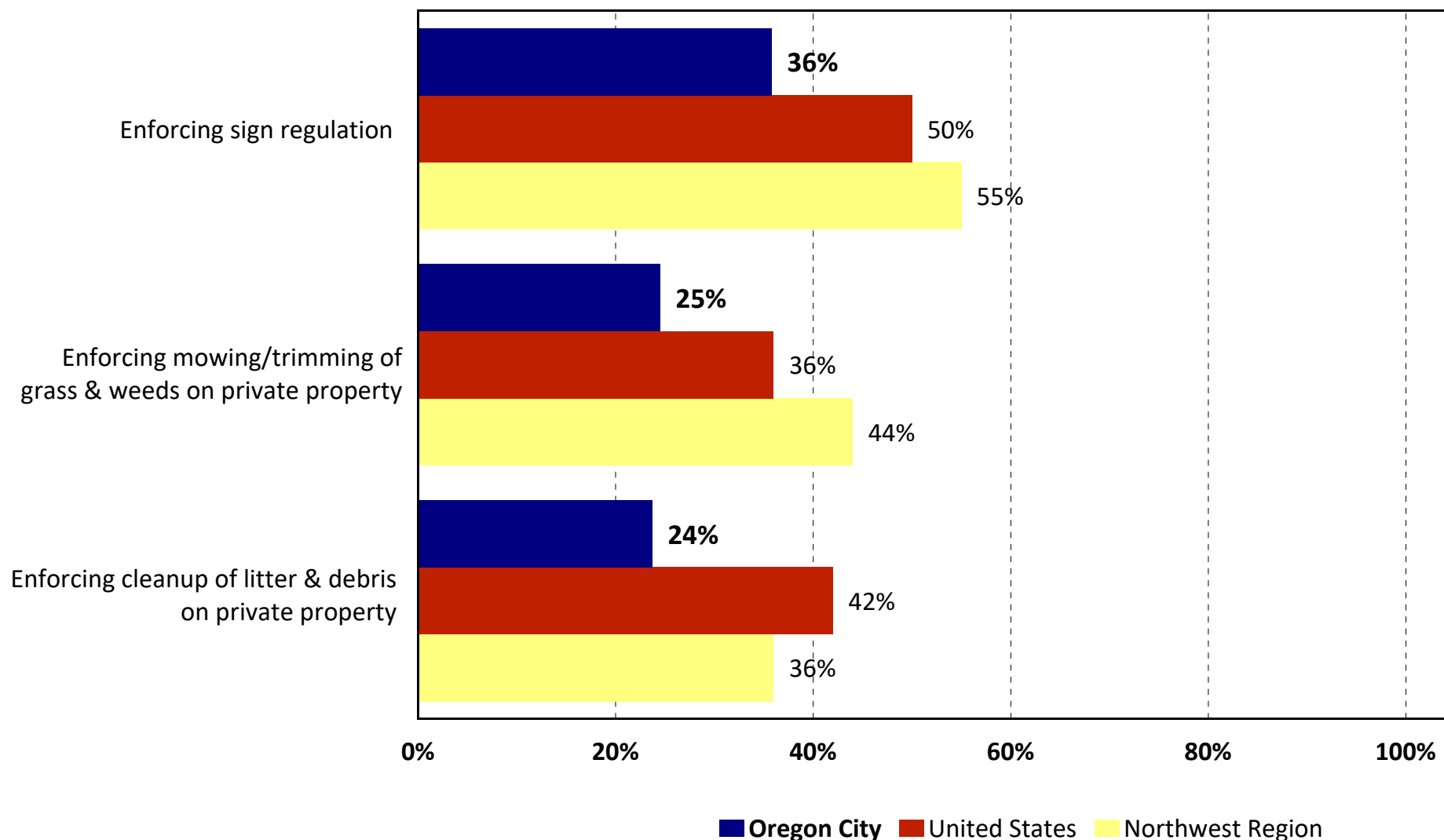
Source: ETC Institute (2020)

ETC Institute (2020)

Overall Satisfaction with Code Enforcement

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



Source: ETC Institute (2020)

ETC Institute (2020)

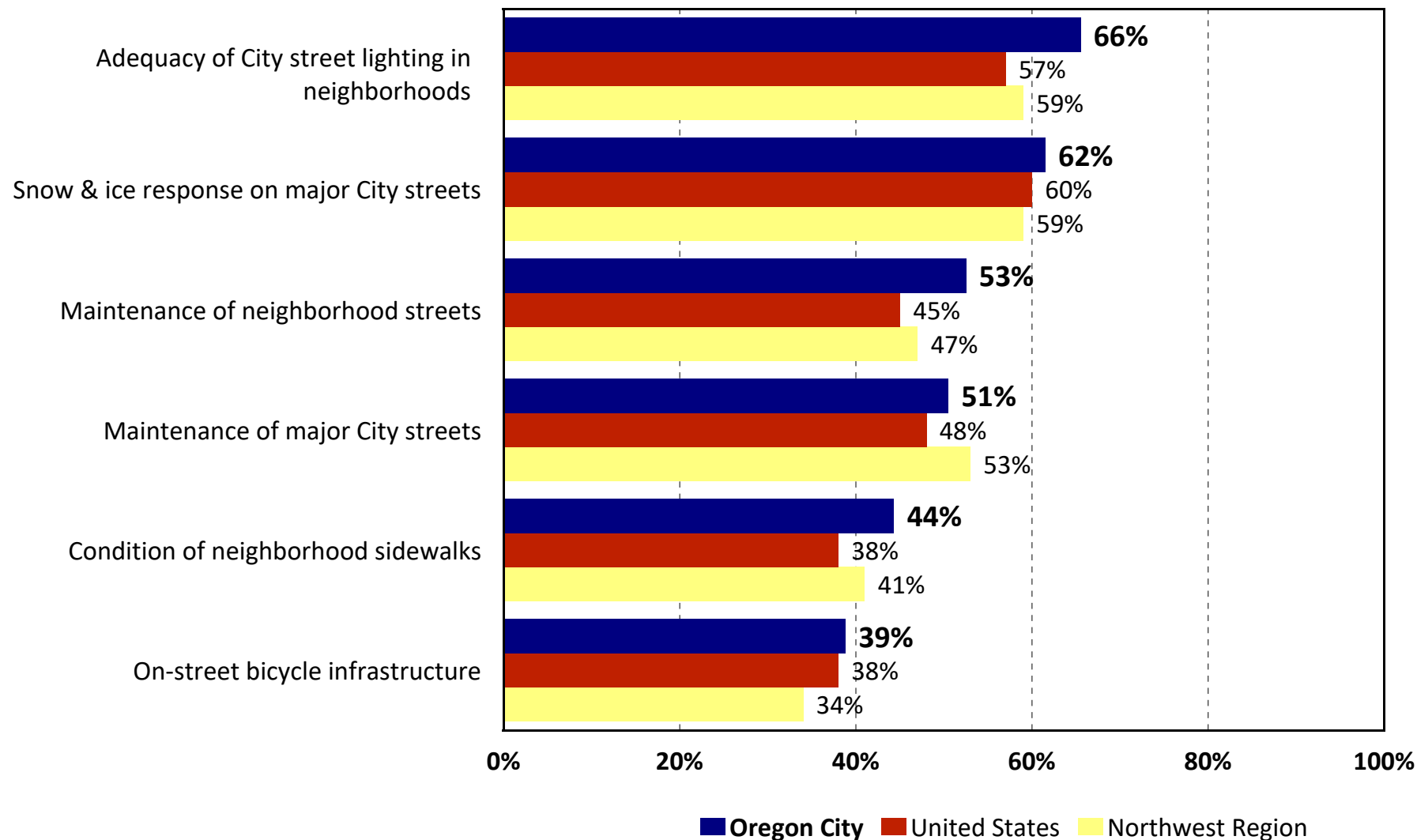
Page 59

Page 72

Overall Satisfaction with Transportation and Infrastructure

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "very satisfied" and 1 was "very dissatisfied" (excluding don't knows)



Source: ETC Institute (2020)

ETC Institute (2020)

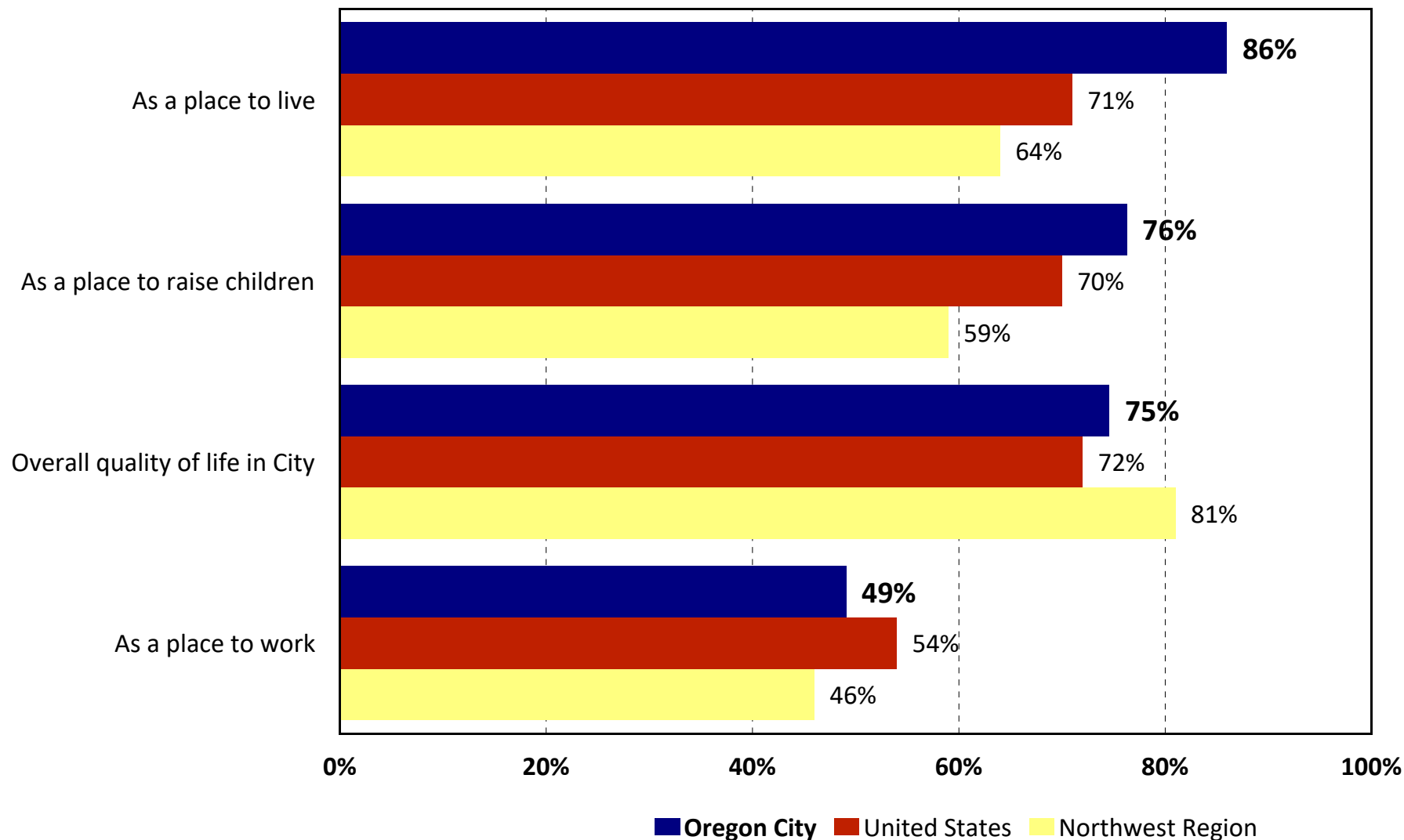
Page 60

Page 73

Overall City Ratings

Oregon City vs. United States vs. Northwest Region

by percentage of respondents who rated the item 4 or 5 on a 5-point scale
where 5 was "excellent" and 1 was "poor" (excluding don't knows)



Source: ETC Institute (2020)

ETC Institute (2020)

Section 3

Importance-Satisfaction Analysis

Importance-Satisfaction Analysis

City of Oregon City, Oregon

Overview

Today, City officials have limited resources which need to be targeted to activities that are of the most benefit to their citizens. Two of the most important criteria for decision making are (1) to target resources toward services of the highest importance to citizens; and (2) to target resources toward those services where citizens are the least satisfied.

The Importance-Satisfaction (IS) rating is a unique tool that allows public officials to better understand both of these highly important decision-making criteria for each of the services they are providing. The Importance-Satisfaction rating is based on the concept that public agencies will maximize overall customer satisfaction by emphasizing improvements in those areas where the level of satisfaction is relatively low, and the perceived importance of the service is relatively high.

Overview

The rating is calculated by summing the percentage of responses for items selected as the first, second, and third most important services for the City to provide. The sum is then multiplied by 1 minus the percentage of respondents who indicated they were positively satisfied with the City's performance in the related area (the sum of the ratings of 4 and 5 on a 5-point scale excluding "Don't Know" responses). "Don't Know" responses are excluded from the calculation to ensure the satisfaction ratings among service categories are comparable. $[IS = \text{Importance} \times (1 - \text{Satisfaction})]$.

Example of the Calculation: Respondents were asked to identify the major categories of city services they thought should receive the most emphasis over the next two years. Approximately half of the respondents (49.9%) of respondents selected *overall maintenance of City streets* as one of the most important services for the City to provide.

With regard to satisfaction, 47.1% of respondents surveyed rated the *maintenance of City streets* as a "4" or "5" on a 5-point scale (where "5" means "Very Satisfied") excluding "Don't Know" responses. The I-S rating was calculated by multiplying the sum of the most important percentages by 1 minus the sum of the satisfaction percentages. In this example 49.9% was multiplied by 52.9% (1-0.471). This calculation yielded an I-S rating of 0.2640, which ranked first out of 13 major service categories.

The maximum rating is 1.00 and would be achieved when 100% of the respondents select an item as one of their top three choices to emphasize over the next two years and 0% indicate they are positively satisfied with the delivery of the service.

The lowest rating is 0.00 and could be achieved under either of the following two situations:

- If 100% of the respondents were positively satisfied with the delivery of the service
- If none (0%) of the respondents selected the service as one for the three most important areas for the City to emphasize over the next two years.

Interpreting the Ratings

Ratings that are greater than or equal to 0.20 identify areas that should receive significantly more emphasis over the next two years. Ratings from 0.10 to 0.20 identify service areas that should receive increased emphasis. Ratings less than 0.10 should continue to receive the current level of emphasis.

- *Definitely Increase Emphasis* ($IS \geq 0.20$)
- *Increase Current Emphasis* ($0.10 \leq IS < 0.20$)
- *Maintain Current Emphasis* ($IS < 0.10$)

The results for the City of Oregon City are provided on the following pages.

2020 Importance-Satisfaction Rating

Oregon City, OR

Major Categories of City Services

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>Very High Priority (IS >.20)</u>						
Overall maintenance of city streets	50%	1	47%	9	0.2640	1
Overall effectiveness of City economic development efforts	36%	2	35%	12	0.2365	2
<u>High Priority (IS .10-.20)</u>						
Overall enforcement of City codes and ordinances	20%	6	38%	11	0.1226	3
Overall effectiveness of City communication with the public	21%	5	48%	8	0.1089	4
<u>Medium Priority (IS <.10)</u>						
Overall quality of City parks/trails/open space	31%	4	69%	3	0.0952	5
Overall quality of permit process	11%	9	25%	13	0.0798	6
Overall quality of police services	31%	3	76%	1	0.0739	7
Overall quality of the City's recreation programs	14%	8	54%	7	0.0641	8
Overall quality of City water utilities	16%	7	69%	4	0.0488	9
Overall quality of Municipal Court Services	5%	13	41%	10	0.0270	10
Overall quality of City sewer services	7%	11	64%	5	0.0256	11
Overall quality of customer service from City employees	6%	12	64%	6	0.0213	12
Overall quality of City's public library services	8%	10	75%	2	0.0192	13

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first, second, and third most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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2020 Importance-Satisfaction Rating

Oregon City, OR

Parks and Recreation

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>High Priority (IS .10-.20)</u>						
Quantity of City trails	27%	2	43%	9	0.1534	1
Quality of recreational areas for dogs	21%	3	27%	11	0.1532	2
<u>Medium Priority (IS <.10)</u>						
Appearance & maintenance of existing City parks	27%	1	71%	2	0.0797	3
Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	21%	4	66%	3	0.0698	4
Quality of City's swimming pool	11%	5	48%	7	0.0578	5
Access to City parks for persons with disabilities	10%	7	44%	8	0.0561	6
Other	6%	12	3%	12	0.0542	7
Quality of services for fees assessed with recreation programming (e.g. pool programs, admission, & camps)	8%	9	40%	10	0.0490	8
Quality of End of the Oregon Trail	8%	8	49%	6	0.0433	9
Quality of outdoor athletic fields (e.g., baseball, soccer, football)	11%	6	60%	4	0.0422	10
Quality of Pioneer Community Center	6%	11	52%	5	0.0270	11
Proximity of parks to your home	7%	10	73%	1	0.0174	12

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first and second most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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2020 Importance-Satisfaction Rating

Oregon City, OR

Public Safety

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>Very High Priority (IS >.20)</u>						
Response to issues with transients	57%	1	24%	9	0.4326	1
<u>High Priority (IS .10-.20)</u>						
Response to drug control	17%	4	35%	8	0.1097	2
Level of community outreach	20%	3	48%	6	0.1032	3
<u>Medium Priority (IS <.10)</u>						
The city's overall efforts to prevent crime	24%	2	63%	3	0.0904	4
Response to property crime	12%	6	43%	7	0.0691	5
How quickly police respond to emergencies	13%	5	65%	2	0.0453	6
Enforcement of local traffic laws	9%	8	57%	4	0.0393	7
The visibility of police in the community	12%	7	71%	1	0.0346	8
Parking enforcement services	3%	9	49%	5	0.0160	9

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first and second most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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2020 Importance-Satisfaction Rating Oregon City, OR Code Enforcement

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance- Satisfaction Rating	I-S Rating Rank
<u>Very High Priority (IS >.20)</u>						
Enforcing cleanup of litter & debris on private property	62%	1	24%	4	0.4753	1
Enforcing codes designed to protect public safety & health	47%	2	36%	2	0.3041	2
<u>High Priority (IS .10-.20)</u>						
Enforcing mowing/trimming of grass & weeds on private property	25%	3	25%	3	0.1857	3
<u>Medium Priority (IS <.10)</u>						
Enforcing sign regulation	12%	4	36%	1	0.0764	4

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first and second most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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2020 Importance-Satisfaction Rating

Oregon City, OR

Transportation and Infrastructure

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
High Priority (IS .10-.20)						
Maintenance of major City streets	35%	1	51%	4	0.1742	1
Maintenance of neighborhood streets	29%	2	53%	3	0.1392	2
Medium Priority (IS <.10)						
Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	16%	4	39%	10	0.0964	3
Availability of safe pedestrian ways on major streets & routes	17%	3	44%	8	0.0941	4
Condition of neighborhood sidewalks	14%	5	44%	7	0.0763	5
Availability of safe pedestrian ways in your neighborhood	10%	8	48%	5	0.0498	6
Snow & ice response on major City streets	12%	6	62%	2	0.0458	7
On-street bicycle infrastructure (bike lanes/signs/arrows)	7%	9	39%	11	0.0453	8
Alternative means of transportation such as transit, bicycling, walking	7%	10	43%	9	0.0402	9
Quality of sidewalks for people with mobility challenges	6%	12	35%	12	0.0367	10
Adequacy of City street lighting in neighborhoods	10%	7	66%	1	0.0342	11
Accessibility of public transportation options	6%	11	45%	6	0.0340	12

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first and second most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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2020 Importance-Satisfaction Rating

Oregon City, OR

Public Library Services

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
Medium Priority (IS < .10)						
Outreach-programs and/or services in the community	13%	4	34%	11	0.0887	1
Events for teens	12%	5	32%	12	0.0790	2
Library as a hub of community information	14%	3	49%	7	0.0706	3
Selection of physical resources available	20%	1	70%	1	0.0586	4
Events for children	12%	6	50%	5	0.0575	5
Events for seniors	8%	7	41%	9	0.0496	6
Selection of digital resources available online	14%	2	64%	2	0.0493	7
Events for adults	8%	9	44%	8	0.0420	8
Access to computers & library Wi-Fi	8%	8	61%	3	0.0300	9
Selection of reference and research tools	3%	10	57%	4	0.0120	10
Reader's Advisory (help finding something to read)	2%	11	49%	6	0.0106	11
Ease of booking meeting rooms	1%	12	37%	10	0.0057	12

Note: The I-S Rating is calculated by multiplying the "Most Important" % by (1-'Satisfaction' %)

Most Important %:

The "Most Important" percentage represents the sum of the first and second most important responses for each item. Respondents were asked to identify the items they thought should be the City's top priorities.

Satisfaction %:

The "Satisfaction" percentage represents the sum of the ratings "5" and "4" excluding 'don't knows.' Respondents ranked their level of satisfaction with each of the items on a scale of 5 to 1 with "5" being Very Satisfied and "1" being Very Dissatisfied.

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Section 4

Tabular Data

Q1. Perception of the City. Please rate each of the following major categories of services provided by the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q1-1. Overall quality of police services	31.2%	38.3%	15.6%	3.1%	2.8%	9.0%
Q1-2. Overall quality of City's recreation programs	12.1%	32.7%	29.3%	7.5%	1.2%	17.1%
Q1-3. Overall quality of City parks/trails/open space	16.2%	47.0%	18.4%	9.0%	1.2%	8.1%
Q1-4. Overall maintenance of City streets	4.7%	41.1%	23.4%	19.3%	8.7%	2.8%
Q1-5. Overall quality of City water utilities	16.8%	48.9%	21.2%	5.9%	3.1%	4.0%
Q1-6. Overall quality of City sewer services	16.5%	43.9%	25.5%	6.5%	1.9%	5.6%
Q1-7. Overall quality of Municipal Court services	5.6%	19.3%	32.1%	1.6%	1.9%	39.6%
Q1-8. Overall enforcement of City codes & ordinances	6.9%	23.7%	31.5%	11.8%	5.6%	20.6%
Q1-9. Overall quality of customer service you receive from City employees	16.8%	34.6%	22.7%	5.0%	1.2%	19.6%
Q1-10. Overall effectiveness of City communication with the public	6.9%	35.8%	31.2%	11.2%	3.1%	11.8%
Q1-11. Overall effectiveness of City economic development efforts	5.9%	22.1%	30.8%	16.2%	6.2%	18.7%
Q1-12. Overall quality of City's public library services	29.6%	36.1%	17.4%	2.8%	1.6%	12.5%
Q1-13. Overall quality of permit process	4.0%	10.0%	31.5%	5.0%	6.2%	43.3%

WITHOUT DON'T KNOW

Q1. Perception of the City. Please rate each of the following major categories of services provided by the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q1-1. Overall quality of police services	34.2%	42.1%	17.1%	3.4%	3.1%
Q1-2. Overall quality of City's recreation programs	14.7%	39.5%	35.3%	9.0%	1.5%
Q1-3. Overall quality of City parks/trails/open space	17.6%	51.2%	20.0%	9.8%	1.4%
Q1-4. Overall maintenance of City streets	4.8%	42.3%	24.0%	19.9%	9.0%
Q1-5. Overall quality of City water utilities	17.5%	51.0%	22.1%	6.2%	3.2%
Q1-6. Overall quality of City sewer services	17.5%	46.5%	27.1%	6.9%	2.0%
Q1-7. Overall quality of Municipal Court services	9.3%	32.0%	53.1%	2.6%	3.1%
Q1-8. Overall enforcement of City codes & ordinances	8.6%	29.8%	39.6%	14.9%	7.1%
Q1-9. Overall quality of customer service you receive from City employees	20.9%	43.0%	28.3%	6.2%	1.6%
Q1-10. Overall effectiveness of City communication with the public	7.8%	40.6%	35.3%	12.7%	3.5%
Q1-11. Overall effectiveness of City economic development efforts	7.3%	27.2%	37.9%	19.9%	7.7%
Q1-12. Overall quality of City's public library services	33.8%	41.3%	19.9%	3.2%	1.8%
Q1-13. Overall quality of permit process	7.1%	17.6%	55.5%	8.8%	11.0%

Q2. Which THREE of the items listed in Question 1 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q2. Top choice	Number	Percent
Overall quality of police services	61	19.0 %
Overall quality of City's recreation programs	10	3.1 %
Overall quality of City parks/trails/open space	26	8.1 %
Overall maintenance of City streets	69	21.5 %
Overall quality of City water utilities	19	5.9 %
Overall quality of City sewer services	4	1.2 %
Overall quality of Municipal Court services	1	0.3 %
Overall enforcement of City codes & ordinances	15	4.7 %
Overall quality of customer service you receive from City employees	4	1.2 %
Overall effectiveness of City communication with the public	18	5.6 %
Overall effectiveness of City economic development efforts	42	13.1 %
Overall quality of City's public library services	4	1.2 %
Overall quality of permit process	7	2.2 %
None chosen	41	12.8 %
Total	321	100.0 %

Q2. Which THREE of the items listed in Question 1 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q2. 2nd choice	Number	Percent
Overall quality of police services	14	4.4 %
Overall quality of City's recreation programs	17	5.3 %
Overall quality of City parks/trails/open space	39	12.1 %
Overall maintenance of City streets	50	15.6 %
Overall quality of City water utilities	21	6.5 %
Overall quality of City sewer services	8	2.5 %
Overall quality of Municipal Court services	11	3.4 %
Overall enforcement of City codes & ordinances	29	9.0 %
Overall quality of customer service you receive from City employees	10	3.1 %
Overall effectiveness of City communication with the public	29	9.0 %
Overall effectiveness of City economic development efforts	30	9.3 %
Overall quality of City's public library services	4	1.2 %
Overall quality of permit process	14	4.4 %
None chosen	45	14.0 %
Total	321	100.0 %

Q2. Which THREE of the items listed in Question 1 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q2. 3rd choice	Number	Percent
Overall quality of police services	25	7.8 %
Overall quality of City's recreation programs	18	5.6 %
Overall quality of City parks/trails/open space	33	10.3 %
Overall maintenance of City streets	41	12.8 %
Overall quality of City water utilities	10	3.1 %
Overall quality of City sewer services	11	3.4 %
Overall quality of Municipal Court services	3	0.9 %
Overall enforcement of City codes & ordinances	20	6.2 %
Overall quality of customer service you receive from City employees	5	1.6 %
Overall effectiveness of City communication with the public	21	6.5 %
Overall effectiveness of City economic development efforts	44	13.7 %
Overall quality of City's public library services	17	5.3 %
Overall quality of permit process	13	4.0 %
None chosen	60	18.7 %
Total	321	100.0 %

SUM OF TOP 3 CHOICES

Q2. Which THREE of the items listed in Question 1 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years? (top 3)

Q2. Sum of Top 3 Choices	Number	Percent
Overall quality of police services	100	31.2 %
Overall quality of City's recreation programs	45	14.0 %
Overall quality of City parks/trails/open space	98	30.5 %
Overall maintenance of City streets	160	49.8 %
Overall quality of City water utilities	50	15.6 %
Overall quality of City sewer services	23	7.2 %
Overall quality of Municipal Court services	15	4.7 %
Overall enforcement of City codes & ordinances	64	19.9 %
Overall quality of customer service you receive from City employees	19	5.9 %
Overall effectiveness of City communication with the public	68	21.2 %
Overall effectiveness of City economic development efforts	116	36.1 %
Overall quality of City's public library services	25	7.8 %
Overall quality of permit process	34	10.6 %
None chosen	41	12.8 %
Total	858	

Q3. Please rate each of the following items that may influence your perception of the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q3-1. Overall quality of services provided by City of Oregon City	9.0%	52.0%	25.9%	5.0%	0.9%	7.2%
Q3-2. Overall value that you receive for your tax dollars & fees	3.1%	28.7%	32.1%	19.6%	10.6%	5.9%
Q3-3. Overall image of City	9.0%	41.7%	24.0%	17.4%	4.7%	3.1%
Q3-4. How well City is supporting growth & development	5.0%	24.6%	35.5%	15.6%	9.0%	10.3%
Q3-5. Overall feeling of safety in City	15.6%	47.0%	20.2%	10.9%	3.7%	2.5%
Q3-6. Availability of job opportunities	1.9%	14.3%	33.0%	14.3%	4.0%	32.4%
Q3-7. Availability of training or educational opportunities	5.6%	21.2%	31.5%	8.1%	2.8%	30.8%
Q3-8. Overall quality of new development	3.1%	26.8%	35.5%	15.0%	6.2%	13.4%
Q3-9. Overall development across City	3.4%	27.4%	38.3%	15.0%	6.2%	9.7%

WITHOUT DON'T KNOW

Q3. Please rate each of the following items that may influence your perception of the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q3-1. Overall quality of services provided by City of Oregon City	9.7%	56.0%	27.9%	5.4%	1.0%
Q3-2. Overall value that you receive for your tax dollars & fees	3.3%	30.5%	34.1%	20.9%	11.3%
Q3-3. Overall image of City	9.3%	43.1%	24.8%	18.0%	4.8%
Q3-4. How well City is supporting growth & development	5.6%	27.4%	39.6%	17.4%	10.1%
Q3-5. Overall feeling of safety in City	16.0%	48.2%	20.8%	11.2%	3.8%
Q3-6. Availability of job opportunities	2.8%	21.2%	48.8%	21.2%	6.0%
Q3-7. Availability of training or educational opportunities	8.1%	30.6%	45.5%	11.7%	4.1%
Q3-8. Overall quality of new development	3.6%	30.9%	41.0%	17.3%	7.2%
Q3-9. Overall development across City	3.8%	30.3%	42.4%	16.6%	6.9%

Q4. Parks and Recreation. Please rate your satisfaction with each of the following Parks and Recreation items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q4-1. Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	12.1%	49.2%	22.4%	7.8%	1.2%	7.2%
Q4-2. Quality of outdoor athletic fields (e.g. baseball, soccer, football)	7.8%	42.7%	23.4%	8.4%	1.6%	16.2%
Q4-3. Appearance & maintenance of existing City parks	16.5%	51.1%	19.6%	6.9%	1.2%	4.7%
Q4-4. Proximity of parks to your home	29.6%	41.4%	15.3%	9.3%	1.2%	3.1%
Q4-5. Quantity of City trails	5.9%	29.9%	26.8%	16.2%	3.7%	17.4%
Q4-6. Access to City parks for persons with disabilities	3.4%	22.4%	26.8%	5.0%	1.2%	41.1%
Q4-7. Quality of Pioneer Community Center	7.8%	24.3%	26.5%	2.8%	0.6%	38.0%
Q4-8. Quality of End of the Oregon Trail	7.5%	28.3%	23.4%	11.5%	3.1%	26.2%
Q4-9. Quality of City's swimming pool	5.9%	28.0%	28.3%	5.0%	2.8%	29.9%
Q4-10. Quality of services for fees assessed with recreation programming (e.g. pool programs, admission, camps)	5.6%	21.2%	32.1%	5.9%	3.1%	32.1%
Q4-11. Quality of recreational areas for dogs	3.1%	14.6%	28.0%	15.3%	5.6%	33.3%
Q4-12. Other	0.0%	3.1%	15.6%	21.9%	56.3%	3.1%

WITHOUT DON'T KNOW

Q4. Parks and Recreation. Please rate your satisfaction with each of the following Parks and Recreation items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q4-1. Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	13.1%	53.0%	24.2%	8.4%	1.3%
Q4-2. Quality of outdoor athletic fields (e.g. baseball, soccer, football)	9.3%	50.9%	27.9%	10.0%	1.9%
Q4-3. Appearance & maintenance of existing City parks	17.3%	53.6%	20.6%	7.2%	1.3%
Q4-4. Proximity of parks to your home	30.5%	42.8%	15.8%	9.6%	1.3%
Q4-5. Quantity of City trails	7.2%	36.2%	32.5%	19.6%	4.5%
Q4-6. Access to City parks for persons with disabilities	5.8%	38.1%	45.5%	8.5%	2.1%
Q4-7. Quality of Pioneer Community Center	12.6%	39.2%	42.7%	4.5%	1.0%
Q4-8. Quality of End of the Oregon Trail	10.1%	38.4%	31.6%	15.6%	4.2%
Q4-9. Quality of City's swimming pool	8.4%	40.0%	40.4%	7.1%	4.0%
Q4-10. Quality of services for fees assessed with recreation programming (e.g. pool programs, admission, camps)	8.3%	31.2%	47.2%	8.7%	4.6%
Q4-11. Quality of recreational areas for dogs	4.7%	22.0%	42.1%	22.9%	8.4%
Q4-12. Other	0.0%	3.2%	16.1%	22.6%	58.1%

Q4-12. Other

- AVAILABILITY OF BIKE PATHS
- Bike paths and trails.
- BUMS LIVING IN PARKS
- Clean up the homeless issue. The tent cities are ridiculous. The mess scattered all over the city is ridiculous. Please stop encouraging the disgusting growth by ignoring the problem.
- CLEANLINESS IN GENERAL
- Clear access along easements.
- Cost of monthly water bill is far too high. I understand from staff when I called to inquire that even if we use ZERO water in our house for the month, our minimum monthly bill will be at least \$100. This is very unsustainable for many people, including my household. City must work to reduce this cost.
- DEVELOPMENT OF PAPER MILL
- DT AND MCLAUGHLIN PLANTINGS
- Fenced dog parks.
- FOOD CARTS
- Home owners need tax relief.
- I do not like all of the extra fees, that you are charging me on my water and sewer bill.
- I love OC. The only thing is the homeless on 213.
- IRRESPONSIBLE DOG OWNERS
- KEEP TRANSIENTS AWAY FROM PARKS
- MAINTENANCE OF TRAILS.
- MAKE THE POOL WARM WATER.
- MORE DOG FRIENDLY AREAS
- More trash cans in parks.
- NEW PARK OFF 213- NO SIGNS AT PARK.
- OPEN THE SCHOOLS
- PARKING AT PARKS
- Parking for park areas could be improved. Clackamette park is a good example of a great park with not enough parking space.
- Sidewalks near me.
- SKATE PARKS AND BIKE PUMP TRACK
- The downtown riverside trails and park areas don't feel safe due to homeless camps and trash and make our city look bad.
- The homeless
- The number of options is limited and income directly affects access.
- Too many homeless people in parks.
- UNDEVELOPED PARKS

Q5. Which TWO of the Parks and Recreation items listed in Question 4 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q5. Top choice	Number	Percent
Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	32	10.0 %
Quality of outdoor athletic fields (e.g. baseball, soccer, football)	18	5.6 %
Appearance & maintenance of existing City parks	44	13.7 %
Proximity of parks to your home	9	2.8 %
Quantity of City trails	51	15.9 %
Access to City parks for persons with disabilities	14	4.4 %
Quality of Pioneer Community Center	11	3.4 %
Quality of End of the Oregon Trail	12	3.7 %
Quality of City's swimming pool	16	5.0 %
Quality of services for fees assessed with recreation programing (e.g. pool programs, admission, camps)	14	4.4 %
Quality of recreational areas for dogs	35	10.9 %
Other	12	3.7 %
None chosen	53	16.5 %
Total	321	100.0 %

Q5. Which TWO of the Parks and Recreation items listed in Question 4 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q5. 2nd choice	Number	Percent
Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	34	10.6 %
Quality of outdoor athletic fields (e.g. baseball, soccer, football)	16	5.0 %
Appearance & maintenance of existing City parks	44	13.7 %
Proximity of parks to your home	12	3.7 %
Quantity of City trails	36	11.2 %
Access to City parks for persons with disabilities	18	5.6 %
Quality of Pioneer Community Center	7	2.2 %
Quality of End of the Oregon Trail	15	4.7 %
Quality of City's swimming pool	20	6.2 %
Quality of services for fees assessed with recreation programing (e.g. pool programs, admission, camps)	12	3.7 %
Quality of recreational areas for dogs	32	10.0 %
Other	6	1.9 %
None chosen	69	21.5 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q5. Which TWO of the Parks and Recreation items listed in Question 4 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years? (top 2)

Q5. Sum of Top 2 Choices	Number	Percent
Quality of facilities (e.g. picnic shelters, playgrounds in City parks)	66	20.6 %
Quality of outdoor athletic fields (e.g. baseball, soccer, football)	34	10.6 %
Appearance & maintenance of existing City parks	88	27.4 %
Proximity of parks to your home	21	6.5 %
Quantity of City trails	87	27.1 %
Access to City parks for persons with disabilities	32	10.0 %
Quality of Pioneer Community Center	18	5.6 %
Quality of End of the Oregon Trail	27	8.4 %
Quality of City's swimming pool	36	11.2 %
Quality of services for fees assessed with recreation programing (e.g. pool programs, admission, camps)	26	8.1 %
Quality of recreational areas for dogs	67	20.9 %
Other	18	5.6 %
None chosen	53	16.5 %
Total	573	

Q6. How willing would you be to pay additional taxes or fees to acquire, develop, and maintain the types of parks, recreation, and trail facilities that are most important to your household?

Q6. How willing would you be to pay additional taxes or fees to acquire, develop, & maintain types of parks, recreation, & trail facilities most important to your household

	Number	Percent
Very willing	27	8.4 %
Willing	94	29.3 %
Neutral	58	18.1 %
Not willing	45	14.0 %
Not at all willing	87	27.1 %
Don't know	10	3.1 %
Total	321	100.0 %

WITHOUT DON'T KNOW

Q6. How willing would you be to pay additional taxes or fees to acquire, develop, and maintain the types of parks, recreation, and trail facilities that are most important to your household? (without "don't know")

Q6. How willing would you be to pay additional taxes or fees to acquire, develop, & maintain types of parks, recreation, & trail facilities most important to your household

	Number	Percent
Very willing	27	8.7 %
Willing	94	30.2 %
Neutral	58	18.6 %
Not willing	45	14.5 %
Not at all willing	87	28.0 %
Total	311	100.0 %

Q7. What makes Oregon City special?

- A SMALL CITY WITH A SOUL THAT IS GROWING. I LOVE IT HERE.
- AFFORDABILITY WITH CLOSE ACCESS TO AMENITIES. HISTORIC HOUSES.
- BALANCE OF SUBURBAN AND RURAL FEE.
- BEAUTIFUL COUNTRY
- Beautiful neighborhoods where I live, around Squire/Meyer area. Close to Portland. Quiet.
- Being historic.
- Best main street around
- CENTRALLY LOCATED TO PORTLAND METRO AREA.
- CITY BUT STILL STRONG COMMUNITY FEEL, HISTORY.
- CLEAN AND FRIENDLY TOWN. SAFE NEIGHBORHOODS.
- CLOSE TO THE CITY, MORE RURAL FEELING-LESS CROWDED, SAFE.
- Combination of natural areas like Willamette Falls and small businesses.
- COMMUNITY OF HARDWORKING PEOPLE, BEAUTIFUL AREA, CLOSE TO NATURE, NOT TOO MANY LARGE BUILDINGS.
- COMMUNITY, SMALL BUSINESS SUPPORT
- CONVENIENCES TO SHOPPING, SERVICES, RESTAURANTS.
- Downtown
- Downtown
- DOWNTOWN AREA, ELEVATOR, END OF OREGON TRAIL.
- Ease of access to big city and rural areas.
- EASY GOING COMMUNITY
- ELEVATOR, THE FALLS, THE QUAINTESS OF THE TOWN- CLOSE TO BIG CITY, BUT NOT YET.
- End of the Oregon Trail
- End of the Oregon Trail
- Everything.
- EXCELLENT MEDICAL SERVICES, INTERESTING HISTORY AND HISTORICAL SITES. GOOD CITY SERVICES, GEOGRAPHY.
- Falls
- Family & friends, being 3rd generation OC resident I have many, but traditional things are very important, but so s economic development of our rivers & especially the logon behind the OC shopping center & developing a water transportation system to use the rivers more effectively.
- Feeling of community, neighbors helping neighbors.
- Feels safe
- Feels very safe, very friendly, and good, decent folks who make it feel like a community.
- For the time being it is a nice small community. But we are starting to build to many home and we do not encourage new businesses to come to our area so that we can keep our money in our community.
- Friendliness of neighbors.
- FRIENDLY PEOPLE
- Good history. A quiet suburb to the loud, fast, Portland.
- GREAT MIX OF BLUE AND WHITE COLLAR FOLKS. FRIENDLY VIBE, FAMILY VALUES.
- HAS SMALL TOWN FEEL YET STILL A LOT GOING ON IN TERMS OF RESTAURANTS AND CITY ACTIVITIES. (SUMMER CONCERTS)
- High cost of living here

Q7. What makes Oregon City special? (cont.)

- HISTORIC AREA, RIVER PROXIMITY, FUTURE REDEVELOPMENT OF PAPER MILL.
- Historic area.
- HISTORIC CITY, GOOD COMMUNITY.
- HISTORIC DISTRICT, ELEVATOR, MAIN STREET, CARNEGIE LIBRARY.
- historic downtown
- HISTORIC HOMES AND NEIGHBORHOODS.
- Historic preservation and proximity to nature.
- Historic value, small town feel in a big city.
- HISTORICAL
- HISTORICAL ASPECTS AND THAT IS SEPERATE FROM PORTLAND AND HOW THEY DO THINGS.
- Historical community with small town feel
- Historical neighborhoods, revitalization of the downtown area.
- HISTORICAL SIGNIFICANCE AND CHARACTER. RENOVATION OF BLUE HERON MILL SITE.
- Historical status
- History
- History
- History
- History
- History
- HISTORY AND LOCATION TO WILLAMETTE FALLS.
- History and location.
- HISTORY AND SENSE OF COMMUNITY
- HISTORY AND SMALL BUSINESSES
- History and small town feel.
- History and the small town feel.
- HISTORY OF THE CITY AND ITS POTENTIAL TO BRING IN SO MUCH REVENUE FOR RESIDENTS AND BUSINESS OWNERS. MAIN ST, THE RIVER.
- HISTORY OF THE FALLS.
- HISTORY, ACCESS TO PORTLAND, MEASURED GROWTH
- History, beauty, proximity to river and the historic neighborhoods.
- History, community
- History, diversity and Willamette Falls
- History, downtown.
- History, Falls and the river.
- HISTORY, FALLS, NO RIOTS.
- history, geographic location (centrally located)
- HISTORY, LOCATION, RIVER.
- HISTORY, LOCATION, SIZE, LESS LOW INCOME RENTALS, FRIENDLY NEIGHBORS.
- HISTORY, LOCATION, SMALL TOWN FEEL.
- History, Main Street, Willamette Falls, river access, elevator
- History.... the Oregon trail. The falls. Topography. The West Linn forest park that enhances the view when traveling down 7th street. The Driving range. Kayaking services on the river. The train station. Our neighbors.

Q7. What makes Oregon City special? (cont.)

- HOA, City employers support, downtown, museums, and historic neighborhoods.
- Hometown
- I grew up here. It is home to me.
- I have lived in Oregon City 38 years. My tax's have gone up up with out seeing any thing for them.
- I like living here.
- I like that business is kept separate from major residential areas. I like the uniqueness of the museums, the Falls, the bridge. I like how safe I feel where I live.
- I like the small town feeling, neighbors caring about neighbors.
- I love living in Oregon City. I have been a resident since 2004. I love Main Street and the general feel that it is a smaller town
- I LOVE MY NEIGHBORHOOD. MOSTLY FRIENDLY, CLEAN, AND FEEL SAFE.
- I LOVE THE FEELING OF THE DIFFERENT AREAS. MAIN STREET DOWNTOWN, MCLAUGHLIN DISTRICT AND HILLTOP SHOPPING AND HOMES.
- I love the small town feel. The history is what makes it most special.
- I think our tax dollars are not used effectively.
- IN COMPARISON TO WHERE I AM FROM, IT IS A FRIENDLY COMMUNITY FOR ME.
- IT FEELS LIKE A FRIENDLY COMMUNITY.
- IT IS A BEAUTIFUL PLACE TO LIVE. FRIENDLY PEOPLE, FEELS SAFE, TRENDY DOWNTOWN AREA.
- IT IS A CITY BIG ENOUGH TO PROVIDE OPPORTUNITIES BUT SMALL ENOUGH TO MAINTAIN A REAL FEELING OF COMMUNITY.
- It is a city of educators - more teachers live here than anywhere else in the area. It is still a small town, but has everything that a person could need. It is beautiful - hills, valleys, rivers, waterfalls, cliffs, fields, and farms.
- IT IS BEAUTIFUL! I LOVE THE HISTORY. I LOVE ALL THE OLD STORIES OF THE OREGON TRAIL AND I AM PROUD TO LIVE HERE.
- IT IS HOME.
- It is not like Portland.
- It is where we have lived and raised our family. It does not have the problems that a larger community has and we have supported the costs increases and improvements as we have been assessed. The new building on Linn Ave. has turned out very nice.
- It quaint small town feel
- IT STILL FEELS SMALL TOWN LIKE.
- It use to be special, but not any more.
- IT USED TO BE BEAUTIFUL, NOW IT IS OVERRUN WITH HOMELESS.
- It's small town feel. Oregon City is pedestrian friendly & a great place to just go for long walks, even on city streets. There are lots of parks.
- ITS A SAFE AND COMFORTABLE PLACE TO LIVE.
- It's calm and not a lot of crime
- It's history
- It's history
- It's history
- It's history
- It's history
- It's history
- It's history

Q7. What makes Oregon City special? (cont.)

- It's history and the falls, the Mill needs to be cleared.
- It's history! It's a fantastic place to live and has a small town feel.
- IT'S HISTORY, BEAUTIFUL OLDER HOMES, LOVE THE STREET LIGHTS AND FLOWERS HANGING IN SPRING AND SUMMER.
- ITS HISTORY, SENSE OF COMMUNITY
- It's location, the history and the desire to improve the downtown.
- It's not Portland or Milwaukee.
- IT'S NOT PORTLAND.
- IT'S NOT PORTLAND.
- ITS PAST AND ITS FUTURE.
- ITS SMALL TOWN FEELING.
- IT'S VOLUNTEER COMMUNITY AND ACTIVE CHAMBER.
- KEEP CONSERVATIVE VALUES AND PDX CREEP OUT.
- Location and beauty.
- LOCATION AND HISTORY
- LOCATION BETWEEN SALEM AND PORTLAND, HISTORY, DOWNTOWN.
- LOCATION TO THE CITY AND COUNTRY SIDE.
- Love the small town feel and overall I feel very safe here.
- LOVE THE WALKING TRAILS, PROMANADE, HISTORY, ESPECIALLY THE ELEVATOR.
- Main Street. Falls trail
- MEDIUM SIZE TOWN WITH IMPORTANT HISTORICAL ROOTS FOR THE REGION AS WELL AS THE ABILITY TO BE MODERN.
- MY GRANDCHILDREN LIVE HERE, NICE NEIGHBORHOODS FOR MOST PART.
- My Kids and grandkids live here
- Natural beauty/river.
- Near rural areas and the access to parks and open space. Close to the City of Portland to enjoy their events.
- NO ANTIFA, NO BLM, LIMITED HOMELESS.
- NOT BEING PORTLAND, QUALITY OF LIVING SEEMS TO BE SLIPPING.
- OPEN SPACES, TRAILS, COMMUNITY IS CLOSE AND NEIGHBORLY.
- OREGON CITY HAS COME A LONG WAY. IT IS BEAUTIFUL.
- OREGON TRAIL HISTORY
- Our downtown, history and proximity to the river.
- OUR HISTORY, FRIENDLY PEOPLE, DOWNTOWN IMPROVEMENTS. RESTAURANTS.
- OUR MIX BETWEEN COUNTRY AND CITY SPACES.
- PEOPLE, SAFE AND CLEAN COMMUNITY
- PERFECT BLEND OF SUBURBAN LIFE MIXED WITH GREAT DOWNTOWN AND CITY AMMENITIES.
- PROGRESSIVE VISION
- PROXIMITY TO PLACES I NEED TO BE.
- Proximity to Portland, Salem and other recreation areas.
- QUAIN
- RAISED HERE
- Relativity large city that still has a small town feel and is close to a lot of options and activities.

Q7. What makes Oregon City special? (cont.)

- River, and trains.
- SAD TO SAY BUT ANYMORE OREGON CITY IS NOT SPECIAL.
- Safety and community features.
- SCENERY, CENTRALIZATION
- Significant improvements to downtown to make it a place where I'm happy to take people from out of town.
- SIZE AND COMMUNITY ARTS
- SIZE AND HISTORY
- Small town and geography.
- SMALL TOWN COMMUNITY. NOTHING LIKE PORTLAND.
- Small town feel
- Small town feel
- Small town feel
- Small town feel
- SMALL TOWN FEEL AND EVERYONE IS SO NICE.
- Small town feel and the history.
- SMALL TOWN FEEL BUST MOST OF WHAT WE NEED CAN BE FOUND LOCALLY.
- SMALL TOWN FEEL BUT OFFERS GREAT SERVICES.
- Small town feel close to big city.
- Small town feel, quiet. Access to nearby shops.
- Small town feel. Historic houses and buildings. Main Street development.
- SMALL TOWN, SAFE, HISTORICAL, GREAT PLACE FOR TOURISTS, CLEAN, NO HOMELESS CAMPING ON CITY SIDEWALKS.
- Small/big town feel.
- Smaller city, lots of rural area.
- Suburb with a small town feel.
- THE ABILITY TO CHARGE HIGH TAXES, DO NOTHING NOTABLE WITH THE MONEY AND GET AWAY WITH IT.
- THE BEAUTY, THE LOCATION TO PORTLAND, SUPPORT FOR OUR CHILDREN AND ACTIVITIES.
- THE BLEND OF OLD AND NEW.
- The city has all the services we require which negates traveling.
- The city has gone downhill at an alarming rate.
- The city vibe and our Heritage Falls area, please finish this project.
- The community
- The community
- THE ELEVATOR, RESTAURANTS, HISTORY, WATER FALL.
- The falls
- THE FALLS, HISTORY, LIBRARY.
- The Falls, The Elevator, Main Street and The Bridge.
- THE FALLS/ ITS HISTORY.
- The farms. The undeveloped land. The more, the merrier. Being next to Willamette and Clackamas Rivers.
- The historic component mixed with the up and coming downtown area. The walkability of the Mcloughlin and surrounding neighborhoods and the on going revitalization project at the Blue Heron Papermill site. Oregon City schools reputation is good. Crime is low. I am comfortable walking my neighborhood day or night.

Q7. What makes Oregon City special? (cont.)

- The historical homes, Main Street and the proximity to the rivers and parks.
- The historical places make this city special.
- The history
- The history
- The history
- The history
- The history
- the history and community feeling it brings
- THE HISTORY, DOWNTOWN DEVELOPMENT, SMALL TOWN FEEL.
- The history, size of the City, closeness to everything.
- The location of our area
- The natural areas/parks for kids. Great mix of town and rural.
- The old business area shops and lights in the trees at night. The museums, hanging flower baskets in the summer, the elevator and lights on it at night, the arch bridge, the walk along the waterfront, the view point of the falls, the quiet park around the library. I like that the metro dump and recycle is located close and convenient.
- It is nice to see the activity on Main street.
- THE PEOPLE
- The people! There is such a nice mix of really friendly people. I love the downtown character and the Singer Hill area. I'm glad to see it more utilized. I love our library and I'm really proud of it and the people who there. I really miss being able to go in and walk around, get recommendations from the staff and enjoy the programs.
- THE PEOPLE, SCHOOLS, POLICE.
- The police department is one of the best I've ever seen. I've lived in 15+ cities and those men/women are extremely experienced, friendly, and do NOT need reform.
- The quality of people living here.
- The revival of downtown, the roads and all the options available to children.
- The river
- The river and waterfall, need to make better use of them.
- THE RIVER WITH THE FALLS.
- THE RIVER, HISTORY
- THE SENSE OF COMMUNITY. THE CLEANLINESS AND RURAL FEEL.
- The size of the city. The car friendly streets. No bicycle lanes every where! The small town feel.
- The slow controlled pace of residential and commercial development. Keep open spaces and farms.
- The small town feel and low density of homes and people.
- THE SMALL TOWN FEELING EVEN AS THE CITY GROWS.
- The smaller town, rural feel while still being close to the metro area.
- The small-town flavor of a city that is re-inventing itself, all wrapped in a significant amount of regional history. Pretty special place!
- The topography and natural beauty but most of all the friendly people.
- THE VIEWS.
- THERE IS NOT A LOT OF HOMELESS PEOPLE. IT IS NICE.
- There used to be a feel of community and safety that we liked about Oregon City. However, with the increase of homeless people camping and staying here, the safety has gone down.

Q7. What makes Oregon City special? (cont.)

- Trees and nature.
- Unique history.
- USED TO BE MORE CONSERVATIVE, BECOMING TOO LIBERAL
- Used to be small town feel. That is getting lost
- We are not Portland
- WE HAVE LOST WHAT MADE IT SPECIAL. IT HAS BECOME PORTLAND.
- WE LIVE HERE AND LIKE THE SMALL TOWN FEEL.
- What I think makes Oregon City special is the vast difference in landscape across the city.
- WILLIAMETTER RIVER- INDIAN TRIBE BUILDING, NEW OLD PAPER MILL.
- You love to TAX the shit out of people, and are not big on future development thanks to people like Rocky Smith who still wants to live in the 1960's atmosphere.

Q7a. What about Oregon City would you like to change in the future?

- A list of Portland Hill Walks book with all the history listed.
- A SMALL PARKOUR PARK WOULD MAKE TEENS/YOUTH VERY HAPPY. IT WOULD BE THE FIRST IN OR.
- A tall order: better addressing the needs of low-income families as well as those of our homeless population.
- A trader's Joe's or New Seasons would be nice. More money for elementary schools
- A YOUTH CENTER OR SIMILAR FOR TEENAGERS.
- ADD MAJOR RETAIL AND RESTAURANTS
- Add restaurants. Develop area around Home Depot to attract guests to visit the area.
- ALLOW COSTCO OR WALMART TO COME HERE.
- Anything that brings us closer to Portland
- Be more concerned about quality of life than growth
- Beautification of the falls and the mill site.
- BETTER AND MORE FOOD SERVICES. USUALLY LEAVE OC TO ORDER FOOD.
- Better enforcement of codes.
- Better kept bike lanes and more bike lanes on streets.
- Better leadership and give the people what their taxes are actually paying for
- BETTER POOL/POOL PROGRAMS. ENCOURAGE GOOD LIKE PORTLAND QUALITY RESTAURANTS TO COME TO OC.
- BETTER RESTAURANTS-NO PIZZA. ALSO COSTCO
- Better schools,
- BETTER TRANSPORTATION OPTION AND TRY TO KEEP OVER POPULATION UNDER CONTROL.
- BETTER USE OF TAX MONEY IN ALL AREAS.
- Better water quality, water taste bad.
- Bike paths, walk-ability and community center.
- Biking trails.
- BLUE HERON MILL DEVELOPMENT, DOWNTOWN ECONOMIC DEVELOPMENT.
- BLUE HERON MILL SITE NEEDS CLEANED UP AND DEVELOPED.
- Bring in economic development that fits our unique recreational opportunities, like fishing, waterways, scenic falls, etc. We need economic development which pays higher wages than service industry minimum wages. Quit passing on things like Cabela's, Walmart, and leaving large tracks like the old wrecking yard on Mollala, the Clackamas lagoon, & the old paper mill just sitting empty. I think the old mill tear down should get going & development of the falls area with high end shopping, restaurants & a hotel overlooking the falls should be top priority!
- Capitalize on the old Blue Heron Mill site. The progress and updating of the downtown/Main Street area has been great; the Blue Heron site and falls access would be a great next step.
- change development patterns to strongly encourage 15 minute neighborhoods
- CITY RESPONSIBILITY TOWARDS ITS CITIZENS.
- Clean up the homeless situation.
- COMMERCIAL DEVELOPMENT OF BLUE HERON SITE.
- DEAL WITH ENCROACHING HOMELESS ISSUES.
- DEVELOP BLUE HERON SITE.
- Develop the area around the falls.
- DEVELOP THE COVE AND MORE ON THE WILLAMETTE RIVER- NOT APARTMENTS.
- DEVELOP THE OLD PAPER MILL SITE.
- Development near or on the river.

Q7a. What about Oregon City would you like to change in the future? (cont.)

- Development, need a fun center for our youth. Need department stores.
- Development-Mill Site.
- Discourage the homeless from coming here.
- DIVERSITY OF THE POPULATION, MORE INCLUSION
- Do something about the old paper mill.
- DO SOMETHING ABOUT THOSE UGLY MILLS!
- Don't over do it on the development, want to keep the community feel and charm.
- Downtown became to yuppie.
- Downtown Parking is horrid... reduction in parking spaces and change to parallel parking was a terrible idea.
- Economic development is going to occur, manage it proactively!
- EMPHASIS LIVABILITY
- EMPHASIS ON WILLAMETTE FALLS DEVELOPMENT AND ON HISTORY OF THE AREA.
- ENCOURAGE DIVERSITY, SAFE CITY FOR PEOPLE OF COLOR, DISCOURAGE WHITE PRIVLEDGE MENTALITY, HOLD COPS ACCOUNTABLE, PROVIDE GOOD PAYING JOBS IN MANUFACTURING.
- ENFORCE NO CAMPING CODES ON THE HOMELESS. SEND THEM TO PORTLAND.
- Enforce no camping ordinance.
- Facilities for OC to be able to host sporting events/tournaments. It would only bring in more money for the city.
- Festival that honors the pioneer heritage and celebrates the historic events.
- Fewer dispensaries, lower taxation.
- Finish and open Newell creek canyon trails, develop Willamette falls area, remove the pavement maintenance fee from water bill, improve downtown
- FINISH THE BLUE HERON SITE- PLAN FOR TRAFFIC, PARKING, BARN ON SITE.
- FINISH WILLIAMETTE FALLS LEGACY PROJECT.
- Fix Trillium Park Drive and get rid of the condemned house. It's been almost 4 years now and nothing has been done.
- Friendliness and personable law enforcement
- Get moving on development on River, bring in new development partnerships.
- Get our Mayor back in office.
- Get rid of homeless/transient camps.
- GET RID OF MARIJUANA SHOPS AND GAMBLING.
- GET THE COVE AND LANDFILL DEVELOPMENTS GOING.
- Get the falls trail underway
- GREENSPACES AND TRAILS AND LESS CONSTRUCTION.
- HAVING EFFECTIVE LEADERSHIP. MAINTAINING OPEN DIALOGUE WITH MAYOR AND COMMISSION RESULTING IN POSITIVE OUTCOMES.
- Help the homeless find shelters. Clean up the garbage they leave behind.
- Home alarm permit accountability.
- Homeless and mentally ill. enabling them is not helping them or me! I know all these homeless people in our area are not from here but Oregon let's them get away with so much and give them so much that they come from everywhere and destroy everything. They say it's inhuman to put he mentally ill in an institution well I say it's inhuman to let them run wild and shit and leave garbage everywhere! We used to have a clean state now it's a dumping ground and very dirty and embarrassing. I'm ashamed to say Oregon's my home with what our politicians have let happen to this once beautiful state!!!!

Q7a. What about Oregon City would you like to change in the future? (cont.)

- Homeless camps are becoming an extreme issue, as is everywhere. I would like a bit more development of stores/restaurants, and less housing developments.
- Homeless community
- Homeless problem.
- HOMELESS WALKING AND LIVING. WE NEED MORE POLICE ON THE STREETS PROTECTING OUR PROPERTY. GET THEM OFF THE STREETS.
- HOMELESS. HELP-NOT SURE OF THE ANSWER BUT IT SHOULD BE TOP OF FOCUS LIST!
- HOMELESSNESS, CAMPS/SAFETY OF CITIZENS
- HOUSING, EMPLOYMENT OPPORTUNITIES
- I am very disappointed in the amount of homeless people and trash that the city is doing nothing about. We work hard and pay taxes to live here and to make it a SAFE place for our children. The city is not doing anything to support the people that actually contribute to the community and pay taxes. By allowing homeless shelters to move in to our community they are welcoming the trash and disrespect that comes with it. They take over our parks and trails that are meant for our children to play and feel safe, trails for exploring with family and friends are now there camping areas. Again very disappointed.
- I do not think anyone in Oregon City government has a true vision on how to make Oregon City change.
- I do not understand why the city leaders have yet to come to a solution or development of the old paper mill. It is run down, depressing, and hazardous. They have turned down income opportunities through retail development, restaurants. West linn and lake Oswego utilize waterfront properties for recreation and restaurants. Oregon city's waterfront feels inaccessible to the members of the community.
- I do not understand why there are not fenced dog parks within the park settings. This has been brought up multiple times by community members and the commissioners continue to not move forward or look into it. There are multiple baseball parks, soccer fields. Yet there are not any locations to play basketball outside. Also, indoor basketball has to continually fight for practice location times. I do not see any park accommodations for handicapped or disabled children. Specialty swings, More wheelchair accessible activities. Let's support our children that are different than others. Schools need an overhaul in services to children with both learning and physical disabilities. Why did I have to fight for 4 years and threaten to sue the district to get a 504 learning plan for my student with dyslexia? Children are being left behind if they do not fit in with the mainstream children. Improvement appears to be demanded by community members not by the commissioners, Mayor. We voted to allow development of the rundown paper Mill property yet it still sits crumbling. We voted for dog parks. there are none provided by the city only small patches of grass the community has decided dogs should meet at. One million baseball fields but no areas for football players to practice or outdoor basketball areas. Have to cross to other cities for safe, accessible access to the river. We voted against houses going into a section of the wesley linn Park multiple years in a row. It failed again yet the last time it was voted on YET houses are now being built and the park has been reduced in size. There are enough houses! Housing developers are allowed to continue adding large family homes to the city but are not required to financially contribute to the addition of schools to accommodate these children moving to the area.
- I have no idea.
- I have noticed an increase in homeless population. Prevent that, don't welcome it.
- I realized that this is a problem not just exclusive to Oregon City and it is an issue that has no easy answer, but the homeless problem. I commend the OCPD for having a homeless liaison, I think it is a great start.
- I THINK IT IS HAPPENING NOW-FEWER POTHOLES ON MOLALLA AND PLACES FOR HOMELESS. 213 IS GETTING MESSY!

Q7a. What about Oregon City would you like to change in the future? (cont.)

- I think the city made a huge mistake not adding parking (or a parking structure) to the downtown. I would love to see more trails. We have lots of chunks of land that are wooded and not suitable for building that would make great hiking space. You pretty much have to leave Oregon City to do any significant nature walk. I also would like to see more trees planted in the commercial areas so the area doesn't look so dated.
- I think the eyesore of the old mill should be taken care of and some family centered recreation area be developed.
- I would like to improve services for children, including the schools.
- I would like to see a food court pod established. Negative mayoral leadership. More diversity within the community.
- I WOULD LIKE TO SEE PEOPLE TAKE BETTER CARE OF THEIR PROPERTY AND GROUNDS, SIDEWALKS, ETC.
- I WOULD LIKE TO SEE THE RIVERWALK PROJECT DEVELOP. KEEP DOWNTOWN THRIVING.
- I would like to see us stop building more and more expensive housing.
- I'm disappointed that many businesses seeking to develop in Oregon City have not moved forward. I understand it is due to restrictions and anti-development city representatives. I am upset that the mill has been rotting away despite many offers to develop the area. It seems like the fault lies in city decisions.
- Improve development to bring more commerce to the city.
- Improve diversity, stop tolerating racism and homophobia in the public schools, clean up the willamette water front around the falls and make it more accessible to the public (it sounds like that's coming together), improve the quality of the drinking water (it tastes heavily of chlorine . I have to dump out my water bottle of O.C. water when I arrive to work in Portland everyday. I try to drink as much bull run Portland water as opposed to the Clackamas River Oregon city water because the Portland water tastes so much healthier). The police could be more responsive to complaints and concerns.
- IMPROVED INFRASTRUCTURE, MORE BICYCLE LANES.
- IMPROVEMENTS IN TRAFFIC FLOW.
- IN ROAD FIGHTING! LOSS OF OPEN LAND TO COOKIE CUTTER HOUSING TRACTS.
- It use to be small and quiet.
- It's attitude towards big business bring good jobs to the city
- Keep exits, especially 205N clean and free of debris.
- keep it a small town. stop expanding, fix more of the roads that are out of the mainstream areas
- Keep it like it is. Don't tax people out of their homes. People who have lived in OC should live property tax free after 70 years old if they remain in their home.
- Keep it safe and clean.
- Keep it small town. Get homeless off the city sidewalks on main street & quit rummaging through my garbage can on trash day.
- KEEP LIBERAL PROGRAMS OUT OF OC. AGAIN, IF I WANTED TO LIVE IN PORTLAND I WOULD MOVE THERE!
- KEEP LIVABILITY HIGH AND GET NEW LEADERSHIP.
- KEEP MALL TOWN FEELING.
- KEEP SMALL TOWN FEEL. MORE HIGH PAYING JOBS THAT CAN SUPPORT FAMILIES.
- Lack of growth in businesses and restaurants. Worst parking in downtown, need more pay lots at night or free.
- LEADERSHIP WE CAN COUNT ON TO PUT THE PEOPLE FIRST AND FOREMOST.
- Less development and growth.
- LESS HOMELESS
- LESS HOMELESS ADDICTS PESTERING PEOPLE.

Q7a. What about Oregon City would you like to change in the future? (cont.)

- Less homeless and not homeless camps allowed.
- LESS HOMELESS CAMPING AND LESS GARBAGE.
- LESS HOMELESS PEOPLE.
- LESS HOMELESSNESS, A CREEPING MENACE.
- Less industrial, more residential and commercial.
- Less political divisiveness.
- Less pot holes, better roads, lower rent(apartments), lower water bill.
- Less regulation
- Less Republicans and Trump supports.
- Less urban sprawl.
- Lower cost for home owners.
- Lower overall tax structure.
- Lower property taxes. WAY TOO HIGH!!!
- Lower taxes
- LOWER WATER BILL
- LOWER WATER BILLS- RIDICULOUSLY HIGH COMPARED TO NEIGHBORING AREAS.
- Lower water cost.
- Maintain the bike lanes and add more.
- Make it easier to fix older homes, homeless campsites, fix vacant lots like Olsens at 7th and Monroe.
- Make the water and sewer more reasonable to pay.
- MOLALLA AVE SHOULD BE FOUR LANES, NO TREES.
- More affordable housing and more walking paths.
- MORE AMENITIES NEEDED, SHOPPING.
- MORE BIKE AND WALKING FRIENDLY. I HAVE NO WAY TO SAFELY BIKE TO SCHOOLS/STORES.
- More choices for parents to schooling for their children
- MORE CHOICES OF FOOD AND RESTAURANTS.
- MORE COMMUNITY EVENTS
- MORE COMMUNITY FRIENDLY POLICE DEPT.
- More connecting trails.
- More cops!!!!
- More dedicated bike paths. Less homeless camps -need shelters
- More delivery options in town for food and alcohol, especially during the pandemic
- MORE DIVERSE SHOPPING, RESTAURANTS ETC. SEEMS MINIMAL CONSIDERING THE AMOUNT OF PEOPLE WHO LIVE HERE.
- More diversity.
- More dog park areas in parks.
- MORE DOG PARKS AND WALKING TRAILS, MAYBE A MAX SOME DAY.
- More dog parks. Better sports programs for kids.
- More emphasis on the history.
- MORE HISTORIC PAINTINGS AROUND TOWN.
- More housing downtown, enhance the north downtown area. Homeless support coordination.
- More job opportunities; more of a small town community atmosphere; facilities for the homeless.

Q7a. What about Oregon City would you like to change in the future? (cont.)

- MORE JOBS. I WOULD LIKE TO SEE THE ANTI-BUSINESS ATTITUDE CHANGED.
- More local commercial development
- MORE MID SCALE DINING OPTIONS. RED ROBIN, APPLEBEES
- More parking for downtown shops and restaurants.
- MORE PUBLIC ART AND CULTURE EVENTS.
- More restaurants and shops.
- More senior housing like Hope Village in Canby
- More sidewalks and complete the Willamette Falls project.
- MORE STREET SAFETY, SPEED BUMPS AND ROUND ABOUTS TO SLOW TRAFFIC.
- More things to do in town, more things for kids 13-18 years old, more options/ways for lower income residents to take advantage of opportunities.
- No homeless. Don't deal with Portland or Milwaukee.
- NO MORE AERIAL LINES FOR ELECTRICAL OR PHONES. LOOKS TRASHY.
- Not a thing! I love everything about it, as it is.
- NOT SO MUCH OF BOTTLE NECK TRAFFIC ON THE HILL IN OREGON CITY. WHAT THEY ARE DOING ON MOLLALA AVENUE TO BEAUTIFY IS MAKING IT WORSE!
- OPEN THE LOCKS AND DEVELOP THE RIVERFRONT
- Open up the bottom of the falls area to business , Shopping Mall, Falls out look and let people know that these type of falls are in the category of Niagara and are second to op Niagara. Develop a attraction of our history and location that will draw people in and around the falls. Get all the ugly falling down mills off the falls. Could be the greatest attraction in Oregon. Shopping, view, History. Also set up from the falls a tour of pioneer homes, churches, Pioneer center, ext. Great opportunity to bring revenue.
- OPENNESS, LIBRARY IS AWESOME. PROGRAMS.
- OREGON CITY SHOULD HAVE COMMUNITY TOWN HALL MEETINGS.
- Pay respect to the original capitol of Oregon.
- PEDESTRIANS ALONG 213- IT IS VERY DANGEROUS AND LITTER EVERYWHERE.
- People of diverse cultures/nationalities/sexual orientation feel welcome to move here.
- Perception is red neck and rural.
- Plan for a more walk able City.
- Please stop asking the residents for a hand out (taxes) and start spending our money like responsible thoughtful adults.
- PROMOTE RACIAL DIVERSITY AND POLICE COMMUNITY OUTREACH.
- PROVIDE SIDEWALKS NEAR SCHOOLS, WATER TAXES ARE TOO HIGH!
- PUBLIC TRANSIT
- QUALITY RIVERFRONT DEVELOPMENT, LESS PARKING METERS, TRAFFIC FLOW, BETTER DEVELOPMENT RATIO TO HOMES BUILT.
- Quit charging us unreasonable fees and taxes to live here.
- Racism and the lack of diversity.
- Recall Mayor Holladay! Better representation for the people of Organ City.
- Reduce basic cost of water service. More public community events and entertainment. More economic development support programs.
- Reopen everything and make things the way they used to be.
- REPAIR ALL OF THE STREETS AND KEEP THEM THAT WAY.

Q7a. What about Oregon City would you like to change in the future? (cont.)

- REPAIR SOME ROADS THAT HAVE BIG HOLES AND BUMPS
- Revitalize the river downtown.
- ROAD AND STREET QUALITY.
- ROADS!!! TO FEW WITH TOO MANY HOMES BUILT.
- Seems the homeless population is growing. We know have them going through our trash.
- Slow down the development of housing.
- Small business opportunities
- SMALLER FOOT PRINT, NEW HOMES.
- Social programs out of residential neighborhood.
- solutions for homeless, opportunities for small business growth
- SONTINUED STRONGER EFFORT TO MAKE OC CYCLE FRIENDLY. TEACH POLICE AND FIRE DEPTS TO KEEP POLITICS TO THEMSELVES IN PUBLIC PLACES.
- SPACE FOR TINY HOMES AND A MOTOR HOME PARK. DO SOMETHING WITH BLUE HERON SPACE.
- Speed enforcement on side streets. A bike trail. More downtown investment. FINALLY do something about the Mill site that is FOR the people. Stop Metro encroachment.
- Stop building.
- STOP FOLLOWING PORTLAND AND METRO-STOP ADDING FEES TO UTILITIES.
- STOP TRYING TO BECOME A MID TO LARGE CITY AND KEEP OC A SMALL TOWN.
- STOP TRYING TO MAKE IT ANOTHER BEAVERTON.
- Streets
- STRONGER EFFORT TO REDUCE HOMELESSNESS AND ALL THE TRASH AND FECES EVERYWHERE.
- TAX RATE
- TAXES AND DOING SOMETHING ABOUT THE HOMELESS.
- THE BLUE HERON AREA/NEWELL CREEK AREA
- The city codes are to restrictive not allowing people free rights to use their property the way they wish to.
- THE COVE DEVELOPMENT NEEDS TO BE COMLETED THE WILLAMETTE FALLS PROJECT DEVELOPED.
- THE DEVELOPMENT OF THE OLD PAPER MILL FACTORY AREA.
- The homeless and the crime
- The homeless and their garbage.
- The homeless population.
- The layout of the city was not planned well.
- The mayor.
- THE OLD MILL TURNED INTO SOMETHING.
- The only tax that I would vote for is one that would help with road maintenance. There are several roads that really need to be repaved or repaired
- THE PAPER MILL.
- THE REMOVAL OF THE MILLS GIVE THE RIVER BACK.
- The River junkyard
- The trash, debris, homeless in our downtown corridor. I do not feel safe waling on Main Street downtown.
- There are a lot of homeless people camping and staying in Oregon City, near neighborhoods and parks. Especially by highway 213 off Beaver creek. There are a lot more garbage also surrounding these areas they are staying at. Safety is also an issue, as there has been an increase of crime and suspicious activity in neighborhoods including mine. Please address these issues.

Q7a. What about Oregon City would you like to change in the future? (cont.)

- There needs to be more maintenance and clean up done around town. This includes plants in the center road dividers, the area around the post office, the weeds pulled near the riverfront walk, the sidewalk area along hwy 99 near the falls view point needs better maintenance and weed pulling and garbage picked up more frequently, more routine clean up of the homeless garbage around town. Traffic is very busy at different times of the day around town. I feel the city has been more interested in new housing developments but is not keeping up with the needs for roads and schools and other needed utilities. What do the businesses on Main street want to see happen downtown? Even before Covid it seemed that places didn't stay in business long. Could we get some businesses that are better established financially or more advertising assistance to those starting out. Make this be a shopping area to find merchandise that is made locally by crafts people. Is there a plan for more parking downtown? The crime in Oregon City is concerning me. People in my neighborhood are having things stolen out of their cars and packages stolen from their porches.
- They need to try and not have ever street torn up at the same time.
- To be advised when street sweeper is coming so I could move cars
- TO FIND PLACE FOR THE HOMELESS AND TO CLEAN UP ALL OF THEIR GARBAGE. IT'S NOT A WELCOME TO OREGON CITY LOOK TO BE PROUD OF.
- Too many Trump supporters
- TRANSIENT ISSUES TO BE ADDRESSED. I DO NOT THINK FATHERS HEART SHOULD BE ABLE TO OPERATE IF THEY ARE NOT TAKING RESPONSIBILITY FOR THE PEOPLE THEY BRING TO OUR NEIGHBORHOOD.
- TRANSIENT TRAFFIC/CAMPS/TENTS.
- WATERFRONT DEVELOPMENT, INCLUSIVITY, MORE REC FOR YOUNG KIDS.
- WAYS/ROADWAYS IN/OUT OF CITY IN CASE OF DISASTER.
- WE COULD DO BETTER SUPPORTING SMALL LOCAL BUSINESSES.
- WE HAVE A WHOLE LOT OF POLICE, ARE THEY ALL NECESSARY?
- WE NEED DOG PARKS AND MORE TRAILS AND OPEN SPACES.
- We need to encourage new businesses to come to our area if we continue to build all these new home. We need to keep our monies in our community instead of going outside.
- WHEN THE COURTHOUSE MOVES, BUILD A NICE MULTI-LEVEL PARKING STRUCTURE THERE. LIMITED PARKING HURTS DOWNTOWN BUSINESS.
- WIDEN 213, CREATE ADDITIONAL INFRASTRUCTURE TO SUPPORT ALL THE NEW HOUSING. BRING IN RETAIL FOR CLOTHING.
- WILL NEED MORE HOUSING.
- WOULD LIKE MORE WALKING/RUNNING PATHS.
- Would like to see more trees.
- WOULD LOVE TO SEE PROGRESS ON THE WILLAMETTE FALLS PROJECT. NEED TO KEEP TRANSIENT ACTIVITY DOWN!!
- ZONING ALONG MOLLALA AVE, IT IS AN EYESORE. SIDEWALKS IN NEIGHBORHOODS.

Q8. Public Safety. Please rate each of the public safety items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q8-1. Visibility of police in the community	23.4%	46.4%	21.5%	7.2%	0.0%	1.6%
Q8-2. City's overall efforts to prevent crime	15.3%	39.9%	21.5%	9.7%	1.6%	12.1%
Q8-3. Enforcement of local traffic laws	12.5%	41.1%	29.6%	8.4%	2.8%	5.6%
Q8-4. Parking enforcement services	12.5%	26.8%	33.3%	6.5%	1.9%	19.0%
Q8-5. How quickly police respond to emergencies	15.6%	28.7%	19.0%	2.5%	1.9%	32.4%
Q8-6. Response to drug control	5.3%	14.6%	25.2%	8.4%	3.7%	42.7%
Q8-7. Response to property crime	6.2%	20.2%	24.6%	7.2%	2.8%	38.9%
Q8-8. Level of community outreach	8.4%	29.3%	30.8%	8.1%	2.5%	20.9%
Q8-9. Response to issues with transients	4.7%	13.7%	18.1%	21.5%	18.4%	23.7%

WITHOUT DON'T KNOW

Q8. Public Safety. Please rate each of the public safety items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q8-1. Visibility of police in the community	23.7%	47.2%	21.8%	7.3%	0.0%
Q8-2. City's overall efforts to prevent crime	17.4%	45.4%	24.5%	11.0%	1.8%
Q8-3. Enforcement of local traffic laws	13.2%	43.6%	31.4%	8.9%	3.0%
Q8-4. Parking enforcement services	15.4%	33.1%	41.2%	8.1%	2.3%
Q8-5. How quickly police respond to emergencies	23.0%	42.4%	28.1%	3.7%	2.8%
Q8-6. Response to drug control	9.2%	25.5%	44.0%	14.7%	6.5%
Q8-7. Response to property crime	10.2%	33.2%	40.3%	11.7%	4.6%
Q8-8. Level of community outreach	10.6%	37.0%	39.0%	10.2%	3.1%
Q8-9. Response to issues with transients	6.1%	18.0%	23.7%	28.2%	24.1%

Q9. Which TWO of the public safety items listed in Question 8 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q9. Top choice	Number	Percent
Visibility of police in the community	15	4.7 %
City's overall efforts to prevent crime	34	10.6 %
Enforcement of local traffic laws	15	4.7 %
Parking enforcement services	4	1.2 %
How quickly police respond to emergencies	20	6.2 %
Response to drug control	19	5.9 %
Response to property crime	6	1.9 %
Level of community outreach	23	7.2 %
Response to issues with transients	141	43.9 %
None chosen	44	13.7 %
Total	321	100.0 %

Q9. Which TWO of the public safety items listed in Question 8 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q9. 2nd choice	Number	Percent
Visibility of police in the community	23	7.2 %
City's overall efforts to prevent crime	44	13.7 %
Enforcement of local traffic laws	14	4.4 %
Parking enforcement services	6	1.9 %
How quickly police respond to emergencies	22	6.9 %
Response to drug control	35	10.9 %
Response to property crime	33	10.3 %
Level of community outreach	40	12.5 %
Response to issues with transients	42	13.1 %
None chosen	62	19.3 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q9. Which TWO of the public safety items listed in Question 8 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years? (top 2)

Q9. Sum of Top 2 Choices	Number	Percent
Visibility of police in the community	38	11.8 %
City's overall efforts to prevent crime	78	24.3 %
Enforcement of local traffic laws	29	9.0 %
Parking enforcement services	10	3.1 %
How quickly police respond to emergencies	42	13.1 %
Response to drug control	54	16.8 %
Response to property crime	39	12.1 %
Level of community outreach	63	19.6 %
Response to issues with transients	183	57.0 %
None chosen	44	13.7 %
Total	580	

Q10. Communication. Where do you currently get news and information about City programs, services, and events?

Q10. Where do you currently get news & information about City programs, services, & events	Number	Percent
"Trail News" quarterly publication	228	71.0 %
City website	88	27.4 %
Newspaper	91	28.3 %
Friends	114	35.5 %
Radio	27	8.4 %
Social media (Facebook, Twitter, Instagram, LinkedIn)	147	45.8 %
Public meetings	30	9.3 %
City's mobile app ("OC Request")	6	1.9 %
YouTube	7	2.2 %
Citizen Involvement Committee	10	3.1 %
TV local news	102	31.8 %
Nextdoor	109	34.0 %
Neighborhood association	61	19.0 %
Utility bill	83	25.9 %
Flyers	72	22.4 %
E-Trail News Monthly e-newsletter	55	17.1 %
Other	15	4.7 %
Total	1245	

Q10-17. Other

Q10-17. Other	Number	Percent
Email	3	20.0 %
Mail	3	20.0 %
NEXTDOOR APP	1	6.7 %
OC CHIT CHAT FB PAGE	1	6.7 %
OC NEWSPAPER	1	6.7 %
Online	2	13.3 %
Online news, not social media	1	6.7 %
Oregon City Library	1	6.7 %
Ring alerts	1	6.7 %
Websites	1	6.7 %
Total	15	100.0 %

Q10a. From which TWO sources listed in Question 10 would you MOST PREFER to get information from the City?

Q10a. Top choice	Number	Percent
"Trail News" quarterly publication	94	29.3 %
City website	25	7.8 %
Newspaper	20	6.2 %
Friends	1	0.3 %
Radio	4	1.2 %
Social media (Facebook, Twitter, Instagram, LinkedIn)	38	11.8 %
Public meetings	3	0.9 %
City's mobile app ("OC Request")	8	2.5 %
YouTube	1	0.3 %
Citizen Involvement Committee	3	0.9 %
TV local news	14	4.4 %
Nextdoor	8	2.5 %
Neighborhood association	9	2.8 %
Utility bill	6	1.9 %
Flyers	14	4.4 %
E-Trail News Monthly e-newsletter	15	4.7 %
Other	6	1.9 %
None chosen	52	16.2 %
Total	321	100.0 %

Q10a. From which TWO sources listed in Question 10 would you MOST PREFER to get information from the City?

Q10a. 2nd choice	Number	Percent
"Trail News" quarterly publication	32	10.0 %
City website	32	10.0 %
Newspaper	22	6.9 %
Friends	4	1.2 %
Radio	5	1.6 %
Social media (Facebook, Twitter, Instagram, LinkedIn)	26	8.1 %
Public meetings	6	1.9 %
City's mobile app ("OC Request")	6	1.9 %
YouTube	4	1.2 %
Citizen Involvement Committee	1	0.3 %
TV local news	17	5.3 %
Nextdoor	17	5.3 %
Neighborhood association	9	2.8 %
Utility bill	16	5.0 %
Flyers	22	6.9 %
E-Trail News Monthly e-newsletter	28	8.7 %
Other	5	1.6 %
None chosen	69	21.5 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q10a. From which TWO sources listed in Question 10 would you MOST PREFER to get information from the City? (top 2)

Q10a. Sum of Top 2 Choices	Number	Percent
"Trail News" quarterly publication	126	39.3 %
City website	57	17.8 %
Newspaper	42	13.1 %
Friends	5	1.6 %
Radio	9	2.8 %
Social media (Facebook, Twitter, Instagram, LinkedIn)	64	19.9 %
Public meetings	9	2.8 %
City's mobile app ("OC Request")	14	4.4 %
YouTube	5	1.6 %
Citizen Involvement Committee	4	1.2 %
TV local news	31	9.7 %
Nextdoor	25	7.8 %
Neighborhood association	18	5.6 %
Utility bill	22	6.9 %
Flyers	36	11.2 %
E-Trail News Monthly e-newsletter	43	13.4 %
Other	11	3.4 %
None chosen	52	16.2 %
Total	573	

Q10b. How frequently would you like to receive information from the City?

Q10b. Top choice	Number	Percent
Daily	18	5.6 %
Weekly	86	26.8 %
Monthly	136	42.4 %
Quarterly	42	13.1 %
Don't know	39	12.1 %
Total	321	100.0 %

Q10b. How frequently would you like to receive information from the City?

Q10b. 2nd choice	Number	Percent
Daily	8	2.5 %
Weekly	49	15.3 %
Monthly	99	30.8 %
Quarterly	80	24.9 %
Don't know	85	26.5 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES**Q10b. How frequently would you like to receive information from the City? (top 2)**

Q10b. Sum of Top 2 Choices	Number	Percent
Daily	26	8.1 %
Weekly	135	42.1 %
Monthly	235	73.2 %
Quarterly	122	38.0 %
Don't know	124	38.6 %
Total	642	

Q11. Which of the following types of information would you like to receive from the City of Oregon City?

Q11. What types of information would you like to
receive from City of Oregon City

	Number	Percent
City Commission's goals meeting wrap up	149	46.4 %
Public safety (police)	226	70.4 %
Public works (infrastructure & transportation updates)	223	69.5 %
Special events	222	69.2 %
Community-based stories (what is going on locally)	191	59.5 %
Economic development	202	62.9 %
Library services & programs	164	51.1 %
Parks & Recreation programs & services	208	64.8 %
Other	15	4.7 %
Total	1600	

Q11-9. Other

Q11-9. Other	Number	Percent
ANYTHING PERTAINING TO RESIDENTS	1	6.7 %
BLUE HERON STATUS	1	6.7 %
BUDGET ALLOCATIONS	1	6.7 %
I HAVE GIVEN UP, OUR CITY POLITICS ARE A JOKE	1	6.7 %
IMPORTANT NEWS	1	6.7 %
Proposed land development	1	6.7 %
Public health	1	6.7 %
ROAD CONSTRUCTION	1	6.7 %
ROAD WORK GOING ON IN CITY	1	6.7 %
STEPS BEING TAKEN TO MAKE PROGRESS IN DIVERSITY	1	6.7 %
Spotlight on citizens doing good things	1	6.7 %
TAX DOLLAR SPENDING	1	6.7 %
Trails	1	6.7 %
VOLUNTEER OPPS TO HELP COMMUNITY	1	6.7 %
Would like to see a police crime report, like other cities have	1	6.7 %
Total	15	100.0 %

Q12. Please rate each of the communication items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q12-1. Availability of information about City programs & services	3.4%	28.7%	47.4%	10.3%	0.6%	9.7%
Q12-2. Overall quality of City's website	2.8%	22.1%	34.6%	10.6%	1.9%	28.0%
Q12-3. Level of public involvement in decision making	0.9%	13.1%	36.1%	23.4%	6.5%	19.9%
Q12-4. Timeliness of information provided by City	1.6%	16.8%	44.9%	12.1%	2.8%	21.8%
Q12-5. Quality of content on social media (Facebook, Twitter, Instagram)	1.2%	10.9%	34.3%	9.3%	2.8%	41.4%
Q12-6. Access to bilingual material	1.2%	3.7%	24.6%	3.4%	0.9%	66.0%

WITHOUT DON'T KNOW

Q12. Please rate each of the communication items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q12-1. Availability of information about City programs & services	3.8%	31.7%	52.4%	11.4%	0.7%
Q12-2. Overall quality of City's website	3.9%	30.7%	48.1%	14.7%	2.6%
Q12-3. Level of public involvement in decision making	1.2%	16.3%	45.1%	29.2%	8.2%
Q12-4. Timeliness of information provided by City	2.0%	21.5%	57.4%	15.5%	3.6%
Q12-5. Quality of content on social media (Facebook, Twitter, Instagram)	2.1%	18.6%	58.5%	16.0%	4.8%
Q12-6. Access to bilingual material	3.7%	11.0%	72.5%	10.1%	2.8%

Q13. Code Enforcement. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following code enforcement items.

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q13-1. Enforcing cleanup of litter & debris on private property	2.8%	15.6%	28.0%	20.6%	10.6%	22.4%
Q13-2. Enforcing mowing/trimming of grass & weeds on private property	3.1%	15.0%	33.3%	14.3%	8.1%	26.2%
Q13-3. Enforcing codes designed to protect public safety & health	3.4%	23.4%	30.2%	11.5%	6.5%	24.9%
Q13-4. Enforcing sign regulation	3.1%	21.8%	34.9%	7.2%	2.8%	30.2%

WITHOUT DON'T KNOW

Q13. Code Enforcement. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following code enforcement items. (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q13-1. Enforcing cleanup of litter & debris on private property	3.6%	20.1%	36.1%	26.5%	13.7%
Q13-2. Enforcing mowing/trimming of grass & weeds on private property	4.2%	20.3%	45.1%	19.4%	11.0%
Q13-3. Enforcing codes designed to protect public safety & health	4.6%	31.1%	40.2%	15.4%	8.7%
Q13-4. Enforcing sign regulation	4.5%	31.3%	50.0%	10.3%	4.0%

Q14. Which TWO of the code enforcement items listed in Question 13 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years?

Q14. Top choice	Number	Percent
Enforcing cleanup of litter & debris on private property	113	35.2 %
Enforcing mowing/trimming of grass & weeds on private property	26	8.1 %
Enforcing codes designed to protect public safety & health	97	30.2 %
Enforcing sign regulation	14	4.4 %
None chosen	71	22.1 %
Total	321	100.0 %

Q14. Which TWO of the code enforcement items listed in Question 13 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years?

Q14. 2nd choice	Number	Percent
Enforcing cleanup of litter & debris on private property	87	27.1 %
Enforcing mowing/trimming of grass & weeds on private property	53	16.5 %
Enforcing codes designed to protect public safety & health	55	17.1 %
Enforcing sign regulation	24	7.5 %
None chosen	102	31.8 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q14. Which TWO of the code enforcement items listed in Question 13 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? (top 2)

Q14. Sum of Top 2 Choices	Number	Percent
Enforcing cleanup of litter & debris on private property	200	62.3 %
Enforcing mowing/trimming of grass & weeds on private property	79	24.6 %
Enforcing codes designed to protect public safety & health	152	47.4 %
Enforcing sign regulation	38	11.8 %
None chosen	71	22.1 %
Total	540	

Q15. Transportation and Infrastructure. Please rate each of the following street maintenance/service items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q15-1. Maintenance of major City streets	6.9%	42.4%	18.4%	22.4%	7.5%	2.5%
Q15-2. Maintenance of streets in your neighborhood	8.1%	43.0%	16.2%	20.2%	9.7%	2.8%
Q15-3. Snow & ice response on major City streets	10.0%	44.9%	22.1%	9.0%	3.1%	10.9%
Q15-4. Adequacy of City street lighting in your neighborhood	12.8%	51.1%	16.5%	12.5%	4.7%	2.5%
Q15-5. Condition of sidewalks in your neighborhood	6.5%	34.3%	21.8%	20.2%	9.3%	7.8%
Q15-6. On-street bicycle infrastructure (bike lanes/signs/arrows)	6.5%	28.3%	34.0%	15.9%	5.3%	10.0%
Q15-7. Accessibility of public transportation options	5.9%	30.8%	29.6%	10.0%	5.0%	18.7%
Q15-8. Availability of safe pedestrian ways on major streets & routes	5.3%	35.8%	25.9%	20.9%	5.6%	6.5%
Q15-9. Availability of safe pedestrian ways in your neighborhood	9.3%	36.1%	20.9%	20.9%	7.5%	5.3%
Q15-10. Quality of sidewalks for people with mobility challenges	2.5%	23.1%	24.9%	16.5%	7.2%	25.9%
Q15-11. Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	7.2%	29.0%	26.8%	18.1%	10.6%	8.4%
Q15-12. Alternative means of transportation such as transit, bicycling, walking	6.9%	31.8%	31.8%	12.1%	6.5%	10.9%

WITHOUT DON'T KNOW

Q15. Transportation and Infrastructure. Please rate each of the following street maintenance/service items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied." (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q15-1. Maintenance of major City streets	7.0%	43.5%	18.8%	23.0%	7.7%
Q15-2. Maintenance of streets in your neighborhood	8.3%	44.2%	16.7%	20.8%	9.9%
Q15-3. Snow & ice response on major City streets	11.2%	50.3%	24.8%	10.1%	3.5%
Q15-4. Adequacy of City street lighting in your neighborhood	13.1%	52.4%	16.9%	12.8%	4.8%
Q15-5. Condition of sidewalks in your neighborhood	7.1%	37.2%	23.6%	22.0%	10.1%
Q15-6. On-street bicycle infrastructure (bike lanes/signs/arrows)	7.3%	31.5%	37.7%	17.6%	5.9%
Q15-7. Accessibility of public transportation options	7.3%	37.9%	36.4%	12.3%	6.1%
Q15-8. Availability of safe pedestrian ways on major streets & routes	5.7%	38.3%	27.7%	22.3%	6.0%
Q15-9. Availability of safe pedestrian ways in your neighborhood	9.9%	38.2%	22.0%	22.0%	7.9%
Q15-10. Quality of sidewalks for people with mobility challenges	3.4%	31.1%	33.6%	22.3%	9.7%
Q15-11. Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	7.8%	31.6%	29.3%	19.7%	11.6%
Q15-12. Alternative means of transportation such as transit, bicycling, walking	7.7%	35.7%	35.7%	13.6%	7.3%

Q16. Which TWO of the transportation and infrastructure items listed in Question 15 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q16. Top choice	Number	Percent
Maintenance of major City streets	89	27.7 %
Maintenance of streets in your neighborhood	40	12.5 %
Snow & ice response on major City streets	16	5.0 %
Adequacy of City street lighting in your neighborhood	11	3.4 %
Condition of sidewalks in your neighborhood	23	7.2 %
On-street bicycle infrastructure (bike lanes/signs/arrows)	12	3.7 %
Accessibility of public transportation options	8	2.5 %
Availability of safe pedestrian ways on major streets & routes	21	6.5 %
Availability of safe pedestrian ways in your neighborhood	10	3.1 %
Quality of sidewalks for people with mobility challenges	9	2.8 %
Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	28	8.7 %
Alternative means of transportation such as transit, bicycling, walking	13	4.0 %
None chosen	41	12.8 %
Total	321	100.0 %

Q16. Which TWO of the transportation and infrastructure items listed in Question 15 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q16. 2nd choice	Number	Percent
Maintenance of major City streets	24	7.5 %
Maintenance of streets in your neighborhood	54	16.8 %
Snow & ice response on major City streets	22	6.9 %
Adequacy of City street lighting in your neighborhood	21	6.5 %
Condition of sidewalks in your neighborhood	21	6.5 %
On-street bicycle infrastructure (bike lanes/signs/arrows)	12	3.7 %
Accessibility of public transportation options	12	3.7 %
Availability of safe pedestrian ways on major streets & routes	33	10.3 %
Availability of safe pedestrian ways in your neighborhood	21	6.5 %
Quality of sidewalks for people with mobility challenges	9	2.8 %
Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	23	7.2 %
Alternative means of transportation such as transit, bicycling, walking	10	3.1 %
None chosen	59	18.4 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q16. Which TWO of the transportation and infrastructure items listed in Question 15 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years? (top 2)

Q16. Sum of Top 2 Choices	Number	Percent
Maintenance of major City streets	113	35.2 %
Maintenance of streets in your neighborhood	94	29.3 %
Snow & ice response on major City streets	38	11.8 %
Adequacy of City street lighting in your neighborhood	32	10.0 %
Condition of sidewalks in your neighborhood	44	13.7 %
On-street bicycle infrastructure (bike lanes/signs/arrows)	24	7.5 %
Accessibility of public transportation options	20	6.2 %
Availability of safe pedestrian ways on major streets & routes	54	16.8 %
Availability of safe pedestrian ways in your neighborhood	31	9.7 %
Quality of sidewalks for people with mobility challenges	18	5.6 %
Traffic calming measures in your neighborhood, for example, traffic circles, speed humps, or radar speed signs	51	15.9 %
Alternative means of transportation such as transit, bicycling, walking	23	7.2 %
None chosen	41	12.8 %
Total	583	

Q17. Public Library Services. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following Public Library services.

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q17-1. Selection of physical resources available (books, CD's, & DVD's)	17.4%	30.8%	16.2%	3.7%	0.6%	31.2%
Q17-2. Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	15.0%	24.9%	19.3%	2.5%	0.6%	37.7%
Q17-3. Events for seniors	5.3%	12.5%	23.7%	1.6%	0.3%	56.7%
Q17-4. Events for adults (e.g. informational, literary, participatory, entertainment)	6.5%	16.2%	25.9%	2.8%	0.3%	48.3%
Q17-5. Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	5.0%	9.0%	26.5%	1.9%	1.6%	56.1%
Q17-6. Events for children (e.g. early literacy development, story times, summer reading program)	7.2%	18.4%	23.1%	2.5%	0.0%	48.9%
Q17-7. Reader's Advisory (help finding something to read)	8.1%	15.9%	24.0%	0.6%	0.0%	51.4%
Q17-8. Selection of reference & research tools	8.7%	23.7%	23.1%	1.2%	0.0%	43.3%
Q17-9. Access to computers & library Wi-Fi	10.9%	25.9%	20.9%	1.9%	0.6%	39.9%
Q17-10. Ease of booking meeting rooms	5.9%	8.1%	23.4%	0.3%	0.3%	62.0%
Q17-11. Library as a hub of community information	9.3%	17.4%	23.7%	4.4%	0.3%	44.9%
Q17-12. Outreach-programs and/or services in the community outside of the library	5.3%	10.3%	26.5%	3.7%	0.3%	53.9%

WITHOUT DON'T KNOW

Q17. Public Library Services. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following Public Library services. (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q17-1. Selection of physical resources available (books, CD's, & DVD's)	25.3%	44.8%	23.5%	5.4%	0.9%
Q17-2. Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	24.0%	40.0%	31.0%	4.0%	1.0%
Q17-3. Events for seniors	12.2%	28.8%	54.7%	3.6%	0.7%
Q17-4. Events for adults (e.g. informational, literary, participatory, entertainment)	12.7%	31.3%	50.0%	5.4%	0.6%
Q17-5. Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	11.3%	20.6%	60.3%	4.3%	3.5%
Q17-6. Events for children (e.g. early literacy development, story times, summer reading program)	14.0%	36.0%	45.1%	4.9%	0.0%
Q17-7. Reader's Advisory (help finding something to read)	16.7%	32.7%	49.4%	1.3%	0.0%
Q17-8. Selection of reference & research tools	15.4%	41.8%	40.7%	2.2%	0.0%
Q17-9. Access to computers & library Wi-Fi	18.1%	43.0%	34.7%	3.1%	1.0%
Q17-10. Ease of booking meeting rooms	15.6%	21.3%	61.5%	0.8%	0.8%
Q17-11. Library as a hub of community information	16.9%	31.6%	42.9%	7.9%	0.6%
Q17-12. Outreach-programs and/or services in the community outside of the library	11.5%	22.3%	57.4%	8.1%	0.7%

Q18. Which TWO of the public library items listed in Question 17 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

<u>Q18. Top choice</u>	<u>Number</u>	<u>Percent</u>
Selection of physical resources available (books, CD's, & DVD's)	51	15.9 %
Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	23	7.2 %
Events for seniors	18	5.6 %
Events for adults (e.g. informational, literary, participatory, entertainment)	9	2.8 %
Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	22	6.9 %
Events for children (e.g. early literacy development, story times, summer reading program)	17	5.3 %
Reader's Advisory (help finding something to read)	3	0.9 %
Selection of reference & research tools	2	0.6 %
Access to computers & library Wi-Fi	12	3.7 %
Library as a hub of community information	18	5.6 %
Outreach-programs and/or services in the community outside of the library	14	4.4 %
None chosen	132	41.1 %
Total	321	100.0 %

Q18. Which TWO of the public library items listed in Question 17 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years?

Q18. 2nd choice	Number	Percent
Selection of physical resources available (books, CD's, & DVD's)	12	3.7 %
Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	21	6.5 %
Events for seniors	9	2.8 %
Events for adults (e.g. informational, literary, participatory, entertainment)	15	4.7 %
Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	15	4.7 %
Events for children (e.g. early literacy development, story times, summer reading program)	20	6.2 %
Reader's Advisory (help finding something to read)	4	1.2 %
Selection of reference & research tools	7	2.2 %
Access to computers & library Wi-Fi	13	4.0 %
Ease of booking meeting rooms	3	0.9 %
Library as a hub of community information	26	8.1 %
Outreach-programs and/or services in the community outside of the library	29	9.0 %
None chosen	147	45.8 %
Total	321	100.0 %

SUM OF TOP 2 CHOICES

Q18. Which TWO of the public library items listed in Question 17 do you think should receive the MOST EMPHASIS from City leaders over the next TWO years? (top 2)

Q18. Sum of Top 2 Choices	Number	Percent
Selection of physical resources available (books, CD's, & DVD's)	63	19.6 %
Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	44	13.7 %
Events for seniors	27	8.4 %
Events for adults (e.g. informational, literary, participatory, entertainment)	24	7.5 %
Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	37	11.5 %
Events for children (e.g. early literacy development, story times, summer reading program)	37	11.5 %
Reader's Advisory (help finding something to read)	7	2.2 %
Selection of reference & research tools	9	2.8 %
Access to computers & library Wi-Fi	25	7.8 %
Ease of booking meeting rooms	3	0.9 %
Library as a hub of community information	44	13.7 %
Outreach-programs and/or services in the community outside of the library	43	13.4 %
None chosen	132	41.1 %
Total	495	

Q19. How do you get information about the library?

Q19. How do you get information about the library	Number	Percent
E-newsletter	60	18.7 %
Library staff	32	10.0 %
Word of mouth	82	25.5 %
City's website	59	18.4 %
Blogs	3	0.9 %
Flyers	25	7.8 %
Newspaper	36	11.2 %
Library's social media	38	11.8 %
Other social media	30	9.3 %
Trail News	132	41.1 %
Other	22	6.9 %
Total	519	

Q19-11. Other

Q19-11. Other	Number	Percent
DRIVING BY	2	9.1 %
Email	1	4.5 %
FACEBOOK	1	4.5 %
FLYER POSTED AT LIBRARY	1	4.5 %
FRIENDS OF LIBRARY AND PRINTED MAILINGS	1	4.5 %
Friends	1	4.5 %
GOING TO THE LIBRARY	3	13.6 %
I CONTRIBUTE TO IT	1	4.5 %
IN PERSON	1	4.5 %
LINCC WEBSITE	3	13.6 %
Live by it	1	4.5 %
NEXTDOOR	2	9.1 %
Not aware of any information from library except through Trail News	1	4.5 %
Outdoor signage	1	4.5 %
Presentations at OC Optimist Club	1	4.5 %
THE LIBRARY	1	4.5 %
Total	22	100.0 %

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES.

Q20. Top choice	Number	Percent
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	23	7.2 %
Park improvements & maintenance	26	8.1 %
Road maintenance/pavement preservation (such as overlay projects)	78	24.3 %
Sidewalks	24	7.5 %
Bike lanes/bike paths	8	2.5 %
Willamette Falls Legacy Project	48	15.0 %
Tourism	5	1.6 %
Natural habitat restoration	13	4.0 %
Economic development	25	7.8 %
Water infrastructure	13	4.0 %
Pedestrian crossings	5	1.6 %
Traffic congestion relief	37	11.5 %
None chosen	16	5.0 %
Total	321	100.0 %

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES.

Q20. 2nd choice	Number	Percent
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	19	5.9 %
Park improvements & maintenance	24	7.5 %
Road maintenance/pavement preservation (such as overlay projects)	54	16.8 %
Sidewalks	32	10.0 %
Bike lanes/bike paths	9	2.8 %
Willamette Falls Legacy Project	38	11.8 %
Tourism	7	2.2 %
Natural habitat restoration	21	6.5 %
Economic development	27	8.4 %
Water infrastructure	19	5.9 %
Pedestrian crossings	15	4.7 %
Traffic congestion relief	36	11.2 %
None chosen	20	6.2 %
Total	321	100.0 %

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES.

Q20. 3rd choice	Number	Percent
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	30	9.3 %
Park improvements & maintenance	30	9.3 %
Road maintenance/pavement preservation (such as overlay projects)	38	11.8 %
Sidewalks	19	5.9 %
Bike lanes/bike paths	9	2.8 %
Willamette Falls Legacy Project	30	9.3 %
Tourism	15	4.7 %
Natural habitat restoration	28	8.7 %
Economic development	18	5.6 %
Water infrastructure	28	8.7 %
Pedestrian crossings	10	3.1 %
Traffic congestion relief	38	11.8 %
None chosen	28	8.7 %
Total	321	100.0 %

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES.

<u>Q20. 4th choice</u>	<u>Number</u>	<u>Percent</u>
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	31	9.7 %
Park improvements & maintenance	36	11.2 %
Road maintenance/pavement preservation (such as overlay projects)	26	8.1 %
Sidewalks	17	5.3 %
Bike lanes/bike paths	12	3.7 %
Willamette Falls Legacy Project	28	8.7 %
Tourism	13	4.0 %
Natural habitat restoration	24	7.5 %
Economic development	34	10.6 %
Water infrastructure	24	7.5 %
Pedestrian crossings	10	3.1 %
Traffic congestion relief	22	6.9 %
None chosen	44	13.7 %
Total	321	100.0 %

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES.

<u>Q20. 5th choice</u>	<u>Number</u>	<u>Percent</u>
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	26	8.1 %
Park improvements & maintenance	34	10.6 %
Road maintenance/pavement preservation (such as overlay projects)	24	7.5 %
Sidewalks	24	7.5 %
Bike lanes/bike paths	9	2.8 %
Willamette Falls Legacy Project	16	5.0 %
Tourism	14	4.4 %
Natural habitat restoration	15	4.7 %
Economic development	27	8.4 %
Water infrastructure	25	7.8 %
Pedestrian crossings	17	5.3 %
Traffic congestion relief	37	11.5 %
None chosen	53	16.5 %
Total	321	100.0 %

SUM OF TOP 5 CHOICES

Q20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the City looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES. (top 5)

Q20. Sum of Top 5 Choices	Number	Percent
Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, & City pool	129	40.2 %
Park improvements & maintenance	150	46.7 %
Road maintenance/pavement preservation (such as overlay projects)	220	68.5 %
Sidewalks	116	36.1 %
Bike lanes/bike paths	47	14.6 %
Willamette Falls Legacy Project	160	49.8 %
Tourism	54	16.8 %
Natural habitat restoration	101	31.5 %
Economic development	131	40.8 %
Water infrastructure	109	34.0 %
Pedestrian crossings	57	17.8 %
Traffic congestion relief	170	53.0 %
None chosen	16	5.0 %
Total	1460	

Q21. Service Expectations. Using a scale of 1 to 5, where 5 means the level of service provided by the City should be "Much Higher" than it is now and 1 means it should be "Much Lower," please indicate how the level of service provided by the City should change in each of the areas listed below.

(N=321)

	Much higher	A little higher	Stay the same	A little lower	Much lower	Don't know
Q21-1. Law enforcement	9.3%	29.3%	47.0%	2.8%	2.5%	9.0%
Q21-2. Parks, trails, & open space	12.1%	41.1%	35.2%	2.5%	1.2%	7.8%
Q21-3. Recreation facilities & programs	7.2%	32.7%	44.5%	4.0%	0.9%	10.6%
Q21-4. Transportation facilities & programs (street maintenance, new sidewalks, added bike lanes)	24.0%	43.3%	23.7%	1.6%	0.9%	6.5%
Q21-5. Utility infrastructure (water, sewer, & drainage system upgrades)	8.7%	33.3%	44.5%	1.6%	0.6%	11.2%
Q21-6. City's public library	4.0%	14.3%	58.9%	4.7%	4.4%	13.7%
Q21-7. City's code enforcement	8.7%	15.6%	48.3%	5.9%	4.0%	17.4%
Q21-8. City's permit review	4.7%	10.3%	39.9%	8.4%	3.1%	33.6%

WITHOUT DON'T KNOW

Q21. Service Expectations. Using a scale of 1 to 5, where 5 means the level of service provided by the City should be "Much Higher" than it is now and 1 means it should be "Much Lower," please indicate how the level of service provided by the City should change in each of the areas listed below. (without "don't know")

(N=321)

	Much higher	A little higher	Stay the same	A little lower	Much lower
Q21-1. Law enforcement	10.3%	32.2%	51.7%	3.1%	2.7%
Q21-2. Parks, trails, & open space	13.2%	44.6%	38.2%	2.7%	1.4%
Q21-3. Recreation facilities & programs	8.0%	36.6%	49.8%	4.5%	1.0%
Q21-4. Transportation facilities & programs (street maintenance, new sidewalks, added bike lanes)	25.7%	46.3%	25.3%	1.7%	1.0%
Q21-5. Utility infrastructure (water, sewer, & drainage system upgrades)	9.8%	37.5%	50.2%	1.8%	0.7%
Q21-6. City's public library	4.7%	16.6%	68.2%	5.4%	5.1%
Q21-7. City's code enforcement	10.6%	18.9%	58.5%	7.2%	4.9%
Q21-8. City's permit review	7.0%	15.5%	60.1%	12.7%	4.7%

Q21a. Would you be willing to pay more in taxes or fees to support an increase in the service level?

Q21a. Would you be willing to pay more in taxes or fees to support an increase in the service level	Number	Percent
Yes	102	31.8 %
No	125	38.9 %
Not applicable, I do not think any levels of service need to be higher	16	5.0 %
Don't know	78	24.3 %
Total	321	100.0 %

WITHOUT DON'T KNOW**Q21a. Would you be willing to pay more in taxes or fees to support an increase in the service level? (without "don't know")**

Q21a. Would you be willing to pay more in taxes or fees to support an increase in the service level	Number	Percent
Yes	102	42.0 %
No	125	51.4 %
Not applicable, I do not think any levels of service need to be higher	16	6.6 %
Total	243	100.0 %

Q22. Please rate Oregon City using a scale of 1 to 5, where 5 means "Excellent" and 1 means "Poor," with regard to each of the following.

(N=321)

	Excellent	Good	Neutral	Below average	Poor	Don't know
Q22-1. As a place to live	30.5%	53.9%	10.9%	1.6%	1.2%	1.9%
Q22-2. As a place to raise children	24.0%	44.2%	15.0%	4.7%	1.6%	10.6%
Q22-3. As a place to work	11.8%	25.9%	24.0%	10.6%	4.4%	23.4%
Q22-4. As a place with a variety of housing choices	10.3%	39.9%	27.7%	11.8%	4.7%	5.6%
Q22-5. As a place to shop	5.3%	29.9%	25.9%	28.3%	7.8%	2.8%
Q22-6. As a place for dining & entertainment options	6.2%	28.7%	24.0%	25.5%	12.1%	3.4%
Q22-7. Overall quality of life in City	16.2%	56.7%	19.9%	3.4%	1.6%	2.2%
Q22-8. As a place to connect & interact with your neighbors	14.3%	48.6%	25.2%	6.5%	1.6%	3.7%

WITHOUT DON'T KNOW

Q22. Please rate Oregon City using a scale of 1 to 5, where 5 means "Excellent" and 1 means "Poor," with regard to each of the following. (without "don't know")

(N=321)

	Excellent	Good	Neutral	Below average	Poor
Q22-1. As a place to live	31.1%	54.9%	11.1%	1.6%	1.3%
Q22-2. As a place to raise children	26.8%	49.5%	16.7%	5.2%	1.7%
Q22-3. As a place to work	15.4%	33.7%	31.3%	13.8%	5.7%
Q22-4. As a place with a variety of housing choices	10.9%	42.2%	29.4%	12.5%	5.0%
Q22-5. As a place to shop	5.4%	30.8%	26.6%	29.2%	8.0%
Q22-6. As a place for dining & entertainment options	6.5%	29.7%	24.8%	26.5%	12.6%
Q22-7. Overall quality of life in City	16.6%	58.0%	20.4%	3.5%	1.6%
Q22-8. As a place to connect & interact with your neighbors	14.9%	50.5%	26.2%	6.8%	1.6%

Q23. Customer Service. Have you called, emailed, or visited the city with a question, problem, or complaint during the past year?

Q23. Have you called, emailed, or visited the City
with a question, problem, or complaint during past
year

	Number	Percent
Yes	119	37.1 %
No	196	61.1 %
Don't know	6	1.9 %
Total	321	100.0 %

WITHOUT DON'T KNOW**Q23. Customer Service. Have you called, emailed, or visited the city with a question, problem, or complaint during the past year? (without "don't know")**

Q23. Have you called, emailed, or visited the City
with a question, problem, or complaint during past
year

	Number	Percent
Yes	119	37.8 %
No	196	62.2 %
Total	315	100.0 %

Q23a. How easy was it to contact the person you needed to reach?

Q23a. How easy was it to contact the person you
needed to reach

	Number	Percent
Very easy	40	33.6 %
Somewhat easy	51	42.9 %
Difficult	16	13.4 %
Very difficult	10	8.4 %
Don't know	2	1.7 %
Total	119	100.0 %

WITHOUT DON'T KNOW**Q23a. How easy was it to contact the person you needed to reach? (without "don't know")**

Q23a. How easy was it to contact the person you
needed to reach

	Number	Percent
Very easy	40	34.2 %
Somewhat easy	51	43.6 %
Difficult	16	13.7 %
Very difficult	10	8.5 %
Total	117	100.0 %

Q23b. What department did you contact?

Q23b. What department did you contact	Number	Percent
Police	24	20.2 %
Code Enforcement	48	40.3 %
Building & Planning	27	22.7 %
Parks & Recreation	11	9.2 %
Oregon City Public Library	13	10.9 %
Event Permits	3	2.5 %
Financial Services/Utility Billing	12	10.1 %
Transportation Services (streets)	6	5.0 %
Administration (public records)	10	8.4 %
Public Works (water/sewer/solid waste)	29	24.4 %
Municipal Court	3	2.5 %
Other	11	9.2 %
Total	197	

Q23b-12. Other

Q23b-12. Other	Number	Percent
CITY COMMISSION	1	9.1 %
CITY MANAGER	1	9.1 %
Cars parked in neighborhood appear to be abandoned	1	9.1 %
City Commissioner	1	9.1 %
ENGINEERING	1	9.1 %
Economic development	1	9.1 %
HISTORIC REVIEW	1	9.1 %
Maintenance	1	9.1 %
Planning	1	9.1 %
SIDEWALK PERMITS AND TREES	1	9.1 %
School	1	9.1 %
Total	11	100.0 %

Q23c. Several factors that may influence your perception of the quality of customer service you receive from City employees are listed below. For each item, please rate how often the employees you have contacted during the past year have displayed the behavior described on a scale of 1 to 5, where 5 means "Always" and 1 means "Never."

(N=119)

	Always	Usually	Sometimes	Seldom	Never	Don't know
Q23c-1. They were courteous & polite	43.7%	38.7%	9.2%	0.8%	4.2%	3.4%
Q23c-2. They gave prompt, accurate, & complete answers to questions	40.3%	27.7%	16.0%	6.7%	6.7%	2.5%
Q23c-3. They did what they said they would do in a timely manner	39.5%	24.4%	16.8%	5.0%	5.9%	8.4%
Q23c-4. They helped you resolve an issue to your satisfaction	39.5%	22.7%	14.3%	10.9%	10.1%	2.5%

WITHOUT DON'T KNOW

Q23c. Several factors that may influence your perception of the quality of customer service you receive from City employees are listed below. For each item, please rate how often the employees you have contacted during the past year have displayed the behavior described on a scale of 1 to 5, where 5 means "Always" and 1 means "Never." (without "don't know")

(N=119)

	Always	Usually	Sometimes	Seldom	Never
Q23c-1. They were courteous & polite	45.2%	40.0%	9.6%	0.9%	4.3%
Q23c-2. They gave prompt, accurate, & complete answers to questions	41.4%	28.4%	16.4%	6.9%	6.9%
Q23c-3. They did what they said they would do in a timely manner	43.1%	26.6%	18.3%	5.5%	6.4%
Q23c-4. They helped you resolve an issue to your satisfaction	40.5%	23.3%	14.7%	11.2%	10.3%

Q24. Land Development. Using a scale of 1 to 5, where 5 means "Much Too Slow" and 1 means "Much Too Fast," please rate the City's current pace of development in each of the following areas.

(N=321)

	Much too slow	Too slow	Just right	Too fast	Much too fast	Don't know
Q24-1. Employment opportunities	7.5%	32.7%	19.3%	0.6%	0.9%	38.9%
Q24-2. Office development	2.2%	12.1%	34.6%	4.0%	1.6%	45.5%
Q24-3. Retail/restaurants/services	13.4%	39.3%	31.8%	0.6%	0.6%	14.3%
Q24-4. Technology & other industry	11.8%	28.3%	21.8%	0.0%	1.2%	36.8%
Q24-5. Housing options for aging population	9.3%	26.5%	24.6%	1.6%	0.9%	37.1%
Q24-6. Apartments	3.1%	13.4%	36.1%	12.1%	6.5%	28.7%
Q24-7. Townhomes/row houses	2.5%	11.5%	30.8%	15.6%	7.2%	32.4%
Q24-8. Entry level single family homes	11.2%	28.7%	28.7%	5.3%	3.7%	22.4%
Q24-9. Single family homes	6.5%	17.4%	40.5%	10.9%	5.6%	19.0%

WITHOUT DON'T KNOW

Q24. Land Development. Using a scale of 1 to 5, where 5 means "Much Too Slow" and 1 means "Much Too Fast," please rate the City's current pace of development in each of the following areas. (without "don't know")

(N=321)

	Much too slow	Too slow	Just right	Too fast	Much too fast
Q24-1. Employment opportunities	12.2%	53.6%	31.6%	1.0%	1.5%
Q24-2. Office development	4.0%	22.3%	63.4%	7.4%	2.9%
Q24-3. Retail/restaurants/services	15.6%	45.8%	37.1%	0.7%	0.7%
Q24-4. Technology & other industry	18.7%	44.8%	34.5%	0.0%	2.0%
Q24-5. Housing options for aging population	14.9%	42.1%	39.1%	2.5%	1.5%
Q24-6. Apartments	4.4%	18.8%	50.7%	17.0%	9.2%
Q24-7. Townhomes/row houses	3.7%	17.1%	45.6%	23.0%	10.6%
Q24-8. Entry level single family homes	14.5%	36.9%	36.9%	6.8%	4.8%
Q24-9. Single family homes	8.1%	21.5%	50.0%	13.5%	6.9%

Q25. Water Quality. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following water quality items.

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfi- ed	Very dissatisfied	Don't know
Q25-1. Water pressure	31.8%	44.2%	8.7%	10.0%	2.2%	3.1%
Q25-2. Water clarity	33.0%	48.6%	11.2%	3.1%	0.6%	3.4%
Q25-3. Water taste	30.8%	39.9%	13.4%	10.0%	2.5%	3.4%
Q25-4. Water smell	30.5%	40.8%	15.6%	6.9%	2.2%	4.0%
Q25-5. Reliability of water service	40.8%	45.2%	8.4%	1.6%	0.3%	3.7%

WITHOUT DON'T KNOW

Q25. Water Quality. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following water quality items. (without "don't know")

(N=321)

	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Q25-1. Water pressure	32.8%	45.7%	9.0%	10.3%	2.3%
Q25-2. Water clarity	34.2%	50.3%	11.6%	3.2%	0.6%
Q25-3. Water taste	31.9%	41.3%	13.9%	10.3%	2.6%
Q25-4. Water smell	31.8%	42.5%	16.2%	7.1%	2.3%
Q25-5. Reliability of water service	42.4%	46.9%	8.7%	1.6%	0.3%

Q25a. Oregon City has a great water supply and an effective but aging water distribution system. Within 7 years, major investments in the existing water system are required. The investments are needed to repair, replace, and operate the existing water system to provide sufficient water supply on a reliable basis to meet our current water customer needs. Investments funded through rates are not for infrastructure to serve new development. How willing would you be to pay additional taxes or higher water rates to repair and replace our aging water system?

Q25a. How willing would you be to pay additional taxes or higher water rates to repair & replace our aging water system

	Number	Percent
Very willing	34	10.6 %
Willing	88	27.4 %
Neutral	69	21.5 %
Not willing	55	17.1 %
Not at all willing	53	16.5 %
Don't know	22	6.9 %
Total	321	100.0 %

WITHOUT DON'T KNOW

Q25a. Oregon City has a great water supply and an effective but aging water distribution system. Within 7 years, major investments in the existing water system are required. The investments are needed to repair, replace, and operate the existing water system to provide sufficient water supply on a reliable basis to meet our current water customer needs. Investments funded through rates are not for infrastructure to serve new development. How willing would you be to pay additional taxes or higher water rates to repair and replace our aging water system? (without "don't know")

Q25a. How willing would you be to pay additional taxes or higher water rates to repair & replace our aging water system

	Number	Percent
Very willing	34	11.4 %
Willing	88	29.4 %
Neutral	69	23.1 %
Not willing	55	18.4 %
Not at all willing	53	17.7 %
Total	299	100.0 %

Q26. Approximately how many years have you lived in Oregon City?

Q26. How many years have you lived in Oregon

City	Number	Percent
0-5	60	18.7 %
6-10	55	17.1 %
11-15	44	13.7 %
16-20	38	11.8 %
21-30	52	16.2 %
31+	70	21.8 %
Not provided	2	0.6 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q26. Approximately how many years have you lived in Oregon City? (without "not provided")**

Q26. How many years have you lived in Oregon

City	Number	Percent
0-5	60	18.8 %
6-10	55	17.2 %
11-15	44	13.8 %
16-20	38	11.9 %
21-30	52	16.3 %
31+	70	21.9 %
Total	319	100.0 %

Q27. What is the preferred language spoken in your home?Q27. What is the preferred language spoken in
your home

	Number	Percent
Arabic	1	0.3 %
English	303	97.7 %
Spanish	6	1.9 %
Total	310	100.0 %

Q28. What is your age?

Q28. Your age	Number	Percent
18-34	62	19.3 %
35-44	60	18.7 %
45-54	62	19.3 %
55-64	65	20.2 %
65+	60	18.7 %
Not provided	12	3.7 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q28. What is your age? (without "not provided")**

Q28. Your age	Number	Percent
18-34	62	20.1 %
35-44	60	19.4 %
45-54	62	20.1 %
55-64	65	21.0 %
65+	60	19.4 %
Total	309	100.0 %

Q29. Do you work outside of Oregon City?

Q29. Do you work outside of Oregon City	Number	Percent
Yes	154	48.0 %
No	158	49.2 %
Not provided	9	2.8 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q29. Do you work outside of Oregon City? (without "not provided")**

Q29. Do you work outside of Oregon City	Number	Percent
Yes	154	49.4 %
No	158	50.6 %
Total	312	100.0 %

Q30. How many children under age 18 live in your household?

Q30. How many children under age 18 live in your household	Number	Percent
0	194	60.4 %
1	53	16.5 %
2	46	14.3 %
3	5	1.6 %
4+	3	0.9 %
Not provided	20	6.2 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q30. How many children under age 18 live in your household? (without "not provided")**

Q30. How many children under age 18 live in your household	Number	Percent
0	194	64.5 %
1	53	17.6 %
2	46	15.3 %
3	5	1.7 %
4+	3	1.0 %
Total	301	100.0 %

Q31. What is your gender?

Q31. Your gender	Number	Percent
Male	155	48.3 %
Female	160	49.8 %
Non-binary	1	0.3 %
Not provided	5	1.6 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q31. What is your gender? (without "not provided")**

Q31. Your gender	Number	Percent
Male	155	49.1 %
Female	160	50.6 %
Non-binary	1	0.3 %
Total	316	100.0 %

Q32. Would you say your total annual household income is...

Q32. Your total annual household income	Number	Percent
Under \$50K	61	19.0 %
\$50K to \$74,999	82	25.5 %
\$75K to \$99,999	69	21.5 %
\$100K to \$149,999	42	13.1 %
\$150K to \$199,999	16	5.0 %
\$200K+	10	3.1 %
Not provided	41	12.8 %
Total	321	100.0 %

WITHOUT NOT PROVIDED**Q32. Would you say your total annual household income is... (without "not provided")**

Q32. Your total annual household income	Number	Percent
Under \$50K	61	21.8 %
\$50K to \$74,999	82	29.3 %
\$75K to \$99,999	69	24.6 %
\$100K to \$149,999	42	15.0 %
\$150K to \$199,999	16	5.7 %
\$200K+	10	3.6 %
Total	280	100.0 %

Q33. If you have suggestions for improving the quality of city programs, facilities, or services, please enter your suggestions in the space below.

- ADD A CLOTHING MASS RETAIL OPTION BEYOND FRED MEYER. WIDEN 213. FOCUS EFFORTS ON DEALING WITH TRANSIENTS.
- AFFORDABLE HOUSING FOR MIDDLE AND WORKING CLASS FAMILIES IS A MUST. ALSO WE NEED DOG PARKS!
- AN OUTDOOR PARKOUR PARK WOULD KEEP PEOPLE IN THE PARK AND OFF BUILDINGS. THIS IS THE SAME REASON WE HAVE SKATE PARKS. IF ONE WAS MADE, IT WOULD BE THE FIRST ONE IN THE PNW. IF YOU NEED HELP DESIGNING ONE I CAN HELP. FORGEPARKOUR.COM
- Better parks, trails and greenways. I miss Phil Lewis! Parks in the historic district are terrible exception is Latorette, which is spearheaded by neighbors.
- CLEAN UP HOMELESS/DEBRIS, CAMPS, NATURAL AREA DENEGRATION.
- Clean up the City!
- Commissioner need to find ways to clean up the down town area and attract business. the Falls area development is the best way too attract new business and relocate businesses. The current down town area has out grown its place in todays times. Would make great parking for the Courthouse. Why are we afraid of moving forward? Plus the Falls development would bring the city much needed revenue, and could take the tax burden off the home owner.
- CONNECT UPPER CITY TO MIDDLE/LOWER CITY FOR SAFE PEDESTRIAN/BIKES. LINN, CENTER AND SOUTHERN AND ARE NOT SAFE FOR WALKING.
- Continue offering programs for children and teens. More focus on diversity. Not too much development/expansion to fast.
- Decrease some of the funds, normally given to the police force, and invest instead in parks, water infrastructure, Willamette Falls Legacy Project, or mental health services for the community.
- DETERMINE A LIST OF THE ABOVE ITEMS AND SEND.
- Dense residential developments are an eye soar. Invest in more open space, no more commercial development.
- DEVELOP NEW CITY GOALS, ELECT OFFICIALS AND HIRE EMPLOYEES THAT CAN ACHIEVE THESE GOALS IN A TIMELY MANNER AND HOLD PEOPLE ACCOUNTABLE.
- DO NOT RAISE THE TAXES ON ANYTHING. WE ARE A LOW INCOME FAMILY.
- DO SOMETHING WITH THE BLUE HERON SITE. IT IS A HUGE WASTE OF LAND AND BUILDINGS.
- EDUCATION AND ENFORCEMENT OF NEGLIGENT DOG OWNERS.
- EITHER A LARGE PARK LIKE TUALATINS REC CENTER OR OPTIONS FOR INDOOR SPORTS (NOT ANOTHER GYM), AND MORE SMALL BUSINESS SPECIFICALLY INTEGRATIVE MEDICINE. ANY ALTERNATIVES TO REGULAR PILL PUSHERS. MORE COMMUNITY EVENTS, PARADES, FESTIVALS TO NETWORK SMALL BUSINESS.
- Enforce crosswalk violations. Get the homeless out of here.
- FAMILY WAGE JOBS HERE NEEDED. KEEP HIGH VALUES AND SMALL TOWN FEEL.
- Fathers Heart is enabling homeless to live in our neighborhood(McLoughlin). Can't walk alone at night or even on the bluff at times.
- FIND A WAY TO IMPROVE WATER WITHOUT INCREASING OUR CURRENT COST. WE ARE TWO PEOPLE PAYING ALMOST \$400. INSANE!!
- FIX ITEMS IN NEED WITH THE CURRENT BUDGET. GOVERNMENT IS ALWAYS SEEKING MORE MONEY TO GET THINGS DONE. FIGURE IT OUT. WE ALL WORK WITHIN A BUDGET!!!
- Fix up parks and bike lanes, people need these during this time of Covid.
- FOCUS ON CREATING/ENHANCING OPPORTUNITIES FOR OUTDOOR ACTIVITIES, GROUP INTERACTIONS. WHEN COVID IS CONTAINED-INFRASTRUCTURE AND HOUSING

Q33. If you have suggestions for improving the quality of city programs, facilities, or services, please enter your suggestions in the space below (cont.)

- Getting busses and sending the homeless to Portland or other states out of clackamas County.
- Have less.
- HAVING AN OPEN MIND AND SHARING NEW/OLD PROJECTS WITH THE COMMUNITY.
- Hold law enforcement accountable for crimes they commit! Make Main Street more accessible.
- HOW DO WE KEEP OC AFFORDABLE FOR ALL? GROWTH PUTS PRESSURE ON OUR INFRASTRUCTURE WHICH ALL MUST COVER WITH HIGHER UTILITY BILLS. WE NEED A NEW FUNDING MECHANISM OUTSIDE OF UTILITY BILLS AND STATE PROPERTY TAXES. OVERALL ALL GREAT JOB!
- I am blind. City needs to have better provisions for the safety of blind and deaf individuals.
- I DON'T LIKE ZONING LAWS, WE SHOULD HAVE MORE FREEDOM TO DO WHAT WE WANT TO WITH OUR OWN PROPERTY. MY PROPERTY WAS ZONED COMMERCIAL.
- I just want to say that although there are some areas that I think need improved and you state that the water system needs to be overhauled, I can't afford any higher taxes.....
- I love our city, but it is growing. Stay ahead of the game, purchase more land for parks.
- I moved here from Portland due to homeless population and all that comes with it. Please prevent Portland issues from happening in OC. I do not want Trimet Max(it brings crime to cities).
- I REALLY BELIEVE THE CITY NEEDS THE RIVER WALK DEVELOPED FOR GROWTH. IT WILL FLOURISH.
- I REALLY REALLY MISS THE LIBRARY. CAN WE FIND A WAY TO REOPEN?
- I thought revenue from our pot shops went to schools and streets
- ICON CONSTRUCTION HAS HAD A NEGATIVE IMPACT IN OUR COMMUNITY. THEY BUILD MULTIPLE HOMES THAT ARE NOT HIGH QUALITY BUT OUT OF FIRST HOME BUYERS PRICE RANGE.
- IF THE CITY NEEDS THINGS THEY SHOULD TAX. WE LIVE HERE, WE SHOULD PAY FOR IT.
- Improve parks, add trails and remove invasive plants.
- Improve water quality, more housing for low income people.
- INCREASE COMMUNICATION N WHAT THE CITY IS DOING TO IMPROVE SAFETY AND LIVABILITY.
- IT WOULD BE NICE ONCE A PERSON RETIRES IF THEIR PROPERTY TAXES WERE LOWERED. THE COUNTY IS TAXING SENIORS RIGHT OUT OF THEIR HOMES.
- ITI FIX THAT INFLOW, ADD ROUNDABOUTS!
- LANGUAGE TRANSLATORS
- LAST WEEK I WAS DRIVING BY DRAKE PARK IN BEND. ON A COLLECTOR STREET THEY HAD A LOT OF SHOS AND RESTAURANTS WITHIN WALKING DISTANCE OF RESIDENTIAL NEIGHBORHOODS. OC HAS NOTHING LIKE THAT.
- Less spending on police and more spending on the community.
- LESS TAXES AND WASTE OF OUR DOLLARS.
- Let the police do their jobs and form municipal codes to address the ridiculous amount of homeless people who are tarnishing the city
- LOW INCOME HOUSING, MORE WALKING TRAILS AND THINGS FOR FAMILIES WITH OR WITHOUT PETS. GET PEOPLE NOT TO SPEED BY MY HOUSE.
- LOWER UTILITY BILLS, WATER BILL! USING \$22 WORTH AND PAYING \$116. ALL TAXES.
- LOWER WATER BILLS/COSTS
- MAKE THE CITY MORE INCLUSIVE AND PROVIDE WITH VARYING VIEWS INCLUSION. EDUCATE PEOPLE.
- More easily accessed dog parks, sidewalks/street lights in our neighborhood.
- MORE MARKED CROSSWALKS ON MAJOR STREETS. (S END RD, CENTRAL PT RD). MORE SIDEWALKS IN MANY AREAS, ESPECIALLY IN OLDER NEIGHBORHOODS. NEED STRATEGY TO ADDRESS HOMELESSNESS.

Q33. If you have suggestions for improving the quality of city programs, facilities, or services, please enter your suggestions in the space below (cont.)

- MORE PARKING TO SERVICE MAIN STREET. DEVELOP FOR DINING OR ENTERTAINMENT RIGHT BY TOP OF ELEVATOR. OPERATE ELEVATOR MORE HOURS.
- More parks with fun recreationally activities. Bocci ball courts, basketball courts, water geysers for summer fun. Covered picnic areas and softball fields.
- More programs for seniors.
- MORE RECREATION PROGRAMS FOR CHILDREN (SUMMER CAMPS, SWIM LESSONS, ACTIVITIES, DAY CAMPS/PROGRAMS, LIBRARY PROGRAMS). ALSO MORE SIDEWALKS IN NEIGHBORHOODS.
- More sidewalks.
- MY BIGGEST FRUSTRATION IS THAT MY FAMILY DOES NOT HAVE GOOD/SAFE WALKING/BIKING OPTIONS IN THE NEIGHBORHOOD. ALSO AM VERY MUCH IN FAVOR OF THE W. FALLS PROJECT.
- Need crosswalks for the blind. Need painted crosswalk at Division and 11th.
- O.C. is out of balance, plenty of housing but no real entertainment or retail shopping. No place for youth entertainment. Use Sherwood as a plan for our city.
- Open everything like it was before Covid
- OPEN TH LOCKS AGAIN! GET THE WILL.FALLS PROJECT GOING.
- OREGON CITY AND PUBLIC SERVICES ARE MUCH BETTER THAN PORTLAND.
- OREGON CITY NEEDS TO BE KEPT AS A TOWN WHERE FAMILIES WANT TO LIVE. WE DO NOT NEED TO BECOME PORTLAND. HAVING A SENSE OF COMMUNITY IS VERY IMPORTANT AND THIS IS WHERE THE FOCUS SHOULD BE.
- OREGON CITY TAXES ARE HIGH-YET COMMERCE AND ECONOMIC DEVELOPMENT SEEM LOW. HARD TO SUPPORT ADDITIONAL FUNDS FOR MANY ITEMS LISTED IN THIS SURVEY.
- PARKS NEED MORE OPTIONS FOR OLDER KIDS. NOT JUST PLAY STRUCTURES. SKATE PARK, PUMP TRACK LIKE REDMOND, FIX ZONING IN MOLLALA AND GET IT REDEVELOPED.
- Parks should have sanitizing stations. Oregon City pool needs major face lift. Please consider adding sidewalks on Leland and Pease Road
- please deal with the homeless problem and no more shelters should be allowed for them in our community. I have heart for people in need but these homeless people don't want help they what to continue the way they are and get things for free and leave there drugs, trash and human waste in our parks, on our sidewalks, and on our property.
- PLEASE DO MORE ABOUT INCREASING NUMBER OF HOMELESS PEOPLE RUINING THE CITY.
- Please leave Oregon City Golf Course alone. Do no develop that property. We have too much residential property development occurring and commercial real estate is in a slump as it is.
- Please quit using grant money to beautify the city by planting trees under power lines. To just turn around years later and use tax payer dollars to rip them up cut them down due to them growing into the lines or blocking traffic view.
- PUBLIC TRANSIT
- Resist the efforts of Metro to impose Portland-style goals, taxes, fees, and restrictions. We would be much better off as a community if Metro were abolished and I encourage the city commissioners to support that effort. Better involvement of larger percent of local population needed to ensure local community goals are discussed and achieved.
- Root out the racism in the mayor's office, police and other departments.
- SAFETY OF PEOPLE AND PROPERTY. PEDESTRIAN CROSSING NEEDS TO BE LIT UP AND FLASHING WHEN SOMEONE IS CROSSING.

Q33. If you have suggestions for improving the quality of city programs, facilities, or services, please enter your suggestions in the space below (cont.)

- SIDEWALK REPAIRS THROUGHOUT CITY NEIGHBORHOODS. TRAFFIC CALMING MEASURES COMING INTO NEIGHBORHOODS FROM RURAL AREAS. CODE ENFORCEMENT CLEANING UP LITTER, DEBRIS ON SIDEWALKS, CUT BACK TREES AND SHRUBS.
- SLOW DOWN THE GROWTH UNTIL ROADS IMPROVE AND ROADS ARE ADDED TO GET OFF THE TOP OF THE HILL.
- Social Service programs are unacceptable. Lack of adequately supervised services have introduced a population into the McLoughlin neighborhood that make it unsafe. We moved to Oregon City in 1999 to attain a higher quality of life than what we experienced in Multnomah Co. - twenty years later, it has become little more than a microcosm of Portland's working class neighborhoods. This is a most unfortunate development for Clackamas.
- SOMEWHERE FOR YOUTH TO GO TO KEEP FROM BOREDOM AND OUT OF TROUBLE.
- Spend less time leaf blowing in parks and clean up the McLoughlin entry into Oregon City. Dump trash daily and remove old shopping carts and debris daily. This will enhance the perception of the City.
- STOP building!
- STOP ENGAGING IN MULTI MILLION PROJETS WITHOUT A VOTE OF THE TAX PAYERS.
- STOP FORCING THIS ONCE GREAT TOWN TO GROW. IT IS OKAY TO NOT BE GRESHAM, BEAVERTON, OR PORTLAND. STAY OUT OF THE FALLS AND MILL PROPERTY. IT'S NOT YOURS.
- Stop with the cancel culture and not agreeing with everyone Learn to respect different outlooks and be willing To listen to others
- Stop worrying about gender or race and focus on basic city services.
- Street improvement. Sidewalks, and water pressure.
- Take the rights away from the homeless they aren't paying taxes they're only using our tax dollars to clean up their garbage
- Thank you for providing this survey.
- THANK YOU FOR PROVIDING US WITH A MEANS FOR INPUT.
- THE NUMBER OF HOMELESS ADDICTS LIVING ON THE STREETS IS INCREASING AND NOT OK. QILLAMETTE FALLS LEGACY PROJECT IS A HUGE DISAPPOINTMENT SO FAR.
- THE PACE OF NEW HOME CONSTRUCTION HAS FAR OUTPACED THE DEVELOPMENT OF AMENITIES SUCH AS SHOPPING AND DINING.
- THE SIDEWALKS LEADING TO JOHN MCLAUGHLIN SCHOOL ARE NON-EXISTENT. OUR WATER BILL IS TAXED TOO HIGH.
- THIS PLACE HAS HIGH TAXES, HIGH FEES AND HIGH WATER BILLS. MY SUGGESTION IS TO DO SOMETHING WITH WHAT YOU HAVE ALREADY BEEN GIVEN. THERE IS VERY LITTLE IN THIS CITY TO DO. ONE EXISTS HERE UNTIL THEY FIND ANOTHER PLACE TO LIVE. IT IS NOT A PLACE TO THRIVE.
- To visit downtown area for shopping or visit an eating place parking is very difficult when you are older and have difficulties getting around. There have been many changes in parking but one seems to work and we get used to it someone has another idea and it is changed, so we go to the malls.
- Traffic officer lied to me about taking a moving violation class, I lost my license as I am disabled vet.
- TRANSIENT POPULATION AND FOOT TRAFFIC NEEDS ADDRESSED. WE DO NOT FEEL SAFE WALKING.
- TRIMMING OF TREES AND BUSHES AT STOP SIGNS TO SEE ONCOMING CARS- BAD EVERYWHERE.
- USABILITY OF COUNTY SHERIFF IS GOOD BUT OREGON CITY POLICE ARE NOT VERY USABLE. I WOULD LIKE TO MORE COMMUNITY BASED POLICING. WE MOVED HERE FOR SMALL TOWN FEEL. CRIME SEEMS TO BE LOW.
- Use city land to build affordable housing. We make 125k a year and cannot afford a house.

Q33. If you have suggestions for improving the quality of city programs, facilities, or services, please enter your suggestions in the space below (cont.)

- USE THE MONIES YOU HAVE MORE EFFICIENTLY- OUR PROPERTY TAXES ARE HORRIBLE!!! IF THE TAXES KEEP GOING UP, PEOPLE WILL HAVE TO MOVE. BUDGET WISELY!
- Water bill is crazy high!
- Water in the summer taste awful. We re-plumbed our house six years ago, so it is not our plumbing.
- We are already paying too much for water/sewer services. My bill has increased by \$75 monthly in the last 10 years. No other bills I have DOUBLED in the last ten years. I believe the fees we are currently paying are more than enough for repairs. I will fight to not increase what I pay for water. Perhaps the money we are paying is being used poorly or inefficiency. I would like a report as to why the immense increase has not been enough to make needed repairs.
- We are Oregon City not Portland! Thank you for your service!
- WE DON'T UNDERSTAND WHY OUR WATER AND SEWER RATES ARE SO MUCH HIGHER THAN ANYONE WE KNOW. LIKE THREE TO FOUR TIMES MORE.
- We hope the planned road improvements for South End Road happen soon. Traffic is increasing, speed limits are not enforced and pedestrians can not safely cross at intersections without new sidewalks and crossings.
- WE MOVED FROM WEST LINN TO OC AND LOVE IT.
- We need a mayor that works on the behalf of taxpayers! Utility increases have been excessive over the past twenty ears. Overall I am satisfied as an O.C. resident. I would love to see progress made on the Falls Legacy Project.
- WE NEED GREEN SPACES, LESS CONSTRUCTION OF SINGLE HOMES AND A NEW MAYOR TO HONOR OUR DIVERSITY!
- We need more affordable means of living.
- WE NEED TO ADDRESS THE HOMELESS SITUATION.
- We need to clean up our city desperately. The trash and filth is appalling. We don't feel safe with the homeless and drug problems.
- We need to spend the tax dollars that are already collected o our community and be able to show us residents what is being done.
- WE SPEND TOO MUCH ON POLICE INSTEAD OF INFRASTRUCTURE. TOO MUCH EMPHASIS ON PUBLIC INPUT COMPLICATES. BUS SERVICE TO PARK PLACE IS TERRIBLE, SAFE SIDEWALKS ARE NEEDED.
- WHEN OUR HOUSING DEVELOPMENT WAS STARTED IN THE 90'S THE CITY TOLD THE DEVELOPER WHAT TREES THEY SHOULD PUT IN PARK STRIPS. THESE HAVE UPROOTED SIDEWALKS AND COST HOMEOWNERS THOUSANDS OF DOLLARS AND HIGH PERMIT CHARGES. WE THINK THIS IS UNFAIR AND UNSAFE.
- WOULD LOVE A BETTER POOL AND BETTER LIBRARY RESOURCES.
- You could lower some speed bumps. We have a UVL, under the vehicle lift, and we scrape them. Knocking off our exhaust pipe! The one in Ainsworth Estates is the worst! We are forced to go out another way and come back...Cominger Dr. Please, PLEASE! shave some of that off. I know you checked it and said it was fine, but it is not! Everyone I know with a van like ours, can not come that way. There are one around Maple lane, they go into a housing area that has some mobile homes that we were going to buy, but we could not get over the speed bumps! We could not move there. We have less than a 5 inch clearance. Thank you.
- You get enough of our money. We pay a very high water rate!

Section 5

Survey Instrument



OREGON CITY

Office of the City Manager

625 Center Street | PO Box 3040 | Oregon City OR 97045
Ph (503) 657-0891 | Fax (503) 657-7026

Dear Oregon City Resident,

We are living in unprecedented times and, with COVID-19, the City has had to change services and programs to maintain the health and safety of residents and staff. City staff has quickly pivoted to offering online programs and services as well as virtual meetings and inspections. We continue to look for ways to support our community now and prioritize future needs which is why your input on the enclosed survey is important.

The City Commission and staff believe it is crucial to ask our residents whether they are satisfied with the services we provide. Asking questions ensures that the City's priorities are aligned with the needs of our residents; we need to know what you think.

Your household was one of a limited number selected at random to receive this survey, and your participation is necessary to make the survey a success.

We greatly appreciate your time. We realize that this survey takes some time to complete, but every question is essential. The time you invest in this survey will influence decisions that will be made about the City's future. Your responses will also help the City Commissioners gauge the success of their or the City's efforts to carry out the community's vision for the City of Oregon City and to address the many opportunities and challenges it faces. Oregon City's adopted *vision* is to embrace and advance Oregon City's historic role as a regional leader, and our *mission* is to build a dynamic community that leads the State in safety, economic opportunity, livability, and historic significance.

2019-2021 City Commission Goals. The City Commission goals prioritize significant projects and help to shape the budget we operate under. The Commission has adopted the following goals for the City; which are to: Cultivate an environment for successful economic development; Address critical facility needs; Enhance the livability of the community; Pursue opportunities to increase transparency and encourage citizen participation; and Maintain fiscal health and long-term stability.

Please return your survey or complete it online sometime during the next week. We have selected ETC Institute to administer this survey. Your responses will remain confidential. ETC Institute will present the results to the City in October or November. Please return your survey in the enclosed postage-paid envelope addressed to ETC Institute, 725 W. Frontier Circle, Olathe, Kansas, 66061 or go to www.oregoncitysurvey.org to complete the survey online. If you have any questions, please contact Kristin Brown with the City of Oregon City at kbrown@orc.org or (503) 496-1547. Thank you very much for taking the time to provide your valuable input to help us understand your priorities, concerns, and insights, and the opportunities that we have in this wonderful City, it is greatly appreciated.

Sincerely,

Tony Konkol

City of Oregon City, City Manager



Please take a few minutes to complete this survey. Your input is important to help Oregon City identify and respond to citizen concerns. If you have questions, please call Kristin Brown 503-496-1547.

1. **Perception of the City.** Please rate each of the following major categories of services provided by the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
01. Overall quality of police services	5	4	3	2	1	9
02. Overall quality of the city's recreation programs	5	4	3	2	1	9
03. Overall quality of city parks/trails/open space	5	4	3	2	1	9
04. Overall maintenance of city streets	5	4	3	2	1	9
05. Overall quality of city water utilities	5	4	3	2	1	9
06. Overall quality of city sewer services	5	4	3	2	1	9
07. Overall quality of Municipal Court Services	5	4	3	2	1	9
08. Overall enforcement of city codes and ordinances	5	4	3	2	1	9
09. Overall quality of customer service you receive from city employees	5	4	3	2	1	9
10. Overall effectiveness of city communication with the public	5	4	3	2	1	9
11. Overall effectiveness of city economic development efforts	5	4	3	2	1	9
12. Overall quality of the city's public library services	5	4	3	2	1	9
13. Overall quality of permit process	5	4	3	2	1	9

2. Which **THREE** of the items listed in Question 1 do you think should receive the **MOST EMPHASIS** from city leaders over the next **TWO** years? *[Write in your answers below using the numbers from the list in Question 1.]*

1st: _____ 2nd: _____ 3rd: _____

3. Please rate each of the following items that may influence your perception of the City of Oregon City using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
1. Overall quality of services provided by the City of Oregon City	5	4	3	2	1	9
2. Overall value that you receive for your tax dollars and fees	5	4	3	2	1	9
3. Overall image of the city	5	4	3	2	1	9
4. How well the city is supporting growth and development	5	4	3	2	1	9
5. Overall feeling of safety in the city	5	4	3	2	1	9
6. Availability of job opportunities	5	4	3	2	1	9
7. Availability of training or educational opportunities	5	4	3	2	1	9
8. Overall quality of new development	5	4	3	2	1	9
9. Overall development across the city	5	4	3	2	1	9

4. **Parks and Recreation.** Please rate your satisfaction with each of the following Parks and Recreation items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

Item 3b.

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
01. Quality of facilities (e.g. picnic shelters, playgrounds in city parks)	5	4	3	2	1	9
02. Quality of outdoor athletic fields (e.g. baseball, soccer, football)	5	4	3	2	1	9
03. Appearance and maintenance of existing city parks	5	4	3	2	1	9
04. Proximity of parks to your home	5	4	3	2	1	9
05. Quantity of city trails	5	4	3	2	1	9
06. Access to city parks for persons with disabilities	5	4	3	2	1	9
07. Quality of the Pioneer Community Center	5	4	3	2	1	9
08. Quality of the End of the Oregon Trail	5	4	3	2	1	9
09. Quality of the city's swimming pool	5	4	3	2	1	9
10. Quality of services for fees assessed with recreation programming (e.g. pool programs, admission, camps)	5	4	3	2	1	9
11. Quality of recreational areas for dogs	5	4	3	2	1	9
12. Other: _____	5	4	3	2	1	9

5. Which TWO of the Parks and Recreation items listed in Question 4 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? [Write in your answers below using the numbers from the list in Question 4.]

1st: _____ 2nd: _____

6. How willing would you be to pay additional taxes or fees to acquire, develop, and maintain the types of parks, recreation, and trail facilities that are most important to your household?

____(1) Very willing ____ (3) Neutral ____ (5) Not at all willing
 ____ (2) Willing ____ (4) Not willing ____ (9) Don't know

7. What makes Oregon City special? _____

- 7a. What about Oregon City would you like to change in the future? _____

8. **Public Safety.** Please rate each of the public safety items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
1. The visibility of police in the community	5	4	3	2	1	9
2. The city's overall efforts to prevent crime	5	4	3	2	1	9
3. Enforcement of local traffic laws	5	4	3	2	1	9
4. Parking enforcement services	5	4	3	2	1	9
5. How quickly police respond to emergencies	5	4	3	2	1	9
6. Response to drug control	5	4	3	2	1	9
7. Response to property crime	5	4	3	2	1	9
8. Level of community outreach	5	4	3	2	1	9
9. Response to issues with transients	5	4	3	2	1	9

9. Which TWO of the public safety items listed in Question 8 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? [Write in your answers below using the numbers from the list in Question 8.]

1st: _____ 2nd: _____

10. Communication. Where do you currently get news and information about city programs, services and events? *[Check all that apply.]* Item 3b.

- | | |
|--|---|
| ☐ (01) "Trail News" quarterly publication
☐ (02) City website
☐ (03) Newspaper
☐ (04) Friends
☐ (05) Radio
☐ (06) Social media (Facebook, Twitter, Instagram, LinkedIn)
☐ (07) Public meetings
☐ (08) City's mobile app ("OC Request")
☐ (09) YouTube | ☐ (10) Citizen Involvement Committee
☐ (11) TV local news
☐ (12) Nextdoor
☐ (13) Neighborhood Association
☐ (14) Utility bill
☐ (15) Flyers
☐ (16) E-Trail News Monthly e-newsletter
☐ (17) Other: _____ |
|--|---|

10a. From which TWO sources listed in Question 10 would you MOST PREFER to get information from the city? *[Write in your answers below using the numbers from the list in Question 10.]*

1st: _____ 2nd: _____

10b. How frequently would you like to receive information from the city? *[Write in your top two choices using numbers from the list below, or circle "Don't Know."]*

1. Daily 2. Weekly 3. Monthly 4. Quarterly

1st: _____ 2nd: _____ Don't Know

11. Which of the following types of information would you like to receive from the City of Oregon City? *[Check all that apply.]*

- | | |
|--|---|
| ☐ (1) The City Commission's goals meeting wrap up
☐ (2) Public safety (police)
☐ (3) Public works (infrastructure and transportation updates)
☐ (4) Special events
☐ (5) Community-based stories (what is going on locally) | ☐ (6) Economic development
☐ (7) Library services and programs
☐ (8) Parks and Recreation programs and services
☐ (9) Other: _____ |
|--|---|

12. Please rate each of the communication items listed below using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied."

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
1. The availability of information about city programs and services	5	4	3	2	1	9
2. Overall quality of the city's website	5	4	3	2	1	9
3. The level of public involvement in decision making	5	4	3	2	1	9
4. Timeliness of information provided by the city	5	4	3	2	1	9
5. The quality of content on social media (Facebook, Twitter, Instagram)	5	4	3	2	1	9
6. Access to bilingual material	5	4	3	2	1	9

13. Code Enforcement. Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following code enforcement items.

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
1. Enforcing the cleanup of litter and debris on private property	5	4	3	2	1	9
2. Enforcing the mowing/trimming of grass and weeds on private property	5	4	3	2	1	9
3. Enforcing codes designed to protect public safety and health	5	4	3	2	1	9
4. Enforcing sign regulation	5	4	3	2	1	9

14. Which TWO of the code enforcement items listed in Question 13 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? *[Write in your answers below using the numbers from the list in Question 13.]*

1st: _____ 2nd: _____

15. **Transportation and Infrastructure.** Please rate each of the following street maintenance/s Item 3b. items using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied".

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
01. Maintenance of major city streets	5	4	3	2	1	9
02. Maintenance of streets in your neighborhood	5	4	3	2	1	9
03. Snow and ice response on major city streets	5	4	3	2	1	9
04. Adequacy of city street lighting in your neighborhood	5	4	3	2	1	9
05. Condition of sidewalks in your neighborhood	5	4	3	2	1	9
06. On-street bicycle infrastructure (bike lanes/signs/arrows)	5	4	3	2	1	9
07. Accessibility of public transportation options	5	4	3	2	1	9
08. Availability of safe pedestrian ways on major streets and routes	5	4	3	2	1	9
09. Availability of safe pedestrian ways in your neighborhood	5	4	3	2	1	9
10. Quality of sidewalks for people with mobility challenges	5	4	3	2	1	9
11. Traffic calming measures in your neighborhood, for example traffic circles, speed humps, or radar speed signs	5	4	3	2	1	9
12. Alternative means of transportation such as transit, bicycling, walking	5	4	3	2	1	9

16. Which TWO of the transportation and infrastructure items listed in Question 15 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? [Write in your answers below using the numbers from the list in Question 15.]

1st: _____ 2nd: _____

17. **Public Library Services.** Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied," please rate your satisfaction with each of the following Public Library services.

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
01. Selection of physical resources available (books, CD's, and DVD's)	5	4	3	2	1	9
02. Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)	5	4	3	2	1	9
03. Events for seniors	5	4	3	2	1	9
04. Events for adults (e.g. informational, literary, participatory, entertainment)	5	4	3	2	1	9
05. Events for teens (e.g. Teen Advisory Council, crafts, summer reading)	5	4	3	2	1	9
06. Events for children (e.g. early literacy development, story times, summer reading program)	5	4	3	2	1	9
07. Reader's Advisory (help finding something to read)	5	4	3	2	1	9
08. Selection of reference and research tools	5	4	3	2	1	9
09. Access to computers and library Wi-Fi	5	4	3	2	1	9
10. Ease of booking meeting rooms	5	4	3	2	1	9
11. Library as a hub of community information	5	4	3	2	1	9
12. Outreach-programs and/or services in the community outside of the library	5	4	3	2	1	9

18. Which TWO of the public library items listed in Question 17 do you think should receive the MOST EMPHASIS from city leaders over the next TWO years? [Write in your answers below using the numbers from the list in Question 17.]

1st: _____ 2nd: _____

19. How do you get information about the library? [Check all that apply.]

Item 3b.

- | | | |
|--|--|---|
| ☐ (01) E-newsletter | ☐ (05) Blogs | ☐ (09) Others social media |
| ☐ (02) Library Staff | ☐ (06) Flyers | ☐ (10) Trail News |
| ☐ (03) Word of mouth | ☐ (07) Newspaper | ☐ (11) Other: _____ |
| ☐ (04) City's website | ☐ (08) Library's social media | |

20. Capital Investments. Funding for capital investments is limited. For some projects, such as Molalla Avenue Streetscape Project, the city looks for substantial federal, state, and regional grant funds to pay for the majority of the costs. But for other projects, such as park improvements or sidewalk maintenance, we have to use local tax dollars. In looking at how we should spend your local tax dollars on capital projects over the next decade, please indicate which FIVE of the projects listed below should be the TOP PRIORITIES. [Write in your answers using the numbers from the list below.]

- | | |
|--|-------------------------------------|
| 01. Recreation facilities such as Pioneer Community Center, End of the Oregon Trail Interpretive Center, and city pool | 06. Willamette Falls Legacy Project |
| 02. Park improvements and maintenance | 07. Tourism |
| 03. Road maintenance/pavement preservation (such as overlay projects) | 08. Natural habitat restoration |
| 04. Sidewalks | 09. Economic Development |
| 05. Bike lanes/bike paths | 10. Water Infrastructure |
| | 11. Pedestrian Crossings |
| | 12. Traffic congestion relief |

1st: _____ 2nd: _____ 3rd: _____ 4th: _____ 5th: _____

21. Service Expectations. Using a scale of 1 to 5, where 5 means the level of service provided by the city should be "Much Higher" than it is now and 1 means it should be "Much Lower," please indicate how the level of service provided by the city should change in each of the areas listed below.

	Much Higher	A Little Higher	Stay the Same	A Little Lower	Much Lower	Don't Know
1. Law enforcement	5	4	3	2	1	9
2. Parks, trails, and open space	5	4	3	2	1	9
3. Recreation facilities and programs	5	4	3	2	1	9
4. Transportation facilities and programs (street maintenance, new sidewalks, added bike lanes)	5	4	3	2	1	9
5. Utility infrastructure (water, sewer, and drainage system upgrades)	5	4	3	2	1	9
6. City's Public Library	5	4	3	2	1	9
7. City's Code Enforcement	5	4	3	2	1	9
8. City's permit review	5	4	3	2	1	9

21a. Would you be willing to pay more in taxes or fees to support an increase in the service level?

- | | |
|----------------------------------|---|
| ☐ (1) Yes | ☐ (3) Not applicable; I do not think any levels of service need to be higher |
| ☐ (2) No | ☐ (9) Don't know |

22. Please rate Oregon City using a scale of 1 to 5, where 5 means "Excellent" and 1 means "Poor" with regard to each of the following. Item 3b.

How would you rate Oregon City...	Excellent	Good	Neutral	Below Average	Poor	Don't Know
1. As a place to live	5	4	3	2	1	9
2. As a place to raise children	5	4	3	2	1	9
3. As a place to work	5	4	3	2	1	9
4. As a place with a variety of housing choices	5	4	3	2	1	9
5. As a place to shop	5	4	3	2	1	9
6. As a place for dining and entertainment options	5	4	3	2	1	9
7. Overall quality of life in the city	5	4	3	2	1	9
8. As a place to connect and interact with your neighbors	5	4	3	2	1	9

23. **Customer Service.** Have you called, emailed, or visited the city with a question, problem, or complaint during the past year?

____(1) Yes [Answer Q23a-c.] ____ (2) No [Skip to Q24.] ____ (9) Don't know [Skip to Q24.]

- 23a. How easy was it to contact the person you needed to reach?

____(1) Very easy ____ (3) Difficult ____ (9) Don't know
 ____ (2) Somewhat easy ____ (4) Very difficult

- 23b. What department did you contact? [Check all that apply.]

____ (01) Police ____ (07) Financial Services/Utility Billing
 ____ (02) Code Enforcement ____ (08) Transportation Services (streets)
 ____ (03) Building and Planning ____ (09) Administration (public records)
 ____ (04) Parks and Recreation ____ (10) Public Works (water/sewer/solid waste)
 ____ (05) Oregon City Public Library ____ (11) Municipal Court
 ____ (06) Event Permits ____ (12) Other: _____

- 23c. Several factors that may influence your perception of the quality of customer service you receive from city employees are listed below. For each item, please rate how often the employees you have contacted during the past year have displayed the behavior described on a scale of 1 to 5, where 5 means "Always" and 1 means "Never."

Frequency that...	Always	Usually	Sometimes	Seldom	Never	Don't Know
1. They were courteous and polite	5	4	3	2	1	9
2. They gave prompt, accurate, and complete answers to questions	5	4	3	2	1	9
3. They did what they said they would do in a timely manner	5	4	3	2	1	9
4. They helped you resolve an issue to your satisfaction	5	4	3	2	1	9

24. **Land Development.** Using a scale of 1 to 5, where 5 means "Much Too Slow" and 1 means "Much Too Fast," please rate the city's current pace of development in each of the following areas.

Growth Management	Much Too Slow	Too Slow	Just Right	Too Fast	Much Too Fast	Don't Know
1. Employment opportunities	5	4	3	2	1	9
2. Office development	5	4	3	2	1	9
3. Retail/Restaurants/Services	5	4	3	2	1	9
4. Technology and other industry	5	4	3	2	1	9
5. Housing options for aging population	5	4	3	2	1	9
6. Apartments	5	4	3	2	1	9
7. Townhomes/Row houses	5	4	3	2	1	9
8. Entry level single family homes	5	4	3	2	1	9
9. Single Family Homes	5	4	3	2	1	9

25. **Water Quality.** Using a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Dissatisfied," please rate your satisfaction with each of the following water quality items. Item 3b.

How satisfied are you with...	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied	Don't Know
1. Water pressure	5	4	3	2	1	9
2. Water clarity	5	4	3	2	1	9
3. Water taste	5	4	3	2	1	9
4. Water smell	5	4	3	2	1	9
5. Reliability of water service	5	4	3	2	1	9

- 25a. Oregon City has a great water supply and an effective but aging water distribution system. Within 7 years, major investments in the existing water system are required. The investments are needed to repair, replace, and operate the existing water system to provide sufficient water supply on a reliable basis to meet our current water customer needs. Investments funded through rates are not for infrastructure to serve new development.

How willing would you be to pay additional taxes or higher water rates to repair and replace our aging water system?

☐ (1) Very willing ☐ (3) Neutral ☐ (5) Not at all willing
☐ (2) Willing ☐ (4) Not willing ☐ (9) Don't know

Demographics

26. Approximately how many years have you lived in Oregon City? _____ years
27. What is the preferred language spoken in your home? _____
28. What is your age? _____ years
29. Do you work outside of Oregon City? ☐ (1) Yes ☐ (2) No
30. How many children under age 18 live in your household? _____ children
31. What is your gender? ☐ (1) Male ☐ (2) Female ☐ (3) Non-binary
32. Would you say your total annual household income is...
☐ (1) Under \$50,000 ☐ (3) \$75,000 to \$99,999 ☐ (5) \$150,000 to \$199,999
☐ (2) \$50,000 to \$74,999 ☐ (4) \$100,000 to \$149,999 ☐ (6) \$200,000 or more
33. If you have suggestions for improving the quality of city programs, facilities, or services, please write your suggestions in the space below.

This concludes the survey – Thank you for your time!

Please return your completed survey in the enclosed postage-paid envelope addressed to:
 ETC Institute, 725 W. Frontier Circle, Olathe, KS 66061

Your responses will remain completely confidential. The information printed to the right will ONLY be used to help identify which areas of the city are having difficulties with city services. If your address is not correct, please provide the correct information. Thank you.

City of Oregon City Community Survey

GIS Maps

...helping organizations make better decisions since 1982

2020

Submitted to the City of Oregon City, Oregon

by:

ETC Institute
725 W. Frontier Lane,
Olathe, Kansas
66061

January 2021



ETC
INSTITUTE

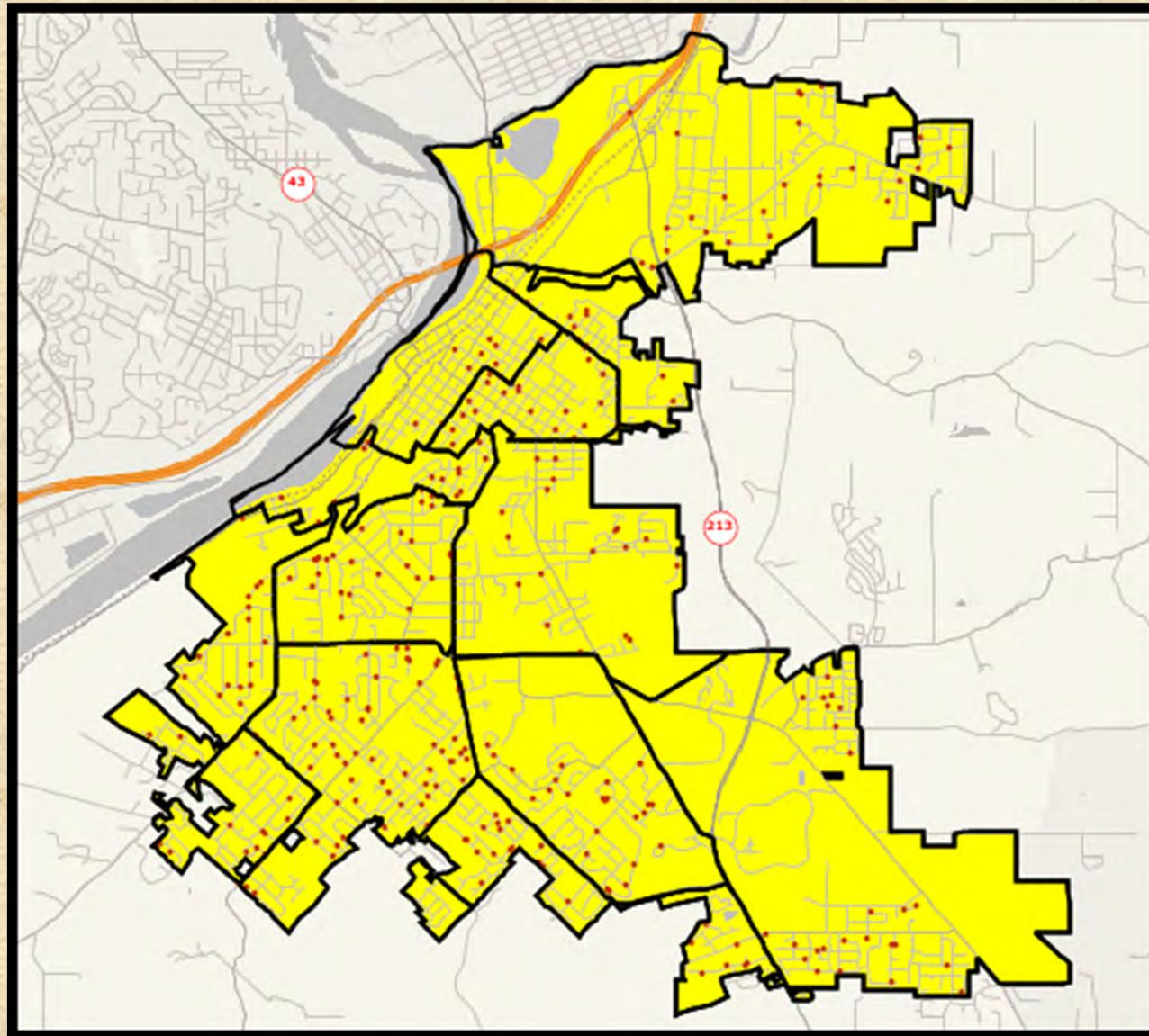
Interpreting the Maps

The maps on the following pages show the mean ratings for several questions on the survey by Census Block Group. If all areas on a map are the same color, then residents generally feel the same about that issue regardless of the location of their home.

When reading the maps, please use the following color scheme as a guide:

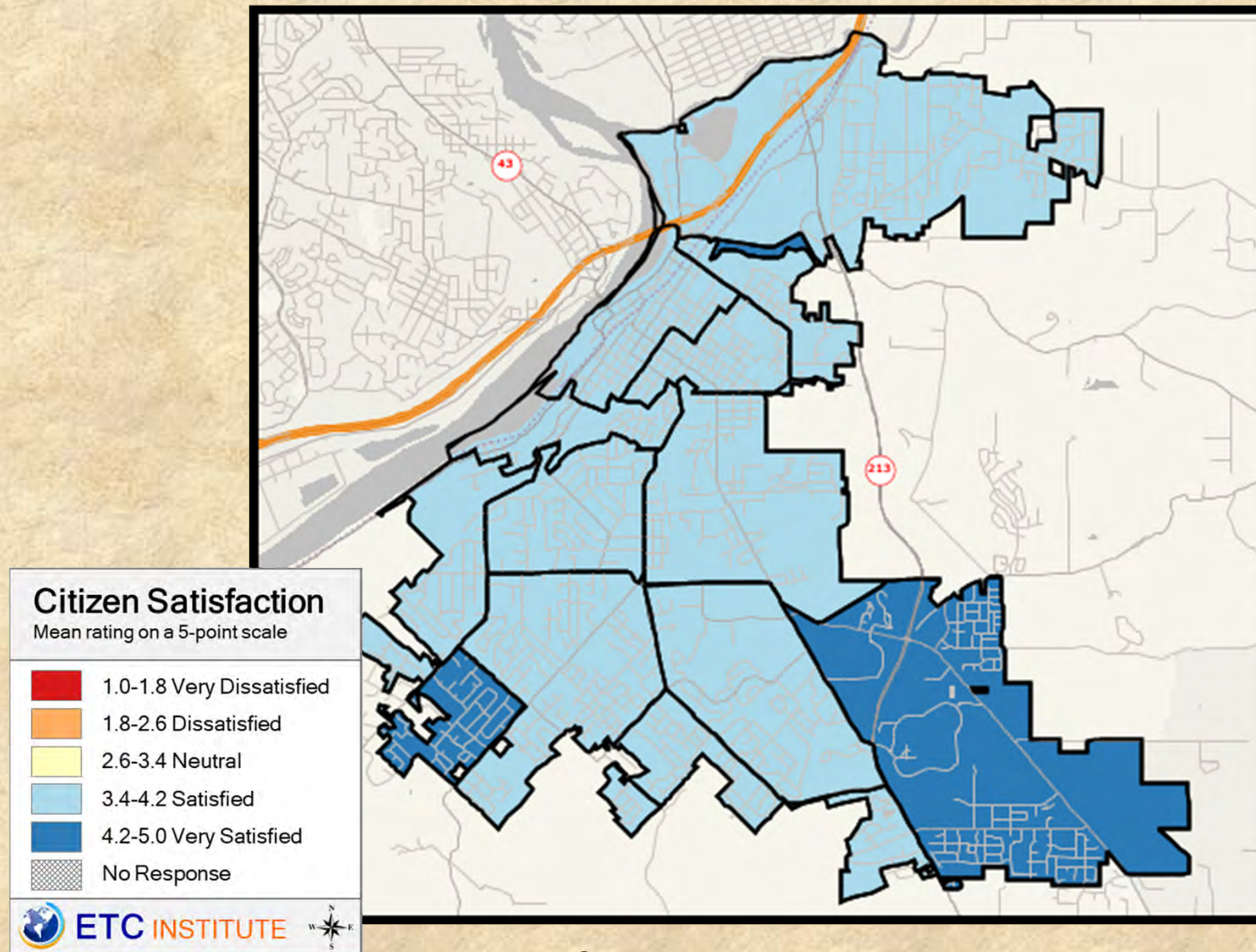
- **DARK/LIGHT BLUE** shades indicate POSITIVE ratings. Shades of blue generally indicate satisfaction with a service, ratings of “excellent” or “good” and ratings of “very safe” or “safe.”
- **OFF-WHITE** shades indicate NEUTRAL ratings. Shades of neutral generally indicate that residents thought the quality of service delivery is adequate.
- **ORANGE/RED** shades indicate NEGATIVE ratings. Shades of orange/red generally indicate dissatisfaction with a service, ratings of “below average” or “poor” and ratings of “unsafe” or “very unsafe.”

Location of Survey Respondents



2020 City of Oregon City Community Survey

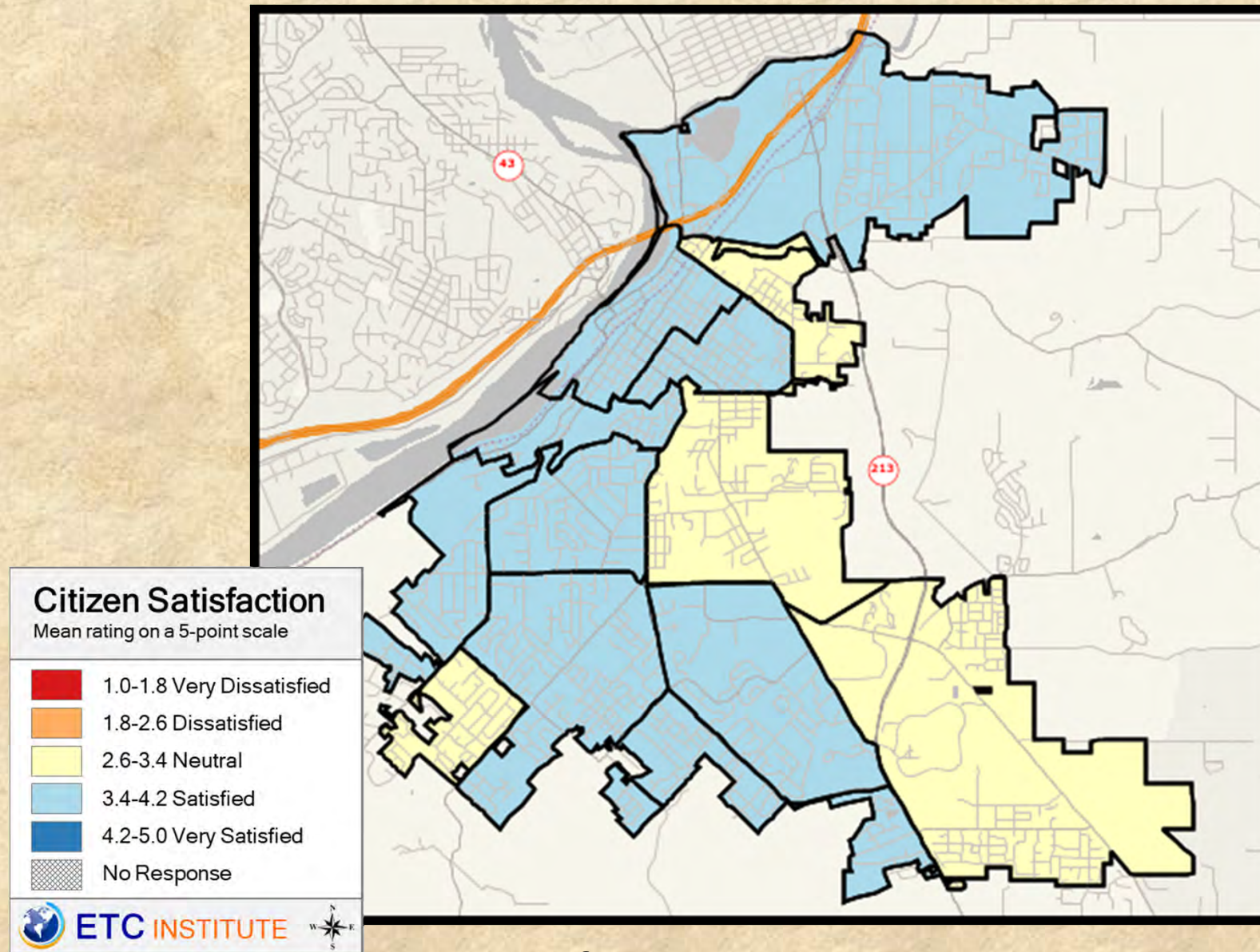
Q1-1. Overall quality of police services



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

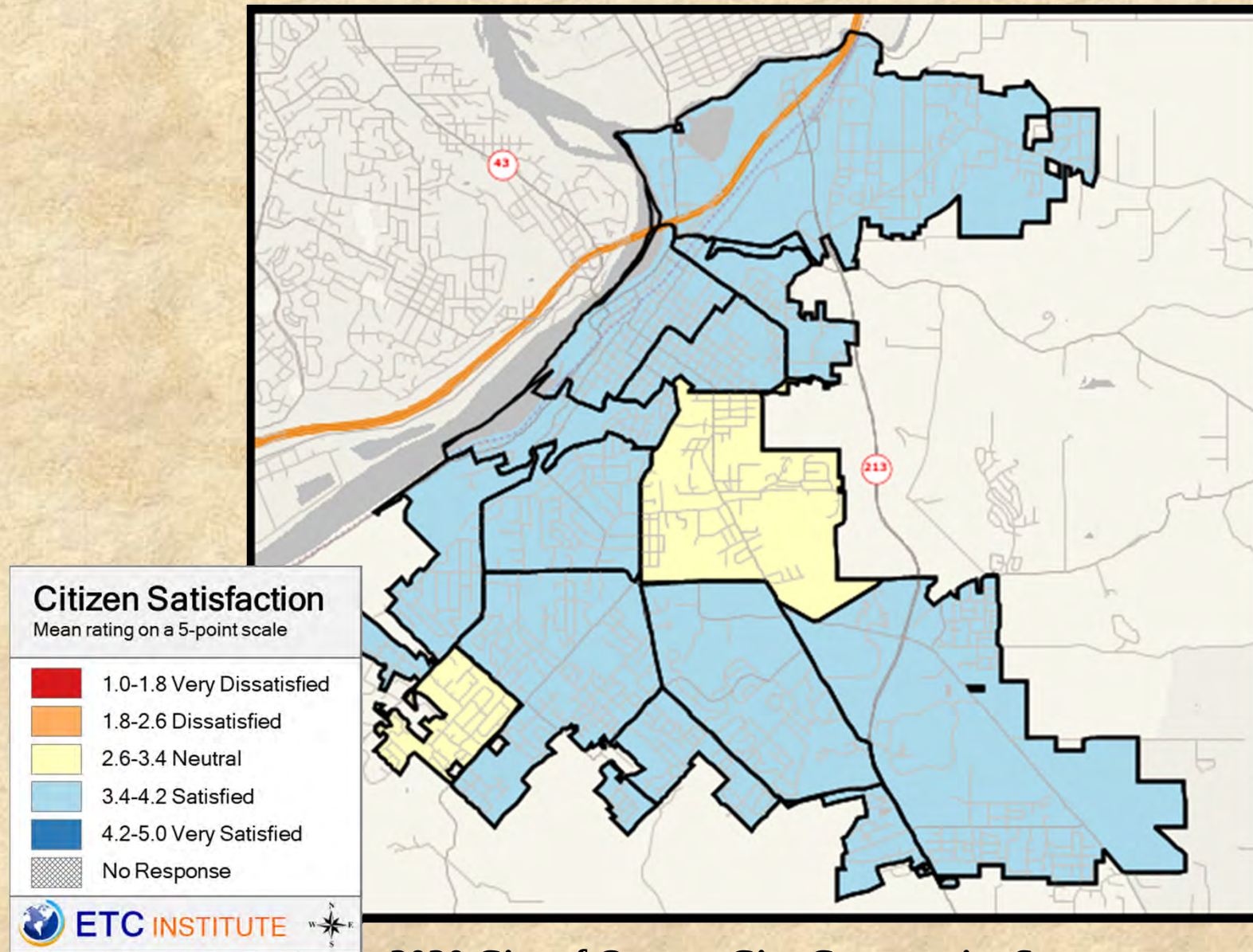
Q1-2. Overall quality of the city's recreation programs



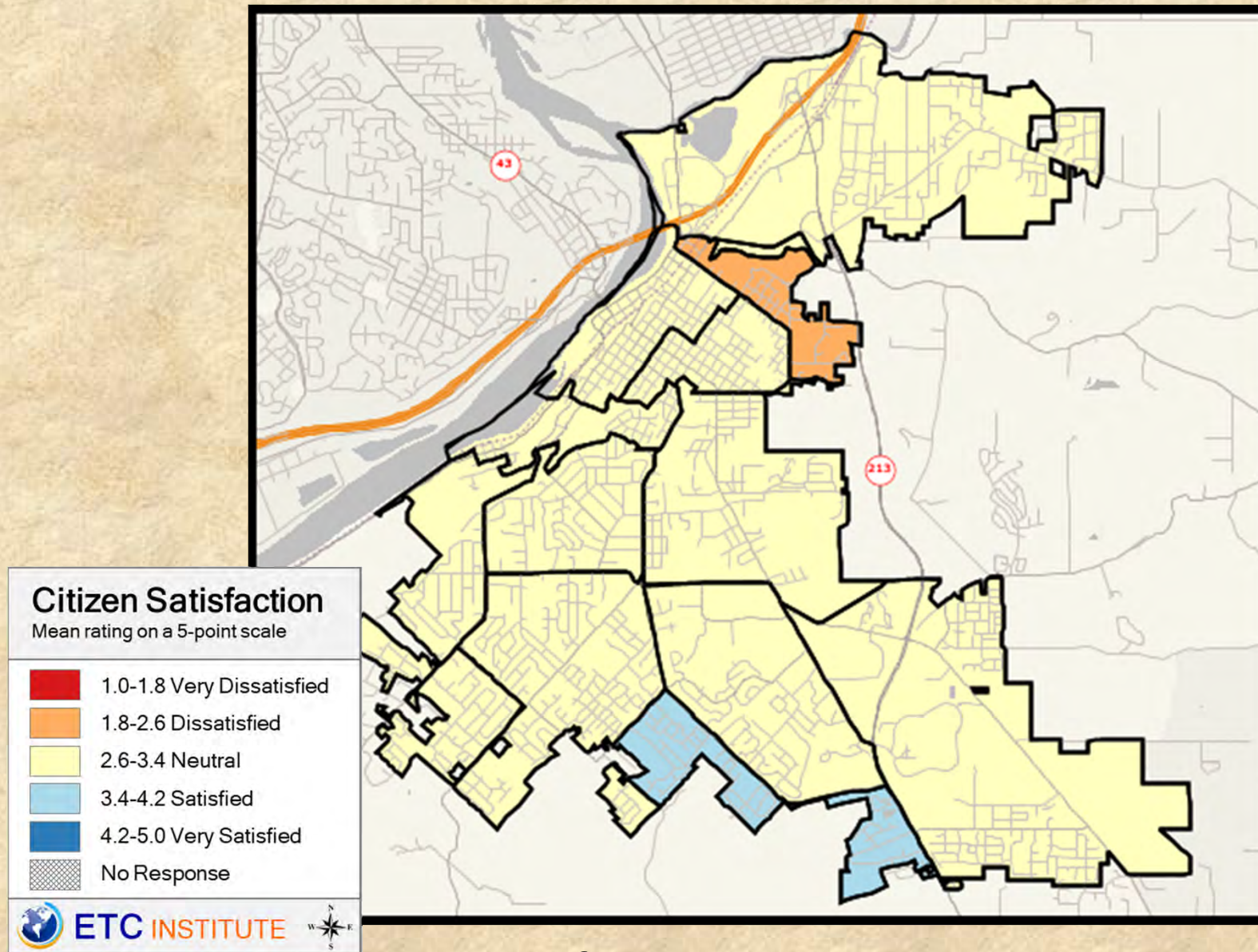
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q1-3. Overall quality of city parks/trails/open space



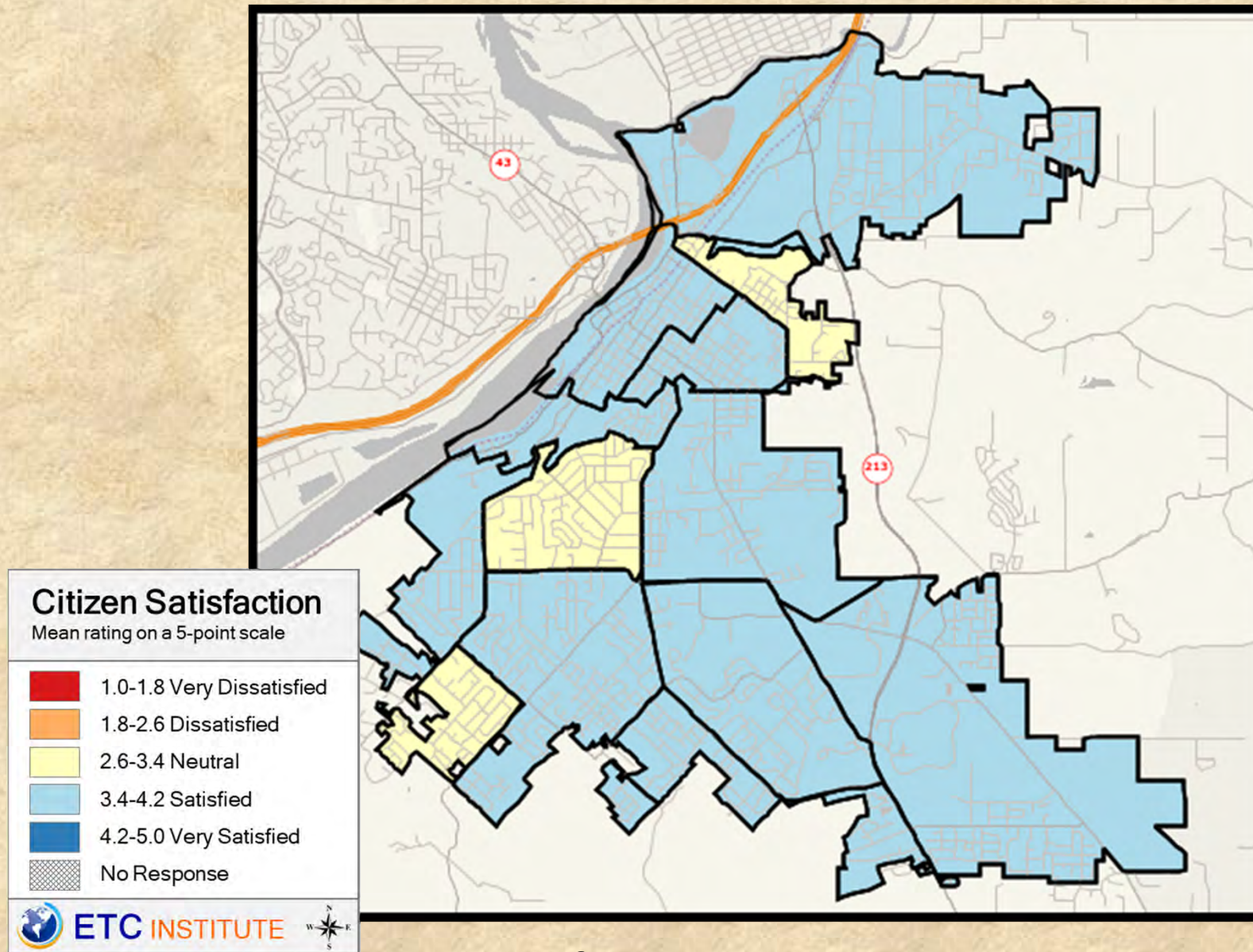
Q1-4. Overall maintenance of city streets



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

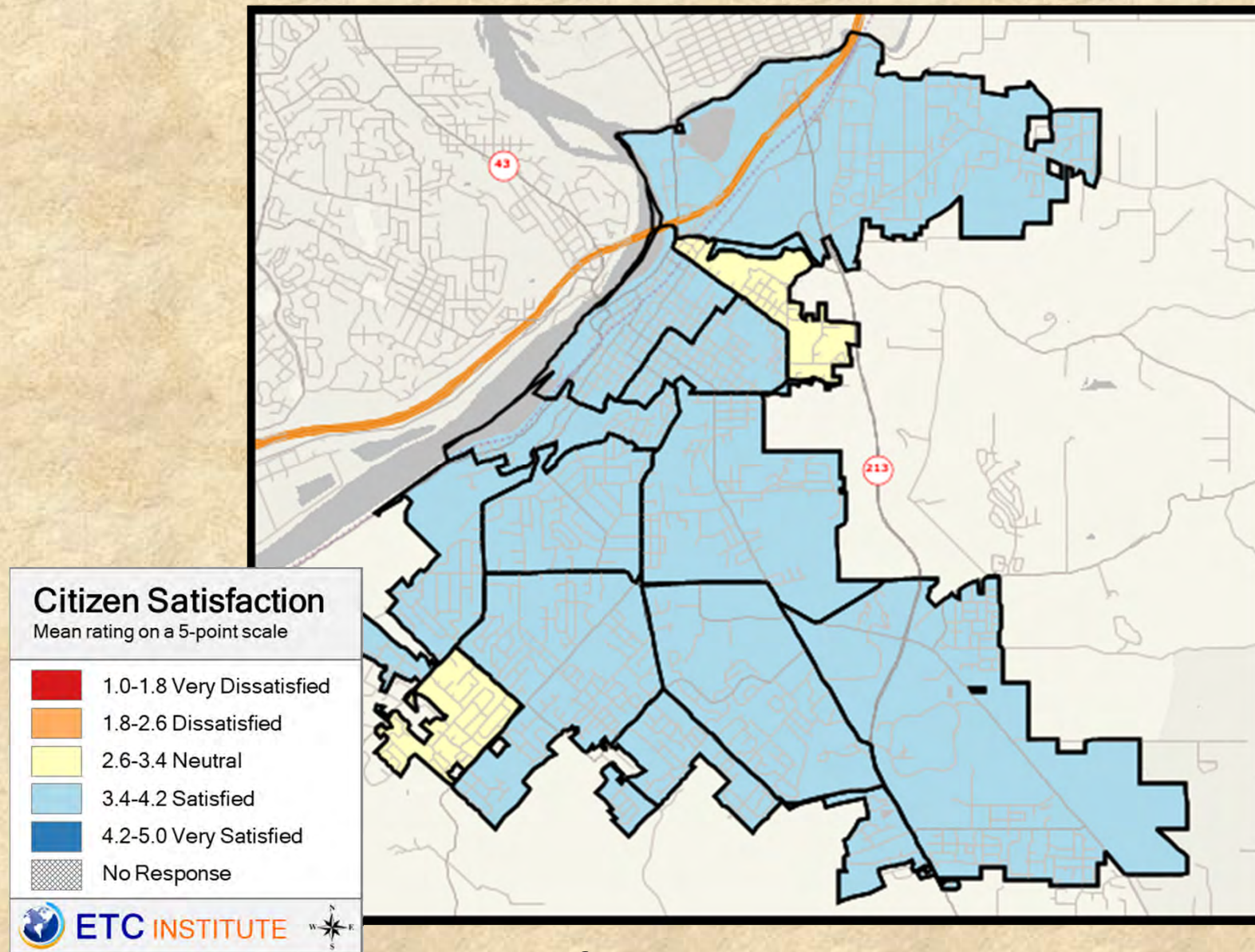
Q1-5. Overall quality of city water utilities



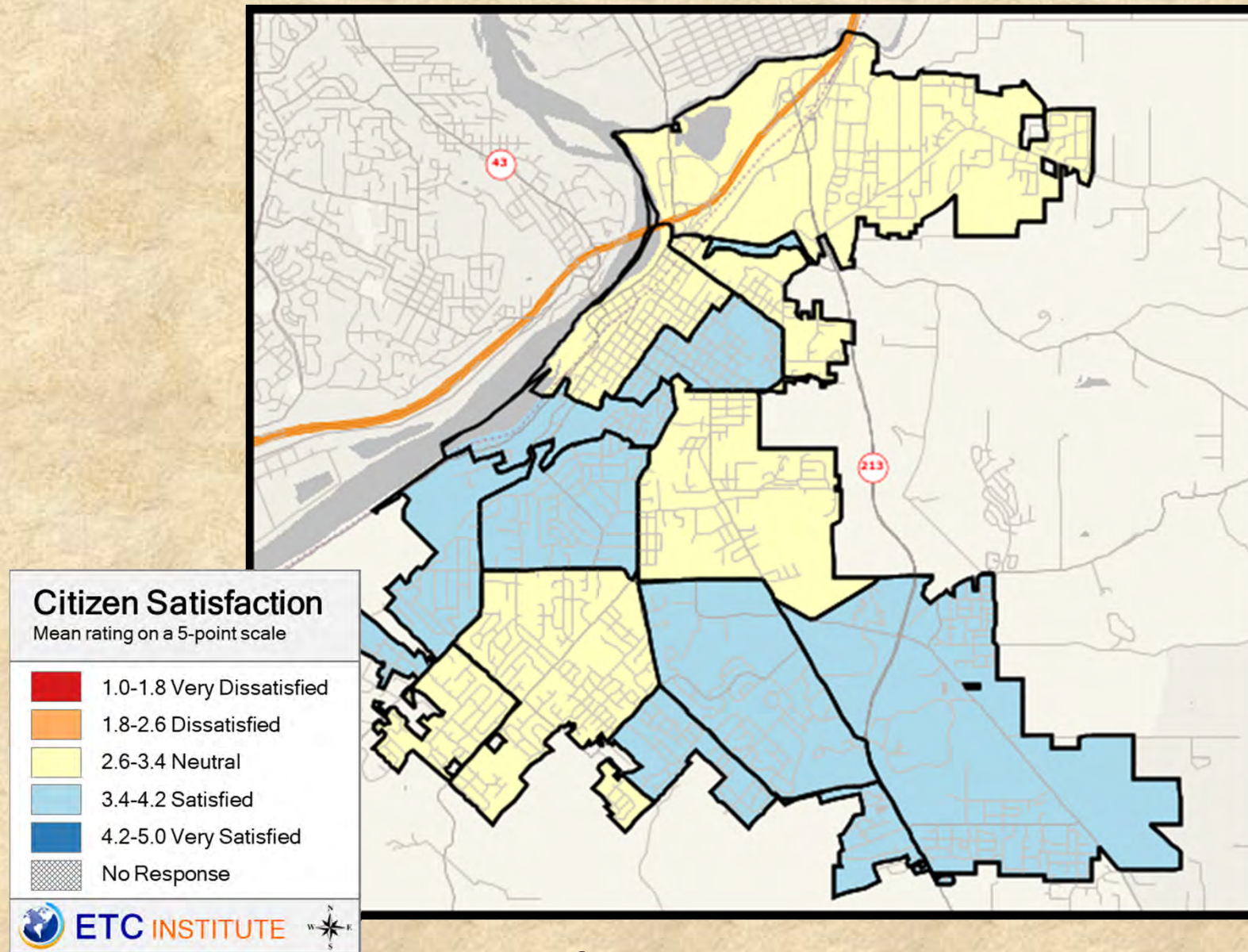
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q1-6. Overall quality of city sewer services



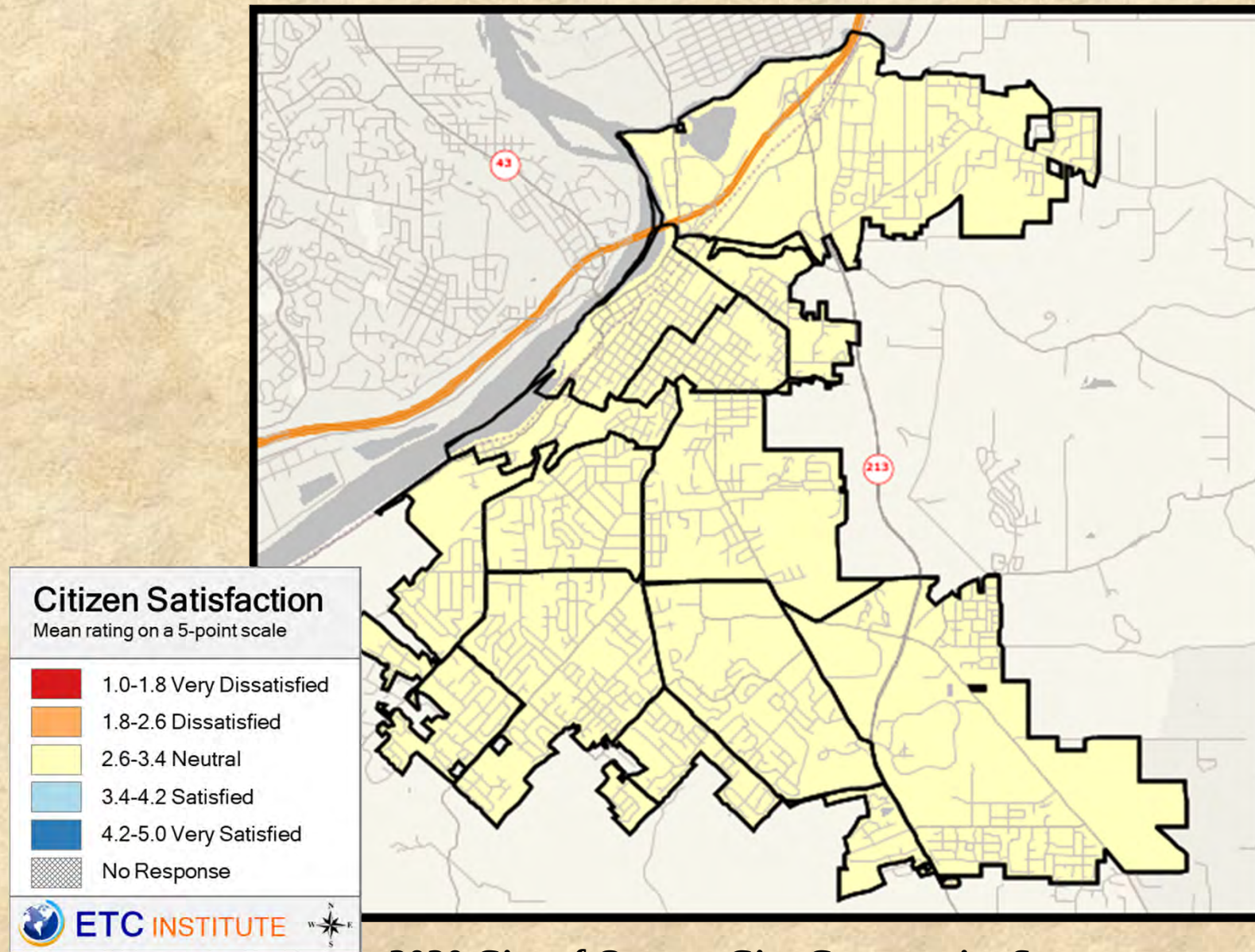
Q1-7. Overall quality of Municipal Court Services



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

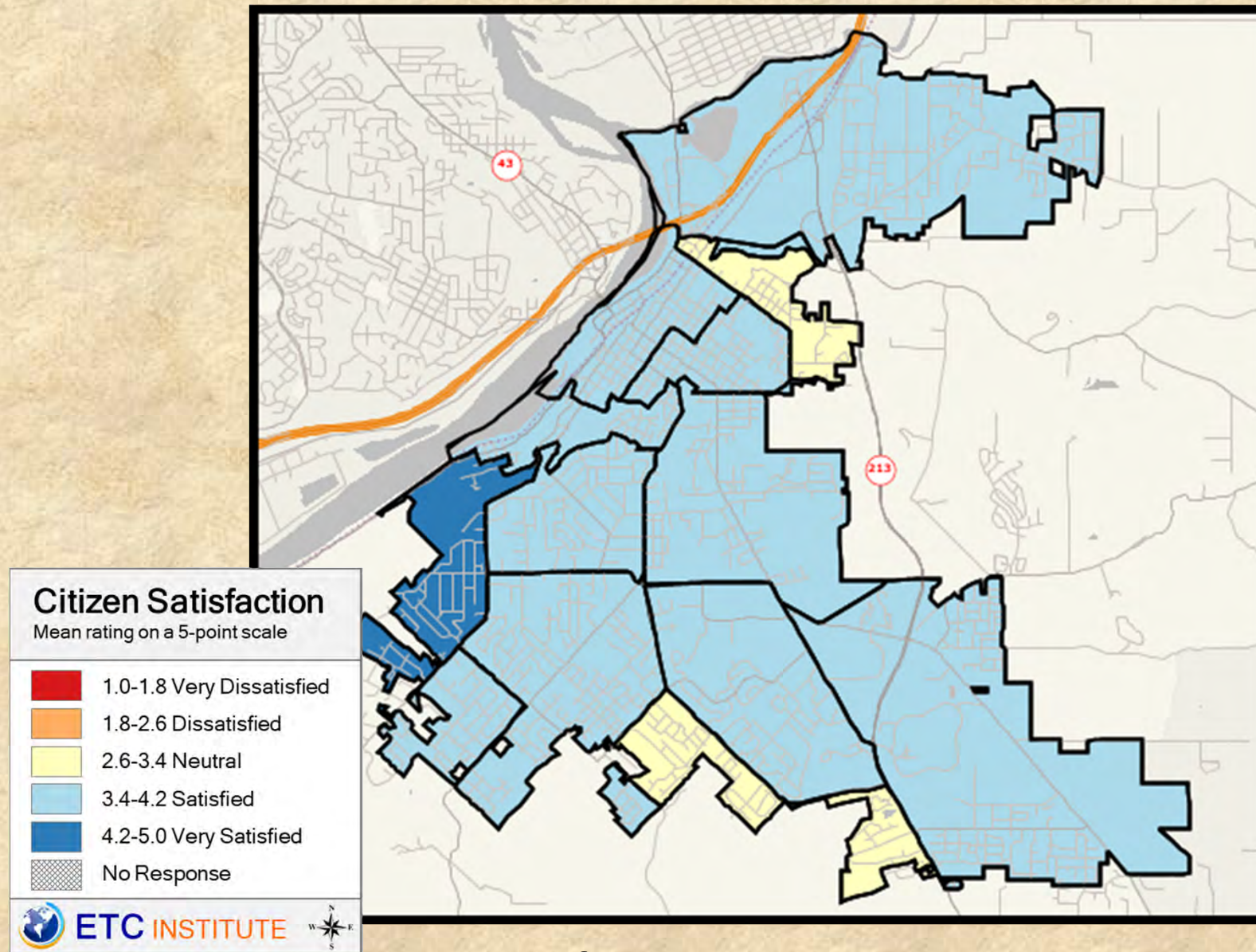
Q1-8. Overall enforcement of city codes and ordinances



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

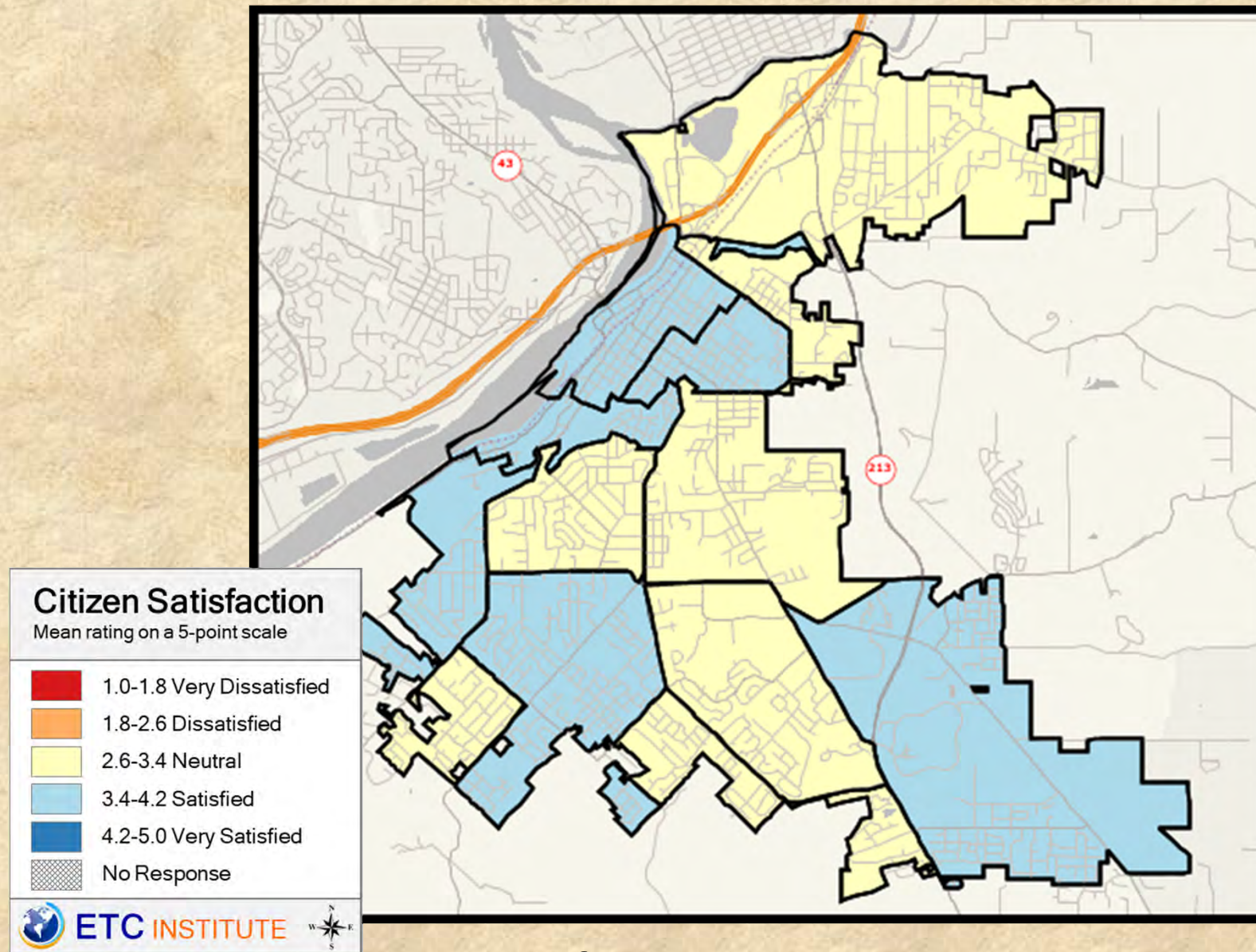
Q1-9. Overall quality of customer service you receive from city employees



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

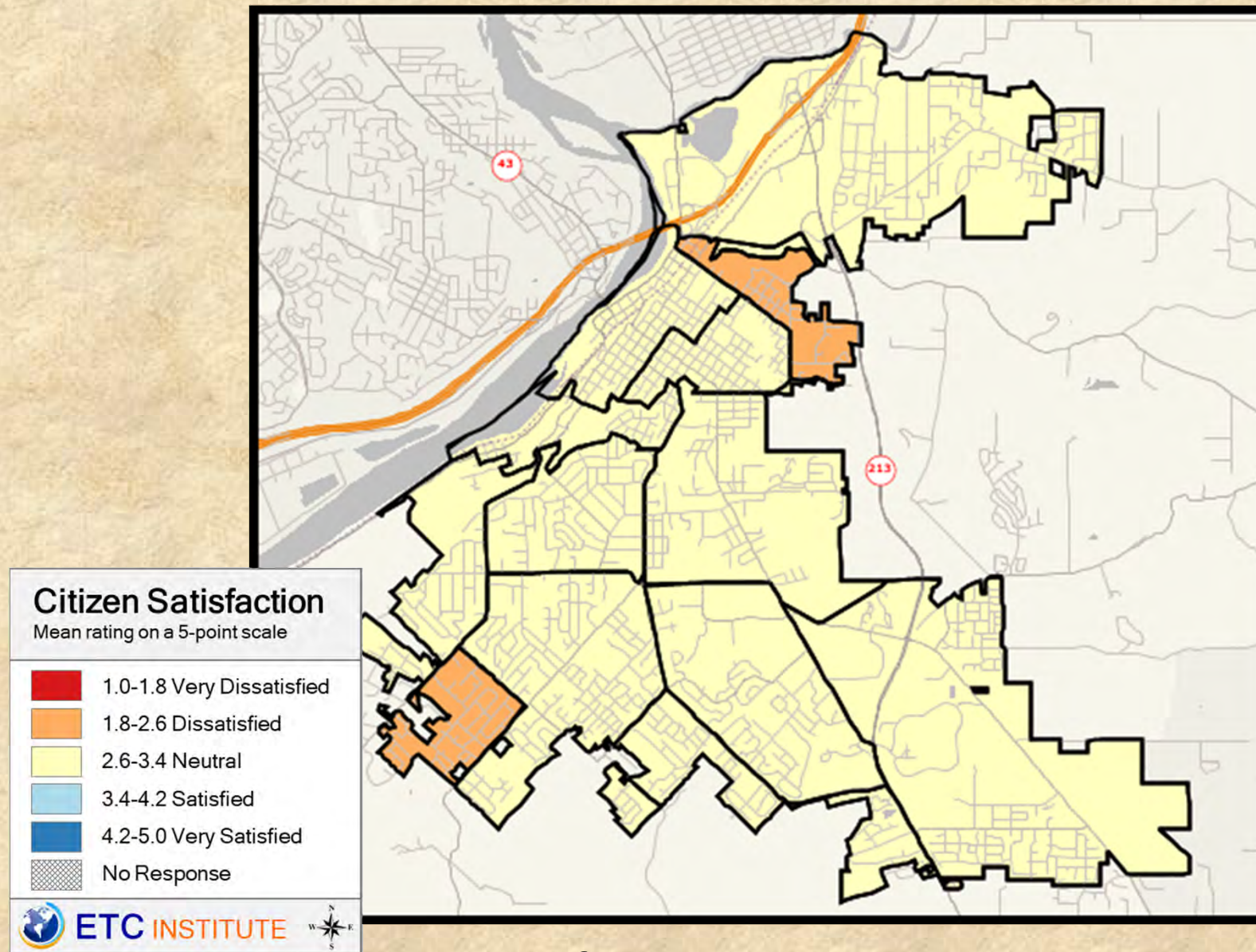
Q1-10. Overall effectiveness of city communication with the public



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

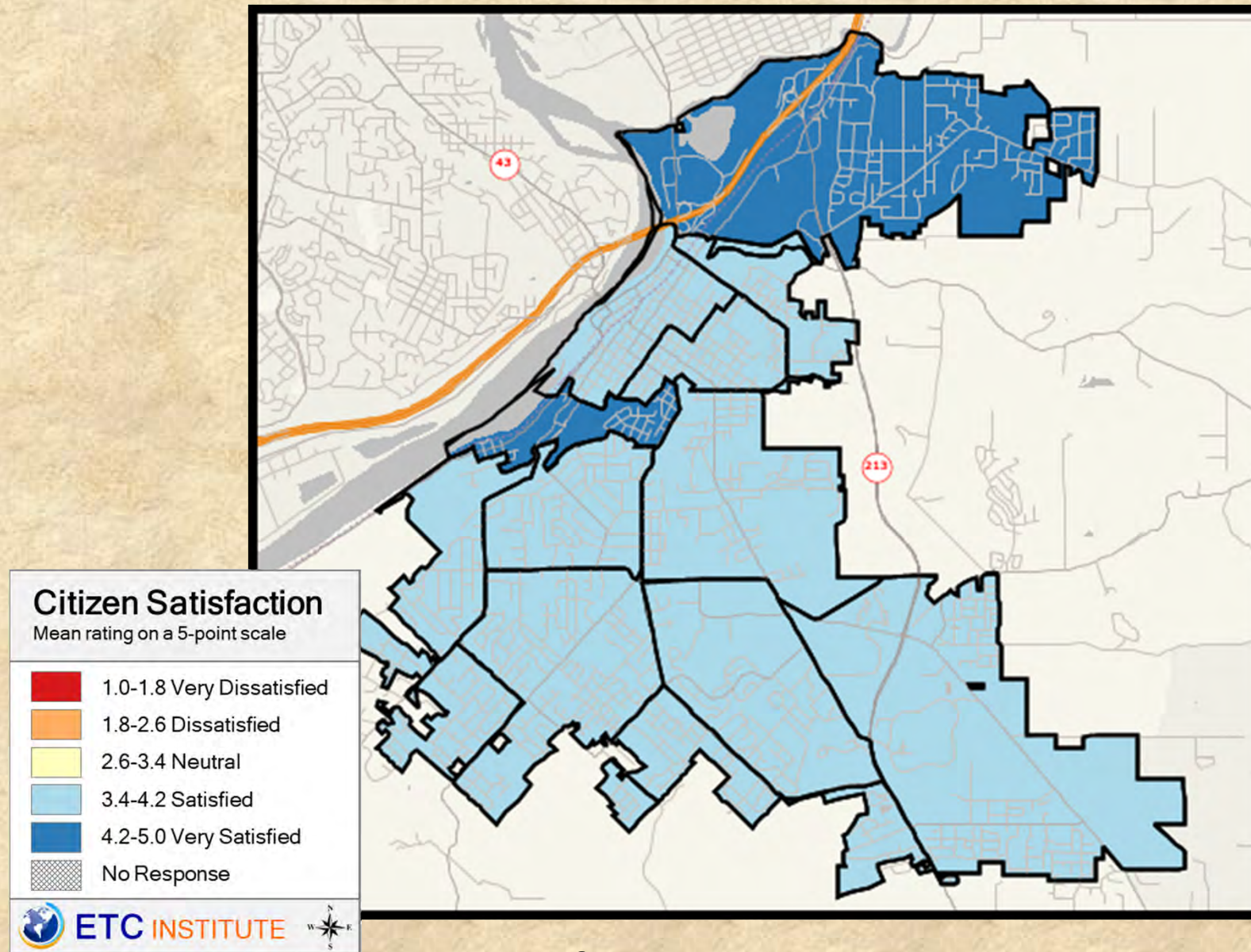
Q1-11. Overall effectiveness of city economic development efforts



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

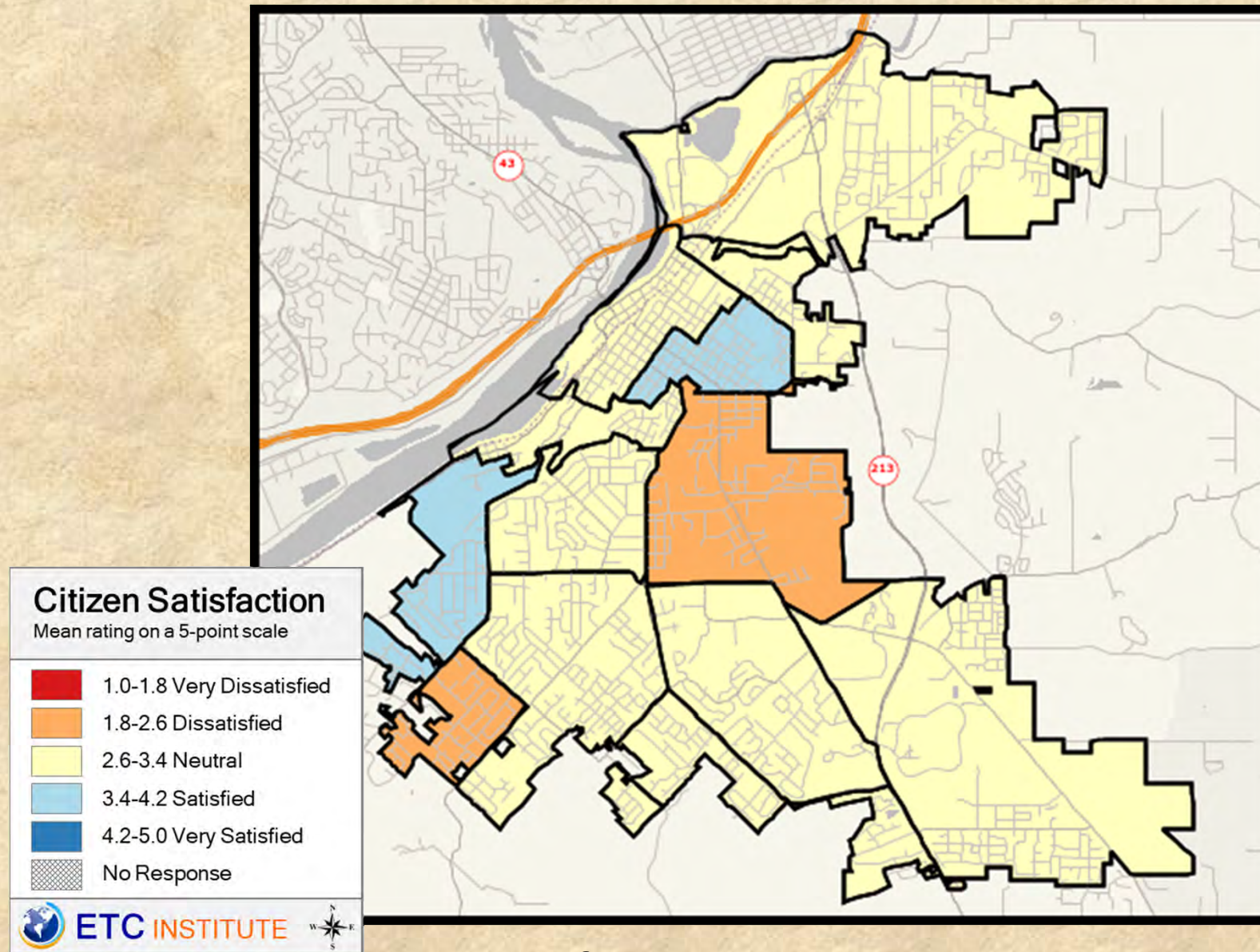
Q1-12. Overall quality of the city's public library services



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

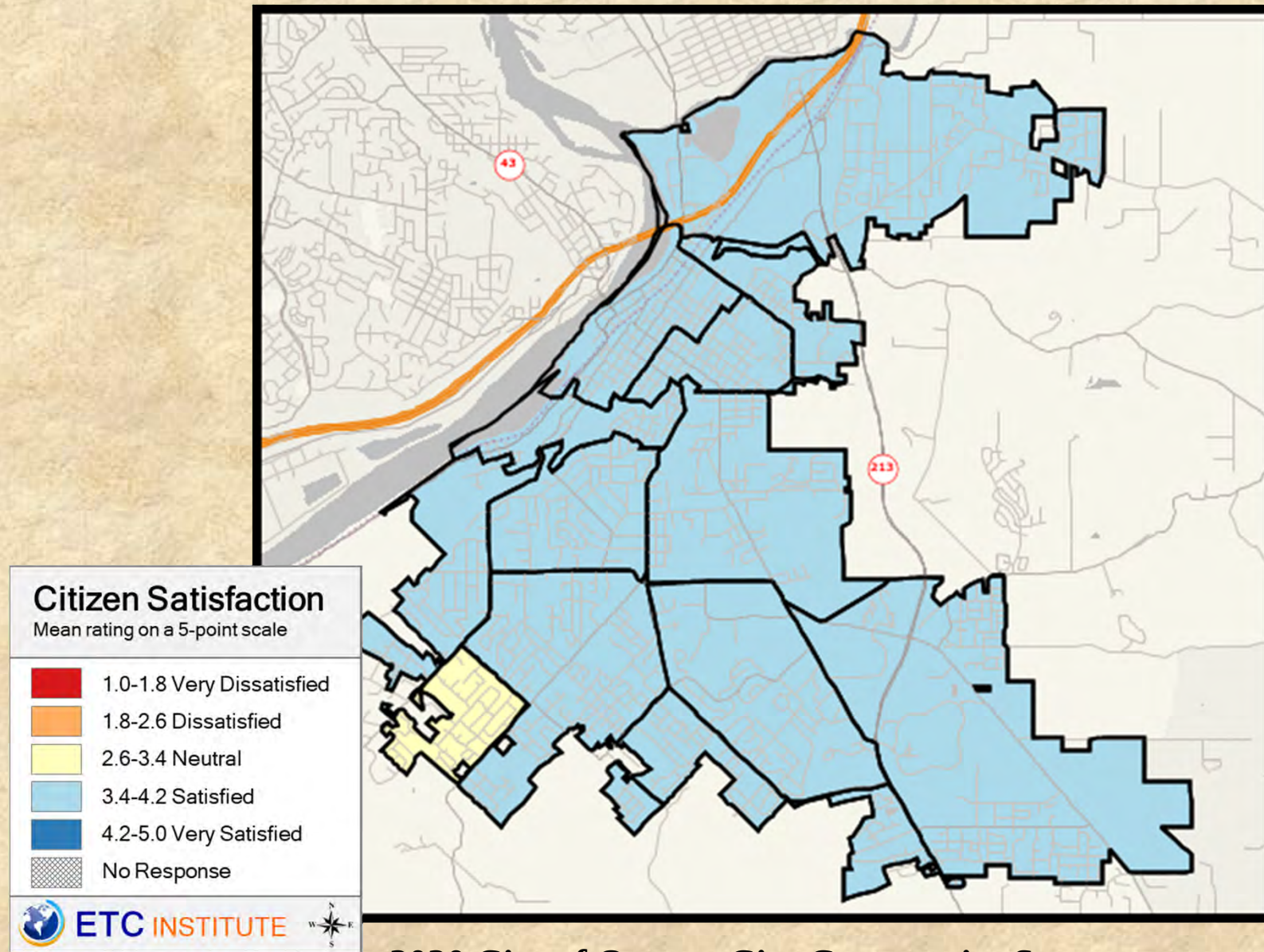
Q1-13. Overall quality of permit process



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

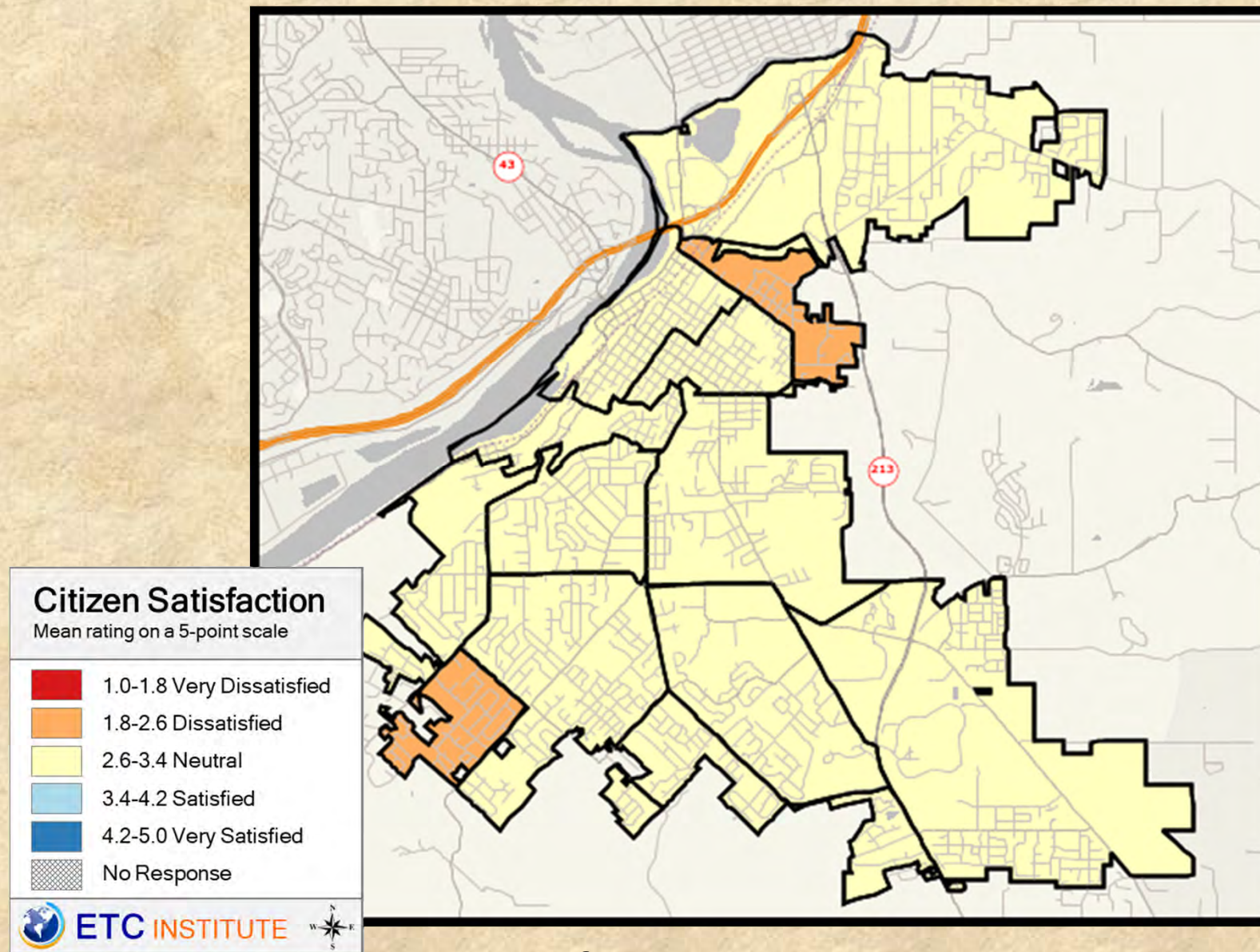
Q3-1. Overall quality of services provided by the City of Oregon City



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

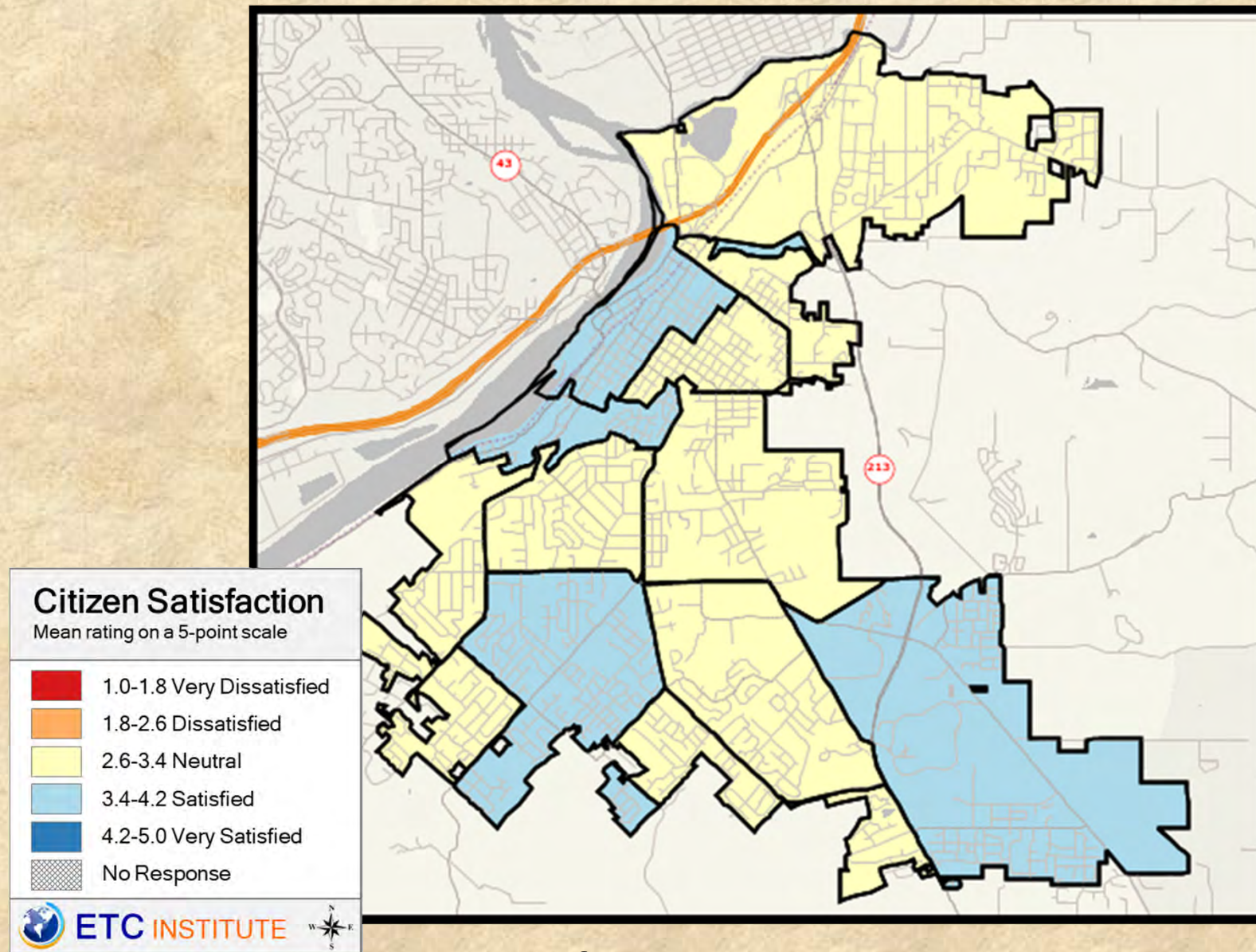
Q3-2. Overall value that you receive for your tax dollars and fees



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

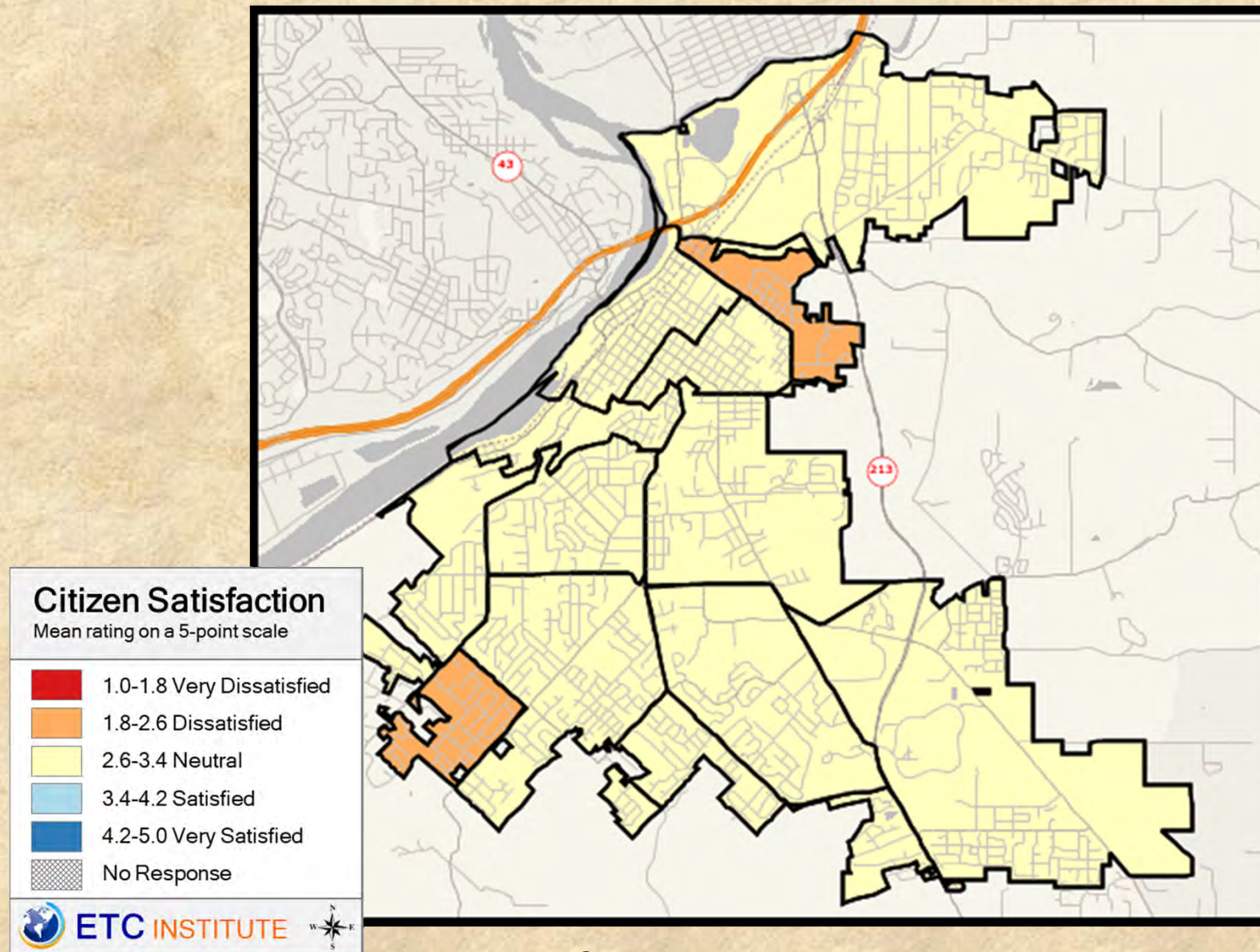
Q3-3. Overall image of the city



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

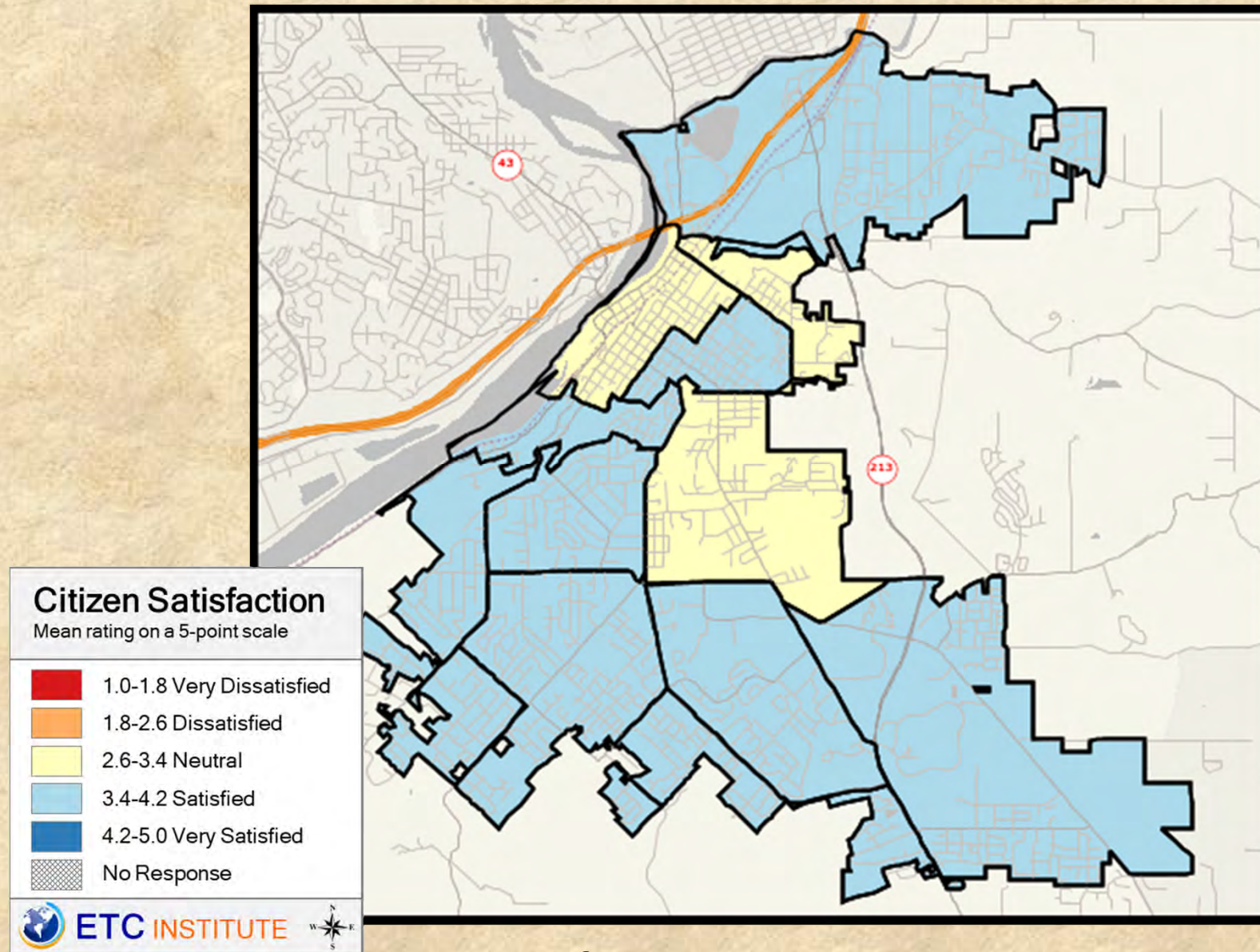
Q3-4. How well the city is supporting growth and development



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

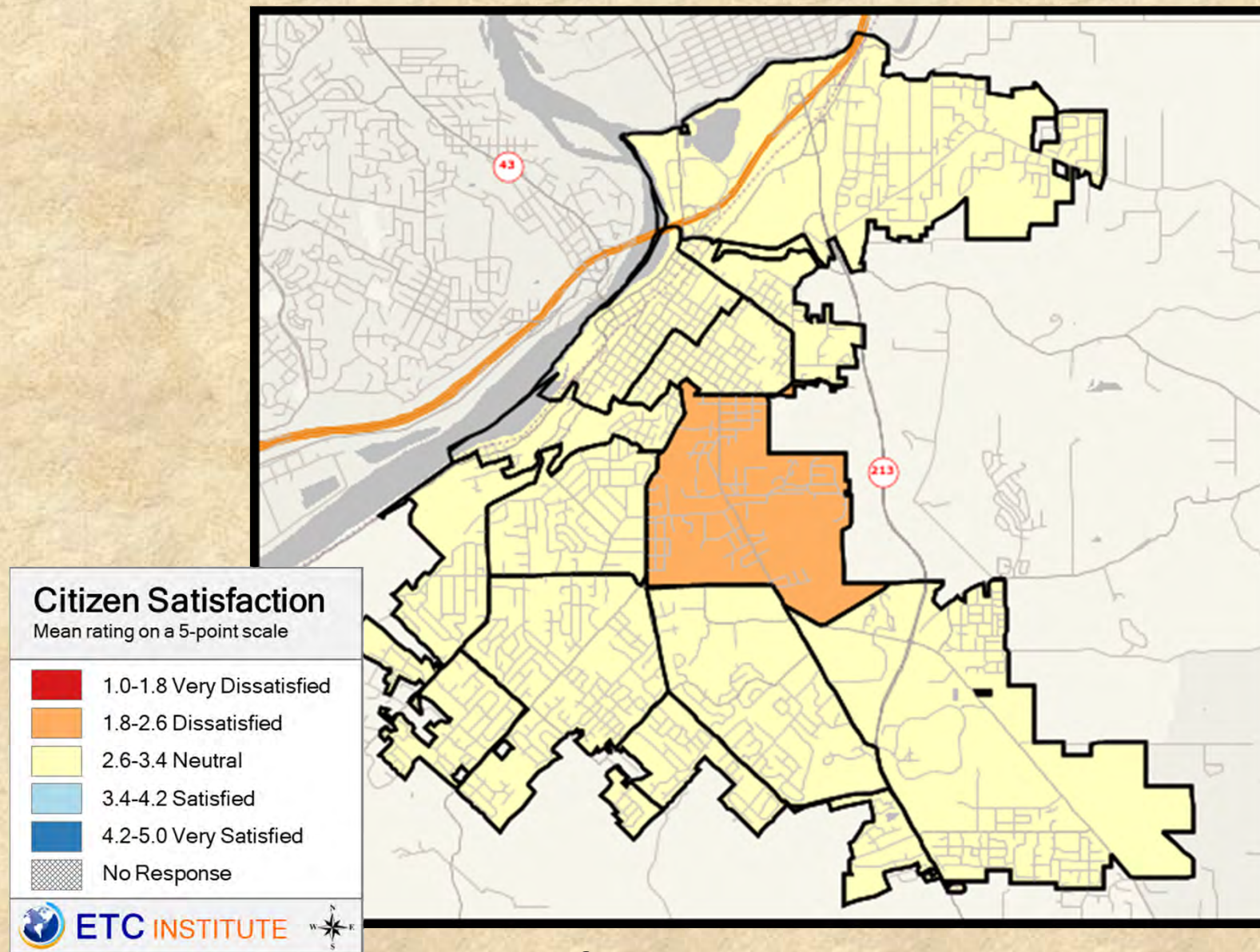
Q3-5. Overall feeling of safety in the city



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

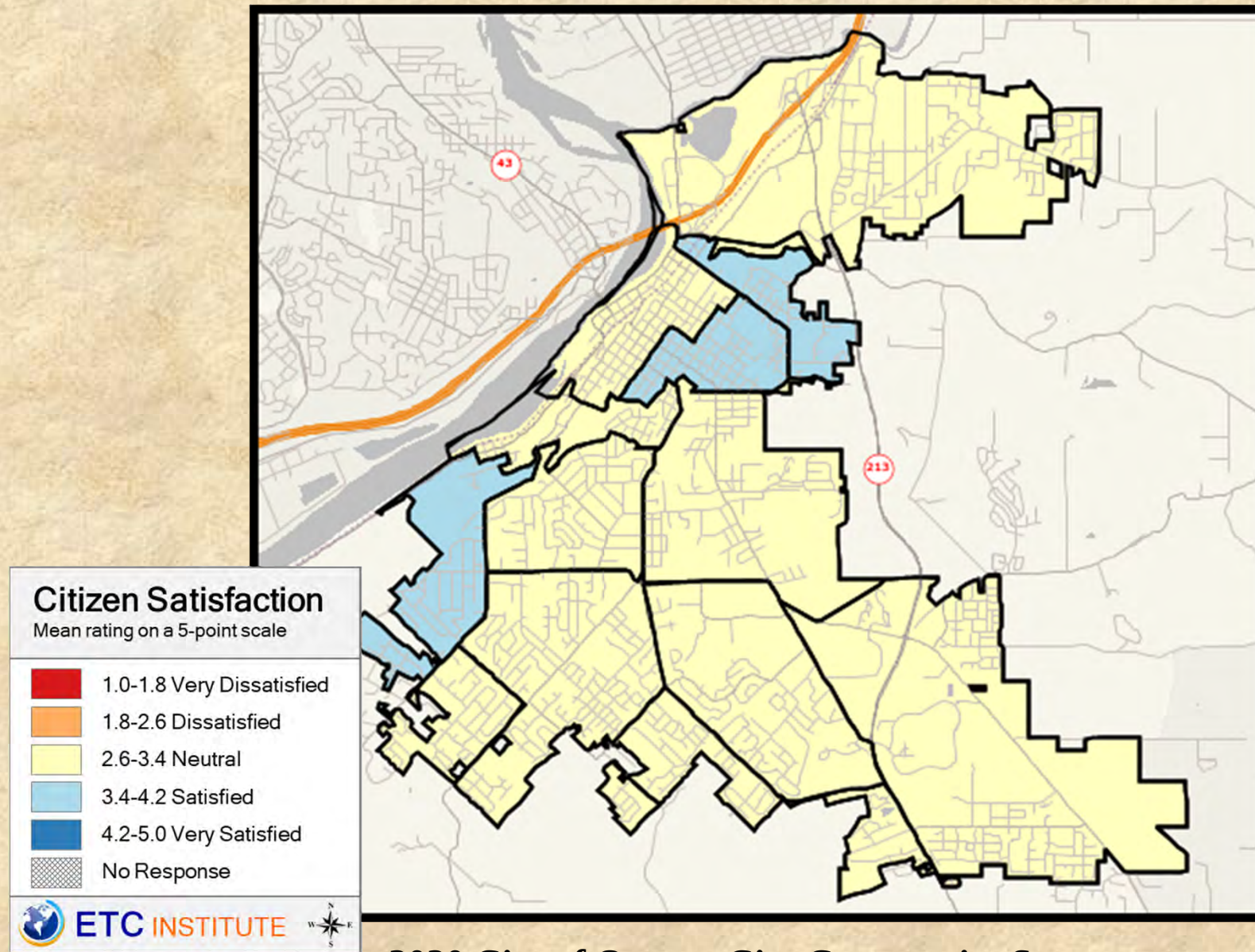
Q3-6. Availability of job opportunities



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

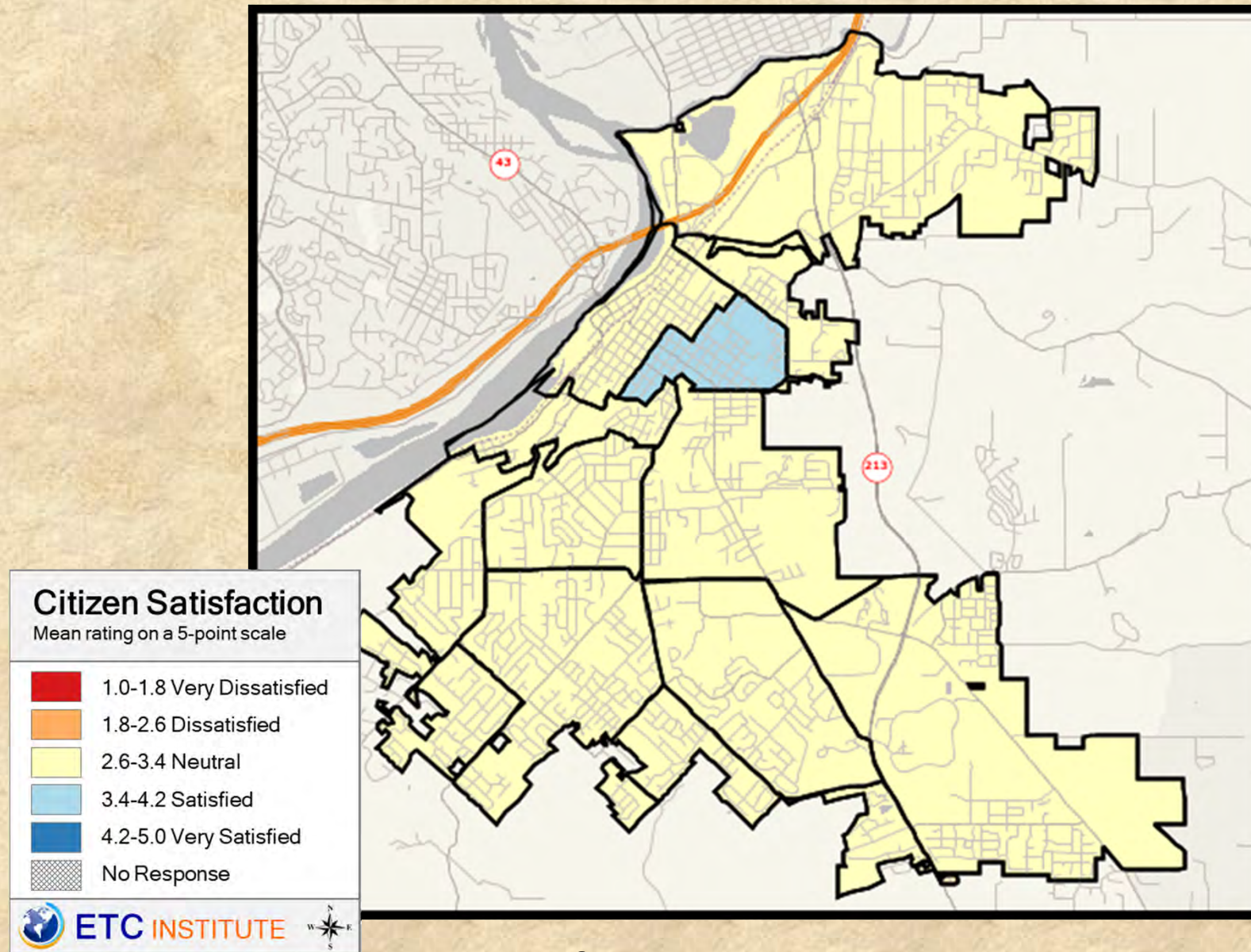
Q3-7. Availability of training or educational opportunities



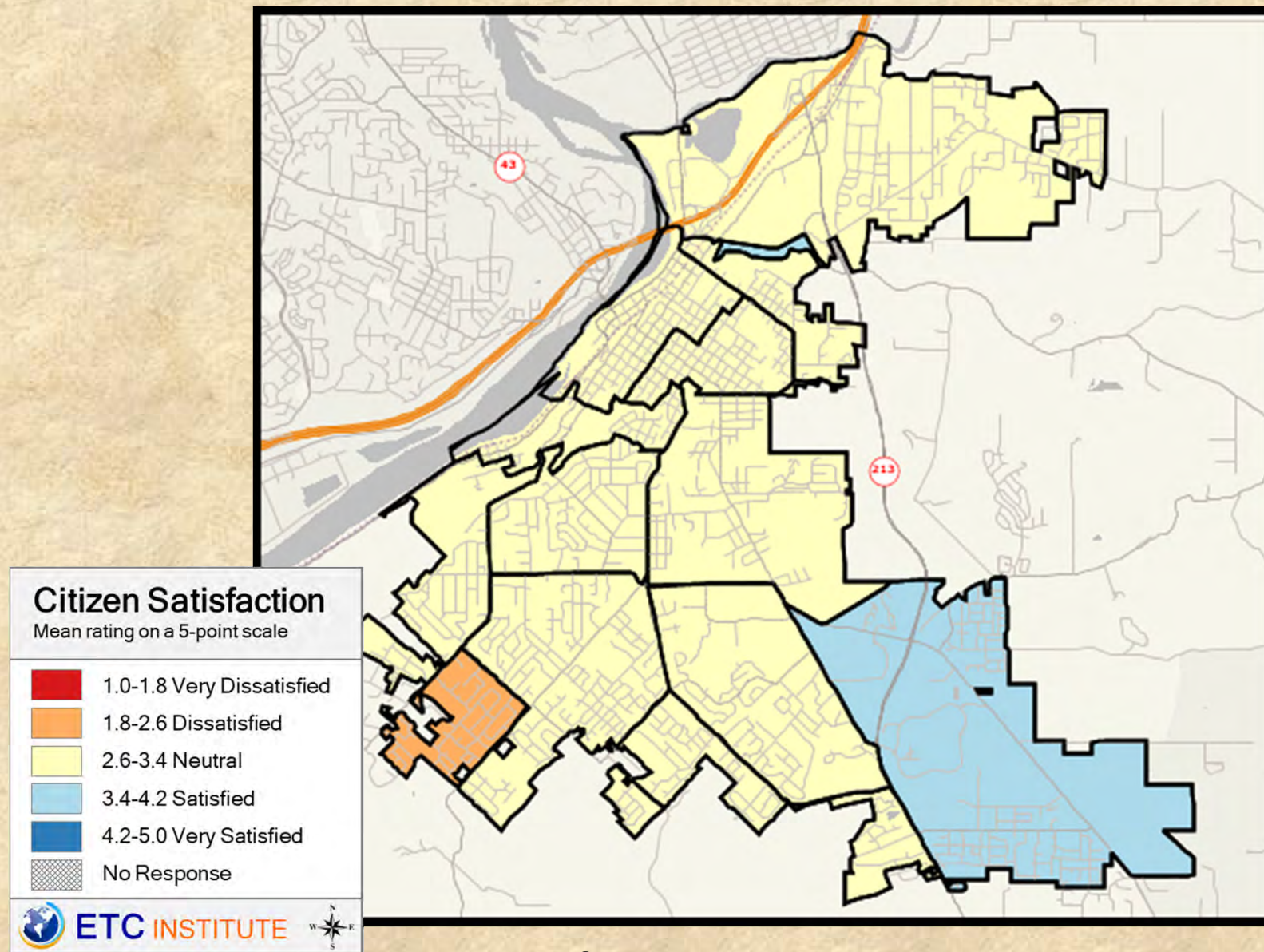
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q3-8. Overall quality of new development



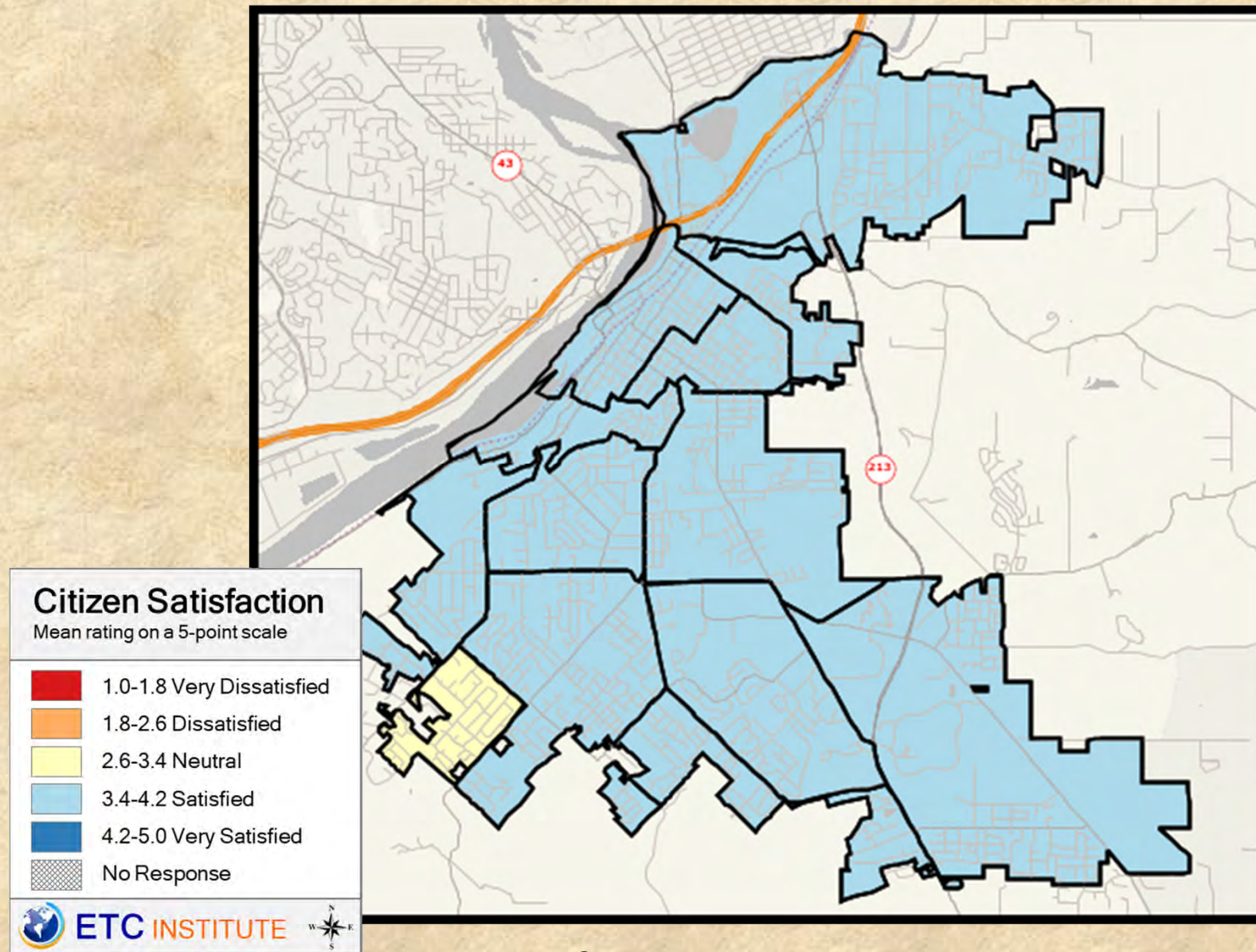
Q3-9. Overall development across the city



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

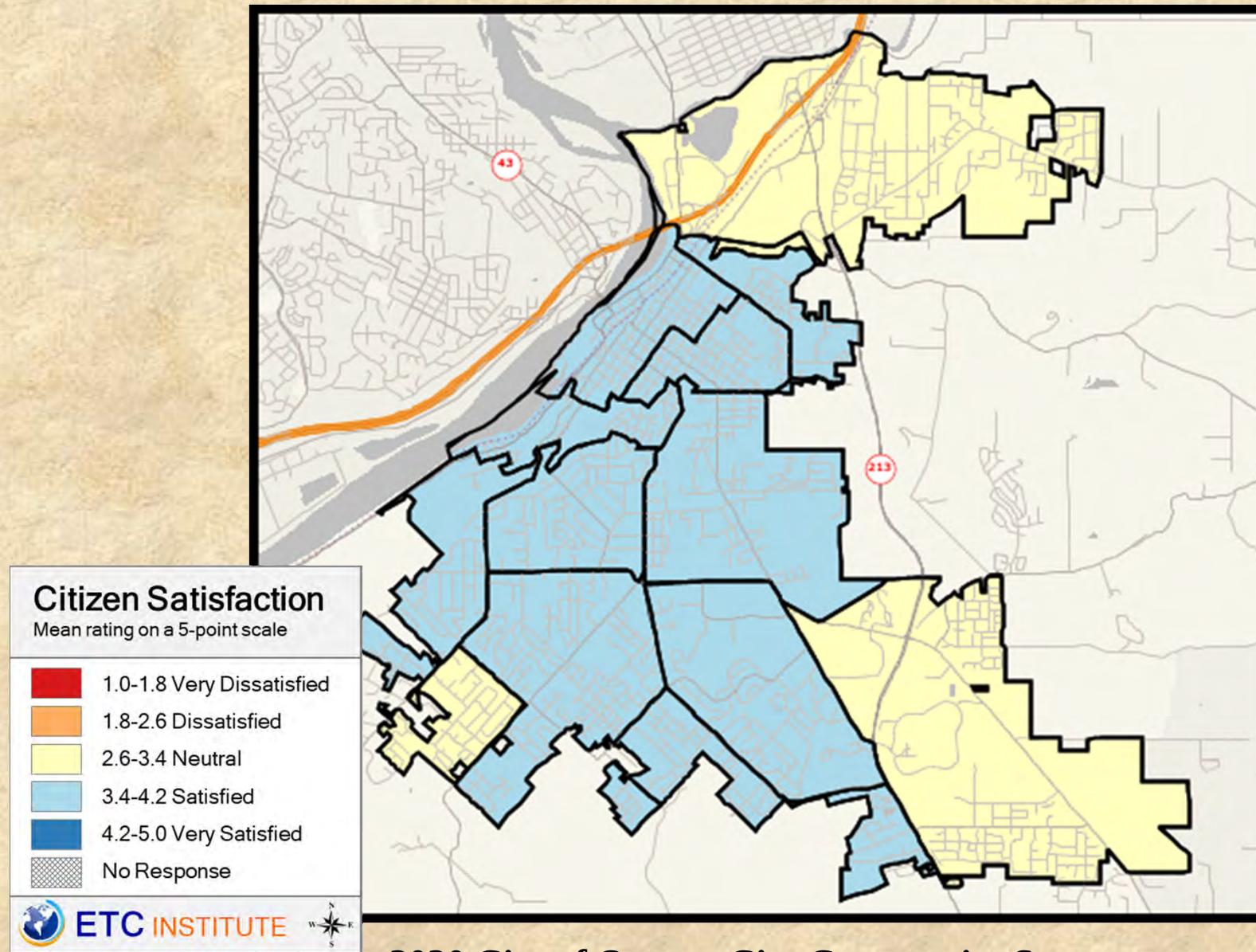
Q4-1. Quality of facilities (e.g. picnic shelters, playgrounds in city parks)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

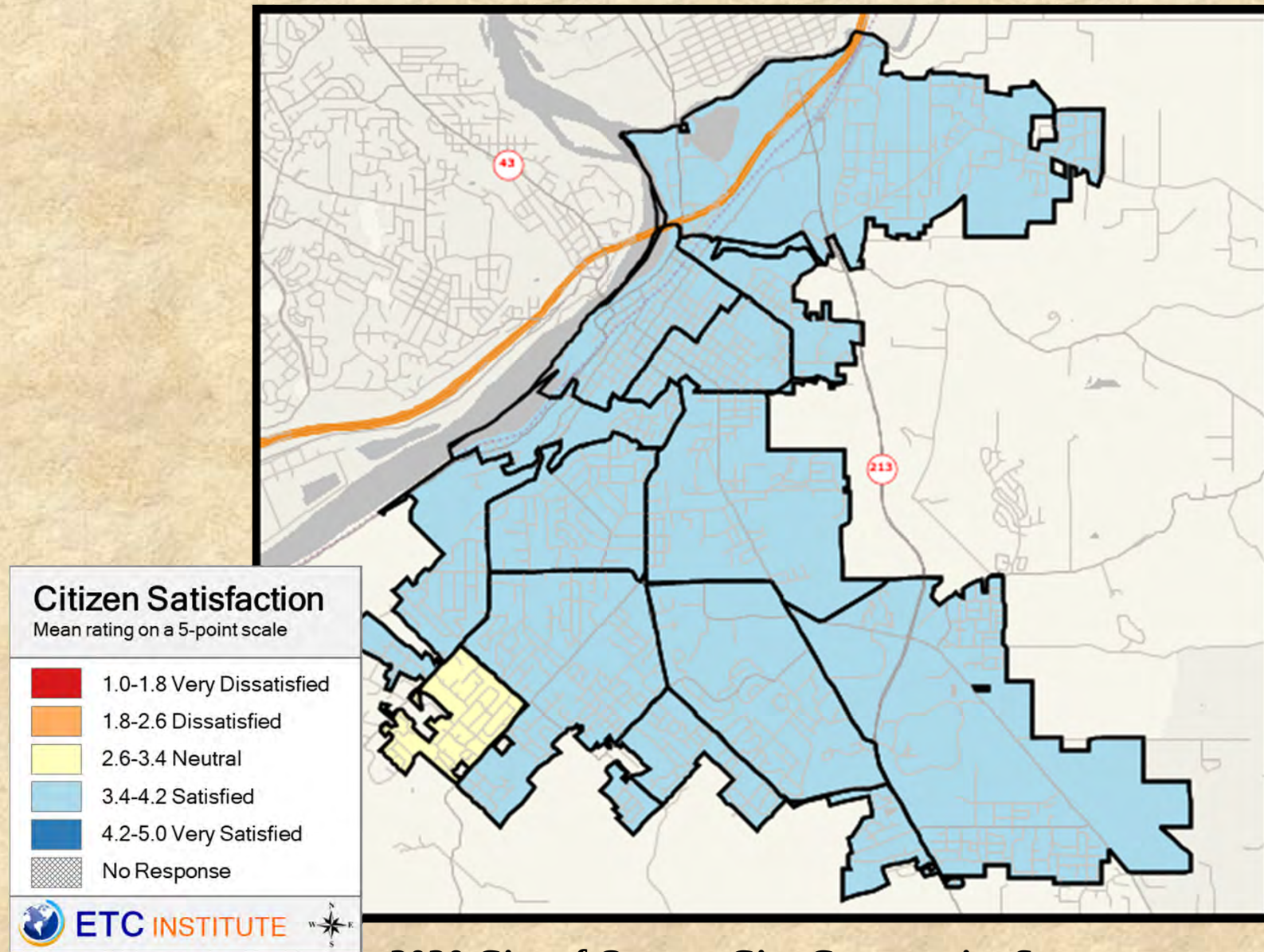
Q4-2. Quality of outdoor athletic fields (e.g. baseball, soccer, football)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

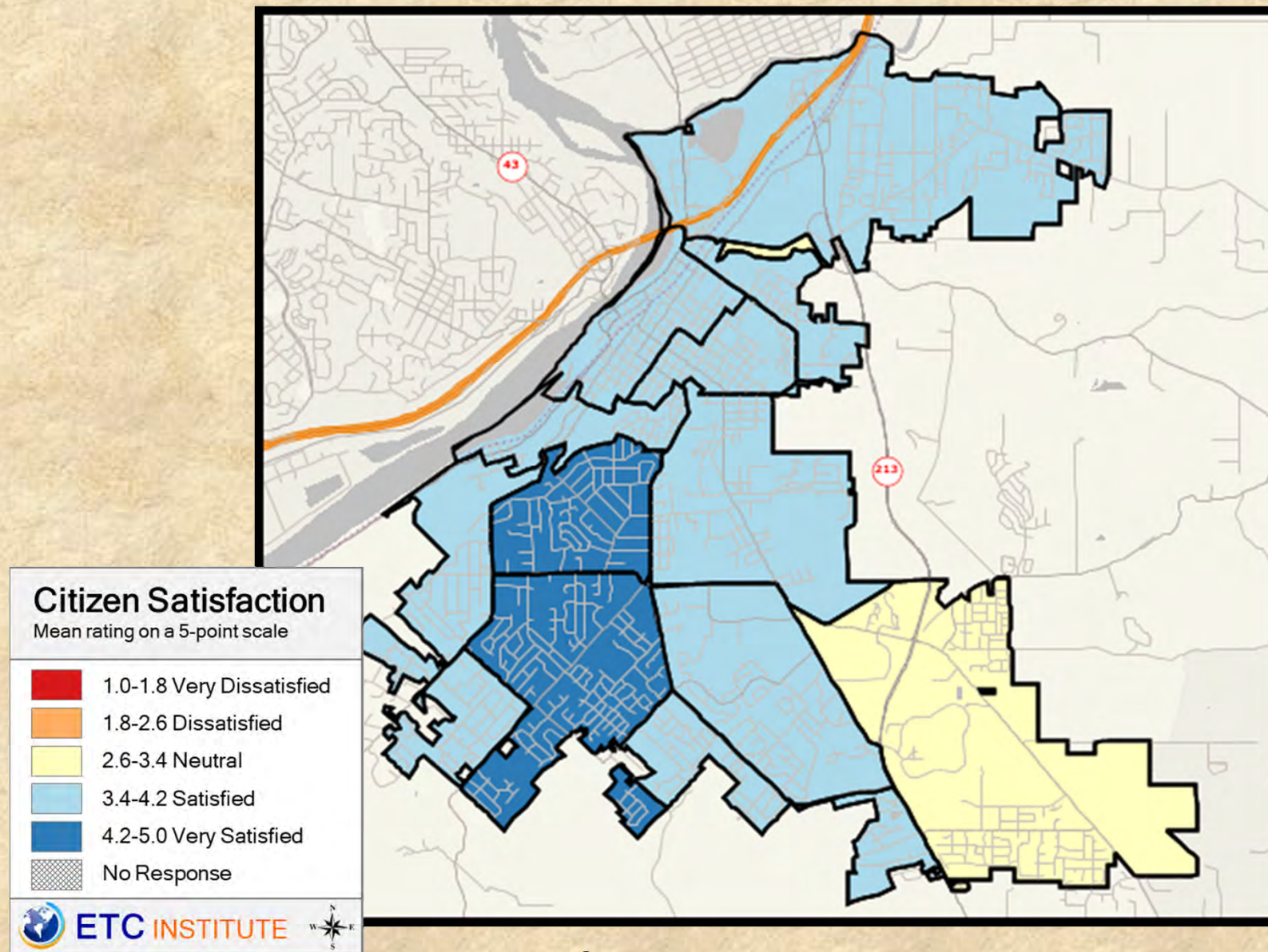
Q4-3. Appearance and maintenance of existing city parks



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

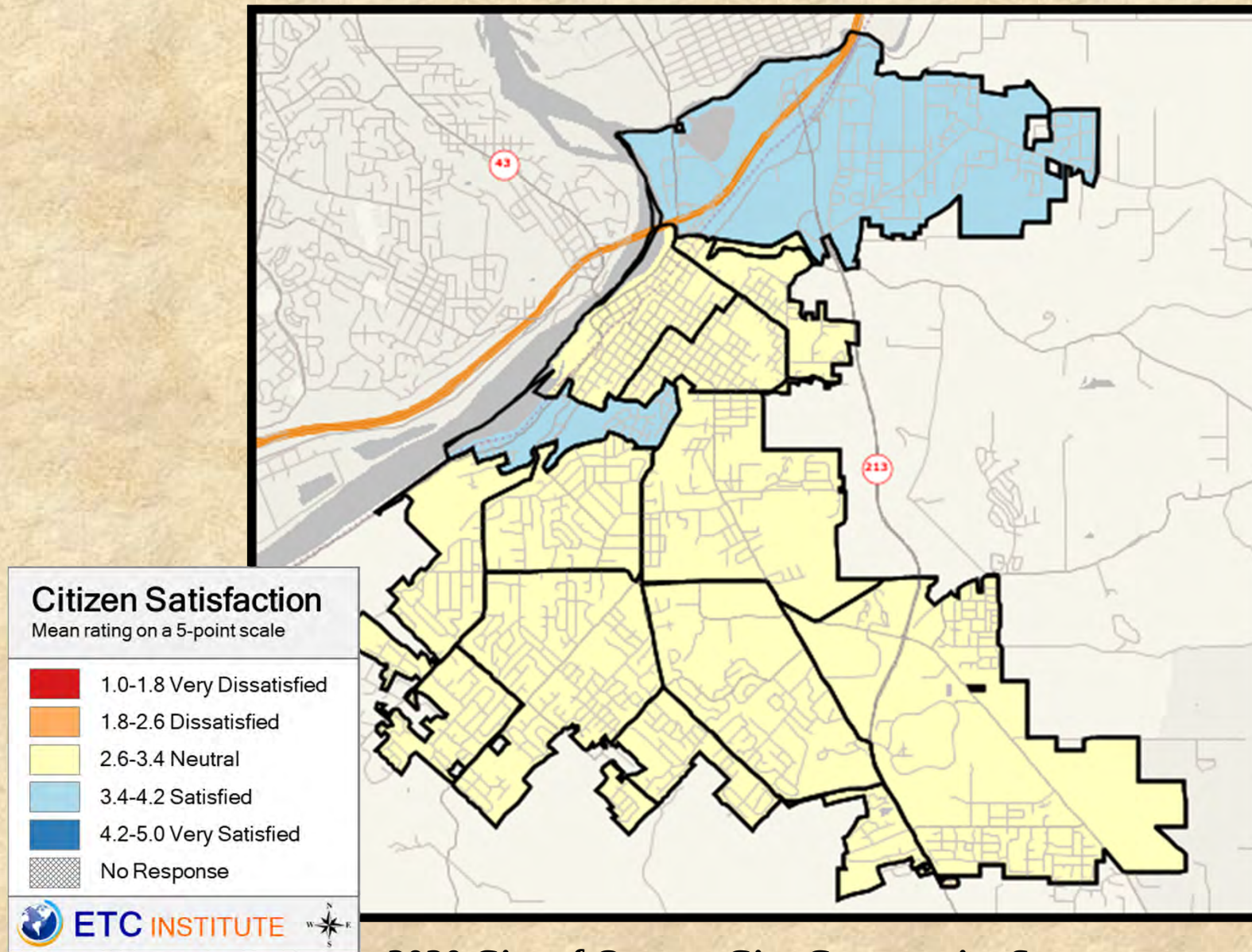
Q4-4. Proximity of parks to your home



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

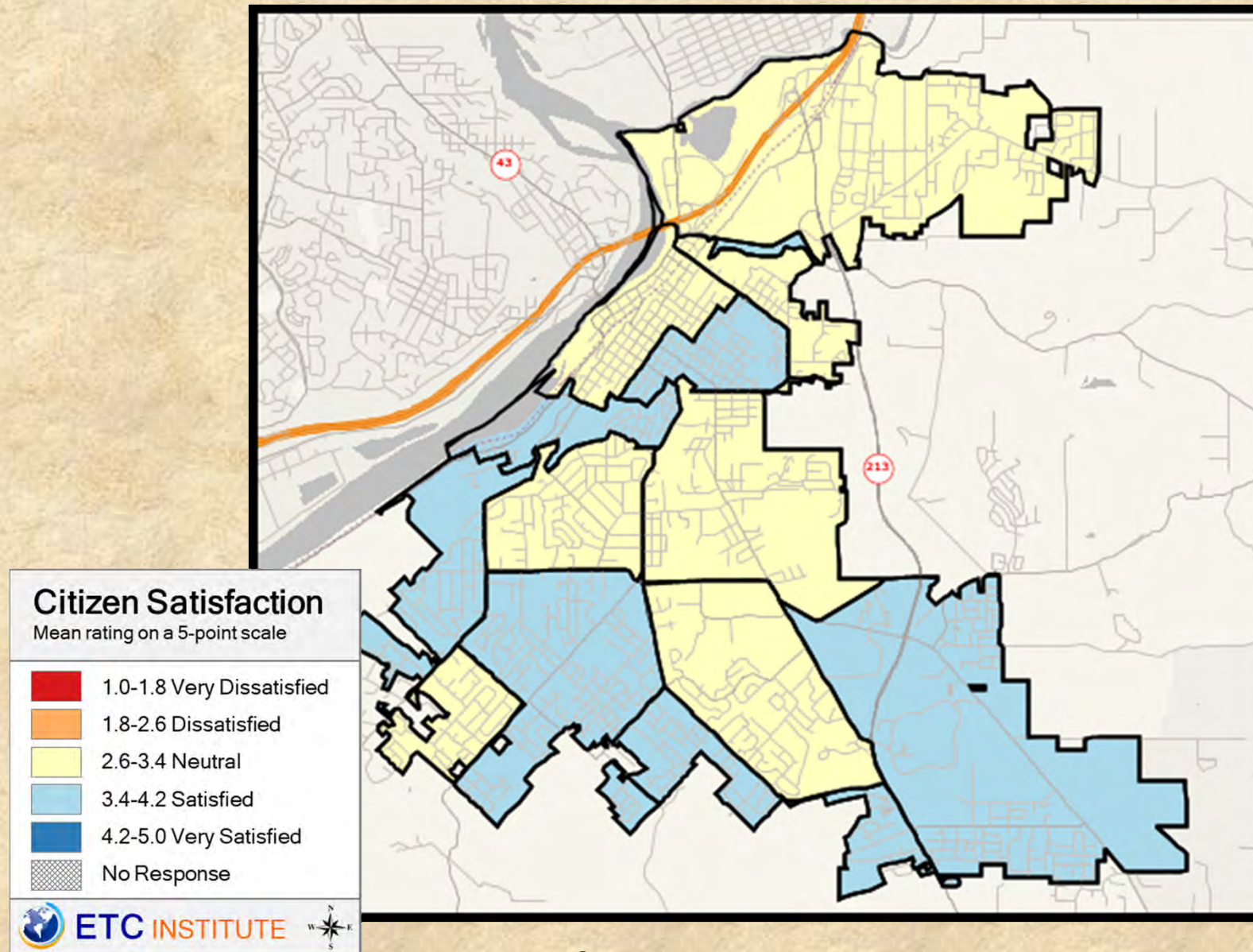
Q4-5. Quantity of city trails



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

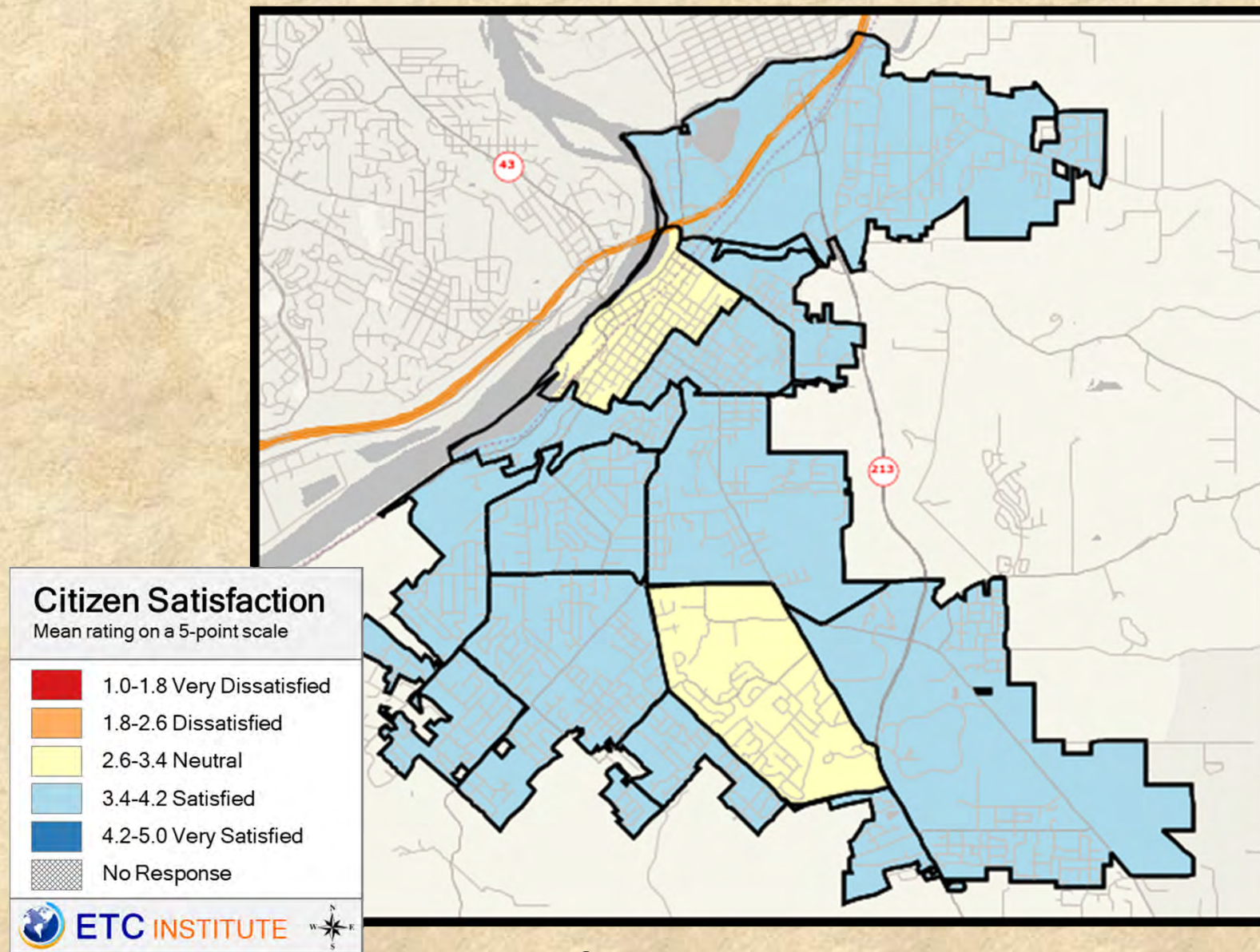
Q4-6. Access to city parks for persons with disabilities



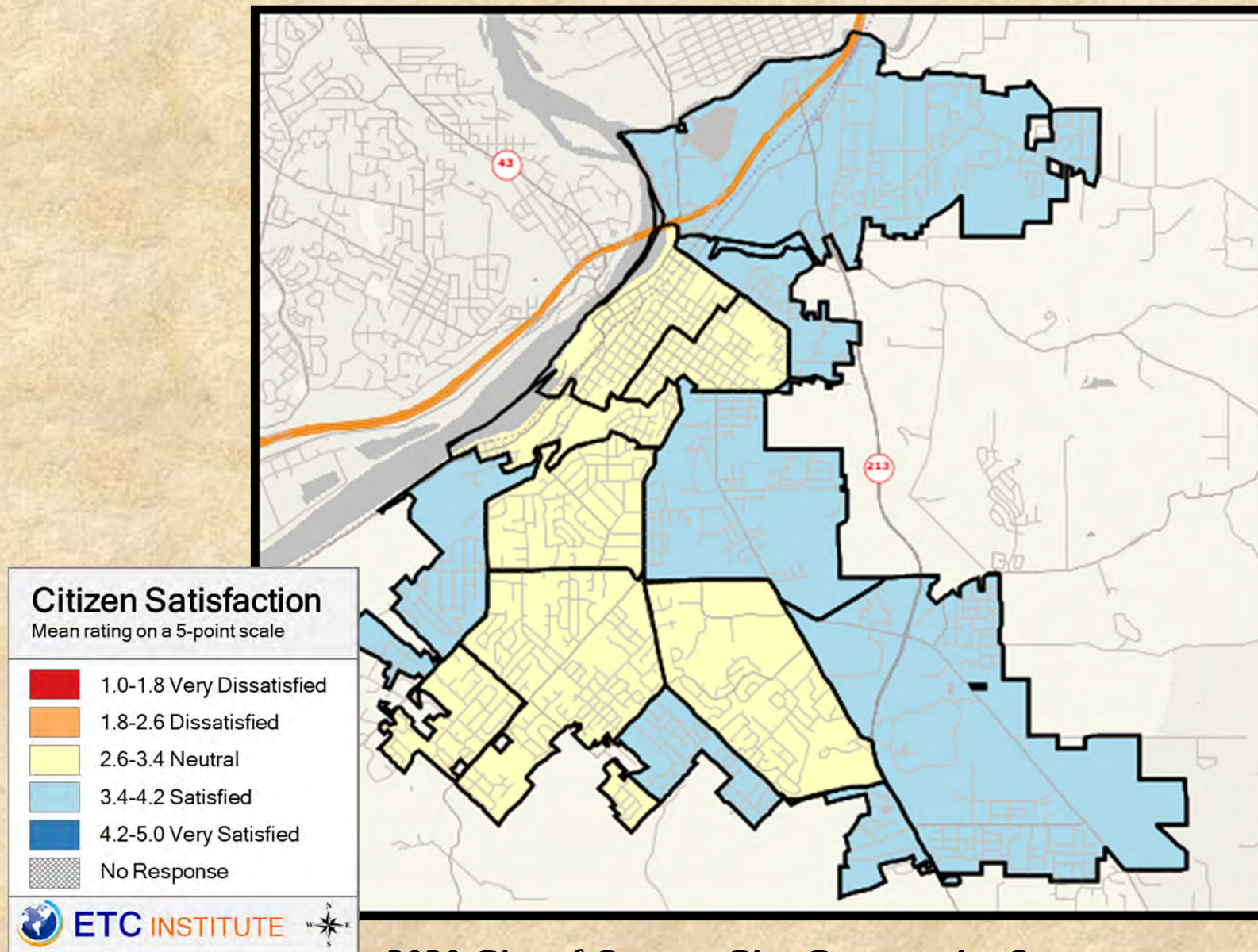
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q4-7. Quality of the Pioneer Community Center



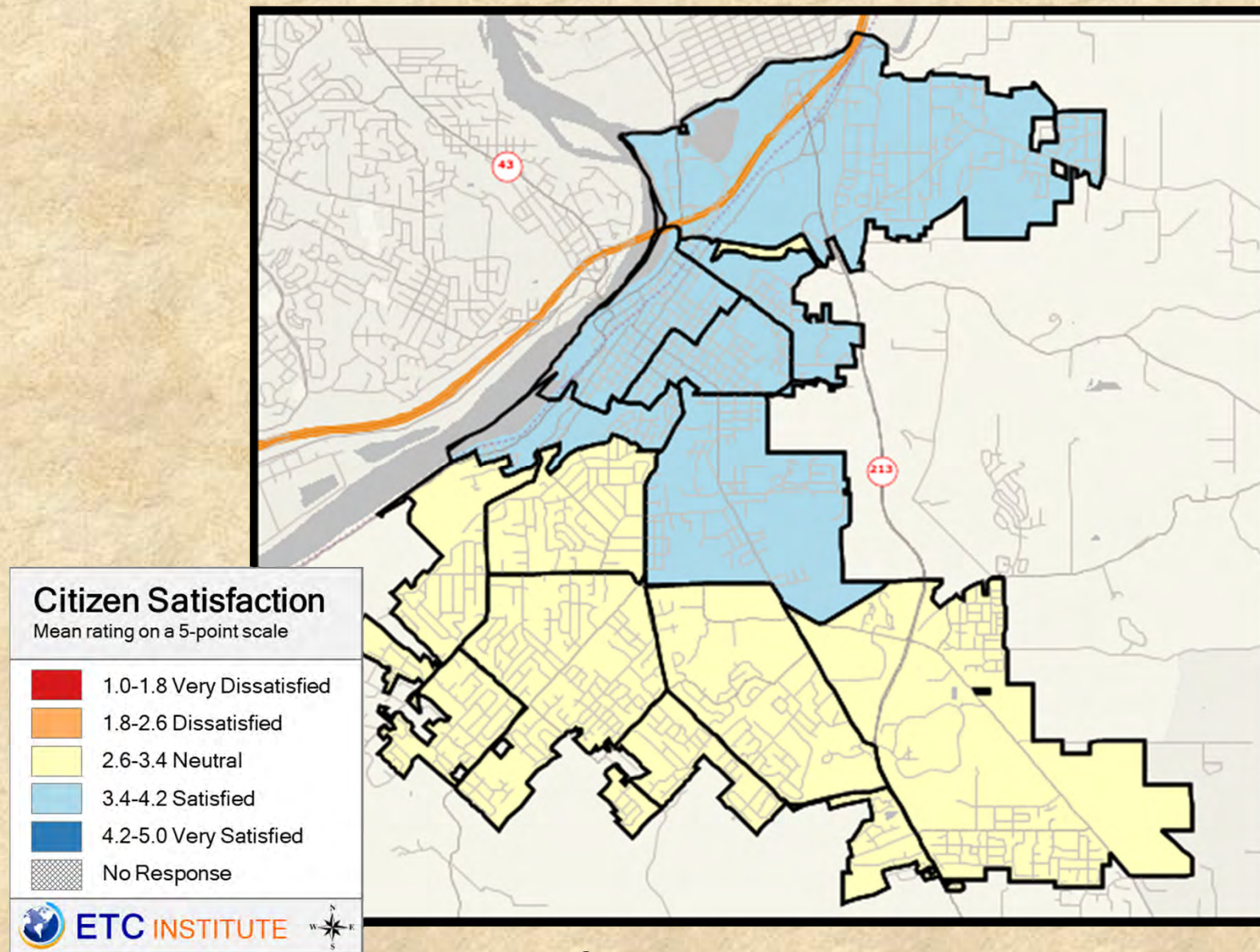
Q4-8. Quality of the End of the Oregon Trail



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

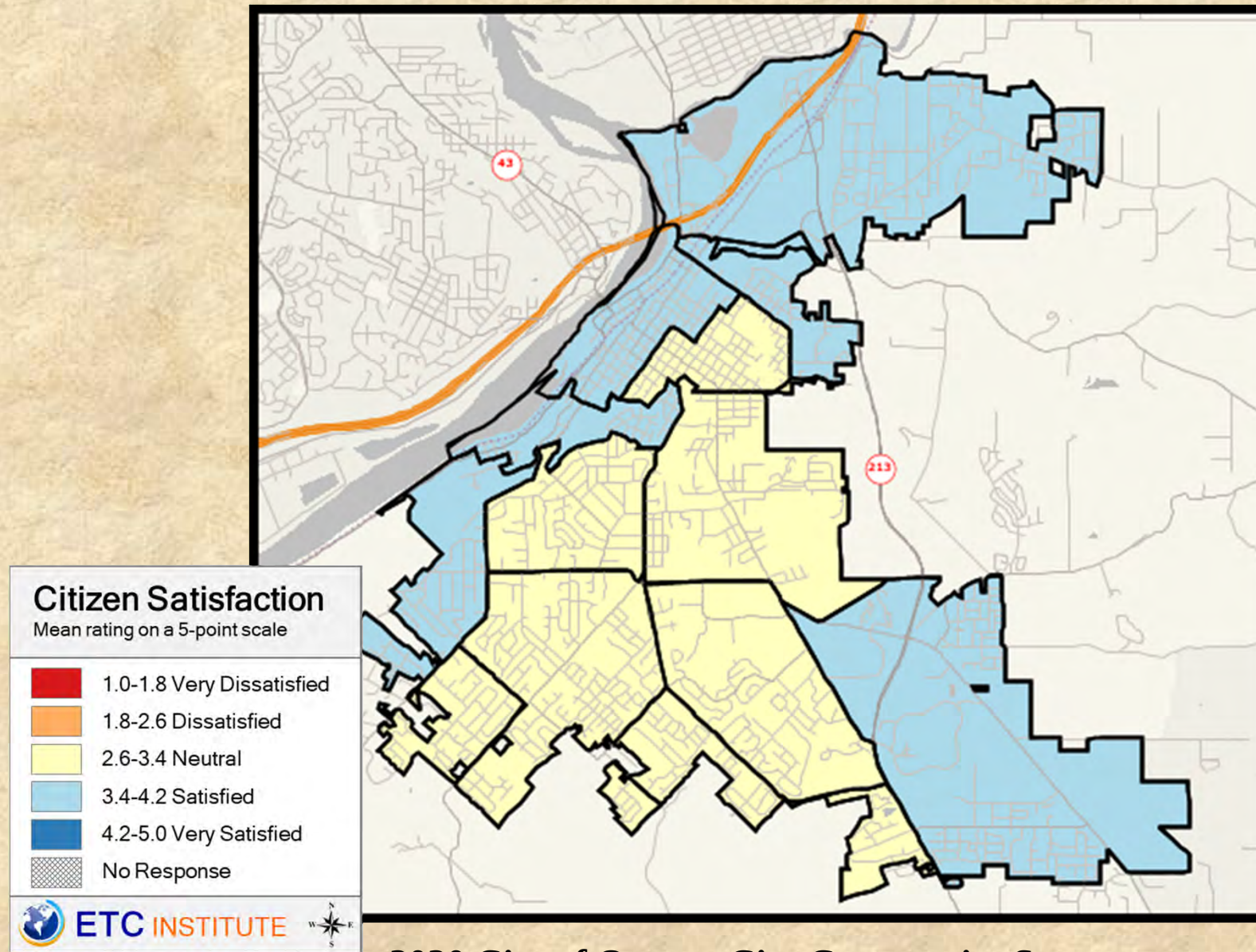
Q4-9. Quality of the city's swimming pool



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

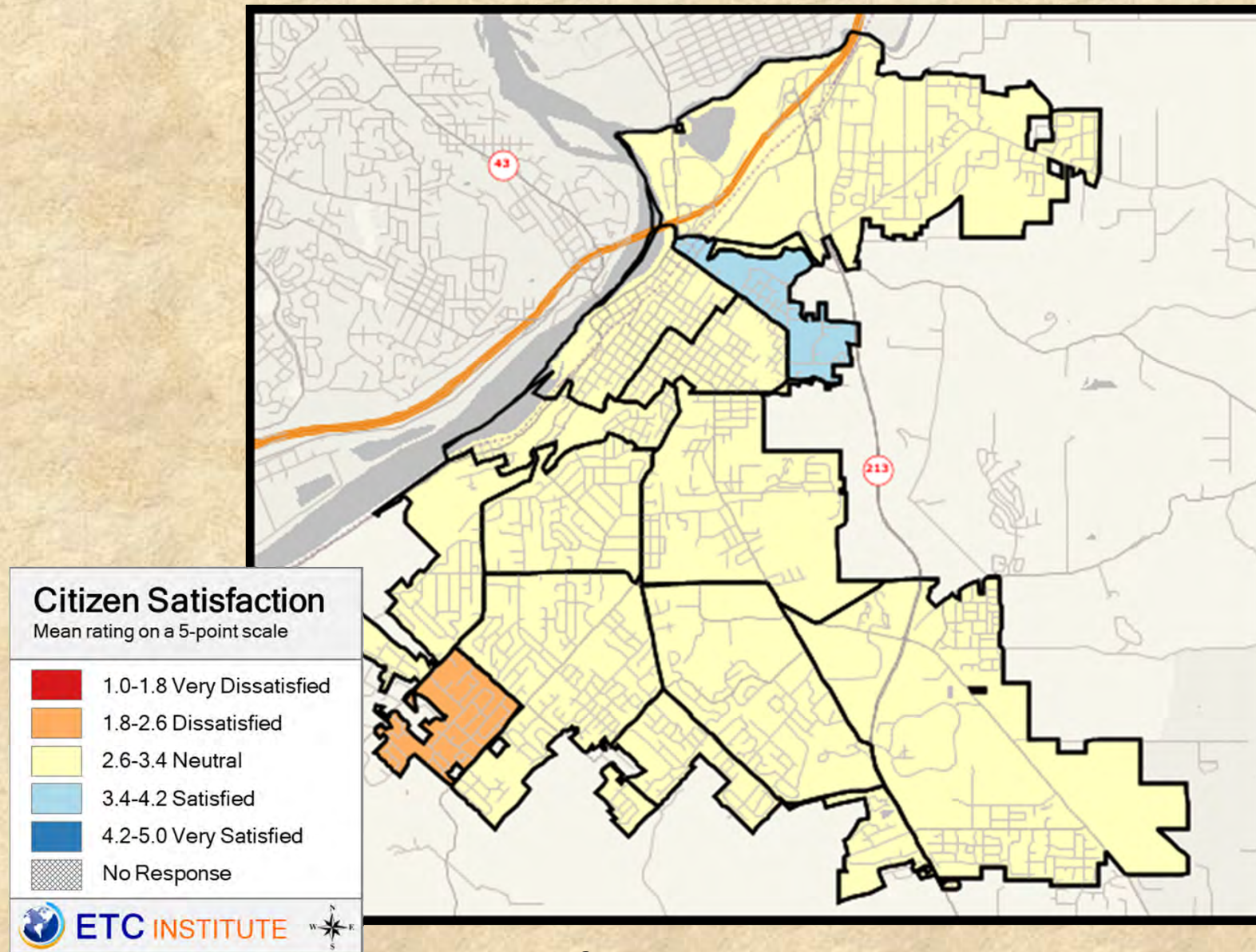
Q4-10. Quality of services for fees assessed with recreation programing (e.g. pool programs, admission, camps)



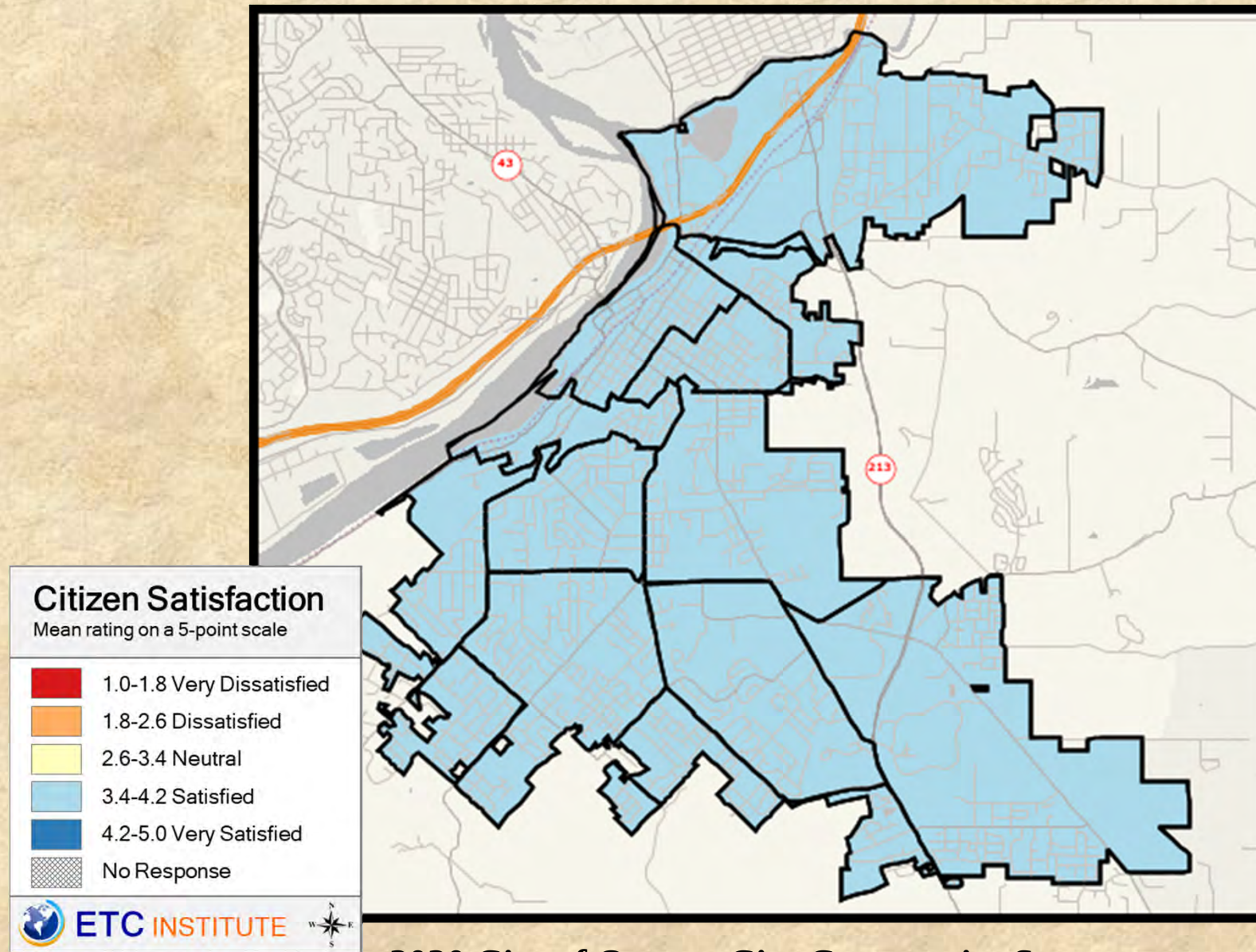
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q4-11. Quality of recreational areas for dogs



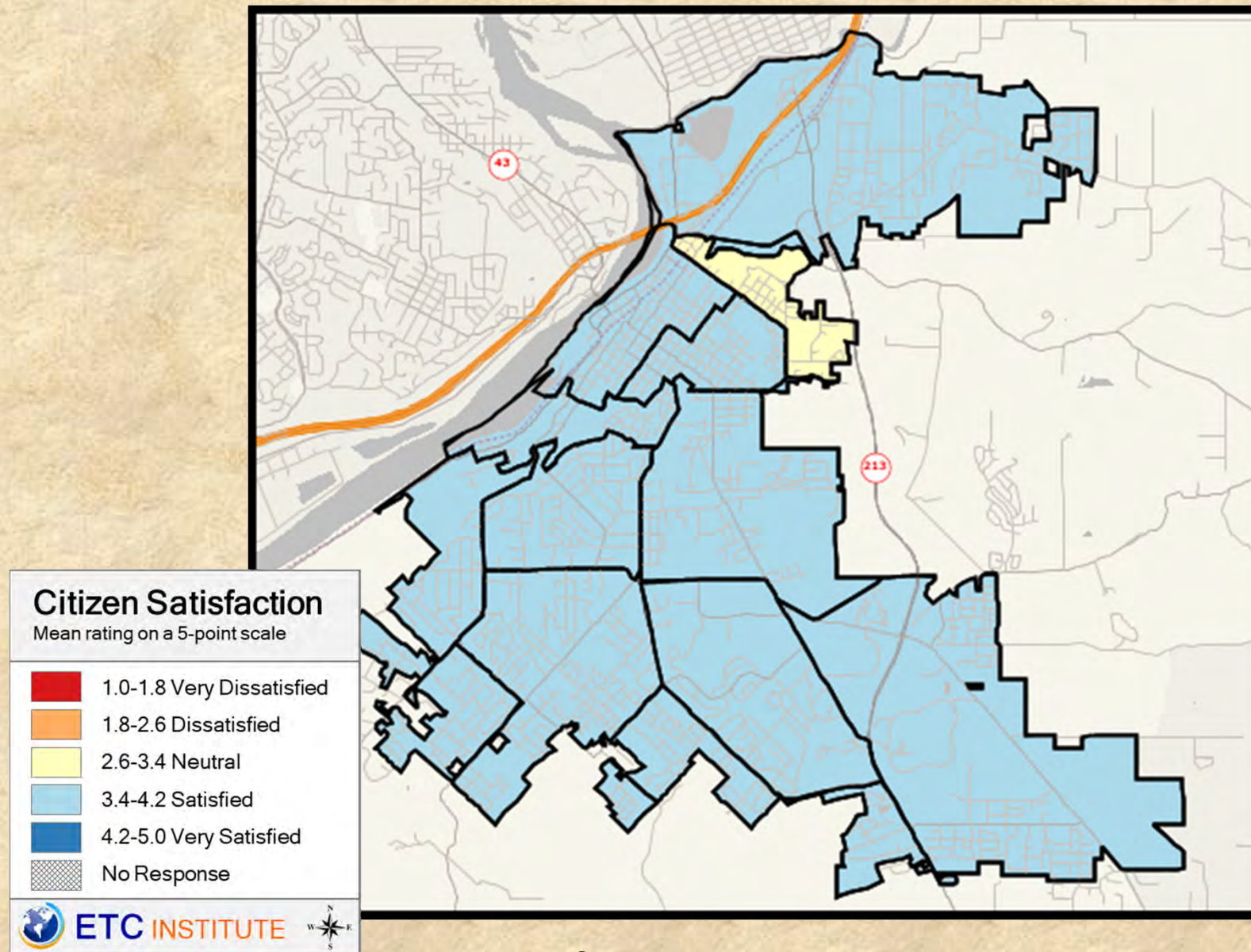
Q8-1. The visibility of police in the community



2020 City of Oregon City Community Survey

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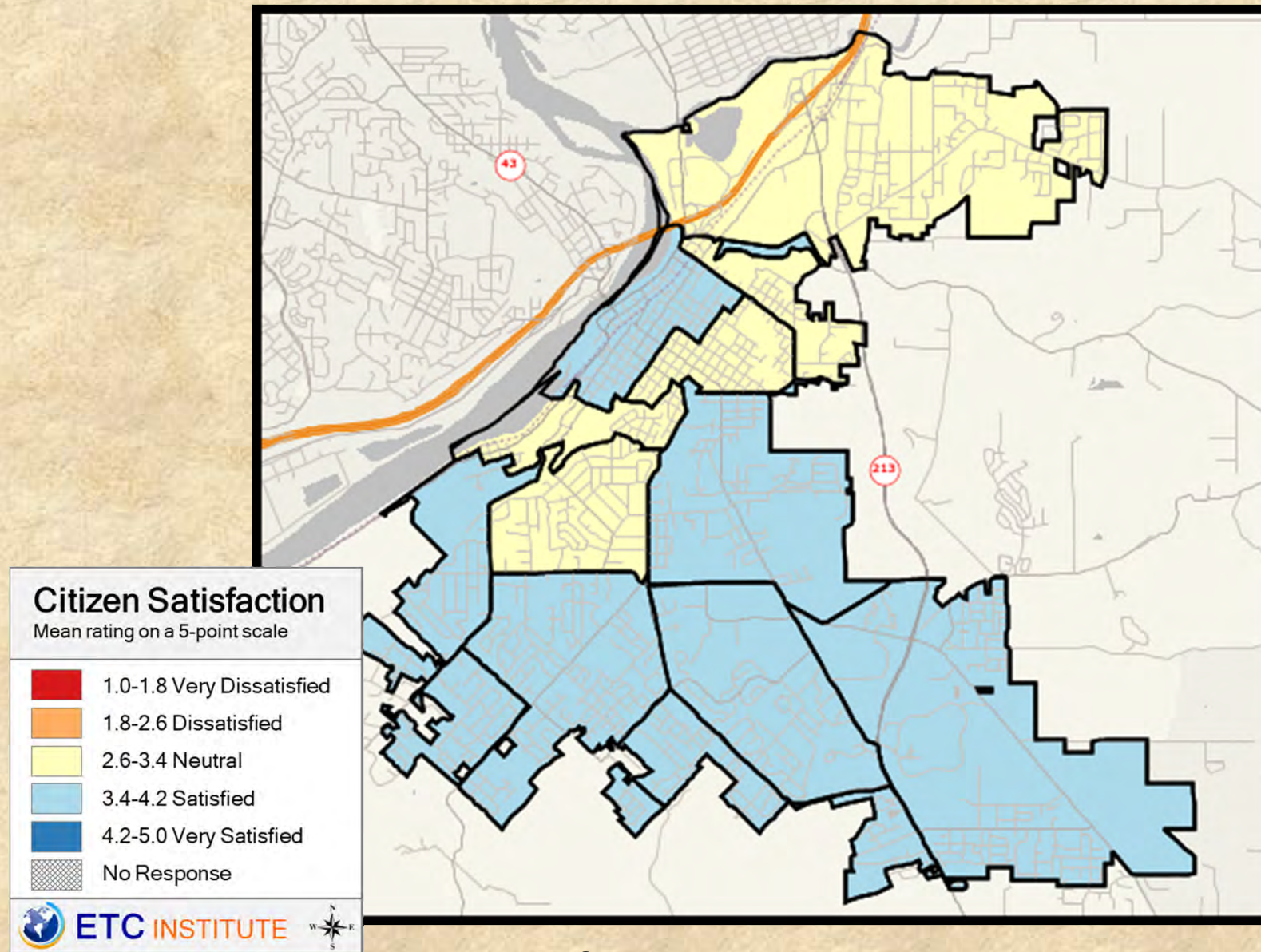
Q8-2. The city's overall efforts to prevent crime



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

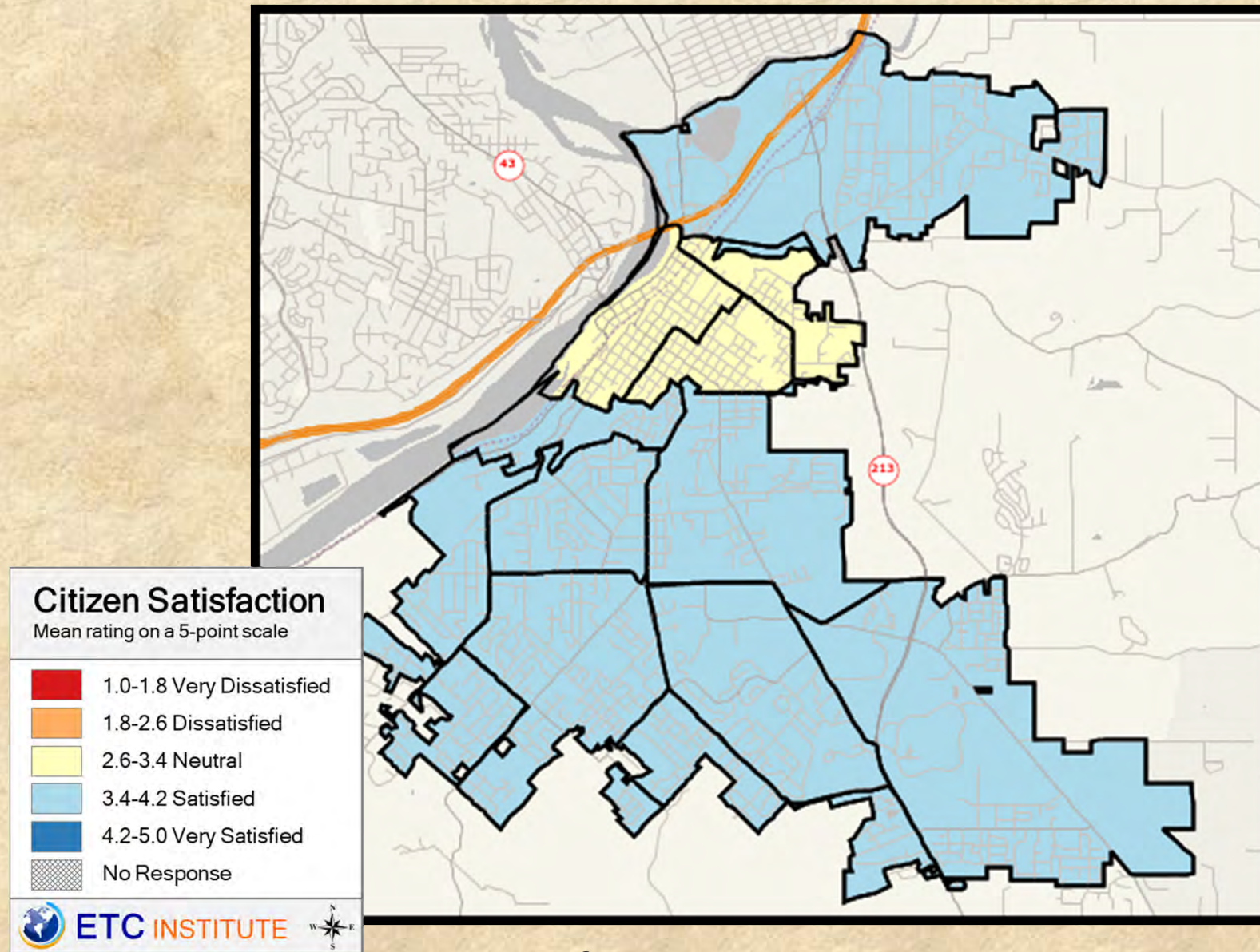
Q8-3. Enforcement of local traffic laws



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

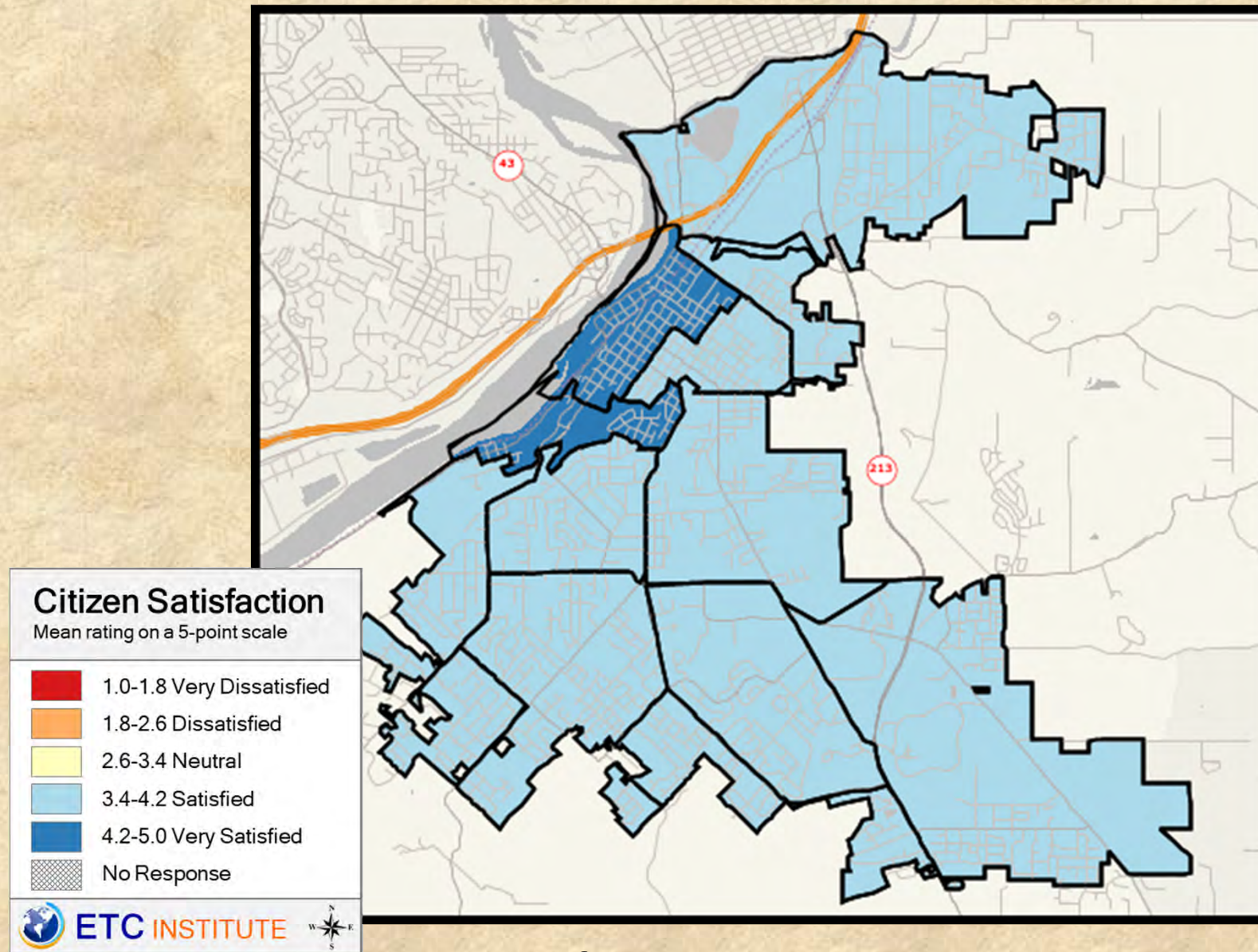
Q8-4. Parking enforcement services



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

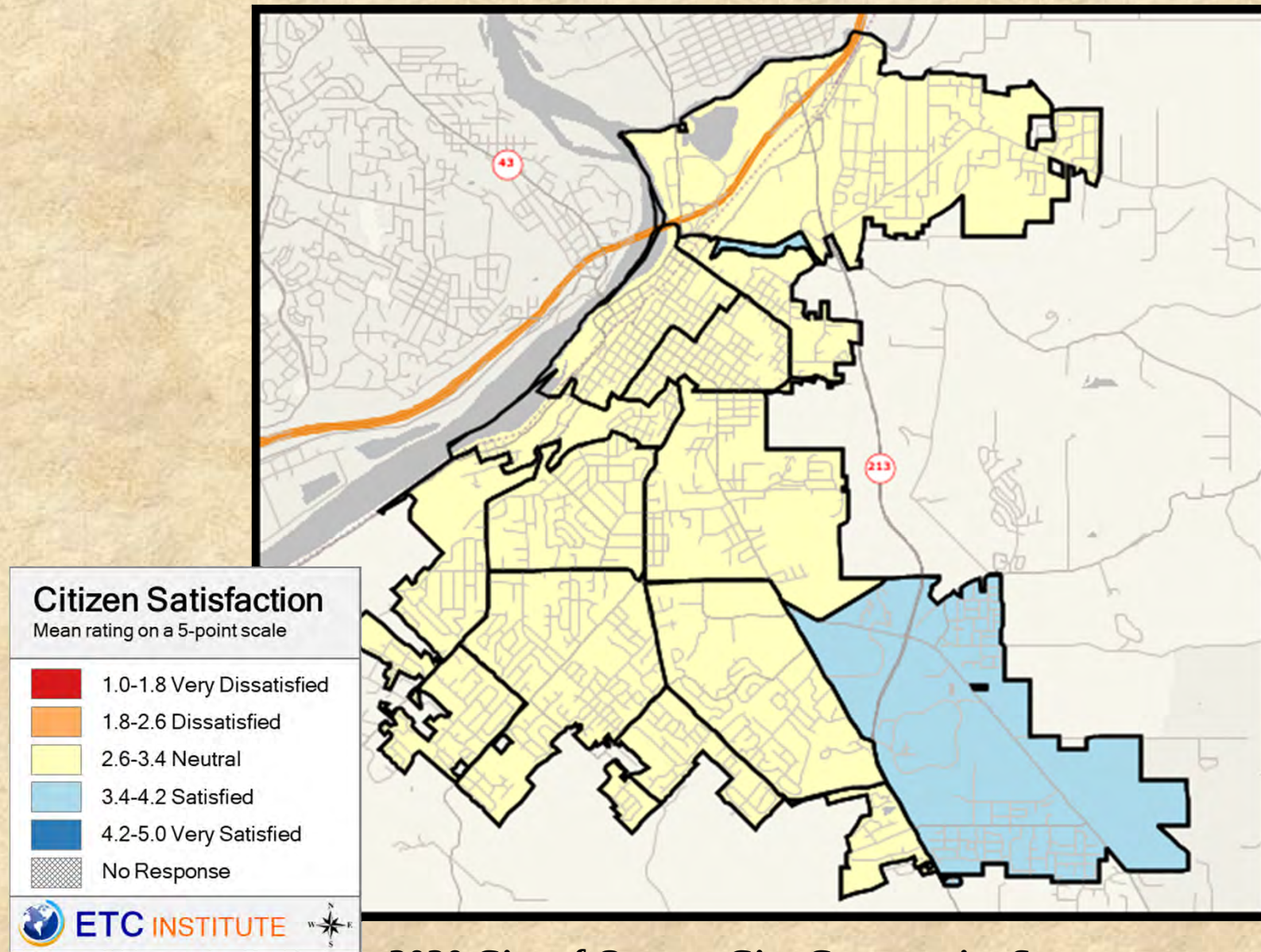
Q8-5. How quickly police respond to emergencies



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

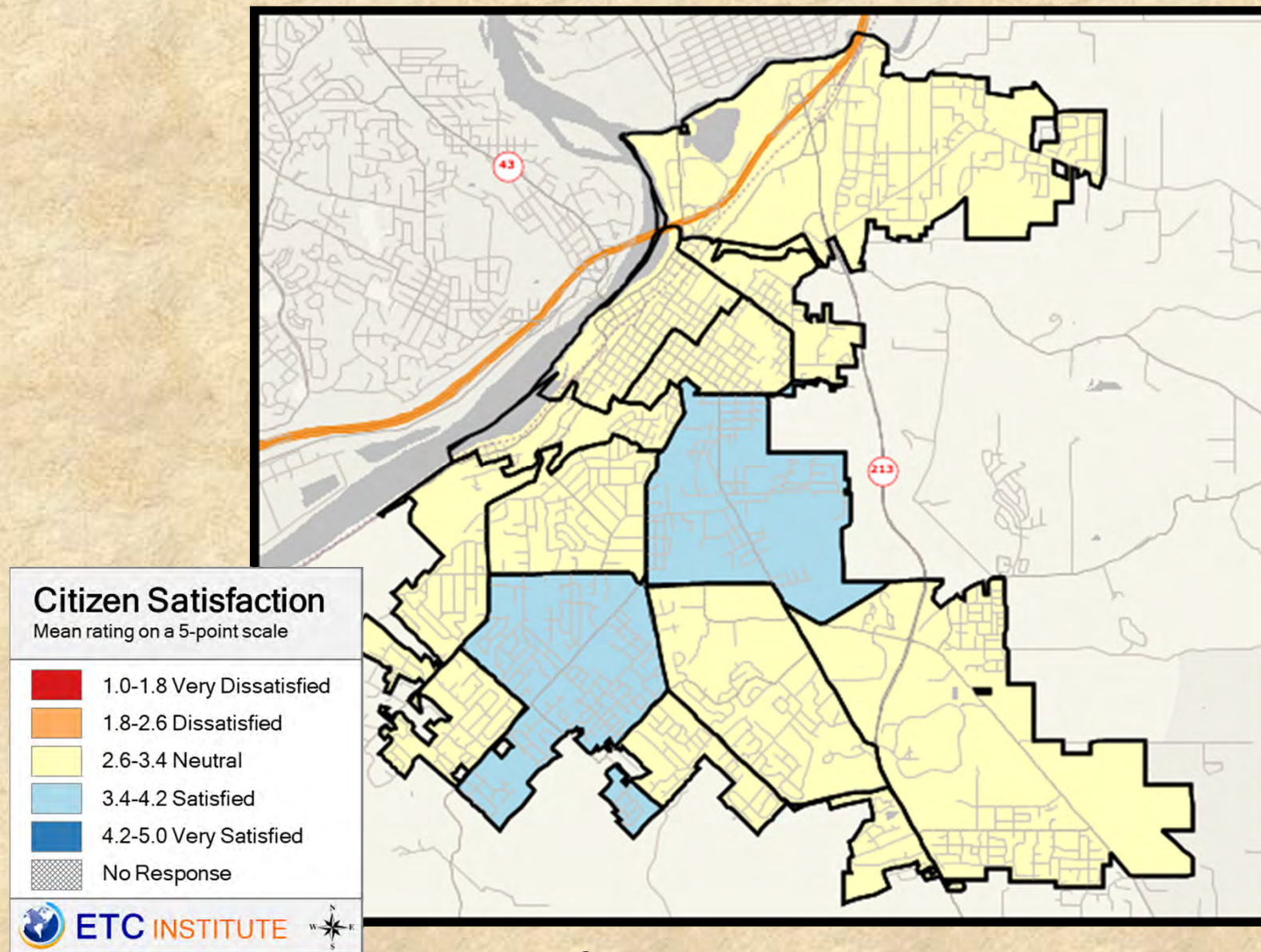
Q8-6. Response to drug control



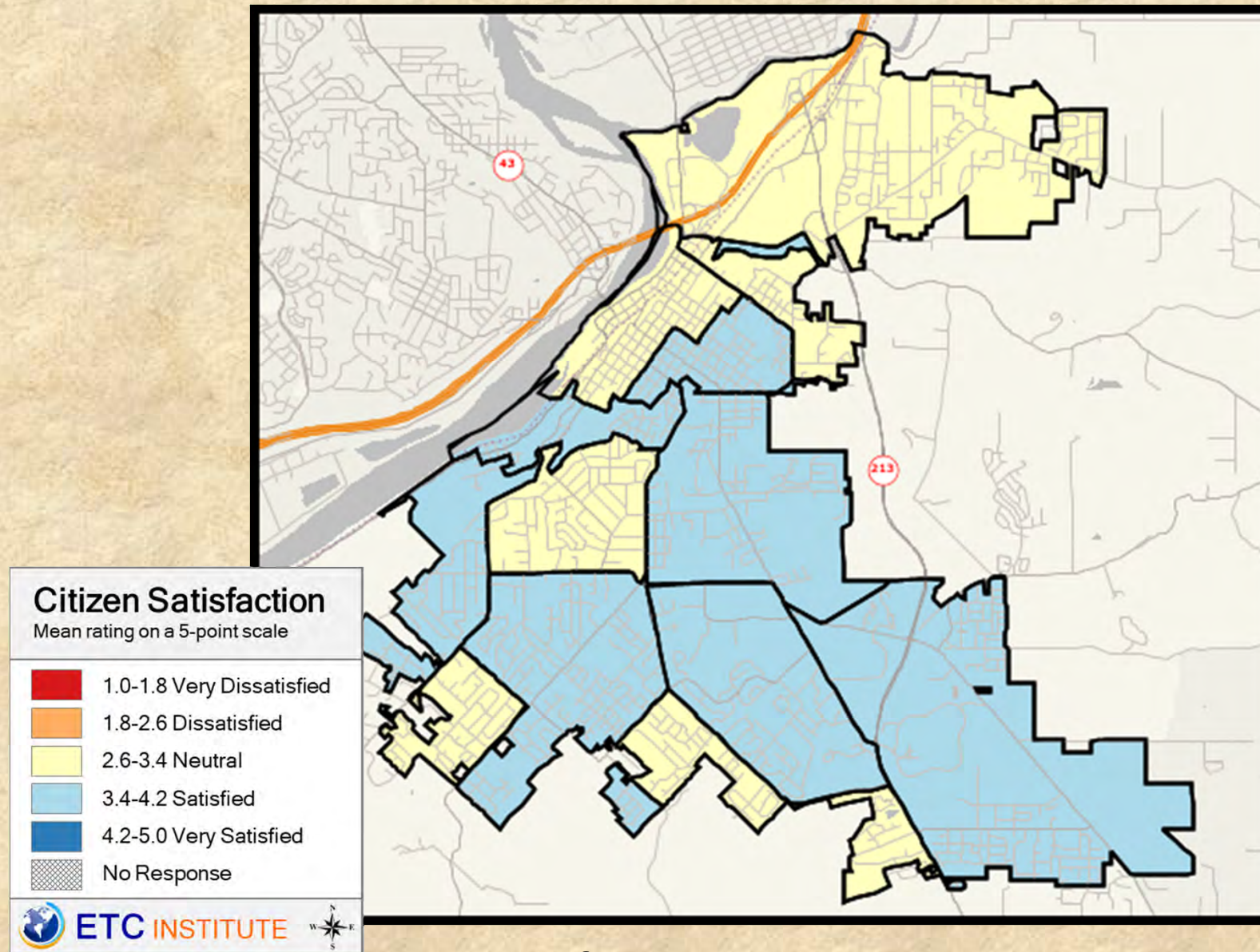
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q8-7. Response to property crime



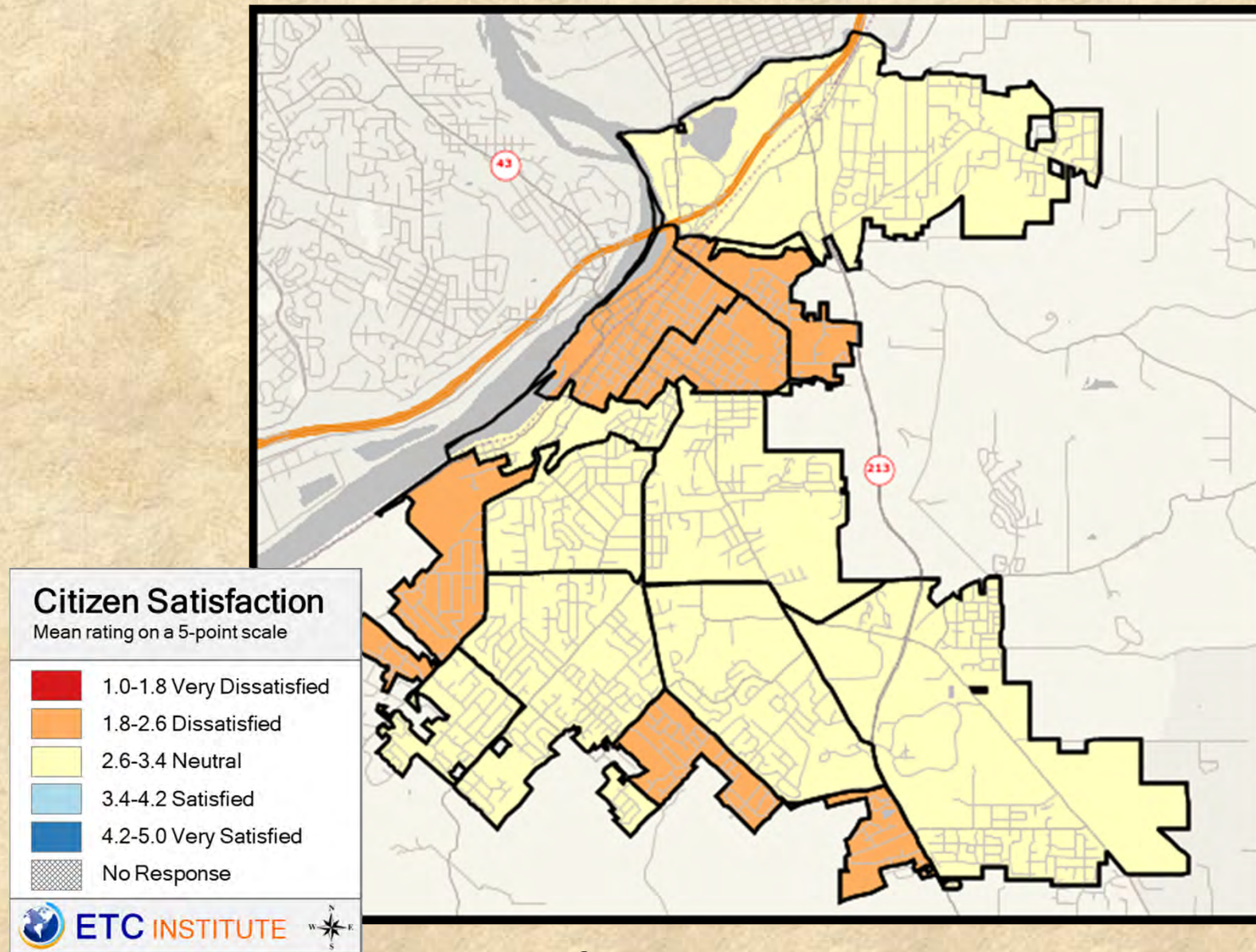
Q8-8. Level of community outreach



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

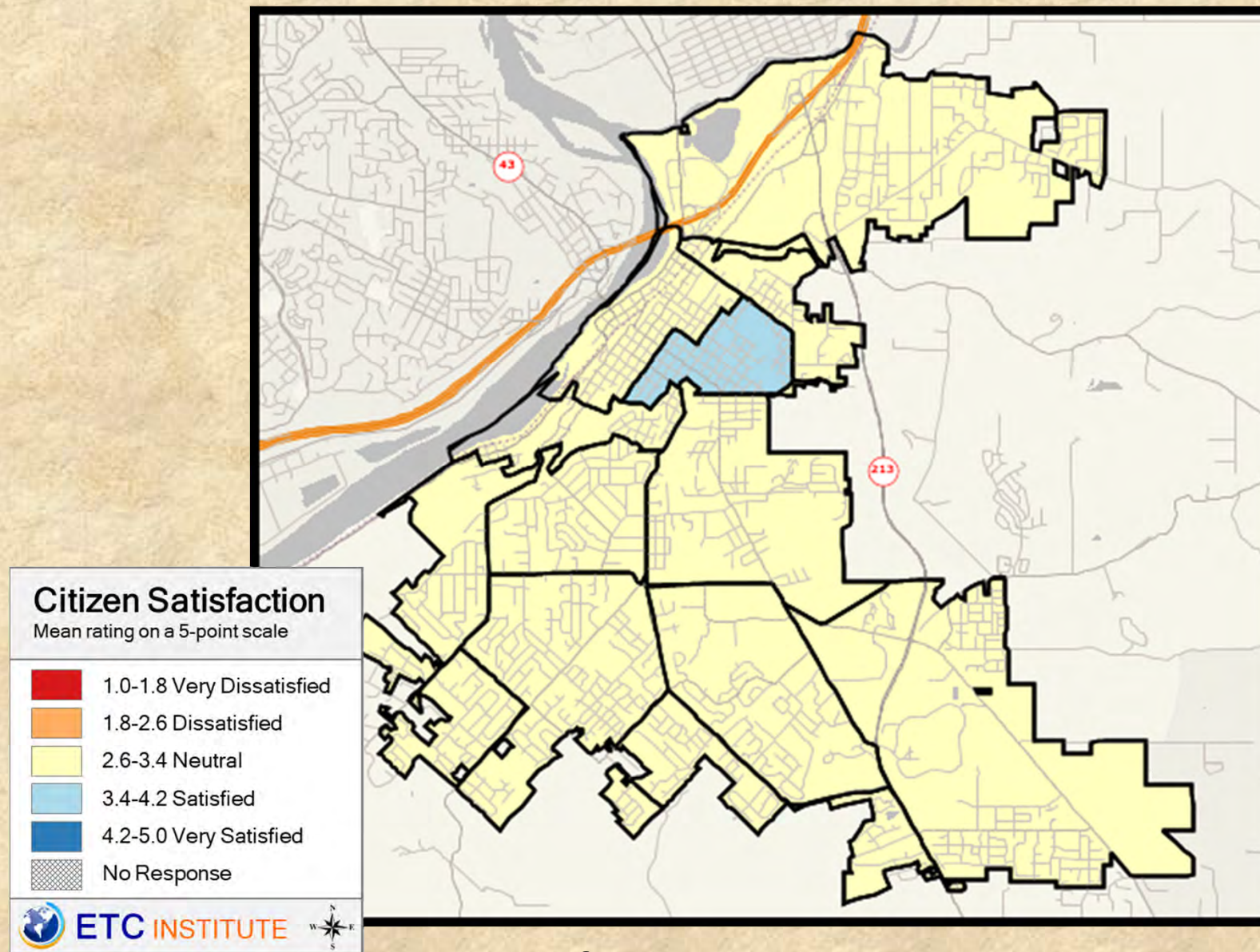
Q8-9. Response to issues with transients



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

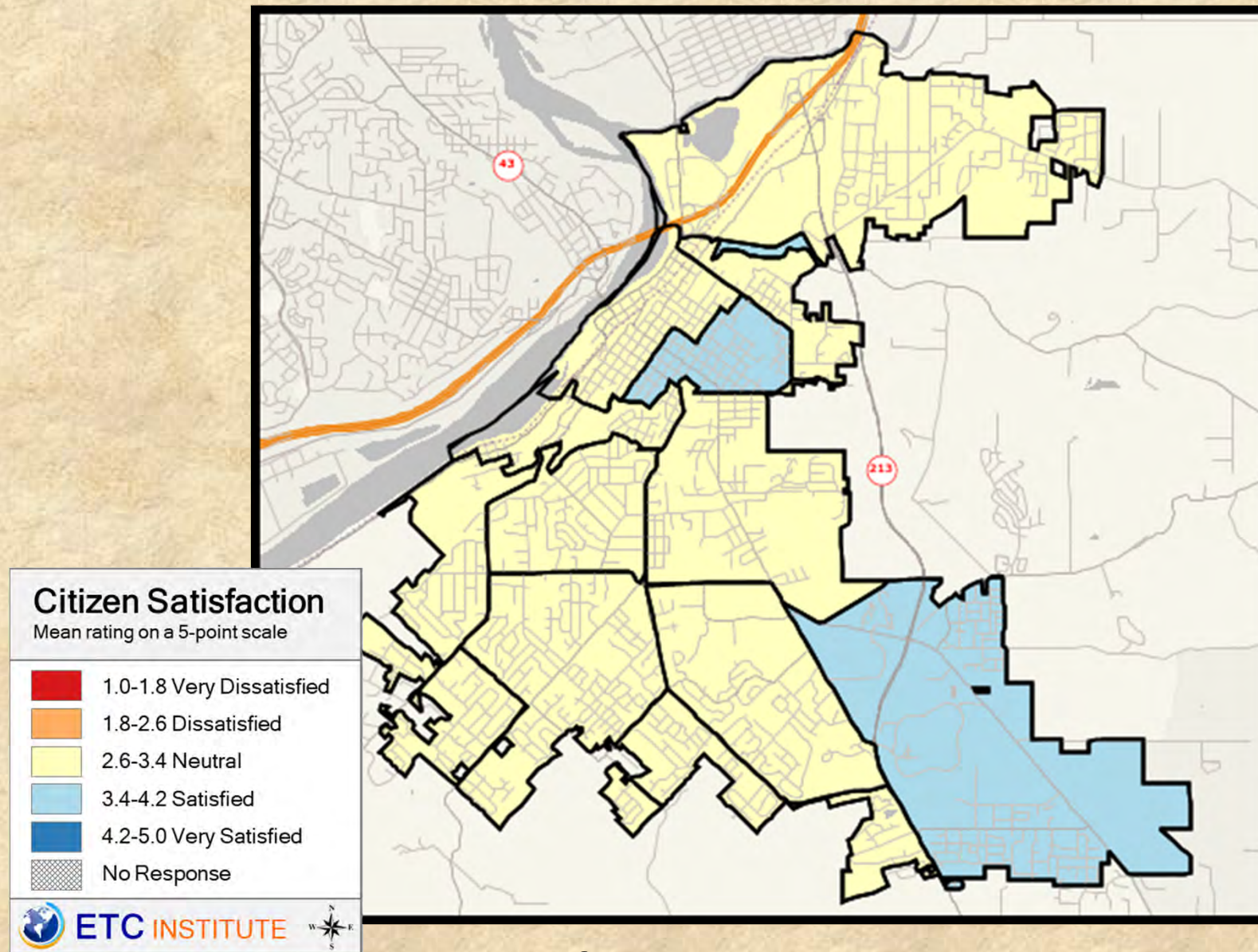
Q12-1. The availability of information about city programs and services



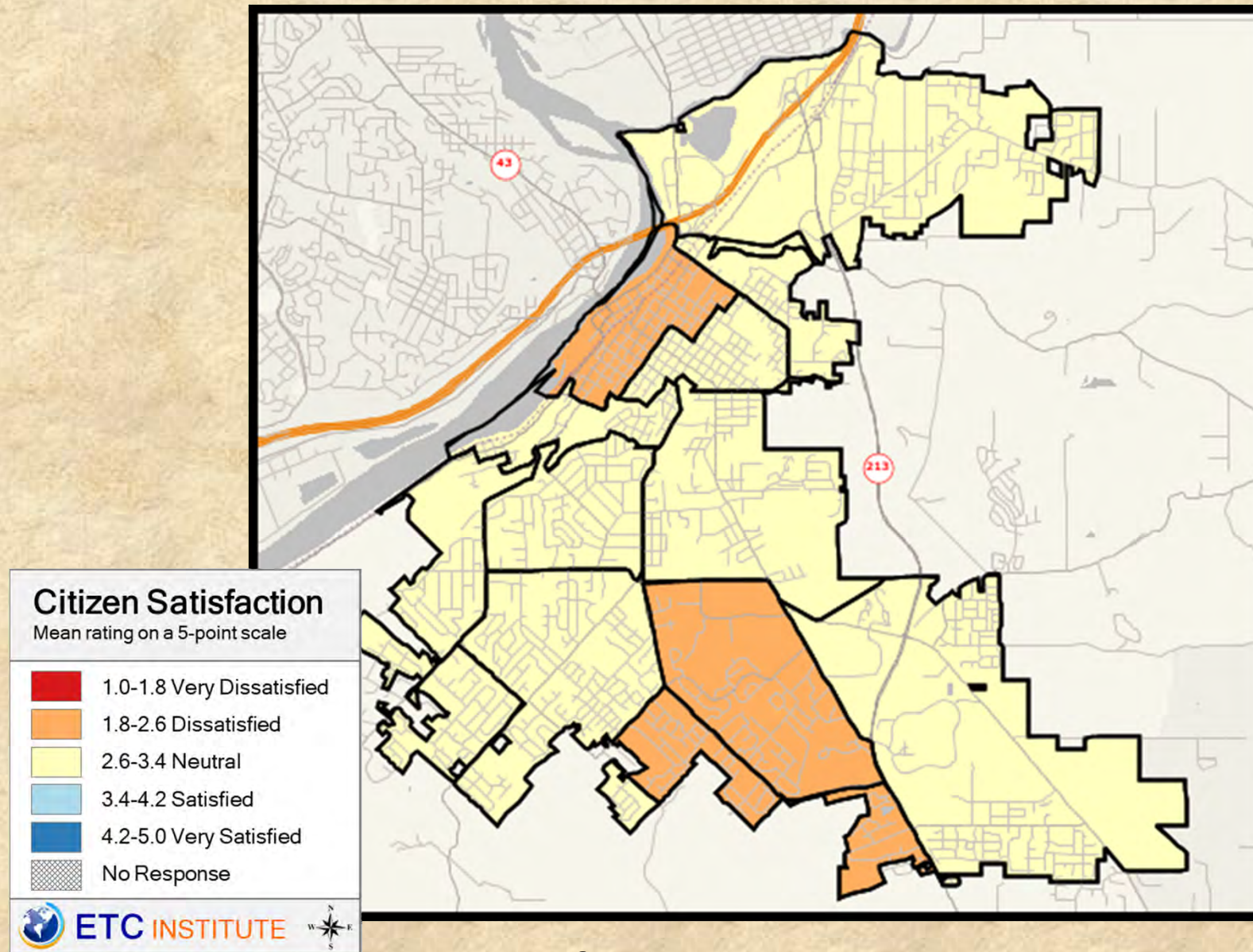
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

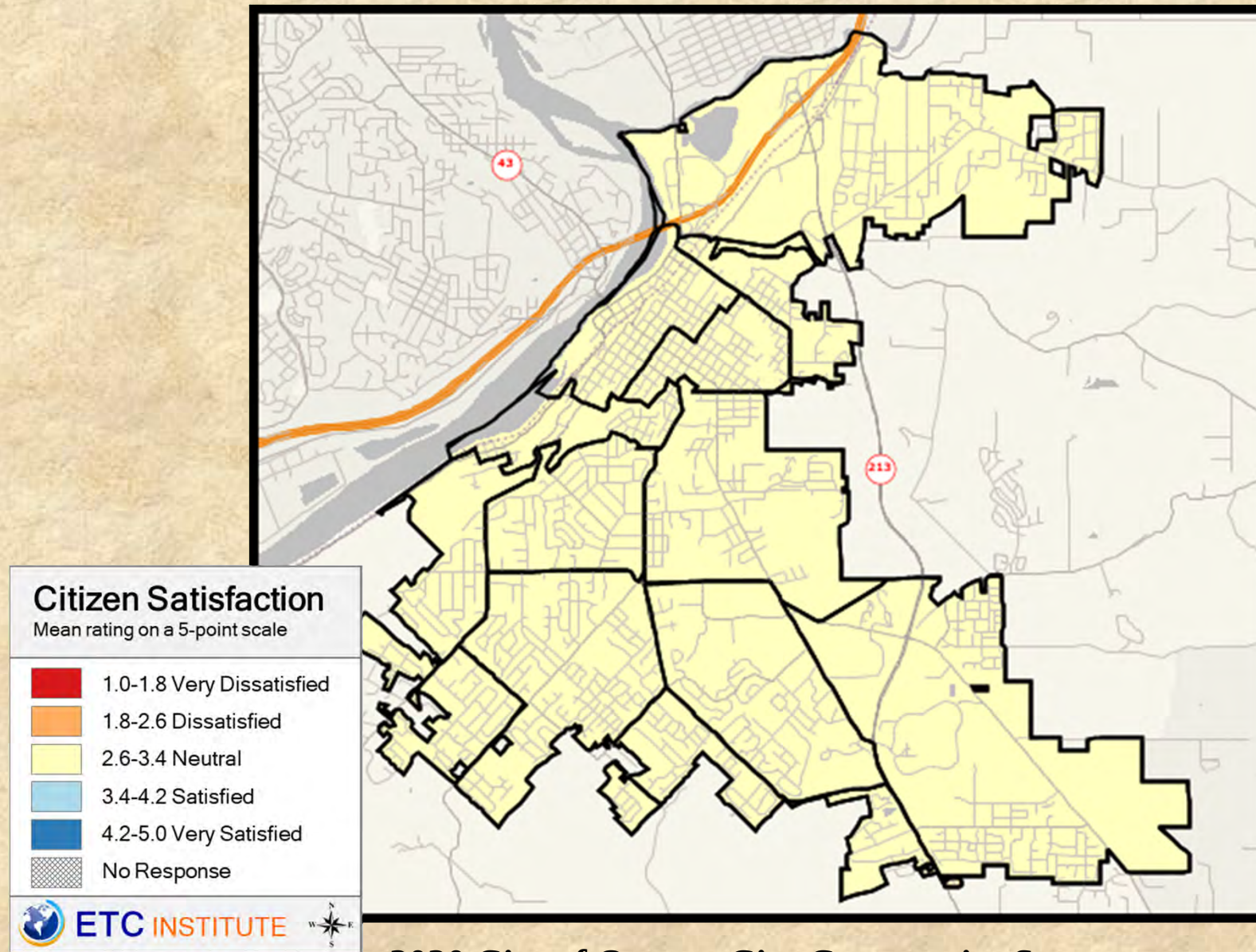
Q12-2. Overall quality of the city's website



Q12-3. The level of public involvement in decision making



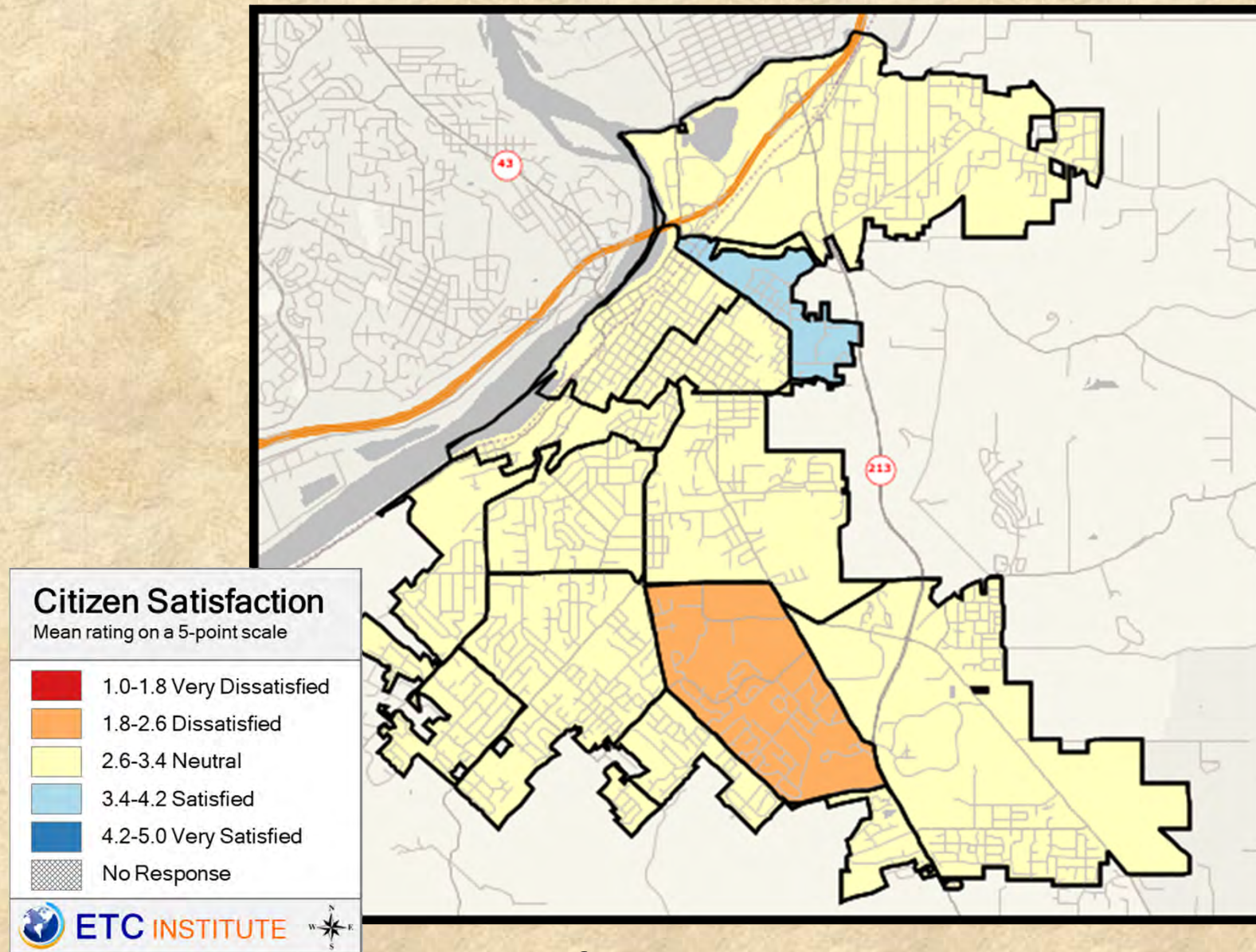
Q12-4. Timeliness of information provided by the city



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

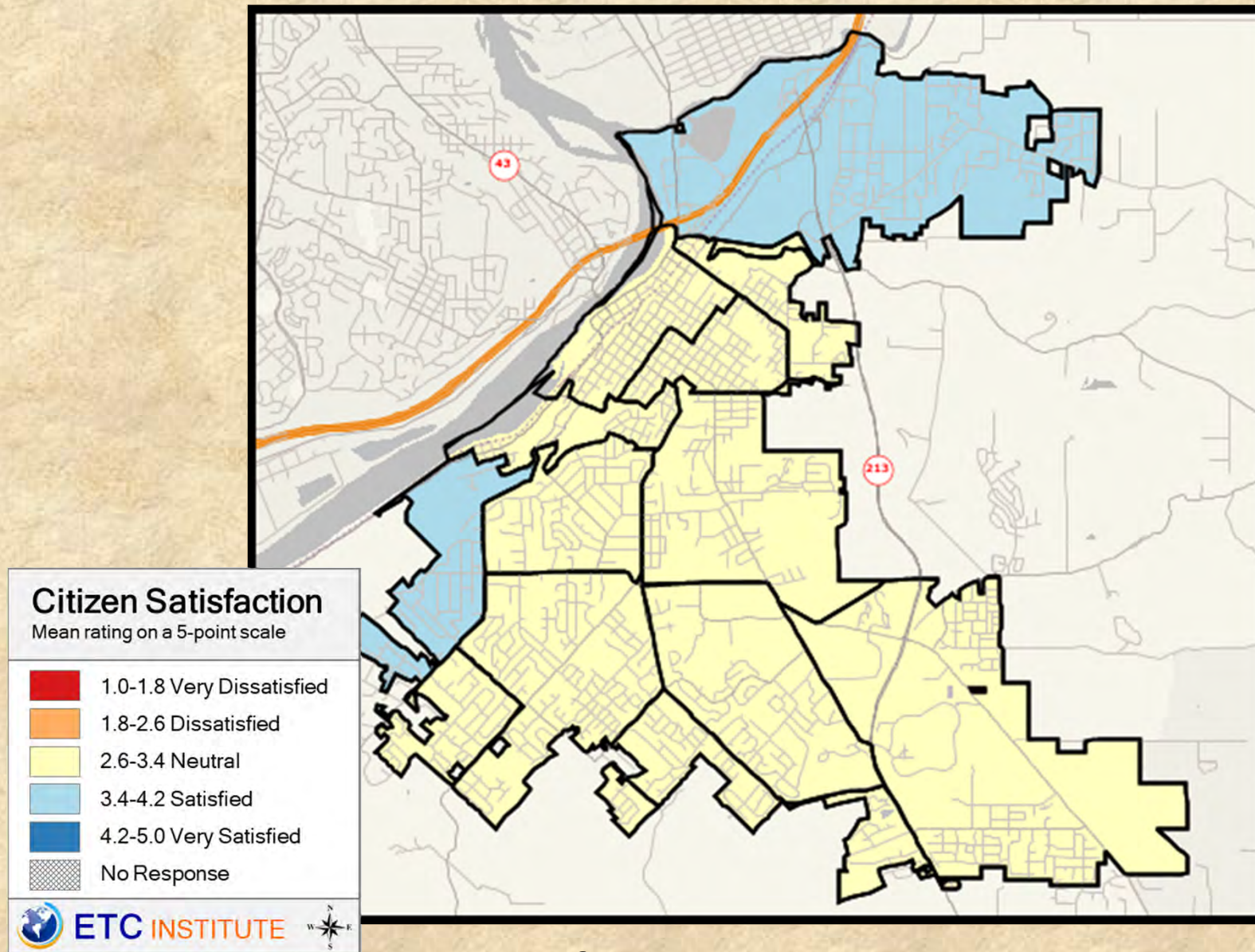
Q12-5. The quality of content on social media (Facebook, Twitter, Instagram)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

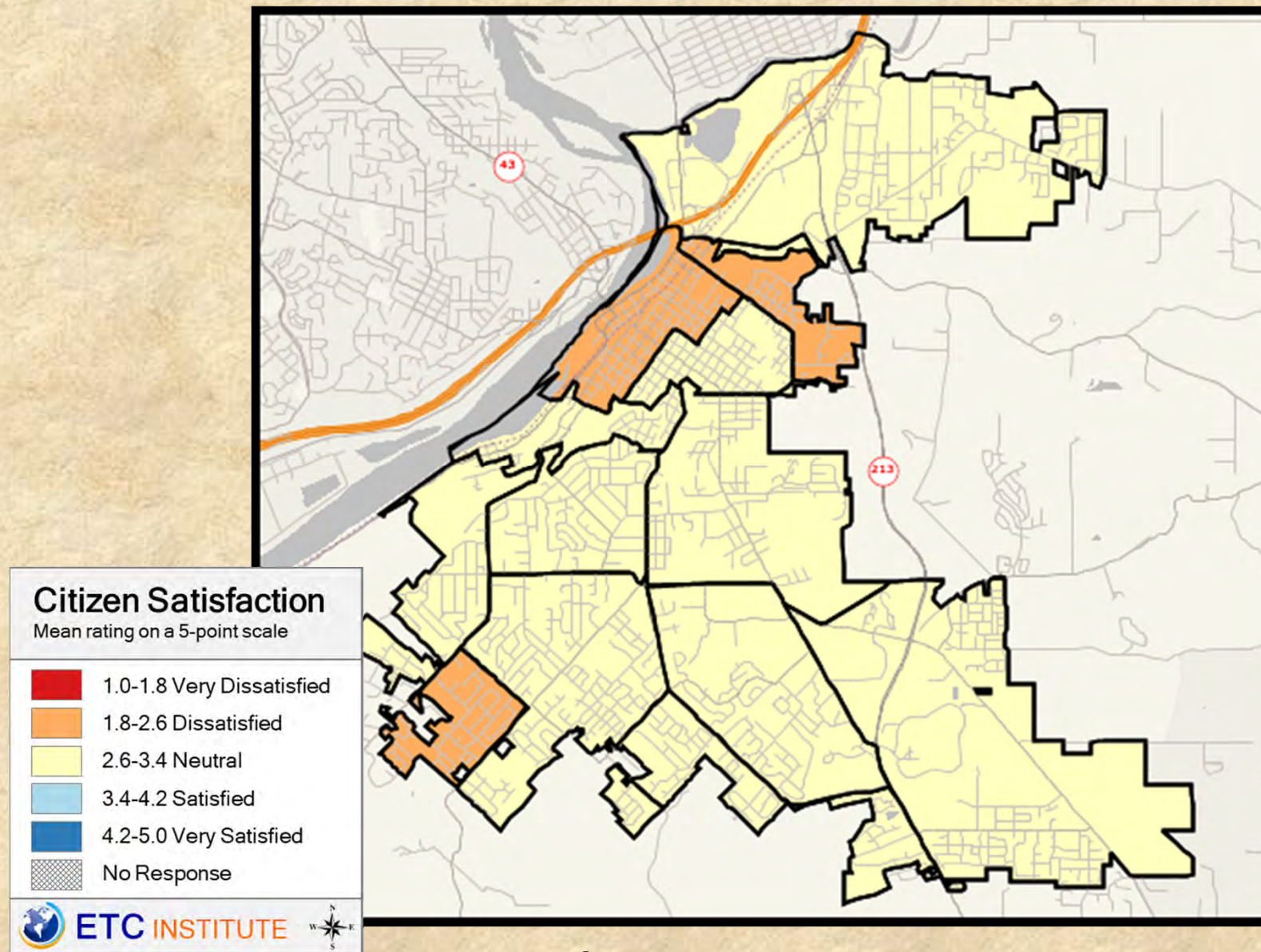
Q12-6. Access to bilingual material



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

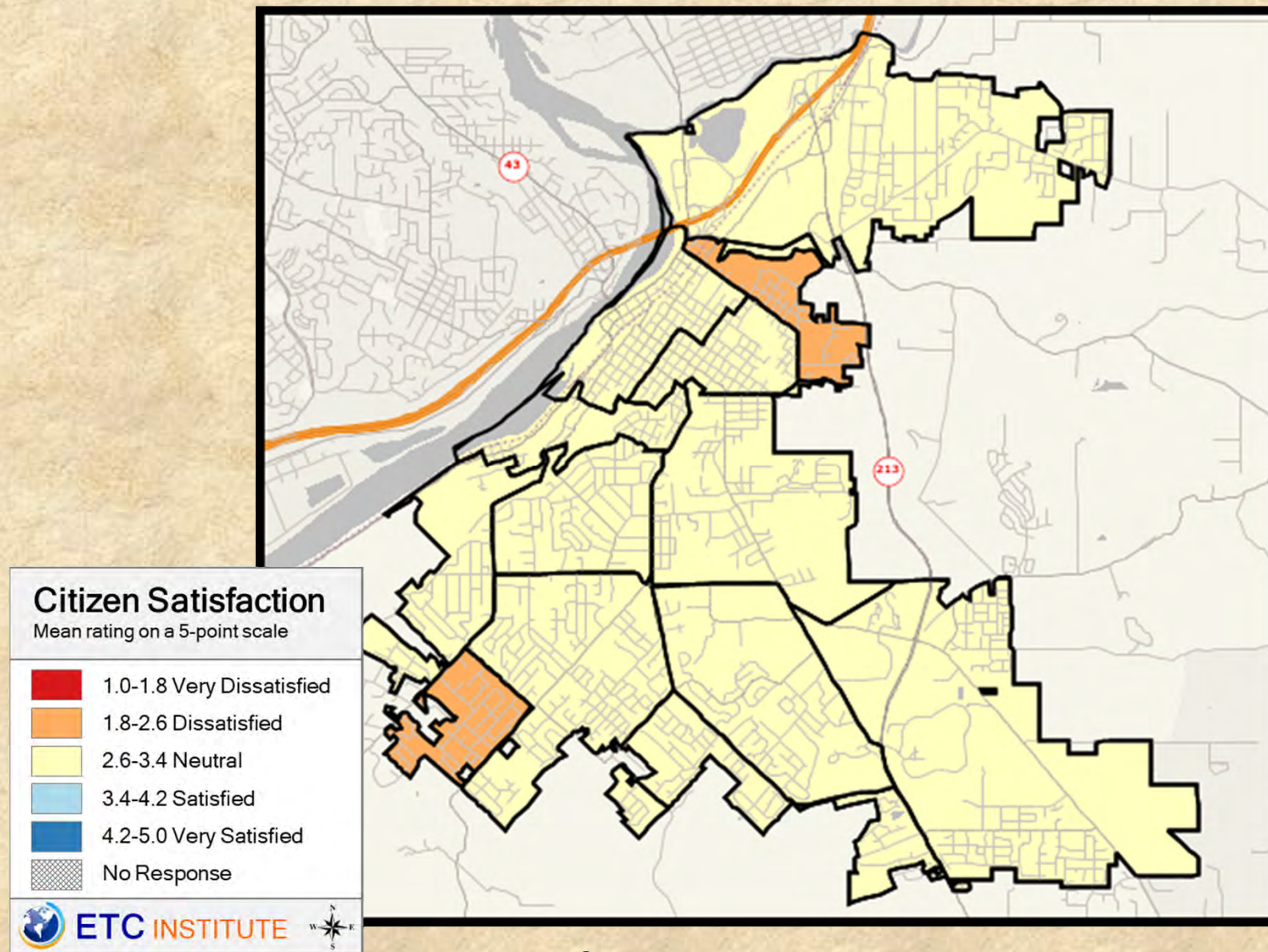
Q13-1. Enforcing the cleanup of litter and debris on private property



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

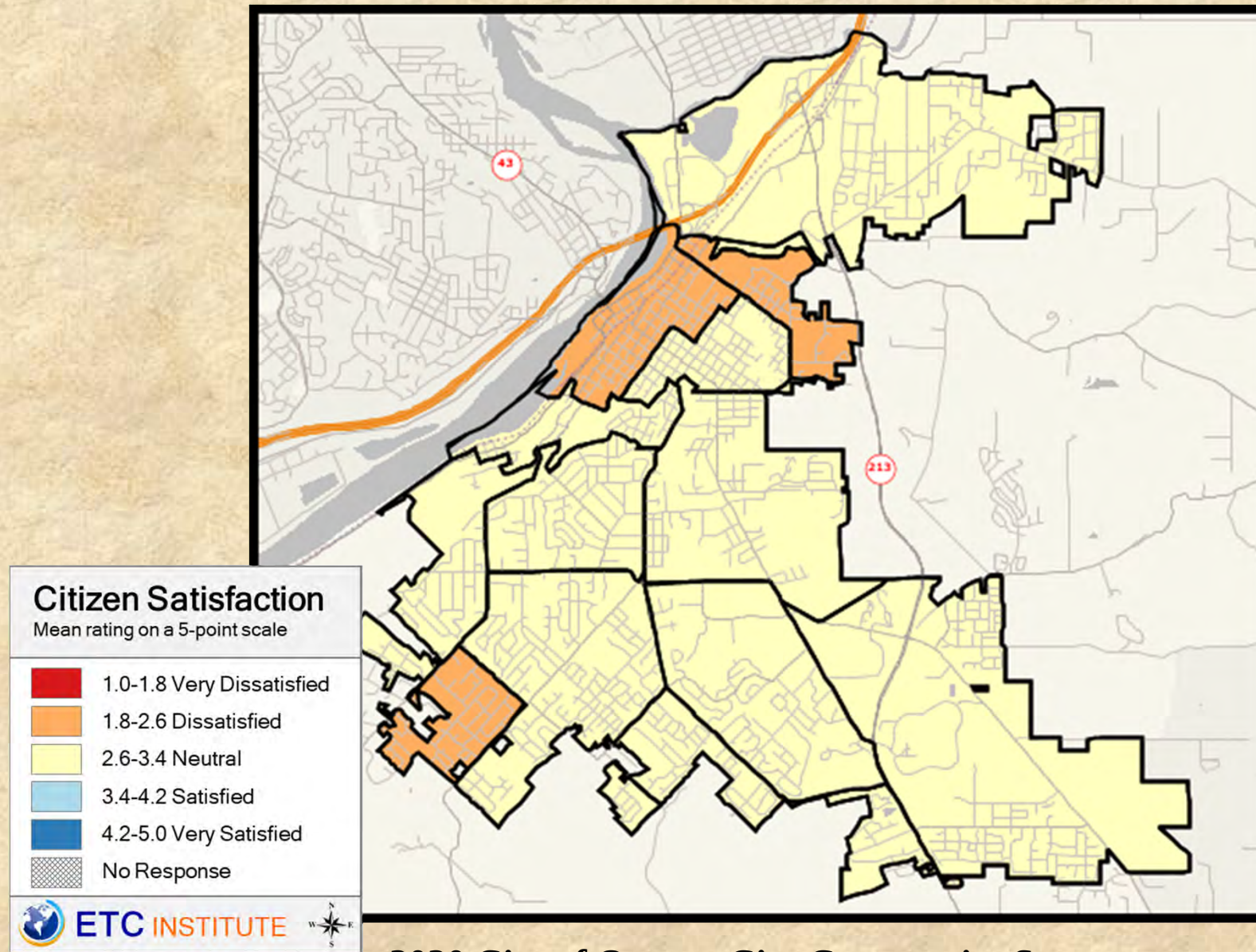
Q13-2. Enforcing the mowing/trimming of grass and weeds on private property



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

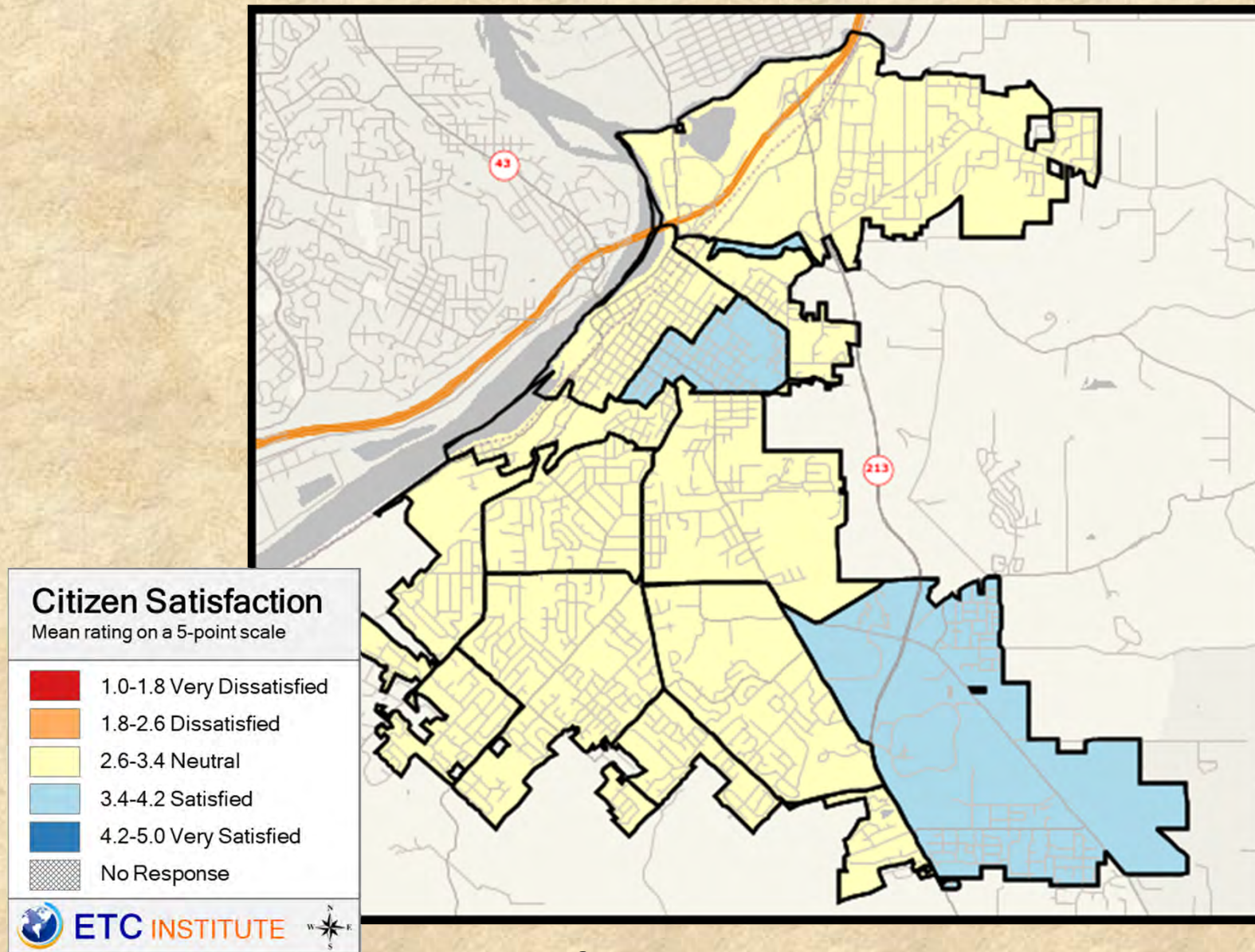
Q13-3. Enforcing codes designed to protect public safety and health



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

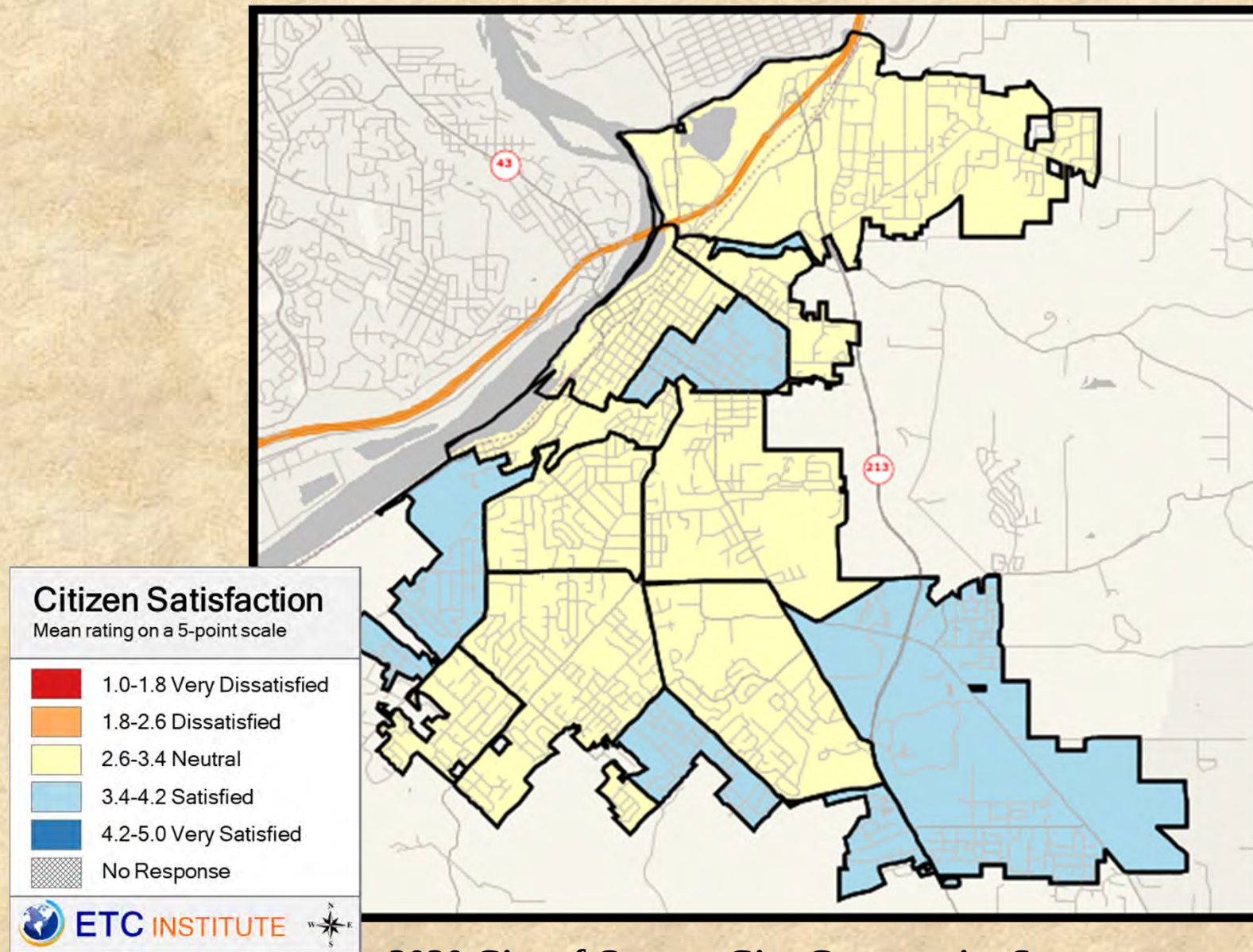
Q13-4. Enforcing sign regulation



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

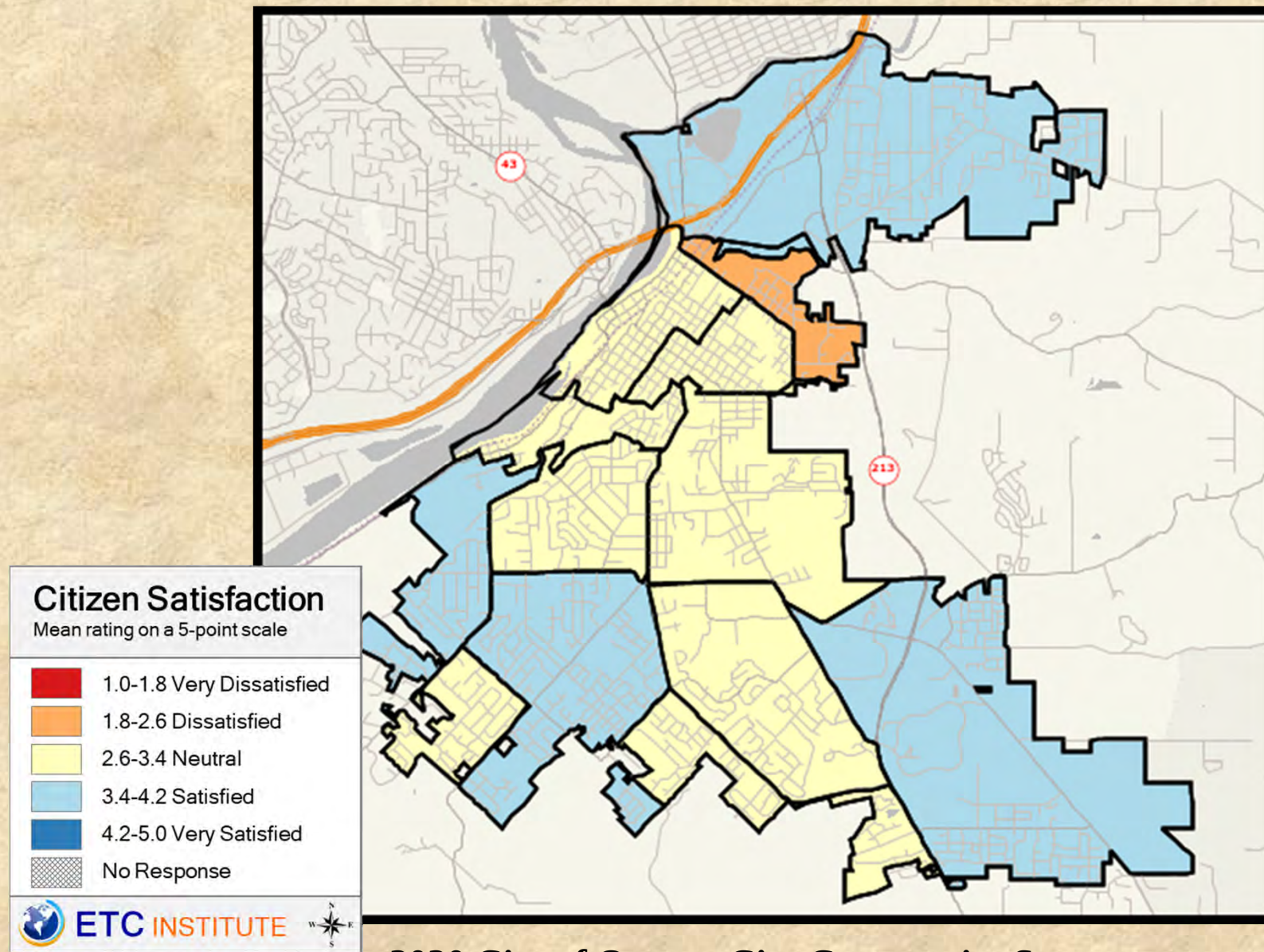
Q15-1. Maintenance of major city streets



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

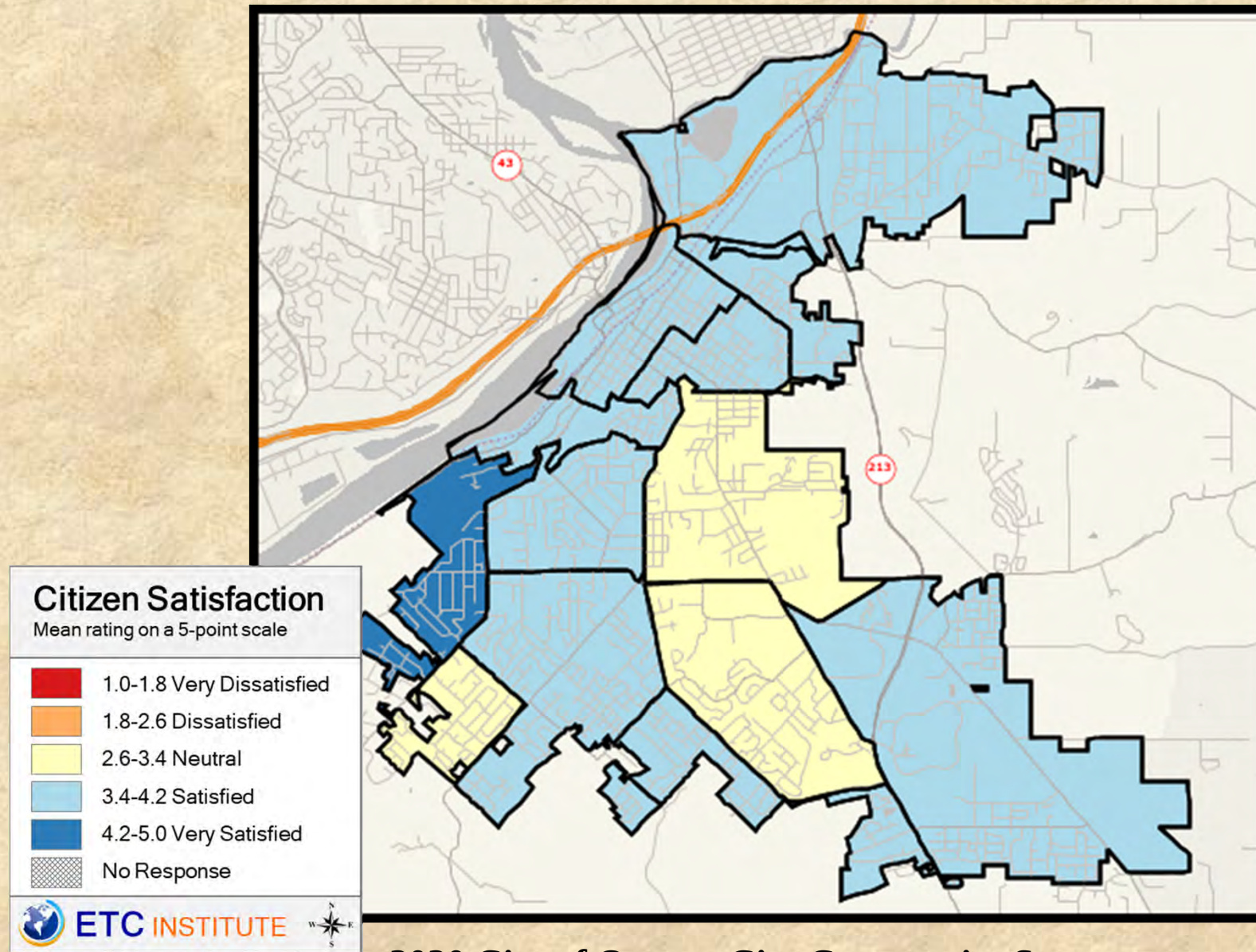
Q15-2. Maintenance of streets in your neighborhood



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

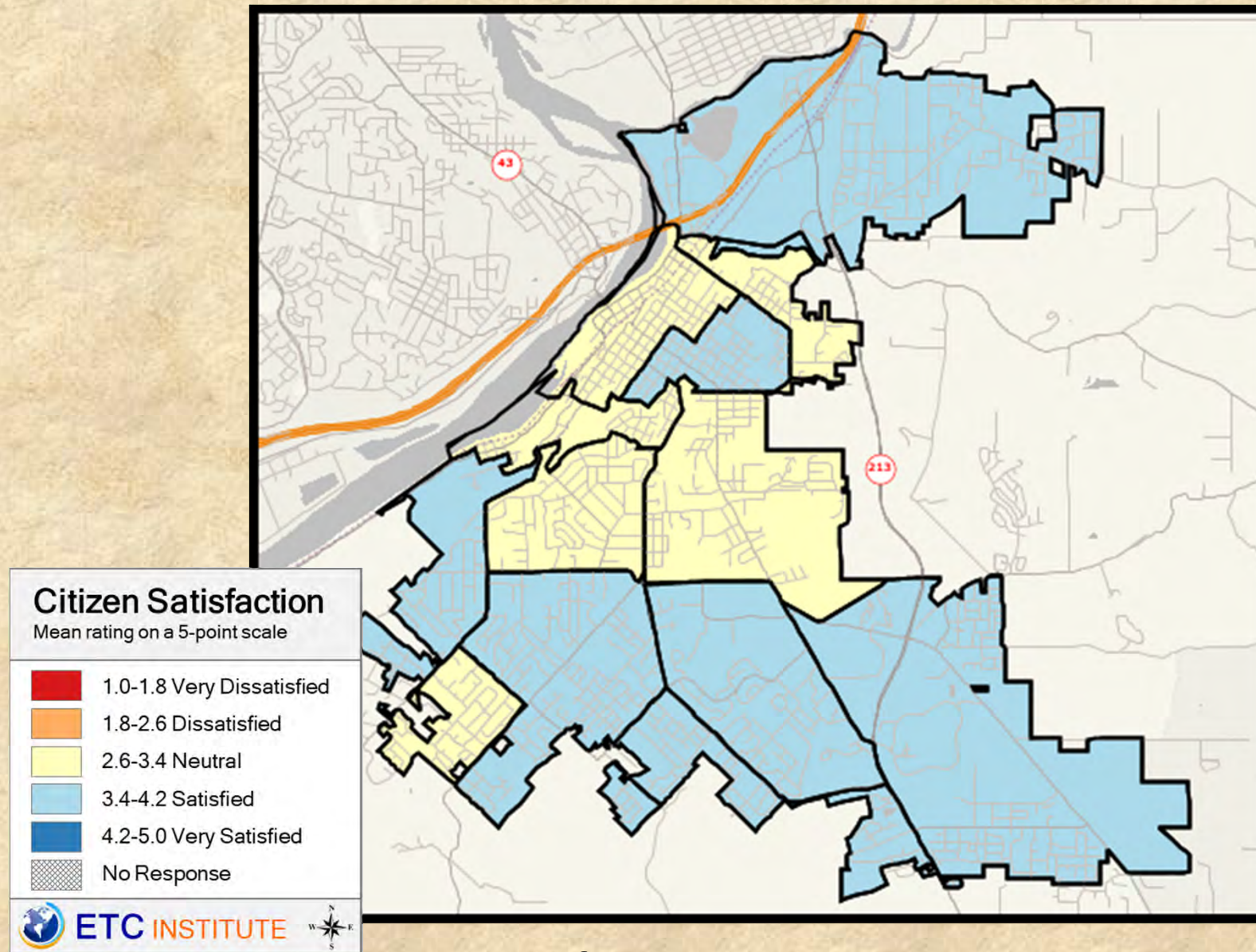
Q15-3. Snow and ice response on major city streets



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

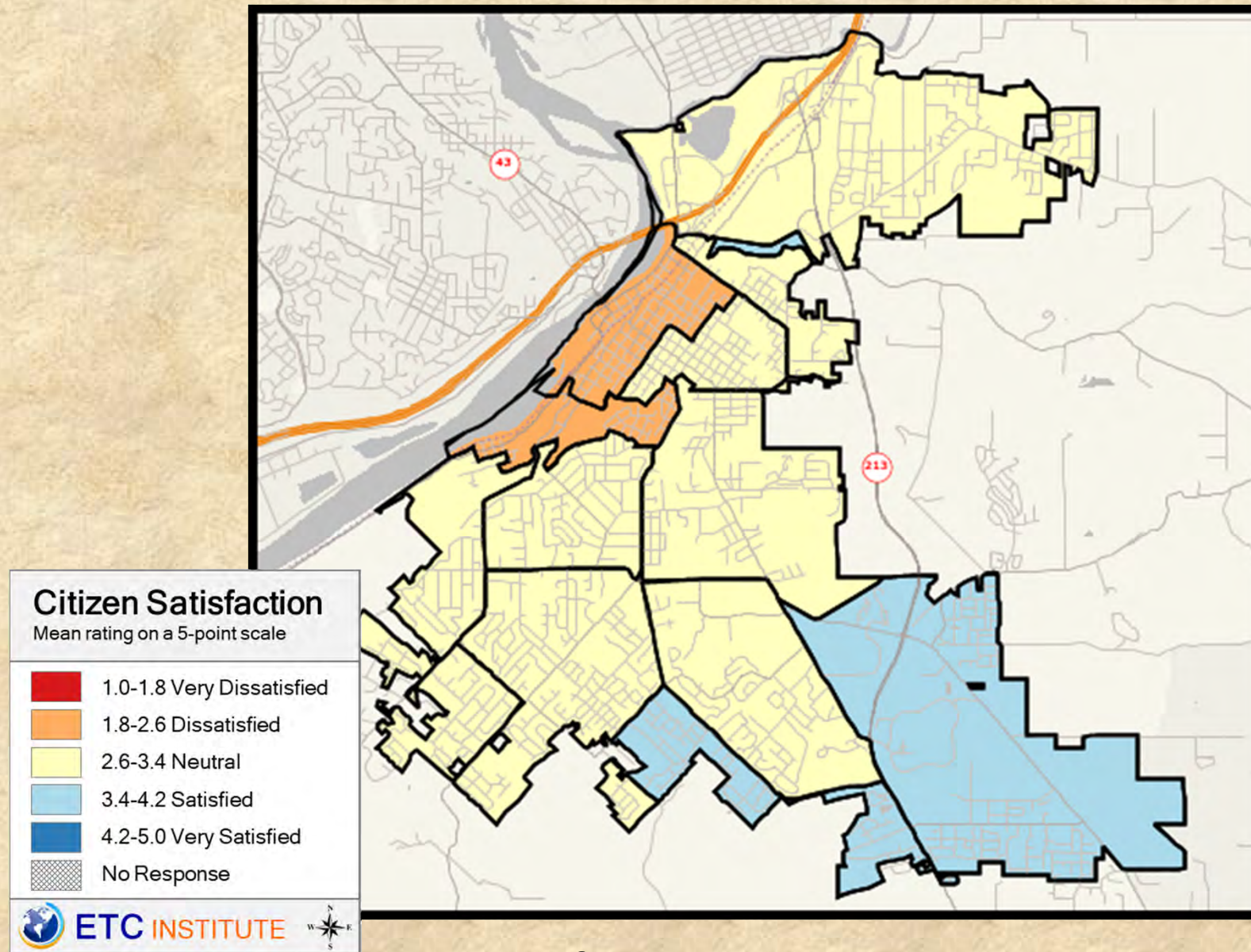
Q15-4. Adequacy of city street lighting in your neighborhood



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

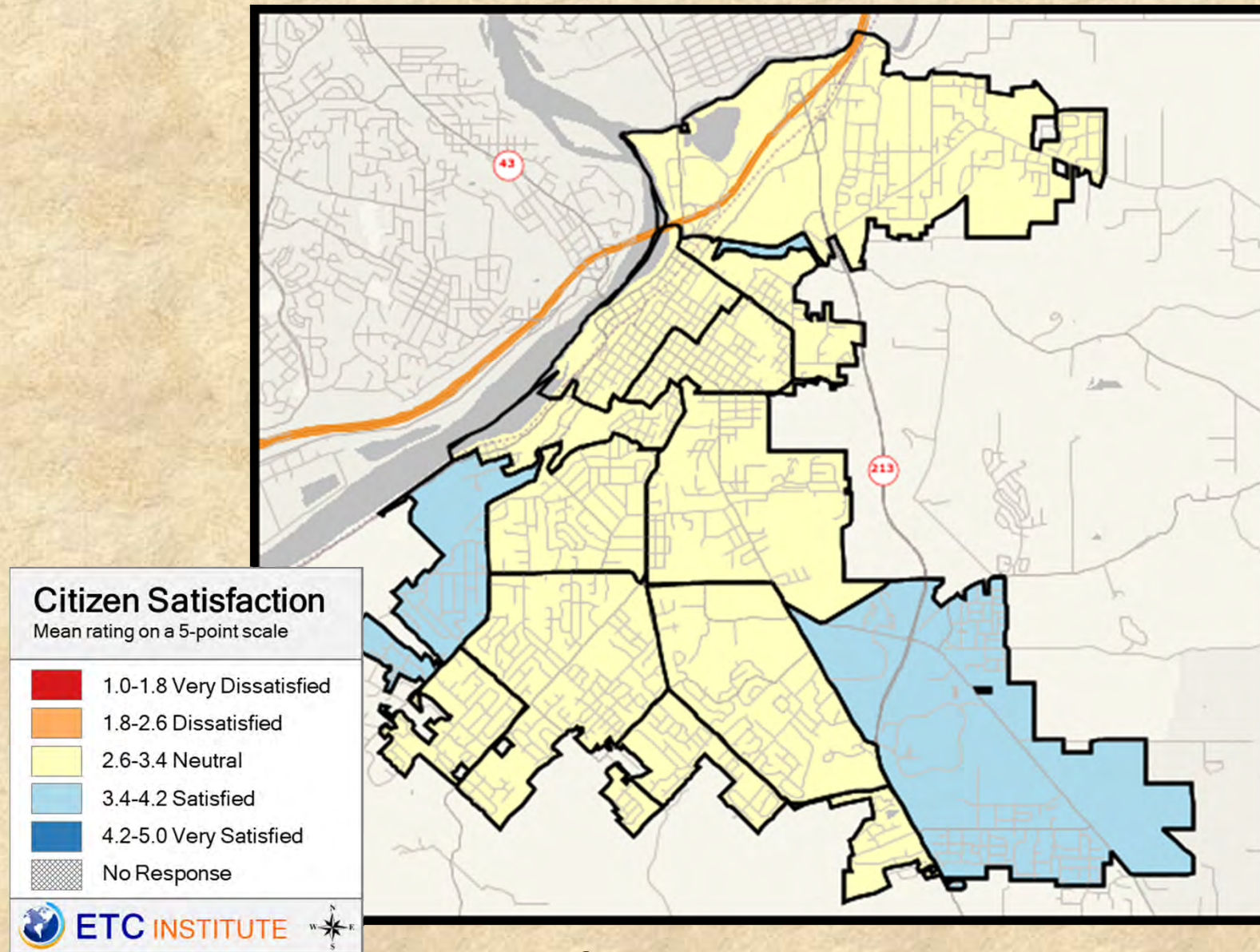
Q15-5. Condition of sidewalks in your neighborhood



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

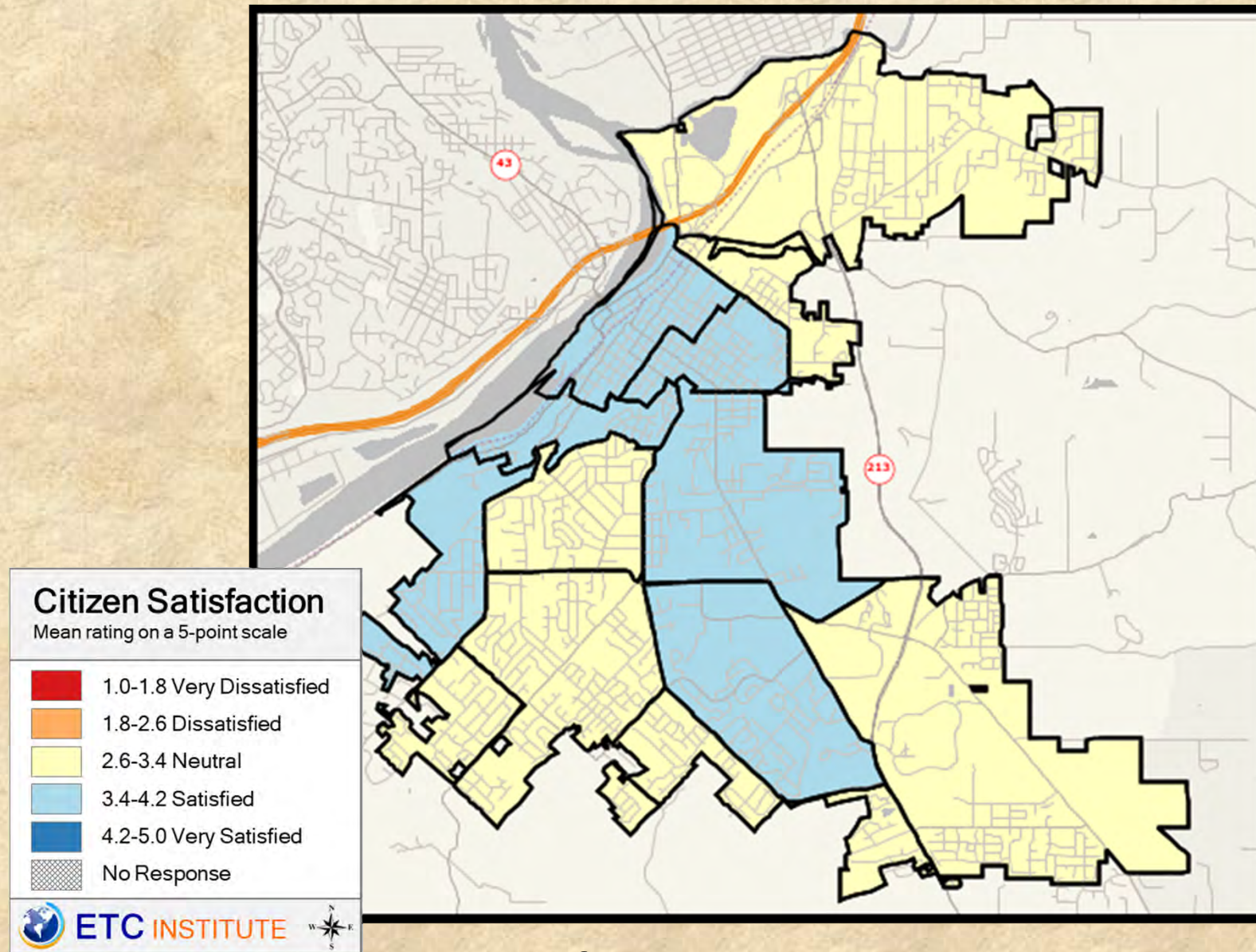
Q15-6. On-street bicycle infrastructure (bike lanes/signs/arrows)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

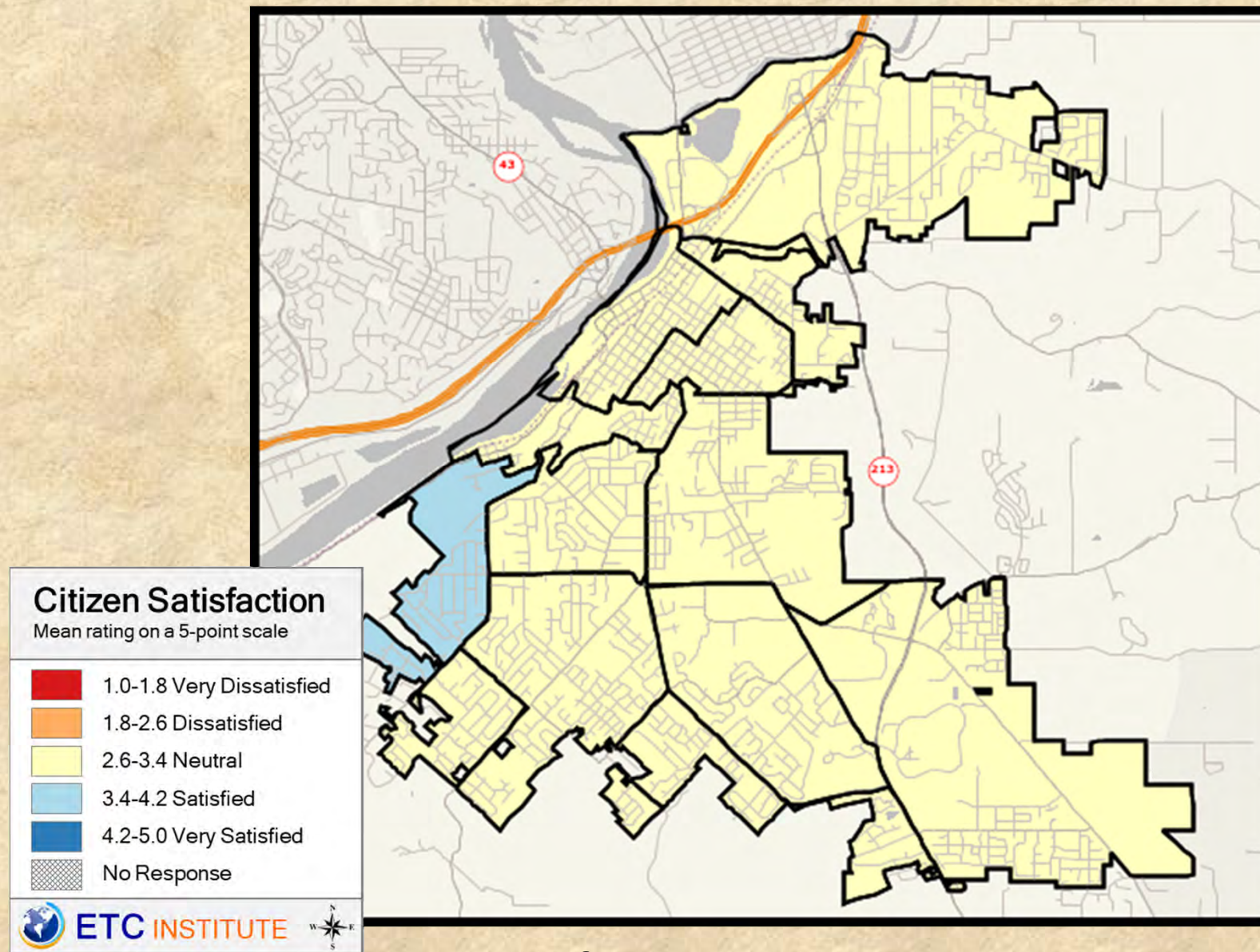
Q15-7. Accessibility of public transportation options



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

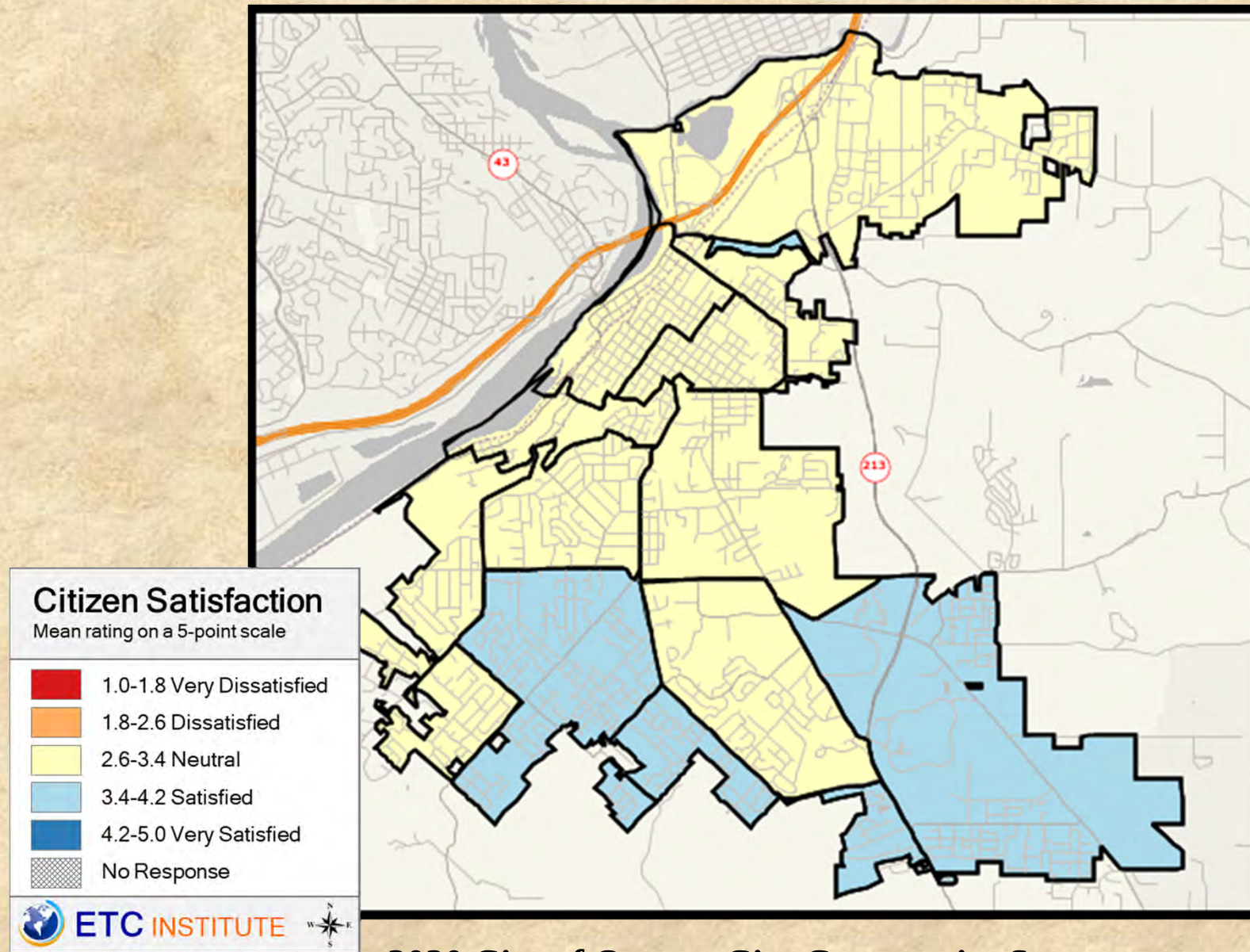
Q15-8. Availability of safe pedestrian ways on major streets and routes



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

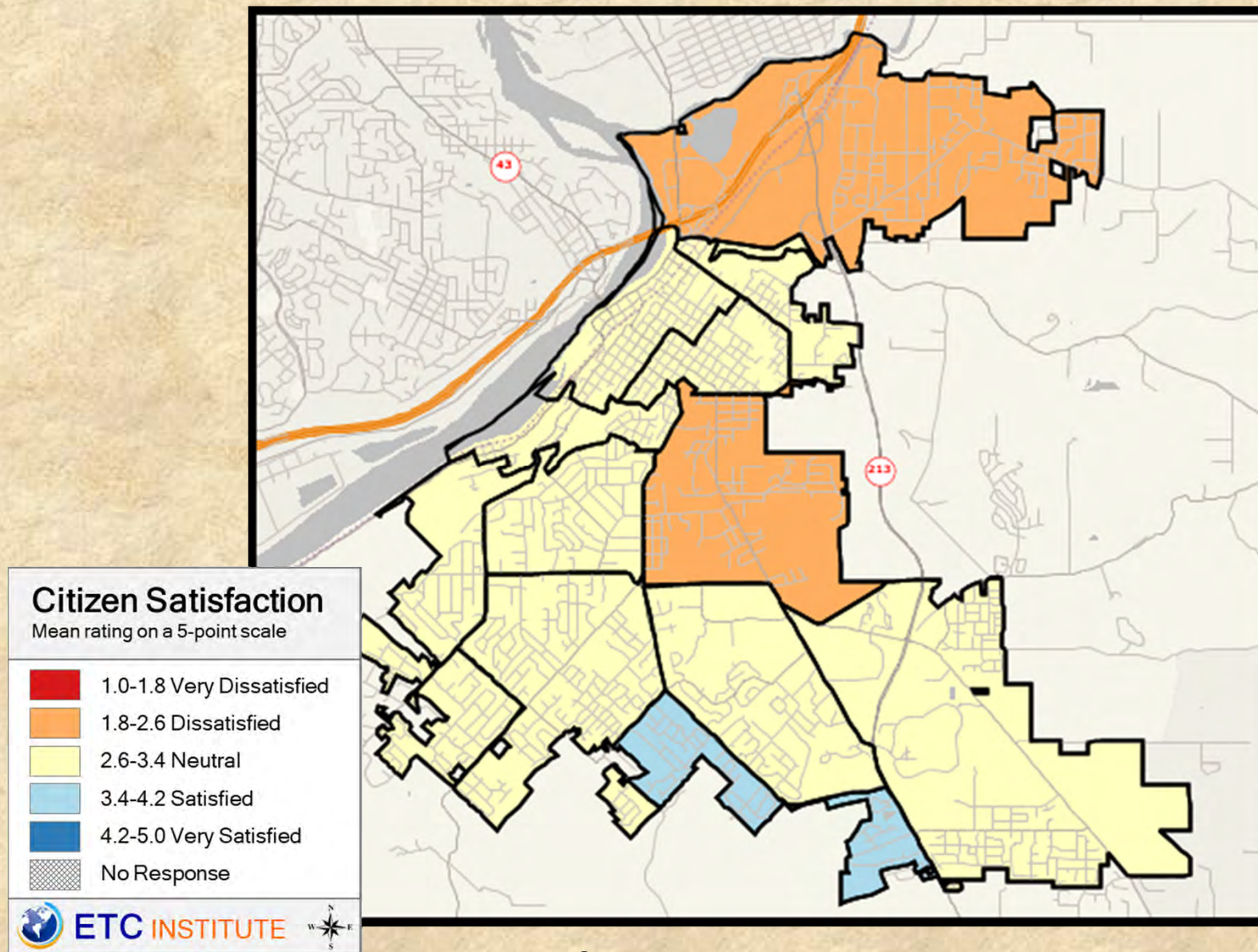
Q15-9. Availability of safe pedestrian ways in your neighborhood



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

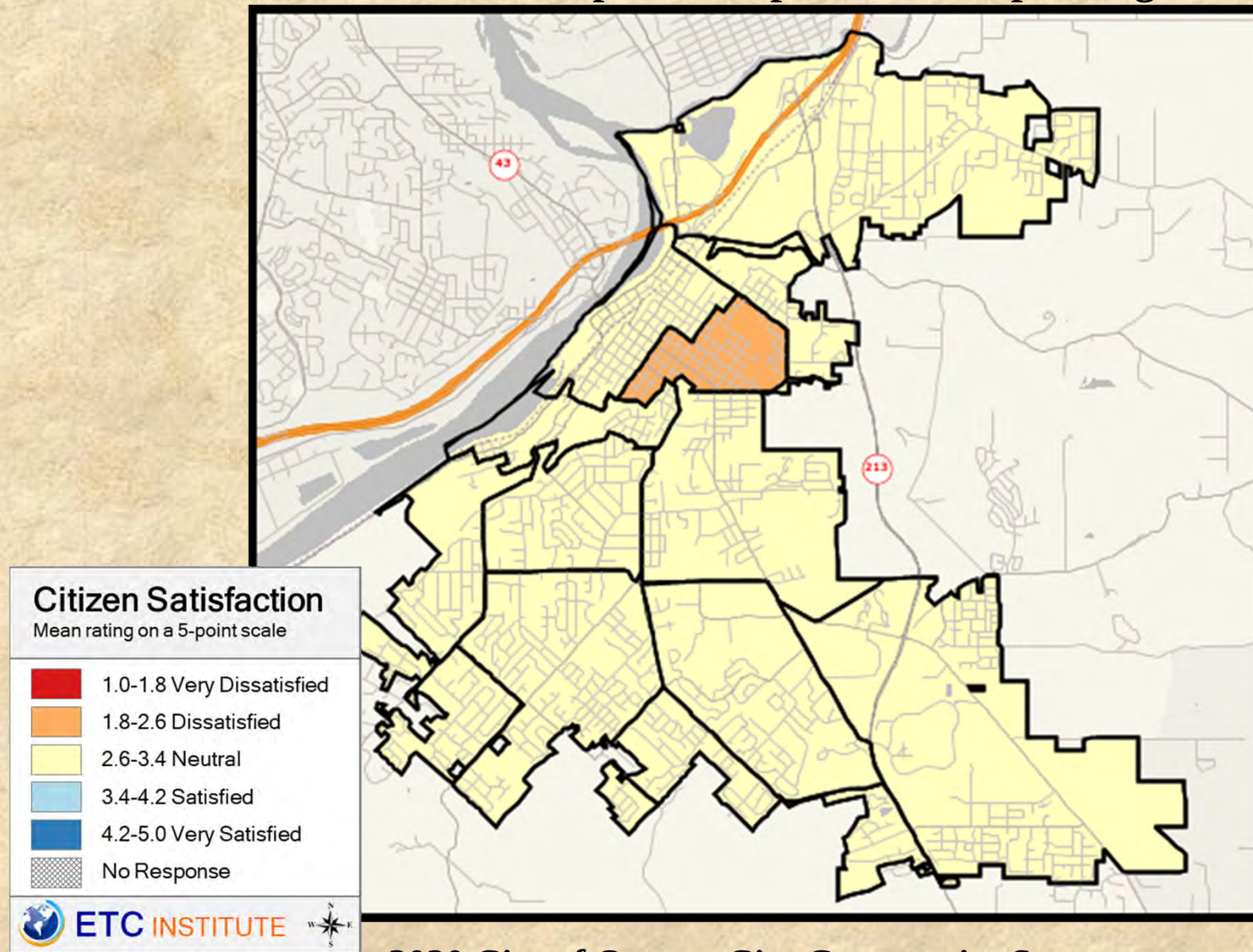
Q15-10. Quality of sidewalks for people with mobility challenges



2020 City of Oregon City Community Survey

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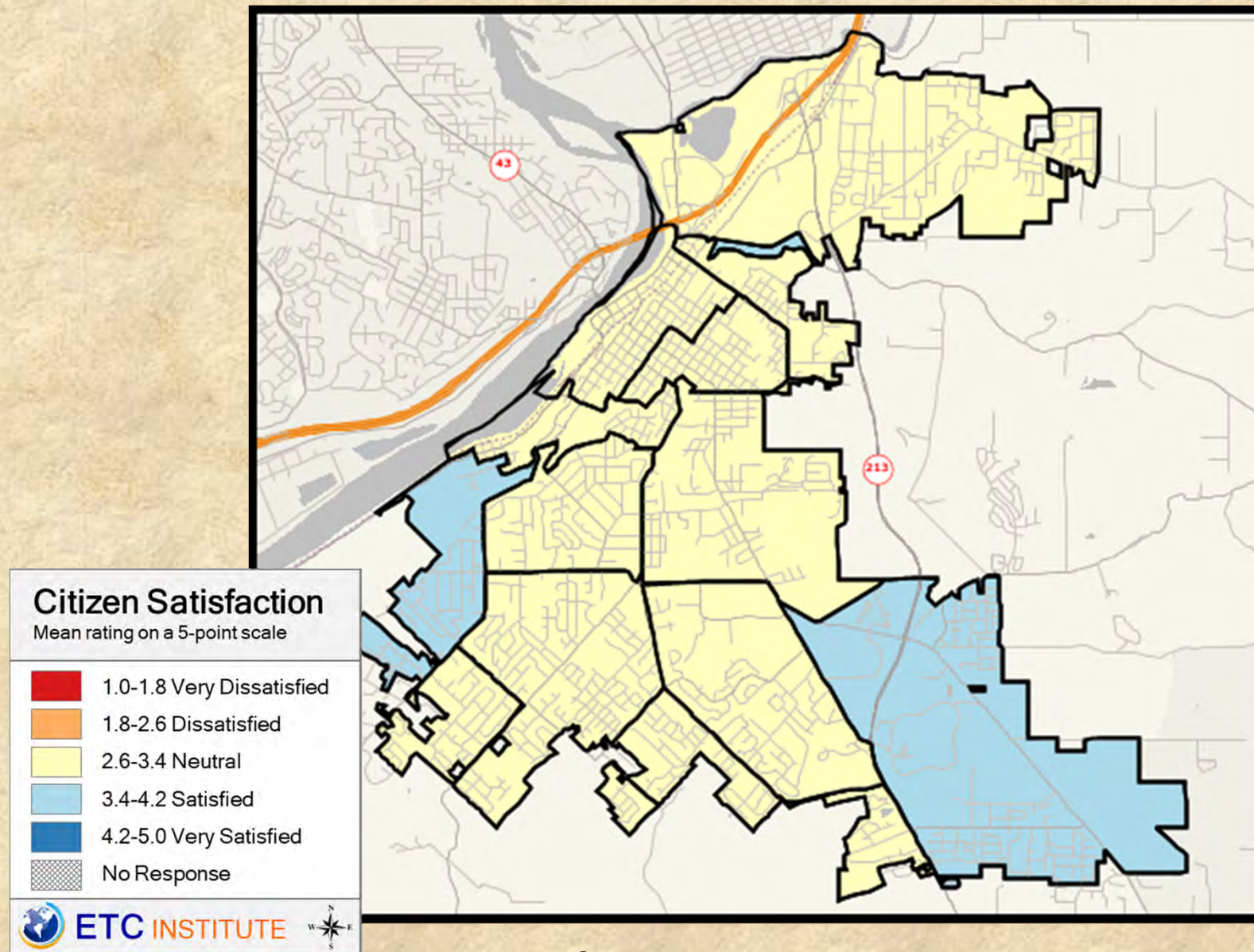
Q15-11. Traffic calming measures in your neighborhood, for example traffic circles, speed humps, or radar speed signs



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

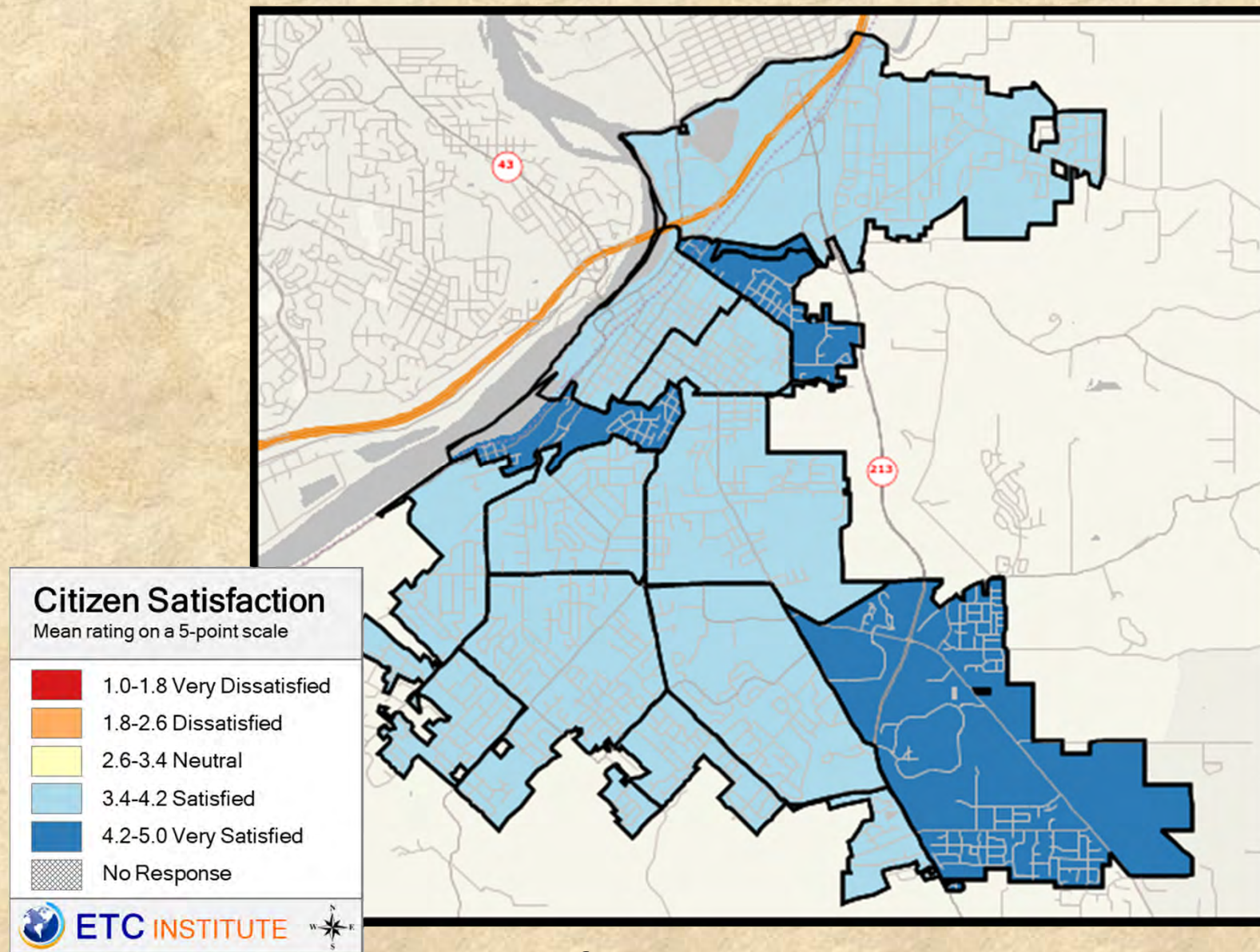
Q15-12. Alternative means of transportation such as transit, bicycling, walking



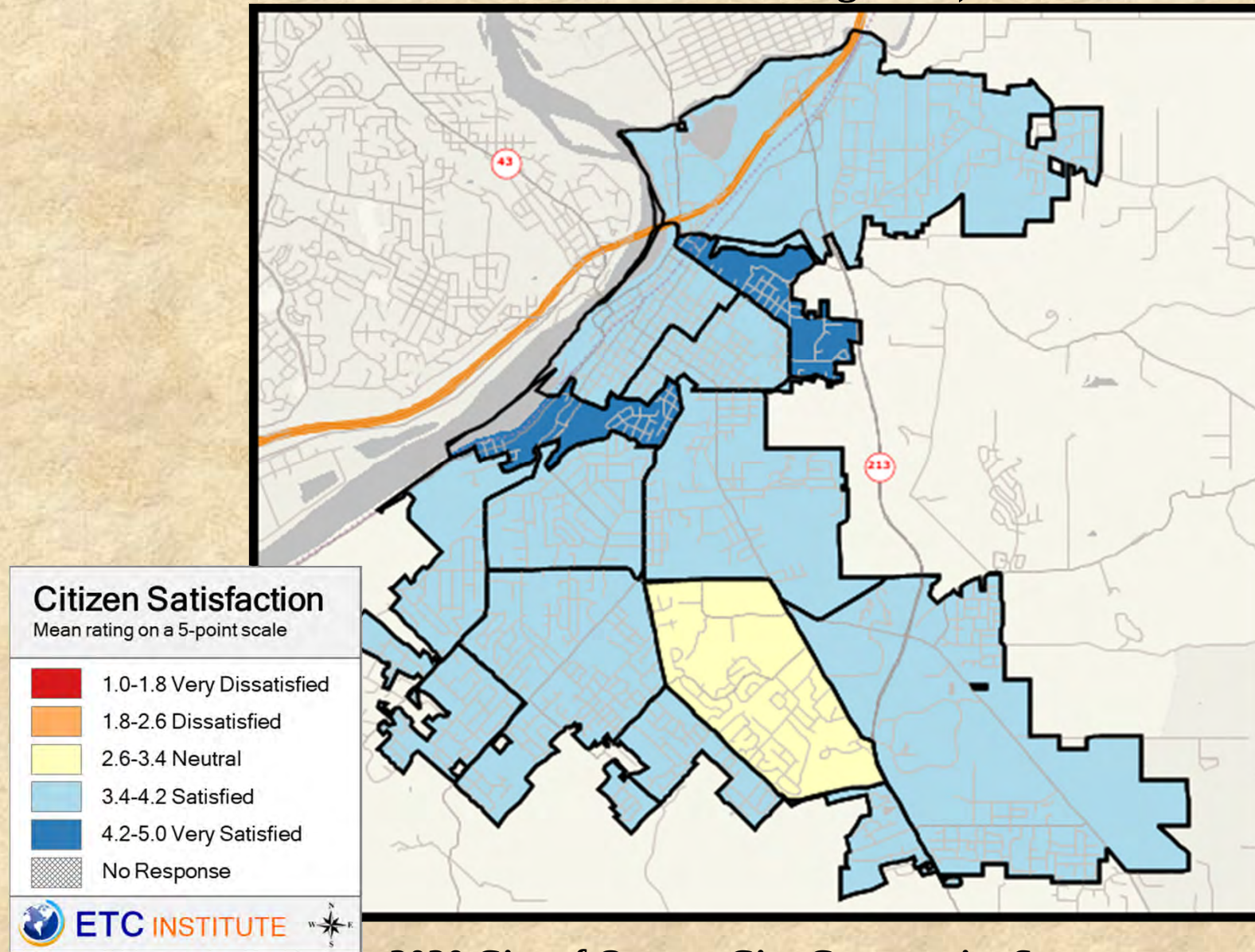
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q17-1. Selection of physical resources available (books, CD's, and DVD's)



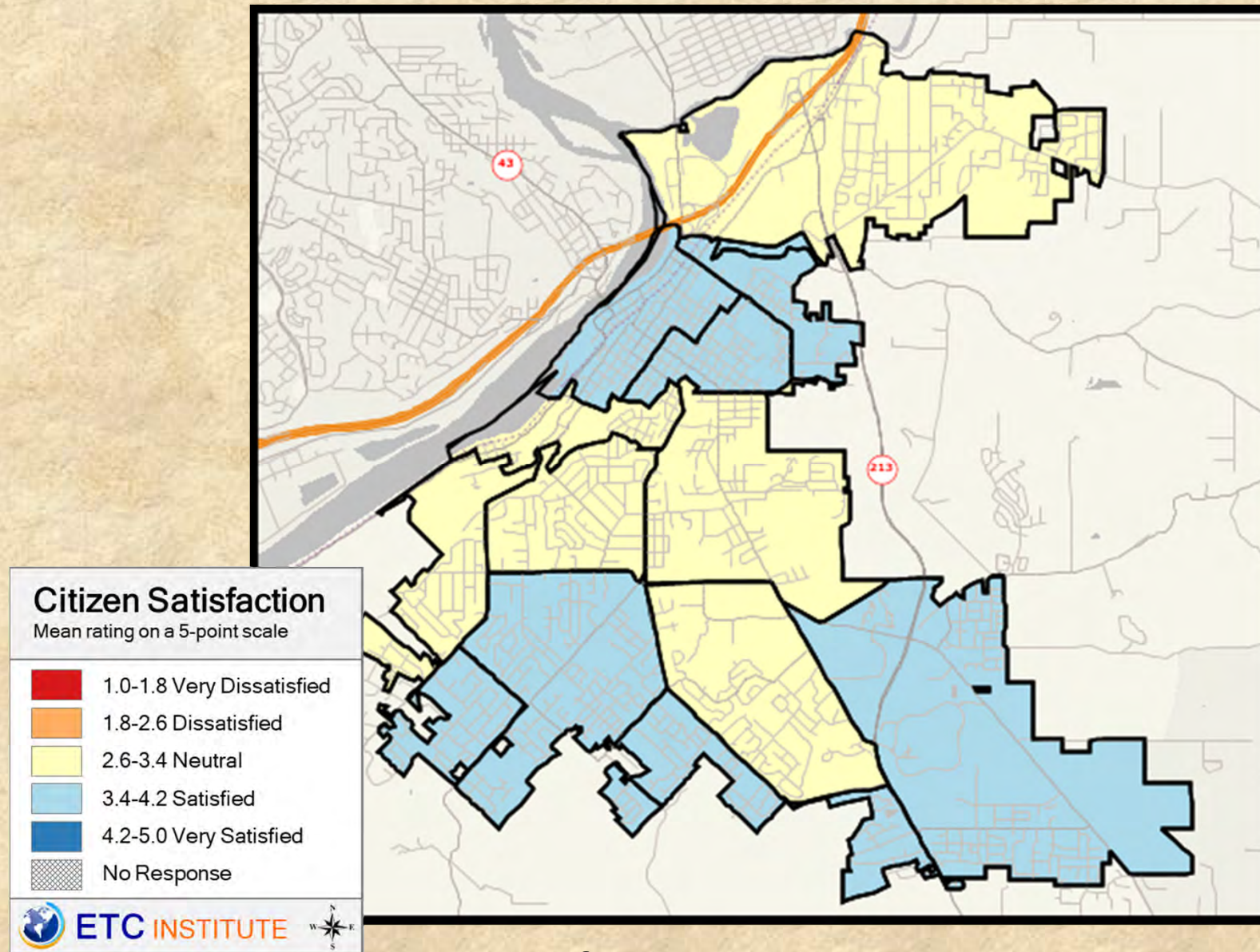
Q17-2. Selection of digital resources available online (e.g. eBooks, downloadable audio, streaming films)



2020 City of Oregon City Community Survey

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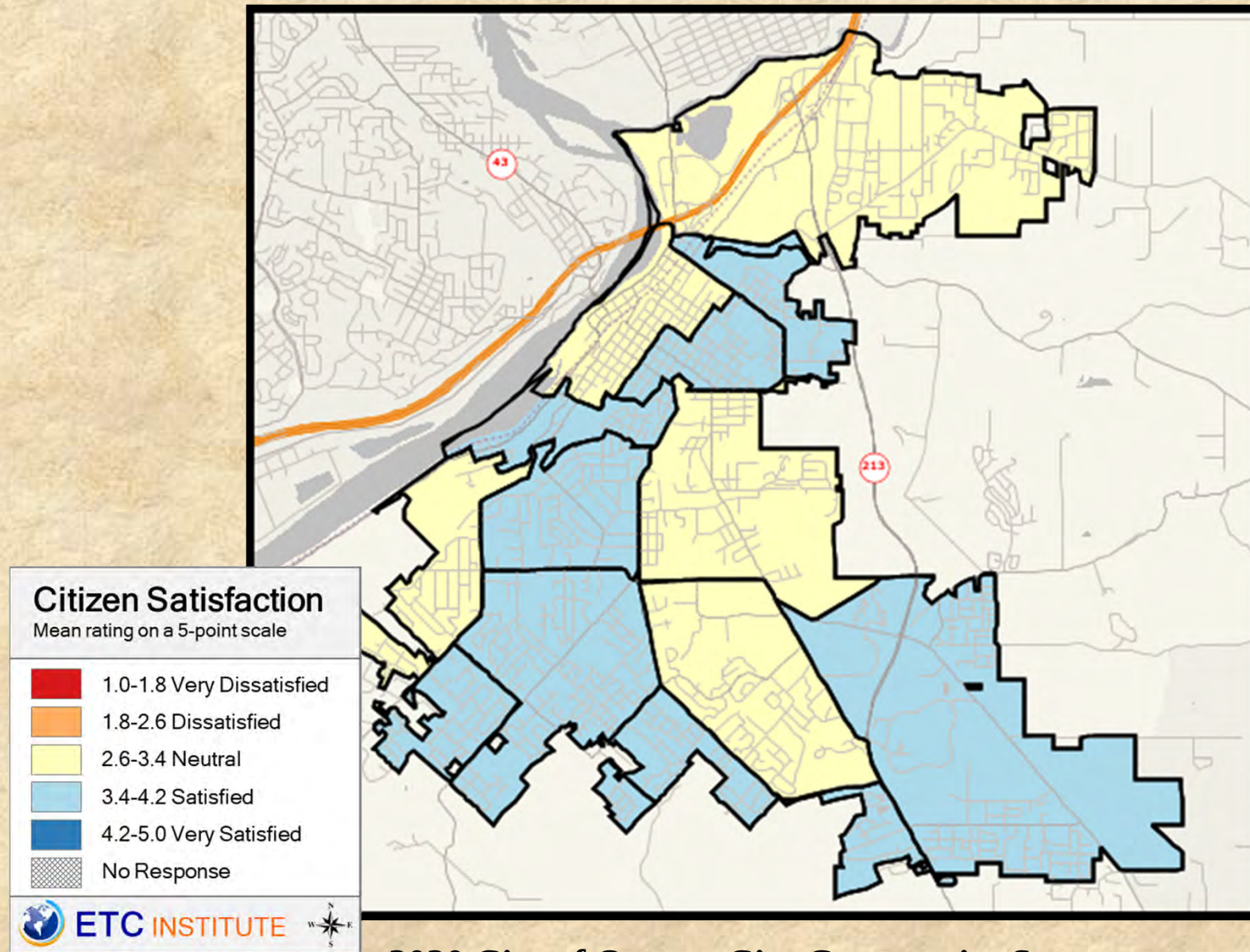
Q17-3. Events for seniors



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

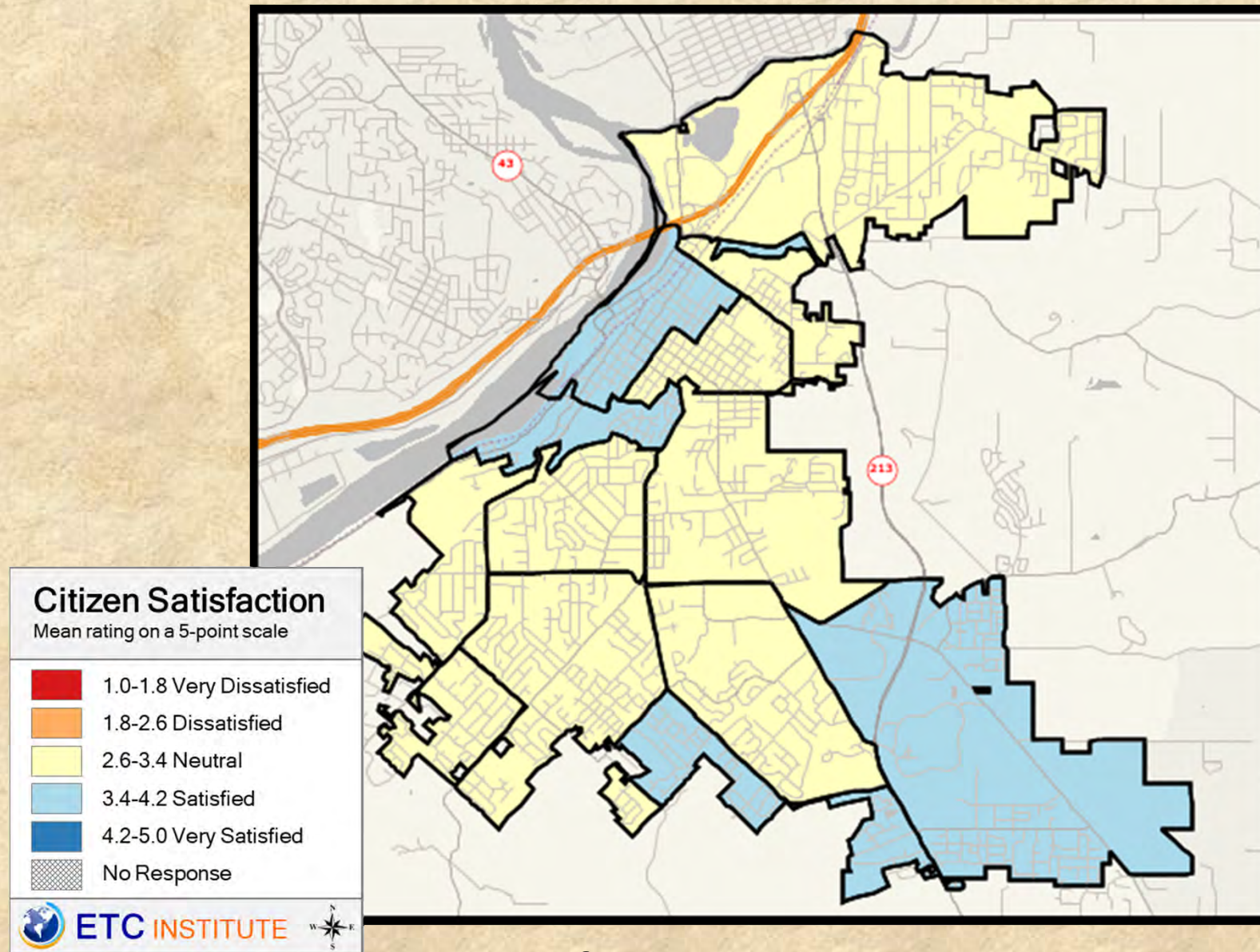
Q17-4. Events for adults (e.g. informational, literary, participatory, entertainment)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

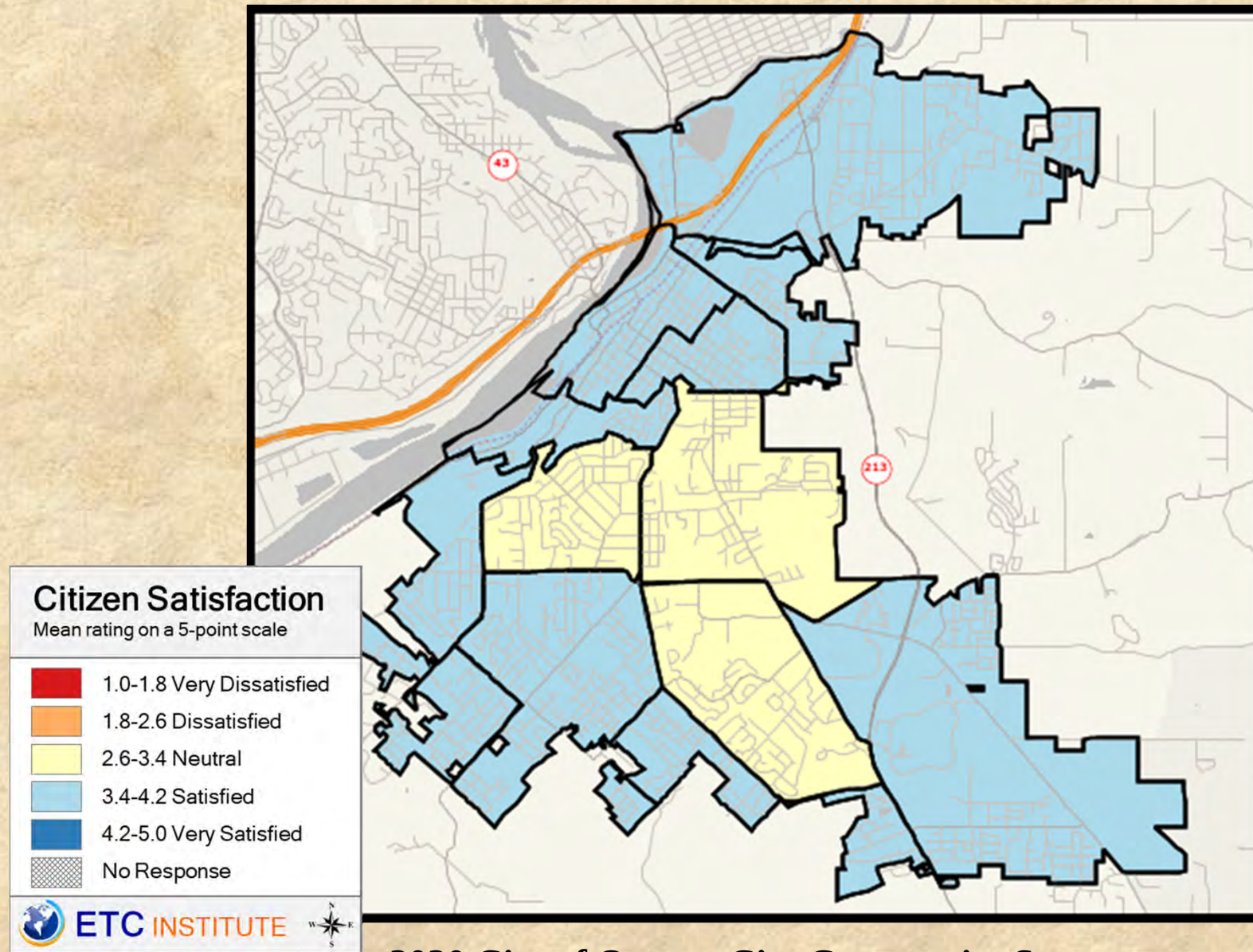
Q17-5. Events for teens (e.g. Teen Advisory Council, crafts, summer reading)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

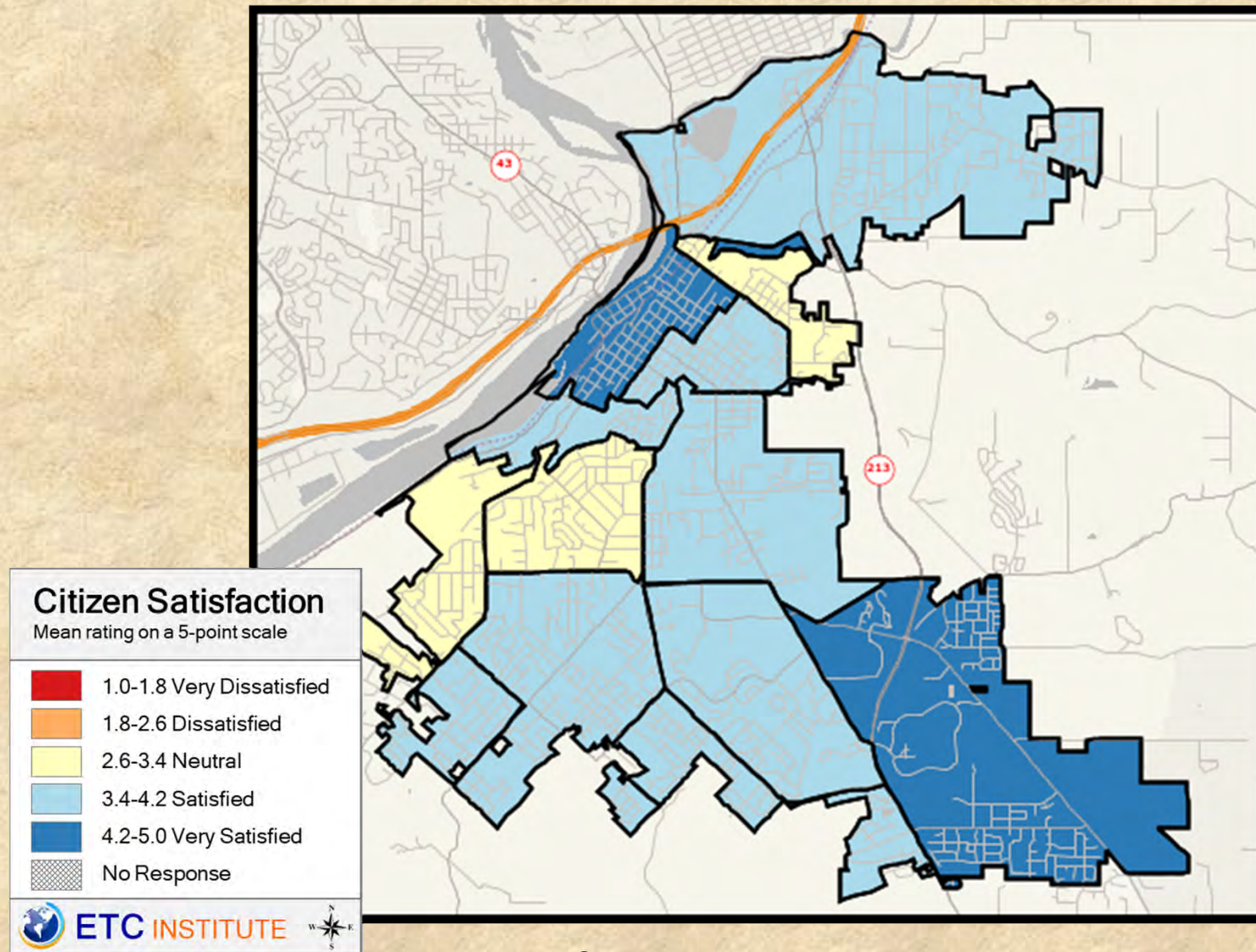
Q17-6. Events for children (e.g. early literacy development, story times, summer reading program)



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

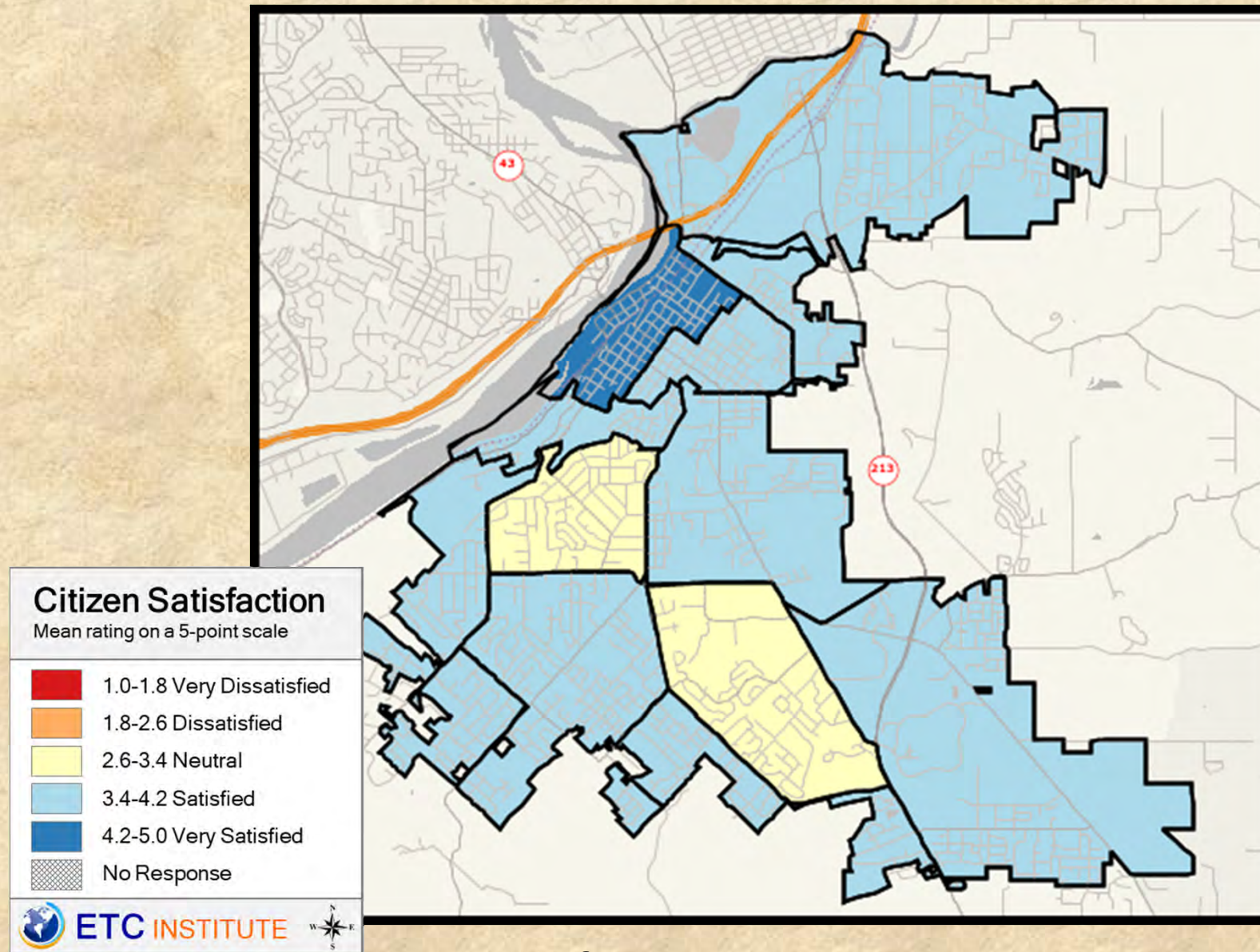
Q17-7. Reader's Advisory (help finding something to read)



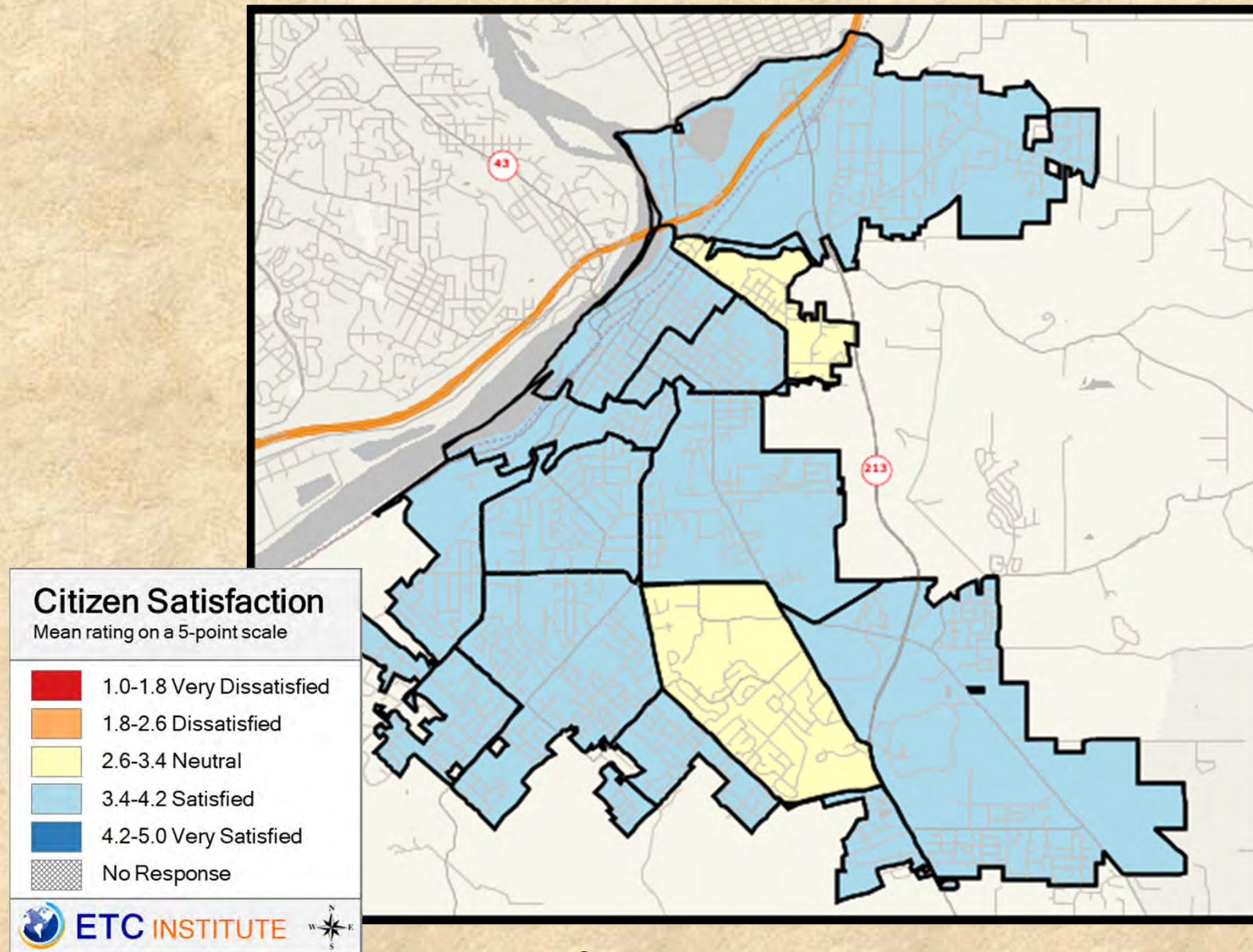
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

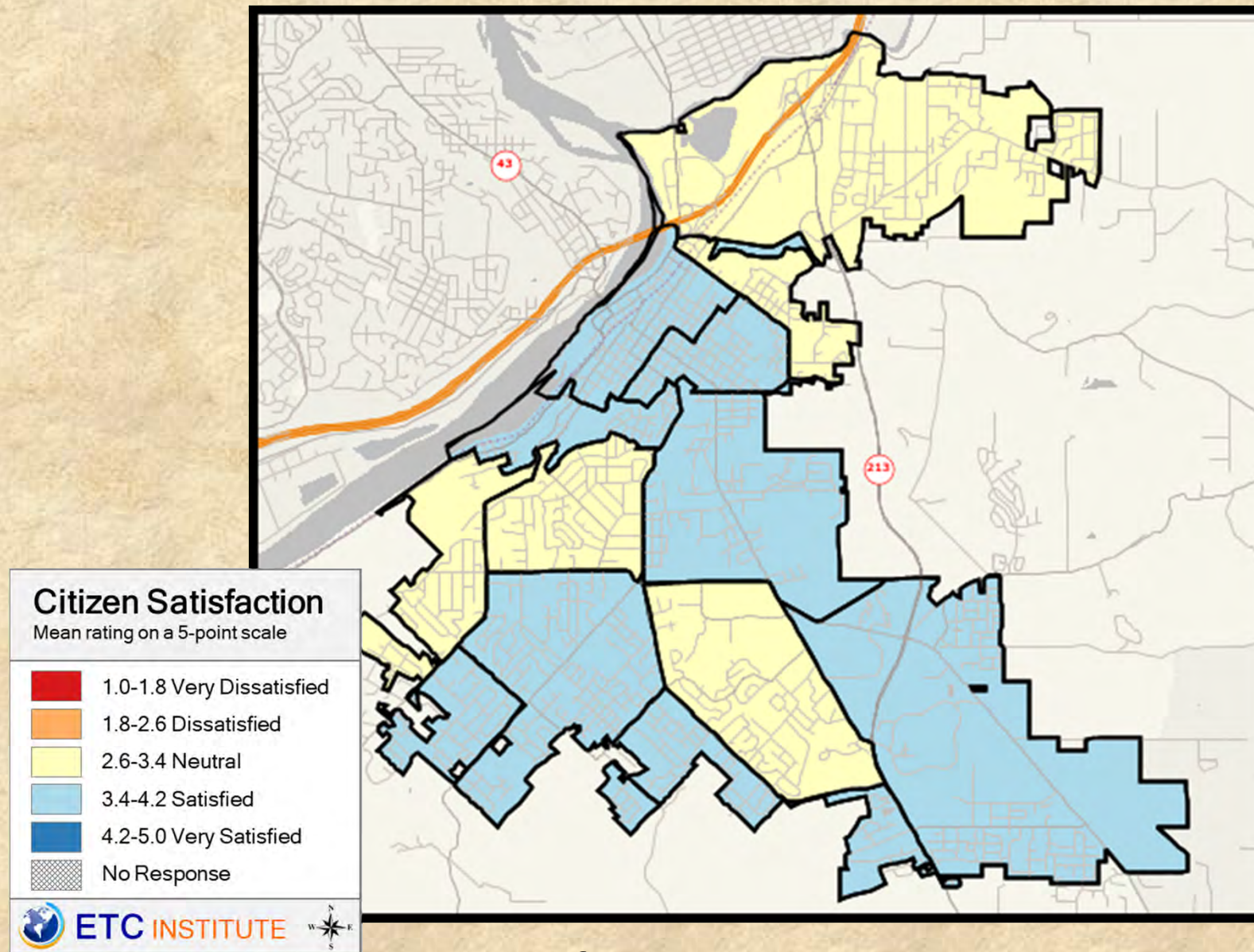
Q17-8. Selection of reference and research tools



Q17-9. Access to computers and library Wi-Fi



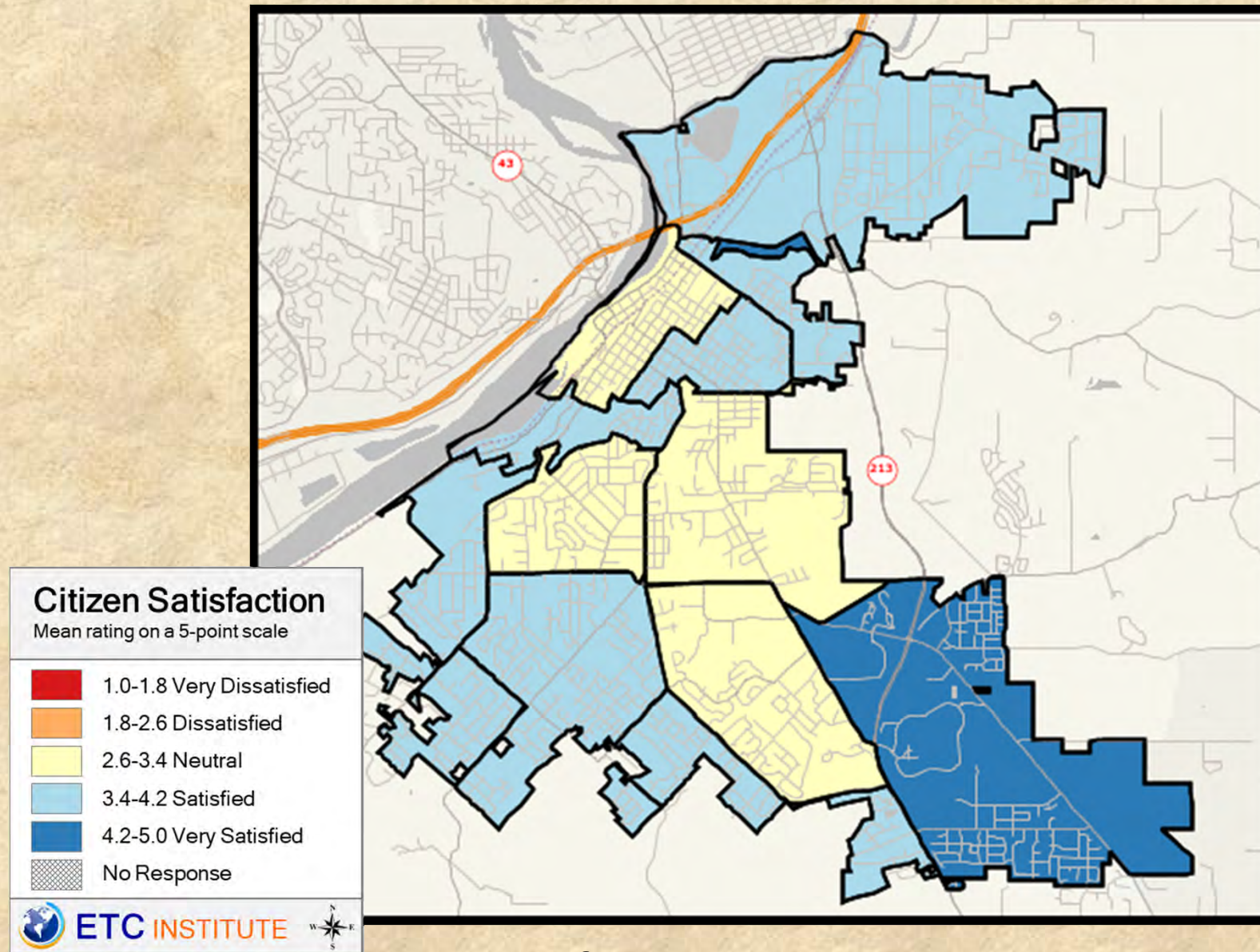
Q17-10. Ease of booking meeting rooms



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

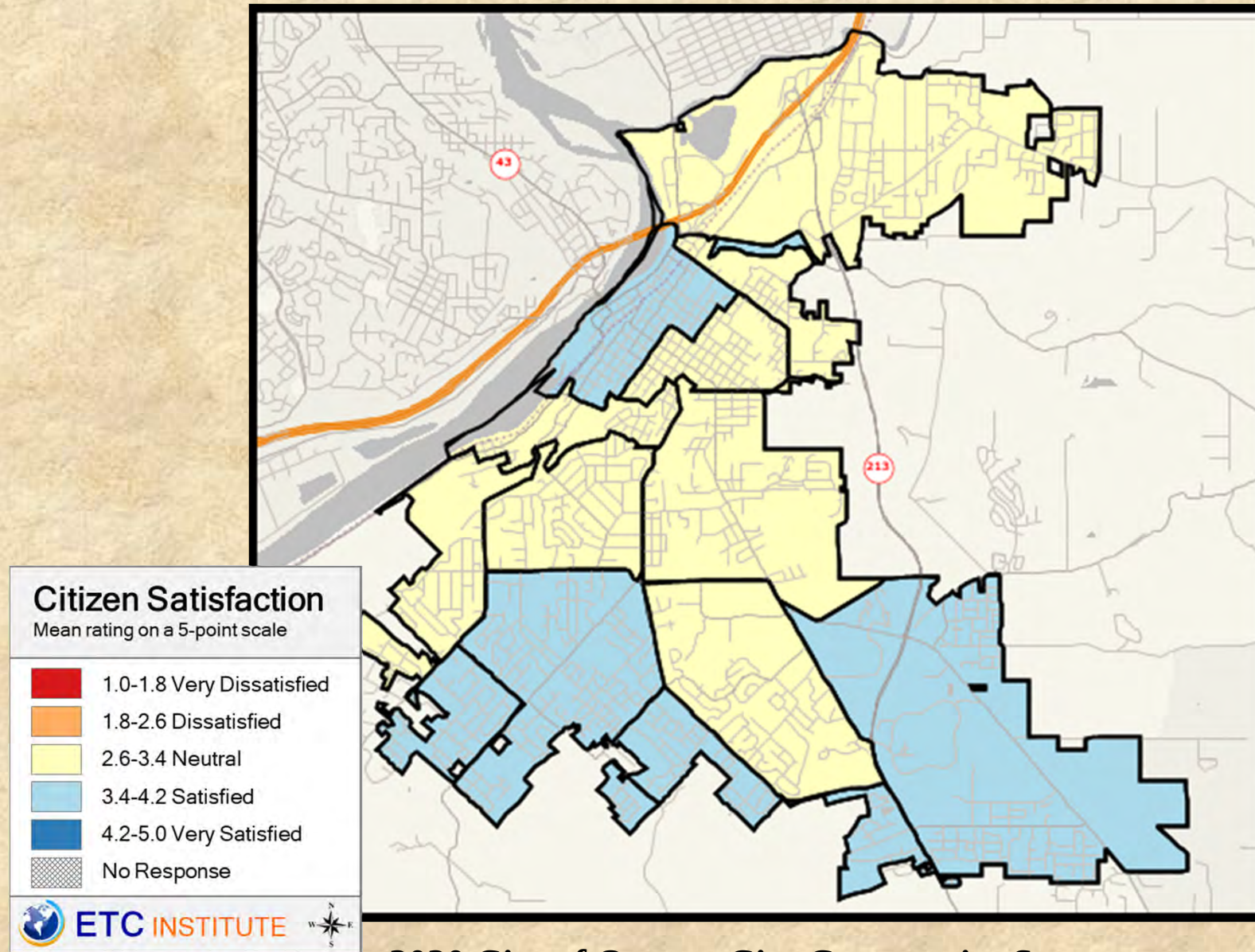
Q17-11. Library as a hub of community information



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

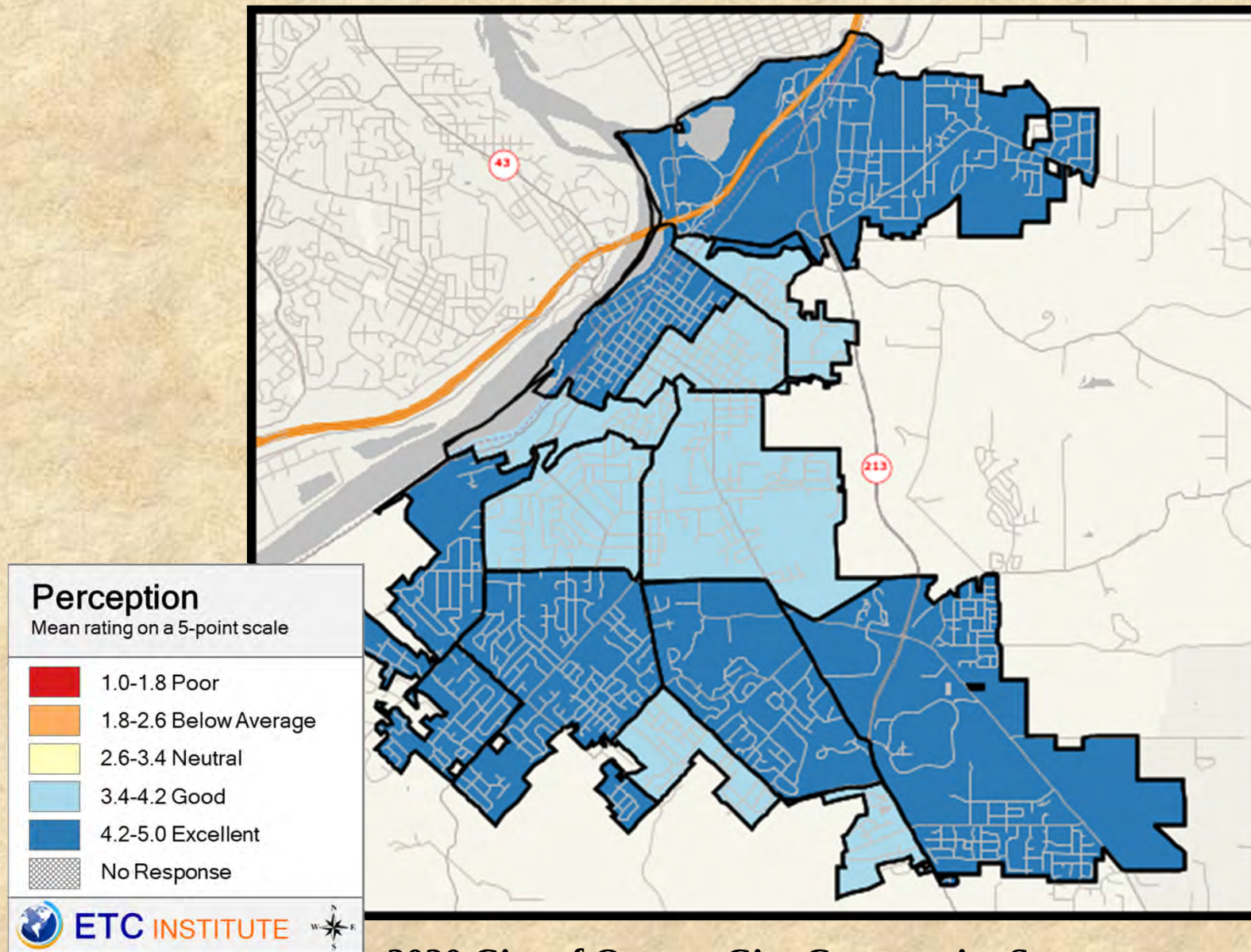
Q17-12. Outreach programs and/or services in the community outside of the library



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

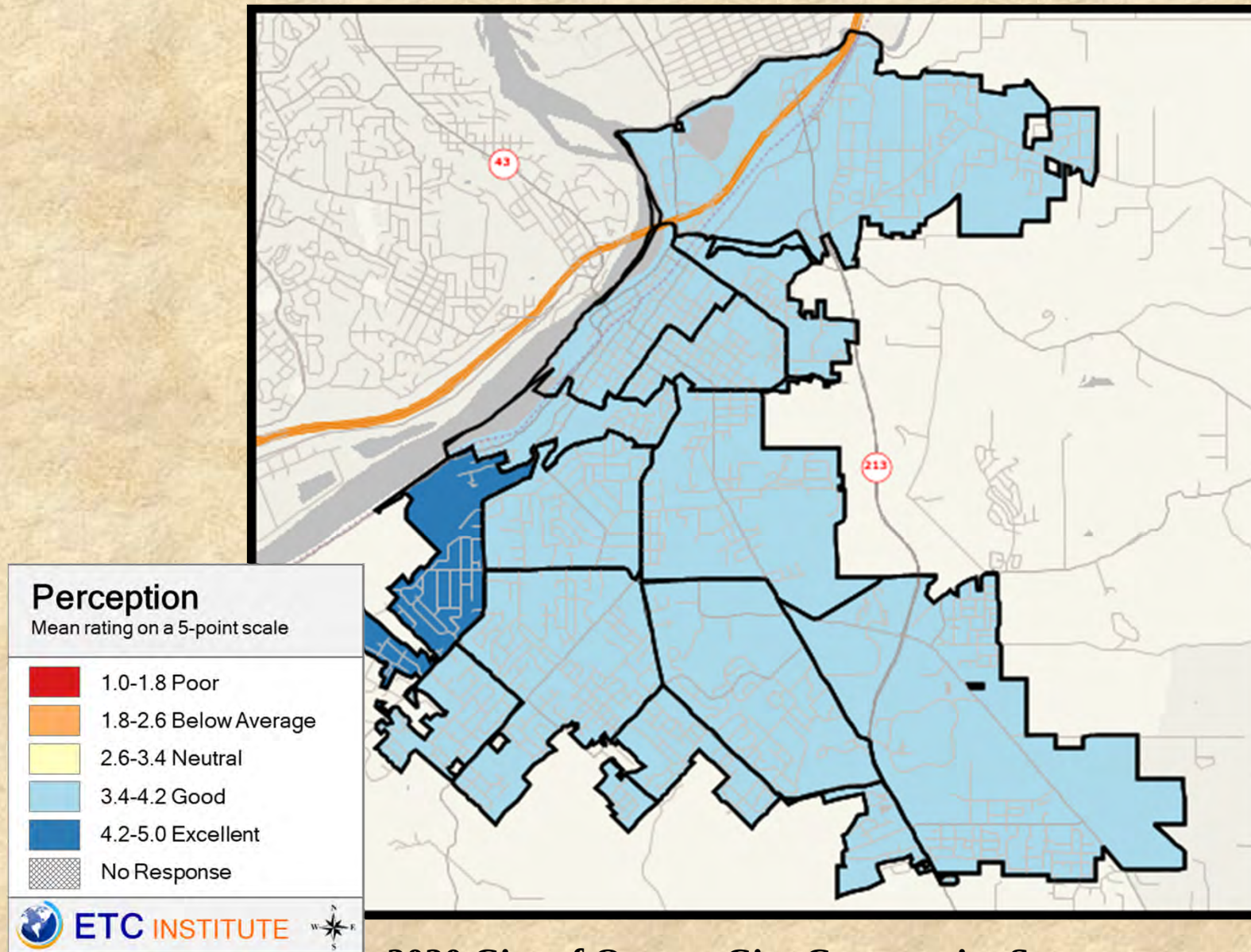
Q22-1. As a place to live



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

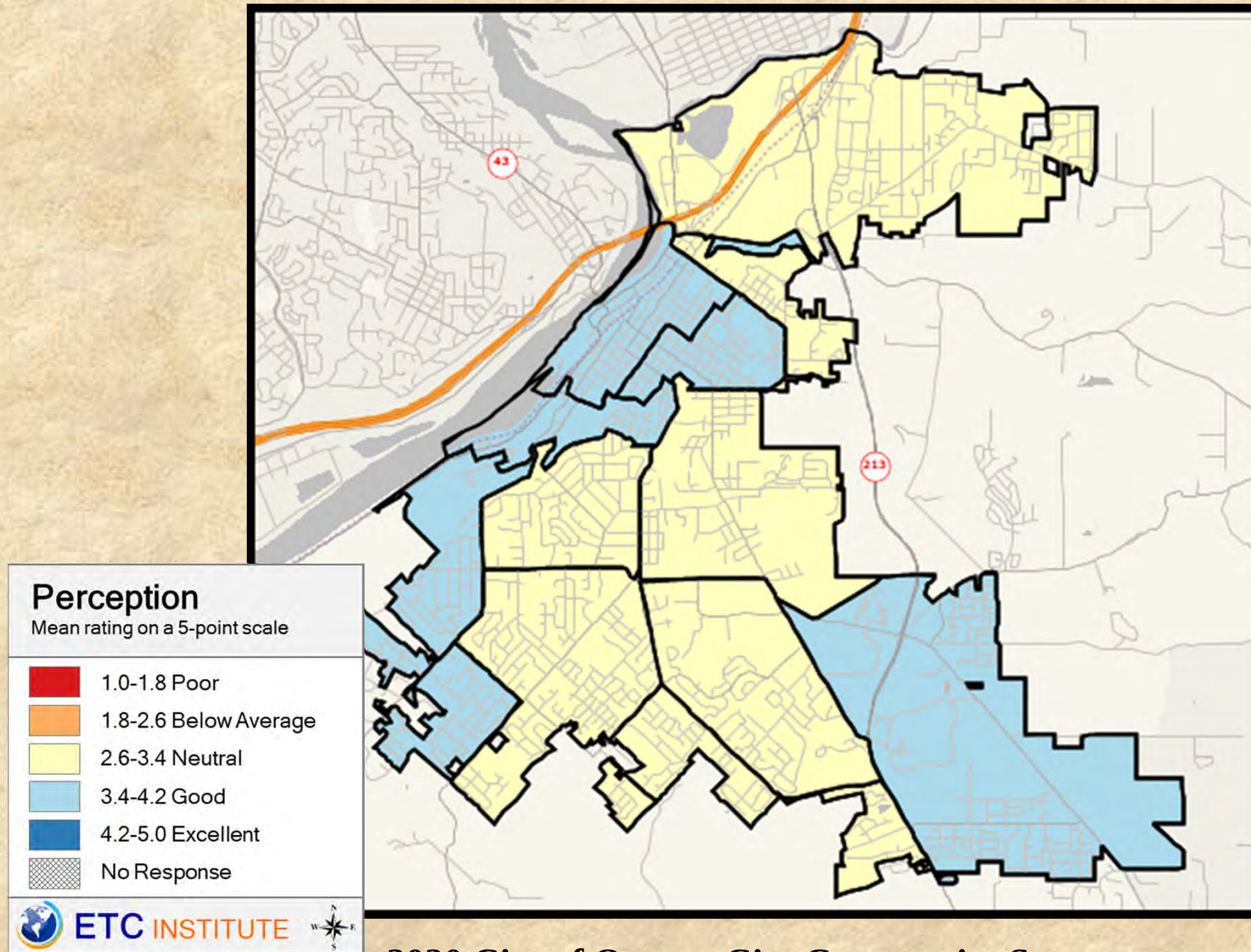
Q22-2. As a place to raise children



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

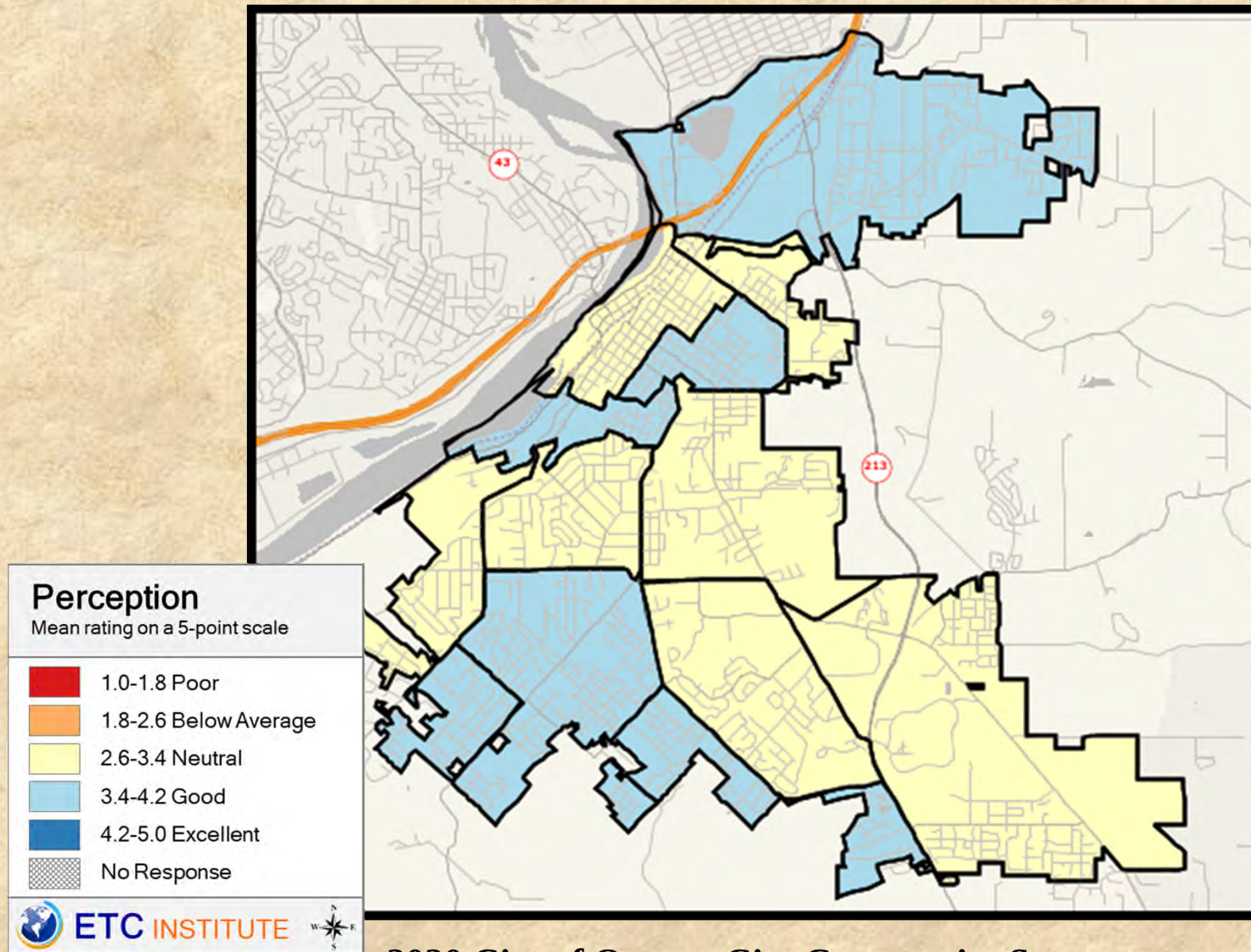
Q22-3. As a place to work



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

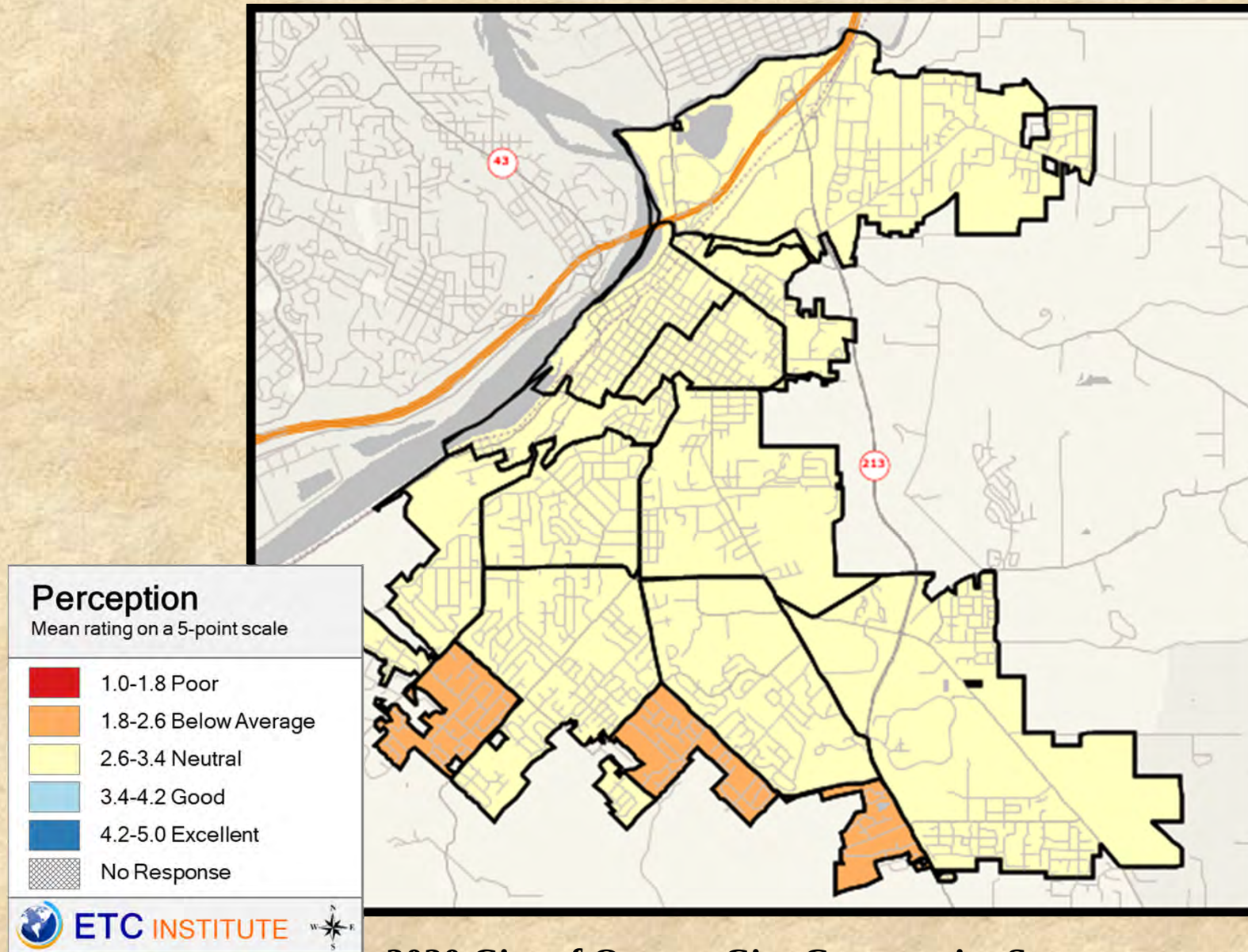
Q22-4. As a place with a variety of housing choices



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

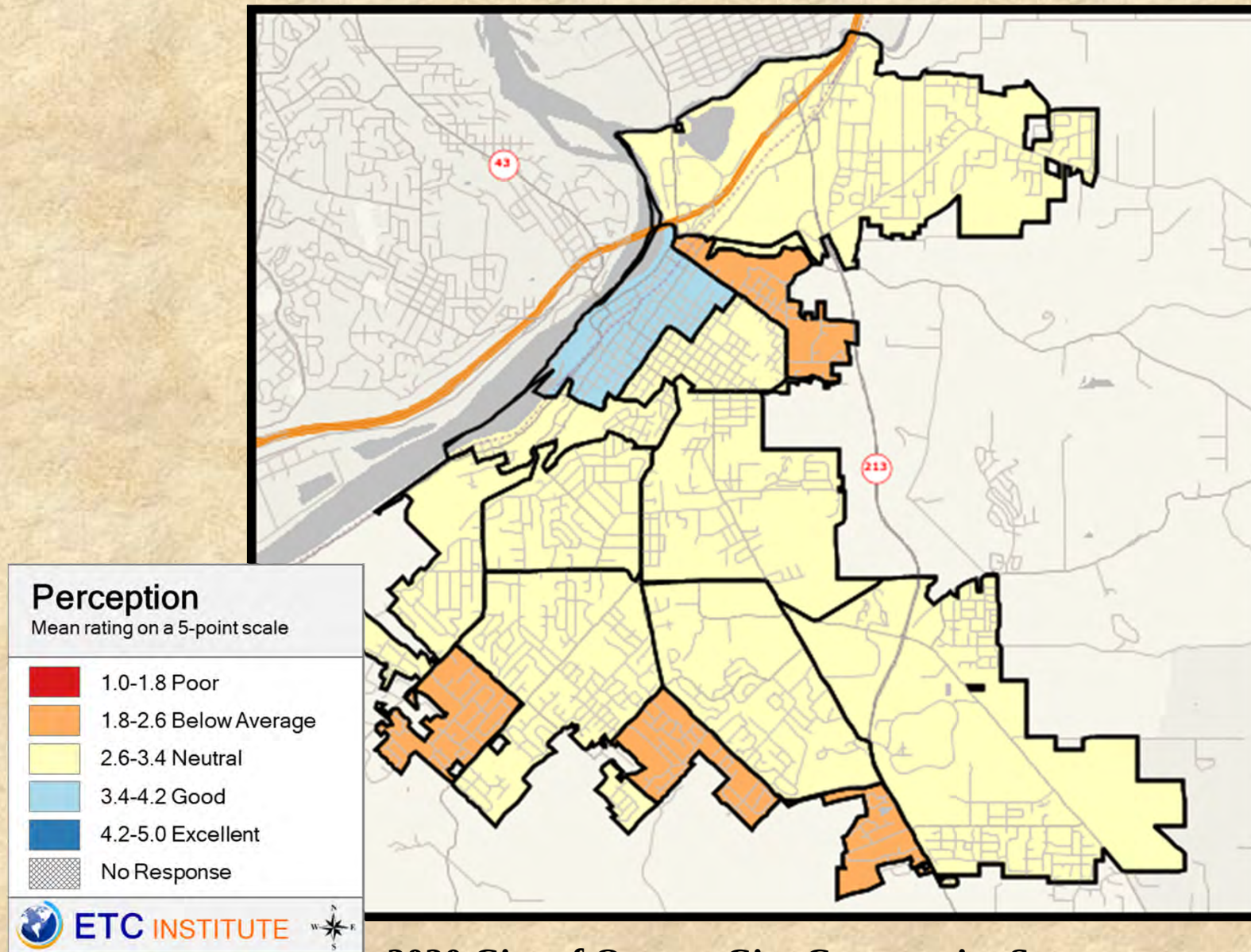
Q22-5. As a place to shop



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

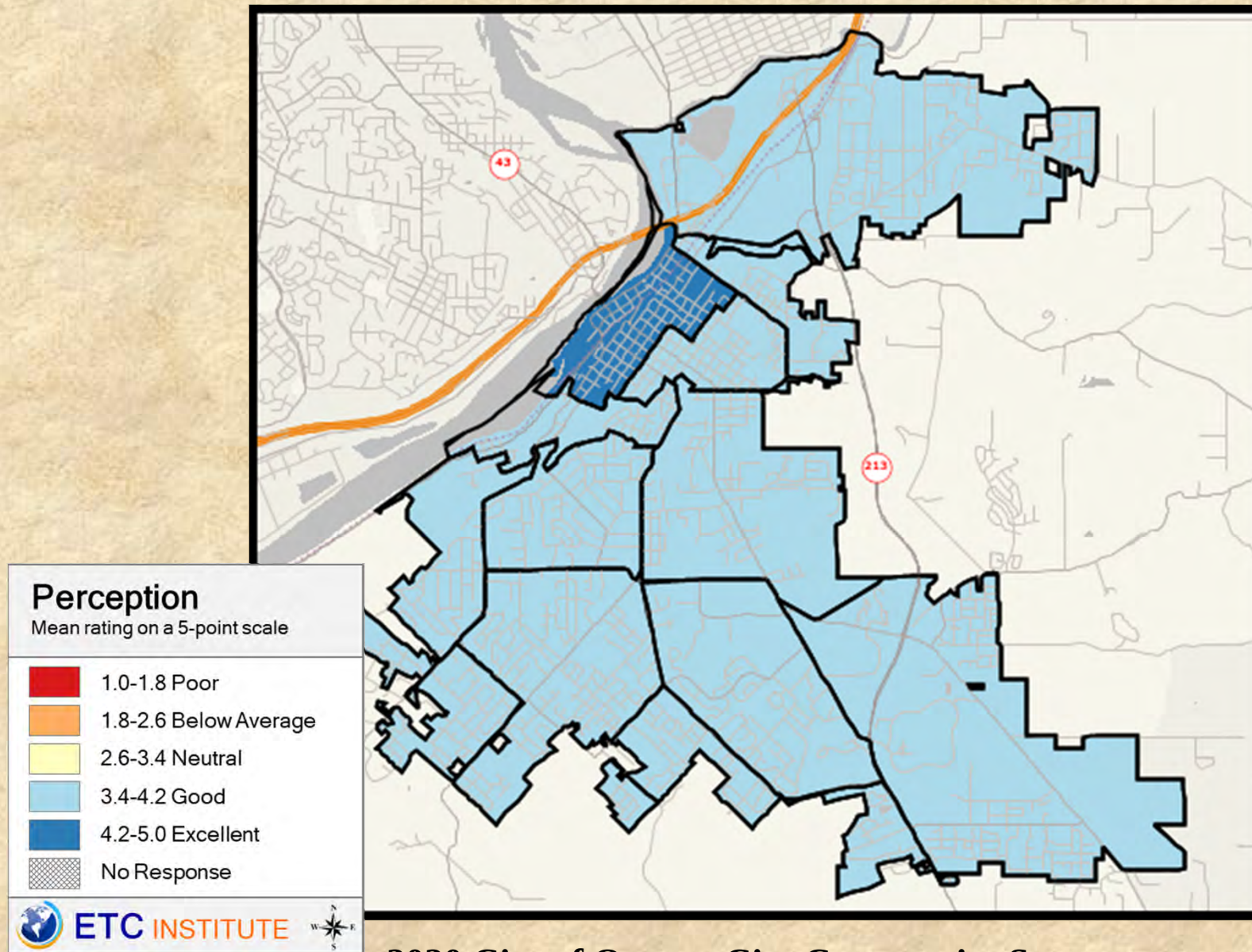
Q22-6. As a place for dining and entertainment options



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

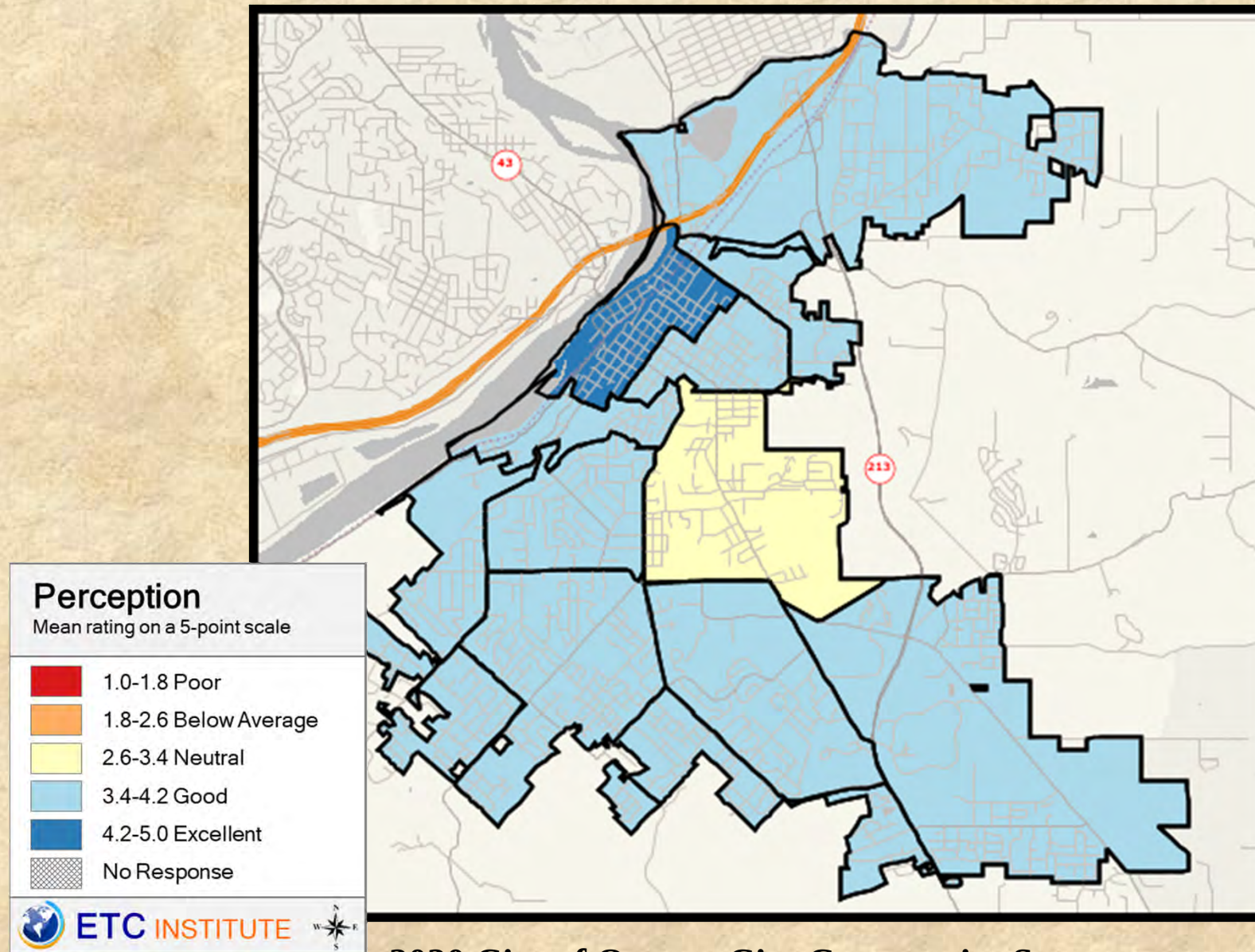
Q22-7. Overall quality of life in the city



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

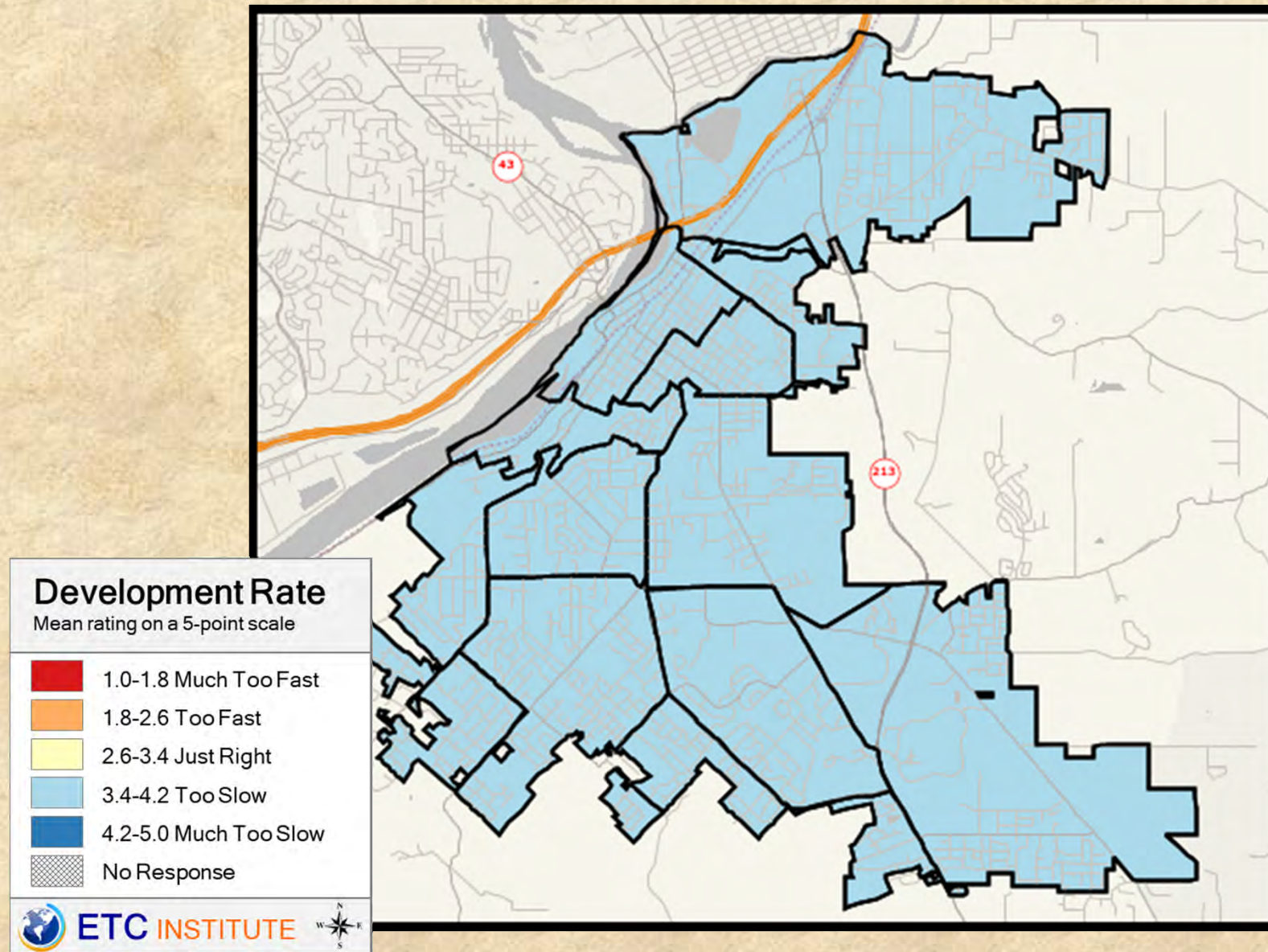
Q22-8. As a place to connect and interact with your neighbors



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

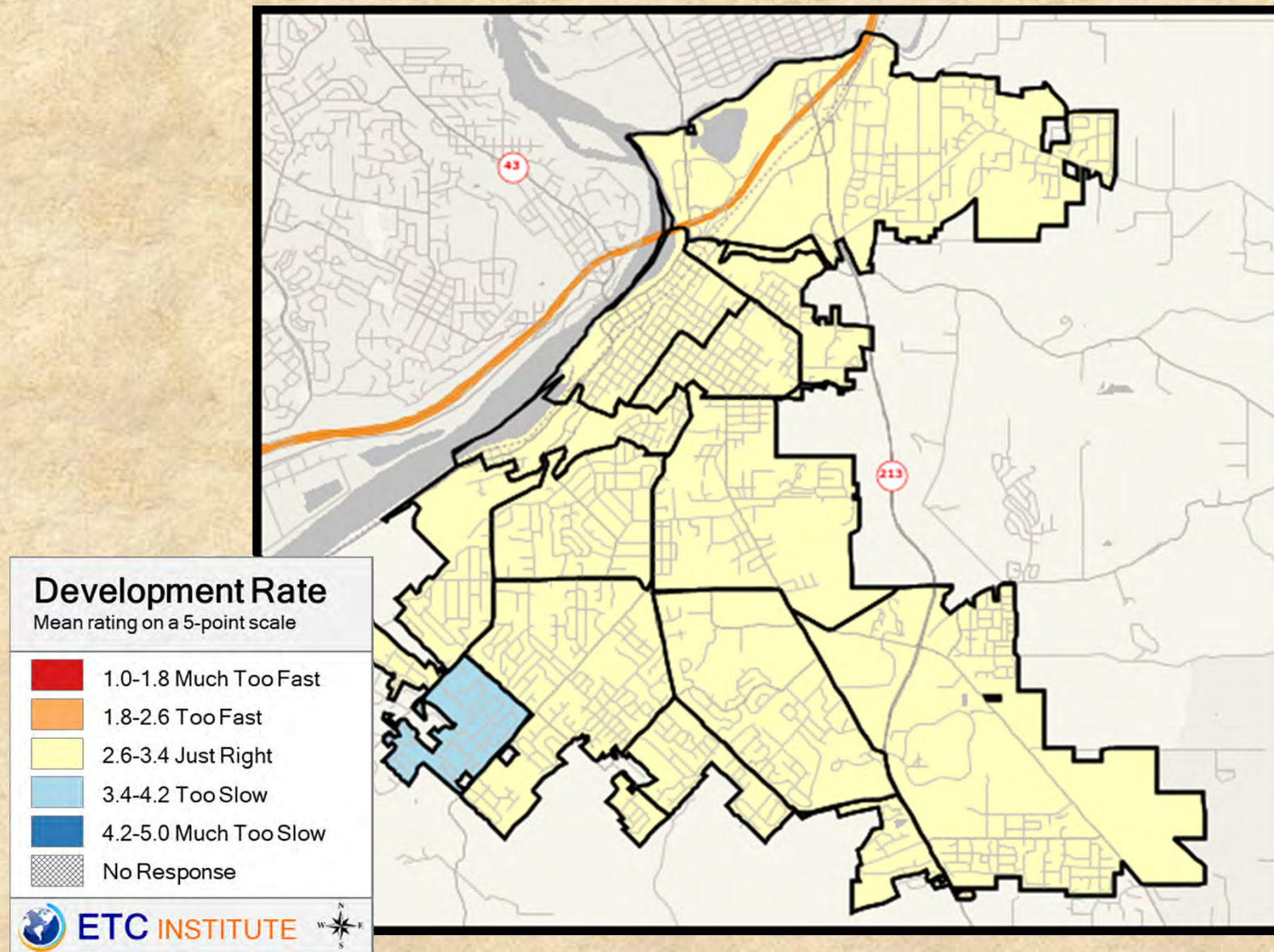
Q24-1. Employment opportunities



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

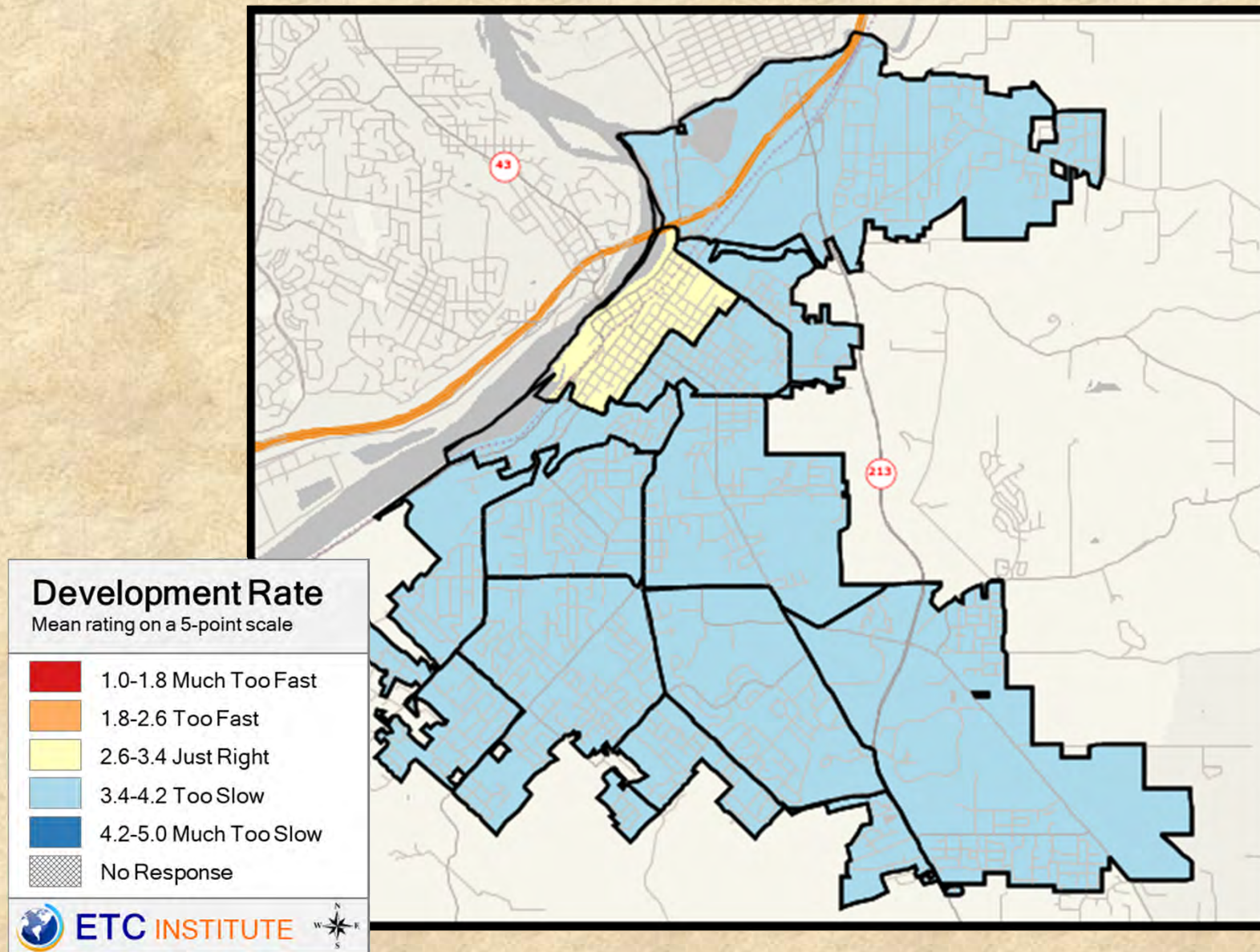
Q24-2. Office development



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

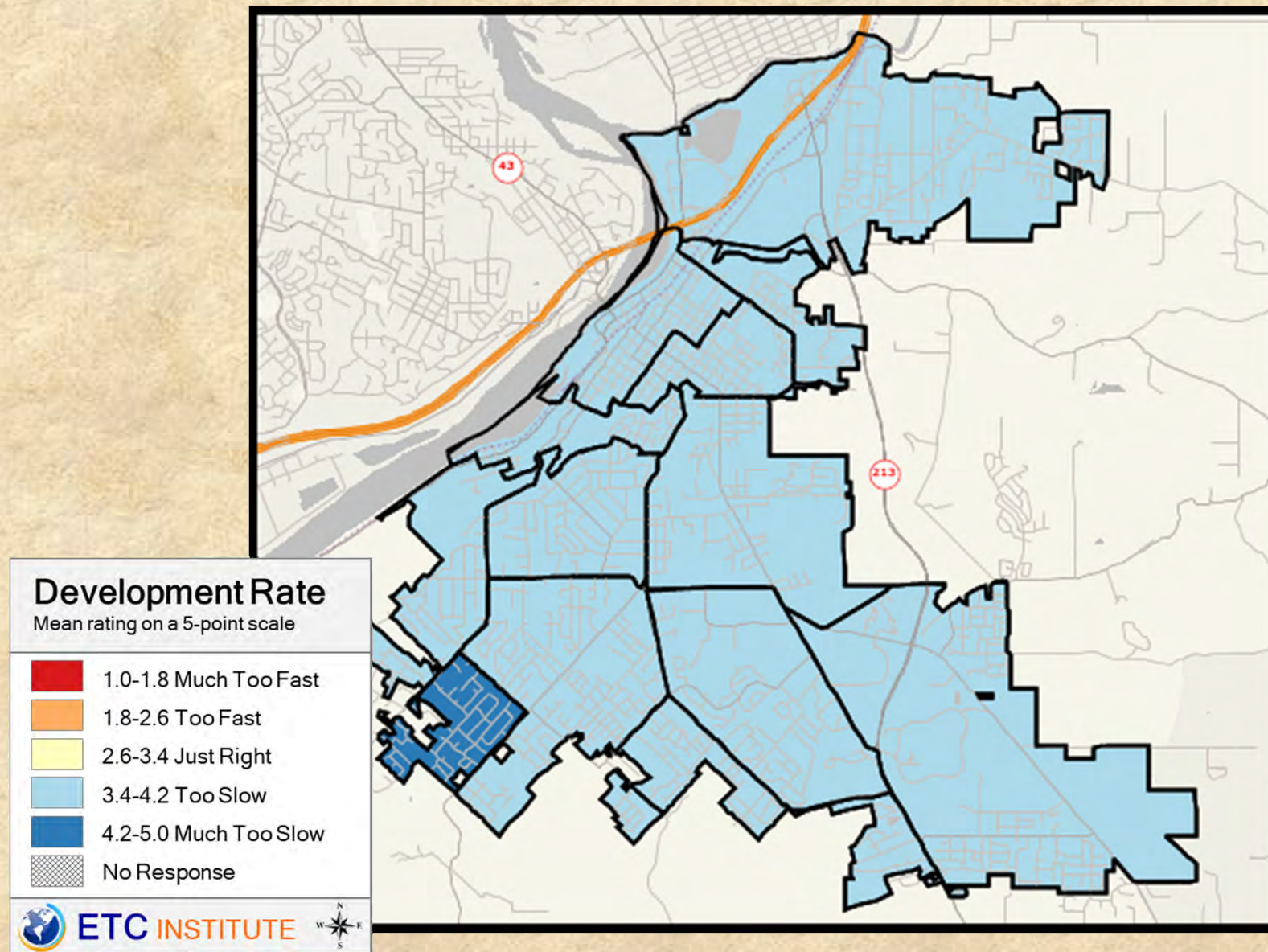
Q24-3. Retail/Restaurants/Services



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

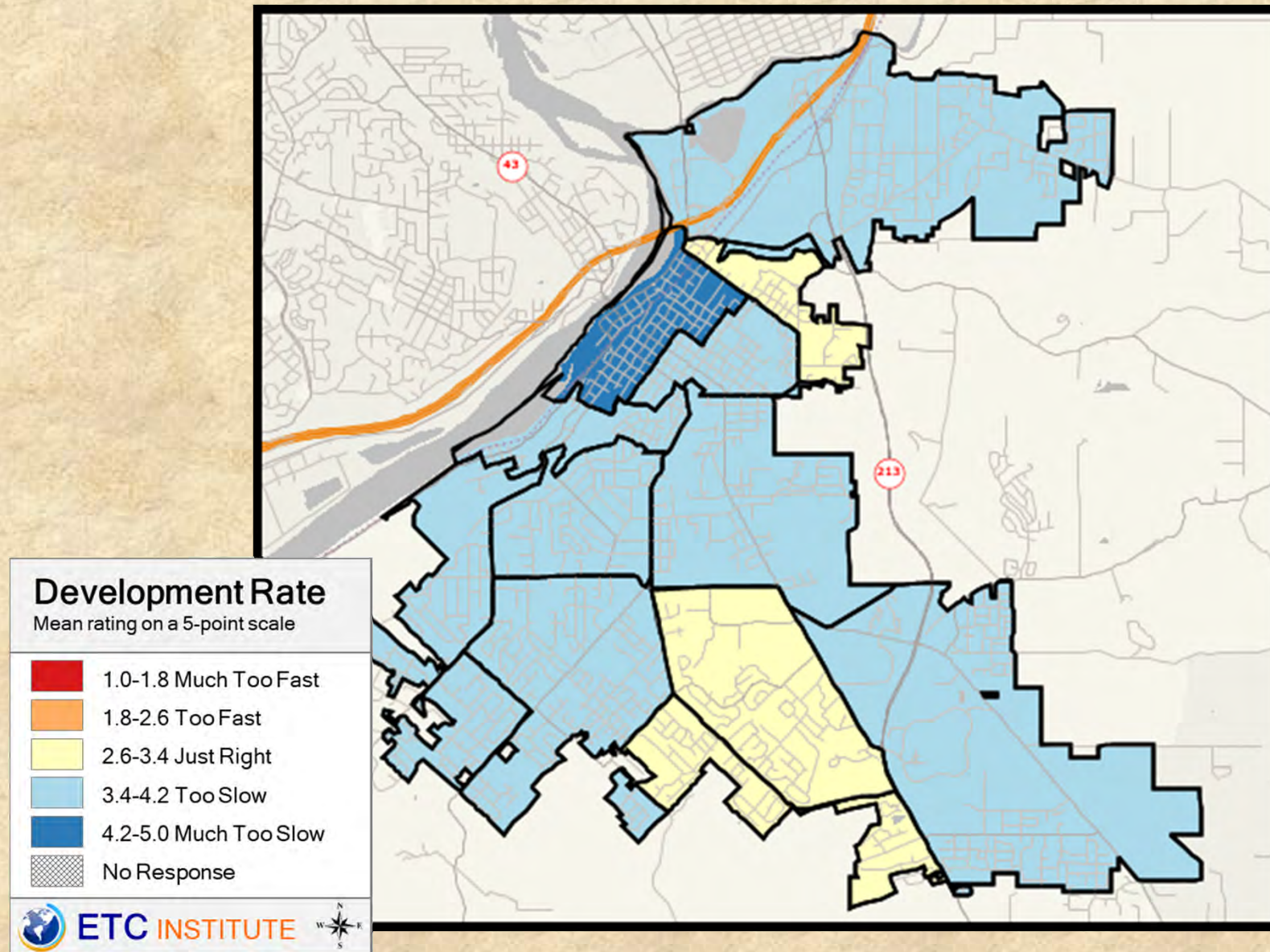
Q24-4. Technology and other industry



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

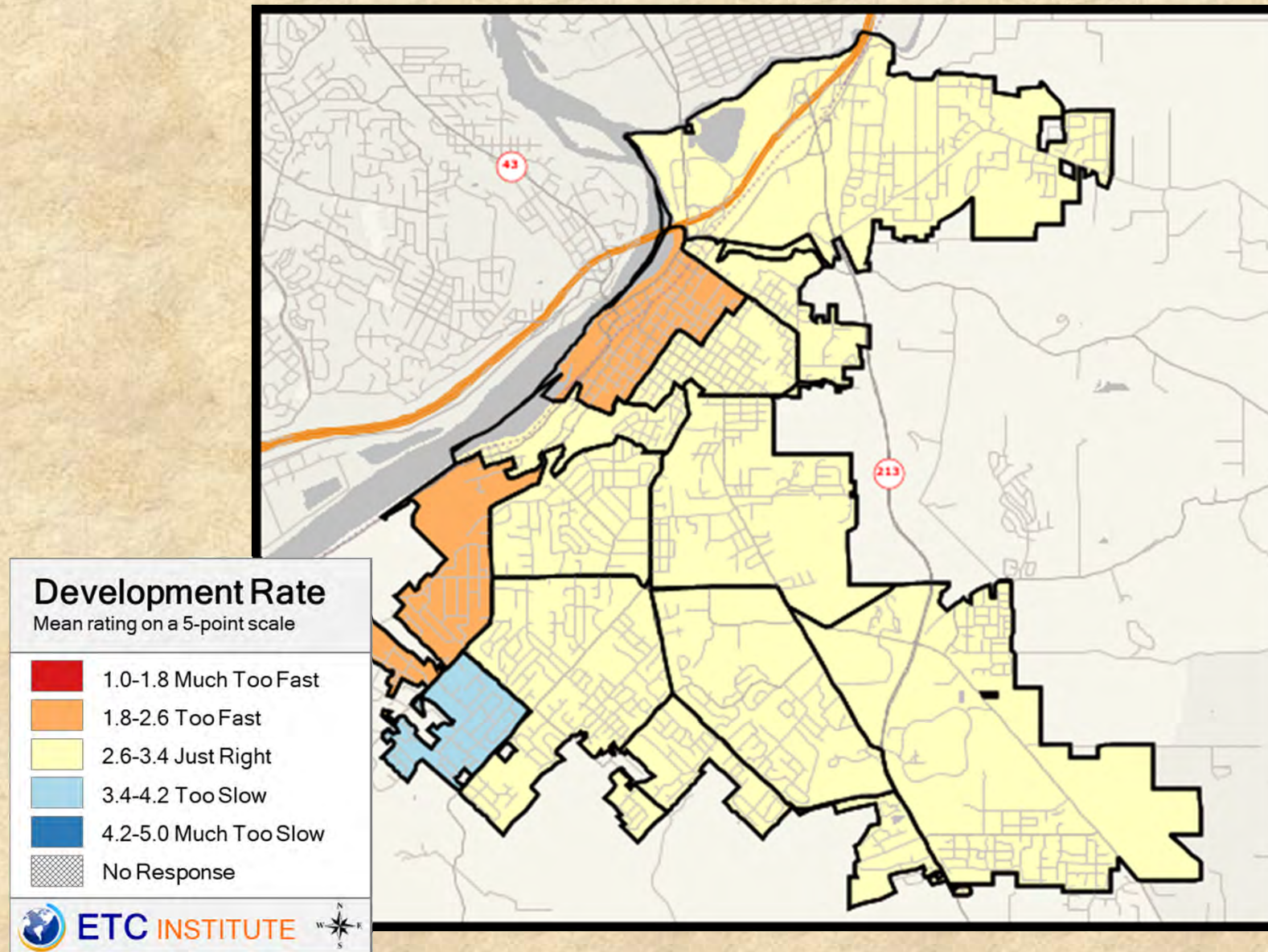
Q24-5. Housing options for aging population



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

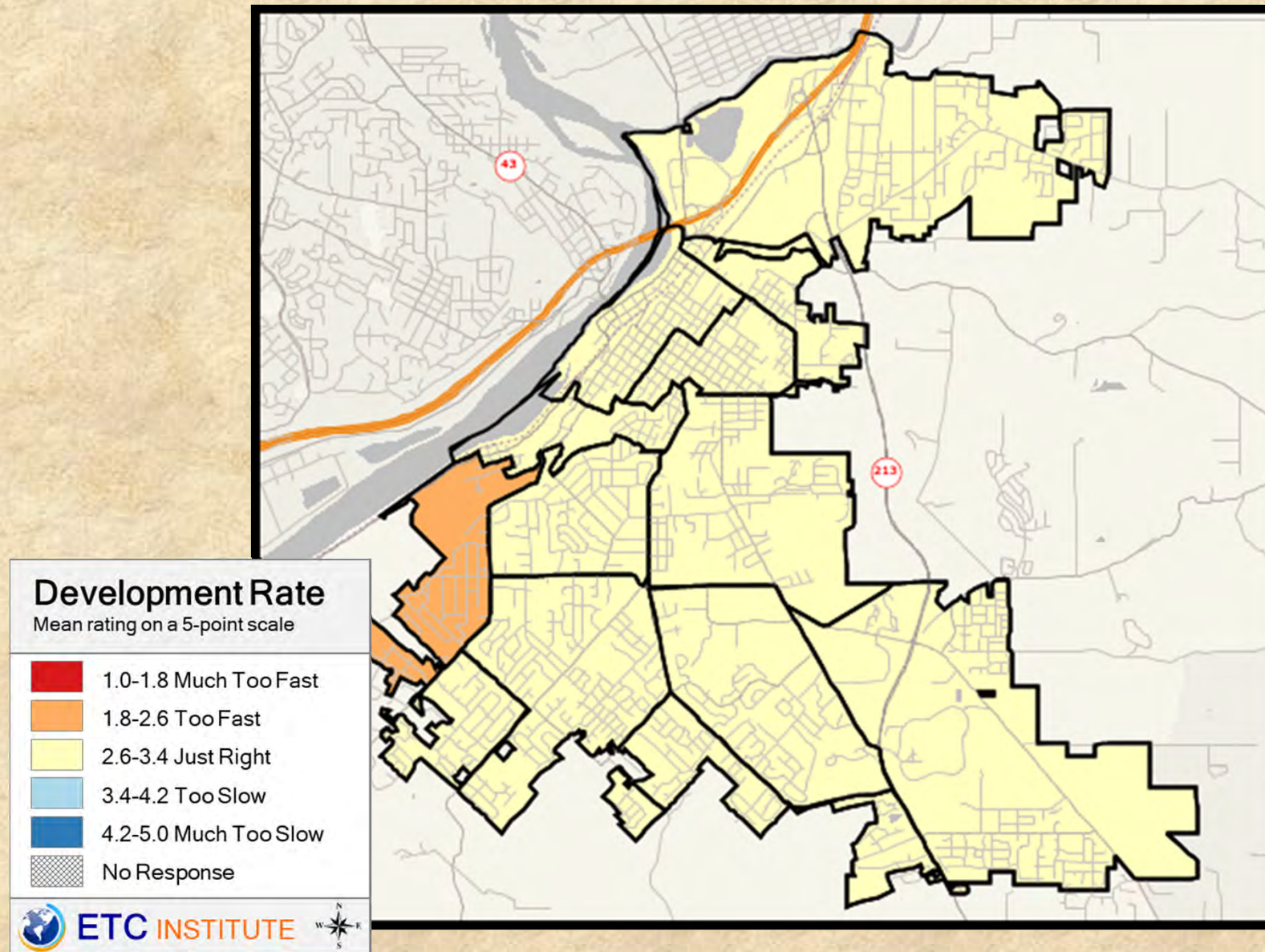
Q24-6. Apartments



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

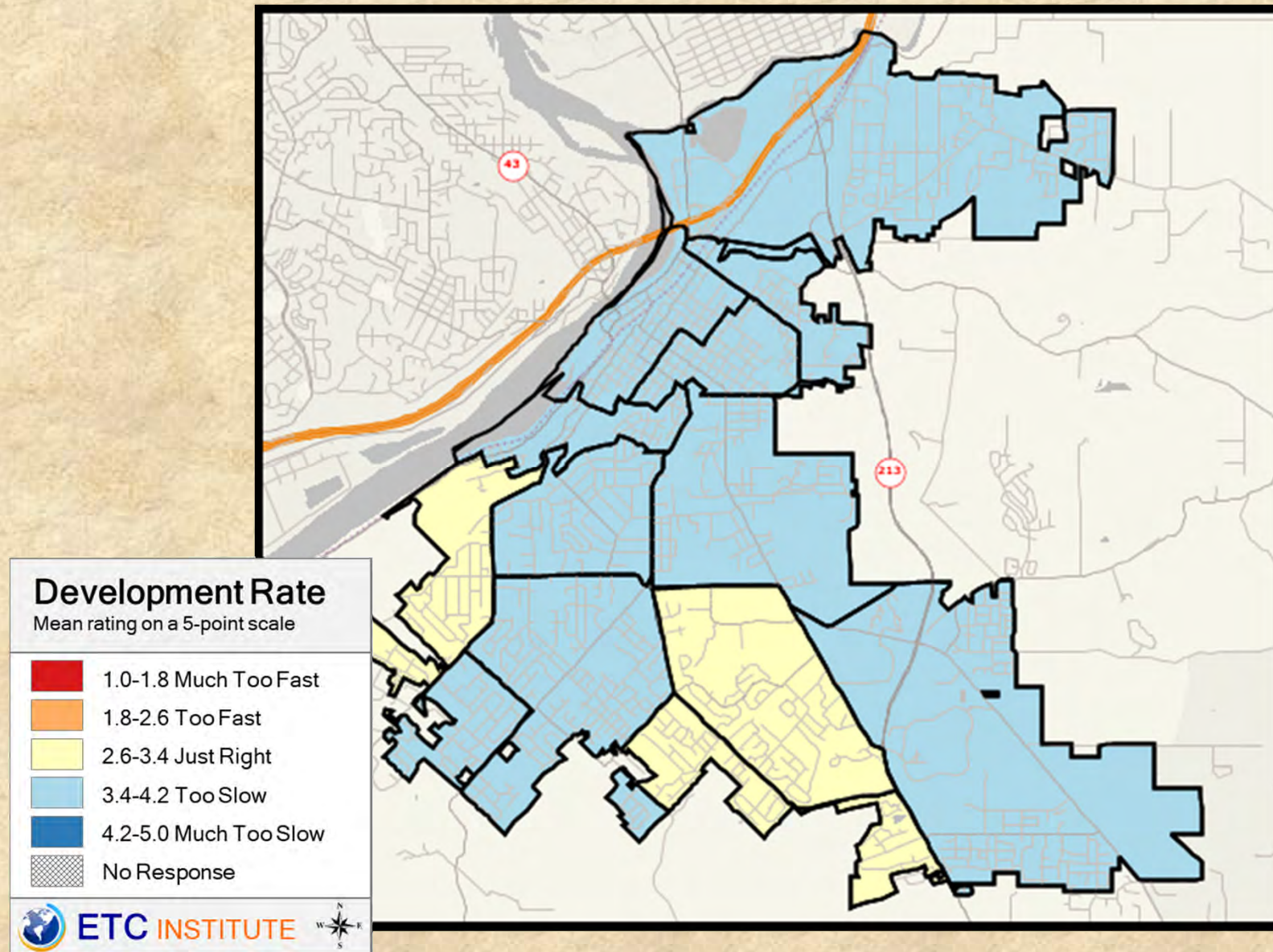
Q24-7. Townhomes/row houses



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

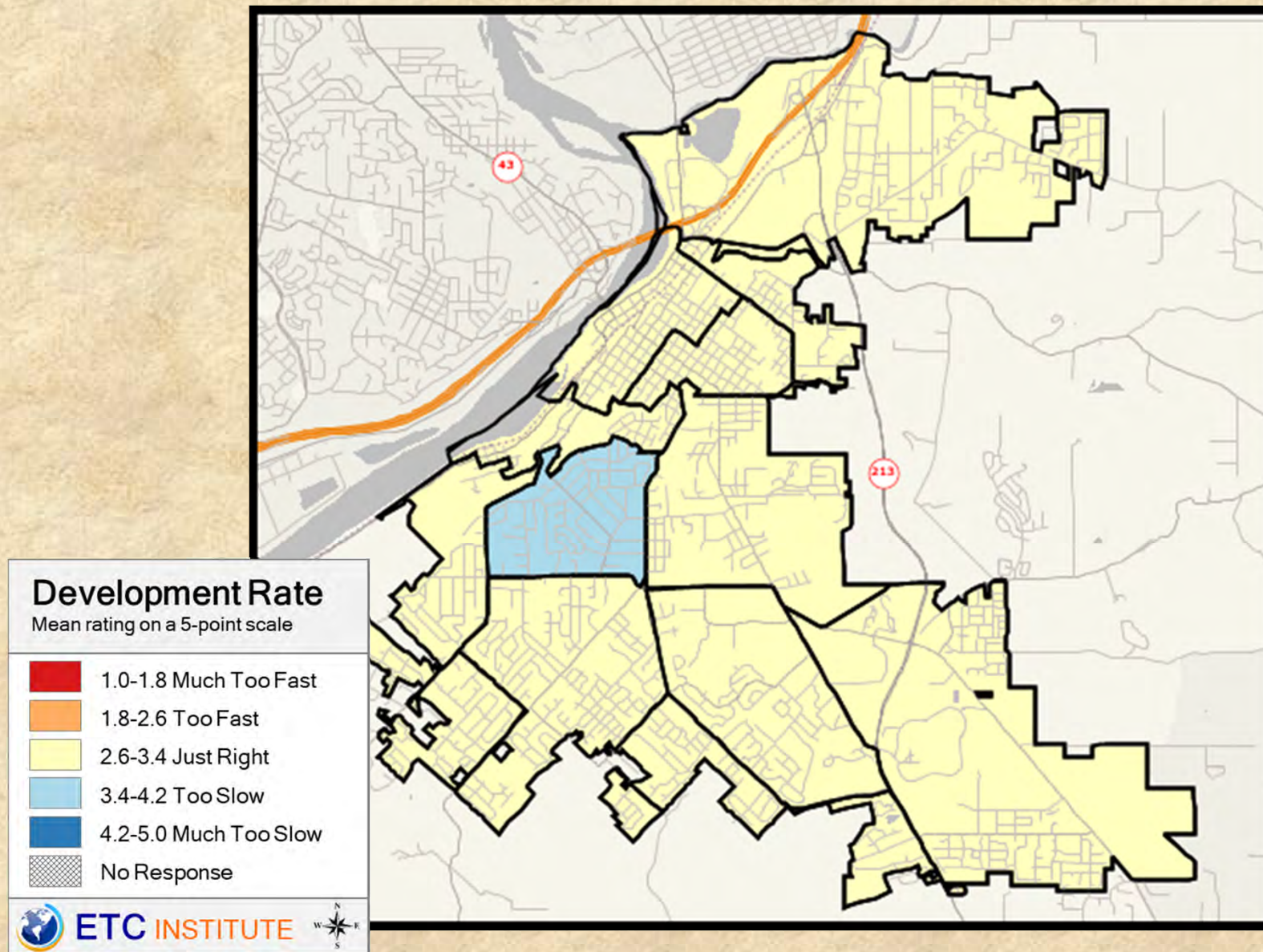
Q24-8. Entry level single family homes



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

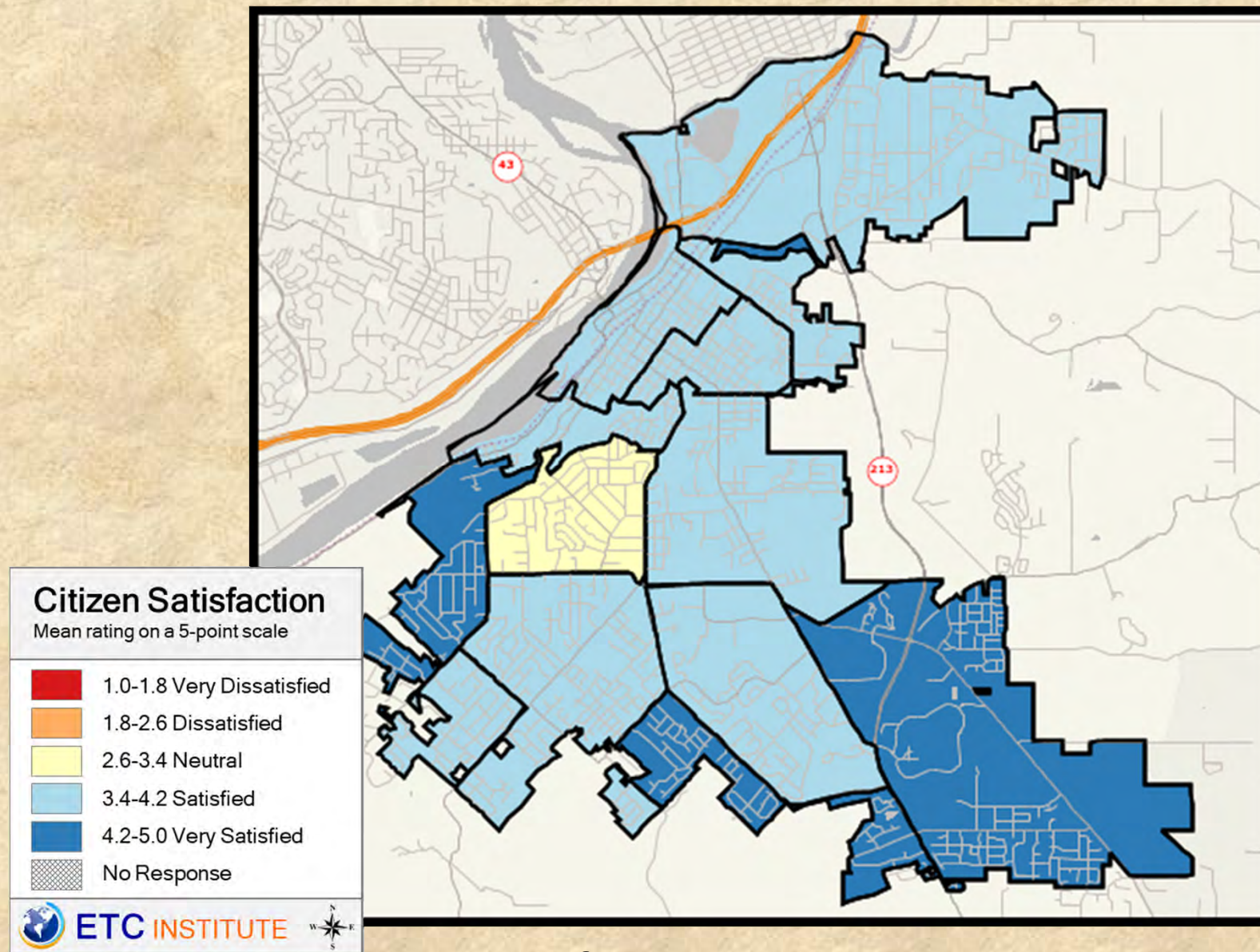
Q24-9. Single family homes



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

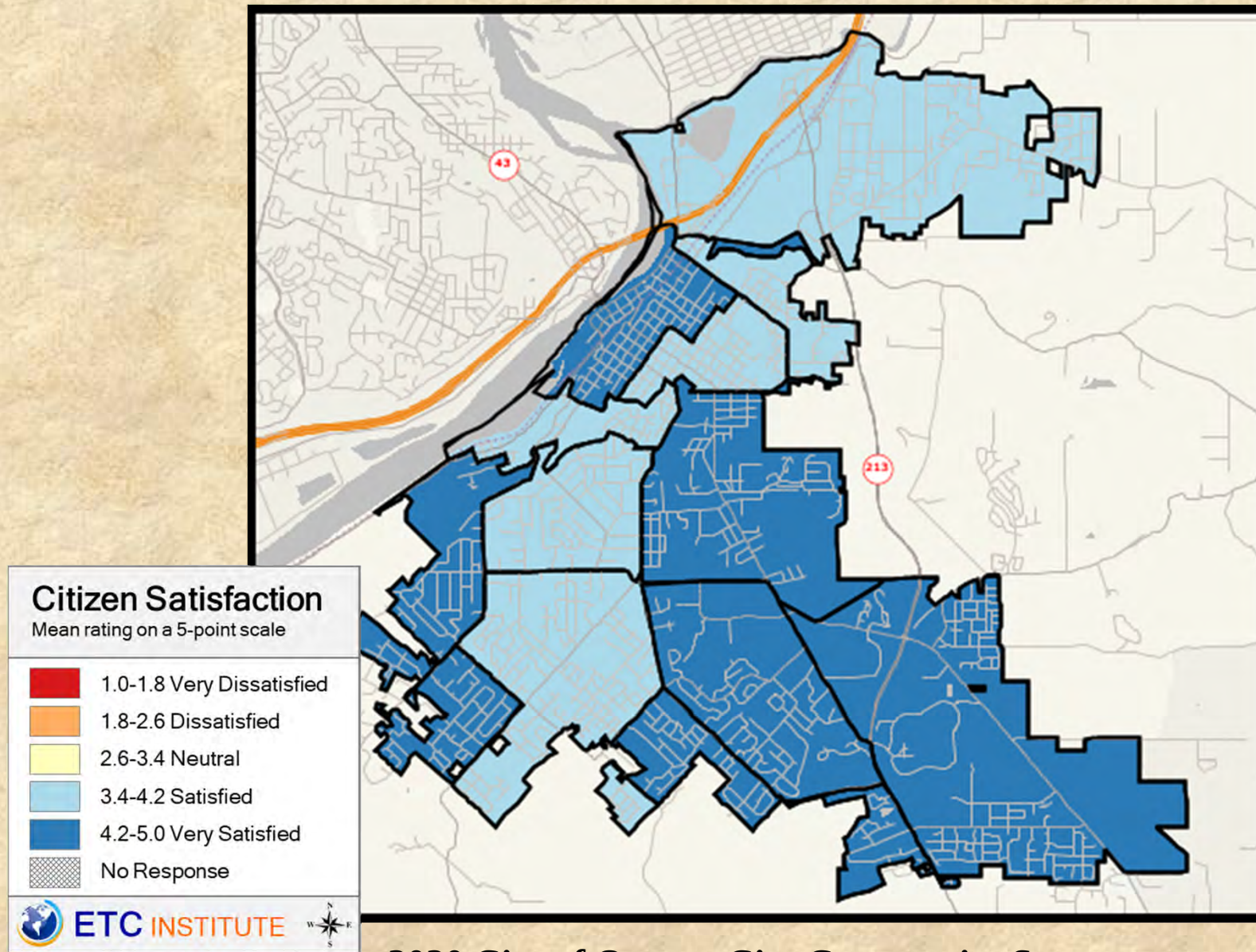
Q25-1. Water pressure



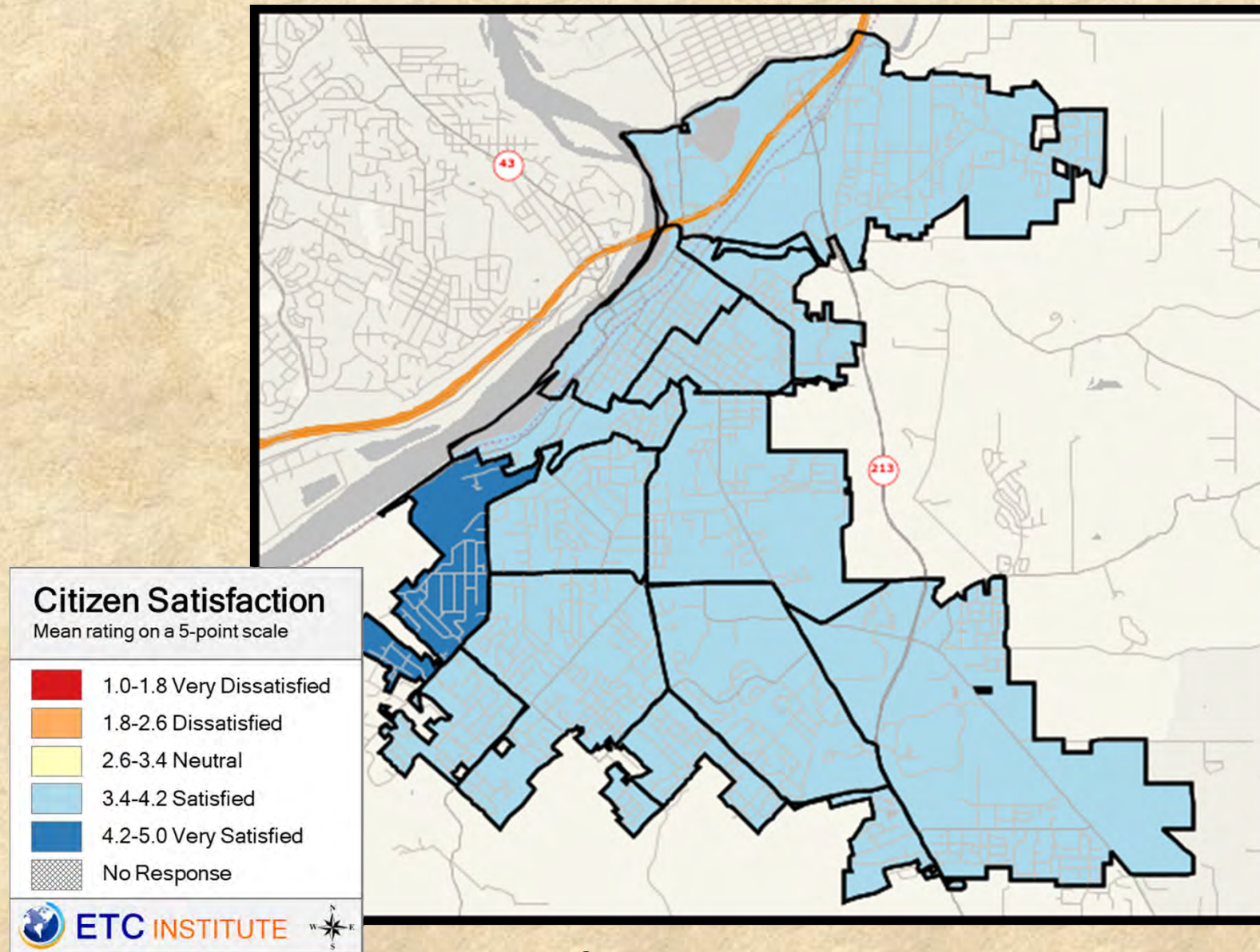
2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

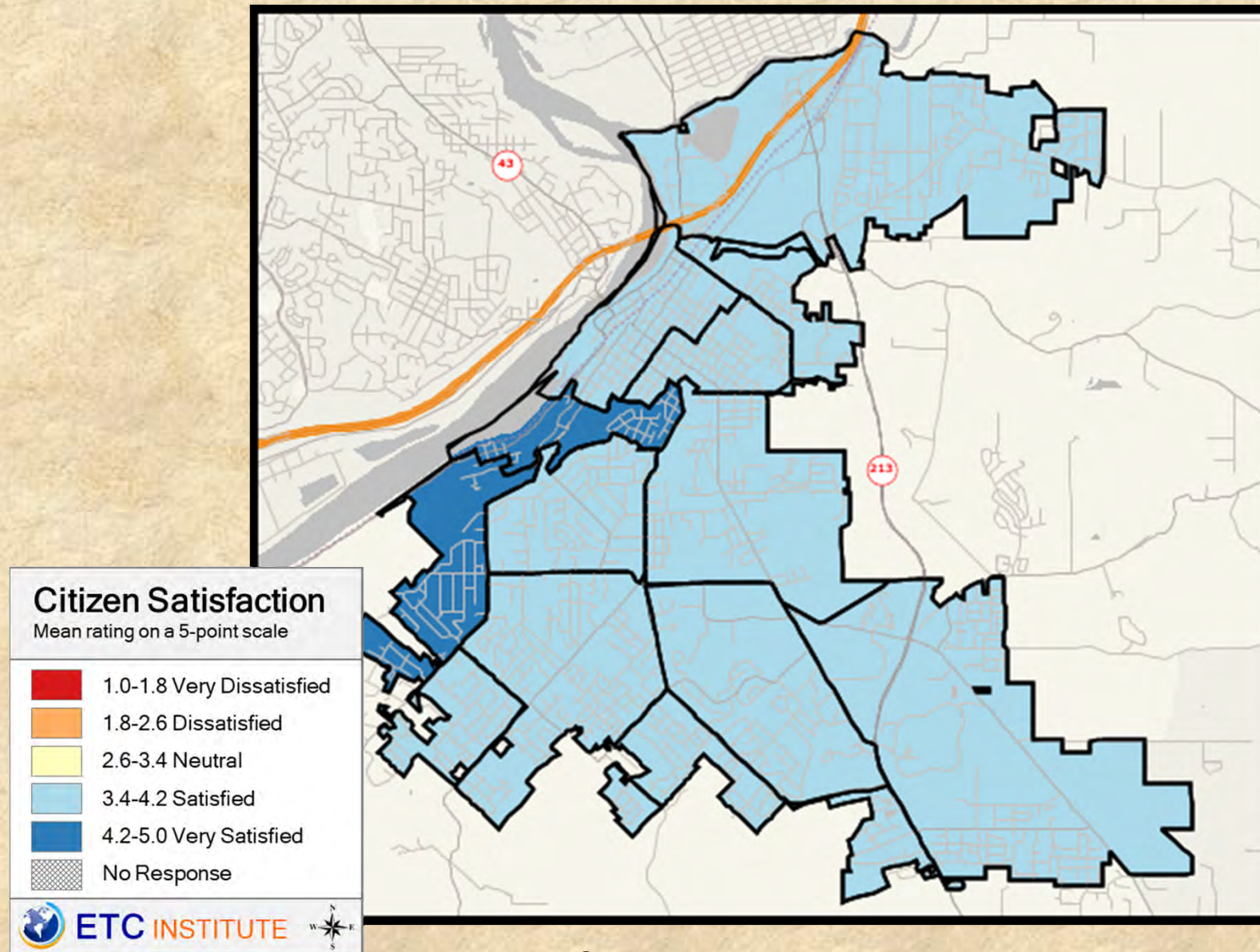
Q25-2. Water clarity



Q25-3. Water taste



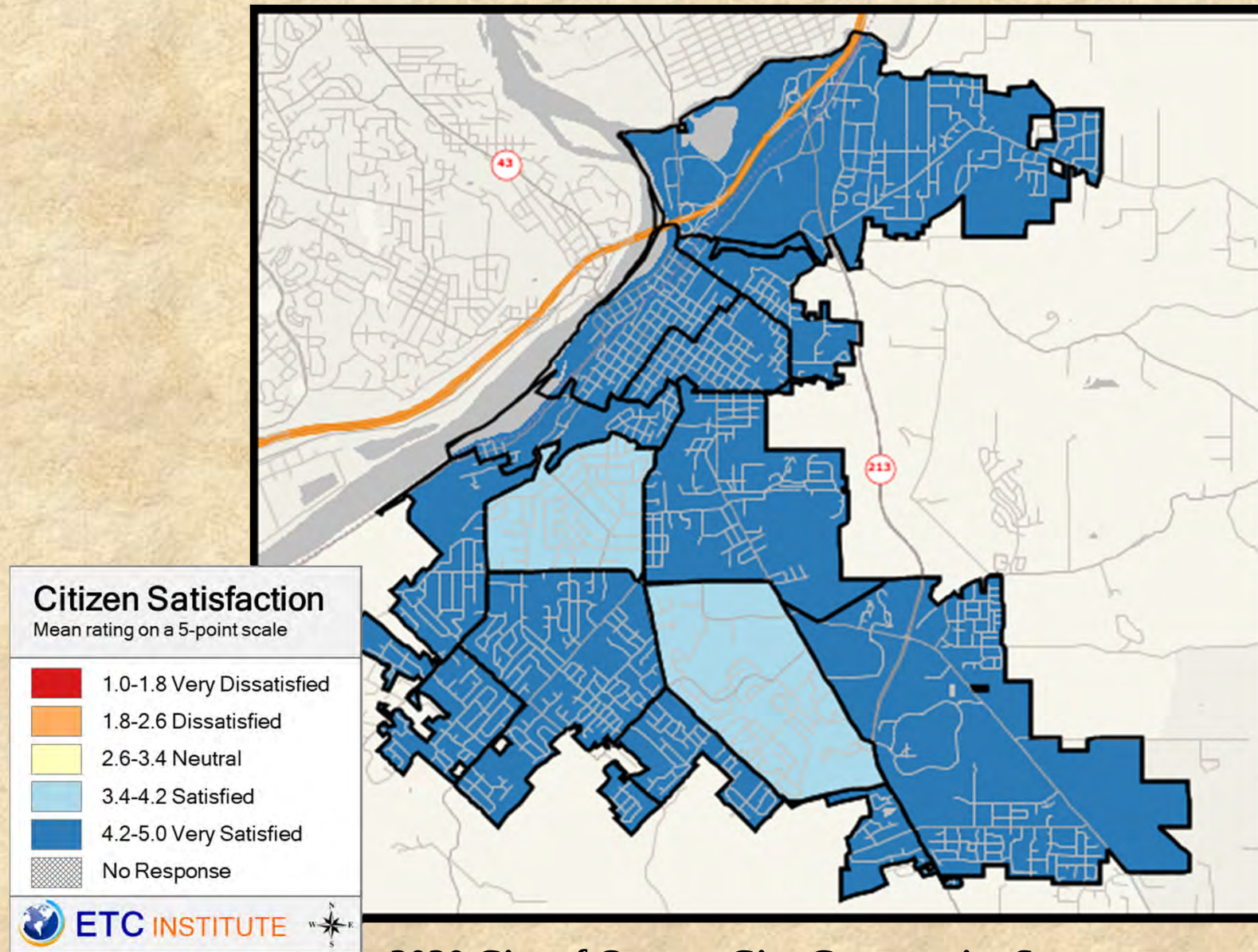
Q25-4. Water smell



2020 City of Oregon City Community Survey

Shading reflects the mean rating for all respondents by CBG (merged as needed)

Q25-5. Reliability of water service



2020 Community Survey

City of Oregon City, Oregon



Presented by

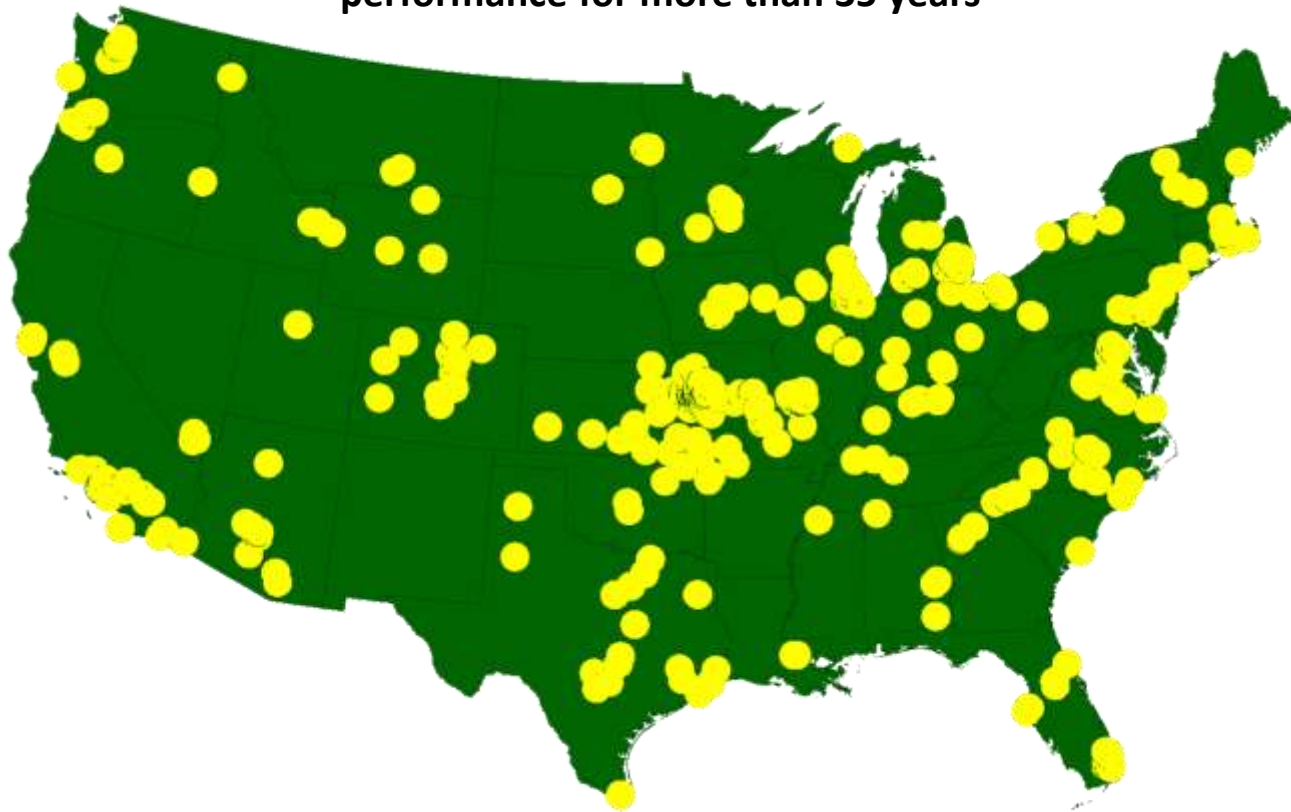


ETC
INSTITUTE

January 2021

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Agenda

- **Purpose and Methodology**
- **Bottom Line Upfront**
- **Major Findings**
- **Summary**
- **Questions**

Purpose

- **To objectively assess resident satisfaction with the delivery of major City services**
- **To help determine priorities for the community**
- **To measure trends from the previous survey**
- **To compare the City's performance with other communities regionally and nationally**

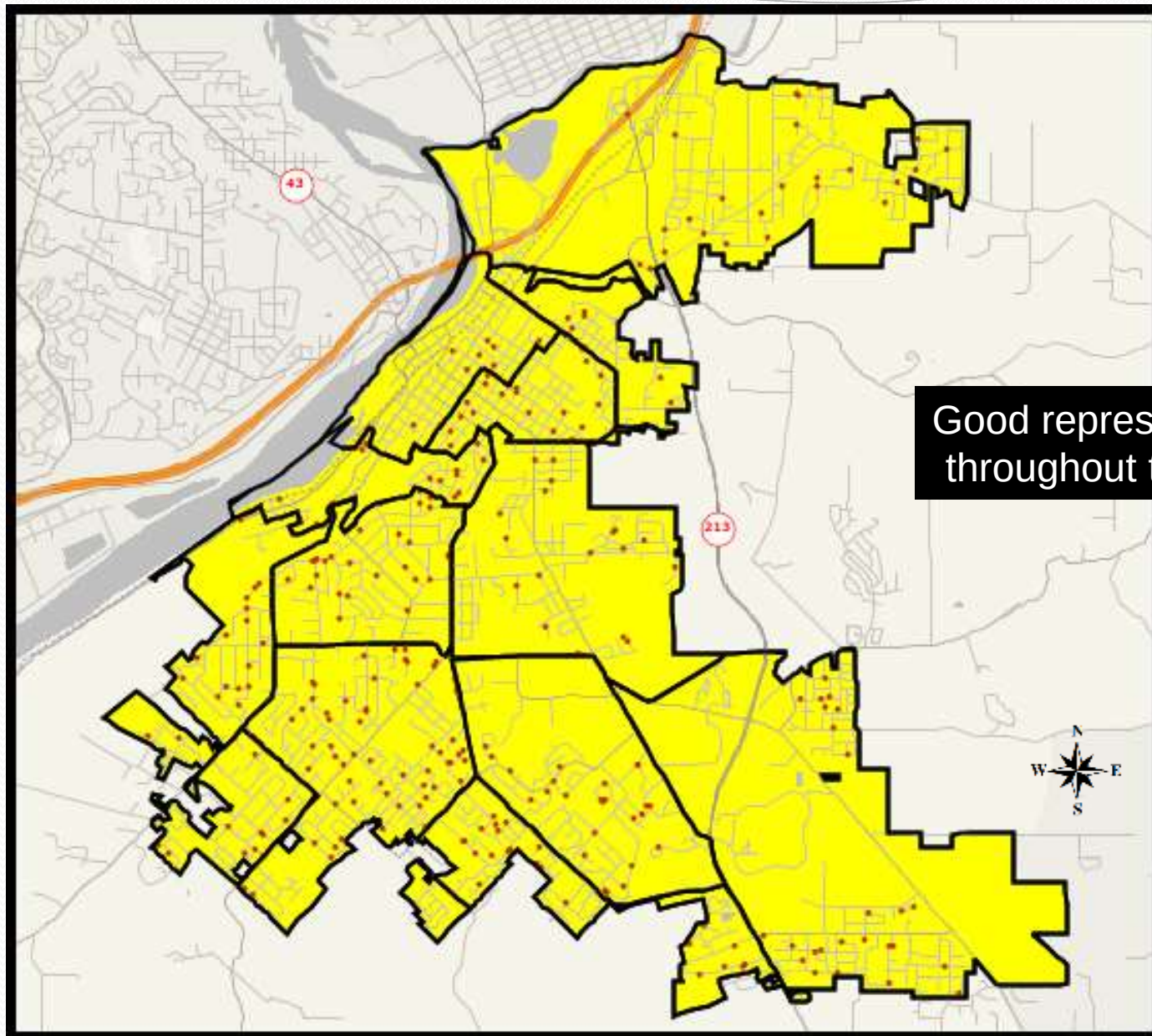
Methodology

Item 3b.

- **Survey Description**
 - ☐ seven-page survey
 - ☐ included many of the same questions that were asked in 2018
- **Method of Administration**
 - ☐ by mail and online to a random sample of City residents
 - ☐ each survey took approximately 15-20 minutes to complete
- **Sample size:**
 - ☐ completed surveys: 321 (goal was 300)
 - ☐ demographics of survey respondents accurately reflects the actual population of the City
- **Confidence level:** 95%
- **Margin of error:** +/- 5.4% overall

Location of Survey Respondents

Item 3b.



Good representation
throughout the City

Bottom Line Up Front

Item 3b.

- **Residents Have a Positive Perception of the City**
 - ❑ 86% rated Oregon City as an excellent or good place to live
 - ❑ 77% rated Oregon City as an excellent or good place to raise children
- **Oregon City Rates Higher Than Other Cities in the Overall Quality of City Services**
 - ❑ Oregon City rated 18% above the U.S. Average and 24% above the Regional Average in the overall quality of services provided by the City
- **Oregon City Rates Higher Than Other Cities in Providing Customer Service**
 - ❑ Oregon City rated 22% above the U.S. Average and 19% above the Regional Average in the quality of customer service provided by City employees
- **Top Overall Priorities:**
 - ❑ Maintenance of City Streets
 - ❑ Economic Development
 - ❑ Codes and Ordinances
 - ❑ Communication with the Public

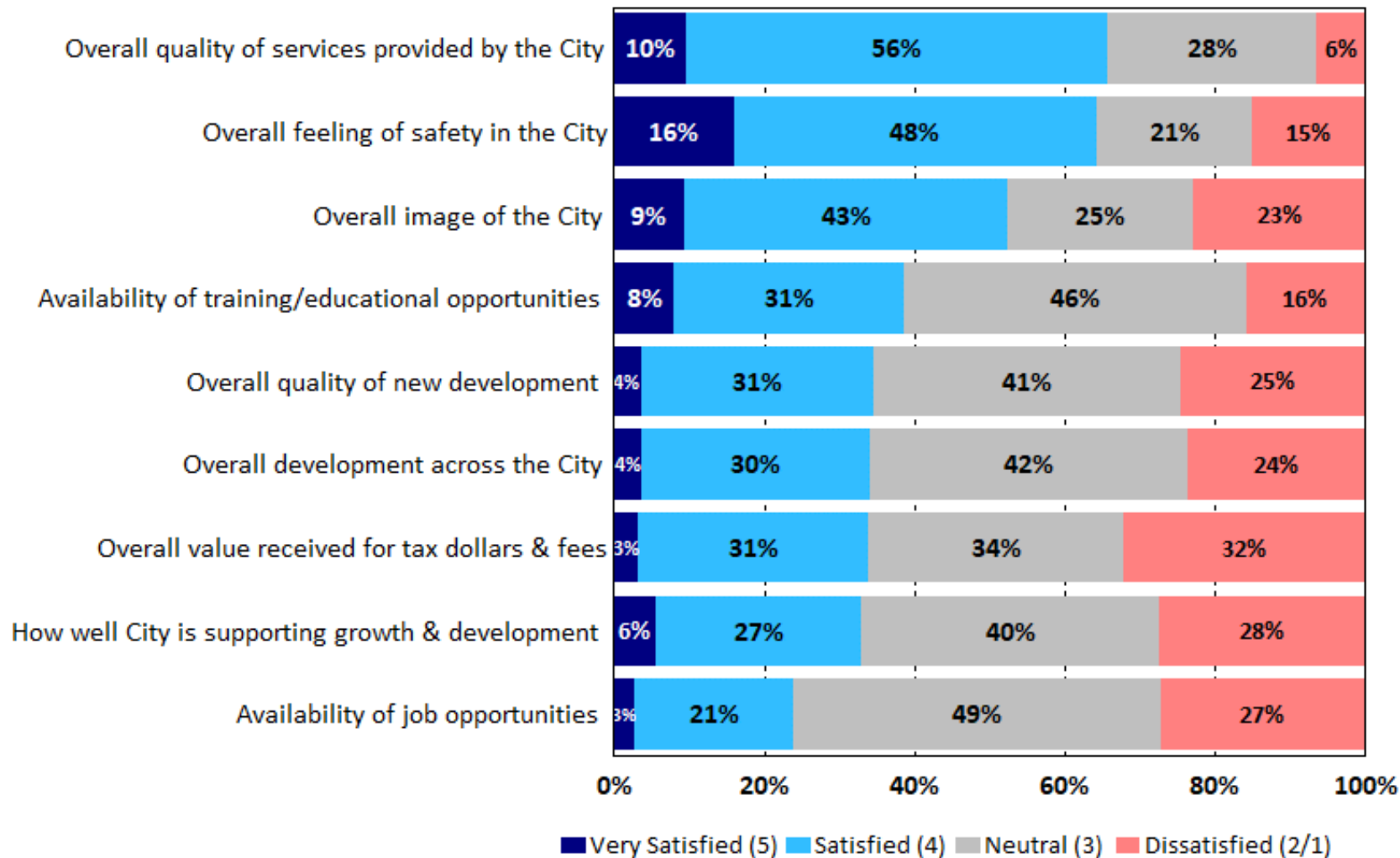
Major Finding #1

**Residents Have a Positive
Perception of the City**

Q3. Satisfaction with Items That Influence Perceptions of the City

Item 3b.

by percentage of respondents (excluding don't knows)



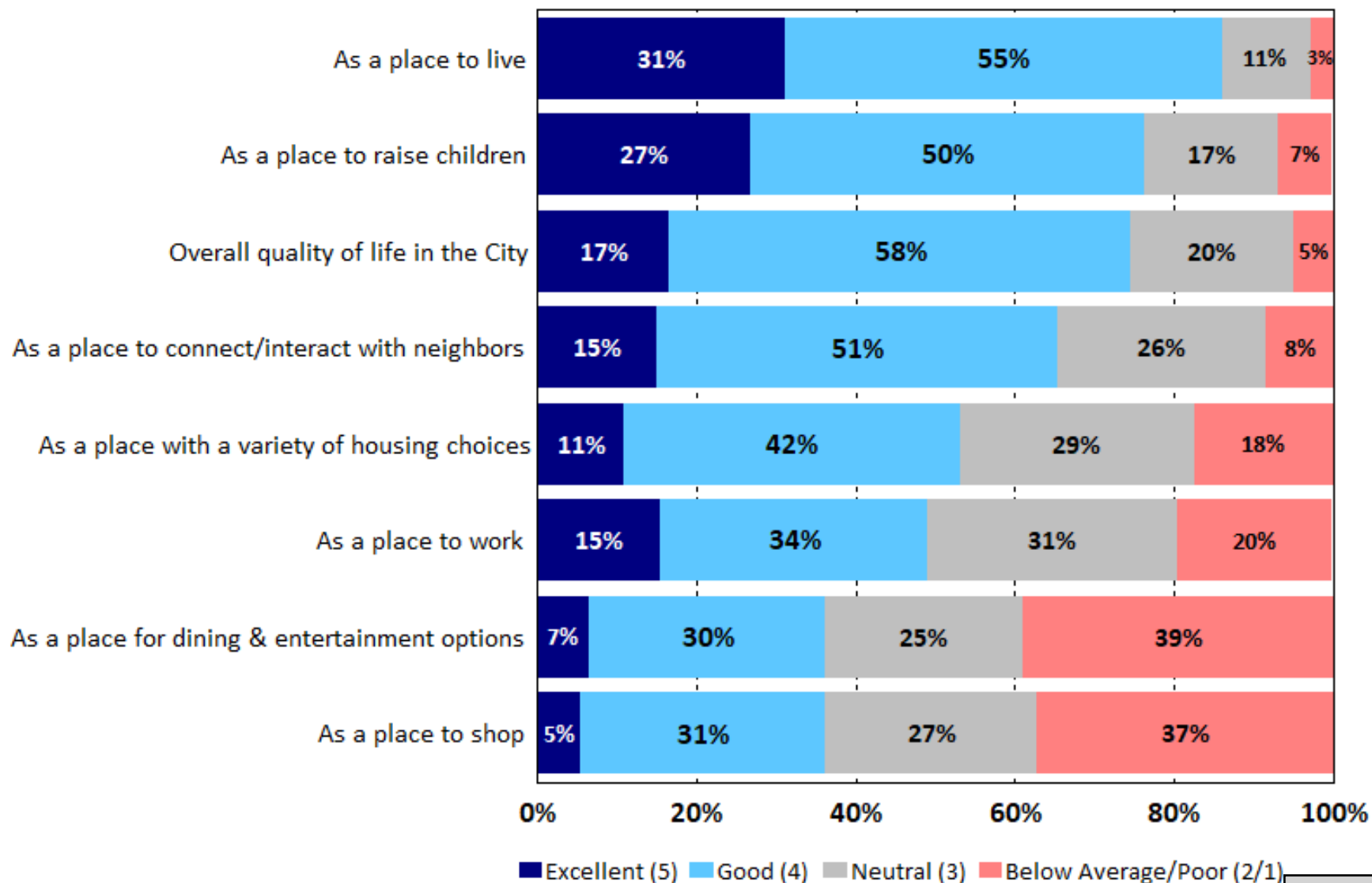
Source: ETC Institute (2020 - Oregon City, OR)

11-1 Ratio of Respondents Who Are Satisfied vs. Dissatisfied with the Overall Quality of City Services (66% vs. 6%)

Q22. Ratings of Oregon City

Item 3b.

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute (2020 - Oregon City, OR)

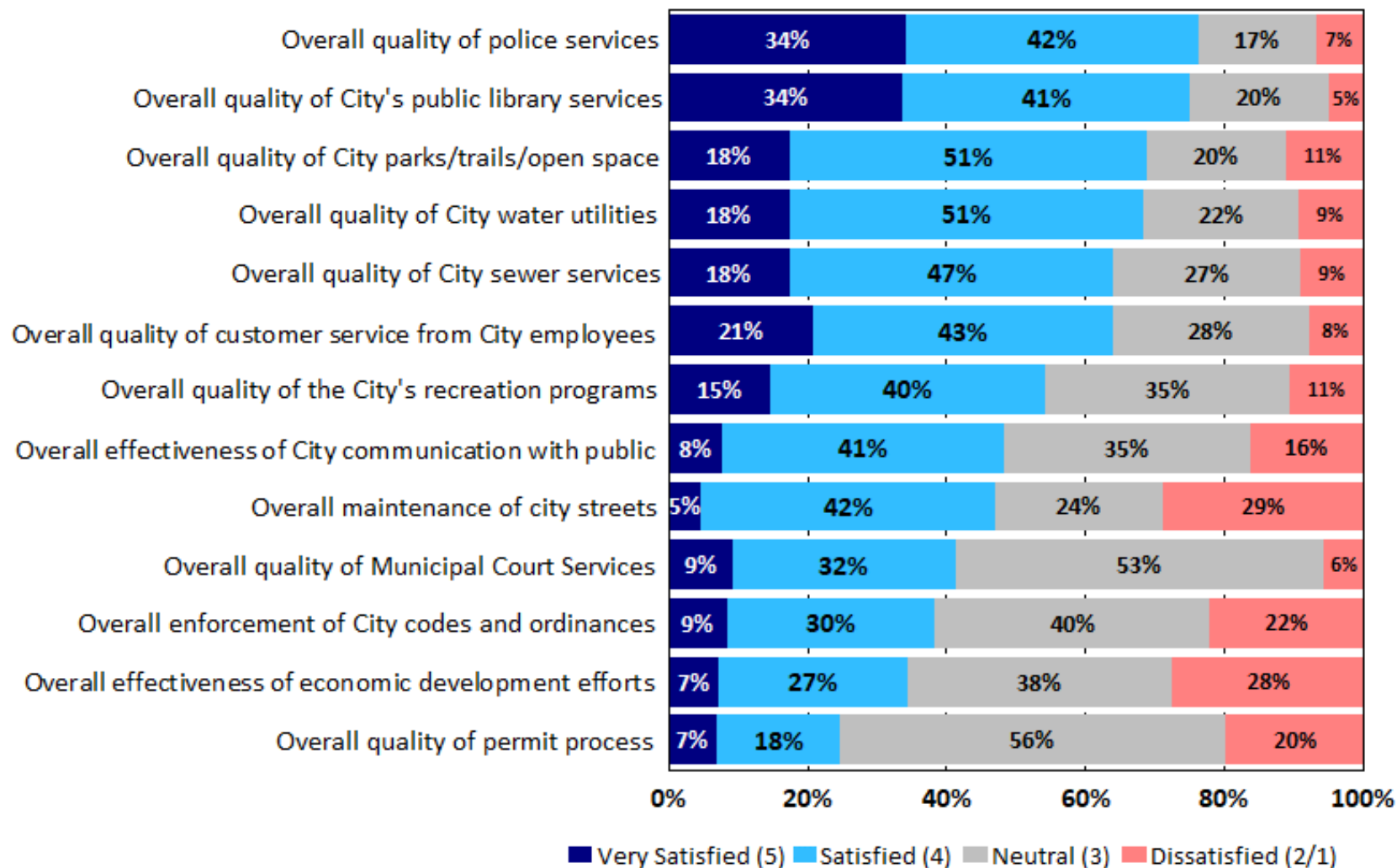
Page 282

Most Residents Feel Oregon City as an Excellent or Good Place to Live and Raise Children

Q1. Overall Satisfaction with City Services by Major Category

Item 3b.

by percentage of respondents (excluding don't knows)

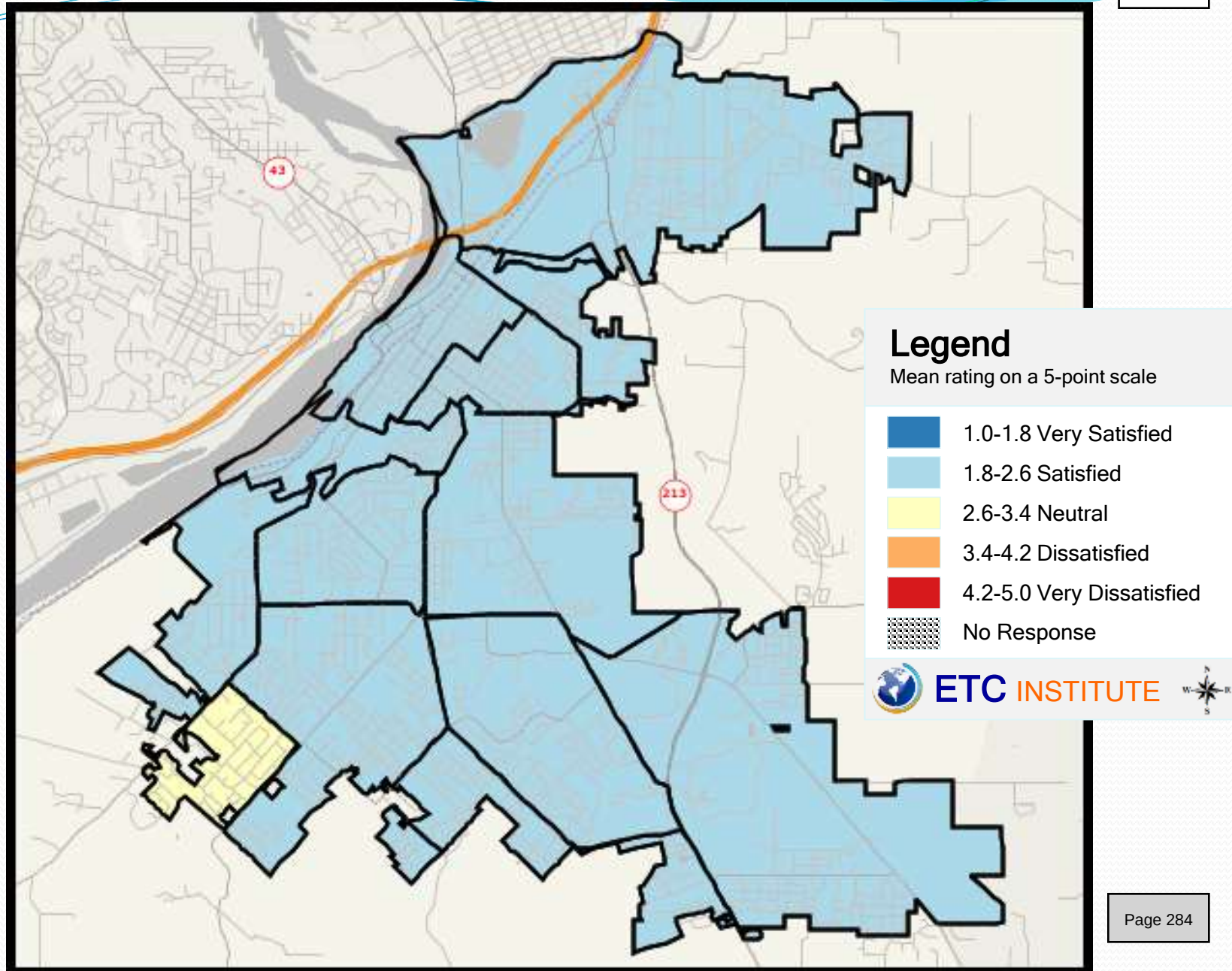


Source: ETC Institute (2020 - Oregon City, OR)

With the Exception of Economic Development and Maintenance of City Streets, Less Than 25% Were Dissatisfied with Any Category of Major City Services

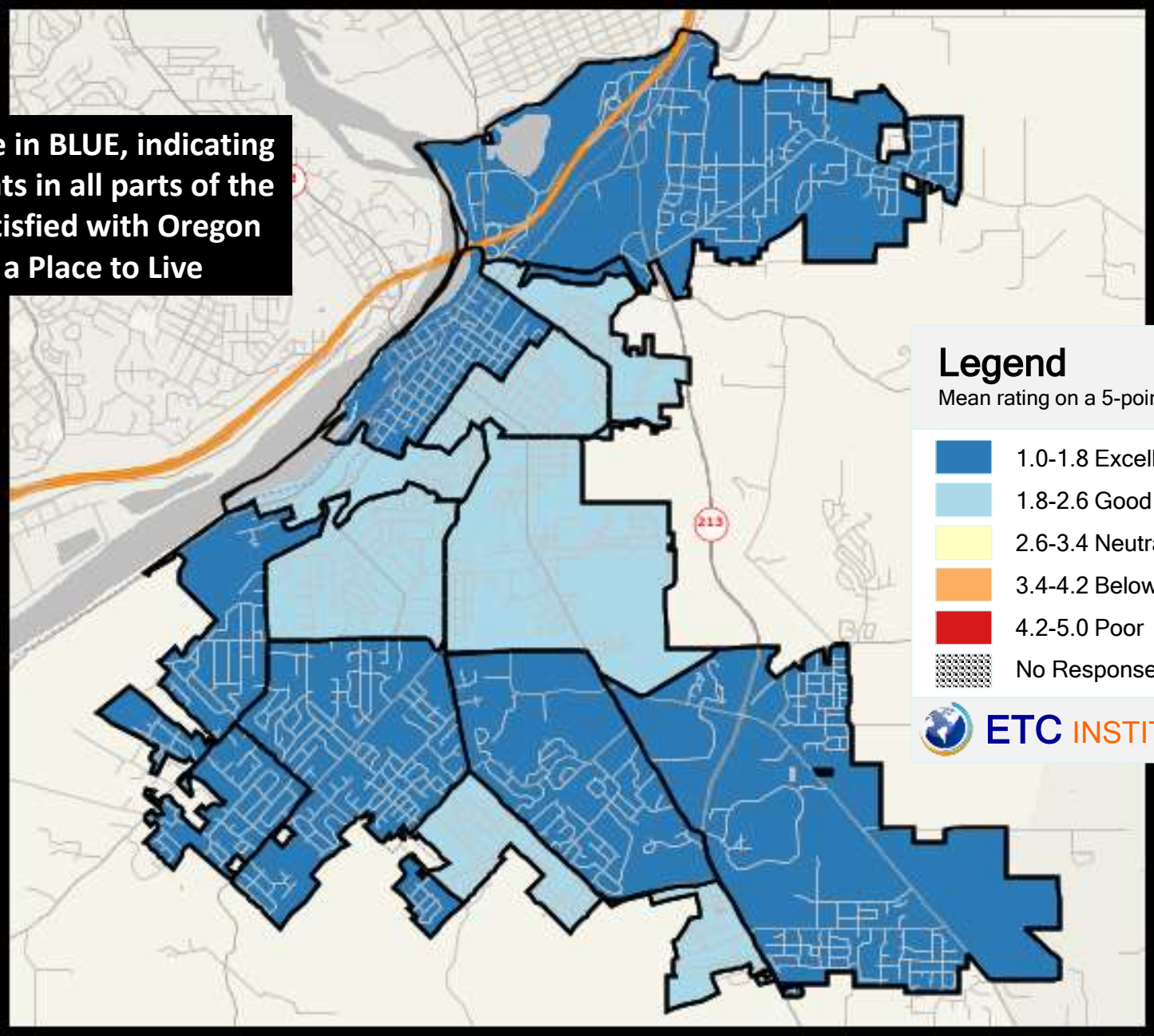
Overall Quality of Services Provided by the City

Item 3b.



Oregon City as a Place to Live

Item 3b.



All areas are in BLUE, indicating that residents in all parts of the City are satisfied with Oregon City as a Place to Live

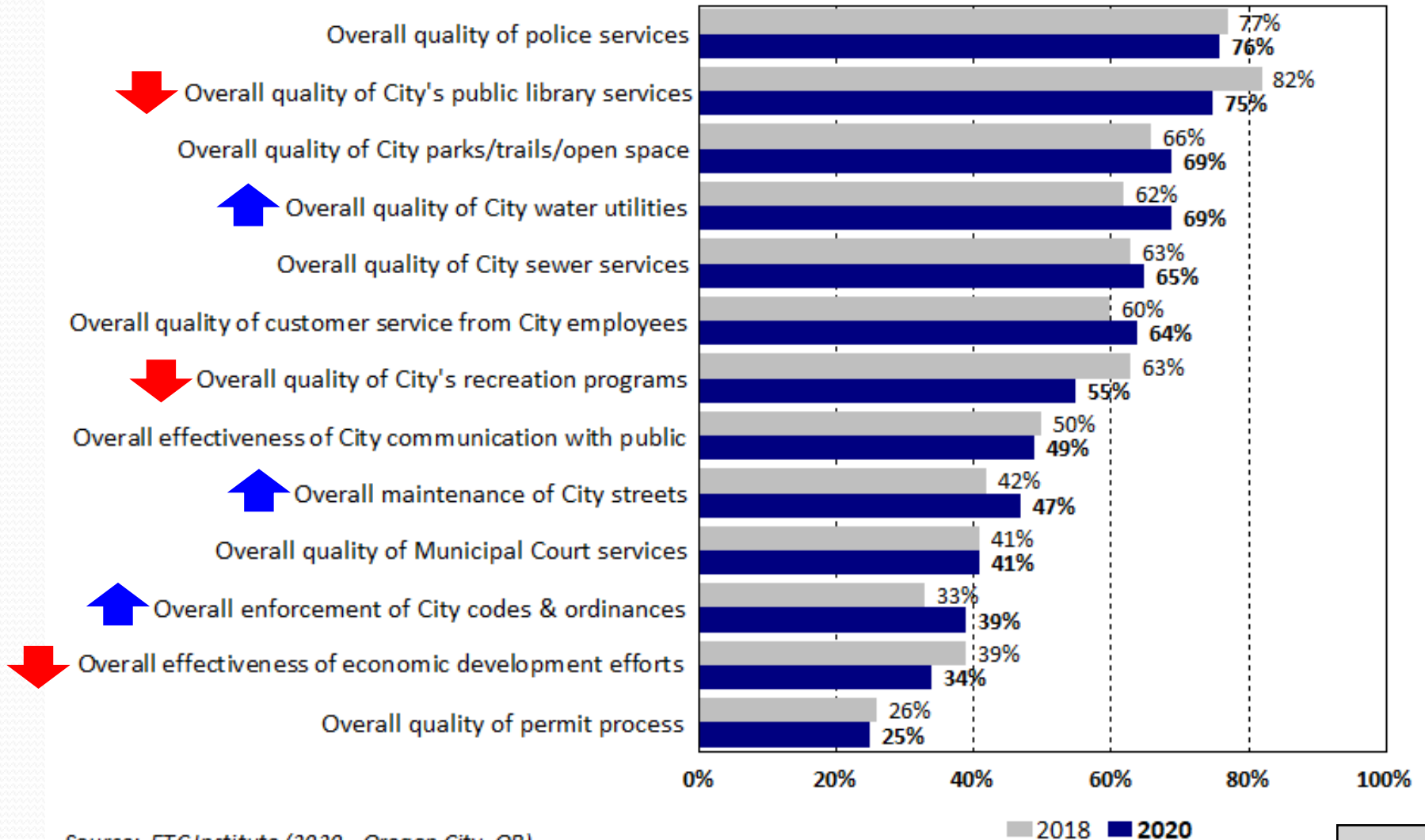
Major Finding #2

Trend Analysis

TRENDS: Overall Satisfaction with City Services by Major Category - 2018 vs. 2020

Item 3b.

by percentage of respondents who rated the item as a 4 or 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute (2020 - Oregon City, OR)

Page 287

Significant Increases From 2018:



Significant Decreases From 2018:



Notable Satisfaction Increases Since 2018

- ☐ Overall feeling of safety
- ☐ Proximity of parks to your home
- ☐ Snow and ice response on major streets
- ☐ Overall quality of water utilities
- ☐ Response to drug control
- ☐ Overall quality of life

Notable Satisfaction Decreases Since 2018

- ☐ Public library events for teens
- ☐ Public library outreach programs/services
- ☐ Availability of training/educational opportunities
- ☐ Public library events for children
- ☐ Ease of booking meeting rooms at the library
- ☐ Availability of job opportunities

Major Finding #3

Community Priorities

2020 Importance-Satisfaction Rating

Oregon City, OR

Major Categories of City Services

Item 3b.

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
Very High Priority (IS >.20)						
Overall maintenance of city streets	50%	1	47%	9	0.2640	1
Overall effectiveness of City economic development efforts	36%	2	35%	12	0.2365	2
High Priority (IS .10-.20)						
Overall enforcement of City codes and ordinances	20%	6	38%	11	0.1226	3
Overall effectiveness of City communication with the public	21%	5	48%	8	0.1089	4
Medium Priority (IS <.10)						
Overall quality of City parks/trails/open space	31%	4	69%	3	0.0952	5
Overall quality of permit process	11%	9	25%	13	0.0798	6
Overall quality of police services	31%	3	76%	1	0.0739	7
Overall quality of the City's recreation programs	14%	8	54%	7	0.0641	8
Overall quality of City water utilities	16%	7	69%	4	0.0488	9
Overall quality of Municipal Court Services	5%	13	41%	10	0.0270	10
Overall quality of City sewer services	7%	11	64%	5	0.0256	11
Overall quality of customer service from City employees	6%	12	64%	6	0.0213	12
Overall quality of City's public library services	8%	10	75%	2	0.0192	13

Overall Priorities:

2020 Importance-Satisfaction Rating

Oregon City, OR

Transportation and Infrastructure

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>High Priority (IS .10-.20)</u>						
Maintenance of major City streets	35%	1	51%	4	0.1742	1
Maintenance of neighborhood streets	29%	2	53%	3	0.1392	2
<u>Medium Priority (IS <.10)</u>						
Traffic calming measures in your neighborhood	16%	4	39%	10	0.0964	3
Availability of safe pedestrian ways on major streets & routes	17%	3	44%	8	0.0941	4
Condition of neighborhood sidewalks	14%	5	44%	7	0.0763	5
Availability of safe pedestrian ways in your neighborhood	10%	8	48%	5	0.0498	6
Snow & ice response on major City streets	12%	6	62%	2	0.0458	7
On-street bicycle infrastructure (bike lanes/signs/arrows)	7%	9	39%	11	0.0453	8
Alternative means of transportation, e.g. transit, bicycling, walking	7%	10	43%	9	0.0402	9
Quality of sidewalks for people with mobility challenges	6%	12	35%	12	0.0367	10
Adequacy of City street lighting in neighborhoods	10%	7	66%	1	0.0342	11
Accessibility of public transportation options	6%	11	45%	6	0.0340	12

2020 Importance-Satisfaction Rating

Oregon City, OR

Public Safety

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>Very High Priority (IS >.20)</u>						
Response to issues with transients	57%	1	24%	9	0.4326	1
<u>High Priority (IS .10-.20)</u>						
Response to drug control	17%	4	35%	8	0.1097	2
Level of community outreach	20%	3	48%	6	0.1032	3
<u>Medium Priority (IS <.10)</u>						
City's overall efforts to prevent crime	24%	2	63%	3	0.0904	4
Response to property crime	12%	6	43%	7	0.0691	5
How quickly police respond to emergencies	13%	5	65%	2	0.0453	6
Enforcement of local traffic laws	9%	8	57%	4	0.0393	7
The visibility of police in the community	12%	7	71%	1	0.0346	8
Parking enforcement services	3%	9	49%	5	0.0160	9

2020 Importance-Satisfaction Rating

Oregon City, OR

Parks and Recreation

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance- Satisfaction Rating	I-S Rating Rank
<u>High Priority (IS .10-.20)</u>						
Quantity of City trails	27%	2	43%	9	0.1534	1
Quality of recreational areas for dogs	21%	3	27%	11	0.1532	2
<u>Medium Priority (IS <.10)</u>						
Appearance & maintenance of existing City parks	27%	1	71%	2	0.0797	3
Quality of facilities (e.g. picnic shelters, playgrounds)	21%	4	66%	3	0.0698	4
Quality of City's swimming pool	11%	5	48%	7	0.0578	5
Access to City parks for persons with disabilities	10%	7	44%	8	0.0561	6
Quality of services for fees assessed with rec programming	8%	9	40%	10	0.0490	7
Quality of End of the Oregon Trail	8%	8	49%	6	0.0433	8
Quality of outdoor athletic fields	11%	6	60%	4	0.0422	9
Quality of Pioneer Community Center	6%	11	52%	5	0.0270	10
Proximity of parks to your home	7%	10	73%	1	0.0174	11

2020 Importance-Satisfaction Rating

Oregon City, OR

Code Enforcement

Category of Service	Most Important %	Most Important Rank	Satisfaction %	Satisfaction Rank	Importance-Satisfaction Rating	I-S Rating Rank
<u>Very High Priority (IS >.20)</u>						
Enforcing cleanup of litter & debris on private property	62%	1	24%	4	0.4753	1
Enforcing codes designed to protect public safety & health	47%	2	36%	2	0.3041	2
<u>High Priority (IS .10-.20)</u>						
Enforcing mowing/trimming of grass & weeds on private property	25%	3	25%	3	0.1857	3
<u>Medium Priority (IS <.10)</u>						
Enforcing sign regulation	12%	4	36%	1	0.0764	4

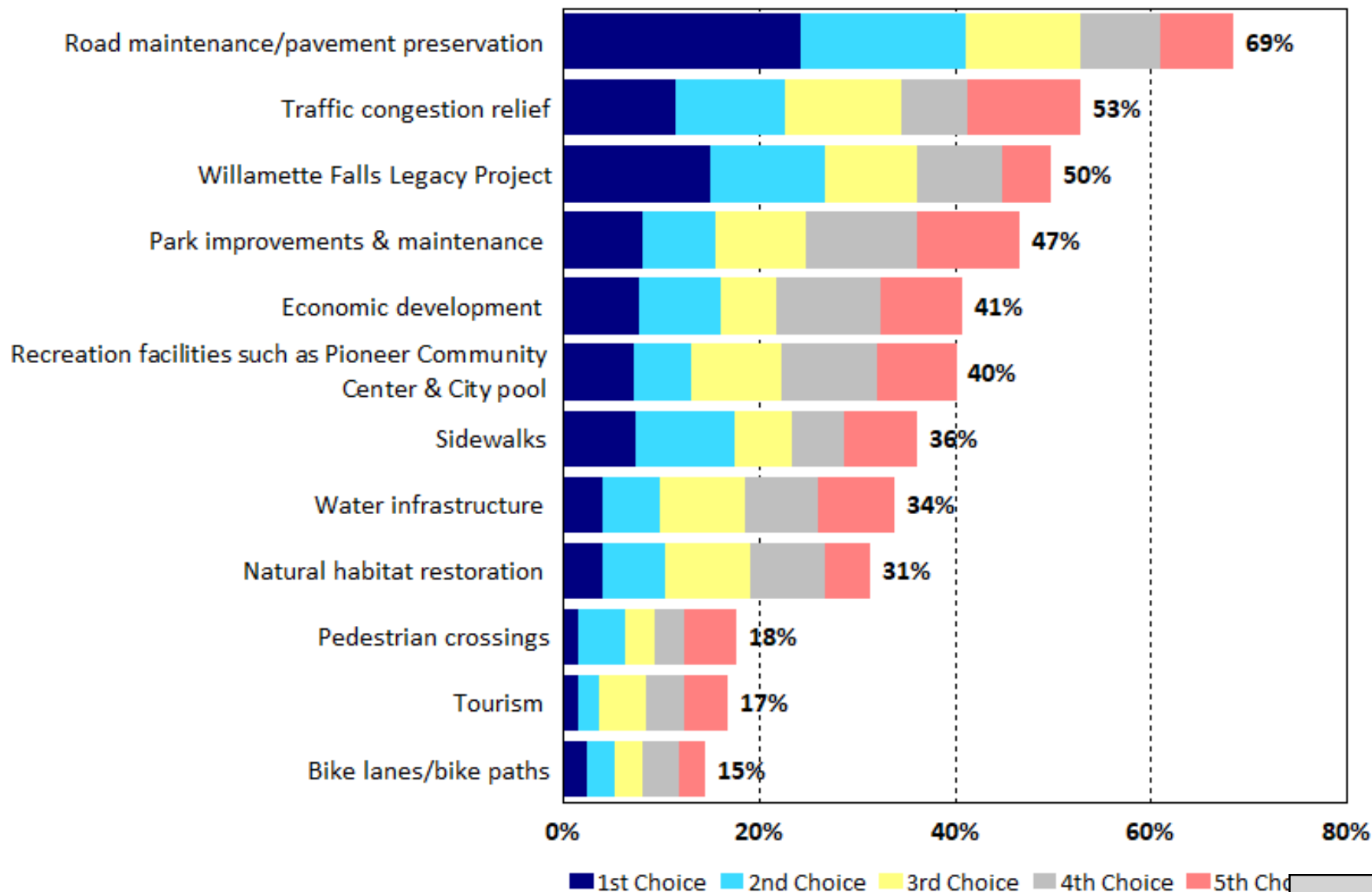
Code Enforcement Priorities:

Other Findings

Q20. Top Capital Investment Priorities

Item 3b.

by percentage of respondents who selected the item as one of their top five choices



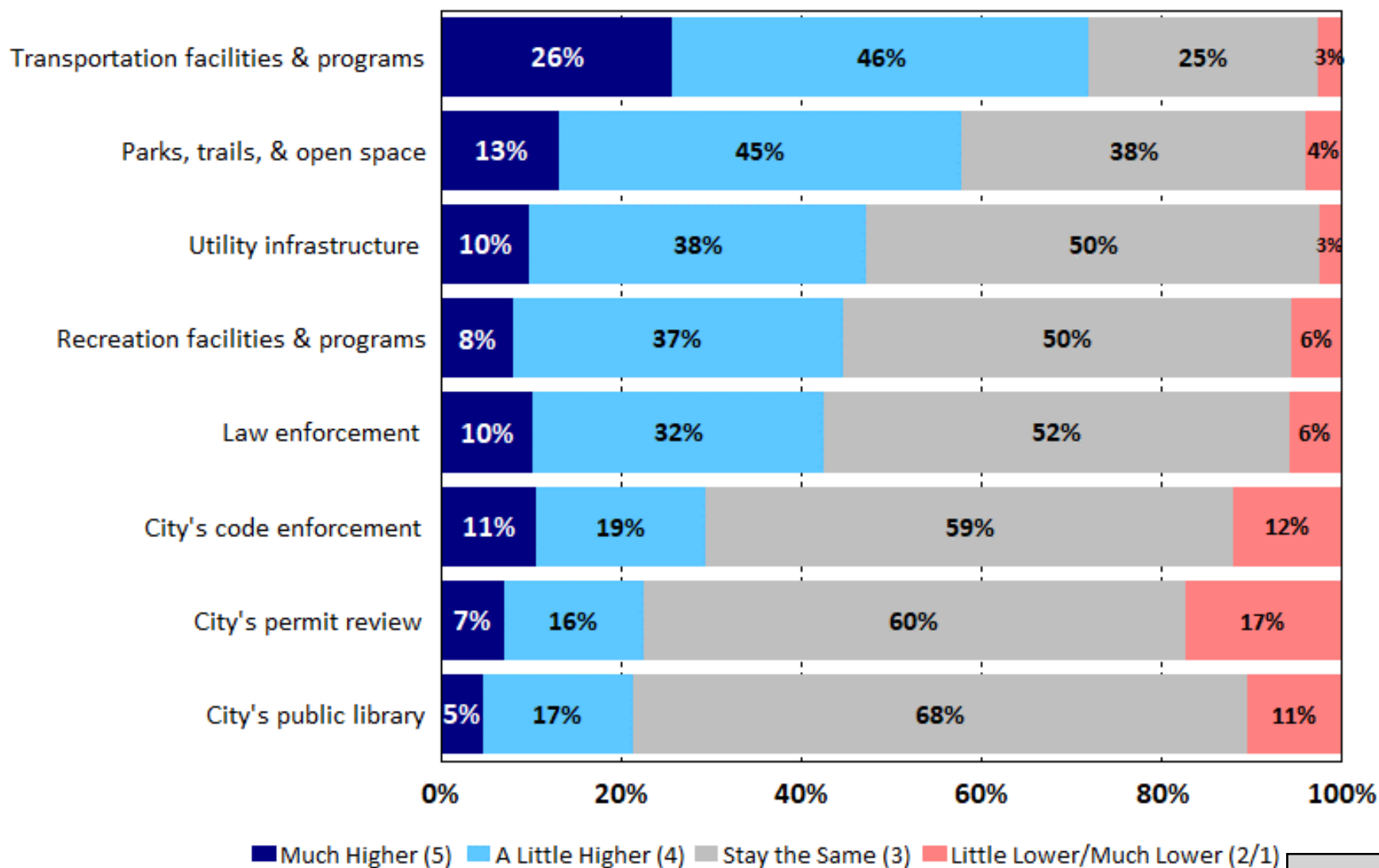
Source: ETC Institute (2020 - Oregon City, OR)

Page 296

Q21. Level of Change in Service Expectations

Item 3b.

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



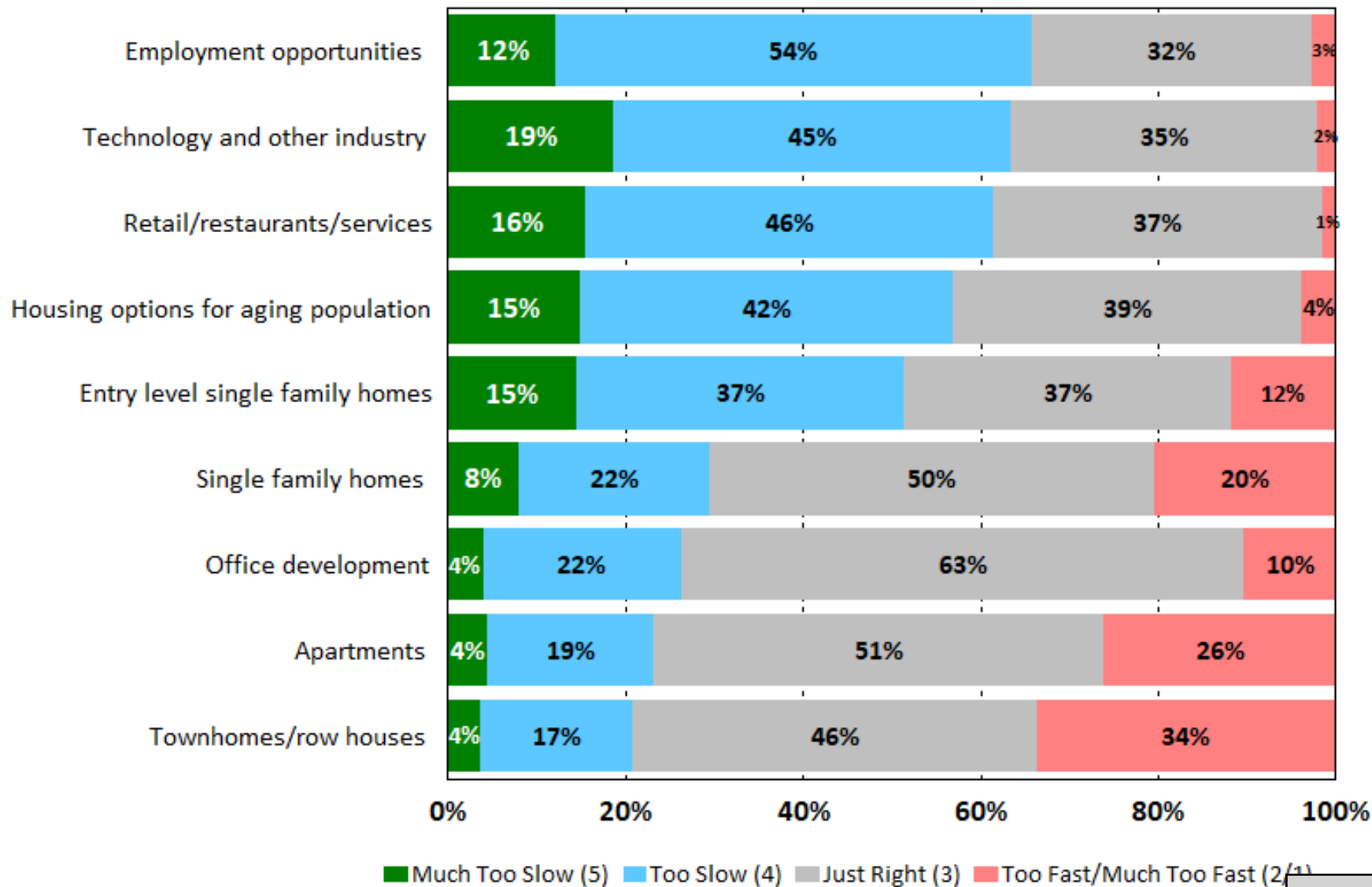
Source: ETC Institute (2020 - Oregon City, OR)

Page 297

Q24. Current Pace of Development in Various Areas

Item 3b.

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)

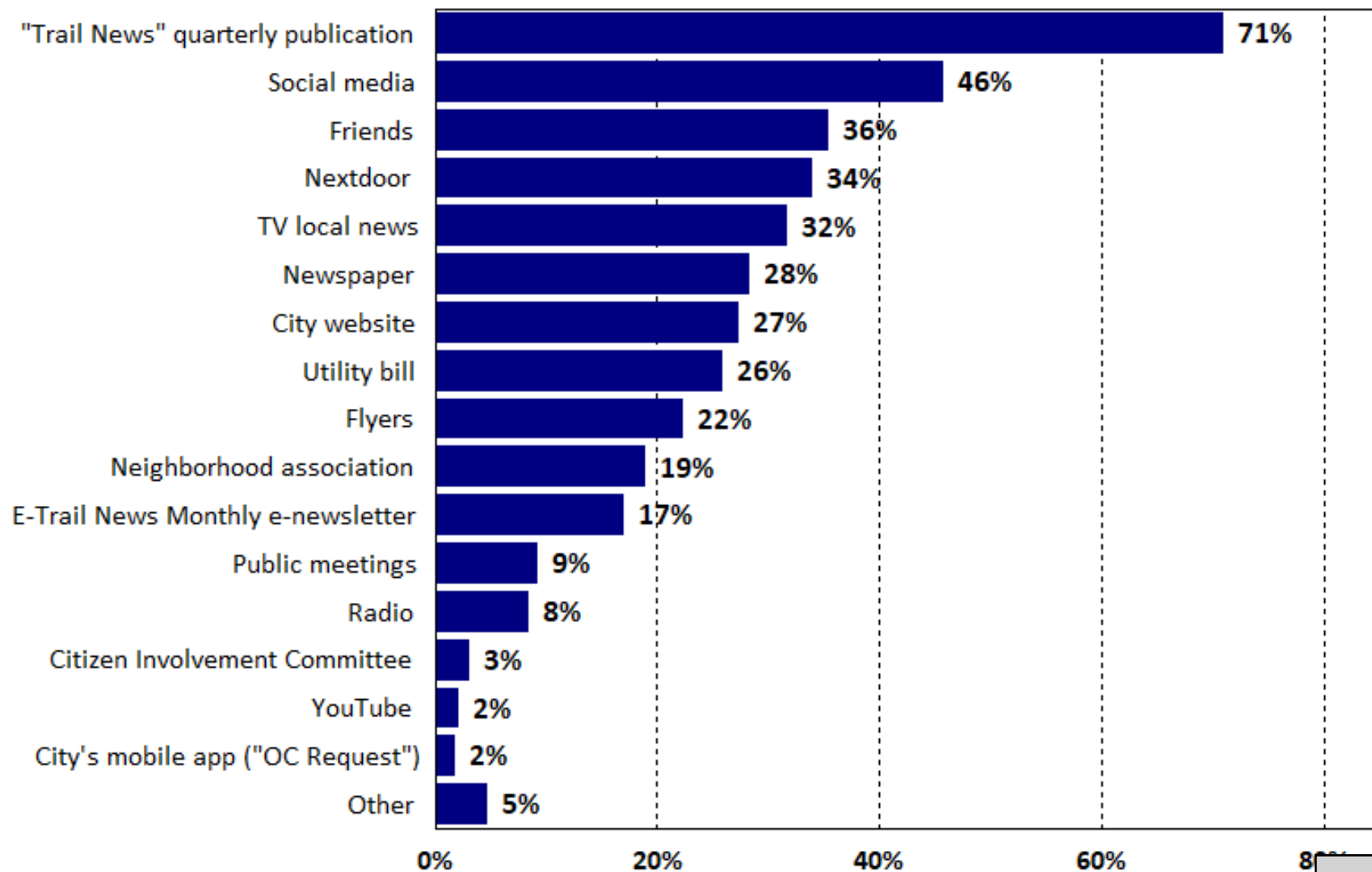


Source: ETC Institute (2020 - Oregon City, OR)

Q10. Where do you currently get news and information about City programs, services, and events?

Item 3b.

by percentage of respondents (multiple choices could be made)

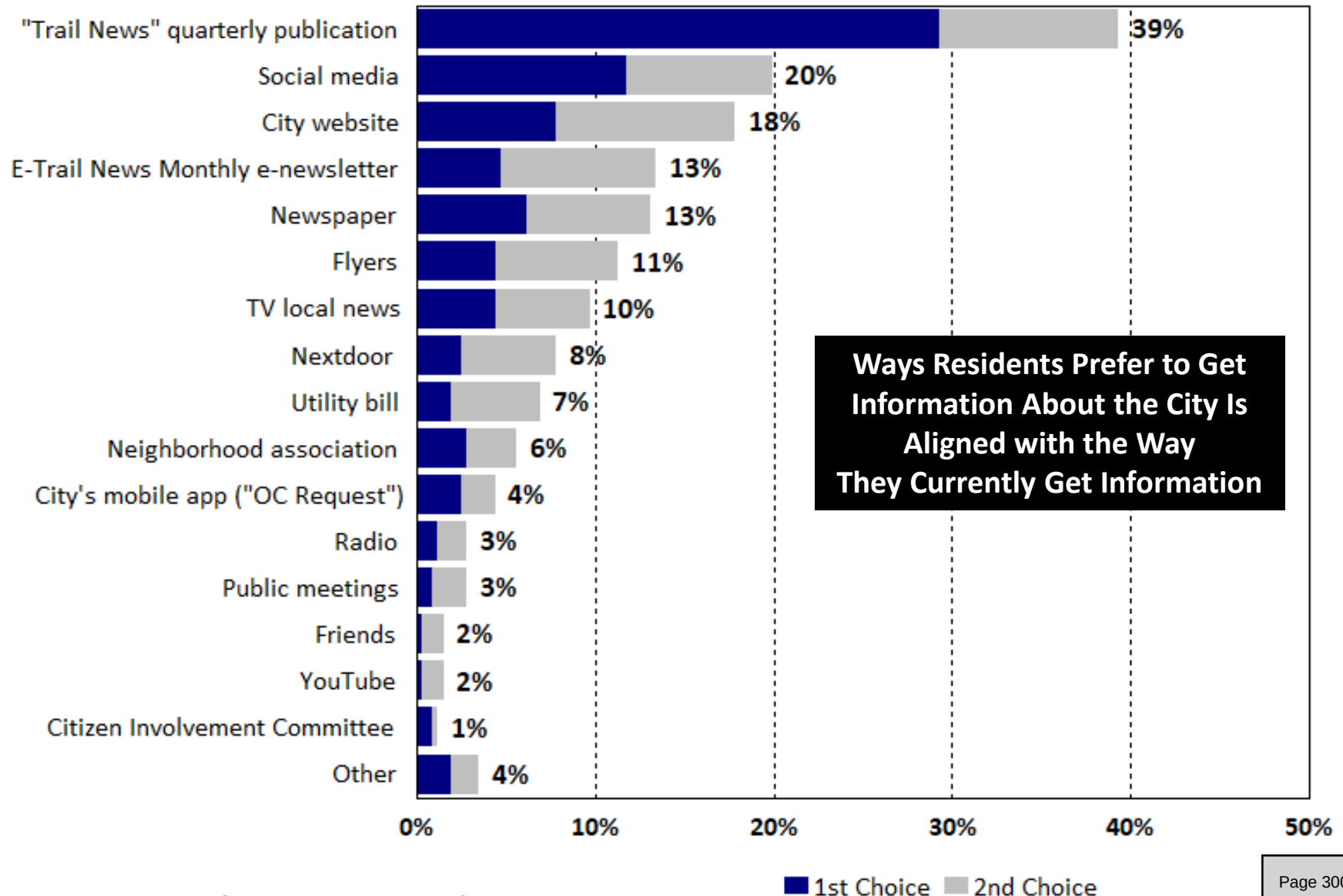


Source: ETC Institute (2020 - Oregon City, OR)

Q10a. Most Preferred Way to Get Information From the City

Item 3b.

by percentage of respondents who selected the item as one of their top two choices



Source: ETC Institute (2020 - Oregon City, OR)

Summary

Summary

Item 3b.

- **Residents Have a Positive Perception of the City**
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 - ❑ Economic Development
 - ❑ Codes and Ordinances
 - ❑ Communication with the Public

Questions?

THANK YOU!!



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 01/20/2021
From: Community Development Director Laura Terway

SUBJECT:

Appeal Fee Waiver Request

STAFF RECOMMENDATION:

No recommendation.

EXECUTIVE SUMMARY:

The City has received a request to waive the \$1,567 fee associated with appealing a Planning Commission decision. On January 13, 2021, the Planning Commission conditionally approved GLUA-20-00020 (CU-20-00002 Conditional Use/SP-20-00043 Site Plan and Design Review) for a 25-bed expansion of an existing 5-room adult care home into a 30-bed residential care and memory care facility at 182 Warner Parrott Road. The City Commission is to review the request and determine if the request is “fair to the applicant and the opposing parties” as identified in OCMC 17.50.290.C. If the waiver is granted, the Planning Division would have a loss of revenue for up to \$1,567.

The scope of this request is limited to the fee waiver request itself. Any discussion regarding the associated residential and memory care facility should occur at a separate hearing in accordance with the limitations in OCMC 17.50 if an appeal is filed.

BACKGROUND:

On January 13, 2021, the Planning Commission conditionally approved GLUA-20-00020 (CU-20-00002 Conditional Use/SP-20-00043 Site Plan and Design Review) for a 25-bed expansion of an existing 5-room adult care home into a 30-bed residential care and memory care facility at 182 Warner Parrott Road. The decision of the Planning Commission is appealable to the City Commission by January 27, 2021.

The requirements for filing an appeal are set forth in Oregon City Municipal Code (OCMC) 17.50.190.C. One of the requirements include either the appeal fee of \$1,567 or a waiver of the appeal fee by the City Commission. OCMC chapter 17.50.290.C notes that:

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.

The City received the enclosed request to waive the appeal fee for this land use application. The City Commission is to review the request and determine if the request is “fair to the applicant and the opposing parties”.

The appellant asserts that the waiver is fair because:

We have no active neighborhood association. The director of our previous neighborhood association moved, resulting in our association being inactive. This lack of a neighborhood association was noted in the applicant's original preapplication conference with the planning department. If we had a neighborhood association this appeal would have been made to the city commission at no cost per city code 17.50.290 section C, fee waivers. “Appeal fees shall not be charged for an appeal filed by a city recognized neighborhood association”. That appeal would surely have been made by our neighborhood association as demonstrated by letters from neighbors within the association boundaries that support this request.

The scope of this request is limited to the fee waiver request itself. Any discussion regarding the associated residential and memory care facility should occur at a separate hearing in accordance with the limitations in OCMC 17.50 if an appeal is filed.

If the waiver is granted, the Planning Division would have a loss of revenue for up to \$1,567.

OPTIONS:

1. Waive all or a portion of the \$1,567 appeal fee.
2. Do not waive any portion of the appeal fee.

BUDGET IMPACT:

Amount: Loss of Revenue of up to \$1,567

FY(s): 2020/2021

Funding Source(s): Community Development: Planning Division

Laura Terway

From: jerry <jerry1968@aol.com>
Sent: Tuesday, January 12, 2021 12:20 PM
To: Laura Terway
Subject: Final "Request for waiver of fees on appeal"

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

January 12, 2021

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

Subject: Request for waiver of fees to appeal Planning Commission action on GLUA-20-00020: CU-20-00002 / SP-20-00043 building expansion at 182 Warner Parrott Road to a 30 bed residential/memory care facility

Commissioners,

The Planning Commission has just approved GLUA-20-00020, the construction of a 30 bed residential/memory care facility at 182 Warner Parrott Road. As a 36 year resident and property owner of a directly affected property abutting the above noted project, I respectfully request a waiver of the fees to appeal the decision. As a resident with standing in this matter, I have attended either in person or via Zoom all public input meetings and have submitted verbal and written comments to the planning commission.

OCMC 17.50.290.C allows the City Commission to waive the appeal fee "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".

Out of fairness to the applicant and a dozen neighbors opposed to the project I am asking the commission to waive the appeal fee so a presentation can be made to the city commission.

We have no active neighborhood association. The director of our previous neighborhood association moved, resulting in our association being inactive. This lack of a neighborhood association was noted in the applicant's original pre-application conference with the planning department. If we had a neighborhood association this appeal would have been made to the city commission at no cost per city code 17.50.290 section C, fee waivers. "Appeal fees shall not be charged for an appeal filed by a city recognized neighborhood association". That appeal would surely have been made by our neighborhood association as demonstrated by letters from neighbors within the association boundaries that support this request.

Respectfully submitted,

Jerry Yarberry
 18641 Boynton Street
 Oregon City, Oregon 97045

Sent from [Mail](#) for Windows 10

Laura Terway

From: Amy <awillhit@yahoo.com>
Sent: Tuesday, January 12, 2021 1:49 PM
To: Laura Terway
Subject: Appeal waiver support

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.

Oregon City Commissioners:

I fully support the letter Jerry Yarberry submitted to the Commission on January 12, 2021 requesting the fees be waived for his appeal of the building expansion at 182 Warner Parrott Road, Oregon City.

I am confident that he would have used the neighborhood association process if there had been an active South End Neighborhood Association. In fairness to him I ask that you waive the appeal fee.

I submitted testimony at one of the hearings on this matter.

Amy Willhite
Oregon City Resident

Laura Terway

From: Gary & Marilyn Fergus <fergusfamily@gmail.com>
Sent: Tuesday, January 12, 2021 12:55 PM
To: Laura Terway
Subject: Fee Waiver request

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.

I, Gary Fergus, support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021 requesting the fees be waived for our neighborhood appeal of the building expansion at 182 Warner Parrott Road, Oregon City.

Gary Fergus
152 Warner Parrott Rd.
Oregon City OR 97045

Laura Terway

From: Gary & Marilyn Fergus <fergusfamily@gmail.com>
Sent: Tuesday, January 12, 2021 12:55 PM
To: Laura Terway
Subject: Fee Waiver request

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I, Marilyn Fergus, support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021 requesting the fees be waived for our neighborhood appeal of the building expansion at 182 Warner Parrott Road, Oregon City.

Marilyn Fergus
152 Warner Parrott Rd.
Oregon City OR 97045

Laura Terway

From: Ingra Rickenbach <irickenbach@aol.com>
Sent: Tuesday, January 12, 2021 3:33 PM
To: Laura Terway
Subject: Fee waiver for 182 Warner Parrott Road

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.

Laura,

I, Ingra Rickenbach support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021. He requested fees to be waived for our neighborhood appeal of the building expansion at 182 Warner Parrott Road, Oregon City, Oregon. I spoke at one of the hearings against the request.

Thank you,

Ingra Rickenbach
131 Warner Parrott Road
Oregon City, Oregon 97045

[Sent from the all new Aol app for iOS](#)

Laura Terway

From: Stacy Cox <stacylynn077@comcast.net>
Sent: Tuesday, January 12, 2021 4:15 PM
To: Laura Terway; jerry
Subject: Appeal support of Jerry Yarberry

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We, Stacy and Todd Cox of , support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021 requesting the fees be waived for our neighborhood appeal of the building expansion at .

Sent from my iPhone

Laura Terway

From: JOHN WINTERS <mjwinters72@comcast.net>
Sent: Wednesday, January 13, 2021 9:47 AM
To: Laura Terway
Cc: jerry1968@aol.com
Subject: waiver of fees

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.

Dear Laura Terway,

John and Michelle winters support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021 requesting the fees be waived for our neighborhood appeal of the building expansion at 182 Warner Parrott Road, Oregon City.

Sincerely,
John & Michelle Winters
18621 Boynton st.
Oregon City, Or 97045

1/12/2021

City Commission
City of Oregon City
625 Center Street
Oregon City, Oregon 97045

Dear Commissioners,

My name is Jill Emra, and I live at 12019 Glacier Street, in Oregon City. I support Jerry Yarberry's request of this date, asking you to waive the fees for us to appeal the expansion at 182 Warner Parrott Road. GLUA-20-00020, CU-20-00002/SP-20-00043.

Thank you for your consideration,



Jill Emra

Laura Terway

From: Becky Turner <turnerbecky@comcast.net>
Sent: Wednesday, January 13, 2021 1:13 PM
To: Laura Terway
Subject: Mess

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.

I Rebecca L. Turner_ support the letter Jerry Yarberry submitted to the Oregon City Commission on January 12, 2021 requesting the fees be waived for our neighborhood appeal of the building expansion at 182 Warner Parrott Road, Oregon City.

Sent from my iPhone

17.50.190 - Appeals.

Appeals of any non-final decisions by the city shall comply with the requirements of this section.

- A. Type I decisions by the community development director are not appealable to any other decision-maker within the city.
- B. A notice of appeal of any Type II, III or IV decision shall be received in writing by the planning division within fourteen calendar days from the date notice of the challenged decision is provided to those entitled to notice. Late filing of any appeal shall be deemed a jurisdictional defect and will result in the automatic rejection of any appeal so filed.
- C. The following shall be included as part of the notice of appeal:
 - 1. The planning file number and date the decision to be appealed was rendered;
 - 2. The name, mailing address and daytime telephone number for each appellant;
 - 3. A statement of how each appellant has an interest in the matter and standing to appeal;
 - 4. A statement of the specific grounds for the appeal;
 - 5. The appropriate appeal fee. Failure to include the appeal fee, with the exception of actual attorney fees, within appeal period is deemed to be a jurisdictional defect and will result in the automatic rejection of any appeal so filed. If a city-recognized neighborhood association with standing to appeal has voted to request a fee waiver pursuant to OCMC 17.50.290.C, no appeal fee shall be required for an appeal filed by that association. In lieu of the appeal fee, the neighborhood association shall provide a duly adopted resolution of the general membership or board approving the request for fee waiver.
- D. Standing to Appeal. The following rules prescribe who has standing to appeal:
 - 1. For Type II decisions, only those persons or recognized neighborhood associations who submitted comments in writing before the expiration of the comment period have standing to appeal a community development director decision. Review by the city commission shall be on the record, limited to the issues raised in the comments and no new evidence shall be considered.
 - 2. For Type III and IV decisions, only those persons or recognized neighborhood associations who have participated either orally or in writing have standing to appeal the decision of the planning commission or historic review board, as applicable. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. No new evidence shall be allowed.
- E. Notice of the Appeal Hearing. The planning division shall mail notice of the appeal hearing to all parties who participated either orally or in writing and provided their mailing address before the close of the public record in accordance with OCMC 17.50.090.B and post notice on the city website. Notice of the appeal hearing shall contain the following information:
 - 1. The file number and date of the decision being appealed;
 - 2. The time, date and location of the public hearing;
 - 3. The name of the applicant, owner and appellant (if different);

4. The street address or other easily understood location of the subject property;
 5. A description of the permit requested and the applicant's development proposal;
 6. A brief summary of the decision being appealed and the grounds for appeal listed in the notice of appeal;
 7. A statement that the appeal hearing is confined to the issues raised in the notice of appeal;
 8. A general explanation of the requirements for participation and the city's hearing procedures.
- F. Appeal Hearing—Scope of Review. Appeal hearings shall comply with the procedural requirements of OCMC 17.50.120. Appeal hearings shall be conducted by the city commission. The decision shall be on the record and the issues under consideration shall be limited to those listed in the notice of appeal.

(Ord. No. 18-1009, § 1(Exh. A), 7-3-2019; Ord. No. 19-1008, § 1(Exh. A), 12-18-2019)

17.50.290 - Fees.

The city may adopt by resolution, and revise from time to time, a schedule of fees for applications and appeals. Fees shall be based upon the city's actual or average cost of processing the application or conducting the appeal process. The only exception shall be the appeal fee for a Type II decision, which shall be limited by ORS 227.175.10.b. The requirements of this section shall govern the payment, refund and reimbursement of fees.

- A. Payment. All fees shall be due and payable at the time the application or appeal is submitted. No application or appeal shall be completed without the proper fee being paid.
- B. Refunds. Fees will only be refunded as provided in this subsection:
 1. When a fee is paid for an application which is later found to not be required, the city shall refund the fee.
 2. Errors. When an error is made in calculating a fee, overpayment will be refunded.
 3. Refund upon Withdrawal of an Application. In the event an applicant withdraws an application, the planning department shall refund the unused portion of the fee. In this case, the planning department will deduct from the fee the city's actual costs incurred in processing the application prior to withdrawal.
- C. 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.
- D. Major Projects. The fees for a major project shall be the city's actual costs, which shall include, but not be limited to, the actual costs for staff time, as well as any consultants, including contract planners, attorneys and engineers. The costs of major projects will not be included in any average used to establish other fees under this section.

(Ord. No. 18-1009, § 1(Exh. A), 7-3-2019; Ord. No. 19-1008, § 1(Exh. A), 12-18-2019)

Item 6a.

Kattie Riggs

From: Amy <awillhit@yahoo.com>
Sent: Wednesday, January 20, 2021 3:14 PM
To: Laura Terway; Kattie Riggs
Cc: Bob La Salle
Subject: Bob's email

This is the email I was referring to.

Amy

On Saturday, January 9, 2021, 9:33 AM, Bob La Salle <jeanbob06@comcast.net> wrote:

Laura;

I would like this matter to be brought to the City Commission. In reference to ORS 17.50.290-Fees. the statement "considering fairness to the applicant and to opposing parties" should apply here. There was, during the application process, no Neighborhood Association available to represent the neighborhood, thus no possibility of representation by the neighborhood. Since the CIC is the land use representative for inactive neighborhoods it should have been brought to the CIC. Since there is much confusion in all this business of appeals, neighborhood associations, CIC representation, etc. I feel it is only fair that, in all fairness, the issue be presented to the City Commission and let them decide.

Most Sincerely;
Bob La Salle

Kattie Riggs

From: Joe Kaufman <jqkaufmanlaw@gmail.com>
Sent: Wednesday, January 20, 2021 11:10 AM
To: recorderteam
Cc: Petronella Donovan
Subject: Letter in Opposition to Appeal Fee Waiver
Attachments: City Commission Letter.01.20.21.pdf

Good Day:

I have attached my letter written on behalf of Petronella Donovan opposing the fee waiver request that is to be considered by the City Commission this evening. Please present the attached letter to the Commissioners for their consideration during this evening's meeting.

Kind Regards,

Joe Q. Kaufman
Attorney at Law

Corporate Counsel Services, Business Law, Intellectual Property

405 W. Arlington St.
Gladstone, OR 97027
[\(503\) 206-1307](tel:5032061307) - Voice
[\(877\) 866-1876](tel:8778661876) - Facsimile
jqkaufmanlaw@gmail.com
www.jqkaufmanlaw.com

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TAX ADVICE NOTICE : IRS circular 230 requires us to advise you that, if this communication or any attachment contains any tax advice, the advice is not intended to be used, and cannot be used, for the purpose of avoiding federal tax penalties or for promoting, marketing, or recommending to anyone else any tax-related matters addressed herein. A taxpayer may rely on professional advice to avoid federal tax penalties if and only if the advice is reflected in a comprehensive tax opinion that conforms to strict requirements. Please contact us if you have any questions about circular 230 or would like to discuss our preparation of an opinion that conforms to circular 230 rules.

Joseph Q. Kaufman, Esq.

405 W. Arlington Street

Gladstone, Oregon 97027

Telephone (503) 722-3850

Facsimile (877) 866-1876

jqkaufmanlaw@gmail.com

January 20, 2021

City Commission
City of Oregon City
625 Center Street
Oregon City, Oregon 97045

RE: Request for Appeal Fee Waiver
Planning Commission Action GLUA-20-00020: CU-20-00002/
SP-20-00043
182 Warner Parrott Road, Oregon City, Oregon

Dear Gentlepeople:

I have been retained by Petronella Donovan for the purpose of voicing her strong objection to the fee waiver request submitted to this Council for consideration. In brief, the request of the waiver of the appeal fee is unfair to Ms. Donovan (*See OCMC 17.50.290(C)*) and is an attempted end run around the process required of city-recognized neighborhood associations. *See OCMC 17.50.190(C)(5) and OCMC 17.50.290(C)*. OCMC 17.50.190 and OCMC 17.50.290 have been provided in your attachments to the Agenda on pages 315-16.

Fairness

The request presented asks the City Commission to waive part or all of the \$1,567.00 appeal fee required 'out of fairness' to Mr. Yarberry and his 12 neighbors. Pursuant to OCMC 15.50.290(C) the City Commission may waive all or part of the appeal fee if it finds that, considering the fairness to the applicant and opposing parties, a full or partial waiver is warranted. The request does not address why a fee waiver would also be fair to Ms. Donovan. It would not be fair.

Ms. Donovan began this process before the Planning Commission a year ago. Numerous hearings have been held in which Yarberry and his neighbors have been active participants. Ms. Donovan and her architect have also participated in the same meetings in which they presented costly reports and studies that have taken substantial time to prepare. These neighbors' concerns and arguments in opposition have been addressed and debunked in the year long process. This handful of neighbors now wish to delay the process further by an appeal but can not do so without rightfully paying a filing fee. OCMC 17.50.190(C)(5).

The requirement of charging a fee for participation in an appeal is to assure among other things, that frivolous appeals do not delay projects approved after the vetting of issues and deliberation of the Planning Commission. The rule provides fairness on its face by requiring appellants to pay a filing fee to appeal a Planning Commission decision after the proponent of the matter has invested mightily in time and money to move the matter along to approval. It is our position that this small group seeking the waiver would not invest the funds to pursue the appeal and that in fairness to Ms. Donovan that the fee waiver should not be granted.

Further, please understand that Ms. Donovan is not some cold corporate developer but rather a long-standing member of the Oregon City community. She has invested her hard earned funds to introduce her request and then participate and present reports and surveys in strict accordance with the Planning Commission's procedure and to address concerns voiced by this group of neighbors over the past year. Further delay to have more discussion of the same concerns considered by the Planning Commission will result in further expense for Ms. Donovan and perhaps at no risk or expense to the appellants if granted the waiver. Granting the fee waiver, in whole or in part, would be unfair to Ms. Donovan.

Automatic Rejection due to Jurisdictional Defect

OCMC 17.50.190 provides the City's rules for a notice of appeal. OCMC 17.50.190(C) provides the prerequisites for any appeal. OCMC 17.50.190(C)(5) provides that failure to include the appeal fee is a jurisdictional defect and results in the automatic rejection of any appeal so filed. The two exceptions to the appeal fee requirement, waiver by the City Commission or appeal after process of approval by a city recognized neighborhood association, are provided in OCMC 17.50.290(C).

The applicant and his neighbors are not a city-recognized neighborhood association. Mr. Yarberry's request clearly states this fact. Only city recognized neighborhood associations with standing to appeal whose general membership or board have officially voted to request a fee waiver at a duly announced meeting qualify for a fee waiver. *See, OCMC 17.50.290(C)*. Mr. Yarberry's assertion that his neighborhood association, if active, would have voted to appeal and to request a fee waiver is far-fetched. If granted it will promote further end-runs around this valuable process required of city recognized neighborhood associations. Mr. Yarberry and his neighbors are only 13 out of 1507 households that would have had a voice if the neighborhood association were active. This request for the waiver of the appeal fee should not be granted.

Thank you for your consideration of our opposition to this fee waiver request.

Kind Regards,


Joseph Q. Kaufman

Kattie Riggs

From: William Gifford <William@smALLFLAGs.com>
Sent: Wednesday, January 20, 2021 10:42 AM
To: Denyse McGriff; Frank O'Donnell; Rachel Lyles Smith; Rocky Smith, Jr.
Cc: Tony Konkol; Kattie Riggs
Subject: City Commission Regular Meeting of 01/20/21

Regarding Item 6a. Appeal Fee Waiver Request

Following the advice from the Executive Summary of the Staff Report on this item,

The scope of this request is limited to the fee waiver request itself.

Given that that should be no discussion of GLUA-20-00020, other than it was conditionally approved by the Planning Commission (5-0-2) on 01/13/21,

There seem to be only two issues which should concern this Commission:

1. Are a small group of citizens entitled to the same benefits as those afforded to an active Neighborhood Association?
2. Would affording those citizens the benefit of an appeal fee waiver show “fairness to the applicant and to opposing parties”? (OCMC chapter 17.50.290.C)

Regarding the first issue, the appellants admit that they do not live in an active Neighborhood Association, yet they contend that the “appeal would surely have been made by our neighborhood association ...”. There has been every opportunity for the appellants to have re-activated their association. They have not. Now, when those advantages are apparent, they ask that the letters of 9 households represent the over 1,500 households of the South End NA – apparently without having attempted to reach out to the rest of them.

This is clearly a case of wanting to “have your cake and eat it too.” If they have not been willing to, at least, go do the hard work of recruiting their larger neighborhood and re-activating their association, why should they have the privilege of basing their request for an appeal waiver based on the status of the imagined opinion of the rest of the neighborhood? They’re either an active Neighborhood or they aren’t. They can’t have it both ways.

Now, the Commission has every right to grant a waiver of any fee it chooses, but consider the slippery slope: if this small group of an inactive Neighborhood Association is granted a waiver, why should there be any requirement for Neighborhood status connected with any request for waivers? Appeals cost City Staff valuable time and money. There should be compensation. Appeals cost applicants valuable time and money. Fees were instigated to erect some reasonable barrier against frivolous appeals. Each side needs to demonstrate some serious “skin in the game” for this to be anywhere close to a level playing field.

This naturally leads to the second issue: that of fairness. Perhaps especially in this case, the applicant has virtually bent over backwards, often at the request of City Staff, to attempt to placate these neighbors. There is a real cost to these accommodations, literally thousands of dollars. That, coupled with the cost of multiple continuances, is a real hindrance. Yet still, the Planning Commission overwhelmingly supports the application. Is it fair to not require a reasonable commitment from the proposed appellants?

I respectfully request that the City Commission deny any part of this request for fee waiver.

Thank you for your attention.

Sincerely,
In Peace Through Understanding,

William Gifford
William@smALLFLAGs.com
503.723.3456



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 01/20/2021
From: Community Development Director Laura Terway

SUBJECT:

First Reading of Ordinance No. 21-1001, Amendments to the Water Master Plan (GLUA 20-00033; LEG-19-00002)

STAFF RECOMMENDATION:

Staff recommends approval of the first reading of Ordinance No. 21-1001.

EXECUTIVE SUMMARY:

The City seeks to amend its Water Master Plan to reflect revised modeling and system analysis, which will result in an updated list of capital projects. The current Water Master Plan was adopted in 2012, providing a 20-year plan to expand and upgrade our water system as necessary to accommodate planned growth. Since that time, the City has been working hard to complete projects identified in the plan. With the Amendment to the Water Master Plan, the City will have an updated plan to better operate, maintain, and improve our system over the next 20 years to provide customers with quality and reliable water.

On December 14, 2020, the Planning Commission recommended 6-0 to recommend approval of GLUA 20-00033 (LEG-19-00002) to the City Commission.

Patty Nelson P.E., Special Projects Senior Engineer, indicates in her attached memo (Exhibit B) that the proposed amendments have been revised to include projected implementation timelines. While adopting this Ordinance is separate from the Water Rate Update discussion (January 12, 2021 City Commission Work Session), approving the Amendment to the Water Master Plan will increase the Capital Improvement Plan (CIP) list. Updates to the Water Rates or System Development Charges will occur at the City Commission's direction through a separate process; however, both are contingent on the adoption of a new Capital Improvement list.

BACKGROUND:

Water is arguably one of the most valuable resources. Without it, there is no life. While having quality drinking water is a necessity of life, we depend on water for our everyday activities such as showering, laundry, dishes, and for fire protection. We are fortunate here in Oregon City to have the rights to a great water source, the Clackamas River. A quality source and an excellent treatment facility, combined with one of the oldest water rights, makes Oregon City water supply one of the most reliable, efficient, high-quality water supplies in the state. While our water is supplied by the South Fork Water Board, jointly owned by Oregon City and West Linn, the City of Oregon City is responsible for getting the water to homes and businesses. Investing in our community water system benefits all of us now and in the future. Over the years, the City has grown and so has the water system.

In 2012, the Oregon City Water Master Plan was updated with the 2012 Water Distribution System Master Plan ("Water Master Plan") and is an Ancillary Document to the Oregon City Comprehensive Plan (2004). The purpose of the Water Master Plan is to identify existing water system deficiencies and required improvements, to analyze existing and future water demands and develop a capital improvement program (CIP) to meet these needs.

In 2012 the Water Distribution System Master Plan ("Water Master Plan") was adopted, including a CIP identifying projects over a 20-year planning horizon to satisfy growth and water system operational and hydraulic criteria. In 2017, City staff identified several shortcomings with the 2012 CIP related to operational and implementation challenges:

- **Transmission Main Reliability:** Aging system condition combined with high water pumping pressures during current peak demand from the Mountain View Booster Station to Boynton and Henrici Reservoirs, results in leaking pipes and increases the risk of pipe breaks. As a result, the system operates at a reduced capacity, creating challenges to meet demands and maintaining fire protection.
- **Pressure Issues in System:** Customer feedback indicated pressure issues in the system that need to be addressed.
- **Future Growth Refinement:** Implementation challenges were realized with the current plan due to topography and development locations in concept plan areas. Revised hydrologic modeling and subsequent analysis do not change the growth assumptions for areas located within the Urban Growth Boundary, but rather the approach to distributing water lines to those areas.

To address these identified challenges and better meet the needs of current and future customers, City staff secured professional services to update the water system model and CIP. The updated model incorporated updated information since 2012, including current adopted design standards, consumption rates, growth rates, expansion of system since 2012, and system operating data. Updated modeling was then used to evaluate the water distribution system needs for the next 20 years. The outcome is an updated list of capital improvements needed to support development, as projected within the Comprehensive Plan.

OPTIONS:

1. Approve first reading of Ordinance No. 21-1001.
2. Continue Ordinance No. 21-1001 to the February 3, 2021 City Commission Meeting.
3. Continue Ordinance No. 21-1001 to a different date certain.

ORDINANCE NO. 21-1001

AN ORDINANCE OF THE CITY OF OREGON CITY ADOPTING REVISIONS TO THE WATER MASTER PLAN AS AN ANCILLARY DOCUMENT TO THE COMPREHENSIVE PLAN

WHEREAS, the City provides quality, reliable water to its customers through its water distribution system; and

WHEREAS, the City plans water system improvements as necessary to serve its customers, now and in the future through the development of its Water Master Plan; and

WHEREAS, the City adopted its current Water Master Plan in 2012, providing a 20-year plan for system improvements; and

WHEREAS, the City identified operational challenges not reflected in the current master plan and updated its hydraulic model and system analysis, resulting in an updated list of capital projects; and

WHEREAS, the City seeks to amend its Water Master Plan, to reflect the updates; and

WHEREAS, since that time, the City has been working hard to complete projects identified in the 2012 Plan; and

WHEREAS, with the Amendment to the Water Master Plan, the City will have an updated plan to better operate, maintain, and improve our system over the next 20 years to provide customers with quality and reliable water.

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. For the reasons set forth in the Legislative Staff Report findings for file GLUA-19-0-00016 (LEG 19-00002) – Amendments to the Water Master Plan, the City Commission hereby amends the City of Oregon City Comprehensive Plan by adopting the revisions to the 2012 Water Master Plan, attached to this Ordinance as Appendix A 2012 Water Master Plan Amendment, as an ancillary document.

Section 2. This Ordinance shall take effect 30 days from the date of adoption.

Read for the first time at a regular meeting of the City Commission held on the 20th day of January, and the City Commission finally enacted the foregoing Ordinance this 3rd day of February 2021.

ROCKY SMITH, JR.
Commission President

Attested to this 3rd day of February 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

Attachments:
Exhibit A – Amendments to the 2012 Water Master Plan



City of Oregon City

2012 Water Distribution System Master Plan Amendment

August 2020



Table of Contents

Introduction	4
Water Distribution Model	5
System Supply and Demands	5
<i>Demand Definition</i>	6
<i>Demand Summary</i>	6
Design Criteria	11
<i>System Pressures</i>	11
<i>Fire Flow Demands</i>	11
<i>Facility Criteria</i>	12
System Evaluation	12
<i>Distribution and Fire Flow Deficiencies</i>	12
<i>Reservoir Capacity Analysis</i>	13
<i>Pump Station Capacity Analysis</i>	14
Capital Improvement Program.....	18
<i>Cost Assumptions</i>	18
<i>Joint Work with CRW and Neighboring Provider Upgrades</i>	19
Improvement Descriptions.....	19
<i>Capacity and Operations Projects</i>	19
<i>Development and Growth Projects</i>	21
<i>Repair and Replacement Projects</i>	22
Capital Improvement Program Summary.....	29

Figures

Figure 1 Study Area	8
Figure 2 MDD Pressure and Pipe Velocity	16
Figure 3 Fire Flow	17
Figure 4 Pipe Distribution by Age and Material.....	24
Figure 5 CIP Projects Map	34

Tables

Table 1 Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone	9
Table 2 CRW and West Linn Demands	10
Table 3 Recommended Service Pressure Criteria.....	11
Table 4 Required Fire Flow Summary.....	11
Table 5 Water System Facility Criteria.....	12
Table 6 Reservoir Storage Calculations	14
Table 7 Pump Station Capacity Calculations	15
Table 8 Capital Improvement Program Projects	18
Table 9 Reservoir Filling Rates – Mountainview to Henrici Transmission Upsizing	21
Table 10 Park Place Concept Area Supply	22
Table 11 Repair and Replacement Summary	23
Table 12 Pipe Replacement Projects	24
Table 13.1 Pressure Reducing Valve Rehabilitation Schedule	25
Table 13.2 Pressure Reducing Valve Recommended Settings.....	27
Table 14 Reservoir Coating and Rehabilitation Schedule	28
Table 15 Reservoir Seismic and Safety Improvements.....	28
Table 16 Pump Station Rehabilitation and Maintenance Schedule	29
Table 17 Capital Improvement Program	30
Table 18 Total CIP Summary Costs	33

Appendices

Appendix A Water Distribution Model Calibration Technical Memorandum, Murraysmith
Appendix B Hydraulic Profiles
Appendix C Emergency Water Supply Analysis Technical Memorandum, Murraysmith
Appendix D Joint Engineering Study Technical Memorandum, Murraysmith
Appendix E Table 10.1B South Storage Capacity Summary (1.5% Growth Forecast), CRW
Appendix F Molalla Avenue Streetscape Concurrent Waterline Improvements Technical Memorandum, Murraysmith
Appendix G Small Waterline Replacement Projects & PRV Photo Documentation, Oregon City
Appendix H Mill Redevelopment Water Distribution Analysis Technical Memorandum, Murraysmith

Introduction

In 2012, the City of Oregon City (City) adopted the *Water Distribution System Master Plan* (2012 WDSMP) prepared by West Yost Associates, an ancillary document to the City's Comprehensive Plan and the Public Facilities Plan for the City's water distribution system as required by Oregon Administrative Rule (OAR) Chapter 660, Division 11, Public Facilities Planning. The 2012 WDSMP includes the Capital Improvement Program (CIP) which consists of a list of prioritized water distribution system projects and estimated costs were based on 2009 dollars. The CIP is a blueprint for forecasting capital expenditures and is one of the most important means of meeting the City's obligation towards community development and financial public facilities planning.

This document is an amendment to the 2012 WDSMP, developed primarily to provide an updated CIP in current dollars for implementation over a 20-year time frame, through 2040. In order to prepare a comprehensive update, elements of the 2012 WDSMP were either retained as the basis for updated analysis, revised and updated to current conditions, or replaced in their entirety. A summary of the relationship between the original Chapters of the 2012 WDSMP and this Amendment is presented below:

2012 WDSMP Chapter	2020 Amendment
1. Introduction	Documents updates presented herein as a supplement to Chapter 1
2. Existing Water Distribution System	Retained as is, limited system modifications have occurred
3. Water Demand Analysis	Replaces this Chapter with current and forecasted demands through the year 2040
4. Water Distribution System Service Standards	Amends specific criteria for service pressures, fire flows, pump stations and storage
5. Hydraulic Model Update	Replaces this Chapter with comprehensive model update and calibration
6. Existing Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
7. Future Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
8. Recommended Capital Improvement Program	Replaces this Chapter with updated CIP based on new existing and future system evaluation
9. Water Distribution System Financing Plan	Proposed method of funding is not changed, however project list is replaced by the project list in the Amendment

This 2012 WDSMP Amendment has been developed in accordance with Oregon Administrative Rule (OAR) 660-011 which requires that "a city or county shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500

persons. The purpose of the plan is to help assure that urban development in such urban growth boundaries is guided and supported by types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities and services are provided in a timely, orderly and efficient arrangement...”

Water Distribution Model

A steady-state hydraulic network model was used to evaluate the performance of the distribution system under existing and future demand conditions to identify deficiencies and evaluate adequacy of improvements. The model uses the Innovyze InfoWater software, and the EPANet hydraulic engine, to simulate system pressures and demands throughout the distribution system. The model was most recently updated and calibrated in 2017, as documented in the *Water Distribution Model Calibration Technical Memorandum* (Murraysmith, 2017, **Appendix A**).

System Supply and Demands

The South Fork Water Board (SFWB) supplies treated water to the City of Oregon City, the Clackamas River Water District (CRW), and the City of West Linn. Until recently, SFWB was the localized sole supply for all three providers. However, West Linn upgraded their connection with Lake Oswego-Tigard to access emergency supply from the Lake Oswego-Tigard Water Treatment Plant, completed in 2017. Additionally, CRW is extending supply from their own treatment through an on-going “Backbone” Project. The diversified supply will decrease the total demand on the SFWB system but will primarily not affect projected demands on the City system, or water wheeled through the City system. Therefore, for this analysis, it was assumed that SFWB would continue to supply all three providers without hydraulic deficiencies.

Currently, the City, West Linn, and CRW share supply via the SFWB 30-inch transmission line and the SFWB Division Street Pump Station, or the SFWB 42-inch transmission line and the City Hunter Avenue Pump Station. The supply system is shown in **Figure 1** and described in the bullets below. Included in **Appendix B** is a hydraulic profile of the complete system. A looped connection between the SFWB 30-inch and 42-inch transmission lines was completed in December 2018 and is not reflected in either the figure or the descriptions. This project serves to bypass a leaking portion of the SFWB 30-inch transmission line near the SFWB Water Treatment Plant (WTP) and does not significantly affect system supply. The planning and modeling for this project are documented in the *Emergency Water Supply Analysis Technical Memorandum* (Murraysmith 2019) included in **Appendix C**.

- West Linn supply is located downstream of the SFWB Division Street Pump Station, directly off SFWB transmission lines, at Master Meter 3 (MM03). West Linn owns and operates their supply line between MM03 and the West Linn Bolton Reservoir. System demands for West Linn are modeled at the Bolton Reservoir.
- CRW demands are supplied via a master meter directly off SFWB infrastructure (MM02), wheeled through City infrastructure to master meters (MM08, MM09, MM11, MM12,

MM13), and directly off City infrastructure, without an intervening master meter. CRW customers supplied without intervening master meters are considered regular City customers, for the purposes of modeling system demands. CRW customers supplied through City infrastructure and via master meters are included as modeled demands at the meter location. Similarly, CRW customers supplied directly off the SFWB line are represented as a single demand at the location of the master meter.

- The City service area includes all areas within the City's Urban Growth Boundary (UGB) as shown in **Figure 1** including 10 pressure zones. The City is supplied through both the SFWB 30-inch transmission line via the SFWB Division Street Pump Station, and through the SFWB 42-inch transmission lines via the Hunter Avenue Pump Station. Currently, CRW serves some areas within the City's UGB, including the Barlow Crest area and portions of the South End. These areas have been discussed in detail between the City and CRW in the *Joint Engineering Study Technical Memorandum* (Murraysmith 2018, **Appendix D**).

Demand Definition

The following demand conditions were used to evaluate system capacity.

- Average daily demand (ADD) is the total annual water volume used system-wide divided by 365 days per year.
- Maximum day demand (MDD) is the largest 24-hour water volume for a given year. In western Oregon, MDD usually occurs each year between July 1st and September 30th, referred to as the peak season.
- Peak hour demand (PHD) is estimated as the largest hour of demand on the peak use day.
- Fire flow demand is the flow rate required by the fire marshal to fight a fire at each hydrant. Demands are based on building size, material, and use. Fire flow demands are modeled in addition to MDD system demands.
- Equivalent Dwelling Units (EDUs) are used to quantify water demands for all forms of development in terms of typical water demand for single family residential units. Water demand per EDU is calculated as the total water demand for all single-family residential units in the system divided by the total number of single-family residential units.

Demand Summary

Demand projections were developed for Oregon City pressure zones and relevant master meters from individual water provider projections and are summarized in **Tables 1** and **2**. Demand projections include existing through the year 2040. The existing condition was approximated as the City's 2015 demands, as these were the most recent data available at the start of the CIP update process, and 2016 demands for West Linn and CRW.

City demands were calculated on a parcel level using Metro and Clackamas County household and employment projections (*Population Forecasts for Clackamas County Service Districts*, EcoNorthwest, 2016). EDUs were developed for each parcel based on residential, commercial, and industrial zoning classifications. Parcels were spatially assigned to the nearest model node within the same pressure zone and demands for each time period were calculated using 2012 WDSMP unit demands of 287 gallons per day per EDU (gpd/EDU). Water demand forecasts assume development occurs within the City's UGB and for the three concept plan areas as illustrated in **Figure 1**. These include the Park Place Concept Area, the South End Concept Area, and the Beavercreek Road Concept Area.

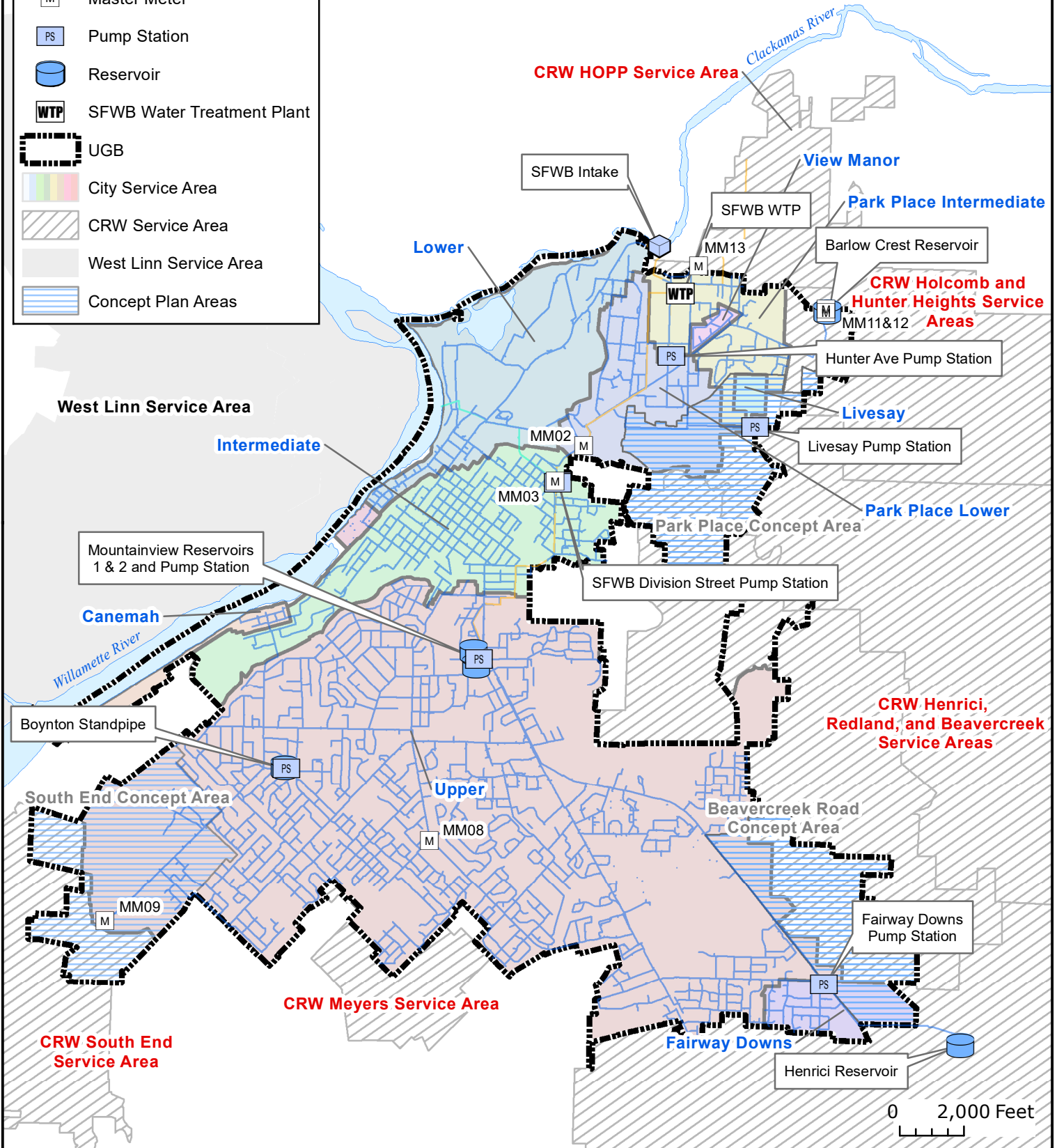
City MDD and PHD were calculated using peaking factors typical of similar systems in the region. Peaking factors of 2.3 for MDD:ADD and 2.0 for PHD:MDD were used.

CRW demands were distributed to master meter locations based on actual 2016 billing records and projected using a 1.5% per year growth rate, as presented in CRW's *Table 101.B South Storage Capacity Summary (1.5% Growth Forecast)* (CRW 2016, **Appendix E**).

West Linn demands were projected from actual 2016 billing records and the same 1.5% growth rate as used in CRW demand projections.

City and SFWB Facilities

-  SFWB Intake
-  Master Meter
-  Pump Station
-  Reservoir
-  SFWB Water Treatment Plant
-  UGB
-  City Service Area
-  CRW Service Area
-  West Linn Service Area
-  Concept Plan Areas



City of Oregon City Water CIP Analysis

Figure 1 Study Area

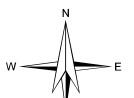


Table 1
Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone

Demand by Zone Zone	ADD (mgd)					MDD (mgd)					PHD (mgd)				
	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040
Lower	0.2	0.3	0.4	0.5	0.6	0.5	0.8	1.0	1.2	1.3	1.0	1.6	1.9	2.4	2.5
Intermediate	0.5	0.5	0.5	0.6	0.6	1.2	1.2	1.2	1.3	1.4	2.3	2.4	2.4	2.6	2.7
Upper	2.3	2.7	2.9	3.4	3.5	5.4	6.2	6.8	7.9	8.2	10.5	12.1	13.3	15.5	16.0
Fairway Downs	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.1	0.1	0.1	0.1	0.2	0.2
Park Place Lower	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.2
Park Place Intermediate	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.8	0.8
Park Place Livesay	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.03	0.04	0.00	0.02	0.04	0.06	0.1
Park Place View Manor	0.04	0.04	0.04	0.04	0.05	0.10	0.10	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Canemah	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.05	0.06	0.06	0.06	0.07
Total	3.4	3.9	4.3	5.1	5.2	7.9	9.1	10.0	11.7	12.1	15.4	17.8	19.5	22.9	23.7

Notes:

- 1 ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2015 data for the City pressure zone demands.

Table 2
CRW and West Linn Demands

Demand (meter)	ADD (mgd)					MDD (mgd)					PHD (mgd)				
Zone	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO
West Linn Total - MM03	2.9	3.1	3.3	3.9	6.0	7.2	7.8	8.4	9.7	15.2	14.1	15.1	16.3	18.9	29.6
CRW Zones- MM02	1.3	1.4	1.5	1.7	2.6	3.3	3.5	3.8	4.4	6.9	6.4	6.9	7.4	8.6	13.4
Barlow Crest PS - MM12	0.2	0.2	0.3	0.3	0.5	0.7	0.8	0.8	1.0	1.5	1.4	1.5	1.7	1.9	3.0
HOPP Forsythe - MM13	0.02	0.02	0.02	0.02	0.04	0.05	0.05	0.05	0.06	0.10	0.09	0.1	0.1	0.1	0.2
Leland/Meyers - MM08	0.09	0.09	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.6
South End - MM09	0.04	0.04	0.04	0.05	0.07	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4
CRW Metered Total	1.6	1.8	1.9	2.2	3.4	4.3	4.6	5.0	5.8	9.0	8.3	9.0	9.7	11.2	17.6

Notes:

- 1 BO = buildout; ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2016 data for the West Linn and CRW demands.
- 3 Future buildout demands include growth as determined by each water service provider.

Design Criteria

System Pressures

Water systems are constrained by service pressures and pipe velocity. For typical water systems, the acceptable service pressure range under ADD operating conditions is 40 to 100 pounds per square inch (psi). Where mainline pressures exceed 80 psi, services must be equipped with individual pressure reducing valves (PRVs) to protect water heaters per the *Oregon Plumbing Specialty Code (Section 608.2, 2014)*. Many of the City's customers fall within this category. During a fire flow event or emergency, the minimum service pressure is 20 psi as required by *Oregon Health Authority, Drinking Water Program (OAR 333.061.0050(8)(e))* regulations. Recommended service pressure criteria are summarized in **Table 3**.

Table 3
Recommended Service Pressure Criteria

Service Pressure Criterion	Pressure (psi)
Normal range, during ADD	50-100
Maximum without PRV	80
Minimum, during emergency or fire flow	20

The acceptable flow velocity under MDD conditions is less than 4 feet per second (fps) velocity. The system should also be able to provide fire flow at less than 10 fps. However, velocity criteria are secondary to pressure and fire flow requirements.

Fire Flow Demands

Fire flow demands within the City's system are assigned based on land use type and summarized in **Table 4**. Fire flow requirements are set by the fire marshal and are consistent with tables in **Appendix B** of the *Oregon Fire Code (OFC, 2014)*.

Table 4
Required Fire Flow Summary

Land Use Type	Required Fire Flow (gallons per minute) ¹	Required Duration (hours)
Single Family and Duplex Residential <3,600 sq ft	1,000	2
Single Family and Duplex Residential >3,600 sq ft	1,500	2
Medium Density Residential, Neighborhood and Community Service (Commercial)	2,500	2
High Density Residential, Commercial, Industrial, and Institutional	3,000	3

Notes:

- 1 A minimum service pressure of 20 psi is required at all services throughout the system during all fire flow.

Facility Criteria

Pump stations to zones with gravity storage are required to supply MDD with the largest pump out of service (firm capacity). This standard applies to all pump stations with the exception of the Fairway Downs Pump Station, which currently pumps to a closed zone (no reservoir) and thus is required to provide adequate supply for MDD and fire flow. In the future, the Fairway Downs zone is expected to be served by a new reservoir, eliminating the additional pumping capacity requirements for fire flow.

Reservoirs storage is allocated into multiple components including emergency, fire, equalization, and operational. Emergency storage is based on the amount of risk a system is willing to accept and is intended for supply during a treatment plant outage, or other emergency. A typical volume for emergency storage is two times ADD. Reservoir storage for fire flow demands is required for the maximum combination of fire flow demand and fire flow duration within each pressure zone. For an entirely residential zone, this value is 180,000 gallons (1,500 gpm x 2 hours). Equalization storage is the volume differential between MDD and PHD. Sometimes a value of 0.25xADD is substituted for equalization in place of an exact volume. Finally, operational storage is available to limit pump cycling or to sustain system pressures. This is the volume of water typically cycled throughout the day while supply is off, or the water surface required to sustain minimum pressures within the pressure zone. **Table 5** lists the water system facility criteria used to evaluate the City's system.

Table 5
Water System Facility Criteria

Water Facility Type	Criteria
Pump Station to Gravity Storage	Firm capacity for MDD
Pump Station to Closed Zone	Firm capacity for MDD + fire flow
Reservoir Storage (sum of components)	Emergency = 2xADD
	Fire flow = maximum fire flow x duration within zone
	Equalization = 0.25xADD
	Operational = Based on zone specific HGL or Pump Cycling

System Evaluation

Distribution and Fire Flow Deficiencies

The system was evaluated at existing and future demands, based on the pressure design criteria presented in **Table 3** and the fire flow criteria presented in **Table 4**. The results of both analyses (existing and future) were similar.

Figure 2 highlights areas of high velocity and low pressures under existing MDD. For both existing and year 2040 conditions, low pressures are generally not an issue, although higher velocities can be seen in one of the parallel Molalla Avenue transmission mains near the Mountainview Site.

Figure 3 highlights available fire flow at existing MDD throughout the system. Based on minimum pressure and fire flow criteria, the system performs adequately with fire flow deficiencies generally isolated to small diameter or dead-end pipes. This is true for both existing and future demand scenarios, although these deficiencies are typically more extreme under future system demands.

The results of the existing MDD condition analysis are shown in **Figures 2 and 3**, as deficiencies visible under the existing condition remain localized to the same areas under future conditions.

The City operates many of its zones at the higher end of pressure recommendations (**Figure 2**). This places stress on distribution piping and increases risk of water losses. For new developments, distribution piping should be designed within the recommended pressure ranges including redundant PRVs where pressures are in excess of 80 psi. Individual PRVs owned and maintained by the property owner may be required to further reduce local distribution pressure.

City staff have expressed concerns about balancing supply and demand between the Henrici Reservoir and Boynton Standpipe. While filling the Henrici Reservoirs from the Mountainview Pump Station, the system experiences high pressures and increased water losses. Additional transmission capacity is required to improve supply to and from the Henrici Reservoir while maintaining pressures within recommended ranges and is documented in **Appendix F, Molalla Avenue Streetscape Concurrent Waterline Improvements** (Murraysmith, October 2018).

Reservoir Capacity Analysis

Reservoir storage is provided for four purposes: emergency supply, fire flow, equalization, and operations. The total distribution storage requirement is the sum of the components. An evaluation of reservoir storage was performed including a review of each component. Because some zones can be supplied by multiple reservoirs or supplemented by pump station capacity, the following assumptions were developed for the reservoir storage analysis:

- Barlow Crest Reservoir supplies Park Place Intermediate Zone, View Manor, Livesay, and CRW MM13 (Forsythe)
- Mountainview Reservoirs 1 & 2 supply the Lower Zone, Intermediate Zone, and Canemah
- Boynton & Henrici Reservoirs supply Upper Zone, Fairway Downs, CRW MM08 (Leland) and MM09 (South End)
- The Upper Zone storage deficiencies can be supplied by the excess storage in Mountainview Reservoirs 1 & 2 depending on adequate pumping capacity at the Mountainview Pump Station.
- Proposed reservoirs for the Beavercreek Road Concept Area (Fairway Downs Reservoir) and the Park Place Concept Area (Holly Lane Reservoir) were included in the analysis and sized for growth within their respective service areas.

- Many zones can be alternately supplied by either the Barlow Crest or Mountainview Reservoirs via control valves and PRVs which provides system redundancy. For the purposes of this analysis, demands from these zones were only assigned to one of the supplying reservoirs.
- SFWB Water Treatment Clear Well supplies the Park Place Lower Zone. As discussed in the *SFWB Water Master Plan* (2016), the 2 million-gallon (MG) clear well has adequate capacity for storage within the zone.

The reservoir storage analysis is presented in **Table 6**. A negative value in available storage represents the additional storage required.

Table 6
Reservoir Storage Calculations

Reservoir	Existing Storage (MG)	Total Storage Required (MG)					Available Storage (MG)				
		Existing	2020	2025	2035	2040	Existing	2020	2025	2035	2040
Barlow Crest	1.75	0.7	0.7	0.8	0.9	1.0	1.1	1.0	1.0	0.8	0.7
Mountainview	12.5	2.7	3.0	3.2	3.6	3.8	9.8	9.5	9.3	8.9	8.7
Henrici/Boynton ¹	4	6.7	7.7	8.4	9.8	10.5	-2.7	-3.7	-4.4	-5.8	-6.5
Holly Lane	0		na			0.5			na		
Fairway Downs	0		na			1.1			na		

Notes:

- MG = millions of gallons, na = not applicable
- Existing condition assumed to be 2015/2016 depending on data source.
- Storage deficit shown in Henrici/Boynton by 2035 can be provided by the excess storage in the Mountainview Reservoirs, if the Mountainview Pump Station can meet the MDD demands of the Upper Zone and emergency power supply at the station is adequate for operation.

Through the 20-year time frame (2040), all zones have adequate storage. For the Upper and Fairway Downs Zones, this assumes that any storage deficiency is minimized by pumping capacity at the Mountainview Pump Station. For 2040, this results in 6.5 MG of emergency storage for the upper zones located in the Mountainview Reservoirs, which places additional risk on the City. Therefore, an additional 6.5 MG storage is recommended within the Upper Zone beyond the year 2040, the 20-year time frame. A future update of the 2012 WDSMP and this Amendment should include further evaluation of the need for this additional storage.

Pump Station Capacity Analysis

Two types of systems are considered in the pump station analysis. The first is an open system, with at least one reservoir that sets the hydraulic grade for the pressure zone. In an open system, the pump station firm capacity must be equal to or greater than MDD for the pressure zone(s) served by the pump station. The second is a closed system, which is a zone without a reservoir. In a closed

system, the pump station must be able to provide MDD + fire flow with the largest pump out of service.

Only the existing Fairway Downs Pump Station supplies a closed zone. With the development of the upper Beavercreek Road Concept Area, a new reservoir and pump station will be required. An open system will replace the existing closed system, and the reservoir will be sized to supply the fire flow needs of the expanded Fairway Downs Pressure Zone. As previously summarized, storage requirements in the Intermediate Zone and limitations in storage at Henrici/Boynton should be considered in sizing the Fairway Downs Reservoir and associated pump station.

As shown in **Table 7**, all existing pump stations meet system demands for the next 20 years through year 2040. Improvements to the Mountainview Pump Station firm capacity may be required beyond 2040 in conjunction with additional storage in the Upper Zone.

Table 7
Pump Station Capacity Calculations

Pump Station	Firm Capacity (GPM)	MDD (GPM)					Available Pumping Capacity (GPM)				
		Existing ⁴	2020	2025	2035	2040	Existing ⁴	2020	2025	2035	
Hunter Ave	1,800	800	850	900	1,100	1,250	1,000	950	900	700	550
Mountainview ¹	8,000	3,900	4,500	4,950	5,800	6,300	4,100	3,500	3,050	2,200	1,700
Fairway Downs ²	1,050	50	50	50	50	na	0	0	0	0	na
Holly Lane	na		na			100			na		
Fairway Downs ³	na		na			250			na		

Notes:

GPM = gallons per minute, MDD = maximum day demand, na = not applicable

1 Mountainview Pump Station required to also have emergency power supply for MDD supply operations, as some emergency storage for the Upper Zones is located in the Mountainview Reservoirs.

2, 3 Existing Fairway Downs Pump Station to be decommissioned when development occurs and replaced by new Fairway Downs Pump Station. Existing station pumps to closed zone, therefore pumping capacity required at MDD + fire flow (1,000 gpm). Check valves from Upper Zone also available for fire flow in the zone. Additional fire flow demand not required for new pump station with gravity storage.

4 Existing condition assumed to be 2015/2016 depending on data source.

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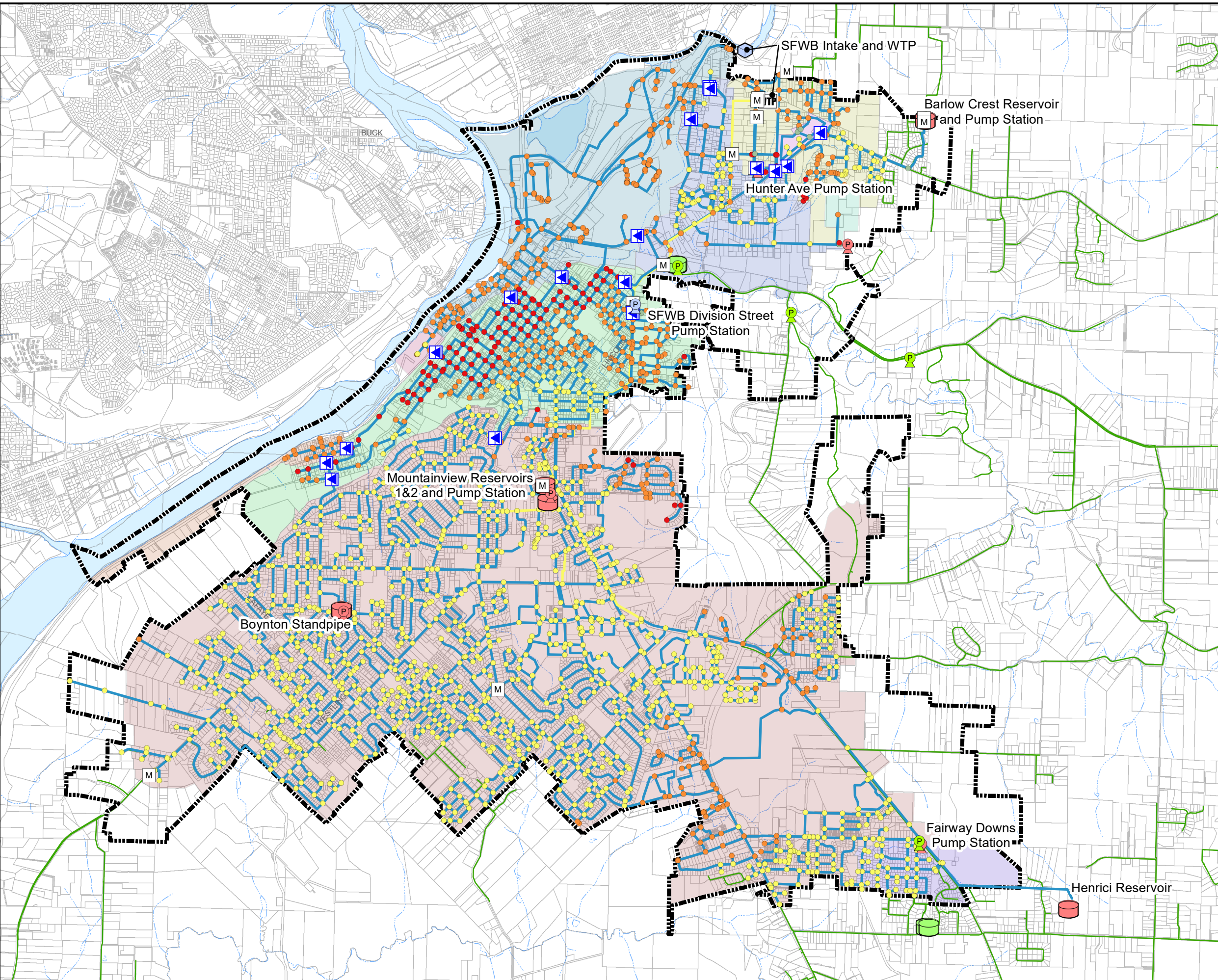


Figure 2
City of Oregon City
Static Pressure Analysis

PIPE VELOCITY

- < 4 fps
- 4 - 10 fps
- > 10 fps

STATIC PRESSURE

- < 20 psi
- 20 - 40 psi
- 40 - 80 psi
- 80 - 120 psi
- > 120 psi
- CRW MAINS
- UGB

PRESSURE ZONE

- CANEMAH DISTRICT
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Water Facilities

- SFWB, Intake
- SFWB, WTP
- Master Meter
- SFWB, Pump Station
- CRW, Pump Station
- CRW, Reservoir
- OC, Pump Station
- OC, Reservoir
- OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.

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Figure 3
City of Oregon City
Available Fireflow

AVAILABLE FIREFLOW

- 0
- <1000
- 1000 - 1500
- 1500 - 3000
- >3000

WATER MAINS

- OREGON CITY
- SFWB
- WEST LINN
- CRW
- UGB

PRESSURE ZONE

- CANEMAH DISTRICT
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Water Facilities

- SFWB, Intake
- SFWB, WTP
- Master Meter
- SFWB, Pump Station
- CRW, Pump Station
- CRW, Reservoir
- OC, Pump Station
- OC, Reservoir
- OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.

Capital Improvement Program

Capital projects were developed based on deficiencies identified in the system evaluation and future year 2040 system demands including new growth areas. The Capital Improvement Program (CIP) is divided into three types of improvement projects: “Capacity and Operations,” “Development and Growth,” and “Repair and Replacement.” Descriptions of these categories are defined below and further summarized in **Table 8**.

- Capacity and Operations - Projects are typically those to meet existing system demands, reservoir turnover, or to meet the needs of areas within the system that will require upsizing to provide for in-fill growth. Dead-end pipes with fire flow limitations where at least 500 gpm of fire flow is available were excluded from the capacity improvements.
- Development and Growth - Projects differ in that they are specifically targeted at new large development areas and are typically not required to supply existing demands.
- Repair and Replacement - Projects include both routine repair and replacement of pipes, pump replacement, reservoir maintenance, and PRV repair/replacement.

Table 8
Capital Improvement Program Projects

Improvement Type	Improvement Addresses:	Timing Trigger
Capacity and Operations	Capacity limitations and system operations	Mitigate projected deficiencies
Development and Growth	New development areas	Developer driven
Repair and Replacement	Routine maintenance on infrastructure and annual pipe replacement	Annual and cyclical investments based on infrastructure life cycle

Cost Assumptions

All project descriptions and cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency. Since construction costs change periodically, an indexing method to adjust present estimates in the future is useful. The Engineering News-Record (ENR)

Construction Cost Index (CCI) is a commonly used index for this purpose. For purposes of future cost estimate updating; the August 2018 ENR CCI (20-city average) is 11124.

Joint Work with CRW and Neighboring Provider Upgrades

The City participates in joint infrastructure planning and supply discussions with regional water suppliers and distributors such as SFWB, CRW, Lake Oswego, and West Linn. Neighboring communities have recognized the benefits of collaborative planning and have worked together through Intergovernmental Agreements (IGAs) and joint projects like the South End supply line and Barlow Crest supply, to provide water to regional customers. This collaboration encourages purveyors to invest in essential facilities, without building redundant infrastructure. As communities develop, this collaboration will continue to be important to efficiently serve all customers. In addition, an increased focus on system interties has improved regional resiliency, in the event of a major failure at one or more of the water treatment plants within the region. Recent and anticipated system intertie investments include:

- CRW’s Backbone Project to extend CRW WTP supply to CRW zones south of the Clackamas River.
- Continued operation and maintenance of City/CRW and SFWB/CRW interties.
- Operation and maintenance of the West Linn-Lake Oswego emergency connection booster station. This provides West Linn an alternate supply from the newly completed Lake Oswego–Tigard WTP upgrades, and improves regional resiliency through interconnections.

Improvements identified in the City CIP exclude analysis of alternatives related to major regional projects such as the CRW Backbone Project. The City will continue to explore opportunities for collaboration with neighboring providers at which time some of the City capital projects may be modified to account for a broader regional supply and/or distribution solution.

Improvement Descriptions

Capacity and Operations Projects

Capacity and operations projects were identified through model evaluations, discussions with City staff, and pump station/reservoir capacity reviews. These improvements are summarized for both the City and SFWB, although only the City improvements are included in the CIP.

SFWB Improvements

SFWB improvements identified in the *SFWB Water Master Plan* (CH2M and MWH, 2016) are required to maintain system operations, expand capacity, and address redundancy. These projects address limited capacity in the 30-inch SFWB supply line which causes operational difficulties at the Division Street Pump Station, and eventual capacity limitations in the rest of the SFWB system. A 42-inch connection on Cleveland St between the 30-inch and 42-inch SFWB supply lines

(referenced earlier in *System Supply and Demands*) was completed recently in December 2018. Key SFWB transmission improvements include:

- Increased transmission capacity between the WTP and the Mountainview Pump Station (upsizing the existing 30-inch line)
- Increased capacity at the Division Street Pump Station

Henrici Reservoir Operations

Based on existing transmission capacity, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. Both reservoirs provide storage for the Upper Zone and are simultaneously filled by the Mountainview Pump Station. The Boynton Standpipe is centrally located while the Henrici Reservoir is located beyond the perimeter of the Upper Zone to the southeast. When the Mountainview Pump Station output is increased to fill the Henrici Reservoir, high pressure issues are seen near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands.

Project constraints and opportunities include:

- Existing transmission main(s) in heavily trafficked Beaver Creek Road
- Secondary transmission route(s) in backyards and other difficult to access locations
- Concurrent streetscape improvement project along Molalla Avenue
- Additional transmission and distribution requirements for growth including the expanded Fairway Downs Zone

After evaluating alternatives, a parallel transmission route was identified along Molalla Avenue, and a new transmission line was identified between Glen Oak Road and the Henrici Reservoir. The combined improvements provide additional capacity and improved transmission to and from the Henrici Reservoir. The projects will likely be constructed in multiple phases with the Molalla Avenue portion of the project constructed first to align with the streetscaping work. Both improvements are required to provide the full operational benefits. **Table 9** presents a flow split analysis between Boynton and Henrici Reservoirs under existing ADD. Without improvements, approximately 67% of the available excess flow from the Mountain View Pump Station is conveyed to the Boynton Standpipe and 33% is conveyed to Henrici. With all improvements, the flow split is approximately 50% between the reservoirs.

Table 9
Reservoir Filling Rates - Mountainview to Henrici Transmission Upsizing

Scenario	Boynton Standpipe (gpm) ¹	Henrici Reservoir (gpm) ¹
No Improvements	4,200	2,100
Parallel Main on Molalla Ave	4,200	2,500
Upsize Beaver Creek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beaver Creek Transmission	3,500	3,500

Note:

1 Filling rates during existing ADD, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.

Development and Growth Projects

Development improvements were identified through a variety of means including discussions with the City and reviewing existing concept plans. Most projects include only the main line infrastructure required to serve the development areas, and do not include full distribution piping. Pipe layouts were based on either proposed street networks or additional studies, if available. Unless otherwise noted, development areas can be served by extending existing transmission and distribution piping.

Park Place Development

The Park Place Concept Area is located east of Oregon City and Highway 213, north and south along S Redland Road, and east and west along S Holly Lane. Portions of the area are currently served by CRW and development is described in the *Park Place Concept Plan* (2008). Proposed improvements for the area include pipe looping into the existing City system at the Park Place Intermediate and the Park Place Lower zones, a new 1.0MG reservoir and pump station, and intermediate PRV's.

Joint transmission along S Redland Road to CRW's Holly Lane and Redland Pump Stations has been discussed between the City and CRW. This is advantageous to both providers as it limits unnecessary parallel infrastructure, provides emergency connections between both systems and provides a secondary supply to the City via CRW.

Details of the pressure zone delineation for the Park Place Concept Area are presented in **Table 10**.

Table 10
Park Place Concept Area Supply

Location	Ground Elevation (ft)	HGL (ft)	Supply	Storage
East of Trail View Dr	>400	794	CRW via Barlow Crest PS	CRW Hunter Heights Reservoir
North of S Redland Rd	>310	549	New transmission piping from Park Place Intermediate	Barlow Crest Reservoir
North of S Redland Rd	200-310	430	PRV'd from Park Place Intermediate	Barlow Crest Reservoir
Along S Redland Rd	40-200	320	Master Meter from SFWB supply at Redland Rd and Anchor Way	SFWB WTP Clearwell
South of S Redland Rd	>200	350	New Park Place PS	New Holly Lane Reservoir

Beavercreek Road Development

The Beavercreek Road Concept Area is located within the existing UGB, northeast of Beavercreek Road. The area will require service to the City's Upper and Fairway Downs Zone pressure zones. The City and CRW have discussed service in this area extensively in the *Joint Engineering Study Technical Memorandum (Appendix D)* and the prior meetings leading up to that document. Various alternatives were explored, including joint construction of a reservoir to serve both CRW and the Fairway Downs Zone. City staff reviewed the alternative approaches with the City Commission and confirmed the City's desire to pursue development of City-owned infrastructure, independent of CRW, to serve the Beavercreek Road Concept Area within the UGB. The capital improvements presented in this 2012 WDSMP Amendment reflect this direction.

Pipe networks were based approximately on planned street alignments, as presented in the *Beavercreek Road Concept Plan* (Otak 2008). The Fairway Downs Zone is expected to serve areas above 480-feet elevation, within the UGB at a pressure zone hydraulic gradeline of 650-feet. Pumps will be sized to meet MDD demands, with additional peak hour or fire flow supply available from the new 1.75 MG reservoir.

Repair and Replacement Projects

Significant investment in infrastructure repair and replacement will be required as infrastructure reaches the end of its useful life. A Repair and Replacement Program is intended to apply proactive investment for reservoir coatings, PRV repair/replacement, pump station mechanical/electrical replacement, and pipeline repair/replacement. The program priorities are established based on

condition assessments with funding established based on standard life spans for facility types as shown in **Table 11**.

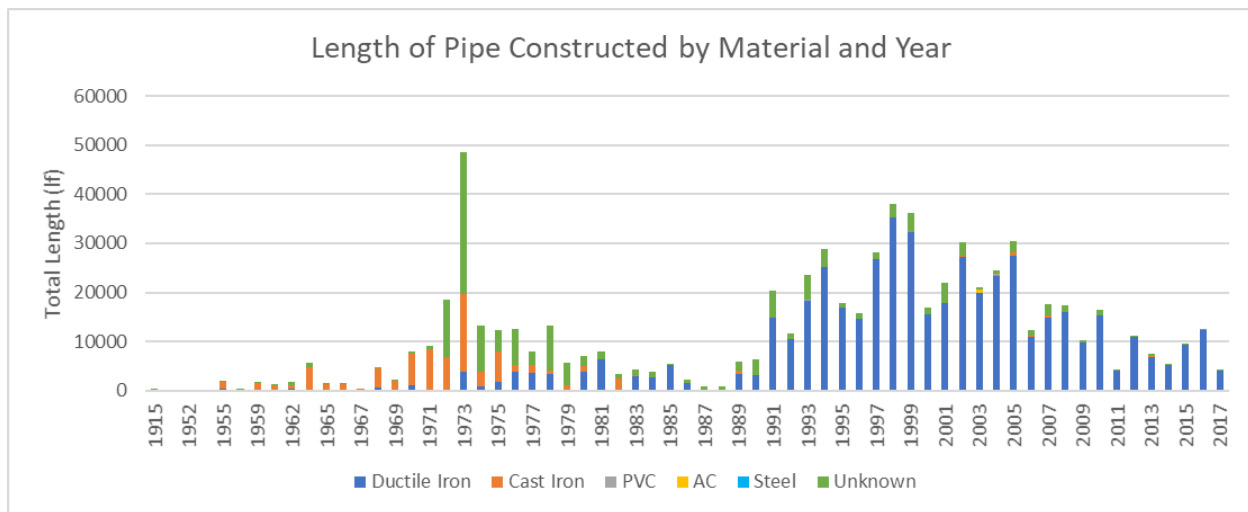
Table 11
Repair and Replacement Summary

Facility	Work Required	Frequency
Pipeline	Repair or Replacement	75 years
PRV	Inspection	Annual
	Major Rehabilitation and Rebuild	5 years
	Replacement	25 years
Reservoir – Steel	Exterior Overcoat	15 years
	Interior Removal and Recoat	30 years
	Exterior Removal and Recoat	30 years
Reservoir – Concrete	Minor Touch Up Rehabilitation	Annual
	Major Rehabilitation and Repairs	25 years
Pump Station - Mountainview	Pump, Mechanical & Electrical Replacements	10 years
Pump Station – Hunter Ave	Pump, Mechanical & Electrical Replacements	20 years
Pump Stations - Other	Pump, Mechanical & Electrical Replacements	20 years

Pipe Replacement

An evaluation was performed to identify the length of pipeline reaching the end of its useful life within the year 2035, 20-year planning horizon. An age distribution for piping was extracted from the City GIS and is presented in **Figure 4**. Pipe installations older than 75-years or with known leakage issues were identified for the 20-year planning horizon. This amounts to 90,000 linear-feet of pipe or approximately 4,500 linear-feet of pipe per year over 20-years as shown in **Table 12**. Specific pipe segments were identified for the 0 to 5-year time frame by City staff based on the known condition and leak issues. These include pipelines located along Main Street between 10th Street and 15th Street, between the Mountainview Reservoirs and Gaffney Lane to the south, crossing I-205 near the intersection of Agnes Avenue and Main Street, and those listed in the CIP **Table 17** as an “Oregon City Operations – Small Waterline Replacement” project. Specific information on small water projects are also summarized in **Appendix G**.

Figure 4
Pipe Distribution by Age and Material



Note:

- 1 Approximately 18 percent of pipe has unknown installation date, not shown in **Figure 4**. The pipe construction material is approximately evenly split between Ductile Iron, Cast Iron, and Unknown. Installation dates were assumed evenly distributed over 50 years between 1943 and 1993.

Table 12
Pipe Replacement Projects

Timeframe	Length of Pipe for Repair and Replacement (linear-feet) ¹	Location Description
0 – 5 Years	29,000	Including but not limited to: - Main Street between 10th Street and 15th Street - Between Mountainview Reservoir and Gaffney Lane - I-205 crossing near Agnes Avenue and Main Street - OC Operations, Small Waterline Replacement Projects
6 – 10 Years	17,000	3,500 linear-feet per year based on pipe condition assessments
11 – 20 Years	43,000	4,500 linear-feet per year based on pipe condition assessments
TOTAL	89,000	

Notes:

- 1 Approximately 18-percent of pipe has unknown installation date. Assumed replacement of those pipes to be evenly distributed over 50 years.

Pressure Reducing Valve Station Rehabilitation, Repair, and Recommended Settings

Pressure Reducing Valve (PRV) stations are vital for supply to zones without gravity storage. The PRVs should be inspected and maintained annually with major rehabilitation scheduled every 5 years, and replacement scheduled every 25 years. **Table 13.1** lists the approximate condition and year slated for rehabilitation for the PRV stations throughout the system.

Table 13.1
Pressure Reducing Valve Rehabilitation Schedule

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
11th St & Washington St	1993	Fair / Dirty	Cleaning required	2021/2022	2026/2027
15th St & Madison St	2016	New		2021/2022	2041/2042
16th St & Division St	1971	Bad	Used to buffer intermediate zone from high pressures caused by the Division Street Pump Station. Small diameter valve inoperable.	Needs Replacement	2019/2020
18th St & Anchor Way	1992	Bad/Fair		Needs Replacement	2019/2020
3rd St & Bluff	2018	New		2023/2024	2043/2044
4th Ave & Jerome St	1958	Bad	Redundant to 3rd & Ganong, for high demand both PRVs required	Needs Replacement	2019/2020
5th Ave & Canemah	1958	Bad	Required to adequately supply Canemah Zone	Needs Replacement	2019/2020 and add power
99E & Main St	1997	Out of service	Abandon and remove the 99E and Main PRV Station, replace with pipe connection between the Paper Mill Zone and Lower Zone that results in eliminating the Paper Mill Zone and expands the Lower Zone (Appendix H)	NA	NA
Abernethy Rd & Redland Rd	1963	Bad	Required based on location and distance from redundant PRVs	Needs Replacement	2019/2020
Apperson Blvd & La Rae Rd	1999	Fair		2022/2023	2027/2028

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
Harley Ave & Forsythe Rd (North)	1988	Fair	Remove South PRV, reconfigure piping as needed for continued operation of North PRV. Relief valve settings need updating. Individual Customer PRV's required on service lines as needed for service pressures exceeding 70psi per City Standard.		2021/2022
Harley Ave & Forsythe Rd (South)	1973	Bad	Remove South PRV and coordinate project with improvements to North PRV as noted above.	Removal 2021/2022	Removal 2021/2022
Jennifer Estates	2002	Fair	Ground settling around vault.	2022/2023	2027/2028
Swan Ave & Holcomb Blvd	1999	Fair		2022/2023	2027/2028
View Manor	1999	Fair	Remove PRV with property redevelopment. Existing piping in poor condition – PRV settings updated to minimize pressure impacts on the local pipe.	Maintain until PRV removal with property redevelopment	Removal with redevelopment
3rd Ave & Ganong St	2008	Good		2028/2029	2033/2034
Hunter Ave Pump Station	1998	Good		2022/2023	2027/2028
East St & Maple St	2015	Good		2021/2022	2040/2041

Table 13.2 lists the valve diameters and settings for existing City PRVs. Photo documentation of PRV stations by the City is included in **Appendix G**. Additional analysis for redevelopment of the Paper Mill Zone and related PRV stations is provided in **Appendix H, Mill Redevelopment Water Distribution Analysis** (Murraysmith, 2018).

Table 13.2
Pressure Reducing Valve Recommended Settings

Pressure Reducing Valve Station	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting
11th St & Washington St ¹	3	10		67	58	
15th St & Madison St ¹	2	6		61	56	
16th St & Division St	1.252	6		na	100	
18th St & Anchor Way	4	8		53	48	
3rd St & Bluff ¹	3	8		42	39	
4th Ave & Jerome St	2	6		55	50	
5th Ave & Canemah	1.25	4		83	78	
99E & Main St			To be removed			
Abernethy Rd & Redland Rd ¹	4	8		102	97	
Apperson Blvd & La Rae Rd ¹	2	4	6	84	79	77
Harley Ave & Forsythe Rd (North) ¹	12			61		
Harley Ave & Forsythe Rd (South)			To be removed			
Jennifer Estates	4	8		51	46	
Swan Ave & Holcomb Blvd	4	8		65	55	
View Manor	4	8		40	35	
3rd Ave & Ganong St	2	6		79	79	
Hunter Ave Pump Station	3	6		45	51	
East St & Maple St	6			46		

Notes:

Updated PRV settings recommended in the *Mill Redevelopment Technical Memorandum* (Murraysmith, 2018) (**Appendix H**).
Valve is not currently functioning.

Facility Rehabilitation and Repair

The lifespan of system reservoirs and pump stations can be significantly increased if regular rehabilitation and repairs are made. It is recommended that regular maintenance on Oregon City's steel tanks (Barlow Crest, Boynton, and Henrici) include periodic exterior overcoats, and less frequent complete exterior and interior removal and recoat. Regular maintenance on the concrete tanks (Mountainview 1 & 2) is recommended to include frequent touch up and rehabilitation, and major repairs when needed. Costs for this rehabilitation are dependent on facility condition, age, material, and size. **Table 14** includes an approximate schedule for rehabilitation of existing reservoirs. **Table 15** includes an approximate schedule for safety and seismic upgrades, and suggested improvements. When new reservoirs are constructed, they will need to be added to the rehabilitation schedule.

Pump stations require annual inspection and maintenance with pump, mechanical, and electrical replacement generally every 20 years, with the exception being Mountainview pump station replacement schedule every 10 years. Costs for pump replacement depend on pump size and condition. **Table 16** includes an approximate schedule for pump station improvements.

Table 14
Reservoir Coating and Rehabilitation Schedule

Facility		Concrete	Steel		
Name	Construction/ Rehab Year	Major Repairs	Exterior Overcoat	Interior Removal and Recoat	Exterior Removal and Recoat
Barlow Crest	1999	-	2024	2024	2039
Mountainview 1	2007	2032	-	-	-
Mountainview 2	1952/2007 ¹	2032	-	-	-
Boynton	1984	-	-	-	2028
Henrici	1994	-	2019/2020	2019/2020	2035

Notes:

- 1 Mountainview 2 built in 1916 and expanded in 1952, underwent seismic upgrades and rehabilitation in 2007.
- 2 Limited redundancy for Barlow Crest Reservoir means it is difficult to take offline. Coordination with CRW to PRV water from Hunter Heights
- 3 Biannual minor repairs for Concrete tanks, annual exterior touch-up for steel tanks. Assumed within O&M budget, separate from CIP budget.

Table 15
Reservoir Seismic and Safety Improvements

Facility	Seismic Analysis/Seismic Upgrades	Safety Upgrades
Barlow Crest	2019/2020	2024
Mountainview 1	-	-
Mountainview 2	-	2020
Boynton	2022/2023	-
Henrici	2019/2020	2019/2020

Table 16
Pump Station Rehabilitation and Maintenance Schedule

Pump Station	Pump Install Year	Replacement Year	Pump, Mechanical, and Electrical Rehab or Replacement
Hunter Ave	1999	2019/ 2022	Drives, PLC/ Pumps, SCADA electrical, transfer switch generator
Mountainview	2018	2023/ 2028	Drives/ Pumps, SCADA electrical
Fairway Downs	2018	NA	Pump station to be removed with Beaver Creek Road Concept Area Development
Boynton	1984	Removal Project 2022	Remove pumps (non-operational), decommission pump station
Livesay	2012	NA	Decommission pump station when Park Place Concept Area Develops

Capital Improvement Program Summary

The capital projects are described in **Table 17**, “Capital Improvement Program” including project descriptions, priorities, and Class 5 costs estimates. Projects are illustrated in **Figure 5**. A summary of total CIP costs is presented in **Table 18**.

Table 17
Capital Improvement Program

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Central Point	Development	1	Project recently completed by development	Pipe	New 8" looped distribution pipe along Skellenger/Orchard Grove area		8			Developer-constructed project
Leland McCord	Development	2	2-5	Pipe	New transmission along Leland Rd	1300	12		100%	\$370,000
	Development	3	2-5	Pipe	New distribution along McCord Rd	2,400	12		100%	\$681,500
	Operations (City/CRW)	4	2-5	Master Meter	Move the Master Meter, MM08, to the UGB and update CRW connection, timing based on development				0%	\$200,000
South End	Development	5	15-20	Pipe	New distribution within development - backbone only	19,000	12		100%	\$5,394,500
	Operations (City/CRW)	6	15-20	Master Meter	Move the Master Meter, MM09, to the UGB and update CRW connection, timing based on development				0%	\$200,000
Upper Zone	Development	7	2-5	Pipe	New distribution loop North of Beaver Creek and South of Hilltop	2,200	12		100%	\$624,500
	Capacity	8	5-10	Pipe	Finish looping along Maplelane Road to increase transmission to existing area	1,600	12		26.89%	\$454,500
	Pipe Replacement	34	0-5	Pipe	Replace aging 16" piping near Molalla Ave (replacement size may be 12-inch or smaller if MAP ID 22 is implemented prior to MAP ID 34)	8,800	12 to 16-inch		26.89%	\$2,498,500
	Operations	37	0-5	PRV	New PRV on Newell Ct to manage high pressures				26.89%	\$200,000
Lower Zone	Capacity	9	0-5	Pipe	Upsize existing I-205 crossing to improve fire flow and distribution looping	700	12		26.89%	\$199,500
	Capacity	35	5-10	Pipe	Upsize existing piping on Abernethy Road for fire flow supply to Lower Zone	2,600	12		100%	\$738,000
	Pipe Replacement	36	0-5	Pipe	Replace aging pipe on Main between 10th and 15th	1,400	12			\$397,500
Park Place Concept Area	Development	10	0-5	Pipe	Joint OC/CRW transmission from SFWB along Redland Rd for replacement of aging pipe and new transmission to Park Place Concept Area	6,900	24		100%	\$3,538,000
	Development	11	2-5	Pipe	Transmission at the Park Place Intermediate Level (above 310')	1,300	12		100%	\$370,000
	Development	12	2-5	Pipe	Transmission from the 16" Barlow Crest Transmission to PP Int Concept (above 310') - redundant transmission and adequate fire flow above 200'	2,600	12		100%	\$738,000
	Development	13	2-5	PRV	New PRV from 550' to 430' (supply to area between 200' and 310'). Note: Livesay Pump Station shall be removed with redevelopment of this area along S Livesay Rd				100%	\$200,000
	Development	14	4-6	Pipe	New 430' distribution piping (supply to area between 200' and 310')	1,700	12		100%	\$483,500
	Development	15	5-10	PRV	New PRV from 430' to 320' (alternate emergency supply and fire flow to PP Concept Area)				100%	\$200,000
	Development	16	5-10	Pipe	New 320' distribution piping (supply to area below 200')	6,200	12		100%	\$1,760,500
	Development	17	5-10	Pipe	Replace existing 320' distribution piping (supply to area below 200')	2,100	12		100%	\$597,000
	Development	18	15-20	Reservoir	New 350' Reservoir (supply to area above 110')			1MG	100%	\$2,000,000
	Development	19	15-20	Pump Station	New Pump Station from 320' to 350' (supply to area above 110')			100 GPM	100%	\$1,194,000
	Development	20	15-20	PRV	New PRV from 350' to 320' (emergency fire flow to PP Concept Area from new reservoir)				100%	\$200,000
	Development	21	15-20	Pipe	New 350' transmission and distribution (supply above 350' and transmission to new Holly Lane PS)	10,000	12		100%	\$2,839,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Henrici Transmission Improvements	Capacity	22	5-10	Pipe	Parallel transmission line between Mountainview Reservoirs and Beaver Creek Rd - Increase transmission to Henrici Reservoir	4,200	24		100%	\$2,153,500
	Capacity	23	0-5	Pipe	Parallel transmission line between Beaver Creek Rd and Glen Oak Rd along Streetscape improvements - Increase transmission to Henrici Res	7,300	18		100%	\$2,963,000
	Capacity	24	0-5	Pipe	New crossing north of Glen Oak Rd from Molalla to OC Public Schools property - distribution for development, increase transmission to Henrici	2,600	12		100%	\$738,000
	Capacity	25	5-10	Pipe	OC HS crossing to Beaver Creek Rd - Increase looping and transmission to Henrici	3,000	12		100%	\$852,000
	Capacity	26	0-5	Pipe	New parallel transmission between Fairway Downs and Henrici Reservoir	4,000	24		100%	\$2,051,500
Beaver Creek Road Concept Area	Development	27	5-10	Pipe	New Upper Zone distribution - supply new development below 480', improve transmission	11,900	12		100%	\$3,379,500
	Development	28	5-10	Pipe	New Fairway Downs distribution - supply new development below 480'	13,700	12		100%	\$3,890,500
	Development	29	5-10	PRV	New PRV between Fairway Downs and Upper Zone - emergency fire flow				100%	\$200,000
	Development	30	0-5	Reservoir	New Fairway Downs Reservoir - supply new development			1.75 MG	80%	\$3,500,000
	Development	31	0-5	Pump Station	New Fairway Downs Pump Station - supply new development			250 GPM	80%	\$1,194,000
	Development	32	0-5	Pipe	New Fairway Downs Transmission - supply new development	5,000	16		80%	\$1,654,000
	Development	33	0-5	Pipe	Transfer existing Henrici transmission to Fairway Downs transmission - supply new development				80%	\$200,000
Oregon City Operations – Small Waterline Replacement List ²	Pipe Replacement		0-5	Pipe	S. Center St from S. 2nd to 1st St	700	8		0%	\$134,000
	Pipe Replacement		0-5	Pipe	Barker Ave from South End Rd to Barker Rd	800	8		0%	\$154,500
	Pipe Replacement		0-5	Pipe	Warner-Parrott Rd from King Rd to Boynton St	1,100	12		0%	\$313,000
	Pipe Replacement		0-5	Pipe	Belle Ct and Glenwood Ct from Holmes Ln to Linn Ave	1,500	8		0%	\$288,500
	Pipe Replacement		0-5	Pipe	Valley View Dr from Park Dr to McCarver Ave	1,000	8		0%	\$192,000
	Pipe Replacement		0-5	Pipe	Canemah Ct from Canemah Rd to Telford Rd	1,700	8		0%	\$326,000
	Pipe Replacement		0-5	Pipe	Randall St from Canemah Rd to Hartke Lp	700	8		0%	\$134,000
	Pipe Replacement		0-5	Pipe	Hartke Lp and Alderwood Pl	3,700	8		0%	\$712,000
	Pipe Replacement		0-5	Pipe	Harrison St from 7th St to Division St	600	8		0%	\$115,000
	Pipe Replacement		0-5	Pipe	Division St from Harrison St to 13th/14th St	4,300	8		0%	\$827,000
Maintenance and Repair Projects			0-5	Pipe	Repair and Replacement Program	18,000	8-12			\$3,699,000
	Pipe Replacement		5-10	Pipe	Repair and Replacement Program	14,500	8-12		26.89%	\$2,996,500
			10-20	Pipe	Repair and Replacement Program	41,000	8-12		26.89%	\$8,033,500
	Facility Rehabilitation (PRV Rebuild and Replacement)		0-5	PRV Rebuild	11th St & Washington St, 15th St & Madison St, 3rd St & Bluff, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station, East St & Maple St, View Manor – continue to schedule rehabilitation and rebuilds every 5 years until the PRV is removed with redevelopment, 99E & Main St – removal of PRV Station with re-zoning the Paper Mill Zone to the Lower Zone	10			26.89%	\$100,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Maintenance and Repair Projects			0-5	PRV Replacement	16th St & Division St, 18th St & Anchor Way, 4th Ave & Jerome St, 5th Ave & Canemah, Abernethy Rd & Redland Rd, Harley Ave & Forsythe Rd (North) including removal of Harley Ave & Forsythe Rd (South)	6.5			26.89%	\$1,300,000
			5-10	PRV Rebuild	3rd Ave & Ganong St	1			26.89%	\$10,000
			5-10	PRV Replacement	11th St & Washington St, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station	5			26.89%	\$1,000,000
	Facility Rehabilitation (Reservoir Coating/Rehab, Seismic/Safety)	Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir- Exterior Overcoat				62.86%	\$722,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Safety Upgrades				62.86%	\$100,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Seismic Analysis/Seismic Upgrades ³				62.86%	\$975,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Steel Interior Removal and Recoat				62.86%	\$789,000
		Barlow Crest	10-20	Reservoir	Barlow Crest Reservoir-Steel Exterior Removal and Recoat				62.86%	\$1,059,000
		Boynton	0-5	Reservoir	Boynton Reservoir-Seismic Analysis/Seismic Upgrades (may require new reservoir) ³				0%	\$975,000
		Boynton	10-20	Reservoir	Boynton Reservoir-Steel Exterior Removal and Recoat				0%	\$1,059,000
		Henrici	0-5	Reservoir	Henrici Reservoir- Exterior Overcoat				0%	\$722,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Safety Upgrades				0%	\$100,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Seismic Analysis/Seismic Upgrades ³				0%	\$975,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Steel Interior Removal and Recoat				0%	\$789,000
		Henrici	10-20	Reservoir	Henrici Reservoir-Steel Exterior Removal and Recoat				0%	\$1,059,000
		Mountainview	0-5	Reservoir	Mountainview 2 Reservoir-Safety Upgrades				53%	\$100,000
		Mountainview	10-20	Reservoir	Mountainview 1 Reservoir-Concrete Major Repairs				53%	\$200,000
		Mountainview	10-20	Reservoir	Mountainview 2 Reservoir-Concrete Major Repairs				53%	\$200,000
	Facility Rehabilitation (Pump Stations)	Hunter Ave	0-5	Pump Station	Hunter Ave PS - PLC, Pumps, drives, SCADA/ electrical, transfer switch generator				26.89%	\$375,000
		Mountainview	0-5	Pump Station	Mountainview PS - Drives				26.89%	\$95,000
		Mountainview	5-10	Pump Station	Mountainview PS - Pumps, SCADA/electrical				26.89%	\$380,000
	Facility Rehabilitation (Decommission)	Fairway Downs	5-10	Pump Station	Decommission				0%	\$50,000
		Boynton	0-5	Pump Station	Decommission				0%	\$50,000
		Livesay	5-10	Pump Station	Decommission				0%	\$50,000

Notes:

1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

2 Oregon City Operations – Small Waterline Replacement Projects not shown on CIP map.

3 Seismic upgrade costs are placeholders. Additional evaluations required to refine cost estimates, risk, and improvement strategies for reservoir seismic improvements.

4. The project list may be updated pursuant OAR 660-011-0045 and ORS 223.309

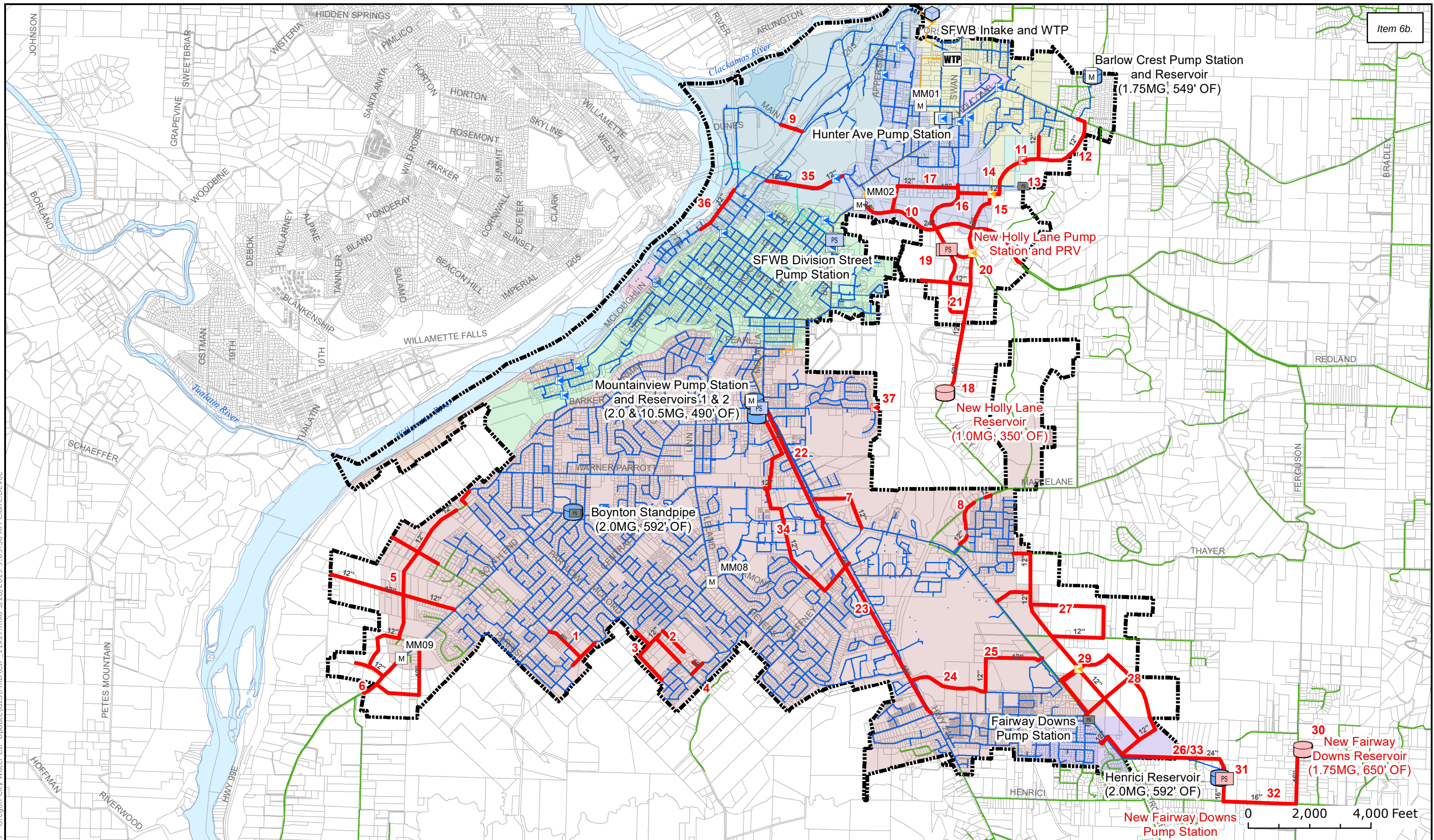
Table 18
Total Water CIP Summary Costs

Year	Development, Capacity & Operations Costs ¹	Pipe Replacement Costs ¹	Facility Rehabilitation Costs ¹	Total CIP Project Costs ¹
0 – 5 Years	\$22,801,500	\$10,041,500	\$8,167,000	\$41,010,000
5 – 10 Years	\$14,225,500	\$2,996,500	\$1,490,000	\$18,712,000
10 – 20 Years	\$11,827,500	\$8,033,500	\$3,577,000	\$23,438,000
TOTAL	\$48,854,500	\$18,175,500	\$13,234,000	\$83,160,000

Notes:

- 1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

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Item 6b.



City of Oregon City Water CIP Analysis

Figure 5 CIP Projects

PRESSURE ZONE

- Canemah
- Fairway Downs
- Intermediate
- Lower
- Paper Mill

Pressure Zones

- Park Place - Intermediate
- Park Place - Livesay
- Park Place - Lower
- Park Place - View Manor
- Upper

CIP Facilities

- PRV
- Tank
- Pump Station
- Emergency PRV

Existing Facilities

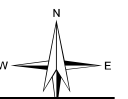
- Intake
- Master Meter
- PRV

Existing Facilities

- Pump Station
- Reservoir
- WTP
- Abandon Pump Station

Legend

- CIP Projects
- OC Water Mains
- CRW Water Mains
- SFWB Water Mains
- UGB taxlots





Appendix



APPENDIX A
WATER DISTRIBUTION MODEL
CALIBRATION TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Water Distribution Model Calibration

Oregon City, Oregon

Date: June 20, 2017

Project: 16-1915

To: Jon Archibald
City of Oregon City

From: Shad Roundy, PE
Sven MacAller, EIT
Murraysmith

Re: City of Oregon City, Water Distribution Model Calibration

Model Calibration

Model calibration is performed to ensure that results of model simulations reflect what is happening in a real-world system and involves adjusting model parameters to match field data. For a water distribution system, hydraulic models attempt to reflect flow and pressure within the system by adjusting parameters such as pipe geometry, friction coefficients, demand distribution, boundary conditions, and operational parameters.

The required level of model accuracy can vary by type and size of the water system including system operations. Ultimately, model accuracy depends on the quality of data used to populate the model and the quality of the data that has been collected in the field. Boundary conditions such as pressure reducing valve (PRV) settings, pump operation, and reservoir levels are critical.

Oregon City Field Tests

For calibration of the Oregon City Distribution System, 22 fire flow tests were conducted to collect field data. These tests were distributed throughout the system and at least one was performed in each pressure zone except Jennifer Estates and Paper Mill. The Jennifer Estates zone had not been identified at the time the calibration plan was developed and the Paper Mill zone does not currently serve any customers. Fire flow tests were conducted between January 5th 2016 and

January 30th 2016 including both a static pressure reading and a flow and residual pressure reading. Boundary condition data including reservoir level and pump operation was collected during the fire flow testing period and was used for the model calibration effort. Model calibration confidence levels were evaluated using the criteria shown in Table 1.

The model calibration process has two steps. The first component of model calibration is to match field-measured static pressure with model simulated pressure. Demand distribution, system connectivity, service elevations, and reservoir water surface elevations are verified during the static model calibration.

Table 1
Calibration Confidence

Confidence Level	Static Test Percent Error	Residual Fire Flow Pressure Difference
High	0 – 5%	≤10 psi
Medium	5 – 10%	10-20 psi
Low	> 10%	>20 psi

The second component of calibration utilizes fire flow tests to verify pipe diameters, system connectivity, friction coefficients, and pump operations. Fire flow testing consists of recording static pressure at a hydrant and then “stressing” the system by flowing an adjacent hydrant. While the adjacent hydrant is flowing, residual pressure is measured at the first hydrant to determine the pressure drop. Boundary condition data, such as reservoir levels and pump on/off status, must also be known to accurately model the system conditions during the time of the flow test. The recorded time of each fire hydrant flow test was used to collect boundary condition information from the City’s system supervisory control and data acquisition (SCADA) system.

Calibration Results

For static pressure calibration, error is measured as a percent pressure difference between model results and results measured in the field. A negative sign (-) indicates that the model pressure is lower than the field test, and a positive sign indicates that the model is over estimating pressure compared to test data. The static tests for the Oregon City distribution system calibrated between 3 and 5-percent of field measured values resulting in a high level of accuracy. A summary of the static test calibration results is shown in Table 2 and Figure 1.

Fire flow tests are used to simulate pressure drops within the system due to high demands. Calibration results for these tests are expressed as a difference in the pressure drop recorded in the field and the modeled system. For example, if field results show a pre-flow test pressure of

100 psi and 80 psi during the fire flow test, the pressure drop is 20 psi. If the model also shows 100 psi as a static condition and 85 psi during the fire flow test, the modeled pressure drop is 15 psi. The differential between these two pressure drops (5 psi) is the “Residual Fire Flow Pressure Difference”. A negative sign on the “Residual Fire Flow Pressure Difference” indicates that the model is overpredicting the pressure drop caused by the fire flow test, while a positive sign indicates that the model is underpredicting the pressure drop. Overpredicting the pressure drop is preferred as it adds conservatism to the model. Because the reported result is based on comparing pressure drop as opposed to actual pressure, any error in the static calibration is not carried over to the fire flow calibration.

As with the static pressure, the fire flow tests calibrated to a high confidence level. All pressure differentials are within a 10-psi range (17 tests are within 5 psi and 5 tests are between 5 and 7 psi). A summary of the fire flow test calibration results is shown in Table 2 and Figure 2.

Calibration Notes

Pressure Reducing Valves

The Oregon City Distribution system is relatively complex with numerous pressure zones, PRVs, pump stations, and reservoirs. The system is sensitive to operational settings at these facilities. PRV settings were initialized from the City’s master plan document and may not reflect the current operational settings. Several PRV settings were modified slightly in the model to improve model calibration. These changes were done only after exhausting other potential operational settings (reservoir levels, pump settings) and after adjusting pipe friction coefficients. PRV settings were changed at the 5th and Canemah, Abernathy and Redland, and Harley and Forsythe PRV stations within a 5-psi range of those reported in the master plan.

View Manor is served by a single PRV and is a small, closed pressure zone. Based on static and fire flow tests, the initial setting of 100 psi at the PRV was unrealistic as only 38 psi was measured during the static test and 30 psi during the fire flow test. The initial setting of 100 psi was reduced to 39 psi for the model calibration.

The Canemah pressure zone is served by two PRVs at 3rd and Ganong, and 4th and Jerome. During fire flow testing, both PRVs should open to supply water demand. The 3rd and Ganong PRV station is on a 2-inch line, while the 4th and Jerome station is on a 6-inch line. Using the initial PRV settings, the zone was served primarily by the 3rd and Ganong station and there was significant headloss in the 2-inch pipe resulting in modeled pressure drop significantly higher than what was recorded during fire flow testing. This was an indication that more flow was entering via the 6-inch line and the 4th and Jerome PRV station. In order to increase flow through the 4th and Jerome PRV, the setting was changed to allow the PRV to open at a higher pressure. The final settings used in the calibration at the 4th and Jerome PRV station were 65 and 70 psi for the large and small PRVs respectively (master plan settings indicated 50 and 65 psi settings).

Fairway Downs Pressure Zone

The Fairway Downs pressure zone is served by the Fairway Downs Pump Station and a check valve that bypasses the pump station and supplies water from the Upper Zone. City staff reported that during this flow test the pumps were operating at a diminished capacity (approximately 850 gpm total) and the check valve opened. In the model, the pressure drop from the fire flow test could not be replicated with the check valve open, even if all pumps were off. A good calibration was achieved using only pump 1 and 2, both at approximately 85% capacity and the check valve closed. This discrepancy indicates that there is either significant additional headloss in the check valve that is not replicated in the model or significant headloss in the piping within the pressure zone. When using the model to evaluate this pressure zone, care should be taken with regard to pump and check valve operation and further investigation of pumping capacity and check valve operation may be required.

Division Street Pump Station

Adjacent to the Division Street Pump Station there is a valve that recirculates water from the discharge side to the suction side of the pump station. This operational scheme is implemented to ensure adequate pressure to supply the CRW demand and the suction side pressure demands of the 16th and Division Street Pump Station. This operation is somewhat unique and should be considered when using the model for system evaluation. There may be a more efficient operational scheme that could be implemented in the future.

Table 2
Calibration Results

Test	Pressure Zone	Static Test Percent Error	Residual Fire Flow Pressure Difference
1	PP View Manor	-1%	1.5
2	PP Intermediate	-2%	0.8
3	PP Intermediate	-1%	3.4
4	PP Lower	-5%	6.4
5	PP Lower	-4%	3.3
6	Lower	-2%	6.9
7	Lower	-2%	2.2
8	Lower	0%	-2.7
9	Canemah	1%	-2.8
10	Intermediate	0%	5.2
11	Intermediate	1%	-1.7
12	Intermediate	-2%	-3.2
13	Intermediate	3%	-7.0
22	Intermediate	1%	-3.3
14	Upper	-5%	-1.8
15	Upper	2%	2.2
16	Upper	-5%	0.7
17	Upper	-3%	-1.3
18	Upper	4%	-7.1
19	Upper	-3%	2.3
20	Upper	-4%	-3.3

Legend

- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Static Pressure Difference*

- +

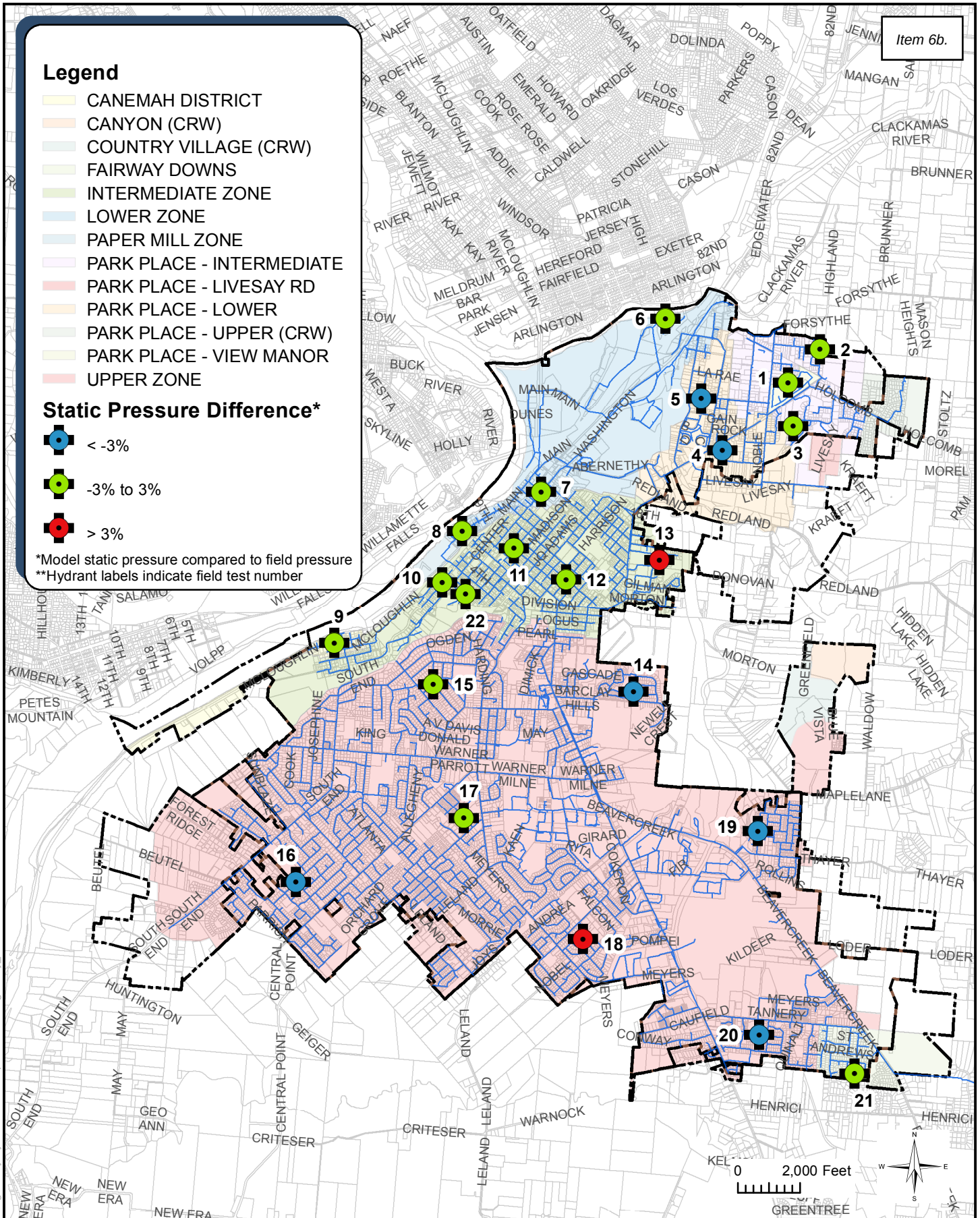
 < -3%
- +

 -3% to 3%
- +

 > 3%

*Model static pressure compared to field pressure
 **Hydrant labels indicate field test number

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Legend

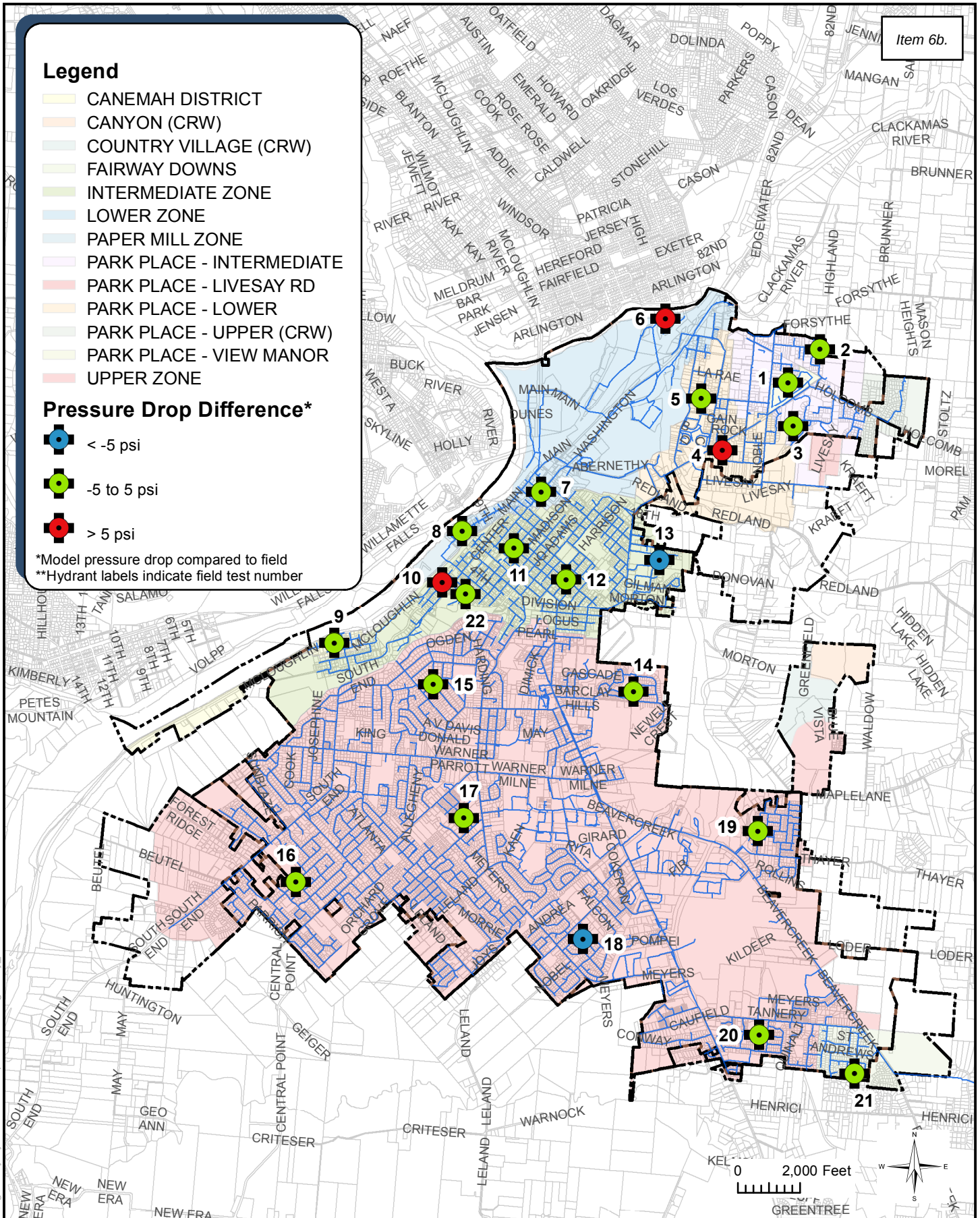
- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Pressure Drop Difference*

- < -5 psi
- 5 to 5 psi
- > 5 psi

*Model pressure drop compared to field
 **Hydrant labels indicate field test number

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City of Oregon City Hydraulic Model Update

Figure 2 Calibration Results Fireflow Tests



Figure B1
Existing Combined SFWB/Oregon City/Clackamas River Water Hydraulic Schematic

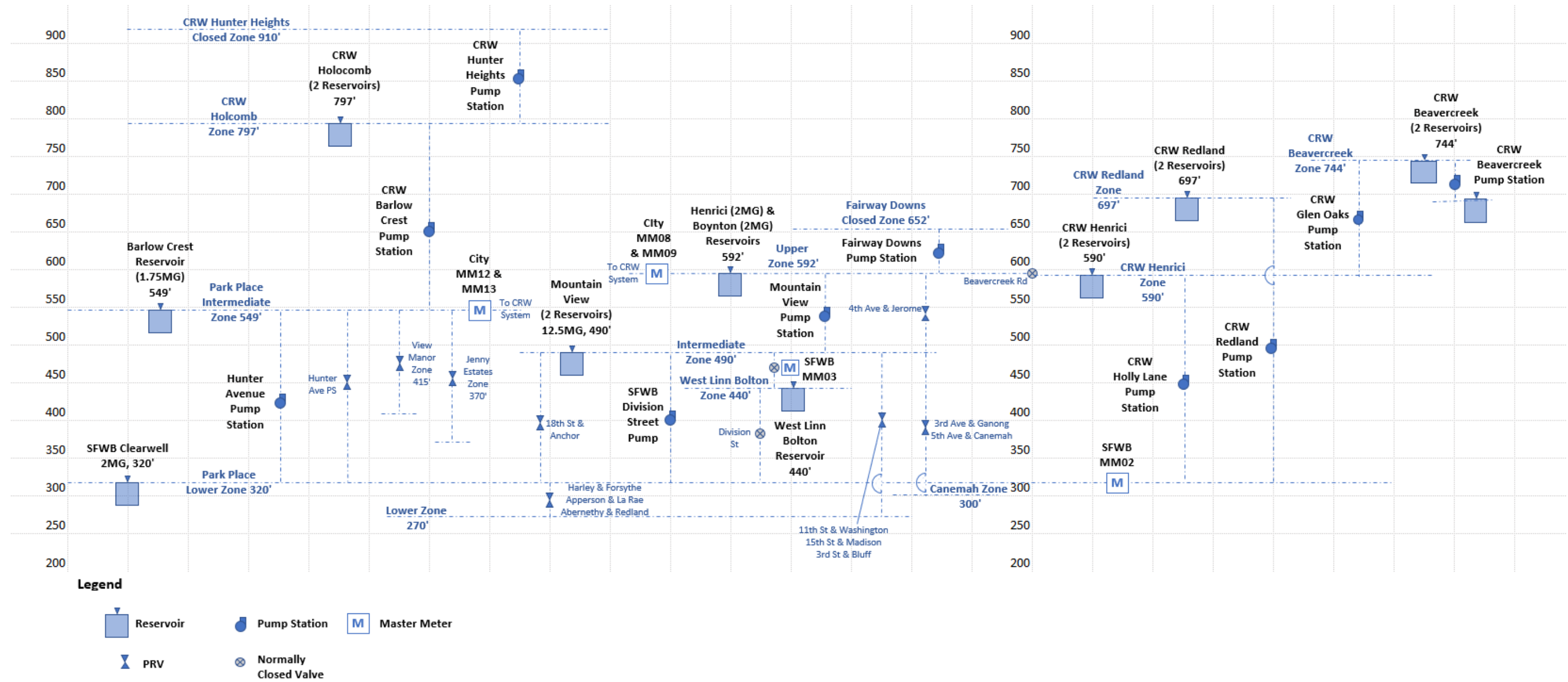
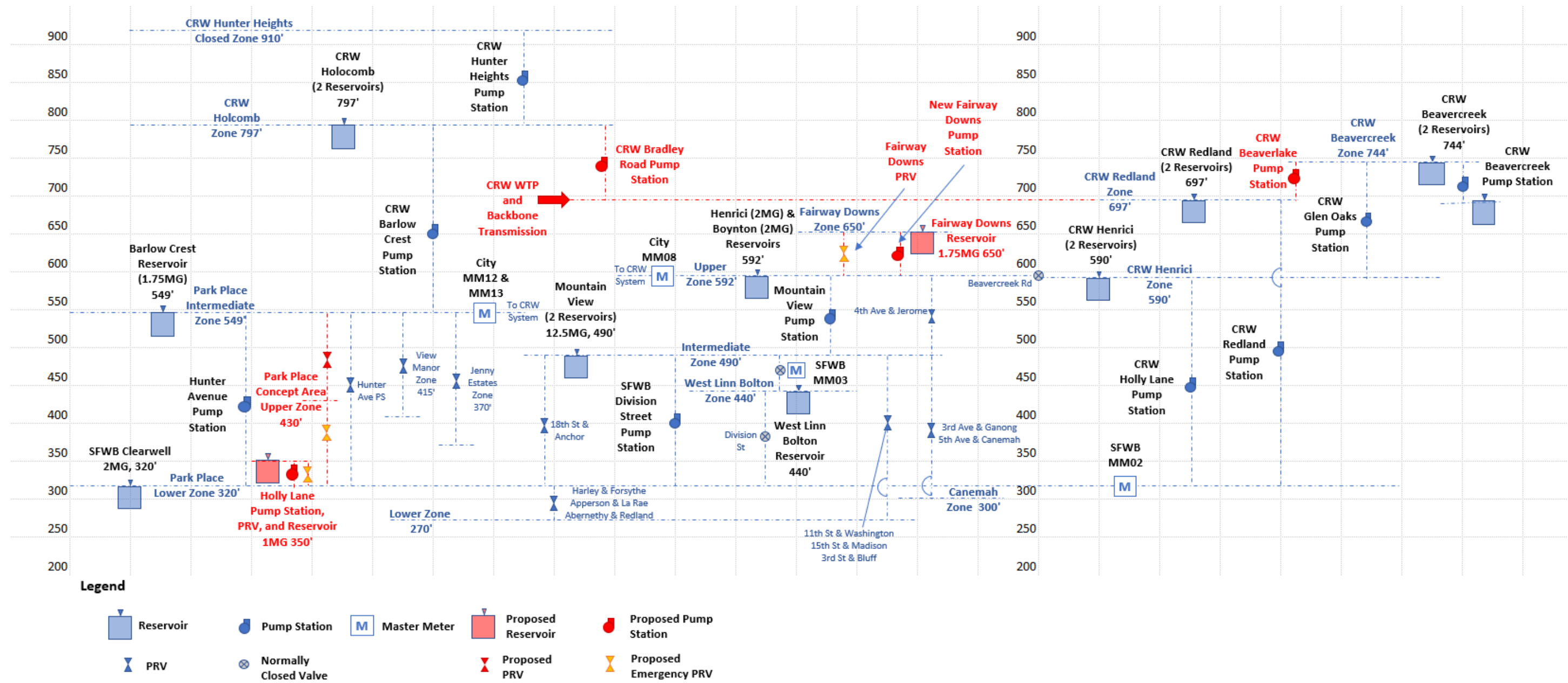


Figure B2
Proposed Combined SFWB/Oregon City/Clackamas River Water Hydraulic Schematic





APPENDIX C
EMERGENCY WATER SUPPLY
ANALYSIS TECHNICAL MEMORANDUM,
MURRAYSMITH

Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System CIP Update (17-2119)

To: Mr. Martin Montalvo
Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Emergency Water Supply Analysis

Introduction

The City of Oregon City (City) is in the process of updating its Capital Improvement Program (CIP) developed in the Water System Master Plan (WMP, 2012). Amendment No. 1 to the CIP Update includes documentation of emergency water supply operations. Specifically, the emergency water supply may be required if the South Fork Water Board (SFWB) 30-inch main on Quail Ct and Hiram Ave is out of operation due to repair and during completion of a 42-inch pipeline capital improvement project on Cleveland Street planned for November 2018. This technical memorandum documents the findings and recommendations of the Emergency Water Supply Analysis.

Existing Conditions

SFWB Supply and Transmission

The SFWB supplies treated drinking water to the City of Oregon City, the Clackamas River Water District (CRW) south of the Clackamas River, and the City of West Linn. Two transmission lines supply water from the SFWB Water Treatment Plant (WTP): a 30-inch line to City and CRW master meters and the Division Street Pump Station, and a 42-inch line to the Hunter Ave Pump Station.

As described in the SFWB Water Master Plan (2016), the 30-inch line may be undersized by 2021. To increase transmission capacity, the CIP includes a 42-inch connection along Cleveland Road between the existing 42- and 30-inch lines. In late August 2018, an existing leak in the 30-inch supply main intensified. In response, the SFWB and the City installed dewatering pumps. According to the City, the situation has stabilized, but there are concerns the entire line may fail,

if any attempts are made at repairs. Therefore, the City and SFWB have accelerated the process for the 42-inch connection.

West Linn Intertie Upgrades

In 2015, the City of West Linn improved its Lake Oswego Booster Station Intertie by installing two new 2,200 gallons per minute (gpm) pumps. These improvements came partly in response to the Lake Oswego – Tigard WTP expansion on the Clackamas River. This intertie is expected to be available for emergency supply.

SFWB Supply Limitations

This analysis focuses on three SFWB supply interruption scenarios:

1. Only the 30-inch line is out of service:
 - a. Prior to the completion of the connection of the new 42-inch line on Cleveland Street, a failure in the 30-inch line eliminates supply to the Division Street Pump Station, without affecting the 42-inch supply to Hunter Ave.
 - b. The 42-inch connection is successfully constructed, and installation requires the 30-inch line to be shut off for the duration of the final connection.
2. The SFWB WTP is completely offline and both the 30-inch and 42-inch lines are unable to provide water supply. The Division Street Pump Station is also not operable.

Under the first scenario, the City, CRW, and West Linn pressure zones supplied by the 30-inch line will either need to use alternate supply or rely on emergency storage. Under the second scenario, CRW and the City are assumed to rely on emergency storage, while West Linn uses alternate supply from Lake Oswego. The second scenario assumes that excess capacity from the Lake Oswego intertie can optionally supply CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Pressure zone supply under all scenarios for Oregon City, CRW, and West Linn are listed in **Table 1** and highlighted in **Figure 1**.

SFWB Supply Operations and Service Interruption

The SFWB Clear Well controls system pressure in the 30-inch and 42-inch transmission mains including suction side pressures at the Division Street and Hunter Ave Pump Stations. When the Clear Well water surface drops below a set point, a transfer valve (day/night valve) at the Division Street Pump Station opens to supply system demands and pressure from the Mountainview Reservoirs to customers supplied directly off the transmission mains. Excess head from the Mountainview Reservoirs is eliminated via an orifice plate at the valve with differential head regulated by the Clear Well water surface.

The supply interruptions described in this Emergency Plan, are different than when the WTP Clear Well is nominally offline and the Mountainview Reservoirs supply the system via the transfer valve.

During the emergency supply interruptions, the Clear Well is unavailable to regulate pressure and the transfer valve should remain closed to eliminate risk of over pressurizing the system.

During closure of the transfer valve, some services directly off the transmission mains will be without water including 27 CRW customers downstream of the CRW Redland and Anchor Way Master Meter (MM02). To avoid water service interruptions during the emergency shutdown, a new pressure reducing valve (PRV) is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to these customers.

Table 1
Pressure Zone Supply Alternatives

SFWB Supply Scenario	System	Alternate Supply	Emergency Storage	Normal Operations
Scenario 1: Pressure Zones Affected by 30-inch Outage including near-term 42-inch pipeline connection	Oregon City	Park Place Lower, Lower, Livesay	Intermediate, Canemah, Upper, Fairway Downs, Paper Mill	Park Place Intermediate, View Manor, Jennifer Estates
	CRW		Redland, Henrici, Beaver Creek Zones and South End and Leland/Meyers Master Meters	Hunter Heights, Holcomb (City's Park Place Upper), HOPP Master Meter
	West Linn	All Zones		
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City	See note 1	All Zones	
	CRW	See note 1	All Zones	
	West Linn	All Zones (from Lake Oswego)		

Notes

1 Optional supply from Lake Oswego. Excess capacity from the Lake Oswego intertie can augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing.

Scenario 1: 30-inch Supply Line Outage

Under this scenario, the 30-inch transmission main is off-line, and the 42-inch transmission main continues normal operation. Therefore, the goal of any operational change is to utilize the 42-inch line and minimize demands on the Mountainview Reservoirs. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland and Holly Lane Pump Stations. CRW to rely on emergency storage in their Redland, Henrici, and Beavercreek Reservoirs for zones normally supplied via MM02. A new PRV is required at the Holly Lane Pump Station to serve 27 customers adjacent to MM02.
- Oregon City to close distribution bypass pressure reducing valves (PRVs) providing supply from the Mountainview Reservoirs to zones capable of being supplied by the 42-inch line. Fire flow PRVs remain open with existing settings to passively provide fire flow demands. The updated PRV settings are listed in **Table 2** including closure of bypass PRVs at 18th & Anchor Way, 3rd & Bluff, 11th & Washington, and 15th & Madison. Fire flow PRV settings are not modified.

This scenario is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing "CLOSED" butterfly valve to the new 42-inch piping.

Scenario 2: Complete SFWB Outage

Under this scenario, both the 30-inch and 42-inch lines are off-line. Therefore, the goal of the any operational change is to balance water stored in reservoirs with system demands. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.

- Shut down of the Hunter Ave Pump Station to eliminate supply from SFWB 42-inch to Barlow Crest and Hunter Heights Reservoirs.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland, Holly Lane, and Barlow Crest Pump Stations. CRW to rely on emergency storage from their reservoirs in all zones.
- Oregon City to modify PRV settings and operations, providing supply from the Barlow Crest Reservoir to zones capable of being supplied by the Mountainview Reservoirs as listed in **Table 2** including closure of the bypass PRV at Hunter Ave Pump Station and a slight adjustment to the Hunter Ave Pump Station fire flow PRV.
- Note that PRV isolation of the Park Place Lower and Lower Zones from the Mountainview Reservoirs is not recommended for this scenario since the Barlow Crest Reservoir supply is more limiting than the Mountainview Reservoir supply with the existing 42-inch supply line to Hunter Avenue Pump Station unavailable.

Analysis and Findings

Assumptions

The following assumptions were made for all system analysis:

- System analysis was performed under wintertime Average Day Demands (ADD), conservatively estimated at 75% of ADD and verified with 2016 master meter records.
- It was assumed all reservoirs would be filled prior to the start of work and a 20% factor of safety was assumed, limiting available storage to 80% of reservoir capacity.
- Only gravity storage was available for supply.
- All interzone pumps and PRVs were assumed operational, except where specifically listed. Therefore, pressure zones could be grouped by limiting reservoir or supply including: Oregon City Mountainview, Oregon City Barlow Crest, CRW Hunter Heights, and CRW MM02.

The analysis consisted of a calculation of supply duration available in the reservoir groups, a system pressure check in Oregon City under the updated supply scenario, and a fire flow pressure check in Oregon City under the updated supply scenario.

System Pressures and Supply Availability

Under both limited SFWB supply scenarios described in the prior section, the City can maintain adequate pressures in all zones. Pressures vary by less than 3 pounds per square inch (psi) between SFWB supply scenarios during winter time demands, therefore only Scenario 1 is presented in **Figure 2**. Reservoir supply duration varies between scenarios and zones and is presented in **Table 3**. These calculations assume that the City will continue wheeling water to CRW's master meters at South End, Meyers, and HOPP, in addition to the assumptions listed

earlier in this document. Approximately 4 days of emergency storage is available in the Oregon City system. If the Mountainview Reservoirs are not isolated from the Park Place and Park Place Lower Zones, the available storage in the Oregon City system reduces to less than 4 days.

Approximately 3 days of emergency storage is available in the CRW system with all reservoirs operations. However, it should be noted that the one of the CRW Redland Reservoirs is temporarily off-line (as of October 2018) affecting near-term emergency storage availability by approximately 50-percent in the Redland zone (see *SFWB Hydraulics – Catastrophic Failure: Emergency Water Main Repair Modeling*, Carrollo, 2018).

Fire flow Availability

If a fire occurs during limited SFWB operations, no additional changes need to be made to system operations. PRVs should be set so that fire flows will be available, even if the distribution bypass PRV is closed. It should be understood, however, that fighting a fire will significantly impact emergency storage and decrease the total time the system can operate without water shortages.

Figure 3 presents the fire flow available throughout the City’s system under both Scenario 1 and Scenario 2 of reduced SFWB supply.

Table 2
PRV Settings for SFWB Supply Alternatives

PRV Station	Scenario 1: Operation under 30-inch Failure & 42-inch Connection	Scenario 2: Complete SFWB Outage	Distribution Bypass or Main Valve Setting (psi)				Fire flow Valve Setting (psi)			
			Diameter (in)	Existing	30-in Failure	Complete Outage	Diameter (in)	Existing	30-in Failure	Complete Outage
18 th & Anchor Way	Closed for distribution, open during fire flow in Lower or Park Place Lower	Required for distribution and fire flow to Park Place Lower and Livesay	4	53	CLOSE	NC	8	48	NC	NC
3rd & Bluff	Closed for distribution, open during fire flow in Lower Zone	Supply to Lower, available for fire flow	3	42	CLOSE	NC	10	39	NC	NC
11 th & Washington			3	67	CLOSE	NC	10	58	NC	NC
15 th & Madison ²			6	56	CLOSE	NC	6	51	NC	NC
Hunter Ave Pump Station PRV	Required for distribution and fire flow supply to Park Place Lower and Lower	Closed for distribution, available for fire flow	3	45	NC	CLOSE	6	51	NC	48

Notes:

1. NC = No change from existing settings required.
2. Additional 1.25-inch PRV also closed during Scenario 1.

Table 3
Emergency Storage Supply Availability Under Limited SFWB Supply Scenarios

SFWB Supply Scenario	Storage System/Zones	Total Storage (MG)	Available Storage (MG)	System Demands (GPM)	Available Supply (Days)
Scenario 1: Pressure Zones Affected by the 30-inch Outage	Oregon City/ Mountainview	16.5	12.1	1,898	4.4
	CRW/ MM02	3.8	3.0	651	3.2
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City/ Mountainview	16.5	12.1	2,208	3.8 – 4.8 (see note 9)
	Oregon City/ Barlow Crest	1.8	1.4	120	8.1
	CRW/ Hunter Heights	1.2	1.0	135	4.9
	CRW/ MM02	3.8	3.0	651	3.2 – 4.2 (see note 9)

Notes:

1. All tanks assumed initially full and operational. Available storage assumed to be 80% of full storage and available by gravity – Boynton Standpipe limited to minimum elevation of Henrici Reservoir at 20% full.
2. Demands at 75% of ADD. All CRW demands wheeled through Oregon City (HOPP area, South End, Leland/Meyers, and Joint User Customers) continued supply at 75% ADD. No supply to West Linn.
3. All interzone pump stations assumed operational, except where specifically shut off.
4. For scenario 1, Oregon City Mountainview Zones include Upper, Fairway Downs, Intermediate, and Canemah. For Scenario 2, additional zones include Lower and Park Place Lower and Livesay.
5. CRW MM02 Zones include Redland, Henrici, and Beavercreek. All reservoirs assumed operational. Available supply will be reduced from what is shown in the table when one of the Redland Reservoirs is offline.
6. Oregon City Barlow Crest Zones include Park Place Intermediate, Park Place View Manor, and Park Place Jenny Estates.
7. CRW Hunter Heights Zones include Hunter Heights and Holcomb (including the City customers in the Barlow Crest area).
8. For Scenario 2, Mountainview Reservoirs supply the Park Place Lower and Lower Zones to preserve supply in the Barlow Crest Reservoir. Without isolating Barlow Crest, the controlling emergency supply reduces to approximately 2 days within the Barlow Crest service area.
9. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing. The higher-end supply times assume up to 700 gpm of excess capacity are provided by the Lake Oswego intertie to supplement storage.

Alternate Supply Analysis

Given the limited time available for supply shut down and the unpredictability of the construction process, alternate supply and distribution were explored from CRW and Lake Oswego via West Linn.

Supply from CRW's WTP may be an option for emergency supply once Phase I of the Backbone Project is completed and interties to Oregon City are established. The Backbone Project extends

transmission piping from the CRW WTP on the north side of the Clackamas to customers south of the Clackamas. Existing connections along the Backbone path were reviewed for a potential supply from the CRW zones supplied by the 42-inch to the CRW zones supplied by the 30-inch and indirectly, the Mountainview Reservoirs. However, available piping is 4-inch diameter and adequate connections are not currently available. Once the Backbone Project is complete, potential intertie locations may be located at the Barlow Crest Reservoir, CRW's Redland and Anchor Way master meter, or along Beavercreek Road. The Backbone Project and associated interties will not be implemented in time to address near-term emergency supply associated with the near-term SFWB pipe break and 42-inch pipeline improvement.

Alternate supply may be available from the Lake Oswego – Tigard WTP, via the Lake Oswego Emergency Booster Station and through West Linn's Bolton Pressure Zone to the Mountain View Reservoirs. Initial review of the system and pump curves for the emergency pump station indicate approximately 225 ft of total dynamic head (TDH) with two pumps operating. This is adequate head to pump from the Emergency Booster Station to the Mountain View Reservoirs. Based on winter-time demands, the pump station would operate almost continuously throughout the day. Two scenarios were considered:

- (1) In the first scenario, the West Linn distribution piping and valving are not isolated. Maximum pressures exceed 170 psi and may affect two-thirds to three quarters of the zone.
- (2) In the second scenario, portions of the West Linn distribution piping are isolated to serve as a transmission main. Maximum pressures exceed 170 psi, but only affect one-third of the zone (see **Figure 4**).

Because the affected customers in the Bolton Pressure Zone may not have individual PRVs to handle pressures greater than 100 psi and the distribution piping is aging with potential leakage concerns, the alternate supply scenario from the Lake Oswego Booster Station to the Mountainview Reservoirs is not recommended.

A third alternative was considered late in the emergency supply analysis. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. This operation does not affect pressures in the West Linn system. Valving requires field verification and emergency operations require testing. Excess capacity from the intertie booster may be limited after demands are supplied to West Linn during peak demand hours of the day. The benefit of the back feed from the Bolton Reservoir is to help refill City and CRW reservoirs normally supplied from the SFWB Clearwell during low demand hours of the day. The reservoir refill occurs through the Division Street Pump Station for the City and the Holly Lane and Redland Pump Stations for CRW.

Future Connections

Additional interconnects to the CRW system after the construction of the CRW backbone project may be explored. A secondary supply south of the Clackamas River greatly increases system resiliency and improves service to CRW, Oregon City, and West Linn customers. The backbone project will not be available for the immediate risks of the 30-inch leak and the 42-inch pipe connection associated with Scenario 1.

Recommendations

The following steps are recommended procedures for implementation of Scenario 1 and Scenario 2 operations. The steps should be field verified (including valve IDs) and tested prior to implementation.

During testing and implementation, all valve operations must be performed slowly to minimize the risk of water hammer and pressure transients. Prior to draining system pipelines, air/vacuum combination release valves should be identified and inspected for functionality to avoid damage from pressure transients. Draining should occur slowly to minimize risks of vacuum pressures.

Scenario 1: 30-inch Supply Line Outage

- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs nominally supplied by the 30-inch line prior to isolating the leak. These reservoirs include:
 - City Mountainview
 - City Henrici
 - City Boynton
 - CRW Redland
 - CRW Henrici
 - CRW Beavercreek
- Isolate the leak and close valves
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)

- Shut off the CRW Redland and Holly Lane Pump Stations
- Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beaver Creek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
- Isolate the leak by closing adjacent valving on the 30-inch line
- Close the bypass PRVs at the following locations per recommendations listed in Table 2, to minimize demands on the Mountainview Reservoirs. Maintain fire flow valves at existing settings.
 - 18th & Anchor PRV Station
 - 3rd & Bluff PRV Station
 - 11th & Washington PRV Station
 - 15th & Madison PRV Station
- Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

Scenario 1 is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing “CLOSED” butterfly valve to the new 42-inch piping.

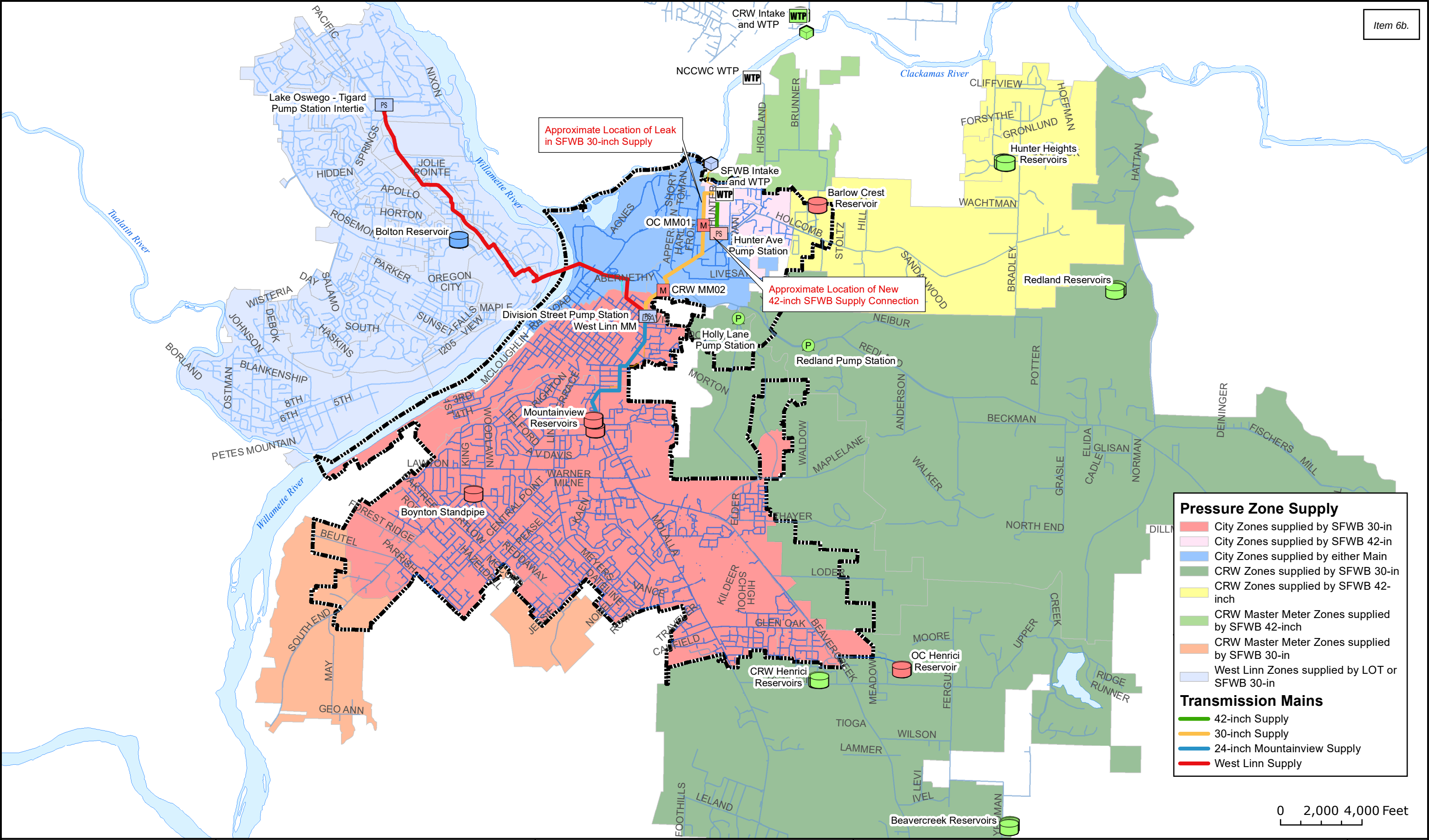
Scenario 2: Complete SFWB Outage

- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs. These reservoirs include:
 - City Mountainview

- City Henrici
 - City Boynton
 - City Barlow Crest
 - CRW Redland
 - CRW Henrici
 - CRW Beavercreek
 - CRW Hunter Heights
- Isolate the CRW, West Linn, and Oregon City systems
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)
 - Shut off the Barlow Crest Pump Station (CRW supply to Holcomb/Hunter Ave)
 - Shut off the CRW Redland and Holly Lane Pump Stations
 - Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beavercreek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
 - Shut off the Hunter Ave Pump Station
 - Close Hunter Avenue bypass PRV and adjust fire flow PRV to less than 48 psi
 - Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

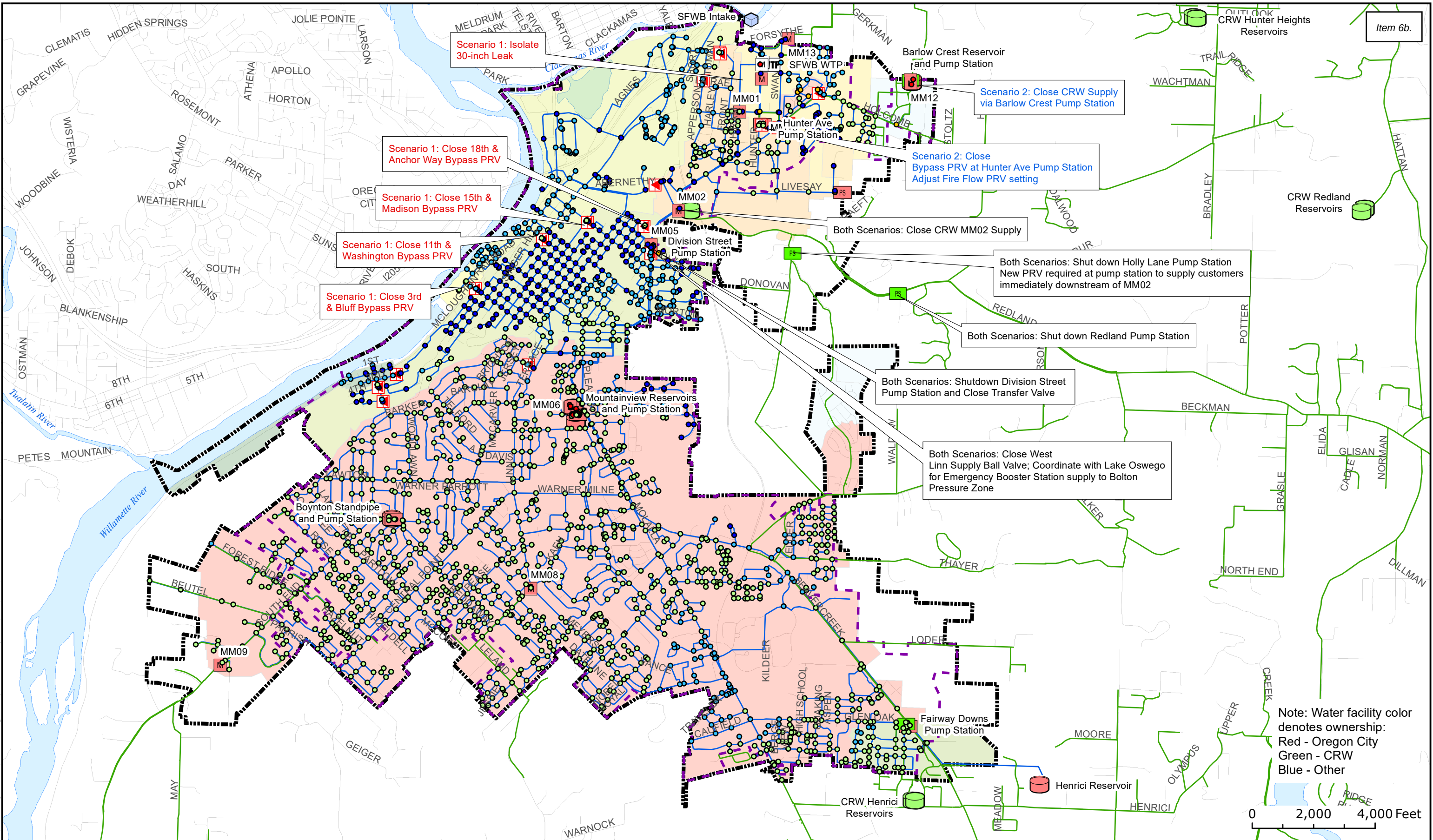
Note: Additional emergency supply to the City and CRW systems may be available from the booster station intertie with Lake Oswego to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir during low demand hours of the day. Valving requires field verification and emergency operations require testing.

Cc: South Fork Water Board, West Linn, Clackamas River Water, Lake Oswego



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City of Oregon City
Water CIP Analysis

Figure 2:
SFWB Supply Limitation
Static Pressure

Model Water Mains
CRW Water Mains
OC City Limits
UGB

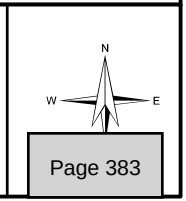
Static Pressure (PSI)

- 25 - 40
- 40 - 80
- 80 - 100
- > 100
- < 25

Water Facilities

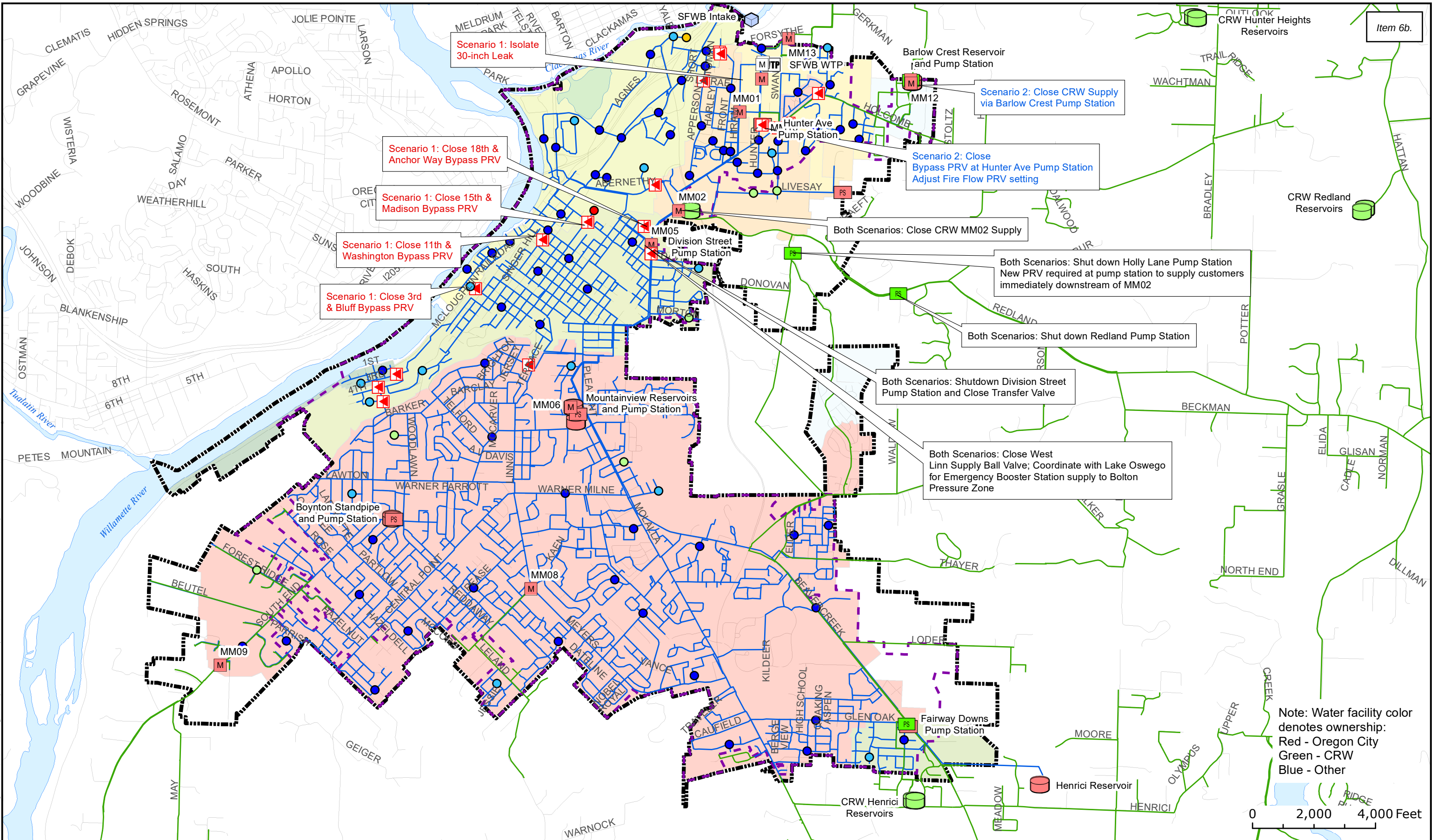
- Reservoir
- Pump Station
- Master Meter
- PRV
- Intake
- WTP

0 2,000 4,000 Feet



Page 383

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City of Oregon City Water CIP Analysis

Figure 3: SFWB Supply Limitation Fireflow Availability

Model Water Mains
CRW Water Mains
OC City Limits
UGB

Available Fireflow (GPM)

- 500 - 1000
- 1000 - 1500
- 1500 - 3000
- > 3000
- < 500

Water Facilities

- Reservoir
- Pump Station
- Master Meter
- PRV
- Intake
- WTP

Page 384

Bolton Zone Supply Status

- Unaffected West Linn Zones
- Transmission Main Overpressurize/No Supply
- PRV - Supply OK
- Alternate Supply via Willamette PZ
- Bolton Reservoir Supply

Valve Operation

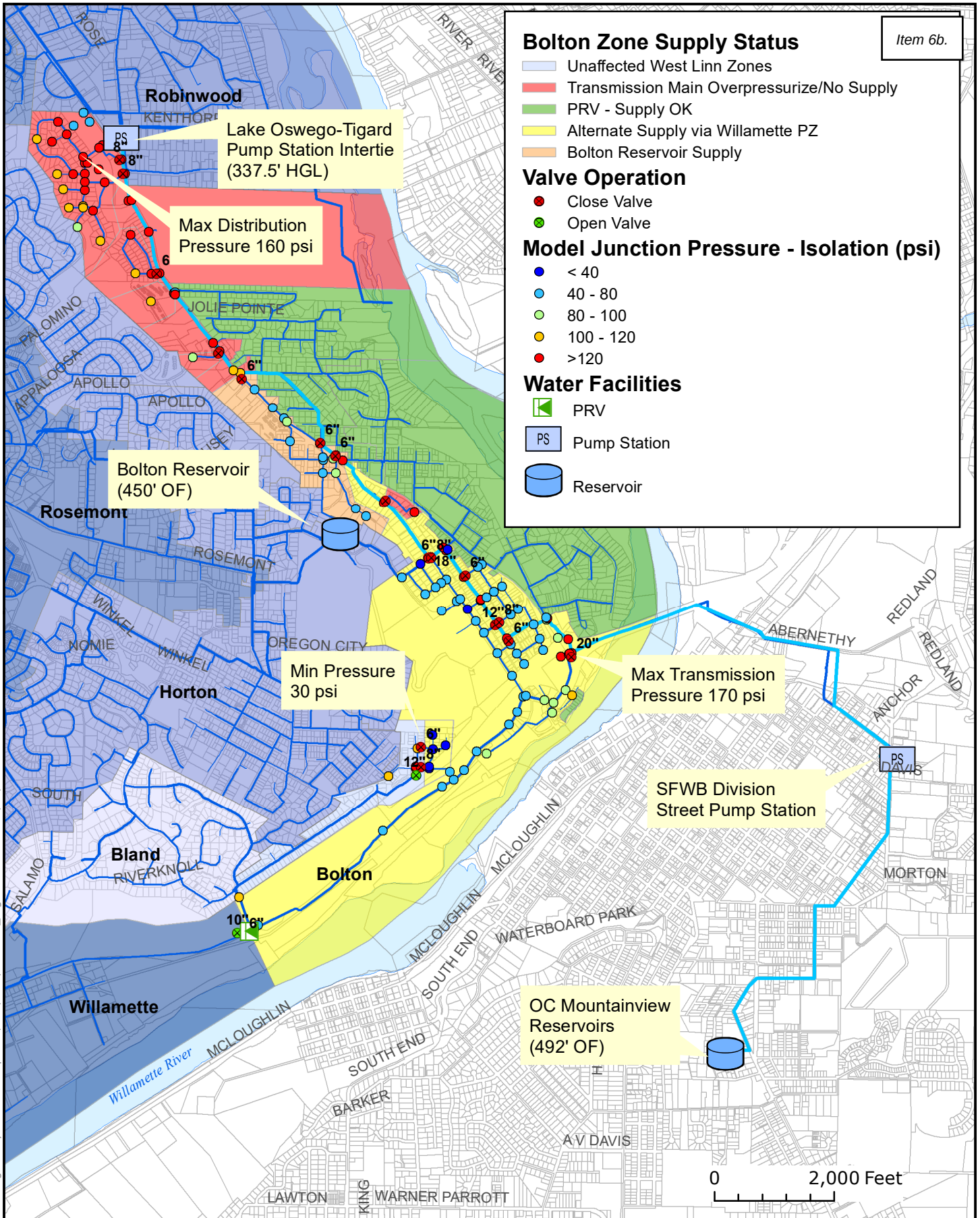
- Close Valve
- Open Valve

Model Junction Pressure - Isolation (psi)

- < 40
- 40 - 80
- 80 - 100
- 100 - 120
- > 120

Water Facilities

- PRV
- PS Pump Station
- Reservoir



**Figure 4:
SFWB Supply Main Failure
Alternate Supply Analysis**

**Lake Oswego-Tigard Supply
West Linn Pressures
Transmission Isolation**



APPENDIX D

JOINT ENGINEERING STUDY TECHNICAL MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: June 11, 2018

Project: 16-1922

To: Mr. Martin Montalvo – Operations Manager
Ms. Aleta Froman-Goodrich, PE – City Engineer
City of Oregon City

Mr. Bob George, PE – Chief Engineer
Clackamas River Water District

From: Brian Ginter, PE
Mike Carr, PE
Claire DeVoe
Murraysmith



Re: Clackamas River Water / City of Oregon City Joint Engineering Analysis
Water Service Dual interest Area Technical Analysis

Purpose

Clackamas River Water (CRW) and the City of Oregon City (City) are engaged in discussions with the goal of defining their adjoining service area boundaries for existing and future conditions to provide more efficient and economic water service to all customers. Murraysmith was selected by both providers to perform the engineering analysis and facilitate discussions between the two water providers.

The purpose of this white paper is to develop a framework for defining current and long-term service area boundaries, orderly service transfers, and infrastructure management through a study of current dual interest areas and overlapping service identified by the providers. This report will:

- Present the historical events regarding boundary realignment
- Identify typical dual interests present between service providers
- Document the identified water service dual interest focus areas
- Propose individual or policy-based solutions for each dual interest area
- Develop an approach to guide future dual interest resolution
- Provide an action plan for the next steps

This report also fulfills the study requirements set forth in the May 2014 Settlement Agreement between CRW and the City.

Introduction

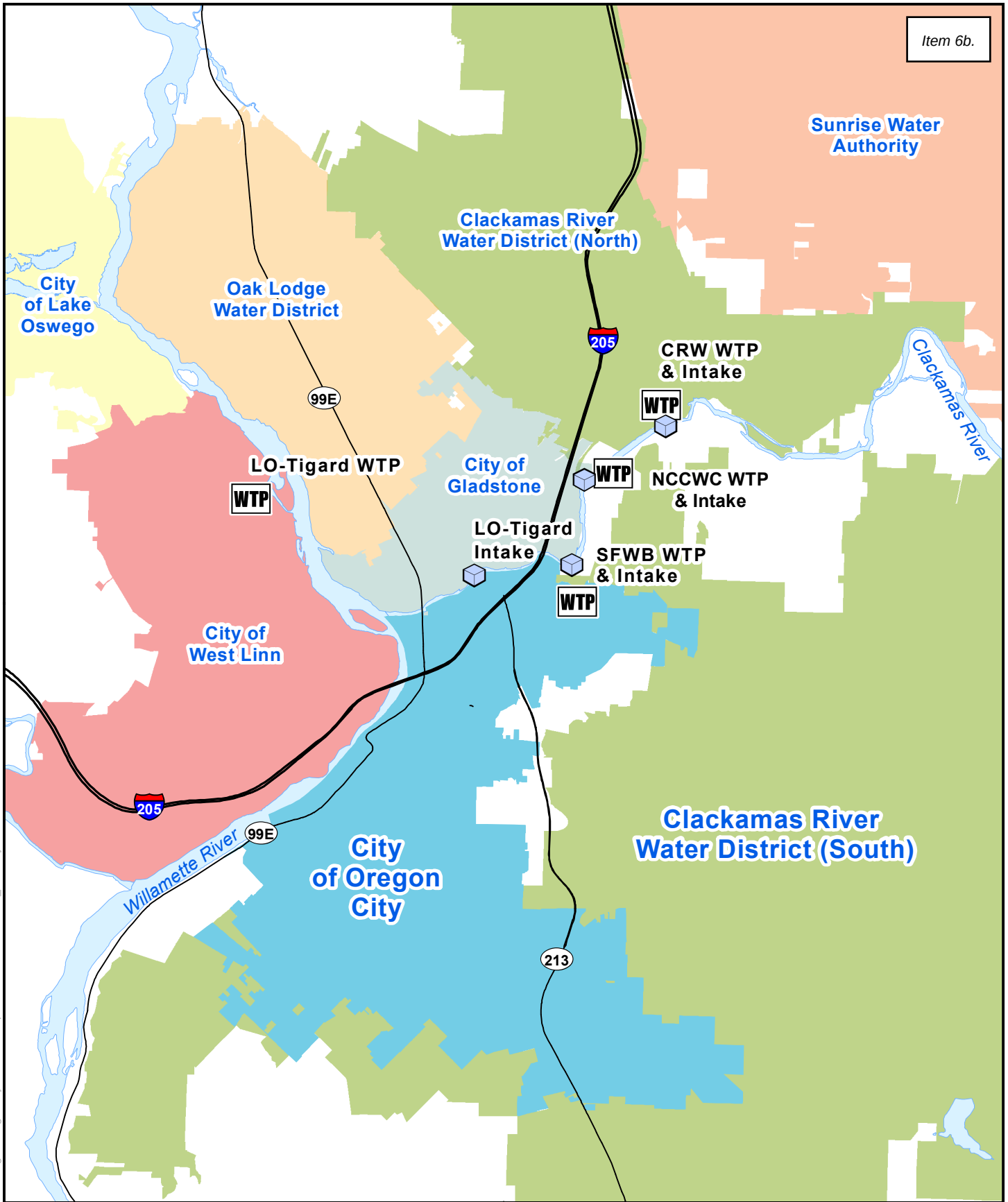
The Clackamas River is the primary water source for municipal water supply to Oregon City and the surrounding urban and semi-urban areas, as illustrated in **Figure 1**. Three separate Water Treatment Plants (WTPs) along the river supply six different water providers, including the City and CRW (**Table 1**).

Table 1
Water Treatment Facilities along the Clackamas River

Water Treatment Plant	South Fork Water Board WTP	North Clackamas County Water Commission WTP	Clackamas River Water WTP
Water Provider Served	Oregon City	Sunrise Water Authority	Clackamas River Water (North)
	West Linn	Gladstone	Sunrise Water Authority
	Clackamas River Water (South)	Oak Lodge Water District	

Historically, these water providers have coexisted and provided service to separate areas. Cities generally supplied the urban centers and water districts or water authorities have served the semi-urban areas both within and outside the Metro Urban Growth Boundary (UGB). With development and subsequent UGB expansion cities can legally serve areas that were once limited to water district or water authority service. Under ORS 222.520 to 222.580, a city may annex and withdraw territory, and assume facilities, from special districts if the facilities are non-essential to the operation of the remaining district water system. This same rule does not apply to water authorities – their service areas are protected and cannot be withdrawn by cities.

This study is the result of a legal dispute over the right to withdraw territory between Oregon City and CRW. As a municipal corporation, the City provides water service to residents within city limits and some areas within the UGB, but is limited in its ability to serve customers outside the UGB. CRW, a domestic water supply district organized under ORS 264, borders the City to the north, south, and east and primarily serves customers within unincorporated Clackamas County outside the UGB, as well as customers within the city limits and the UGB.



- City of Oregon City
- Clackamas River Water District
- City of Gladstone
- City of Lake Oswego
- Oak Lodge Water District
- Sunrise Water Authority
- City of West Linn
- Major Roads
- Water Intake
- Oregon City UGB
- WTP Water Treatment Plant

N
 1 inch = 6,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 1 Vicinity Map



In November of 2013, CRW and Sunrise Water Authority (SWA) approved Ordinance 03-2013 and Resolution 2013-02 respectively (collectively known as the 190 Agreement) to form the Clackamas Regional Water Supply Commission (CRWSC). CRW and SWA created the CRWSC to oversee the efficient supply of domestic water services within the two water providers' service areas. The City and South Fork Water Board (SFWB) were concerned the 190 Agreement would extend SWA boundary protection rights under ORS 450.987 as a Water Authority to CRW, thus limiting the City's right to annex and withdraw CRW territory.

In December of 2013, the City and SFWB filed an appeal to the Land Use Board of Appeals (LUBA) stating that the creation of the CRWSC infringed on the City's expansion rights and constituted material harm to the City and SFWB. This appeal led to discussions between CRW and the City regarding the goals of the CRWSC. In May 2014, a Settlement Agreement was signed by the City and CRW calling for this engineering study to provide direction for existing and future disputes.

This study is focused only on service provision dual interests between Oregon City and CRW. For the remainder of this study, areas and service providers north of the Clackamas River and west of the Willamette River will be ignored.

Dual interest Characterization

Neither party disputes the City's right to annex and withdraw CRW territory. Rather it is how prior annexations and withdrawals have occurred that is the primary driver of dual interest. The agreements for service transitions are outdated or do not address the current challenges, which has led to irregular policies and an uncertainty in long-term service provider boundaries. This uncertainty has led to CRW's reluctance to invest in areas that might soon be taken by the City, animosity over the condition of existing infrastructure in areas that are eligible for annexation, and a general short-term perspective on coordinated planning. The lack of a clear plan has at times resulted in annexation without withdrawal of territory resulting in continued uncertainty for both water providers related to long-term service requirements. All compiled, this has meant customers of both providers have seen failing infrastructure, frequent road repairs, higher costs, and a lack of clarity regarding long term service. As annexations and withdrawals are becoming more and more frequent, and in order to efficiently and effectively plan for the long-term service to all customers in the area, the parties concluded that a formalized process should be developed that is acceptable to both water providers.

Remuneration for Assets

Typically, urbanization and city expansion occurs where there is no existing public water service provider. However, CRW already provides water service to much of the semi-urban area surrounding the City. When the City expands service into these area, existing CRW infrastructure, often with remaining useful life, might be present, however the infrastructure may be inadequate by City standards. This creates a potential source of dual interest between the two water providers associated with:

- CRW's willingness to invest in the renewal or replacement of aging infrastructure that may ultimately be withdrawn by the City;
- The City's desire to efficiently transfer service to City rate payers without constructing redundant facilities; and
- Identification of critical infrastructure that must remain within CRW's ownership for continued water service to CRW customers.

In order to address these sources of dual interest, both water providers have acknowledged the need to develop a fair and objective remuneration policy that encourages coordinated planning and equitable, long-term focused investment in infrastructure development and renewal.

Reduce Isolated CRW Service Areas

When newly annexed areas are inconsistently withdrawn, isolated pockets of CRW customers are created within City service area. To supply these customers, either parallel and redundant infrastructure must be constructed and maintained, or the City must wheel water through their infrastructure to supply CRW infrastructure and customers. Traditionally, the latter has been chosen and facilitated in two ways – as a master meter connection or as Joint Users. These two mechanisms are detailed below:

- **Master Meters:** Master meters cleanly divide two systems and retain infrastructure maintenance responsibility with the system paying for the water by recording the totalized flow through a single supply point. They can supply entire pressure zones or a limited area such as a single road. Typically, master meters are used in areas that are not predicted to transition soon, or where a significant number of customers are served in the receiving system.
- **Joint Users:** Joint users are CRW customers that are supplied through City, CRW, or jointly owned infrastructure without an intervening master meter. Joint Users are not ideal in that the supplying system must take on a significant amount of risk if the receiving system does not adequately maintain its pipes but certain conditions such as system looping, or a limited number of customers, prevent the use of master meters.

Master meters and Joint Users are both integral solutions to serving isolated customers. The problem arises when these short-term solutions are selected without thought to long-term service goals.

For long term service, the simplest technical solution is often annexation and withdrawal of CRW service areas. However, political motives and a reluctance to be included in city limits stalls this type of solution. The City currently has a policy (Oregon City Municipal Code 13.04.260B) to charge 1.5 times the retail rates for service to customers outside of city limits. This policy may discourage orderly transition of service in the interest of protecting the customer as Master Metered or Joint User customers currently only pay their system's nominal rate.

The inconsistent application of master meters and Joint Users, the lack of certainty regarding annexation and withdrawal of territory, and the economic consequences for both water providers and customers require the development of an approach to isolated service that can be consistently and fairly applied.

Water Service Provider Goals

The consultant team met individually with CRW and City staff to understand both providers' goals (without the influence of the other provider). The following goals that influence each water providers' definition of success in this study were identified in the discussions.

- Joint Engineering Study Goals for Both Providers
 - The City and the CRW are both committed to providing high quality potable water service to customers at reasonable rates.
 - Both providers recognize the benefits of continued collaboration to provide seamless service to dual interest area customers that may be transferred, but each also recognizes their first duty is to customers within their own long-term service areas.
 - Both providers desire certainty of long-term water service area boundaries to inform ongoing system development and renewal/replacement capital investment.
 - Both providers are amenable to wheeled water from the other purveyor's WTP in cases where a higher level of service could be provided more economically and long-term agreements are in place to support investments needed to achieve and maintain the level of service.
 - Both providers recognize the value of interconnected systems with redundant emergency supply and are committed to working together with neighboring water providers to minimize impacts on customers during emergencies as well as periods of growth and transition.
- City Specific Goals
 - The City wants to be the water service provider to existing and future annexed City residents and businesses.
 - The City is part owner of SFWB, and therefore prefers to supply the City's customers with water sourced from the SFWB WTP, thereby serving the City's ultimate service area and customers. This results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

- CRW Specific Goals
 - CRW prefers to supply the district's customers with water sourced from the CRW WTP as this results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

Keeping these goals in mind, existing dual interests and solutions to key areas identified during scoping will be explored in the next section.

Study Area

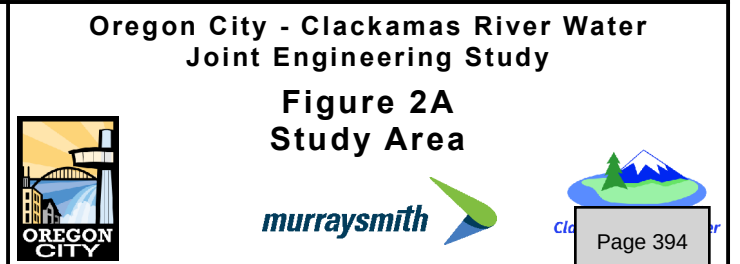
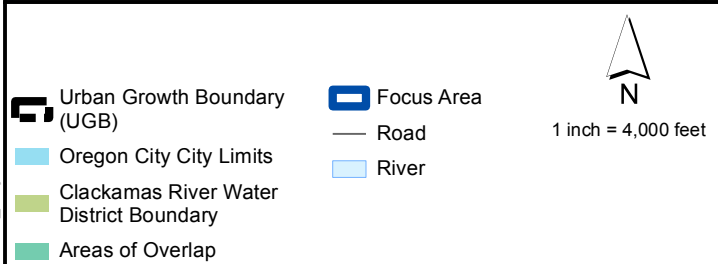
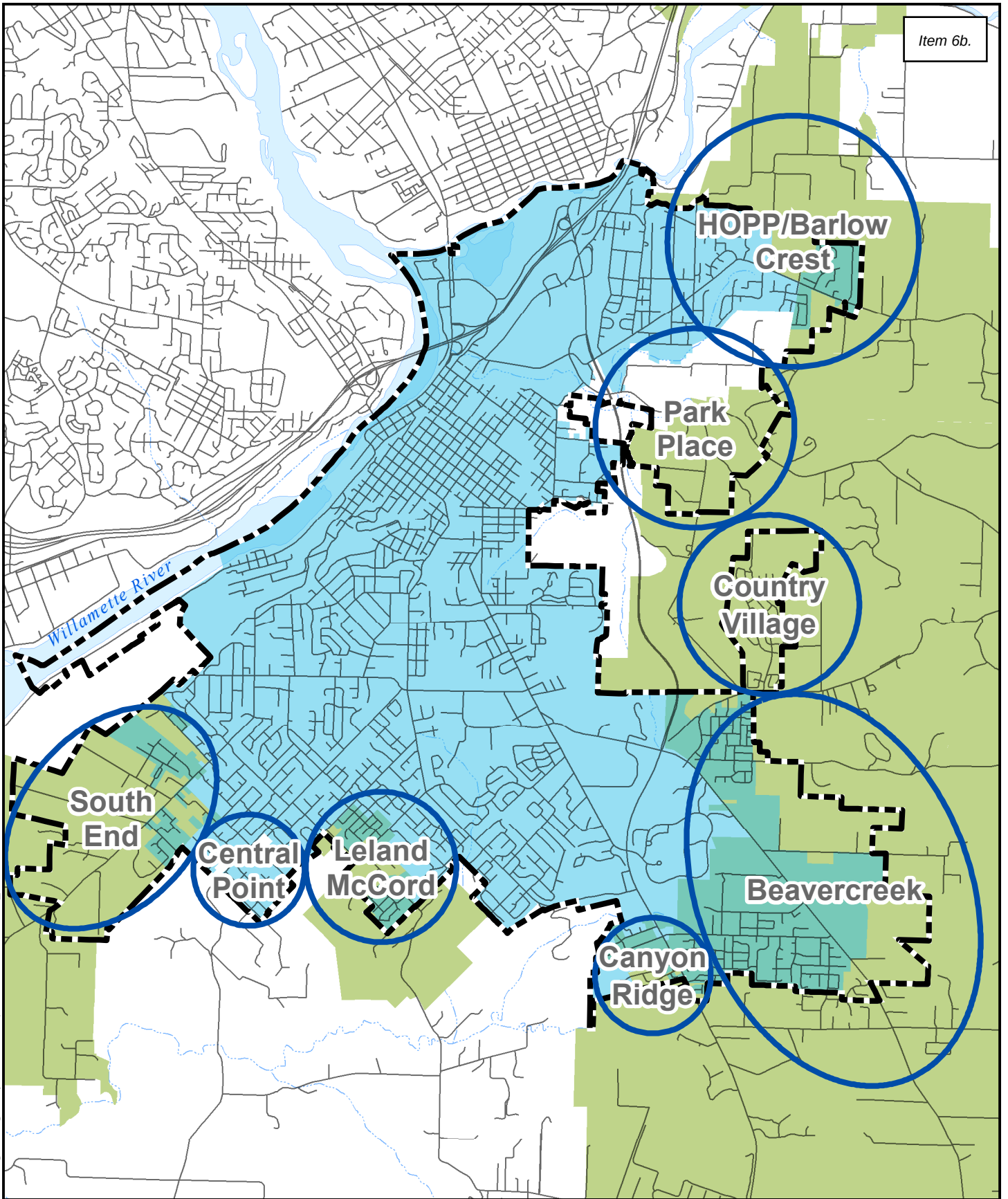
Figures 2A and 2B highlights the overall study area of this white paper and identifies the individual focus areas discussed in detail later in this section. Study dual interest areas are generally located near the Oregon City city limits or the edge of the UGB, where annexation and withdrawals occur.

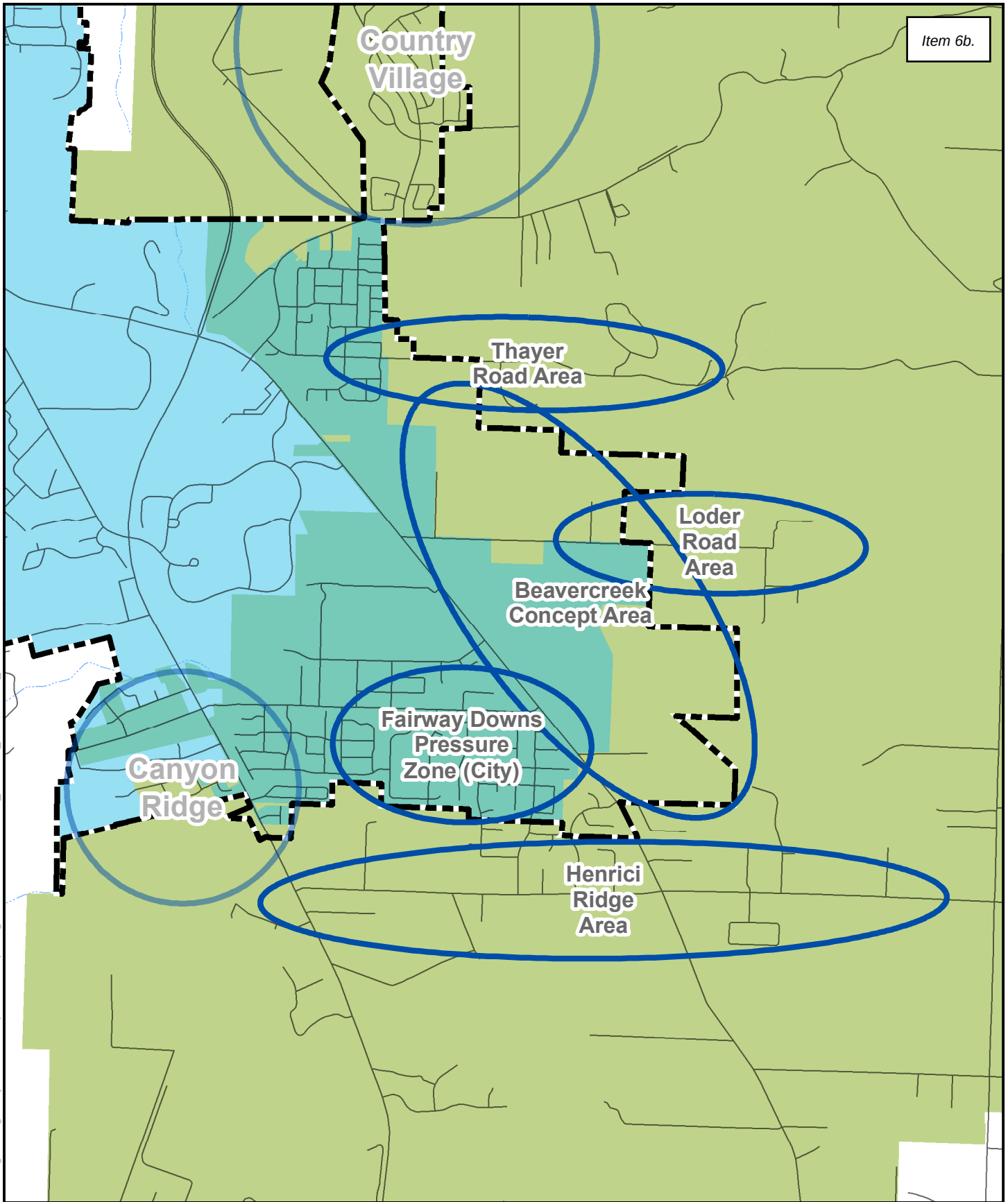
Focus Areas:

- South End
- Central Point
- Canyon Ridge
- Leland McCord
- Country Village
- Beavercreek
 - Beavercreek Concept Plan
 - Fairway Downs
 - Thayer and Loder Roads
 - Henrici Ridge
 - Park Place
- HOPP/Barlow Crest

Study Area Discussion

The following section details existing conditions, dual interests, and proposed solutions for each study area. While specific solutions are unique, the general goals described in the previous section helped drive a common approach to the solution process.





Urban Growth Boundary (UGB)

Oregon City City Limits

Clackamas River

Water District Boundary

Areas of Overlap

Focus Area

Beaver Creek Areas

Road

River

1 inch = 2,000 feet

N

Oregon City - Clackamas River Water Joint Engineering Study

Figure 2B

Study Area - Beaver Creek

murraysmith

OREGON CITY

Page 395

16-1922

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Comments Regarding Mapping

The figures in this section present the existing and proposed service conditions in the focus areas. Existing infrastructure is color coded: dark blue represents City ownership, green CRW ownership, light blue joint ownership, and yellow SFWB or other ownership. Taxlots currently served by CRW are highlighted in colors representing either their existing or future service category. City taxlots have not been highlighted because there is assumed to be no change of service at the individual customer scale. Future conditions maps are only presented if deemed necessary and are intended to be used as a guide for long-term service; intermediate steps may be necessary to achieve this configuration and other alternatives may be preferred, based on actual timing and character of annexation and urban development. Finally, all mapping is limited by the accuracy of the data provided by the City and CRW. Best efforts have been made to resolve lingering inaccuracies but due to ongoing service transitions and the nature of two separate system databases, some inaccuracies are likely.

South End

The South End Concept Area is a prime example of dual interests that arise when service transitions occur without a long-term service plan. As the City developed, the geopolitical boundary and service area expanded south into CRW service areas, effectively isolating the CRW South End Area from the rest of the CRW system. Additionally, City annexation occurred at the individual taxlot level, resulting in an inconsistent patchwork of City and CRW service areas and infrastructure. Both providers will continue to collaborate to develop a long-term solution in this area. In this study, the existing condition will be explained and key areas of agreement will be noted, but a finalized solution and transition phasing was not developed.

Most customers in the South End Area are served via a jointly-owned 12-inch diameter transmission main in South End Road and supplied with water wheeled through the City system from the SFWB WTP. CRW customers south of Impala Way are master metered, while north of Impala Way CRW and City mains are served as City customers and CRW joint users. **Figure 3** presents the existing system infrastructure and service provider for taxlots currently served by CRW in the South End area.

Both providers have recognized the need for a consistent approach to service and infrastructure transitions in South End. To achieve this goal, policy-level agreements are required, including:

- A remuneration methodology and agreement for the transfer of infrastructure assets
- An updated cost-assignment for installation and maintenance of shared and interfacing (master meter) infrastructure
- A methodology and agreement of triggers for the transfer of service area
- A methodology and agreement for wheeled service (master meter or Joint User status) and development of a wheeling charge

Each of these policy level agreements will continue to appear throughout the discussions of the dual interest areas and are explained in greater detail in the **Typical Dual interest/Solutions** section

UPPER ZONE (CITY)

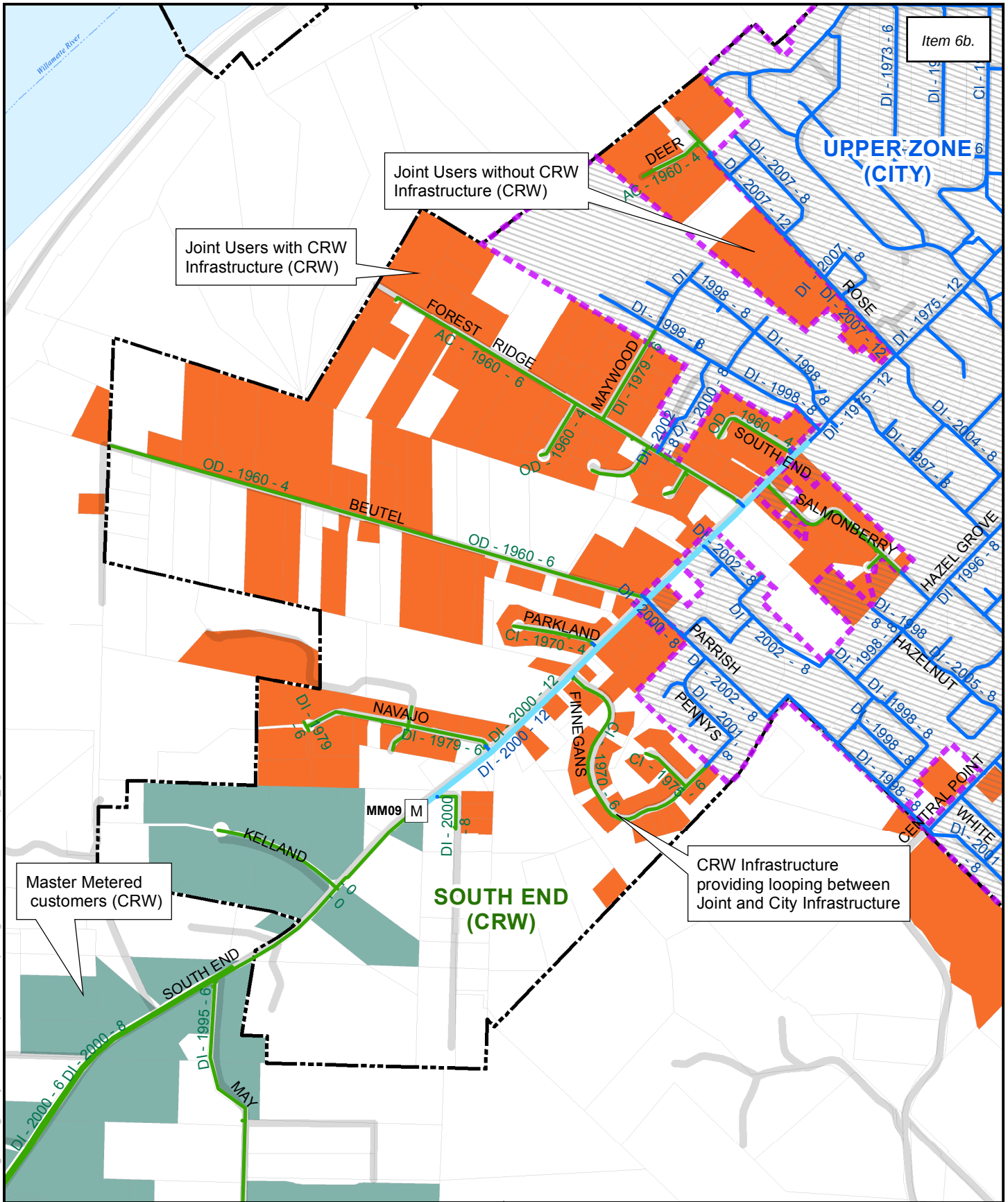
Joint Users without CRW Infrastructure (CRW)

Joint Users with CRW Infrastructure (CRW)

CRW Infrastructure providing looping between Joint and City Infrastructure

Master Metered customers (CRW)

SOUTH END (CRW)



UGB
 City Limits
 Joint
 CRW
 City
 SFWB

Current Service

 Master Meter
 Joint User

1 inch = 1,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 3 - Existing South End

Page 397

16-1922

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(page 19 of this report). Given the complexity of the South End area water service boundary overlap and uncertainty of future development timing and character, a specific plan for service transfers and infrastructure/territory withdrawal was not developed. A general understanding that the City will ultimately annex and withdraw all territory within the UGB was agreed upon.

Resolution: Ongoing collaborative communication and planning will be required; service agreements (especially Joint User) addressing ongoing leak detection and mitigation.

Central Point

The Central Point area is an example of incomplete annexation and withdrawal. Existing infrastructure in the area is entirely City owned and CRW customers are classified as Joint User served via City mains. **Figure 4** illustrates the existing service configuration in Central Point.

Both providers agreed that given the lack of CRW infrastructure and the adjacent City service area, the City should provide service to all customers in this area. Recently, local development has been the primary driver of provider transitions, and additional efforts should be made to complete all transitions in the near future. There may be a few remaining taxlots outside the present UGB that will necessitate Joint User service, but within the UGB, all efforts should be made to withdraw these customers. One specific issue that will need to be addressed is the City's policy (Oregon City Municipal Code 13.04.260B) for water service outside the City limits. Currently, these customers pay 1.5 times the City retail rate.

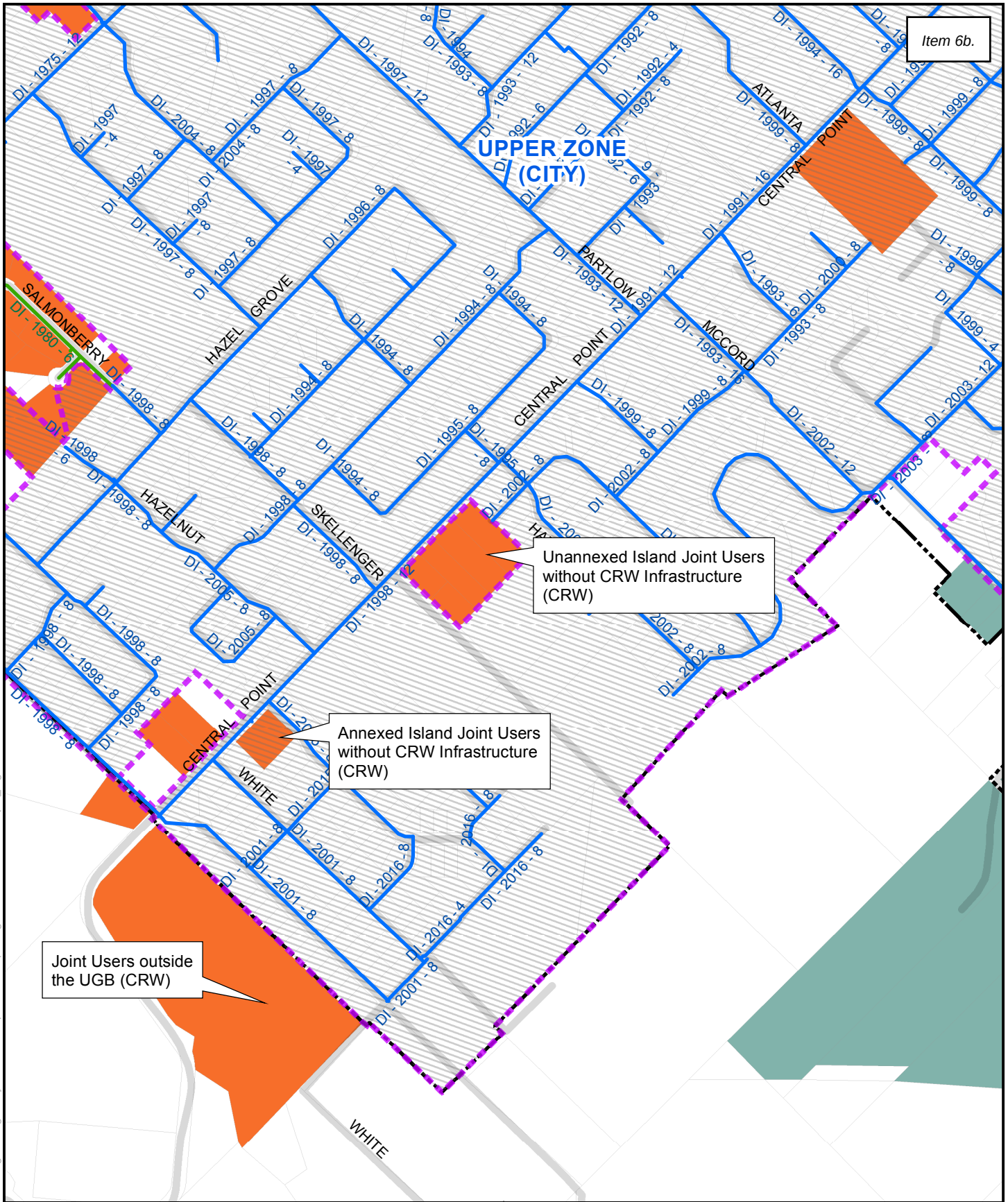
Resolution: All customers within the UGB to be withdrawn by the City; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.

Canyon Ridge

The Canyon Ridge area is another example of a CRW service area completely reliant on City supply, although without an intervening master meter. Existing service is provided by CRW through the Joint User agreement via CRW distribution mains in Canyon Ridge Drive and City mains in Molalla Avenue. Canyon Ridge customers are primarily single family homes within the UGB and outside of city limits while others CRW customers are large lots outside the UGB. **Figure 5** shows the current service configuration in Canyon Ridge.

City development west of Canyon Ridge is expected to require looping to the CRW main in Canyon Ridge Drive. To maintain service area continuity and minimize the need for redundant infrastructure, the City should annex and withdraw all CRW customers and infrastructure within the UGB. Taxlots outside the UGB will necessarily remain CRW Joint Use customers served from City mains. East of Molalla Ave these areas are Urban Reserve while west of Molalla customers are Rural Reserve and as such cannot be considered for UGB expansion for several decades, if ever.

Resolution: City to withdraw customers and infrastructure within the UGB; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.



Legend

- UGB
- City Limits
- Joint
- CRW
- City
- SFWB

Current Service

- Master Meter
- Joint User

N

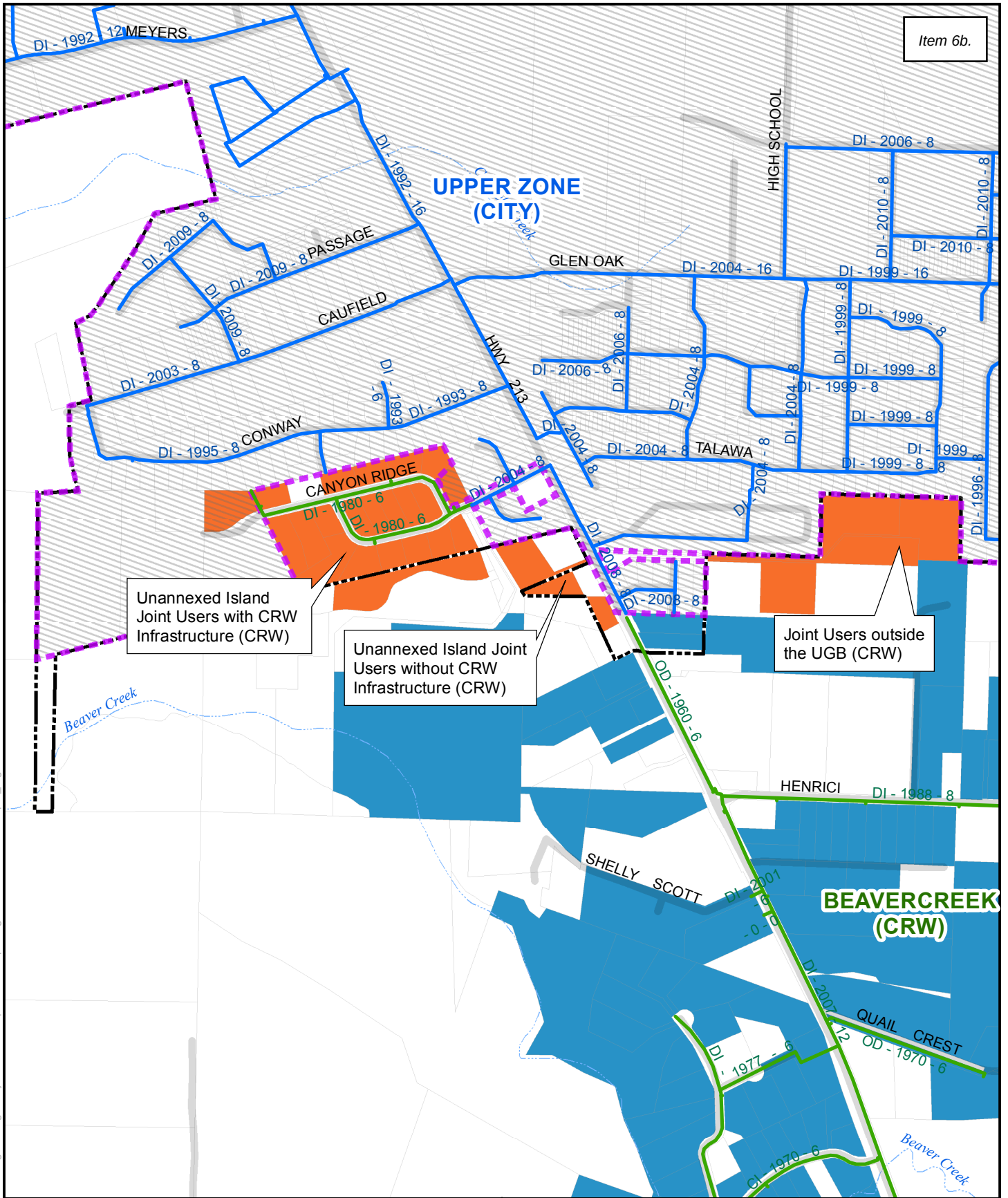
1 inch = 600 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 4 - Existing Central Point

Page 399

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Leland McCord

The Leland McCord area is similar to the South End area in that supply to CRW customers is entirely dependent on water wheeled through the City system. The City supplies water to a master meter at the intersection of Leland and Meyers Road. CRW and City mains run parallel in Leland Road to just south of Kalal Court, beyond which CRW mains continue in Leland past the UGB. Additional City development and infrastructure has continued along the south-east edge of the UGB, further isolating CRW service area. **Figure 6A** shows the existing infrastructure and service boundaries in the Leland McCord area.

Following the logic used for South End and Central Point, the City should serve customers in the Leland McCord area within the UGB. A master meter should be installed at the UGB to serve remaining CRW customers outside the UGB from the existing CRW distribution main. **Figure 6B** shows the long-term resulting infrastructure and customer configuration after transfers.

Recent City development south of Jessie Ave to the UGB has extended City infrastructure to the point where looping through the CRW service areas is required and will necessitate either redundant infrastructure or infrastructure withdrawal. However, most of the CRW infrastructure is failing 1960's steel pipe which the City will not withdraw from the district. Both parties prefer to minimize the construction of unnecessary parallel infrastructure. CRW, however, is reluctant to replace the mains without guaranteed return on investment while the City is unwilling to accept the immediate risk by withdrawing the failing infrastructure. Development of a remuneration policy for infrastructure withdrawal would minimize investment in parallel infrastructure, and incentivize system renewal in dual interest areas to the benefit of both City and CRW customers.

Resolution: Continued collaboration; eventual transition to City service within UGB with development; Master meter for customers outside the UGB; City to pursue current extraterritorial service policy change; collaboration for replacement of Leland Road and McCord Road CRW mains applying the remuneration methodology.

Country Village

Country Village is unique in that it is an area served by CRW with limited drivers for development already within the UGB. The area is served by CRW from a single critical transmission main that is not eligible for City withdrawal. This CRW transmission main is the primary supply main from the CRW Holly Lane Pump Station to the CRW owned Henrici Reservoirs, feeding SFWB wholesale water to CRW's Henrici and Beaver Creek pressure zones. Because the main is vital to the CRW transmission network, a redundant line would be necessary for the City to annex, withdraw, and provide service. **Figure 7** illustrates the focus area, key infrastructure, and service areas.

Master Meter supplying
CRW Leland/McCord area

MM08

Parallel City/CRW
mains along Leland Rd

UPPER ZONE
(CITY)

Aging CRW
Infrastructure

Recent City development
and system expansion

LELAND McCORD
(CRW)

-  UGB
-  City Limits
-  Joint
-  CRW
-  City
-  SFWB

Current Service

-  Master Meter
-  Joint User


N
1 inch = 600 feet

Oregon City - Clackamas River Water
Joint Engineering Study

**Figure 6A - Existing
Leland McCord**



CRW Infrastructure
to be abandoned -
Master Meter and Leland main

Planned CRW replacement
with withdrawal and
remuneration

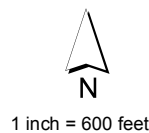
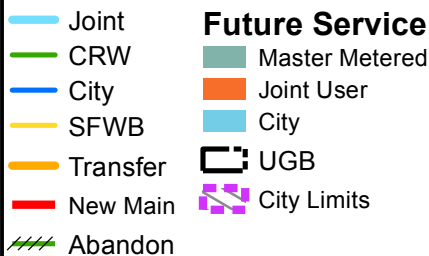
Transfer and loop
to City infrastructure

Master Meter moved
to UGB (CRW)

UPPER ZONE
(CITY)

LELAND McCORD
(CRW)

Leland MM



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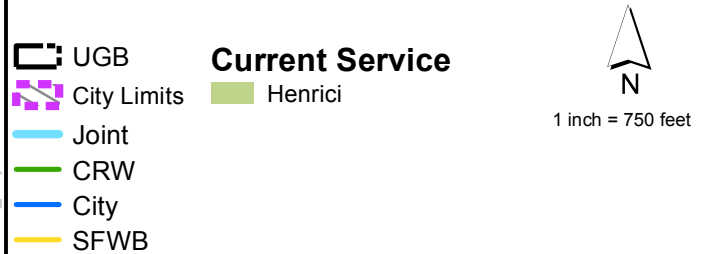
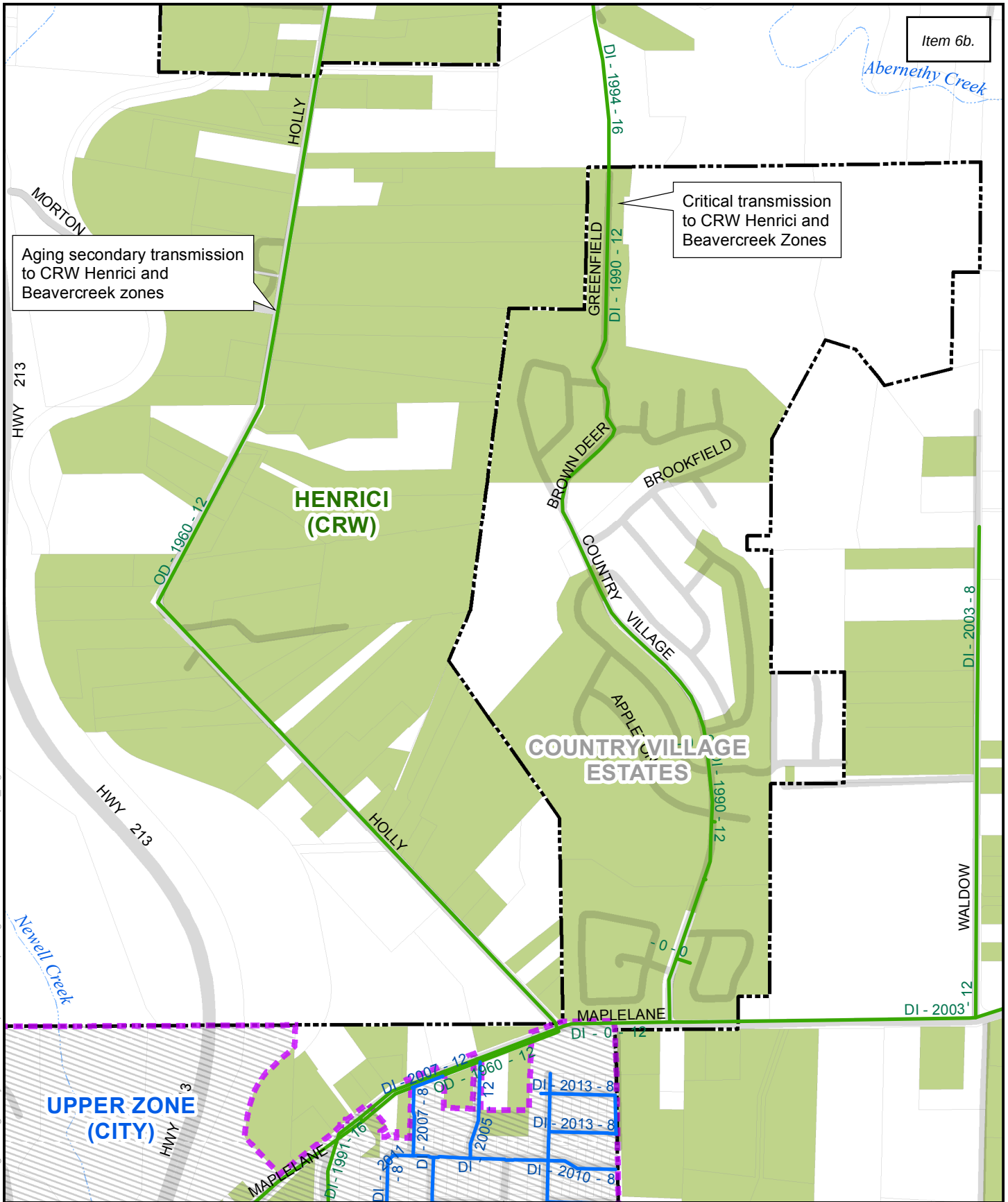
**Figure 6B - Future
Leland McCord**



Abernethy Creek

Critical transmission to CRW Henrici and Beaver Creek Zones

Aging secondary transmission to CRW Henrici and Beaver Creek zones



Oregon City - Clackamas River Water Joint Engineering Study

Figure 7 - Existing Country Village

OREGON CITY

murraysmith

Page 404

16-1922

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Additionally, the area is not adjacent to other City service and there is minimal development expected between Country Village Estates and City service areas. Although customers are within the UGB, CRW should continue to serve existing and future customers in the area, until such a time that the City has either built out infrastructure to serve the area or redevelopment requires annexation and extension of other City services to the area.

Resolution: No change from present service arrangement.

Beavercreek and Surrounding Areas

Service to the Beavercreek area affects recommendations for both City and CRW service areas including the City's Beavercreek Concept Area, the City's Upper Zone, the City's Fairway Downs Zone, CRW's Beavercreek Zone, CRW's Henrici Zone, the Henrici Ridge Area, and the City's Park Place Concept Area. Because the Beavercreek area is so highly linked to both systems, an opportunity to minimize redundant existing and future facilities, and potentially provide additional flexibility and resiliency to both systems, is present if both providers agree to the development of jointly owned facilities.

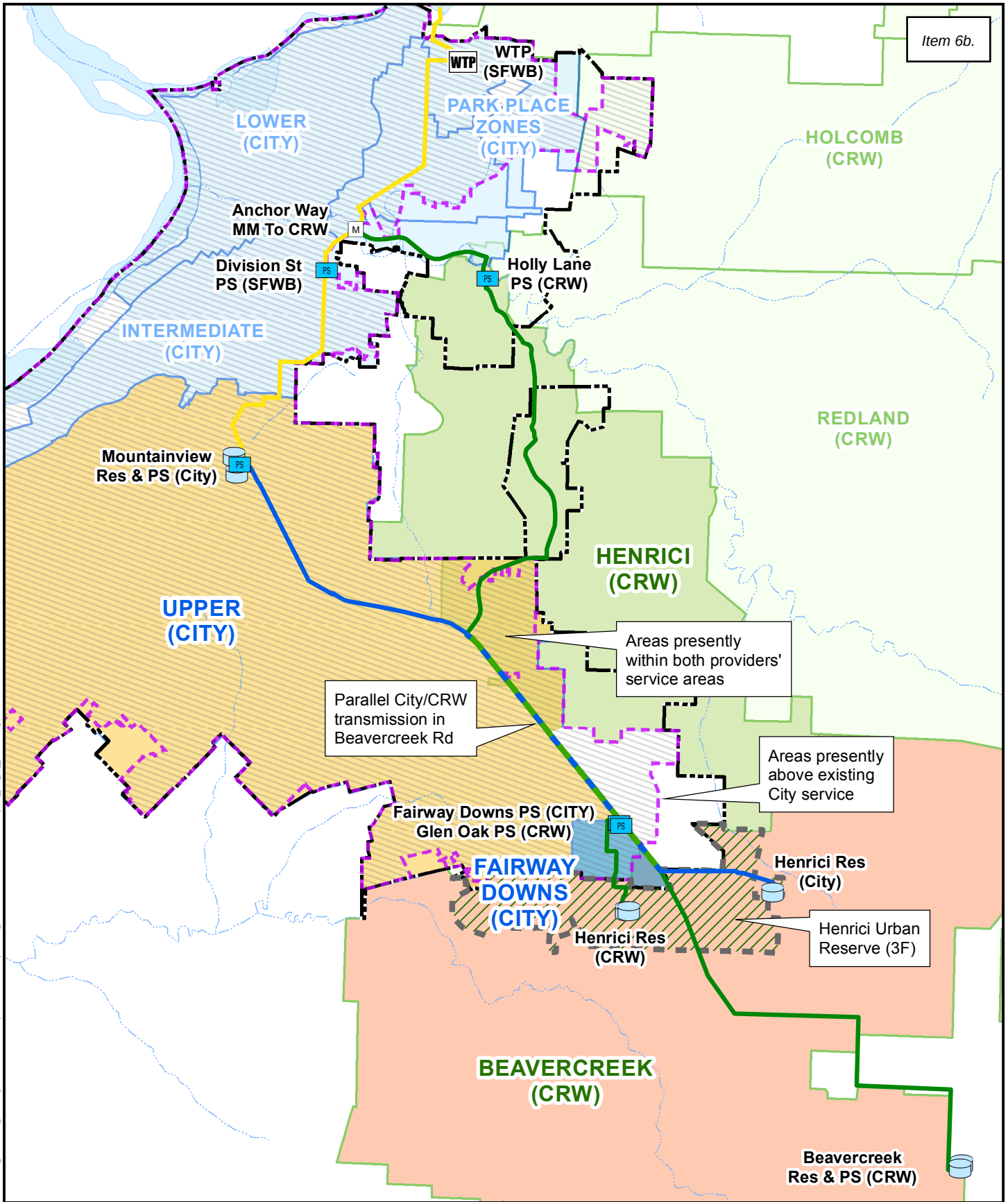
Existing Service

Currently, CRW and the City have essentially duplicate pressure zones at similar hydraulic grades serving partially redundant areas: CRW's Henrici zone (590 ft reservoir overflow) and the City's Upper zone (592 ft). The City's Upper Zone serves most of the southern part of the City within the UGB while CRW's Henrici Zone serves areas outside the UGB and provides some overlapping service along the eastern limits of the UGB.

Because of these essentially redundant zones, there are two separate pathways for water to reach an HGL of 590 ft. Within the City's system, water can be pumped from the SFWB WTP via the SFWB Division Street Pump Station to the City's Intermediate Zone (490 ft), then via the City's Mountainview Pump Station to the City's Upper Zone and City Henrici Reservoir (592 ft). Within CRW's system, water can be delivered from the SFWB WTP through the Anchor Way master meter, then pumped via the CRW Holly Lane Pump Station to the CRW Henrici Zone and CRW Henrici Reservoirs (590 ft). Two interties exist between the two systems at the 590 ft level, and could allow for supply in either direction.

Both systems also provide service to elevations requiring hydraulic grades greater than 590 ft. The City serves the closed Fairway Downs Pressure Zone (652 ft) via the Fairway Downs Pump Station. Supply to this zone is provided by the City's Upper Zone. CRW serves the Beavercreek Pressure Zone (744 ft) via the Glen Oak Pump Station. Supply to this zone is provided by CRW's Henrici Zone.

Figure 8 illustrates the configuration of existing infrastructure serving the Beavercreek area and associated service areas.



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UGB

City Limits

CRW

City

SFWB

Parallel City/CRW

PRESSURE ZONES

City

CRW

N

1 inch = 3,750 feet

Oregon City - Clackamas River Water Joint Engineering Study

FIGURE 8 - EXISTING BEAVERCREEK

Page 406

16-1922

Expected Development

Development is expected in the Beavercreek area, although there is uncertainty over timing and extent. Within the UGB and north of Beavercreek Road, the City's Beavercreek Concept Plan calls for a mixed-use neighborhood. This development is expected to be served primarily by the City's Upper zone, and elevations above 480-ft (approximately south of Loder Road) will require a hydraulic grade similar to the City's existing Fairway Downs zone. However, the City's existing Fairway Downs Pump Station does not have capacity for this expansion and additional investment will be required to serve this area.

Continued development is expected in the CRW service areas outside the UGB, with the added confusion of possible service area withdrawal within the development timeframe. This is especially key for the Henrici Ridge area, which is currently designated as Urban Reserve and will be among the areas next considered for UGB expansion. When that occurs, City service to the area (to be consistent with service area goals) would require an even higher hydraulic grade than the City's Fairway Downs zone.

To meet the developing needs of the Beavercreek area, additional storage and transmission facilities will be required for both the City and CRW. Both providers have independently developed alternatives for service to the area, and through extensive discussions, we have developed a shared infrastructure alternative that may be more cost effective and in-line with the providers' goals set forth earlier in this report.

Demand and Storage Characterization

Existing and buildout demands and storage capacities for applicable CRW and City service areas were calculated and are presented in **Table 2**. For this analysis, storage needs for the existing pressure zones serving elevations in the Beavercreek area and the pressure zones supplying these zones were evaluated. Service area transfers likely to occur were included in buildout figures. Based on these estimates, the City will need to build additional storage at the City's Upper zone elevation and CRW will require additional storage at the CRW Beavercreek zone level. A summary of key assumptions for this analysis follows:

- Since the existing City Fairway Downs zone does not have existing storage, the *Existing Average Day Demand* (ADD) of this zone is included in the City Upper zone demands for the purposes of calculating existing storage needs. This also applies to demands for the CRW areas served from master meters at South End and Leland.
- *Build-out Average Day Demand* is based on recent planning documents and future service area boundaries described in this report. A comprehensive analysis of City and CRW pressure zone boundaries and a refined estimate of build-out development needs has not been completed. This analysis is intended to provide an order of magnitude estimate of storage volume needs for the purpose of evaluating alternatives.

- *Total Available Storage* is based on the volume of storage currently serving each pressure zone. For the City's Upper Zone, the 2010 Water System Master Plan considers the full volume of the City's Mountain View Reservoir No. 1, which provides suction supply to the City's Mountain View Pump Station serving the Upper zone, to be available storage for the Upper zone. This assumption should be verified before final decisions regarding City Upper zone storage needs are made, as it could result in a change to the long-term storage need in the Upper zone.
- *Existing Storage Need* and *Build-out Storage Need* are the sum of the three components of water system storage – equalizing, fire suppression and emergency – as defined in each water provider's Water System Master Plan. These volumes are calculated based on the zone's existing and build-out demand projection.
- *Existing Available Capacity* and *Build-out Available Capacity* are calculated as the difference between the *Total Available Storage* and *Existing (or Build-out) Storage Need* for the zone. A negative value represents a capacity deficit.

Table 2
Beavercreek Area Demands and Storage Capacity

	Existing Average Day Demand (MGD)	Build-out Average Day Demand (MGD)	Total Available Storage (MG)	Existing Storage Need (MG)	Existing Storage Surplus (MG)	Build-out Storage Need (MG)	Buildout Storage Surplus (MG)
City Upper	2.9	5.5	14.5	9.1	5.4	16.5	-2.0
City Fairway Downs	--	0.6	--	--	--	1.8	-1.8
CRW Henrici	0.2	0.2	1.5	0.6	0.9	0.6	0.9
CRW Beavercreek	0.6	1.7	2.0	1.8	0.2	4.7	-2.7

Notes:

1. MG = Million Gallons; MGD = Million Gallons per Day

The individual and shared infrastructure alternatives will need to address these storage requirements to be considered viable. **Table 3** presents a summary of each alternative and planning level cost estimates for service to the Beavercreek Area. More detailed descriptions of each alternative are given in the following sections.

Table 3
Supply Alternatives to the Beavercreek Area

City Independent Infrastructure Alternative				CRW Independent Infrastructure Alternative			Shared Infrastructure Alternative			Preliminary Buildout Cost Sharing			
Item		Size	Total Cost ¹	Item		Size	Total Cost ²	Item		Size	Total Cost ³	City Cost	CRW Cost
Pump Stations	Fairway Downs Improvements		100,000	Beaver Lake	3MGD	1,700,000	New Station at the City's Henrici Site	3MGD	1,700,000	500,000	1,200,000		
	Beavercreek	2 MG	4,000,000	Beavercreek Elevated	3.5 MG	7,000,000	Beavercreek Elevated	2x2.75 MG	11,000,000	4,000,000	7,000,000		
Transmission	Fairway Downs Pump Station to New Reservoir	16-inch 10,750 lf	3,400,000	Grasle Road	12-inch 13,480 lf	3,200,000	New Pump Station to Beavercreek Reservoirs	12-inch 3,200 lf	800,000	200,000	500,000		
	Total \$ 7,500,000			Total \$ 11,900,000			Total \$ 13,500,000			\$ 4,700,000	\$ 8,700,000		
									Cost decrease:	37%	27%		

Notes:

1. City costs updated from 2013 City Technical Memo
2. CRW costs updated from 2015 Backbone Project Memo
3. Unit costs for shared infrastructure solution – reservoir 2\$/gal; Pipe 20\$/in-lf
4. Joint costs consistent with CRW pump station cost, study unit costs
5. Cost division based on buildout demand for pump station and transmission piping, storage requirements for elevated reservoirs

The values presented are only planning level estimates and need to be verified prior to development of infrastructure designs. In particular, the capacity of existing City Upper Zone and CRW Henrici zone transmission piping to supply the expanded Beavercreek service area at build-out will need to be confirmed as additional transmission improvements to address existing deficiencies may have a significant impact on cost estimates.

A. City Service to Beavercreek Concept Area and Fairway Downs

In the Oregon City Technical Memorandum dated November 5, 2013, the City presented three options to serve the Beavercreek area within the UGB. Based on our understanding that CRW does not have excess capacity in the existing CRW Beavercreek Reservoirs, two of the three options are infeasible. The remaining option for the City would be to build a new 2 MG Beavercreek Reservoir with a 16-inch diameter transmission main and improve the existing Fairway Downs Pump Station (City Independent Infrastructure Alternative in **Table 3**).

Additional costs and political investment would be incurred during the land acquisition and permitting process. The City does not currently own property for a reservoir at the proper elevation. This is a significant hurdle, and should not be disregarded.

While the City has planned for service within the existing UGB, the planning does not provide adequate pressures for the Henrici Ridge area that is currently designated as Urban Reserve. If this alternative is selected, the City will need to consider capital costs for additional infrastructure to serve this higher elevation area once development occurs.

B. CRW Service to Beaver Creek Pressure Zone and Fairway Downs

CRW's current planning for improved service to their Beaver Creek pressure zone is part of the larger CRW Backbone Project. Overall, the project is designed to improve system connectivity and transmit water from the CRW WTP to CRW service areas south of the Clackamas River. Phase 1 of the Backbone Project is currently in various stages of design and construction and will transmit water to the Redland Reservoirs and associated pressure zone. Phase 2 would construct transmission and pumping improvements to transmit water from the Redlands Reservoirs south to the Henrici and Beaver Creek pressure zones as well as north to the Holcomb pressure zone (CRW Independent Infrastructure Alternative in **Table 3**).

Phase 2 currently plans for service to the entire existing Beaver Creek pressure zone. However, it is probable that some of this area will eventually be City territory and supplied by the City, rendering some of the Phase 2 facilities oversized and unused with remaining useful life. CRW cost estimates in Table 3 were updated similarly to City estimates, and storage capacity in the elevated tank was decreased to reflect the volume required to serve CRW customers to buildout.

C. Shared Infrastructure to Serve the Beaver Creek Area

Typical of dual interests between the City and CRW, planning in the Beaver Creek area has been limited by boundaries that are subject to change. It is expected that the lifespan of infrastructure built now will extend beyond the lifespan of the current UGB. Opportunity to develop shared infrastructure to serve both providers' customers and facilitate transfer of service area without construction of parallel redundant infrastructure is a goal of this study. Already, the City and CRW serve similar elevations from their Henrici Reservoirs. Emergency interties exist between the two systems and additional overlap of service and infrastructure is expected with continued development if coordination does not occur.

To optimize the use of existing infrastructure, one possible alternative would be a new pump station at the City's Henrici Reservoir to replace CRW's Glen Oak Pump Station, new transmission main along Henrici Road to increase the capacity of CRW's existing transmission to CRW's Beaver Creek Reservoirs, and two new elevated tanks at the existing CRW Beaver Creek Reservoir site for additional storage for both providers (Shared Infrastructure Alternative in **Table 3**). A PRV and meter could be installed at the existing City Fairway Downs Pump Station to supply the City's expanded Fairway Downs zone.

Benefits of Shared Infrastructure Development

Shared infrastructure will allow for greater flexibility with construction phasing, minimize the land acquisitions required, provide redundant supply pathways, reinforce emergency supply pathways

and allow for future infrastructure consolidation. Other potential benefits include minimizing operational & maintenance costs and future infrastructure renewal needs.

Given the uncertainty of development timing, shared infrastructure could be built in stages, with existing facilities providing supply until upgrades are required. The shared Beavercreek Reservoirs could be built one at a time, allowing for future demolition of the existing ground level tank to provide a site for the second elevated tank. The CRW Glen Oak Pump Station can continue to be used to supply the Beavercreek zone as is, until the new shared Henrici Pump Station is completed. When the UGB is expanded and/or CRW areas are annexed by the City, shared infrastructure would simplify the transition process because independent infrastructure service to the area would require significant parallel and costly redundant facilities throughout the area. Ultimately, with a shared solution there will be opportunity to decommission aging redundant facilities when the cost to maintain these facilities exceeds their value as backup infrastructure. This is specifically true for the City's existing Fairway Downs Pump Station, CRW's Henrici Reservoir and CRW's Glen Oak Pump Station.

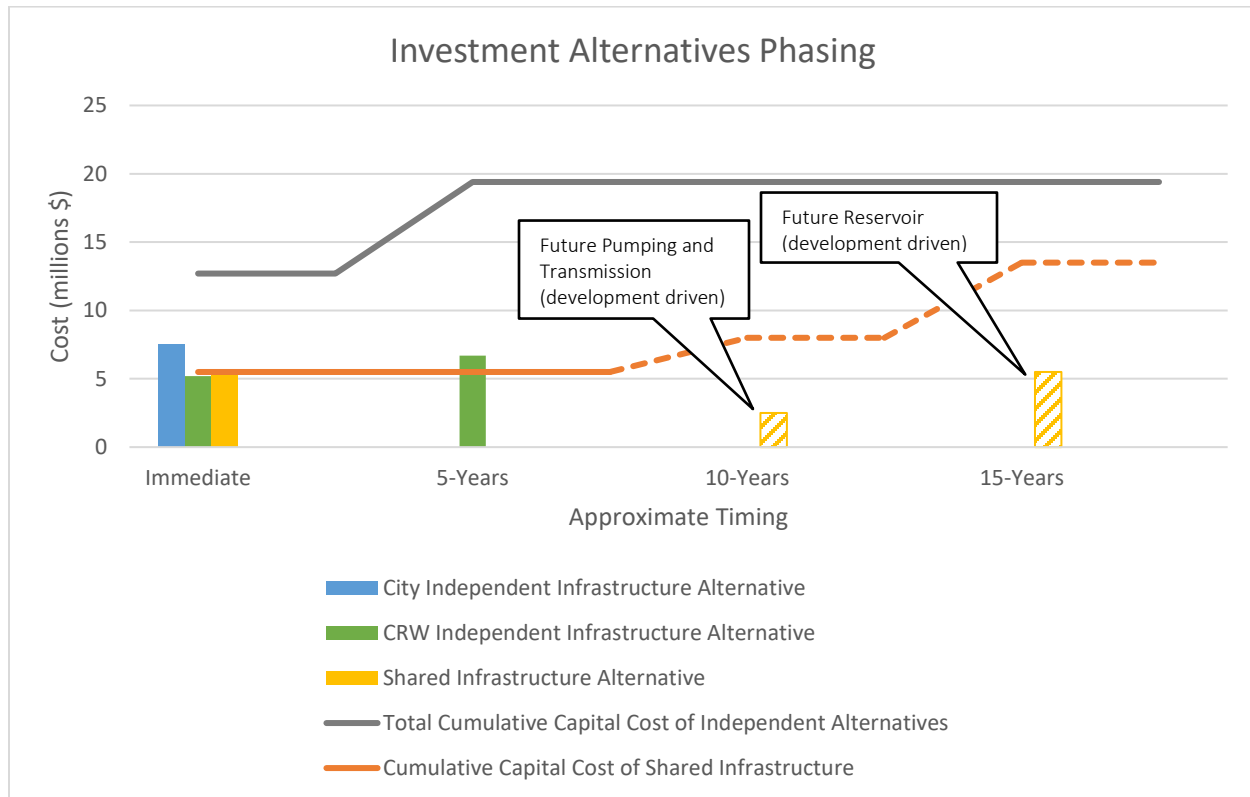
Figure 9 illustrates the capital cost over time of the individual and shared infrastructure alternatives. The shared infrastructure alternative is based on a potential phasing schedule, with the first reservoir built immediately, the transmission and pump station built in 10 years, and the second reservoir built in 15 years. These dates are conceptual to illustrate the potential phasing opportunity and are dependent on development of the City's Beavercreek concept plan area. The individual alternatives must be built within the next 5 years, if not sooner, with limited flexibility for shifts in development timing.

Utilizing existing infrastructure will minimize both monetary and political cost of additional land acquisition for new infrastructure siting. The City's Henrici Reservoir site has capacity for both a new pump station and additional reservoir, if deemed necessary in the future. CRW's Beavercreek site has capacity for at least one additional reservoir, with a second reservoir potentially able to be built at the site of the existing ground level tank.

The shared infrastructure alternative will also provide redundant pathways for service and emergency supply to the Beavercreek and Fairway Downs zones. Given recent emphasis on seismic resiliency this redundancy aligns with resiliency goals. The primary supply via the SFWB Division Street Pump Station and the City's Mountainview Pump Station have adequate supply for normal service. The secondary supply via the master meter at Redland and Anchor Way, the CRW Holly Lane Pump Station, and the emergency intertie between the City and CRW at Beavercreek provides redundancy not necessarily guaranteed in independent infrastructure alternatives.

Another benefit of a shared infrastructure alternative is the potential for continued consolidation of redundant and aging infrastructure. As the system is served today, the City and CRW have redundant pressure zones at the 590 HGL. Four tanks, (two CRW and two City-owned), serve this zone, although none of the tanks currently meet updated seismic standards and some are approaching the end of their useful lives. A shared infrastructure solution lays the groundwork for continued development of efficient infrastructure investment through partnership.

Figure 9
Infrastructure Investment Phasing Alternatives



Service Transitions in Affected Areas

Within each pressure zone, there are additional specific areas that will be affected more than others by the solutions to serve the Beavercreek Area.

Thayer and Loder Roads:

At present, CRW supplies customers along Thayer and Loder Roads via CRW distribution mains branching from the CRW transmission line along Beavercreek Road. Both mains begin within city limits and extend outside the UGB. In both cases, areas within the UGB are part of the City's Beavercreek Concept Area and should be annexed and withdrawn by the City. The City will then need to connect the existing CRW mains in each road to the City transmission main in Beavercreek Road. This will transition supply from the CRW Henrici zone to the City's Upper zone. At the UGB, master meters or Joint User status may be negotiated to supply remaining CRW customers outside the UGB.

Henrici Ridge:

Henrici Ridge is the area just south of the UGB along Henrici Road that cannot be served by the City's existing grades. As an Urban Reserve area, it is expected to eventually be annexed into the UGB and City service. If the shared infrastructure alternative is not selected, future service by the City to this area will require significant investment in parallel infrastructure.

Park Place Concept Area:

The Park Place area is located entirely within the UGB and outside of city limits. The area, currently served by CRW, is supplied from SFWB via the Redland and Anchor Way Master Meter and pumped up to higher pressures by the Holly Lane or the Redland Pump Stations (see **Figure 10A**). Until urban development occurs, the area should be served as is.

The 2008 Park Place Concept Plan calls for a City distribution network starting south of Ogden Middle School and connecting north to existing City distribution mains along Holcomb Boulevard. A reservoir at Holly Lane and Morton Road is proposed to provide additional storage.

Given the limited number of existing services, it is recommended that the providers plan for future City service to the entire Park Place area. CRW will need to maintain transmission from the existing Anchor Way MM through Park Place to reach CRW's Holly Lane and Redland Road Pump Stations. Some existing CRW transmission infrastructure through this area is aging and will need to be replaced. It is suggested both providers fund a shared transmission main from the master meter to Holly Lane.

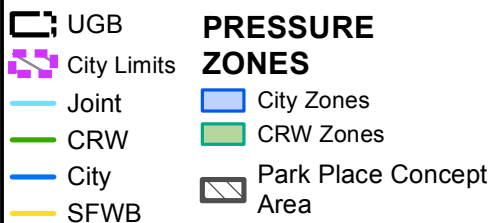
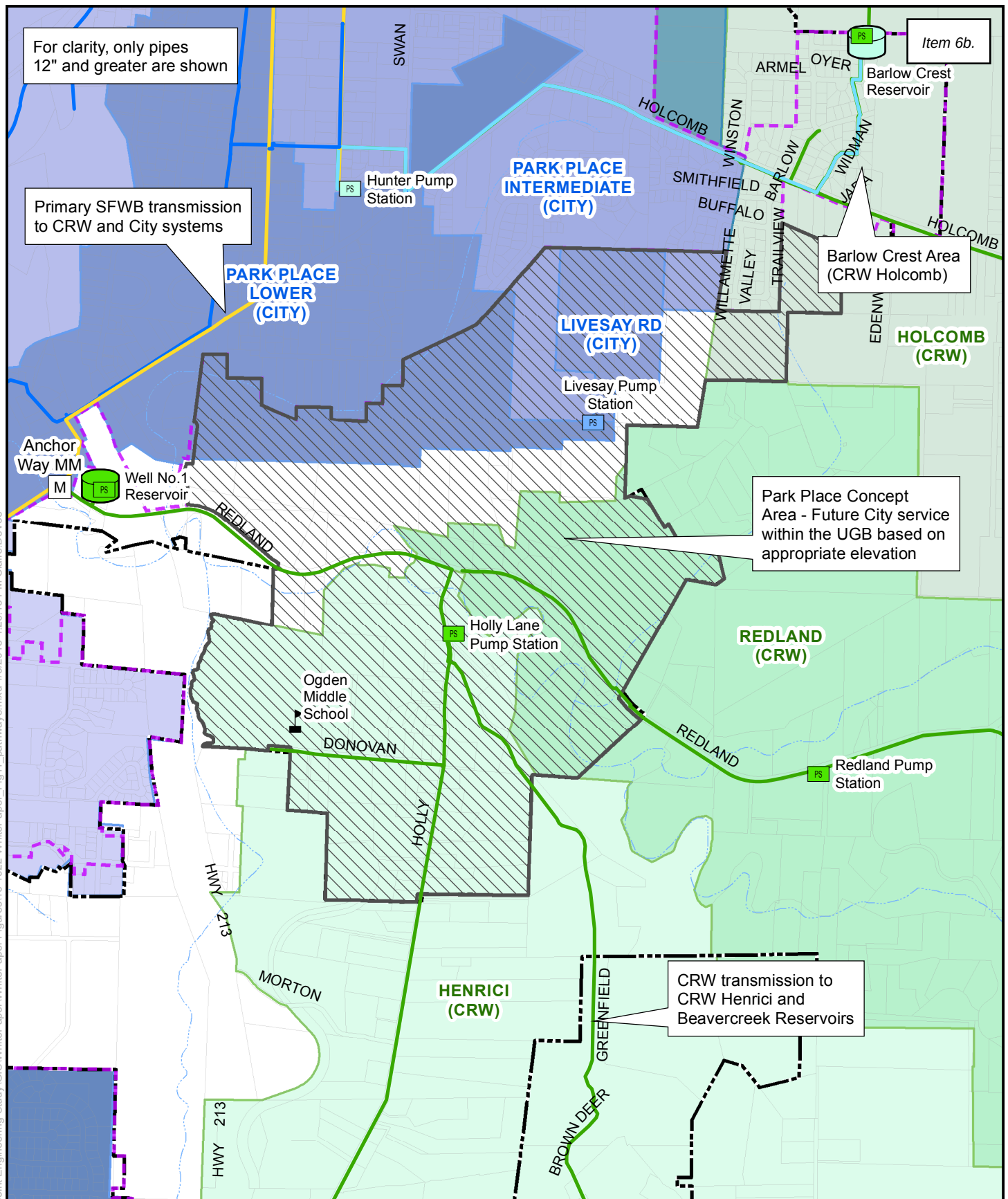
Existing CRW infrastructure is critical for CRW supply from the SFWB supply at Master Meter 02 to the CRW system. As such, the only water mains that may be eligible for withdrawal and remuneration are a portion of the CRW 12-inch diameter steel main in Holly Lane, extending south from CRW's Holly Lane Pump Station to the UGB, and a CRW 12-inch diameter ductile iron main in Donovan Road that serves the middle school. The possible shared improvement along Redland Ave would require relocating the Anchor Way Master Meter to Holly Lane (which would become a City to CRW master meter) and would replace aging infrastructure and serve the common needs of both utilities – water transmission backbone piping in Redland Road between Anchor Way and the UGB.

Figure 10B illustrates the proposed future service area and infrastructure withdrawals.

In order to accommodate the phased development of the Park Place area, the City should develop a detailed Park Place water service master plan to include:

- Confirmed siting, configuration, and capacity of future storage identified as the proposed Holly Lane Reservoir
- Confirmed water main sizing and backbone transmission facilities to serve the Lower Park Place pressure zone, including SFWB transmission main connections and pressure reduced supply from the Intermediate Park Place pressure zone

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1 inch = 1,250 feet

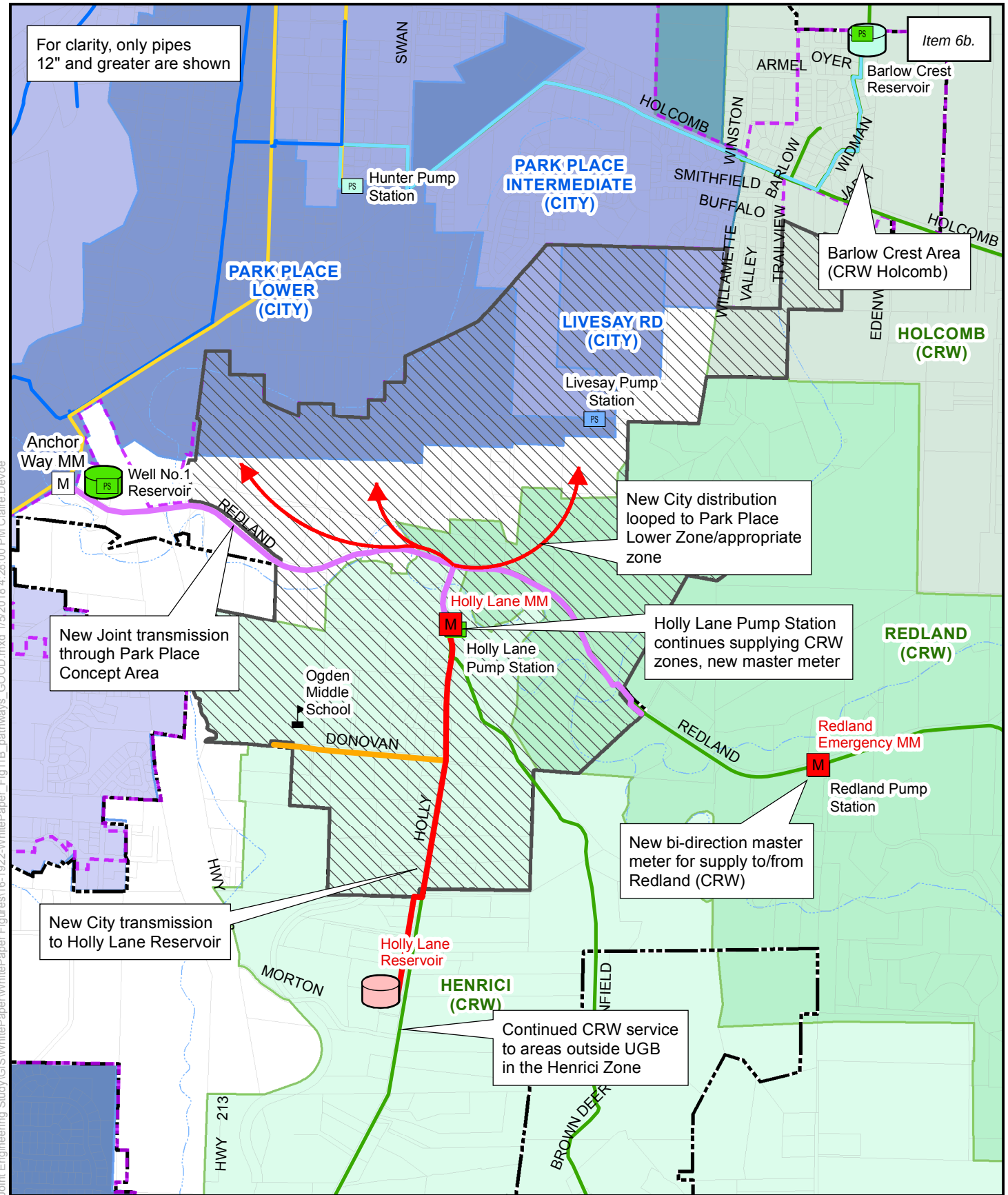
Oregon City - Clackamas River Water
Joint Engineering Study

**FIGURE 10A - EXISTING
PARK PLACE**



For clarity, only pipes 12" and greater are shown

Item 6b.



New Joint transmission through Park Place Concept Area

New City distribution looped to Park Place Lower Zone/appropriate zone

Holly Lane Pump Station continues supplying CRW zones, new master meter

New bi-direction master meter for supply to/from Redland (CRW)

New City transmission to Holly Lane Reservoir

Continued CRW service to areas outside UGB in the Henrici Zone

Joint

CRW

City

SFWB

Transfer

New City

New Joint

PRESSURE ZONES

City Zones

CRW Zones

Park Place Concept Area

UGB

City Limits

1 inch = 1,250 feet

N

Oregon City - Clackamas River Water Joint Engineering Study

FIGURE 10B - FUTURE PARK PLACE

murraysmith

Page 415

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- Coordination with CRW to determine if new shared transmission in Redland Road is feasible and to determine if potential withdrawal of mains between Holly Lane and the UGB is feasible and desirable.

These studies will inform how infrastructure develops in the near-term and will support CRW development of additional infrastructure to provide limited service until annexation and withdrawal occurs with the full development of the City water system facilities to provide service.

Resolution: Continued discussions regarding shared storage and transmission infrastructure in the Beavercreek and Park Place areas; Partial developer driven transfers and potential master meter relocation to the UGB

HOPP/Barlow Crest

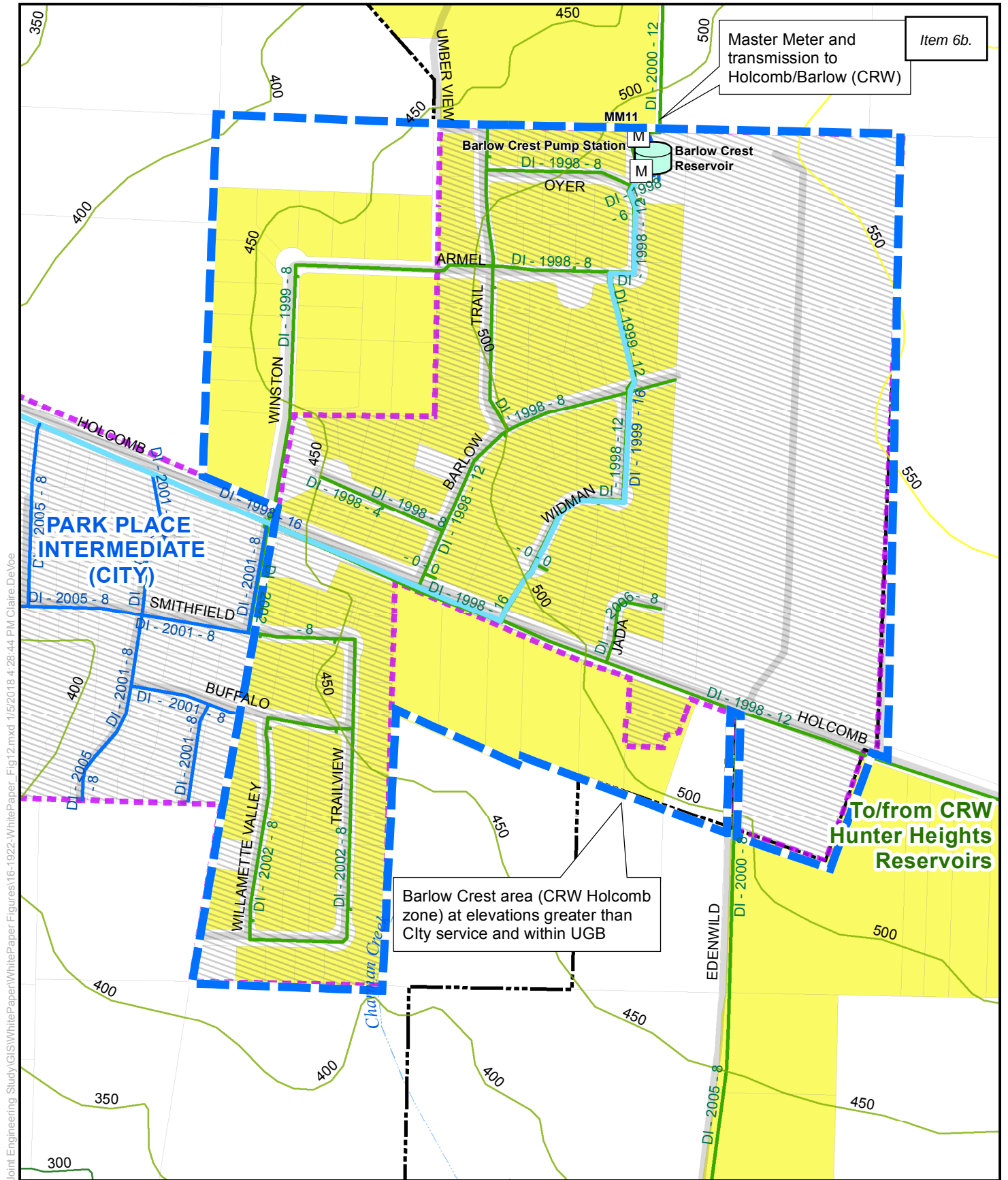
The Holcomb-Outlook-Park Place focus area includes the CRW Holcomb-Barlow master metered zone, the CRW Holcomb pressure zone, and City service areas near Holcomb Road. Existing service to the HOPP area was set up under the 1998 HOPP Agreement which terminates in the year 2028, and includes jointly owned facilities and transmission mains. Presently, the SFWB WTP is the sole water supplier to the area. **Figure 11** illustrates the focus area, critical facilities, and customer designations.

North of the City, the CRW Holcomb-Barlow zone is served via multiple master meters from the City's Park Place Intermediate zone. This area is not expected to develop in the near future and should continue to be served as is via master metering.

Similarly, within the existing City service area, City customers should continue to be served without change.

The main point of dual interest in the HOPP area is the CRW/City interface at Barlow Crest. The CRW Holcomb pressure zone (797-ft HGL) is currently supplied with SFWB sourced water wheeled through jointly funded infrastructure from the SFWB WTP to the jointly owned Barlow Crest Reservoir (549-ft overflow). The CRW Barlow Crest Pump Station pumps from the jointly owned Barlow Crest Reservoir to the CRW Hunter Heights Reservoirs (797-ft overflow) which provide gravity supply to the CRW Holcomb pressure zone.

Much of the CRW Holcomb zone located within the UGB has been annexed into the city limits. However, the City does not have the existing infrastructure to provide service to this area as the Barlow Crest Pump Station is an essential facility for CRW's supply to the Hunter Heights Reservoir which serves CRW's Holcomb pressure zone both inside and outside the UGB.



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-  UGB
-  City Limits
-  Joint
-  CRW
-  City
-  SFWB

- Current Service**
-  Holcomb
-  Barlow Crest Area


 N
 1 inch = 400 feet

**Oregon City - Clackamas River Water
Joint Engineering Study**



**Figure 11
HOPP/Barlow Crest**



Additionally, the CRW Backbone Project Phase 2 is proposed to include a new pump station and transmission facilities to boost water from the CRW Redland pressure zone to the Holcomb pressure zone/Hunter Heights Reservoir. This will provide a second supply route and water source to the Barlow Crest pressure zone. These improvements will allow CRW to supply the Holcomb zone from CRW's WTP.

Given the current understanding of the CRW Backbone Project, existing infrastructure, and the goals outlined in this white paper, there are two alternatives to consider:

A) Continued service as is, recognizing the City will continue to annex the land within the UGB but will not withdraw the territory from CRW. CRW would remain the service provider for the entire Holcomb pressure zone area inside and outside the UGB serving customers above an elevation of approximately 450 feet. The Phase 2 Backbone Project improvements would provide a second feed to the Holcomb pressure zone, allowing for a second source, the CRW WTP, to supply this area. The primary advantage of this option is that infrastructure and master meters are already in place to continue service as is for areas above an elevation of 450 feet. The primary disadvantage is that this alternative is not consistent with the goal of City service within the UGB, where feasible.

B) The City continues to annex and withdraw territory within the UGB and the associated distribution piping. An additional master meter would be installed at the UGB to deduct City supplied Holcomb pressure zone demand from the total supply from the CRW's Barlow Crest Pump Station. If improvements identified in the Phase 2 Backbone Project area constructed, future supply could be provided by CRW from either the CRW Barlow Crest Pump Station or the future CRW Bradley Road Pump Station with master metering to totalize the demand of the City area in the joint Holcomb pressure zone inside the UGB. This option would most effectively meet the goal of aligning service area boundaries with associated geo-political boundaries. However, it creates a complicated master metering and water wheeling arrangement.

Alternative A is recommended as it does not require the construction of additional master metering infrastructure, and minimizes disruption to existing rate payers. It is also compatible with the CRW Backbone Project as all water supply impacts are to CRW customers only.

In order to facilitate City management of sewer service, including the ability to take action in the event of non-payment by a customer, an agreement between the two agencies should be developed similar to the existing agreement between CRW and the City of Milwaukie.

Resolution: No change from the existing condition; development of a billing and customer shut off agreement

Typical Dual interests/Solutions

This section outlines proposed policy-level criteria for service area and infrastructure transfer.

Annexation and Withdrawal

Areas under consideration for withdrawal should meet the following criteria:

- Located within the UGB. Areas located within city limits should be given highest priority for withdrawal from the district, if possible.
- Adjacent to existing city limits. Priority should be given to CRW areas surrounded by City service area.
- Priority should be given to areas currently receiving additional City services such as sewer, etc.

The City and CRW will need to collaborate for the development of a plan and typical procedure for implementing service transfers once areas have been identified for withdrawal.

Infrastructure Remuneration

A remuneration policy should be developed to encourage proper maintenance and replacement of aging infrastructure and to encourage sizing to meet long-term needs regardless of the future water service provider ownership. The economic analysis was completed as part of this project and addresses the specific financial elements and further detail the parameters of the policy.

Master Meters and Joint Users

Master meters are required when water is supplied through wheeling and meets one or more of the following criteria:

- The service area crosses the UGB at which point a meter would be placed at the UGB
- The total length of pipe past the meter is greater than 1,000 lf
- The service area is not predicted to be withdrawn by the other provider in the near future.

Master meters are preferable to joint user customers when infrastructure reliability is questionable, proven through leak history and/or obsolete pipe material.

Joint User Customers should only be allowed where:

- The provider whose service boundary they reside within cannot supply the customer with water from their infrastructure
- AND the number of customers does not warrant the cost of a master meter

In these limited cases, Joint User is the only way to reasonably serve these customers. As an example, customers outside the UGB and served via private service lines off City mains (located within the UGB) must be Joint User because there is no justification for the City to extend service beyond the UGB.

In addition, a formal supply agreement between CRW and SFWB should be developed to address ongoing master metered supply to CRW.

Jointly Developed Infrastructure

Jointly developed infrastructure should continue to be encouraged where applicable to minimize redundant facilities and encourage future collaboration.

Summary of Customer and Infrastructure Withdrawal Potential

Table 4 illustrates the maximum number of the existing customers and length of water main infrastructure in each focus area, potentially eligible for withdrawal by the City from CRW if the recommendations and agreed strategies presented in the study area are executed. These areas are illustrated graphically in **Figure 12**. **Table 5** summarizes the total number of customers and the share of CRW's south system demand that could be withdrawn through this process.

Additional Action Items

The following action items will require additional study and are recommended to conclude the dual interest resolution process. It is suggested that all action items will be completed within a year of this study, although certain items are dependent on the completion of others.

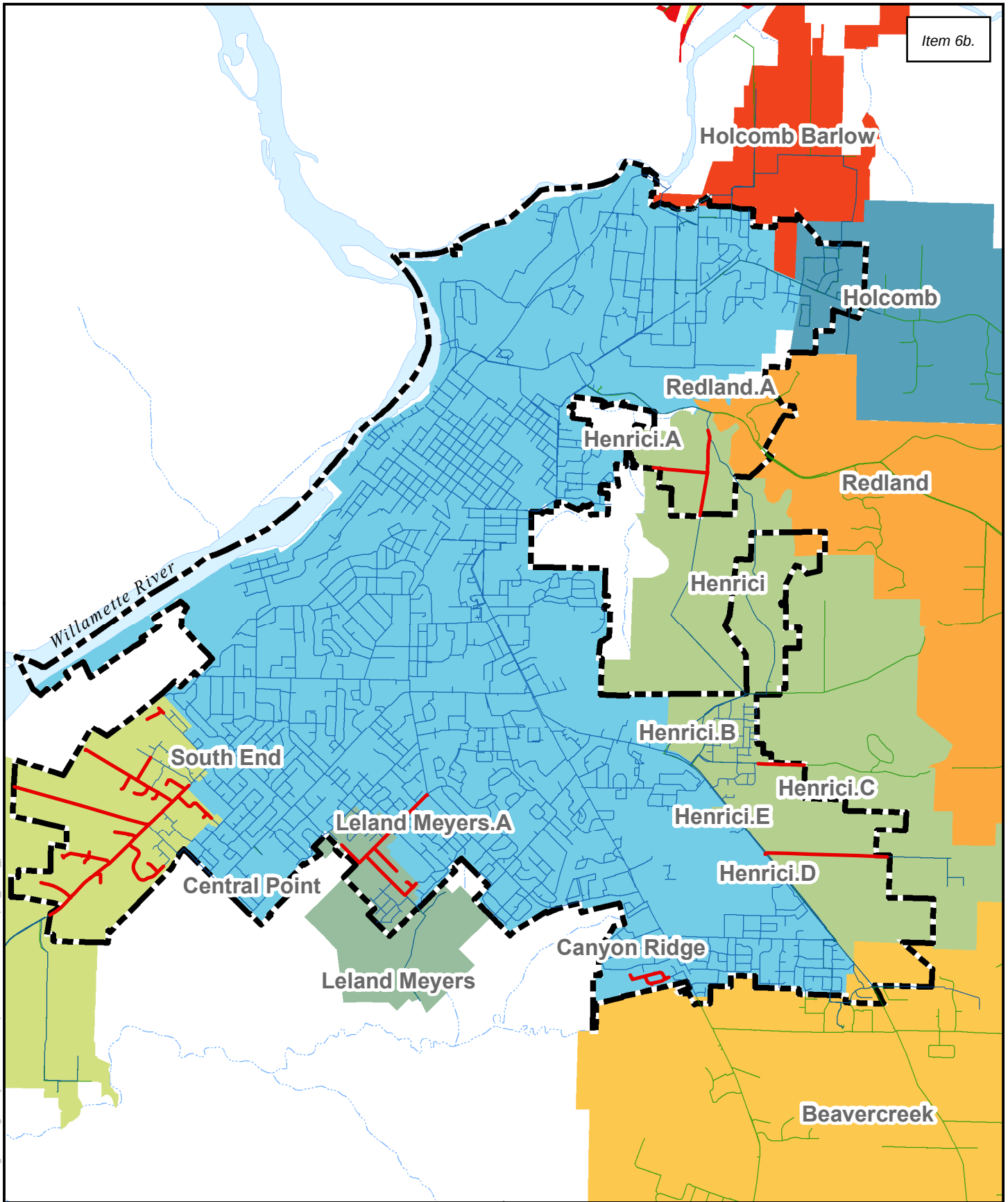
- Adopt a Remuneration Policy as outlines in the Remuneration Methodology TM (FCS Group, 2018).
- Adopt an updated, stand-alone Joint User Agreement
- Perform and adopt the findings of a Wheeling Charge Study to determine fair City and CRW rates for Joint User or Master Metered customers based on a defensible methodology such as cost of service
- Develop a water supply agreement for supply from SFWB to CRW
- Develop process for systematic transitions of service with communication to customers

Throughout this process, certain areas have been identified where mapping of service provider transition has not been completed. A common mapping convention and agreed schedule for updates should be coordinated, to include:

- Consistent and agreed upon Joint User properties
- Accurate service area boundaries
- Shared GIS data that avoids duplication by mapping of the other provider's infrastructure

Summary

As urban areas expand, boundary disputes as typified by the dual interests between Oregon City and Clackamas River Water become ever more common. The two water providers have a long history of working together to develop creative solutions to address the unique challenges they face. Formalizing this process in a common framework, rather than a rigid set of specific solutions, ensures common goals lead the process, and not individual opinions or short term changes in priorities. Developing methodologies and strategies that adapt to unique situations is more important for long-term cooperation and dual interest resolution. It is the goal of this study to provide a framework for Oregon City and Clackamas River Water to continue to efficiently provide high quality water to current and future customers for years to come, and minimizes conflict or misunderstanding.



- Urban Growth Boundary (UGB)
- City of Oregon City
- Clackamas River Water District
- Water Mains
- Potential Transfers
- River

N
 1 inch = 4,000 feet

**Oregon City - Clackamas River Water
Joint Engineering Study**

**Figure 12 - Potential
Customer & Infrastructure
Transfers**



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Table 4
Summary of Dual interest Areas by CRW Pressure Zone

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Holcomb-Barlow		549	Master metered from OC Park Place Intermediate Zone (Barlow Crest Res.)	No change	72	
Holcomb		797	Master metered from Barlow Crest Pump Station	No change	726	
Hunter Heights		910	Pumped up from CRW Holcomb	No change	70	
Redland		697	Master metered from Anchor Way and pumped via Redland PS		1082	
Redland.A				Development triggered transfers within Park Place Concept Area	8	
Henrici		590	Master metered from Anchor Way and pumped via Holly Lane PS		262	
Henrici.A				Development triggered transfers within Park Place Concept Area	46	2600' 12" 1960 OD; 1650' 12" 2004 DI
Henrici.B				Transfers within expanding development north of Thayer Road	14	
Henrici.C				Customer transfers along Thayer Road within UGB	7	1400' 12" 2003 DI
Henrici.D				Customer transfers along Loder Road within UGB	21	3700' 8" 1988 DI
Henrici.E				Additional Henrici Pressure Zone potential transfers	6	
Beavercreek		744	Pumped from CRW Henrici via Glen Oak PS	No change	1389	
Canyon Ridge		592	Joint Users supplied directly from OC Upper Zone		8	

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Canyon Ridge.A				Customer transfers within UGB	21	2200' 6" 1980 DI
Leland Meyers		592	Master metered from OC Upper Zone		33	
Leland Meyers.A				Customer transfers within UGB	59	1650' 6" 1960 OD; 3650' 8" 1960 OD; 250' 4" CI 1970; 1450' 6" 1970 CI
Central Point		592	Joint Users supplied directly from OC Upper Zone		2	
Central Point.A				Joint User customer transfer within UGB	9	
South End		592	Master metered and Joint Users supplied directly from OC Upper Zone	TBD based on future development potential	334*	3500' 4-6" 1960 AC; 5500' 4-6" 1960 OD; 1000' 8" 1966 DI; 4000' 4-6" 1970's CI; 4050' 6" 1980's DI; 650' 8" 2000 DI; 6050' 12" 2001 DI**

*Total CRW South End customer count within the UGB

**4100 lf of water main constructed as a joint project with a cost sharing agreement

Table 5
Summary of Potential Transfers

	Customer Count	Existing Water Mains (lf)	Existing Reimbursable Water Wains (lf)	2016 Demand (gpd)	Percent of Demand
Total CRW-South	4,170	679,000		1,212,250	100%
Possible Transfers Excluding South End	190	18,500	6,750	48,500	4%
South End Transfers	330	24,750	6,750	83,500	7%
Total Possible Transfers	530	43,250	13,500	131,750	11%
Remaining CRW within UGB	210	14,500		141,750	12%



APPENDIX E
TABLE 10.1B SOUTH STORAGE
CAPACITY SUMMARY
(1.5% GROWTH FORECAST), CRW

Table 101.A -Revised

Revised - 2/16/2017

North Storage Capacity Summary (1.5% growth forecast)

152nd Reservoir Storage Reduced from 5mg to 4mg

Site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Otty	2015		1.59	3.02	5,000	0.76	1.20	3.18	5.14	6.54	1.41
	2020		1.69	3.21	5,000	0.80	1.20	3.20	5.20	6.54	1.34
	2025		1.82	3.46	5,000	0.87	1.20	3.64	5.71	6.54	0.84
	2030		1.96	3.73	5,000	0.93	1.20	3.92	6.05	6.54	0.49
	2035		2.11	4.02	5,000	1.01	1.20	4.22	6.43	6.54	0.12
	2054		2.81	5.34	5,000	1.34	1.20	5.62	8.16	6.54	-1.62
Mather	2015		2.25	4.28	5,000	1.07	1.20	4.50	6.77	10	3.23
	2020		2.39	4.54	5,000	1.14	1.20	4.78	7.12	10	2.89
	2025		2.58	4.89	5,000	1.22	1.20	5.16	7.58	10	2.42
	2030		2.78	5.27	5,000	1.32	1.20	5.56	8.08	10	1.92
	2035		2.99	5.68	5,000	1.42	1.20	5.98	8.60	10	1.40
	2054		3.98	7.56	5,000	1.89	1.20	7.96	11.05	10	-1.05
152nd Windswept HWY 224/Carver	2016		0.13	0.25	5,000	0.06	0.00	0.26	0.32	4	3.68
	2019		0.15	0.29	5,000	0.07	0.00	0.3	0.37	4	3.63
	2024		0.17	0.32	5,000	0.08	0.00	0.34	0.42	4	3.58
	2029		0.19	0.36	5,000	0.09	0.00	0.38	0.47	4	3.53
	2034		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
	2054		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
Mather & 152nd Storage Combined	2015/16								7.09	14	6.91
	2019								7.49	14	6.51
	2024								8.00	14	6.00
	2029								8.55	14	5.45
	2034								9.12	14	4.88
	2054								11.57	14	2.43

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. 152nd Reservoir available storage (CRW) does not include SWA clearwell storage volume

Note 6. Fire storage for the Windswept HWY 224/Carver site (pressure zone) rely on Mather Reservoir for fire storage

Table 101.B

12/20/20

Item 6b.

South Storage Capacity Summary (1.5% growth forecast)

site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Holcomb & Hunter Heights	2014		0.25	0.69	1,500	0.17	0.18	0.50	0.85	1.20	0.35
	2019		0.27	0.74	1,500	0.19	0.18	0.54	0.91	1.20	0.30
	2024		0.29	0.80	1,500	0.20	0.18	0.58	0.96	1.20	0.24
	2029		0.31	0.86	1,500	0.22	0.18	0.62	1.02	1.20	0.19
	2034		0.33	0.93	1,500	0.23	0.18	0.66	1.07	1.20	0.13
	2054		0.45	1.26	1,500	0.32	0.18	0.90	1.40	1.20	(0.20)
Redland (.75MG / new 1.25 MG)	2014		0.41	1.15	1,500	0.28	0.18	0.82	1.28	1.05	(0.23)
	2019		0.44	1.24	1,500	0.31	0.18	0.88	1.37	2.00	0.63
	2024		0.48	1.33	1,500	0.33	0.18	0.96	1.47	2.00	0.53
	2029		0.51	1.44	1,500	0.36	0.18	1.02	1.56	2.00	0.44
	2034		0.55	1.55	1,500	0.39	0.18	1.10	1.67	2.00	0.33
	2054		0.75	2.09	1,500	0.52	0.18	1.50	2.20	2.00	(0.20)
Henrici	2014		0.19	0.53	1,500	0.13	0.18	0.38	0.69	1.55	0.86
	2019		0.20	0.57	1,500	0.14	0.18	0.40	0.72	1.55	0.83
	2024		0.22	0.62	1,500	0.16	0.18	0.44	0.78	1.55	0.78
	2029		0.24	0.67	1,500	0.17	0.18	0.48	0.83	1.55	0.72
	2034		0.26	0.72	1,500	0.18	0.18	0.52	0.88	1.55	0.67
	2054		0.35	0.97	1,500	0.24	0.18	0.70	1.12	1.55	0.43
Beavercreek	2014		0.61	1.72	1,500	0.43	0.18	1.22	1.83	1.20	(0.63)
	2019		0.66	1.86	1,500	0.47	0.18	1.32	1.97	1.20	(0.77)
	2024		0.71	2.00	1,500	0.50	0.18	1.42	2.10	1.20	(0.90)
	2029		0.77	2.16	1,500	0.54	0.18	1.54	2.26	1.20	(1.06)
	2034		0.83	2.32	1,500	0.58	0.18	1.66	2.42	1.20	(1.22)
	2054		1.12	3.14	1,500	0.79	0.18	2.24	3.21	1.20	(2.01)

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. Redland storage volumes changed to 2 mg in year 2019 to incorporate Backbone Redland Reservoir 1.25mg and demolition of Reservoir No. 1 (.3mg). Reservoir No.2 (.75mg).



**APPENDIX F
MOLLALLA AVENUE STREETSCAPE
CONCURRENT WATERLINE
IMPROVEMENTS TECHNICAL
MEMORANDUM, MURRAYSMITH**

Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Molalla Ave Streetscape Concurrent Waterline Improvements

Introduction

The City of Oregon City (City) is currently working on an update of its water distribution system Capital Improvement Program (CIP). Simultaneously, the City is proceeding with design on the Molalla Avenue Streetscape Project which includes improvements along Molalla Avenue from Beaver Creek Road to the intersection with Highway 213. This document is intended to document the purpose and cost of the Molalla Avenue project prior to completion of the updated CIP.

The Molalla Avenue project is intended to minimize existing Upper Zone over-pressurization and balance supply and demand between the Henrici Reservoir and the Boynton Standpipe. Additionally, the project is required to serve future growth within the City. The Molalla Avenue project is a portion of a larger set of capital projects to improve system capacity and operations. Other associated projects include the following:

- Parallel transmission line from the Mountainview Pump Station to Beaver Creek Avenue
- Parallel transmission line from Beaver Creek Ave to Glen Oak Road (along the Streetscape Project to Sebastian Way)
- Improved looping and upsized transmission between Highway 213 and Beaver Creek Road, north of Glen Oak Road
- Upsized transmission between Glen Oak Road and the Henrici Reservoir

The Molalla Avenue project and other capital projects are presented in Figure 1.

Project Background and Summary

The South Fork Water Board (SFWB) supplies the City's Mountainview Reservoirs with treated water via a 30-inch supply main and the Division Street Pump Station. The City's Mountainview Pump Station in turn supplies Henrici Reservoir and the Boynton Standpipe. These tanks set the hydraulic Grade Line (HGL) in the Upper Zone. The tanks also act as suction supply for the Fairway Downs Pump Station, which supplies a small, closed zone near the Henrici Reservoir.

Growth is expected in the Upper and Fairway Downs Zones as described in the Beavercreek Concept Plan. This growth will require extension of Upper Zone distribution, and the construction of a new pump station and reservoir to replace the existing Fairway Downs Pump Station and extend the existing Fairway Downs Zone.

Under current conditions, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. The Boynton Standpipe is centrally located while the Henrici Tank is located southeast of the system. When flow from the Mountainview Pump Station is increased to fill the Henrici Reservoir, high pressure issues are experienced by customers near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands. This problem is expected to increase as the Mountainview Pump Station is expected to operate at higher flow rates to keep up with growth related demands.

An evaluation of the supply from the Henrici Reservoir and the Boynton Standpipe was performed with and without capital improvements as presented in Table 1. Prior to improvement, demands are distributed at a 67/33-percent split with the majority of demand supplied through the Boynton Standpipe. The improved system, which includes the Molalla Avenue project, results in an improved flow split of 50/50-percent between the reservoir and standpipe.

Table 1
Reservoir Filling Rates – Boynton Standpipe and Henrici Reservoir

Scenario	Boynton Standpipe (gpm)	Henrici Reservoir (gpm)
No Improvements	4,200	2,100
Only add Parallel Main on Molalla Ave	4,200	2,500
Only upsize Beavercreek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beavercreek Transmission	3,500	3,500

1. 2015 ADD demands, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.
2. Parallel main sizing evaluated between 12-inch and 24-inch. Improvements on Molalla Avenue between Beaver Creek Road and Glen Oak Road are recommended at 18-inch sizing.

Demands in the Upper Pressure Zone, Fairway Downs Pressure Zone, and CRW Master Meters 8&9 can be used to determine the ratio of the Molalla Avenue project serving existing and future

customers. These demands for existing and future time frames are summarized in Table 2. The ratio of existing to future services by 2035 is estimated at 68-percent existing and 32-percent future. The ratio of existing to future services by buildout is estimated at 42-percent existing and 58-percent future.

Table 2
Existing and Future Demand Summary and Ratios Associated with Molalla Avenue Project

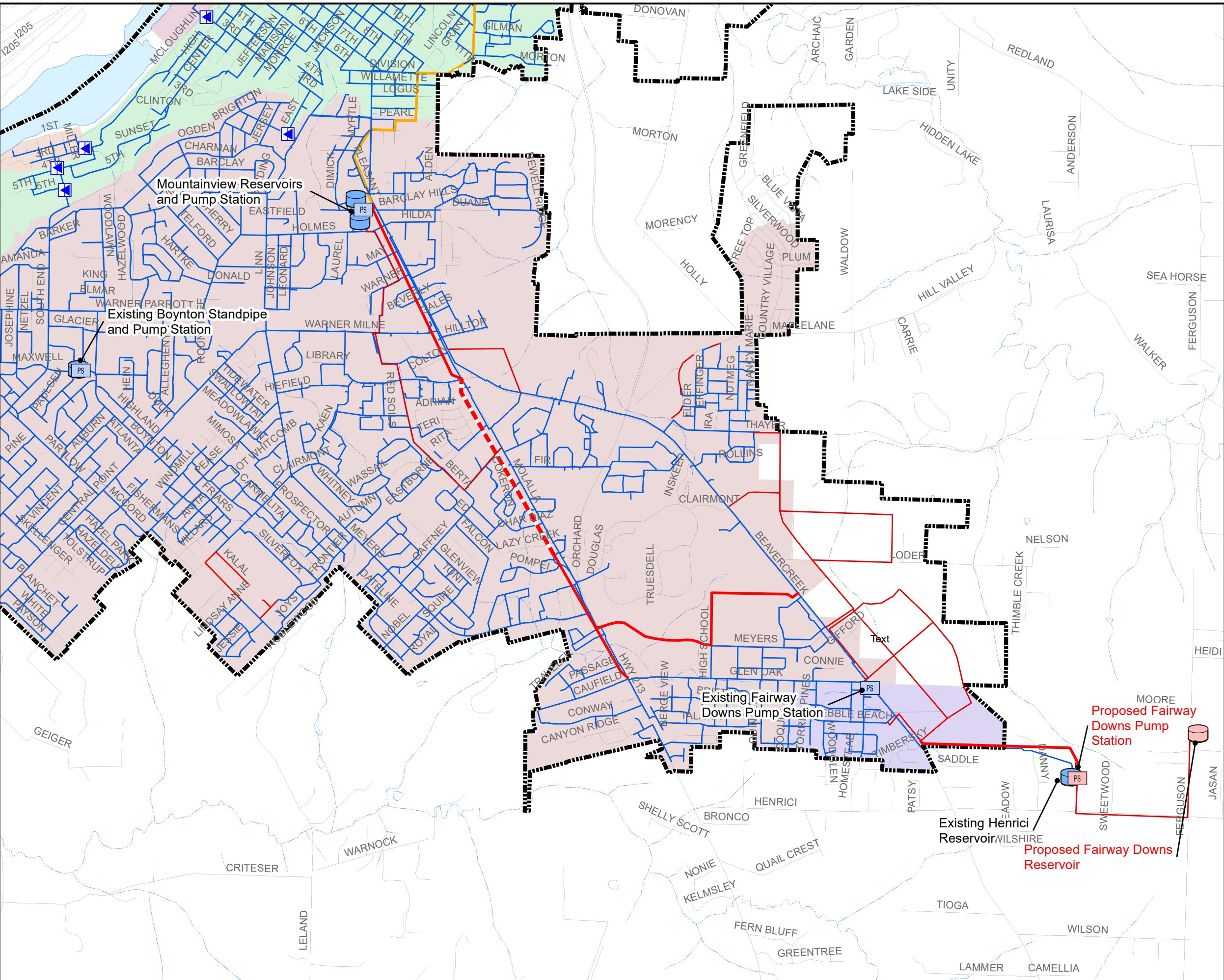
Pressure Zone or Master Meter	Existing Average Day Demand	2035 Average Day Demand	Buildout Average Day Demand
Upper	1,600	2,370	3,860
Fairway Downs	20	20	40
CRW Master Meters 8 & 9	80	110	180
TOTAL	1,700	2,510	4,080

Demands in gallons per minute.

Preliminary costs were estimated for the Molalla Avenue project for the CIP update as summarized below. Cost estimates represent a Class 5 budget estimate in 2018 dollars, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +50 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate.

- Project cost estimate for 18-inch pipeline on Molalla Avenue at approximately 4,200 linear feet
- Cost estimates include labor, materials, and markups
- Cost estimates exclude land or right-of-way acquisition
- Markups include 40-percent for engineering, overhead, and contractor profits
- Markups include 30-percent for construction contingency
- Total project cost is estimated at \$1.7 million (\$407 per linear foot)

G:\PDX_Projects\17-2119 - Oregon City Water CIP Update\GIS\WDX\OC_upsizeMolalla_shortMemoFig.mxd 2/25/2019 12:29:45 PM SJR



City of Oregon City Molalla Ave Streetscape CIP Project Impacts

- CIP PROJECTS**
 - Parallel Transmission along Streetscape
 - Mountainview to Henrici Transmission Projects
 - Other CIP Projects
 - PS Pump Station
 - Reservoir
- EXISTING WATER MAINS**
 - Oregon City
 - SFWB
 - West Linn
 - UGB
- PRESSURE ZONE**
 - Canemah
 - Fairway Downs
 - Intermediate
 - Lower
 - Paper mill
 - Park Place Intermediate
 - Park Place Livesay
 - Park Place Lower
 - Park Place View Manor
 - Upper

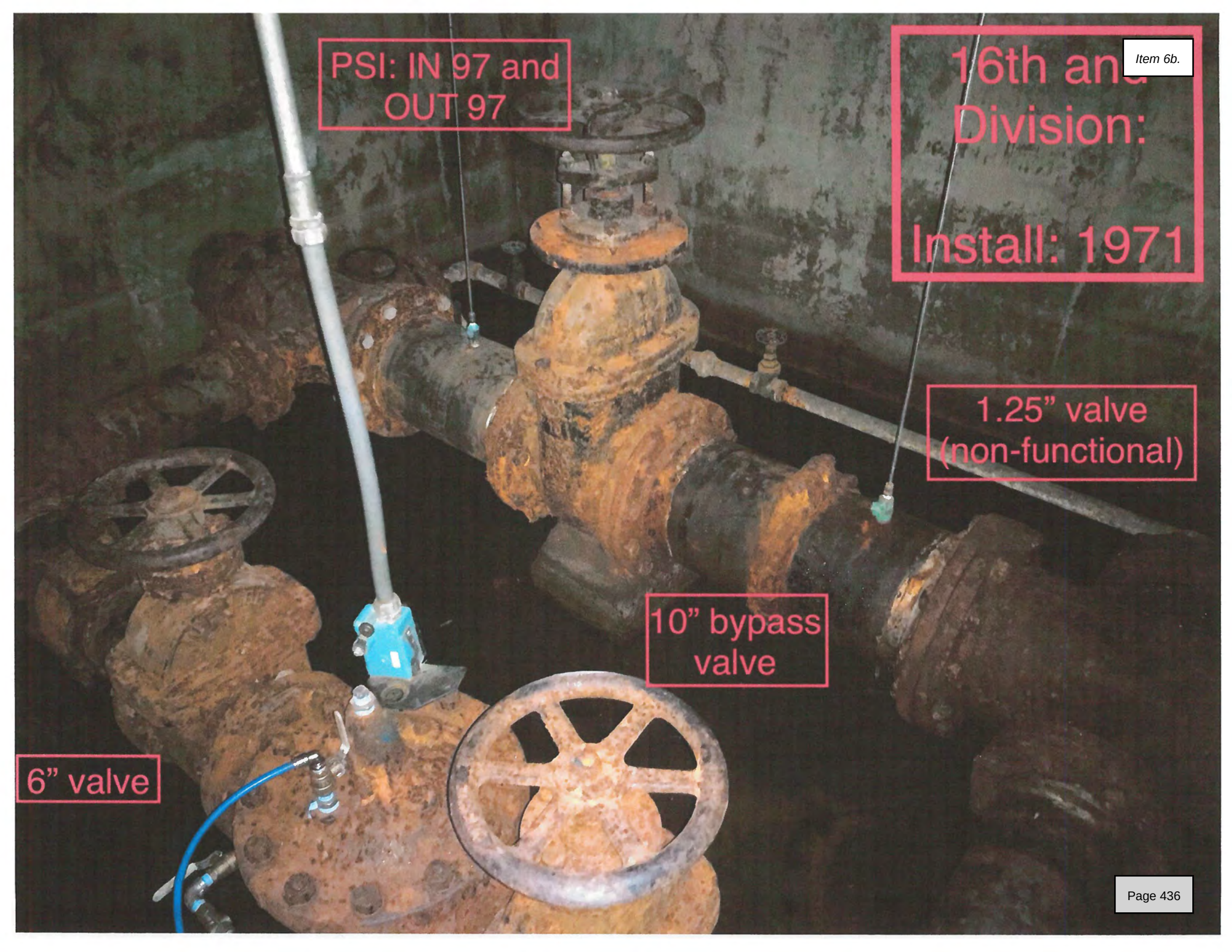
FIGURE 1



APPENDIX G
SMALL WATERLINE REPLACEMENT
PROJECTS & PRV PHOTO
DOCUMENTATION, OREGON CITY

Updated 12/30/2018 for PW Ops Higher Priority List for Small Water Pipeline Replacement Project List For Projects Originally Listed in

#	Project Location	Project Area Beginning	Project Area End	Existing Diameter	Proposed Diameter [1]	Length	Unit Construction Cost [2]	Total Construction Cost	CIP Cost (w/ Mark Up) [3]
	Street Name	Street Name	Street Name	(in)	(in)	(ft)	(\$/ft)	(\$)	(\$)
1	S. Center St	S. 2nd	1st St	6	8	700	\$140	\$98,000	\$150,500
2	Barker Ave	South End Rd	Barker Rd	6	8	800	\$140	\$112,000	\$172,000
3	Warner-Parrott Rd	King Rd	Boynton St	10	12	1100	\$200	\$220,000	\$337,900
4	Belle Ct and Glenwood Ct	Holmes Ln	Linn Ave	6	8	1500	\$140	\$210,000	\$322,600
5	Valley View Dr	Park Dr	McCarver Ave	4	8	1000	\$140	\$140,000	\$215,000
6	Canemah Ct	Canemah Rd	Telford Rd	6	8	1700	\$140	\$238,000	\$365,600
7	Randall St	Canemah Rd	Hartke Lp	6	8	700	\$140	\$98,000	\$150,500
8	Hartke Lp and Alderwood Pl			6	8	3700	\$140	\$518,000	\$795,600
9	Harrison St	7th St	Division St	6	8	600	\$140	\$84,000	\$129,000
10	Division St	Harrison St	13th/14th St	6	8	4300	\$140	\$602,000	\$924,700
11	Division St	Anchor Way PRV Station	Davis Rd	6	8	1300	\$140	\$182,000	\$279,600
	Total					17400		\$2,502,000	\$3,843,100
NOTES:									
[1] Proposed pipe diameters are matching the existing diameter, 8-Inch Minimum.									
[2] Unit Construction Costs are based on units costs included in the 2012 Water Master Plan for developed areas.									
[3] CIP Cost includes a 20% contingency, 10% design engineering, 10% construction engineering, and 8% administration cost allowance in accordance with Appendix D and then rounded to the nearest \$100.									



PSI: IN 97 and
OUT 97

Item 6b.

16th and
Division:
Install: 1971

1.25" valve
(non-functional)

10" bypass
valve

6" valve

Harley and Forsythe
(South):

Install: 1973

Item 6b.

1.25" valve
non-functional

PSI: IN 82 and
OUT 82

6" bypass
valve

4" valve

Harley and
Forsythe (North)

Install: 1988

4" relief
valve

Item 6b.

4" relief
valve

PSI: IN 81 and
OUT 81

12" valve

Abernethy and
Redland:

Install: 1963

PSI: IN 125
and OUT 125

4" relief valve

8" valve

4" relief valve

Install:
1993

4" valve

Apperson and
Larae:

Install: 1999

PSI: IN 99 and
OUT 94

4" valve

2" valve

6" valve

Hunter Pump
Station:

Install: 1998

6" valve

PSI: IN 152 and
OUT 52

3" valve

Item 6b.

PSI: IN 135 and
OUT 34

Jennif
Estates:

Item 6b.

Install: 2002

8" valve

4" valve

MOORE

Item 6b.

Swan and
Holcomb:
Install: 1999

PSI: IN 152
and OUT 50

8" valve

4" valve

View Manor:
Install: 1999

PSI: IN 99
and OUT 32

Item 6b.

8" valve

4" valve

4th and Main
(mill):

Install: 1997

PSI: IN 110 and
OUT 110

10" valve

3" valve

10" bypass valve

5th and
Canemah:
Install: 1958

PSI: IN 132 and
OUT 90

1.25" valve

6" bypass
valve

4" valve

4th and
Jerome:

Install: 1958

Item 6b.

2" valve

6" valve

PSI: IN 135
and 52 OUT

3rd and
Ganong:

Item 6b.

Install: 2008

PSI: IN 160 and
OUT 86

6" valve

2" valve

3" relief valve

PSI: IN 135
and OUT 60

3rd and Bluff:
Install: 2018

8" valve

3" valve

PSI: IN 100
OUT 46

East St.
Install: 2015

6" valve

PSI: IN 158 and
OUT 78

15th and
Madison:
Install: 2016

Item 6b.



6" valve

2" valve

10" valve

11th and
Washington:
Install:1993

PSI: IN 168 and
OUT 80

3" valve

PSI: IN 128 and
OUT 54

18th and
Anchor Way:
Install: 1992

Item 6b.

8" valve

4" valve

4" relief valve



APPENDIX H
MILL REDEVELOPMENT WATER
DISTRIBUTION ANALYSIS TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: January 18, 2018

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Natalie Jennings, PE
MurraySmith

Re: Mill Redevelopment Water Distribution Analysis

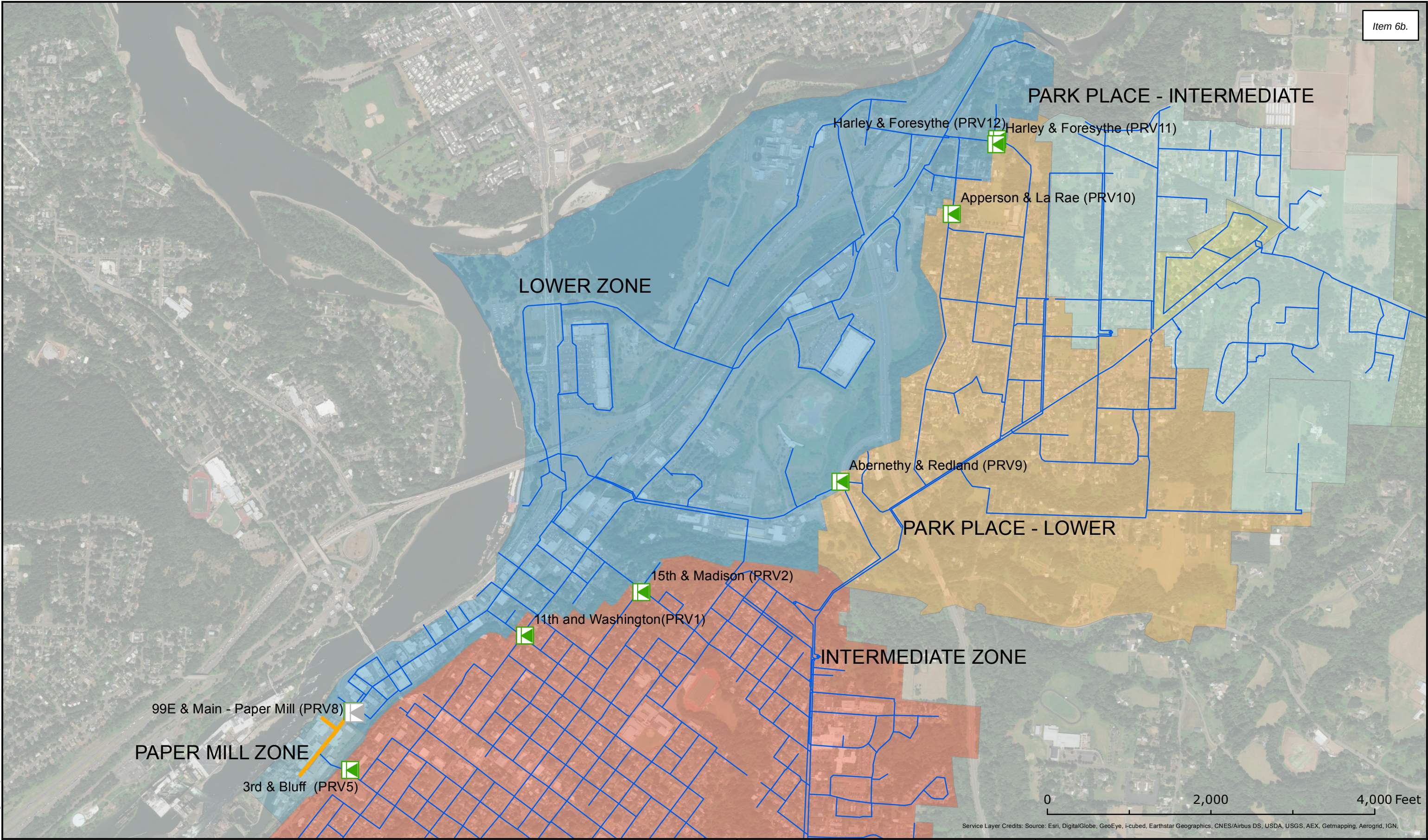
Background Information

The City of Oregon City (City) is evaluating expansion of the water distribution system to accommodate commercial redevelopment along the Willamette River, in the Paper Mill Zone. The development area and preliminary pipeline configuration are shown in Figure 1. The Paper Mill Zone is supplied through two pressure reducing valve (PRV) stations located at 3rd and Bluff and 99 E & Main. This technical memorandum documents recommended modifications to PRV stations to combine the Paper Mill Zone and the Lower Zone. Additionally, local pipeline sizing recommendations are provided to supply domestic and fire flow demands to the Mill Redevelopment Area.

Demand Summary

To evaluate the system capacity, domestic demand conditions were analyzed for average day demand (ADD), maximum day demand (MDD), and peak hour demand (PHD). Fire flow demands were evaluated during MDD including, 3,500 gallon-per-minute (gpm) and 5,000 gpm fire flow requirements.

The City's water demand data is summarized in the *Water Distribution System Master Plan* (West Yost, 2012) by service type and largest user for the full distribution system. Future demands in the Mill Redevelopment Area were developed by applying unit demands to number of dwelling units, square footage of office and retail space, or number of hotel rooms as shown in Table 1.



**City of Oregon City
Water Distribution System**

Legend

- PRVs
- Existing Pipes
- Mill Redevelopment Piping



**Mill Redevelopment Area
Proposed Piping and
New Combined Lower Zone**

Table 1
Water Demands by Type

Category	Unit	Number of Units, Rooms, or Square Feet	Unit Demand (gpm)	Total Demand (gpm)
Residential	dwelling unit	240	0.14	35
Office Space	1,000 Sq. Ft.	436	0.08	36
Retail Space	1,000 Sq. Ft.	119	0.08	10
Hotel	Rooms	115	0.07	9
Total				90

Maximum day and peak hour demands for the Mill Redevelopment Area are estimated using the historical peaking factors from the master plan, established by the dividing max day by average day for MDD:ADD, and peak hour by average day for PHD:ADD, as shown in Table 2.

Table 2
Peaking Factors

Unit	Peaking Factor
MDD:ADD	2.3
PHD:ADD	4.5

Table 3 summarizes the demands in the proposed Mill Redevelopment Area, and the new, combined, Paper Mill/Lower Pressure zone.

Table 3
Water Demands by Zone

Demand	Mill Redevelopment Area ¹	Paper Mill and Lower Zones Combined
ADD	98 gpm	272 gpm
MDD	225 gpm	626 gpm
PHD	440gpm	1,225 gpm

¹ Includes existing demands in addition to the Mill Redevelopment demands.

Design Criteria

This section presents the planning and analysis criteria used to analyze performance of the City water distribution system. Criteria are presented in Table 4 for distribution system piping, service pressures, and recommended fire flow. Performance guidelines are based on a review of State requirements, American Water Works Association (AWWA) acceptable practice guidelines, and *Recommended Standards for Water Works, Ten States Standards* (Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2012).

Service Pressures

The desired service pressure range under ADD and normal operating conditions is 40 to 80 pounds per square inch (psi). The maximum 80 psi service pressure limit is required by the *Oregon Plumbing Specialty Code* (OPSC) 608.2. If mainline pressures exceed 80 psi, service connections should be equipped with individual PRVs.

Distribution Piping

In general, distribution flow velocities should not exceed 10 feet-per-second (fps) under the PHD conditions and drop below 3.5 fps under normal demand conditions. The minimum pipe size is 8-inch diameter for new permanently dead ended residential water mains and primary feeder mains in residential areas, however areas with large fire flow demands will require larger pipe diameters.

Fire Flow

The amount of water recommended for fire suppression purposes is typically associated with the local building type or land use of a specific location within the distribution system. Fire flow recommendations are typically much greater in magnitude than the MDD in any local area. Adequate hydraulic capacity for these potentially large fire flow demands controls pipe sizing and system operation.

During a fire flow event or emergency, the minimum service pressure is 20 psi as required by Oregon Health Authority, Drinking Water Services, and OAR 333-061-0025(7). The system should be capable of providing fire flow capacity while simultaneously delivering MDD and maintaining 20 psi throughout the distribution system. The system should meet this criterion with operational storage depleted and firm pumping capacity.

Two fire flow scenarios were requested by the City for evaluation in the Mill Redevelopment Area including 5,000 gpm and 3,500 gpm fire flow demands.

Table 4
Water System Performance Criteria

System Facility	Evaluation Criterion	Value	Design Standard/Guideline
Service Pressure	Normal Range (ADD Conditions)	40-80 psi	AWWA M32
	Maximum without individual PRV	80 psi	AWWA M32, Oregon Plumbing Specialty Code, Section 608.2
	Minimum, during MDD with Fire Flow	20 psi	AWWA M32, OAR 333-061
	Minimum, during PHD	75% of normal, not less than 40 psi	Murraysmith recommended, AWWA M32
	Velocity during PHD	Not to exceed 10 fps	AWWA M32

Distribution Piping	Minimum Pipe Diameter	8-inch recommended for fire flow, except in short mains without fire service	Industry Standard
Required Fire Flow and Duration	Single Family Residential	1,500 gpm for 2 hours	2014 Oregon Fire Code, Scenario 1: Requested by Oregon City
	Medium Density Residential, Commercial	3,000 gpm for 3 hours	
	Public, Industrial	3,500 gpm for 3 hours	
	Public, Industrial	5,000 gpm for 3 hours	Scenario 2: Requested by Oregon City

System Evaluation

Two types of infrastructure improvements are needed to service the proposed Mill Redevelopment Area including modifications to existing PRV stations, and new water lines.

Pressure Reducing Valve Stations

Current PRV settings in both the Paper Mill Zone and Lower Zone result in high pressures exceeding the 80-psi maximum requirement. Additionally, complete isolation of the Paper Mill Zone is unnecessary, as the elevations in this zone are similar to the adjacent Lower Zone. Recommendations to modify PRV stations include the following:

- A reduction in PRV settings for all PRV stations between the Intermediate Zone and the Paper Mill/Lower Zones to maintain maximum pressure below 120 psi and reduce risk of leakage. Recommended settings are provided in Table 5. Individual building PRVs are still required within the pressure zones.
- Combine the Paper Mill and Lower Zones by abandoning the 99E and Main PRV station. A pipe connection routing around the PRV station is required to maintain looped service.

Table 5
Recommended PRV Settings

Valve Name	Valve #	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting	Priority Opening
11 th & Washington	1	3	10		67	58		1
15 th & Madison	2	1.25	6	10	61	56	51	4
Abernathy & Redland	9	4	8		102	97		3
Apperson & La Rae	10	2	4	6	84	79	77	5
Harley & Forsythe (south)	11	1.5	4		71	66		2
Harley & Forsythe (north)	12	1.5	12		66	61		7
3 rd & Bluff	5	3	10		42	39		6
99E & Main	8	3	10		abandon	abandon		n/a

Water Line Improvements

Water line improvements are required to serve the Mill Redevelopment Area. Improvements are focused on upsizing and extension of the pipeline on the proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area. This improvement route eliminates pipeline improvements adjacent to the 3rd and Bluff PRV station and the associated 10-inch piping along the cliff face on Highway 99E that was recently replaced in the Hwy 99E Bluff Waterline Replacement Project. The existing section under the adjacent highway and railroad are also preserved.

To supply a 5,000 gpm fire flow, the pipe size on proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area is recommended at 14-inch diameter with dead-end piping of 16-inches as shown in Figure 2. To supply a 3,500 gpm fire flow, the pipe size is recommended at 12-inch diameter with dead-end piping of 14-inches as shown in Figure 3.

The City's InfoWater hydraulic model was used to evaluate system capacity and size improvements. Figures showing pressure results for the pipe sizing and PRV analysis are provided in Appendix A.

Figure 2
Proposed Water Line Alignments in Mill Redevelopment Area 5,000 gpm Fire Flow

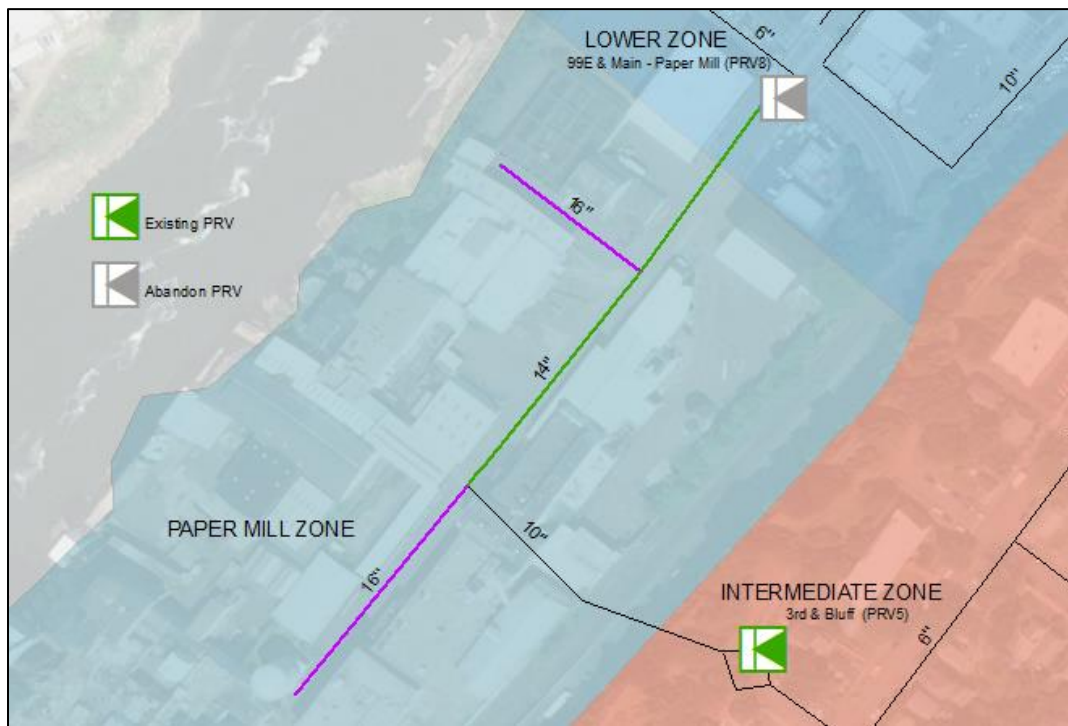
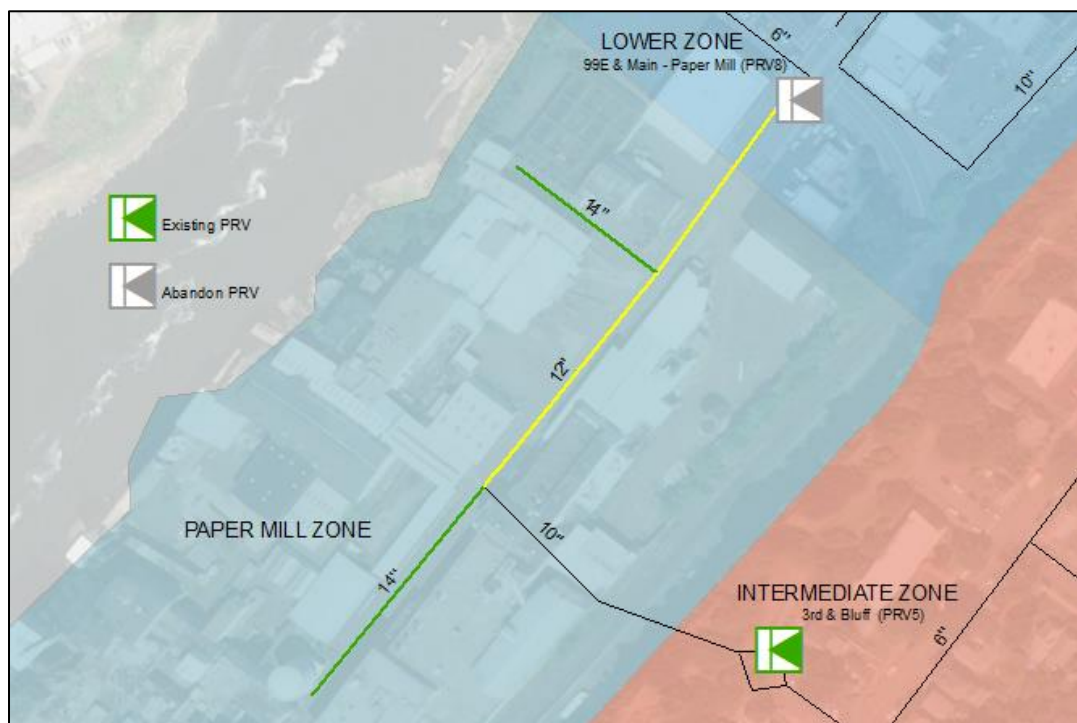


Figure 3
Proposed Water Line Alignments in Mill Redevelopment Area 3,500 gpm Fire Flow



Summary of Recommendations

Development can occur as desired by the City in the Mill Redevelopment Area. Several PRV and piping changes are needed to achieve design criteria specified herein, including combining two pressure zones. Specific changes within the zone include:

- Combination of the Paper Mill Zone and Lower Zone
- Abandonment of the PRV on 99E & Main
- Construction of new mains in the Mill Redevelopment Area
- Adjustments of PRV settings in PRV stations to the new Combined Paper Mill/Lower Zone

SJR:ncj

Appendix A

The City InfoWater hydraulic model was used to perform model simulations for domestic and fire flow demands and evaluate system pressures and velocities. The simulation results are summarized in the following figures.

Figure A1 – Average Day Demand

Figure A2 – Peak Hour Demand

Figure A3 – Maximum Day Demand + 3,500 gpm Fire Flow

Figure A4 – Maximum Day Demand + 5,000 gpm Fire Flow

Figure A1
Results: ADD

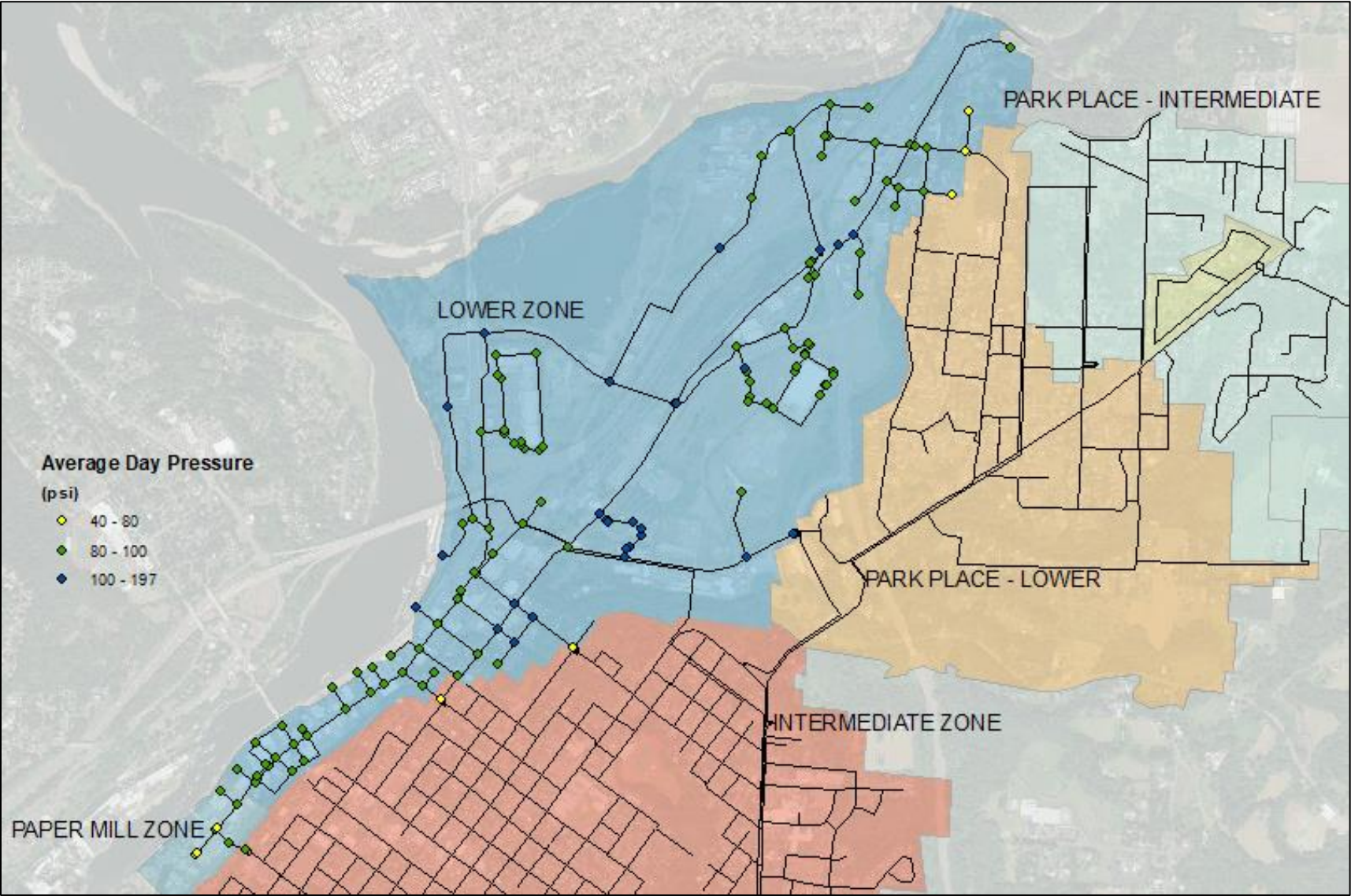


Figure A2
Results: PHD

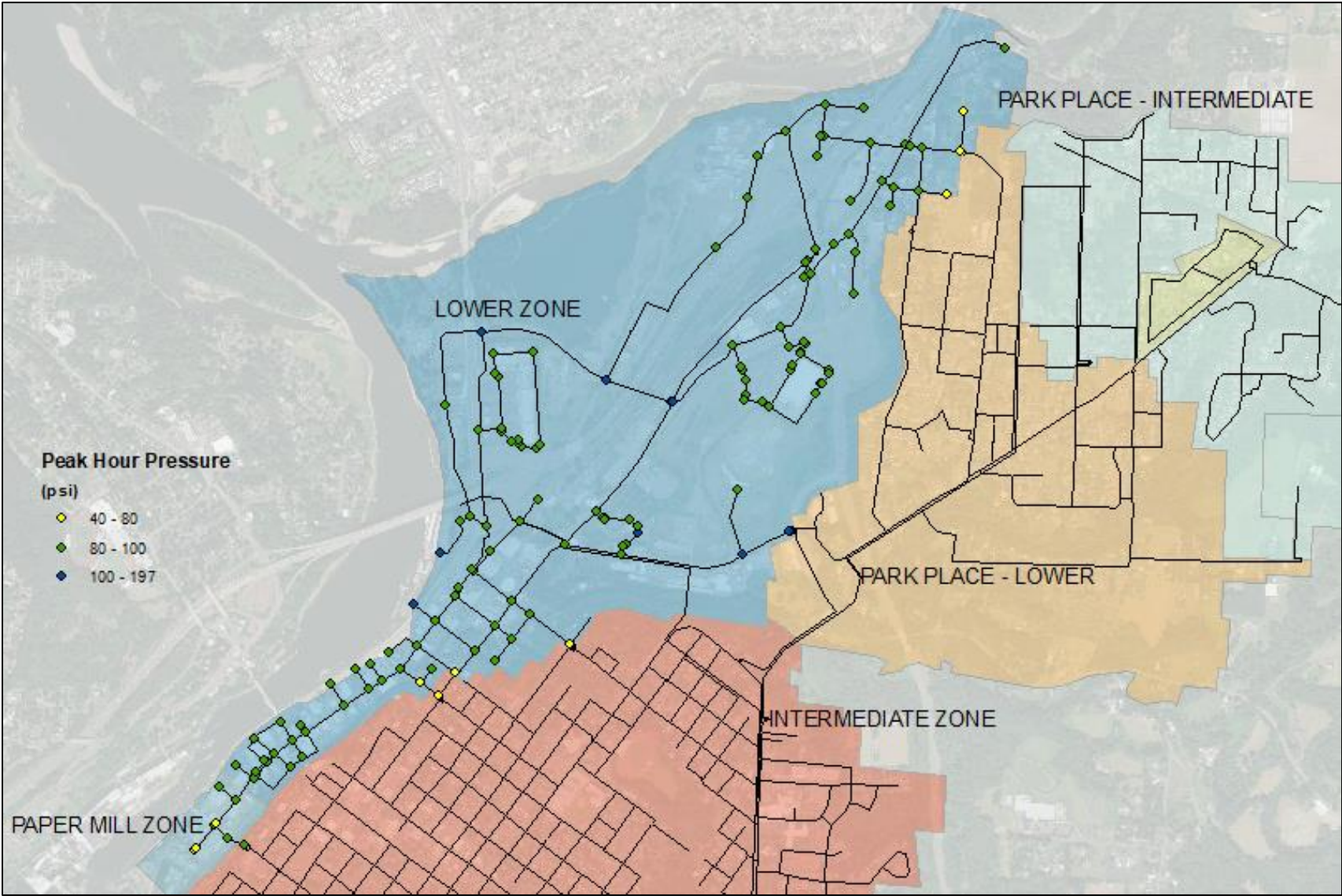


Figure A3
Results: MDD +3,500 gpm Fire Flow

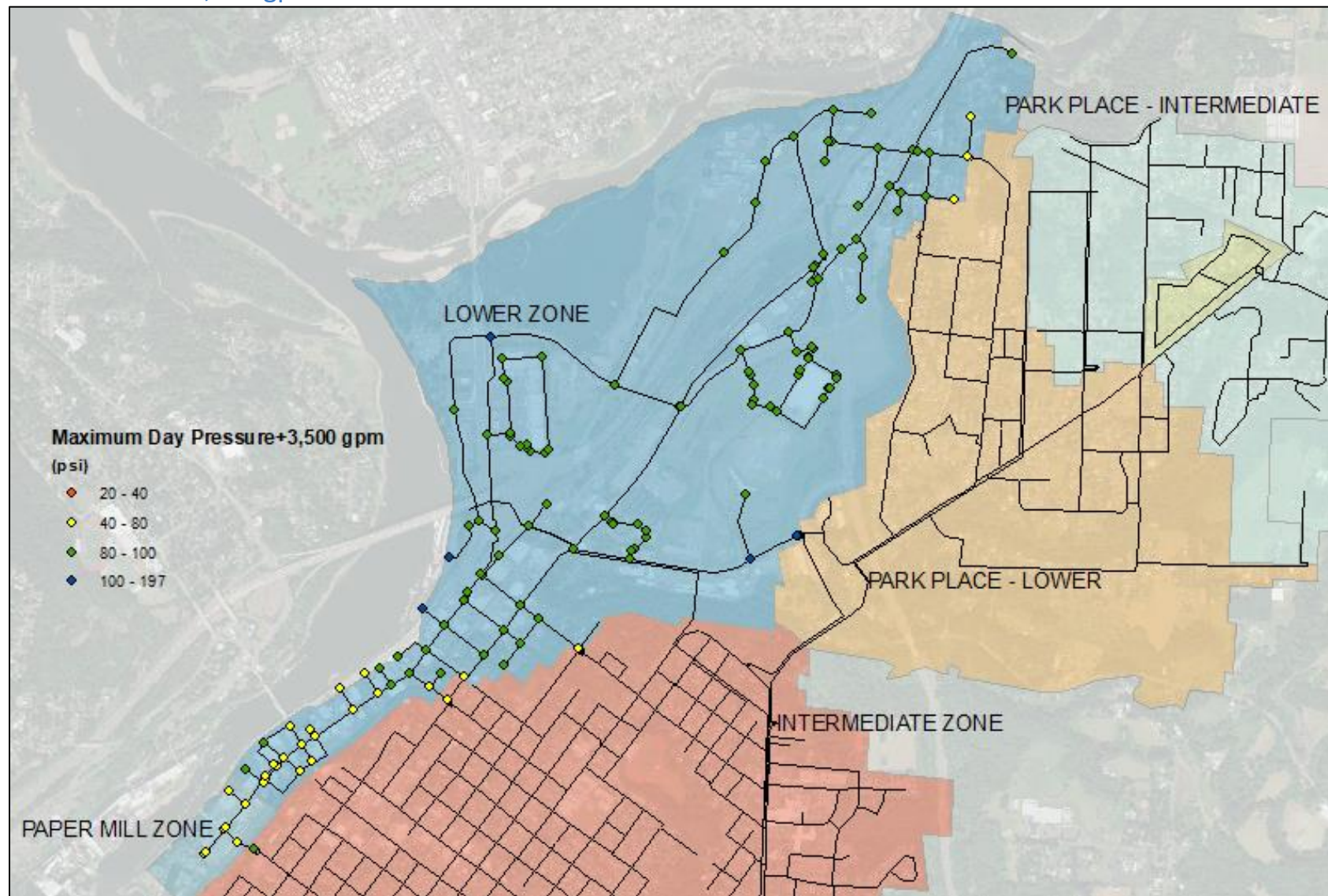
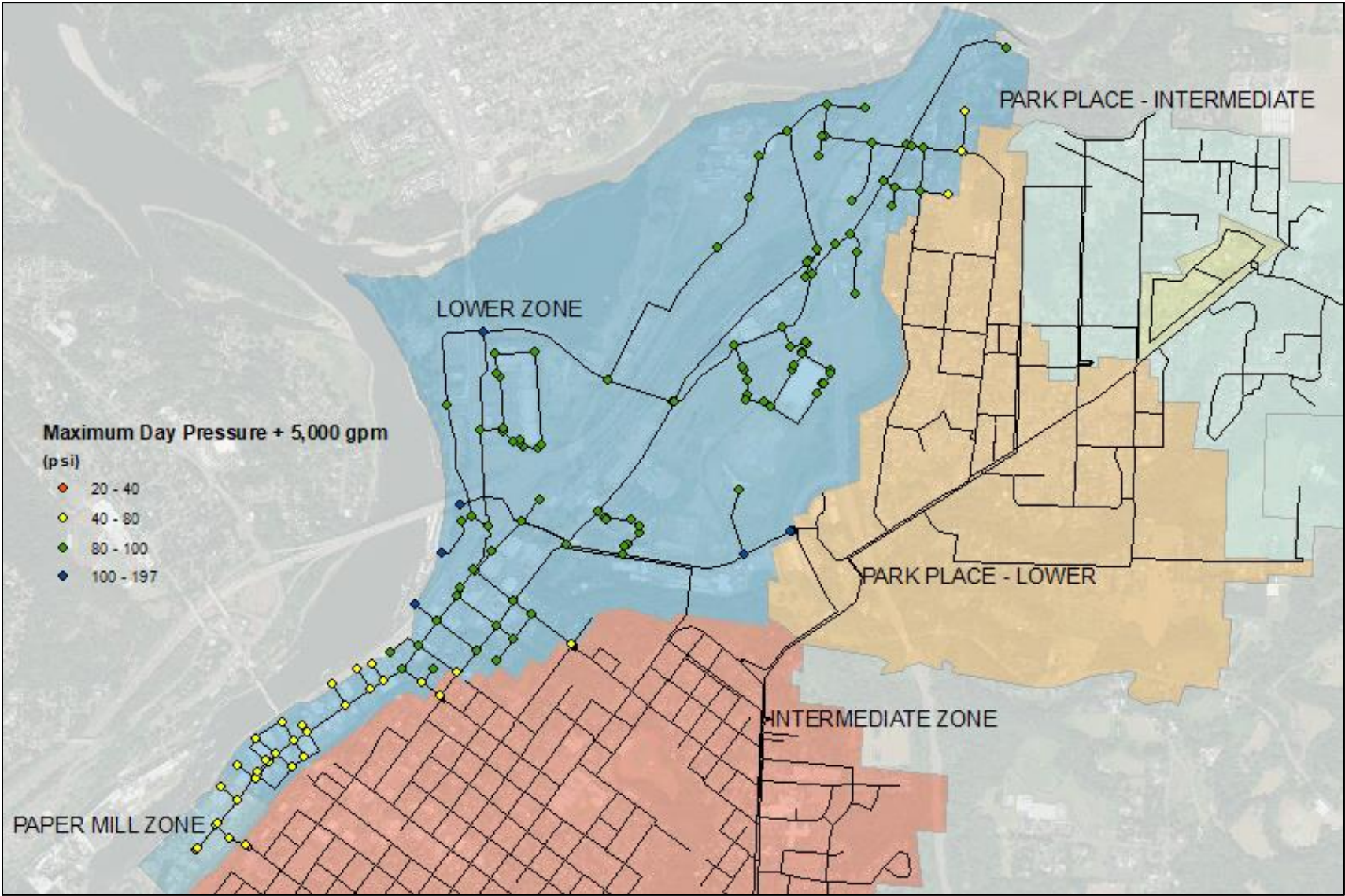


Figure A4
Results: MDD +5,000 gpm Fire Flow





MEMORANDUM

TO: Christina Robertson-Gardiner
FROM: Patty Nelson P.E., Special Projects Senior Engineer
DATE: January 12, 2021
SUBJECT: GLUA 20-00033: LEG 19-00002 Amendment to Water Master Plan
Revised Amendment

Please delete and replace the Amendment document with the Revised version reflecting an Updated Table 17 and Table 18, including updated implementation timeframes for projects and identification of eligibility for system development charge.

Thank you.



Community Development

695 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LEGISLATIVE STAFF REPORT AND RECOMMENDATION

A preliminary analysis of the applicable approval criteria for a legislative proposal is enclosed within the following report. The applicant understands that all applicable criteria shall be met, or met with conditions, in order to be approved. The Planning Commission may choose to adopt the findings as recommended by staff or alter any finding as determined appropriate.

HEARING DATE: Planning Commission: December 14, 2020
FILE NUMBER: GLUA 20-00033 LEG-19-00002 Amendments to the Water Master Plan
APPLICATION TYPE: Legislative (OCMC 17.50.170)
APPLICANT: Oregon City Public Works
 C/O Patty Nelson, Project Engineer
 PO Box 3040
 Oregon City, OR 97045
REQUEST: Proposed Amendments to the Water Master Plan
LOCATION(S): City Wide

I. BACKGROUND:

Water is arguably one of the most valuable resources. Without it, there is no life. While having quality drinking water is a necessity of life, we depend on water for our everyday activities such as showering, laundry, dishes, and for fire protection. We are fortunate here in Oregon City to have the rights to a great water source, the Clackamas River. A quality source and an excellent treatment facility, combined with one of the oldest water rights, makes Oregon City water supply one of the most reliable, efficient, high-quality water supplies in the state. While our water is supplied by the South Fork Water Board, jointly owned by Oregon City and West Linn, the City of Oregon City is responsible for getting the water to homes and businesses. Investing in our community water system benefits all of us now and in the future.

Over the years, the City has grown, and so has the water system. The system is now comprised of over 150 miles of pipe, ranging in diameter from 2 inches to 30 inches.

The City seeks to amend its Water Master Plan, to reflect revised modeling and system analysis, which will result in an updated list of capital projects. The current Water Master Plan was adopted in 2012, providing a 20-year plan for expanding and upgrading our water system as necessary to accommodate planned growth. Since that time, the City has been working hard to complete projects identified in the plan. With the Amendment to the Water Master Plan, the City will have an updated plan to better operate, maintain, and improve our system over the next 20 years to provide customers with quality and reliable water..

These amendments also provide the needed documentation and direction for ongoing discussions with Clackamas River Water, the neighboring water provider, on implementation of the City's capital projects to serve existing and future city residents as well as any future water rate discussions.

Project Purpose

In 2012, the Oregon City Water Master Plan was updated with the 2012 Water Distribution System Master Plan ("Water Master Plan") and is an Ancillary Document to the Oregon City Comprehensive Plan (2004). The purpose of the Water Master Plan is to identify existing water system deficiencies and required improvements, to analyze existing and future water demands, and develop a capital improvement program (CIP) to meet these needs.

In 2012 the Water Distribution System Master Plan ("Water Master Plan") was adopted including a CIP identifying projects over a 20-year planning horizon to satisfy growth, and water system operational and hydraulic criteria. In 2017, City staff identified several shortcomings with the 2012 CIP related to operational and implementation challenges:

- **Transmission Main Reliability:** Aging system condition combined with high water pumping pressures during current peak demand from the Mountain View Booster Station to Boynton and Henrici Reservoirs, results in leaking pipes and increases the risk of pipe breaks. As a result, the system operates at a reduced capacity, creating challenges to meet demands and maintaining fire protection.
- **Pressure Issues in System:** Customer feedback indicated pressure issues in the system that need to be addressed.
- **Future Growth Refinement:** Implementation challenges were realized with the current plan, due to topography and development locations in concept plan areas. Revised hydrologic modeling and subsequent analysis does not change the growth assumptions for areas located within the Urban Growth Boundary, but rather the approach to distributing water lines to those areas.

To address these identified challenges and better meet the needs of current and future customers, City staff secured professional services to update the water system model and CIP.

The updated model incorporated updated information since 2012, including current adopted design standards, consumption rates, growth rates, expansion of system since 2012, and system operating data. Updated modeling was then used to evaluate the water distribution system needs for the next 20

years. The outcome is an updated list of capital improvements needed to support development, as projected within the Comprehensive Plan.

The Amendment to the 2012 Water Distribution System Master Plan will incorporate the updated information into the Water Master Plan. The Amendment was developed in accordance with the Oregon Administrative Rule (OAR) 660-011 which requires that "...a City or County shall develop and adopt a public facility plan for areas within the urban growth boundary containing a population greater than 2,500 persons. The purpose of the plan is to help assure the urban development in such urban growth boundaries is guided and supported by the types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities and services are provided in a timely, orderly and efficient arrangement..". The revisions made in the Amendment will satisfy the City's obligations with respect to OAR 660-011.

According to the 2004 Oregon City Comprehensive Plan (Introduction, "Implementing the Plan" Page 4, Exhibit 6): "Ancillary Plans are adopted by the City Commission for such things as parks and recreation, transportation systems, water facilities and sewer facilities. Usually prepared by City departments through public process, ancillary plans are approved by the City Planning Commission and adopted by the City Commission to provide operational guidance to City departments in planning for and carrying out city services. These plans are updated more frequently than the Comprehensive Plan."

The Oregon City Water Master Plan is a "public facilities plan", which is defined in the administrative rules implementing Goal 11, OAR 660-011-0005(1), and provides: "A public facility plan is a support document or documents to a comprehensive plan. The facility plan describes the water, sewer and transportation facilities which are to support the land uses designated in the appropriate acknowledged comprehensive plans which an urban growth boundary containing a population greater than 2,500. Certain elements of the public facility plan also shall be adopted as part of the Comprehensive Plan, as specified in OAR 660-11-045."

Project Description

Amendment to Water Master Plan: This Amendment amends portions of the Water Master Plan as outlined in the "2012 Water Distribution System Master Plan Amendment, August 2020" by Murraysmith (attached). The Amendment has been identified as a change that requires approval by the Planning Commission and City Commission. When approved, the 2012 Water Distribution System Master Plan will be Amended as outlined in the "2012 Water Distribution System Master Plan Amendment, August 2020", attached herein, an ancillary plan to the Comprehensive Plan

The City of Oregon City is seeking adoption of an Amendment to the 2012 Water Distribution System Master Plan ("Water Master Plan"), to reflect current conditions and system needs. A complete replacement of the Water Master Plan is not being proposed at this time. Instead, the City seeks to amend the Water Master Plan to reflect updated modeling and system analysis and revising the list of capital projects based on that analysis. Elements of the Master Plan are still valid; therefore this Amendment will modify only portions of the Master Plan as noted below:

Amend the affected chapters amended, as noted below:

The following is a brief description of the affected chapters of the 2012 Water Master Plan, including description of change and what information is superseded in the affected chapters. Upon adoption, these changes will improve the City's ability to ensure the safe and adequate provision of water to existing and future customers within the urban growth boundary.

Chapter 3: Water Demand:

Description of Amendment: The Amendment reflects updated demand forecasts reflecting actual growth rates since 2012 and updated population forecasts based on Metro/Clackamas County projections. Demand projections also consider updated water demand data, reflecting actual consumption rates. Methodology is consistent with 2012 Master Plan and uses current comprehensive plan and zoning designations, to estimate water consumption including adopted concept plans and zoning implementation for Beavercreek (Thimble Creek), South End and Park Place.

Amendment to the Water Master Plan: *References to forecasted demands are superseded by this Amendment.*

Chapter 4: Water Distribution System Service Standards:

Description of Amendment: Since the 2012 Water Master Plan, certain specialty codes and design standards have changed. The Amendment incorporates updates to standards resulting from these code and standard changes, including:

- **Fire Flows:** Updated to align with recent revisions to the Oregon Fire Code.
- **Service Pressures:** Revised Minimum and Maximum service pressure criteria to reflect Oregon Plumbing Code requirements and industry standards, as well as City Operations input regarding acceptable minimums based on customer concerns.
- **Storage Criteria:** Updated to meet current industry standard.

Amendment to the Water Master Plan: *References to fire flow requirements, service pressures and storage criteria should be superseded by the Amendment.*

Chapter 5: Hydraulic Model Update:

Description of Amendment: Since 2012, system improvements and expansions have occurred consistent with the existing master plan. The Amendment includes an updated model reflecting system improvements since 2012, as well as incorporating updated data collected reflecting system operations and updated demand projections developed as part of this Amendment.

Amendment to the Water Master Plan: *The Amendment updates the hydraulic model and therefore supersedes the 2012 water master plan model.*

Chapter 6: Existing Water Distribution System Evaluation:

Description of Amendment: The water distribution system and design criteria have changed, as noted above, therefore the evaluation of the existing system has changed in the Amendment. Evaluation of the existing system was also expanded to include major maintenance items not captured in the 2012 Water Master Plan, but require a large capital outlay, such as reservoir coating and transmission main improvements. The updated hydraulic model and system operating information indicates the need to install pressure reducing valves (PRV) as well as transmission main and pump station improvements.

Amendment to the Water Master Plan: *The Amendment provides an updated evaluation of the existing system and supersedes the 2012 system evaluation.*

Chapter 7: Future Water Distribution System Evaluation:

Description of Amendment: As discussed above, the Amendment includes a new hydraulic model incorporating updated information since 2012, resulting in an updated evaluation of the future water demand throughout the City. Some key changes include looping of the water system to improve resiliency. This resulted in modification of size and location of some water lines. In addition, water lines that are 8" or less in concept planning areas have been eliminated from the CIP, since these costs are born by the developer and are not a capital expense for the City. Changes in design criteria combined with an updated hydraulic model, modified storage needs has resulted in a size reduction of new reservoirs. Minor pipe location alignments and the reservoir location as identified in the concept plan areas are also reflected, informed by information gathered since 2012 regarding build out of the areas to accommodate topographical challenges and system needs. The Amendment also reflects the City Commission decision to serve the Beavercreek (Thimble Creek) Concept plan area with City-owned infrastructure, independent of Clackamas River Water.

Amendment of the Water Master Plan: *The Amendment provides an updated evaluation of the future water distribution system and supersedes the 2012 water master plan evaluation.*

Chapter 8: Recommended Capital Improvement Program:

Description of Amendment: Updated modeling and evaluation of the existing and future water distribution system needs has generated an updated list of projects to be completed in the Capital Improvement Program including those projects discussed above. The Amendment is intended to provide an update of the projects and proposed implementation plan.

Amendment of the Water Master Plan: *Amendment project list replaces the 2012 Water Master Plan project list. Implementation of the projects will be as set forth in the Capital Improvement Plan for the Water Distribution System, adopted by City Commission.*

Chapter 9: Water Distribution System Financing Plan:

Description of Amendment: This Amendment does not change the sources of funding identified in the 2012 Water Master Plan. An updated rate study has been performed using the updated project list, however this is done outside of the comprehensive plan process and will be reviewed by the City Commission separately.

Amendment of the Water Master Plan: *Proposed method of funding is not changed; however, project list is replaced by the project list in the Amendment.*

1. Public Notice and Comments

Public outreach for the Water Master Plan Amendment has been done throughout the development of the Amendment through the land-use process, including the following:

- September 7, 2019: City Commission Work Session: Presentation of Water Distribution System CIP Update
- May 12, 2020 City Commission Work Session: Presentation of Water Master Plan Amendment – Service
- June 20, 2020 City Commission Meeting: Resolution 21-15 Water Service
- July 6, 2020 Citizen Involvement Committee Meeting: Presentation of WMP Amendment

- Summer 2020 Trail News: Keep Your Water Flowing – Describes Water Master Plan Amendment
- Winter 2020 Trail News: Keep Your Water Flowing – Describes Water Master Plan Amendment

The following public comments were received prior to the release of the Staff Report.

Wes Rogers

The Oregon City School District indicated that the proposal did not conflict with their interests.

Clackamas River Water

Clackamas River Water Submitted the following comments along with an existing letter date June 2, 2020 sent to Mayor Dan Holladay.

The Amendment would not conflict with the interests of Clackamas River Water (CRW) if the following changes are noted/included:

- CRW may have infrastructure in these areas that is needed to continue to serve parts of the District outside of these areas. Therefore, note that such infrastructure (such as water transmission mains) shall remain the property of CRW regardless of the planning actions taken by the City, in accordance with State statute and the 2018 Joint Engineering Study between the City and CRW.
- Where applicable, infrastructure eligible for reimbursement shall follow the terms of the Remuneration Agreement between the City and CRW.
- If the City intends to construct water infrastructure to serve properties in certain areas still in CRW's service area, the District asks that the City follow established procedures for withdrawal of these areas as outlined by statute.
- CRW infrastructure may exist in certain areas that can currently, or with minor modification, serve properties in some of these areas. CRW remains willing to serve those customers that remain within our boundaries in a manner that can help the City accomplish Goal 11.3 of its Comprehensive Plan ("Water Distribution").
- For further information and clarification, please reference the attached letter dated June 2, 2020, which was previously sent to the City.

Adam M. Bjornstedt, P.E. Chief Engineer, in an email dated December 7, 2020, provided additional context to the reference to the 2018 Joint Engineering Study:

Please consider this as a clarifying response to CRW's 10/29/2020 letter addressing Oregon City's proposed water master plan amendments. In that letter, the first bullet describes the need to consider existing CRW water infrastructure that is necessary to serve other areas of the District. The comments therein included a reference to the 2018 Joint Engineering Study and state statute. Please note that the reference to the Joint Engineering Study was for information purposes only, since the Study includes some definition and discussion of existing water infrastructure. As long as any action by the City in implementing its Master Plan is done in accordance with state statute, including where existing District water infrastructure exists, CRW takes no exception. The other bullet points of the 10/29/2020 letter remain as written, for the City's consideration.

Staff Response: Oregon City is a party to a remuneration agreement with Clackamas River Water that has been signed by both agencies that addresses infrastructure within areas to be withdrawn and how they are retained or transferred. State statute outlines the withdrawal process and procedures which we are following. The proposed Amendment does not change the area the City is planning to serve, just the implementation measures (e.g., reservoir location and alignments). Oregon City is the planned service provider in areas we are able to serve, as outlined in the Amendment.

II. DECISION-MAKING CRITERIA

Chapter 17.68 - Zoning Changes and Comprehensive Plan Amendments

17.68.010 - Initiation of the Amendment.

A text amendment to the comprehensive Plan, or an amendment to the zoning code or map or the Comprehensive Plan map, may be initiated by:

- A. A resolution request by the City Commission;*
- B. An official proposal by the Planning Commission;*
- C. An application to the Planning Division; or.*
- D. A Legislative request by the Planning Division.*

All requests for Amendment or change in this title shall be referred to the Planning Commission.

Finding: Complies as Proposed. The proposal qualifies as initiated as a legislative request by the Public Works Director.

17.68.015 –Procedures.

Applications shall be reviewed pursuant to the procedures set forth in Chapter 17.50.

17.50.170 - Legislative hearing process.

A. Purpose. Legislative actions involve the adoption or Amendment of the City's land use regulations, comprehensive Plan, maps, inventories and other policy documents that affect the entire City or large portions of it. Legislative actions which affect land use shall begin with a public hearing before the planning commission.

B. Planning Commission Review.

1. Hearing Required. The planning commission shall hold at least one public hearing before recommending action on a legislative proposal. Any interested person may appear and provide written or oral testimony on the proposal at or prior to the hearing. The community development director shall notify the Oregon Department of Land Conservation and Development (DLCD) as required by the post-acknowledgment procedures of ORS 197.610 to 197.625, as applicable.

Finding: Complies as Proposed. This legislative action will follow the procedures found in OCMC 17.50.170, including meetings with the Planning Commission and City Commission where applicable. 17.68.020 - Criteria.

The criteria for comprehensive plan amendment or text or map amendment in the zoning code are set forth as follows:

A. The proposal shall be consistent with the applicable goals and policies of the Comprehensive Plan;

Finding: Complies as Proposed. This legislative action will be consistent with the applicable goals and policies of the Comprehensive Plan. Therefore, the proposed amendments are consistent with Criterion (A).

The 2004 Oregon City Comprehensive Plan contains criteria for approving changes to the Comprehensive Plan and ancillary documents. Review of the Comprehensive Plan should consider:

1. Plan implementation process.
2. Adequacy of the Plan to guide land use actions, including an examination of trends.
3. Whether the Plan still reflects community needs, desires, attitudes and conditions. This shall include changing demographic patterns and economics.
4. Addition of updated factual information including that made available to the City of regional, state and federal governmental agencies.

"Statements of Principle - Page 3.

Provide efficient and cost-effective services. Water, sewer, fire protection, police services, streets, storm drainage, and other public services are directly affected by land-use decisions. This Plan ensures that land-development decisions are linked to master plans for specific services such as water or sewer and to capital improvement plans that affect budgets and require taxes to build.. The City Commission believes that citizens are economically well-served through compact urban form, redevelopment of existing areas, and public investments (for example, street improvements) that are carefully tied to private investments when development occurs."

"Implementing the Plan – Page 4

The Oregon City Comprehensive Plan is implemented through City Codes, ancillary plans, concept plans, and master plans.

Ancillary plans are adopted by the City Commission for such things as parks and recreation, transportation systems, water facilities, and sewer facilities. Usually prepared by City departments through a public process, ancillary plans are approved by the City Planning Commission and adopted by the City Commission to provide operational guidance to city departments in planning for and carrying out city services. These plans are updated more frequently than the comprehensive Plan."

"Ancillary Plans. – Page 15

Since 1982, several documents have been adopted as ancillary to the 1982 Comprehensive Plan: the *Public Facilities Plan* (1990), *Oregon City Transportation System Plan* (2001), *Oregon City Downtown Community Plan* (1999), *Oregon City Waterfront Master Plan* (2002), **City of Oregon City Water Master Plan (2012)**, *City of Oregon City Sanitary Sewer Master Plan* (2003), *Drainage Master*

Plan (1988, updated in 1999 as the City of Oregon City Public Works Stormwater and Grading Design Standards), Caufield Basin Master Plan (1997), South End Basin Master Plan (1997), Molalla Avenue Boulevard and Bikeway Improvements Plan (2001), the Oregon City Park and Recreation Master Plan (1999), and the Oregon City Trails Master Plan (2004)." (Emphasis added.)

Applicable Comprehensive Plan and Statewide Planning Goals and Policies

Goal 9.1 Improve Oregon City's Economic Health

Provide a vital, diversified, innovative economy including an adequate supply of goods and services and employment opportunities to work toward an economically reasonable, ecologically sound and socially equitable economy

Finding: Complies as Proposed. One of the primary purposes of the legislative Amendment is to update planned water infrastructure for developing areas considering topographic challenges, given the need to develop consistent with planned densities and resource limitations. These updates will improve the efficient arrangement of public facilities to better serve the planned development framework within the Urban Growth Boundary, which includes the Park Place, South End and Thimble Creek Concept Plan areas.

Goal 9.2 Cooperative Partnerships

Create and maintain cooperative partnerships with other public agencies and business groups interested in promoting economic development.

Policy 9.2.1

Seek input from local businesses when making decisions that will have a significant economic impact on them.

Policy 9.2.2

Carefully consider the economic impacts of proposed programs and regulations in the process of implementing the City's Comprehensive Plan.

Policy 9.2.3

Simplify, streamline, and continuously improve the permitting and development review process.

Finding: Complies as Proposed. This legislative Amendment has been proposed as a response to what other public agencies, local business, and citizens have conveyed to the City. These amendments also provide the needed documentation and direction for ongoing discussions with Clackamas River Water, the neighboring water provider, on implementation of the City's capital projects to serve existing and future city residents as well as any future water rate discussions.

Goal 11.1 Provision of Public Facilities

Serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities.

Finding: Complies as Proposed. The Master Plan and Amendment are in compliance with Goal 11, Public Facilities, which requires that public facilities and services be provided in a timely, orderly, and efficient manner. The Goal's central concept is that local government should plan public services in accordance with

the community's needs as a whole, rather than be forced to respond to individual developments as they occur, including water service.

The Amendment reflects a number of updates that improve the City's ability to meet Goal 11. Specific updates include:

- Updating water demand projections
- Updates water distribution system service standards
- Updating hydraulic model and analysis of system needs
- Updated Capital Improvement Plan (CIP)

Comp Plan Policy, 11.1.1

Ensure adequate public funding for the following public facilities and services, if feasible: Water distribution

Finding: Complies as Proposed. While the Amendment provides a new list of projects, the funding sources are the same as those identified in the current Water Master Plan: Water Fund and System Development Charge Fund.

Comp Plan Policy 11.1.2

Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.

Finding: Complies as Proposed. The Amendment updates portions of the Master Plan, thereby improving the City's ability to implement public facilities consistent with the goals, policies and implementation of the Comprehensive Plan consistent with Policy 11.1.2.

Comp Plan Policy 11.1.3

Confine urban public facilities and services to the city limits except where allowed for safety and health reasons in accordance with state land-use planning goals and regulations. Facilities that serve the public will be centrally located and accessible, preferably by multiple modes of transportation.

Finding: Complies as Proposed. The City's water distribution system and related facilities are located within the city limits. Storage and transmission facilities are identified outside the city limit and outside the UGB due to elevation requirements, but said facilities are for storage and supplying water to within the city limits. Interties to other jurisdictions water systems are located at various points around the City as allowed by state law. The water distribution facilities exist and are planned for in locations that are accessible by various modes of transportation.

Comp Plan Policy 11.1.4

Support development on underdeveloped or vacant buildable land within the City where public facilities and services are available or can be provided and where land-use compatibility can be found relative to the environment, zoning, and Comprehensive Plan goals.

Finding: Complies as Proposed. The Amendment reflects updated hydraulic model and system analysis to support the development consistent with the planned comprehensive planned zoning, inclusive of the adopted concept planned areas. An updated capital project list has been included in the Amendment showing system improvements to meet existing, and future water system needs.

Comp Plan Policy 11.1.5

Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

Finding: Complies as Proposed. The Amendment includes updates to the water distribution model, supply and demand projects, and an updated Capital Improvement Plan that identifies water system improvements needed to provide a uniform level of service to the planning area.

Comp Plan Policy 11.1.7

Develop and maintain a coordinated Capital Improvements Plan that provides a framework, schedule, prioritization, and cost estimate for the provision of public facilities and services within the City of Oregon City and its Urban Growth Boundary.

Finding: Complies as Proposed. The Amendment provides an updated capital project list, which will replace the existing project list in the Water Master Plan. The CIP includes prioritization of projects, cost estimates and an implementation plan. The CIP includes system improvements needed to meet operational, capacity and development needs, as well as pipe replacement and facility rehabilitation.

Comp Plan Goal 11.3 Water Distribution

Seek the most efficient and economical means available for constructing, operating, and maintaining the City's water distribution system while protecting the environment and meeting state and federal standards for potable water systems.

Finding: Complies as Proposed. The Amendment improves the City's ability to efficiently and economically construct, operate and maintain the City's water system and protect the environment and meet state, federal standards for potable water by incorporating updates to standards and regulations, reflecting current demand projections, providing a current hydraulic model, updated evaluation of the existing distribution system, and update to the needed improvements to meet the system needs and growing demands.

Comp Plan Policy 11.3.1

Plan, operate and maintain the water distribution system for all current and anticipated city residents within its existing Urban Growth Boundary and plan strategically for future expansion areas.

Finding: Complies as Proposed. The Amendment enhances the City's ability to plan, operate and maintain the water distribution system for all current and anticipated city residents within the UBG, by incorporating updated projections for water demand, reflecting current standards, updated hydraulic model, system analysis and updated capital project list.

Comp Plan Policy 11.3.2

Collaborate with South Fork Water Board to ensure that an adequate water supply system is maintained for residents. Coordinate with the South Fork Water Board, City of West Linn and Clackamas River Water to ensure that there is adequate regional storage capacity.

Finding: Complies as Proposed. The Amendment provides updated and current storage capacity needs, developed from revised water demand projections and design standards and updated hydraulic modeling. In addition, it identifies interties to other distribution systems to provide water supply when needed to improve system resiliency. These amendments provide the needed documentation and direction for ongoing discussions with Clackamas River Water and South Fork Water Board on implementation of the City's capital projects to serve existing and future city residents.

Comp Plan Policy 11.3.3

Maintain adequate reservoir capacity to provide all equalization, operational, emergency and fire flow storage required for the City's distribution system.

Finding: Complies as Proposed. A key component of the Amendment is an updated water distribution model which was calibrated with the system operation and updated to reflect updated projected demands. The Amendment includes updated reservoir capacity needs for the City to ensure adequate capacity to provide all equalization, operational, emergency, and fire flow storage required for current and future distribution system needs. The Amendment also reflects the City Commission's decision to provide service to the Beaver Creek (Thimble Creek) area.

Comp Plan Policy 11.3.4

Adopt a progressive water rate structure that will encourage water conservation.

Finding: Complies as Proposed. Water rate structure is addressed separately and not included in the existing Master Plan or Amendment proposal.

Goal 13.1 Energy Sources

Conserve energy in all forms through efficient land-use patterns, public transportation, building siting and construction standards, and city programs, facilities, and activities.

Finding: Complies as Proposed. One of the primary purposes of the legislative Amendment is to update planned water infrastructure for developing areas considering topographic challenges encountered in development plans. These updates will improve the efficient arrangement of public facilities to better serve the planned development framework within the Urban Growth Boundary, which includes the Park Place, South End and Thimble Creek Concept Plan areas.

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 plan amendment, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone or plan amendment;

Finding: Complies as Proposed. The proposed amendments to the Water Master Plan provide additional refinement to the capital project and proposed transmission line system indented service all areas within the Urban Growth Boundary. The work confirms and further refines the approach to efficiently services all areas of the City by utilizing currently modeling data and looks.

C. 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 or plan amendment

Finding: Complies as Proposed.: Not applicable. None of the proposed amendments will have any impact on the existing or planned functions, capacity, and level of service of the transportation system. Therefore, the proposed amendments are consistent with Criterion (C).

D. Statewide planning goals shall be addressed if the Comprehensive Plan does not contain specific policies or provisions which control the Amendment.

STATEWIDE PLANNING GOAL 1:

To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

Finding: Complies as Proposed.

Public outreach for the Water Master Plan Amendment has been done through-out the development of the Amendment through the land-use process, including the following:

- September 7, 2019: City Commission Work Session: Presentation of Water Distribution System CIP Update
- May 12, 2020 City Commission Work Session: Presentation of Water Master Plan Amendment – Service
- June 20, 2020 City Commission Meeting: Resolution 21-15 Water Service
- July 6, 2020 Citizen Involvement Committee Meeting: Presentation of WMP Amendment
- Summer 2020 Trail News: Keep Your Water Flowing – Describes Water Master Plan Amendment
- Winter 2020 Trail News: Keep Your Water Flowing – Describes Water Master Plan Amendment

STATEWIDE PLANNING GOAL 2:

To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Finding: Complies as Proposed. This Goal is implemented through the applicable Goals and Policies in Section 2 of the Oregon City Comprehensive Plan: Land Use. Because the Plan is an ancillary document to the City's Comprehensive Plan, the application was processed pursuant to the legislative hearing process outlined in Section 17.50.170 of the Oregon City Municipal Code.

Goal 2 also provides that the public and "affected governmental units" be given the opportunity to review and comment on proposed amendments.

STATEWIDE PLANNING GOAL 3: Agricultural Lands and GOAL 4: Forest Lands

Finding: Not Applicable. By definition, Oregon City does not have rural resource lands such as for agricultural or forest use within its city limits or UGB, and therefore, those goals are not applicable.

STATEWIDE PLANNING GOAL 5:

To protect natural resources and conserve scenic and historic areas and open spaces.

Finding: Complies as Proposed This goal requires the "protection of natural resources" through an inventory, conflict analysis and protection evaluation scheme that is prescribed by Oregon Administrative Rule 660, Chapter 23.

OAR 660-023-0250 specifies the circumstances that trigger Goal 5 review. In relevant part, an amendment affects a Goal 5 resource if the PAPA "amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource." Adoption of a new Stormwater Master Plan and the proposed minor amendments to the Stormwater and Grading Design Standards do not alter the City's existing riparian or wetland inventories.

That said, the 2020 Water Master Plan Update may trigger Goal 5 review because it will be adopted as an ancillary document to the City's Comprehensive Plan and one of the purposes for its adoption to update planned water infrastructure for developing areas considering topographic challenges to meet planned development densities and protect natural resources. These updates will improve the efficient

arrangement of public facilities to better serve the planned development framework within the Urban Growth Boundary, which includes the Park Place, South End and Thimble Creek Concept Plan areas.

Construction of capital project that implement the Water Master Plan will be reviewed under the City's development standards which include applicable overlay districts such as Natural Resource, a Flood, Geologic Hazards at that time of proposed development, just as they are today.

Where Goal 5 review is triggered under OAR 660-023-0250(3), the local government is not necessarily obligated to undertake each of the many sequential steps in the Goal 5 process identified in the rule. *Johnson v. Jefferson County*, 56 Or LUBA 25, 39-40, aff'd 221 Or App 190, 189 P3d 34 (2008); *NWDA v. City of Portland*, 50 Or LUBA 310, 338 (2005); *NWDA v. City of Portland*, 47 Or LUBA 533, 543 (2004), *rev'd on other grounds*, 198 Or App 286, 108 P3d 589 (2005); *Home Builders Assoc. v. City of Eugene*, 41 Or LUBA 370, 443-44 (2002). Rather, which and how many of the substantive steps in the Goal 5 decision process must be revisited, if any, and to what extent, will depend on the nature of the amendments, the existing acknowledged program, the particular Goal 5 resource and the conflicting use at issue. *Cosner v. Umatilla County*, 65 Or LUBA 9, 22 (2012).

The first step in the general Goal 5 process is to compile an inventory of resources to determine which resources are significant. OAR 660-023-0030. The proposed Amendment does not alter or amend the City's riparian or wetland inventories.¹ The quantity, quality and significance determinations for riparian resources similarly remains unchanged. Therefore, this inventory analysis step is not applicable to the City's adoption of Water Master Plan.

The second step is determining a program to achieve Goal 5 based on "an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use." OAR 660-023-0040. A "conflicting use" is defined by OAR 660-023-0010 to include "a land use, or other activity reasonably and customarily subject to land use regulations, that could adversely affect a significant Goal 5 resource." Identification of certain capital stormwater improvement projects proposed for construction within the Water Master Plan does not "allow, limit or prohibit a conflicting use" to a greater or lesser degree than if these projects were proposed before the

¹ Further OAR 660-023-0250(4) provides that:

"Consideration of a PAPA regarding a specific resource site, or regarding a specific provision of a Goal 5 implementing measure, does not require a local government to revise acknowledged inventories or other implementing measures, for the resource site or for other Goal 5 sites, that are not affected by the PAPA, regardless of whether such inventories or provisions were acknowledged under this rule or under OAR 660, division 16."

The only components of the City's land use plan or regulations that are germane for Goal 5 evaluation are the Water Master Plan. The City is not under any obligation to consider its existing plan or regulations, the level or extent of existing protections of riparian corridors, instream water and the habitat within rivers and creeks that are not subject to amendment.

Master Plan was adopted. Development of the Plan-identified projects must comply with all applicable plan and land use regulations just like private development would. In other words, where capital improvements are proposed within Natural Resource Overlay District regulated riparian setback areas, including the addition of any new impervious surface, compliance with OCMC 17.49 standard will be required. Any above ground water facility development within historic districts or on landmarks are reviewed for compliance with OCMC 17.40 Historic Overlay District and the Design Guidelines for New Construction. Therefore, adoption of the Water Master Plan does not "allow, limit or prohibit" a "conflicting use" to any greater or lesser degree than currently allowed, and therefore, no further analysis of ESEE consequences is necessary, and if applicable, Goal 5 is satisfied.

STATEWIDE PLANNING Goal 7:

To protect life and property from natural disasters and hazards.

Finding: Not Applicable. This proposal does not change any regulations related to natural hazards in Oregon City, including Geologic Hazard and floodplain overlay districts.

STATEWIDE PLANNING GOAL 8:

To satisfy the recreational needs of the citizens of the state and visitors, and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

Finding: Not Applicable. This proposal does not affect any parks or recreation facilities in Oregon City.

STATEWIDE PLANNING GOAL 9:

To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

Finding: Complies as Proposed. The adoption of these standards will allow the City to approve new development in the area that contributes to economic vitality.

STATEWIDE PLANNING Goal 10:

To provide for the housing needs of citizens of the state.

Finding: Complies as Proposed. This proposal allows for greater housing opportunities by creating a clear and objective process for reviewing and approving water infrastructure as necessary to serve the development of housing.

STATEWIDE PLANNING GOAL 11:

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Finding: Complies as Proposed. The Water Master Plan was created to serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities. Public Facilities include, but are not limited to, pump stations, public service lines, reservoirs, pressure release valves, service laterals list all the components of the water distribution system.

This goal is implemented through the applicable Goals and Policies in Section 11 of the Oregon City Comprehensive Plan: Public Facilities. As stated in Section 11, the Master Plan is necessary to maintain compliance with Statewide Planning Goal 11, Public Facilities. Goal 11 requires that public facilities and services be provided in a timely, orderly, and efficient manner. The goal's central concept is that local governments should plan public services in accordance with the

community's needs as a whole rather than be forced to respond to individual developments as they occur. This includes stormwater service. As shown in the findings below, the proposed update of the Water Master Plan is consistent with Goal 11.1.

One of the primary purposes of the legislative Amendment is to update planned water infrastructure for developing areas considering topographic challenges to meet planned development densities and protect natural resources.. These updates will improve the efficient arrangement of public facilities to better serve the planned development framework within the Urban Growth Boundary, which includes the Park Place, South End and Thimble Creek Concept Plan areas.

STATEWIDE PLANNING GOAL 12:

To provide and encourage a safe, convenient and economic transportation system.

Finding: Not Applicable. The proposed amendments to the Water Master Plan will not impact or otherwise alter the City's planned transportation system in any way. This goal does not apply

STATEWIDE PLANNING GOAL 13: To conserve energy.

Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles.

Finding: Complies as Proposed. This goal is implemented through the applicable Goals and Policies in Section 13 of the Oregon City Comprehensive Plan: Energy Conservation. The City promotes the efficient use of land and conservation of energy through its Comprehensive Plan and Zoning Code and through the implementation of public facility improvements and building codes. Higher density and mixed use zoning, land division, and site plan design standards promote more compact development patterns, and promote bicycling and walking instead of relying on the automobile for routine errands. New annexations are required to show that public utilities can be efficiently extended to new urban areas. Metro-approved Concept Plans are required prior to annexation to the City to assure that urban services and amenities will be developed in logical places as the community develops. The amendments to the water master plan assure that public facilities are efficiently used and that energy is conserved.

17.68.040 - Approval by the Commission. If the Planning Commission finds that the request or application for an amendment, or change, complies with the criteria of OCMC 17.68.020, it shall forward its findings and recommendation to the City Commission for action thereon by that body.

Finding: Not applicable. No Planning Commission recommendation will relate to OCMC 17.68.020 as no rezoning or annexation is occurring with this legislative application.

17.68.050 - Conditions.

In granting a change in zoning classification to any property, the Commission may attach such conditions and requirements to the zone change as the Commission deems necessary in the public interest and such conditions and restrictions shall thereafter apply to the zone change or map amendment.

Finding: Not applicable. No land is being rezoned as part of this legislative application.

Chapter 17.50 Administration and Procedures

17.50.050 – Pre-application conference.

- A. *Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.*
- 1. To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.*
 - 2. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.*
 - 3. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.*
- B. *A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have not been significantly amended. In no case shall a pre-application conference be valid for more than one year.*
- C. *Notwithstanding any representations by City staff at a pre-application conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.*

Finding: Complies as Proposed. Public Works (applicant) attended a preapplication conference with Planning staff (PA 19-69) on December 3, 2019

17.50.055 - Neighborhood association meeting.

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

- A. *Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.*
- B. *The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the Citizen Involvement Committee.*
- C. *A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet*

within thirty days, the applicant shall host a meeting inviting the neighborhood association, Citizen Involvement Committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a City facility.

- D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the Citizen Involvement Committee.*
- E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.*

Finding: Complies as Proposed: The applicant met with the Citizen Involvement Committee on June 6, 2020

17.50.070 - Completeness review and one hundred twenty-day rule.

- C. Once the Community Development Director determines the application is complete enough to process, or the applicant refuses to submit any more information, the City shall declare the application complete. Pursuant to ORS 227.178, the City will reach a final decision on an application within one hundred twenty calendar days from the date that the application is determined to be or deemed complete unless the applicant agrees to suspend the one hundred twenty calendar day time line or unless State law provides otherwise. The one hundred twenty-day period, however, does not apply in the following situations:*
 - 1. Any hearing continuance or other process delay requested by the applicant shall be deemed an extension or waiver, as appropriate, of the one hundred twenty-day period.*
 - 2. Any delay in the decision-making process necessitated because the applicant provided an incomplete set of mailing labels for the record property owners within three hundred feet of the subject property shall extend the one hundred twenty-day period for the amount of time required to correct the notice defect.*
 - 3. The one hundred twenty-day period does not apply to any application for a permit that is not wholly within the City's authority and control.*
 - 4. The one hundred twenty-day period does not apply to any application for an amendment to the City's comprehensive plan or land use regulations nor to any application for a permit, the approval of which depends upon a plan amendment.*
- D. A one-hundred day period applies in place of the one-hundred-twenty day period for affordable housing projects where:*
 - 1. The project includes five or more residential units, including assisted living facilities or group homes;*
 - 2. At least 50% of the residential units will be sold or rented to households with incomes equal to or less than 60% of the median family income for Clackamas County or for the state, whichever is greater; and*
 - 3. Development is subject to a covenant restricting the owner and successive owner from selling or renting any of the affordable units as housing that is not affordable for a period of 60 years from the date of the certificate of occupancy.*

- E. *The one hundred twenty-day period specified in OCMC 17.50.070.C or D may be extended for a specified period of time at the written request of the applicant. The total of all extensions may not exceed two hundred forty-five calendar days.*
- F. *The approval standards that control the City's review and decision on a complete application are those which were in effect on the date the application was first submitted.*

Finding: Complies as Proposed.

Not applicable. Legislative actions are not subject to this standard.

Exhibits

1. Applicant's Submittal
 - a. Narrative
 - b. Proposed Amendment to Water Master Plan (2020)
2. Water Master Plan (2012)
3. Public Comments
 - a. Oregon City School District, Wes Rogers
 - b. Clackamas River Water, Adam M. Bjornstedt, P.E. Chief Engineer
 - c. December 7, 2020 Email from Adam M. Bjornstedt, P.E. Chief Engineer
4. The following meeting agendas, videos, staff report, and exhibits for this project are available for viewing at <https://www.orcity.org/meetings> and are part of the record.
 - a. September 7, 2019: City Commission Work Session: Presentation of Water Distribution System CIP Update
 - b. May 12, 2020 City Commission Work Session: Presentation of Water Master Plan Amendment – Service
 - c. June 20, 2020 City Commission Meeting: Resolution 21-15 Water Service
 - d. July 6, 2020 Citizen Involvement Committee Meeting: Presentation of WMP Amendment
5. [Summer 2020 Trail News](#): Keep Your Water Flowing
6. [Fall 2020 Trail News](#): Keep Your Water Flowing
7. [Winter 2020 Trail News](#): Keep Your Water Flowing

**CITY OF OREGON CITY LAND-USE
APPLICANT SUBMITTAL**

FILE NO.: GLUA-19-00016 Amendment to Oregon City Water Master Plan

APPLICANT: Oregon City Public Works Department
John Lewis, P.E., Public Works Director
Patty Nelson, P.E. Senior Engineer
625 Center Street, Oregon City, Oregon 97045

REPRESENTATIVE: Murraysmith, Consulting Engineers
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Portland, OR 97204

REQUEST: Amendment to Oregon City Water Master Plan

LOCATION: City-wide.

Background

In 2012, the Oregon City Water Master Plan was updated with the 2012 Water Distribution System Master Plan (“Water Master Plan”) and is an Ancillary Document to the Oregon City Comprehensive Plan (2004). The purpose of the Water Master Plan is to identify existing water system deficiencies and required improvements, to analyze existing and future water demands and develop a capital improvement program (CIP) to meet these needs.

According to the 2004 Oregon City Comprehensive Plan (Introduction, “Implementing the Plan” Page 4, Exhibit 6): “Ancillary Plans are adopted by the City Commission for such things as parks and recreation, transportation systems, water facilities and sewer facilities. Usually prepared by City departments through public process, ancillary plans are approved by the City Planning Commission and adopted by the City Commission to provide operational guidance to City departments in planning for and carrying out city services. These plans are updated more frequently than the Comprehensive Plan.”

The Oregon City Water Master Plan is a “public facilities plan”, which is defined in the administrative rules implementing Goal 11, OAR 660-011-0005(1), and provides: “A public facility plan is a support document or documents to a comprehensive plan. The facility plan describes the water, sewer and transportation facilities which are to support the land uses designated in the appropriate acknowledged comprehensive plans which an urban growth boundary containing a population greater than 2,500.

Certain elements of the public facility plan also shall be adopted as part of the comprehensive plan, as specified in OAR 660-11-045.”

Amendment to Water Master Plan: This Amendment, amends portions of the Water Master Plan as outlined in the “2012 Water Distribution System Master Plan Amendment, August 2020” by Murraysmith (attached). The Amendment has been identified as a change that requires approval of the Planning Commission and City Commission. When approved, the 2012 Water Distribution System Master Plan will be Amended as outlined in the “2012 Water Distribution System Master Plan Amendment, August 2020”, attached herein, an ancillary plan to the Comprehensive Plan

A complete update of the Water Master Plan is not being completed at this time. Instead, the City seeks to amend the Water Master Plan, to reflect revised modeling and system analysis and resulting updated list of capital projects.

What is the purpose of the project?

In 2012 the Water Distribution System Master Plan (“Water Master Plan”) was adopted including a Capital Improvement Plan (CIP) identifying projects over a 20-year planning horizon to satisfy growth, and water system operational and hydraulic criteria. In 2017, City staff identified several issues with the 2012 CIP related to operational and implementation challenges:

- **Transmission Main Reliability:** Aging system condition combined with high water pumping pressures during current peak demand from the Mountain View Booster Station to Boynton and Henrici Reservoirs, result in leaking pipes and increase risk of pipe breaks. As a result, the system operates at a reduced capacity, creating challenges to meet demands and maintaining fire protection.
- **Pressure Issues in System:** Customer feedback indicated pressure issues in the system that need to be addressed.
- **Future Growth Refinement:** Implementation challenges were realized with current plan, due to topography and development locations in concept plan areas. The hydrologic modeling and subsequent analysis do not change the growth assumptions for areas located within the Urban Growth Boundary, but rather the approach to distributing water lines to those areas.

To address these identified challenges and better meet the needs of current and future customers, City staff secured professional services to update the water system model and capital improvement plan. The updated model incorporated updated information since 2012, including current adopted design standards, consumption rates, growth rates, expansion of system since 2012, and system operating data. Updated modeling was then used to evaluate the water distribution system needs for the next 20

years. The outcome is an updated list of capital improvements needed to support the comprehensive planned development.

The Amendment to the 2012 Water Distribution System Master Plan will incorporate the updated information into the Water Master Plan. The Amendment was developed in accordance with the Oregon Administrative Rule (OAR) 660-011 which requires that “..a City or County shall develop and adopt a public facility plan for areas within the urban growth boundary containing a population greater than 2,500 person. The purpose of the plan is to help assure the urban development in such urban growth boundaries is guided and supported by the types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities and services are provided in a timely, orderly and efficient arrangement..”. The revisions made in the Amendment will improve the City’s ability to meet OAR 660-011.

What are you proposing for adoption as part of this project?

The City of Oregon City is seeking adoption of an Amendment to the 2012 Water Distribution System Master Plan (“Water Master Plan”), to reflect current conditions and system needs. Elements of the Master Plan are still valid; therefore this Amendment will modify only portions of the Master Plan as noted below:

Amendment to Water Master Plan:

- *Add the attached document, 2012 Water Distribution System Master Plan Amendment (“Amendment”), dated August 2020 prepared by Murraysmith as **Appendix E: 2012 Water Distribution Master Plan Amendment, August 2020***

Amend the affected chapters amended, as noted below:

The following is a brief description of the affected chapters of the 2012 Water Master Plan, including description of change and what information is superseded in the affected chapters. Upon adoption, these changes will improve the city’s ability to ensure the safe and adequate provision of water to existing and future customers within the urban growth boundary.

Chapter 3: Water Demand:

- **Description of Amendment:** The Amendment reflects updated demand forecasts reflecting actual growth rates since 2012 and updated population forecasts based on Metro/Clackamas County projections. Demand projections also consider updated water demand data, reflecting actual consumption rates. Methodology is consistent with 2012 Master Plan and uses current comprehensive plan and zoning designations, to estimate water consumption including adopted concept plans and zoning implementation for Beaver Creek (Thimble Creek), South End and Park Place.

- **Amendment to the Water Master Plan:** *References to forecasted demands are superseded by this Amendment.*

Chapter 4: Water Distribution System Service Standards:

- **Description of Amendment:** Since the 2012 Water Master Plan, codes and standards have changed. The Amendment incorporates updates to standards resulting from these code and standard changes, including:
 - **Fire Flows:** Updated to align with recent revisions to the Oregon Fire Code
 - **Service Pressures:** Revised Minimum and Maximum service pressure criteria to reflect Oregon Plumbing Code requirements and industry standards, as well as City Operations input regarding acceptable minimums based on customer concerns.
 - **Storage Criteria:** Updated to meet current industry standard
- **Amendment to the Water Master Plan:** *References to fire flow requirements, service pressures and storage criteria should be superseded by the Amendment.*

Chapter 5: Hydraulic Model Update:

- **Description of Amendment:** Since 2012, system improvements and expansions have occurred consistent with the existing master plan. The Amendment includes an updated model reflecting system improvements since 2012, as well as incorporating updated data collected reflecting system operations and updated demand projections developed as part of this Amendment.
- **Amendment to the Water Master Plan:** *The Amendment updates the hydraulic model and therefore supersedes the 2012 water master plan model.*

Chapter 6: Existing Water Distribution System Evaluation:

- **Description of Amendment:** The water distribution system and design criteria have changed, as noted above, therefore the evaluation of the existing system has changed in the Amendment. Evaluation of the existing system was also expanded to include major maintenance items not captured in the 2012 Water Master Plan, but require a large capital outlay, such as reservoir coating and transmission main improvements. The updated hydraulic model and system operating information indicates the need to install pressure reducing valves (PRV) as well as transmission main and pump station improvements.
- **Amendment to the Water Master Plan:** *The Amendment provides an updated evaluation of the existing system and supersedes the 2012 system evaluation.*

Chapter 7: Future Water Distribution System Evaluation:

- **Description of Amendment:** As discussed above, the Amendment includes a new hydraulic model incorporating updated information since 2012, resulting in an updated evaluation of the future water system. Some key changes include looping of the water system to improve resiliency. This resulted in modification of size and location of some water lines. In addition,

water lines that are 8" or less in areas to be developed have been eliminated, since these costs are born by the developer and are not a capital improvement expense for the City. Changes in design criteria combined with an updated hydraulic model, modified storage needs and resulted in a size reduction of new reservoirs. Minor pipe location alignments and the reservoir location as identified in the concept plan areas are also reflected, informed by information gathered since 2012 regarding build out of the areas to accommodate topographical challenges and system needs.

The Amendment also reflects the City Commission decision to serve the Beavercreek (Thimble Creek) Concept plan area with City-owned infrastructure, independent of Clackamas River Water.

- ***Amendment of the Water Master Plan:*** *The Amendment provides an updated evaluation of the future water distribution system and supersedes the 2012 water master plan evaluation.*

Chapter 8: Recommended Capital Improvement Program:

- **Description of Amendment:** Updated modeling and evaluation of the existing and future water distribution system needs has generated an updated list of projects to be completed in the Capital Improvement Program including those projects discussed above. The Amendment is intended to provide an update of the projects and proposed implementation plan.
- ***Amendment of the Water Master Plan:*** *Amendment project list replaces the 2012 Water Master Plan project list. Implementation of the projects will be as set forth in the Capital Improvement Plan for the Water Distribution System, adopted by City Commission.*

Chapter 9: Water Distribution System Financing Plan:

- **Description of Amendment:** This Amendment does not change the sources of funding identified in the 2012 Water Master Plan. An updated rate study has been performed using the updated project list, however this is done outside of the comprehensive plan process and will be reviewed by the City Commission separately.
- ***Amendment of the Water Master Plan:*** *Proposed method of funding is not changed; however, project list is replaced by the project list in the Amendment.*

Consistency with Oregon City Comprehensive Plan

The 2004 Oregon City Comprehensive Plan calls for periodic, technical review of the Comprehensive Plan. Recommendations for updating the Comprehensive Plan should be presented to the Citizen Involvement Committee. The proposed Amendment to the Water Master Plan, an ancillary document to the Comp Plan, is considered a technical update to the Comprehensive Plan and was presented to the Citizens Involvement Committee on July 6, 2020.

In accordance with the requirements of the Comprehensive Plan, this technical review has considered:

1. ***Plan implementation process:*** This Amendment to the Water Master Plan, will be implemented consistent with the plan implementation process.
2. ***Adequacy of the Plan to guide land use actions, including an examination of trends.:*** This Amendment improves the City's ability to guide land use actions by providing an updated analysis of the water distribution system and resulting capital project list, which will help inform and guide land use actions.
3. ***Whether the Plan still reflects community needs, desires, attitudes, and conditions. This shall include changing demographic patterns and economics:*** *This Amendment is technical in nature specific to the water distribution system. It does not affect the Comprehensive Plan that affect demographics patterns or economics and should therefore still reflect community needs, desires, attitudes, and conditions.*
4. ***Addition of updated factual information including that made available to the City of regional, state and federal governmental agencies.:*** *Factual information updated as part of this Amendment, include water demand projections and hydraulic modeling of the system to support the comprehensive plan.*

Goal 11.1 Provision of Public Facilities

Serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities.

Amendment Response: The Master Plan and Amendment are in compliance with Goal 11, Public Facilities, which requires that public facilities and services be provided in a timely, orderly, and efficient manner. The goal's central concept is that local government should plan public services in accordance with the community's needs as a whole, rather than be forced to respond to individual developments as they occur, including water service.

The Amendment reflects a number of updates that improve the City's ability to meet Goal 11. Specific updates include:

- Updating water demand projections
- Updates water distribution system service standards
- Updating hydraulic model and analysis of system needs
- Updated Capital Improvement Plan (CIP)

Comp Plan Policy, 11.1.1

Ensure adequate public funding for the following public facilities and services, if feasible: Water distribution

- **Amendment Response:** While the Amendment provides a new list of project, the funding sources are the same as those identified in the current Water Master Plan: Water Fund and System Development Charge Fund.

Comp Plan Policy 11.1.2

Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.

- **Amendment Response:** The Amendment updates portions of the Master Plan, thereby improving the City's ability to implement public facilities consistent with the goals, policies and implementation of the Comprehensive Plan consistent with Policy 11.1.2.

Comp Plan Policy 11.1.3

Confine urban public facilities and services to the city limits except where allowed for safety and health reasons in accordance with state land-use planning goals and regulations. Facilities that serve the public will be centrally located and accessible, preferably by multiple modes of transportation.

- **Amendment Response:** The City's water distribution system and related facilities are located within the city limits. Storage and transmission facilities are identified outside the city limit and outside the UGB due to elevation requirements, but said facilities are for storage and supplying water to within the city limits. Interties to other jurisdictions water systems are located at various points around the city as allowed by state law. The water distribution facilities exist and are planned for in locations that are accessible by various modes of transportation.

Comp Plan Policy 11.1.4

Support development on underdeveloped or vacant buildable land within the city where public facilities and services are available or can be provided and where land-use compatibility can be found relative to the environment, zoning, and Comprehensive Plan goals.

- **Amendment Response:** The Amendment reflects updated hydraulic model and system analysis to support the development consistent with the planned comprehensive planned zoning,

inclusive of adopted concept planned area. An updated capital project list has been included in the Amendment showing system improvements to meet existing and future water system needs.

Comp Plan Policy 11.1.5

Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

- **Amendment Response:** The Amendment includes updates to the water distribution model, supply and demand projects and an updated Capital Improvement Plan that identifies water system improvements needed to provide a uniform level of service to the planning area.

Comp Plan Policy 11.1.7

Develop and maintain a coordinated Capital Improvements Plan that provides a framework, schedule, prioritization, and cost estimate for the provision of public facilities and services within the City of Oregon City and its Urban Growth Boundary.

- **Amendment Response:** The Amendment provides an updated capital project list, which will replace the existing project list in the Water Master Plan. The CIP includes prioritization of projects, cost estimates and an implementation plan. The CIP includes system improvements needed to meet operational, capacity and development needs, as well as pipe replacement and facility rehabilitation.

Comp Plan Goal 11.3 Water Distribution

Seek the most efficient and economical means available for constructing, operating, and maintaining the City's water distribution system while protecting the environment and meeting state and federal standards for potable water systems.

Comp Plan Policy 11.3.1

Plan, operate and maintain the water distribution system for all current and anticipated city residents within its existing Urban Growth Boundary and plan strategically for future expansion areas.

- **Amendment Response:** The Amendment enhances the City's ability to plan, operate and maintain the water distribution system for all current and anticipated city residents within the UBG, by incorporating updated projections for water demand, reflecting current standards, updated hydraulic model, system analysis and updated capital project list.

Comp Plan Policy 11.3.2

Collaborate with South Fork Water Board to ensure that an adequate water supply system is maintained for residents. Coordinate with the South Fork Water Board, City of West Linn and Clackamas River Water to ensure that there is adequate regional storage capacity.

- **Amendment Response:** The Amendment provides updated and current storage capacity needs, developed from revised water demand projections and design standards and updated hydraulic modeling. In addition, it identifies interties to other distribution systems to provide water supply when needed to improve system resiliency.

Comp Plan Policy 11.3.3

Maintain adequate reservoir capacity to provide all equalization, operational, emergency and fire flow storage required for the City's distribution system.

- **Amendment Response:** A key component of the Amendment is an updated water distribution model which was calibrated with the system operation and updated to reflect updated projected demands. The Amendment includes updated reservoir capacity needs for the City to ensure adequate capacity to provide all equalization, operational, emergency and fire flow storage required for current and future distribution system needs. The Amendment also reflects the City Commission decision to provide service to the Beavercreek (Thimble Creek) area.

Comp Plan Policy 11.3.4

Adopt a progressive water rate structure that will encourage water conservation.

- **Amendment Response:** Water rate structure is addressed separately and not included in the existing Master Plan or Amendment.



City of Oregon City

2012 Water Distribution System Master Plan Amendment

August 2020



Table of Contents

Introduction	4
Water Distribution Model	5
System Supply and Demands	5
<i>Demand Definition</i>	6
<i>Demand Summary</i>	6
Design Criteria	11
<i>System Pressures</i>	11
<i>Fire Flow Demands</i>	11
<i>Facility Criteria</i>	12
System Evaluation	12
<i>Distribution and Fire Flow Deficiencies</i>	12
<i>Reservoir Capacity Analysis</i>	13
<i>Pump Station Capacity Analysis</i>	14
Capital Improvement Program.....	18
<i>Cost Assumptions</i>	18
<i>Joint Work with CRW and Neighboring Provider Upgrades</i>	19
Improvement Descriptions.....	19
<i>Capacity and Operations Projects</i>	19
<i>Development and Growth Projects</i>	21
<i>Repair and Replacement Projects</i>	22
Capital Improvement Program Summary.....	29

Figures

Figure 1 Study Area	8
Figure 2 MDD Pressure and Pipe Velocity	16
Figure 3 Fire Flow	17
Figure 4 Pipe Distribution by Age and Material.....	24
Figure 5 CIP Projects Map	34

Tables

Table 1 Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone	9
Table 2 CRW and West Linn Demands	10
Table 3 Recommended Service Pressure Criteria.....	11
Table 4 Required Fire Flow Summary.....	11
Table 5 Water System Facility Criteria.....	12
Table 6 Reservoir Storage Calculations	14
Table 7 Pump Station Capacity Calculations	15
Table 8 Capital Improvement Program Projects	18
Table 9 Reservoir Filling Rates – Mountainview to Henrici Transmission Upsizing	21
Table 10 Park Place Concept Area Supply	22
Table 11 Repair and Replacement Summary	23
Table 12 Pipe Replacement Projects	24
Table 13.1 Pressure Reducing Valve Rehabilitation Schedule	25
Table 13.2 Pressure Reducing Valve Recommended Settings.....	27
Table 14 Reservoir Coating and Rehabilitation Schedule	28
Table 15 Reservoir Seismic and Safety Improvements.....	28
Table 16 Pump Station Rehabilitation and Maintenance Schedule	29
Table 17 Capital Improvement Program	30
Table 18 Total CIP Summary Costs	33

Appendices

Appendix A Water Distribution Model Calibration Technical Memorandum, Murraysmith

Appendix B Hydraulic Profiles

Appendix C Emergency Water Supply Analysis Technical Memorandum, Murraysmith

Appendix D Joint Engineering Study Technical Memorandum, Murraysmith

Appendix E Table 10.1B South Storage Capacity Summary (1.5% Growth Forecast), CRW

Appendix F Molalla Avenue Streetscape Concurrent Waterline Improvements Technical Memorandum, Murraysmith

Appendix G Small Waterline Replacement Projects & PRV Photo Documentation, Oregon City

Appendix H Mill Redevelopment Water Distribution Analysis Technical Memorandum, Murraysmith

Introduction

In 2012, the City of Oregon City (City) adopted the *Water Distribution System Master Plan* (2012 WDSMP) prepared by West Yost Associates, an ancillary document to the City's Comprehensive Plan and the Public Facilities Plan for the City's water distribution system as required by Oregon Administrative Rule (OAR) Chapter 660, Division 11, Public Facilities Planning. The 2012 WDSMP includes the Capital Improvement Program (CIP) which consists of a list of prioritized water distribution system projects and estimated costs were based on 2009 dollars. The CIP is a blueprint for forecasting capital expenditures and is one of the most important means of meeting the City's obligation towards community development and financial public facilities planning.

This document is an amendment to the 2012 WDSMP, developed primarily to provide an updated CIP in current dollars for implementation over a 20-year time frame, through 2040. In order to prepare a comprehensive update, elements of the 2012 WDSMP were either retained as the basis for updated analysis, revised and updated to current conditions, or replaced in their entirety. A summary of the relationship between the original Chapters of the 2012 WDSMP and this Amendment is presented below:

2012 WDSMP Chapter	2020 Amendment
1. Introduction	Documents updates presented herein as a supplement to Chapter 1
2. Existing Water Distribution System	Retained as is, limited system modifications have occurred
3. Water Demand Analysis	Replaces this Chapter with current and forecasted demands through the year 2040
4. Water Distribution System Service Standards	Amends specific criteria for service pressures, fire flows, pump stations and storage
5. Hydraulic Model Update	Replaces this Chapter with comprehensive model update and calibration
6. Existing Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
7. Future Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
8. Recommended Capital Improvement Program	Replaces this Chapter with updated CIP based on new existing and future system evaluation
9. Water Distribution System Financing Plan	Replaced by analysis of water rates and system development charges (SDCs) by FCS Group (under separate cover)

This 2012 WDSMP Amendment has been developed in accordance with Oregon Administrative Rule (OAR) 660-011 which requires that "a city or county shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500

persons. The purpose of the plan is to help assure that urban development in such urban growth boundaries is guided and supported by types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities and services are provided in a timely, orderly and efficient arrangement...”

Water Distribution Model

A steady-state hydraulic network model was used to evaluate the performance of the distribution system under existing and future demand conditions to identify deficiencies and evaluate adequacy of improvements. The model uses the Innovyze InfoWater software, and the EPANet hydraulic engine, to simulate system pressures and demands throughout the distribution system. The model was most recently updated and calibrated in 2017, as documented in the *Water Distribution Model Calibration Technical Memorandum* (Murraysmith, 2017, **Appendix A**).

System Supply and Demands

The South Fork Water Board (SFWB) supplies treated water to the City of Oregon City, the Clackamas River Water District (CRW), and the City of West Linn. Until recently, SFWB was the localized sole supply for all three providers. However, West Linn upgraded their connection with Lake Oswego-Tigard to access emergency supply from the Lake Oswego-Tigard Water Treatment Plant, completed in 2017. Additionally, CRW is extending supply from their own treatment through an on-going “Backbone” Project. The diversified supply will decrease the total demand on the SFWB system but will primarily not affect projected demands on the City system, or water wheeled through the City system. Therefore, for this analysis, it was assumed that SFWB would continue to supply all three providers without hydraulic deficiencies.

Currently, the City, West Linn, and CRW share supply via the SFWB 30-inch transmission line and the SFWB Division Street Pump Station, or the SFWB 42-inch transmission line and the City Hunter Avenue Pump Station. The supply system is shown in **Figure 1** and described in the bullets below. Included in **Appendix B** is a hydraulic profile of the complete system. A looped connection between the SFWB 30-inch and 42-inch transmission lines was completed in December 2018 and is not reflected in either the figure or the descriptions. This project serves to bypass a leaking portion of the SFWB 30-inch transmission line near the SFWB Water Treatment Plant (WTP) and does not significantly affect system supply. The planning and modeling for this project are documented in the *Emergency Water Supply Analysis Technical Memorandum* (Murraysmith 2019) included in **Appendix C**.

- West Linn supply is located downstream of the SFWB Division Street Pump Station, directly off SFWB transmission lines, at Master Meter 3 (MM03). West Linn owns and operates their supply line between MM03 and the West Linn Bolton Reservoir. System demands for West Linn are modeled at the Bolton Reservoir.
- CRW demands are supplied via a master meter directly off SFWB infrastructure (MM02), wheeled through City infrastructure to master meters (MM08, MM09, MM11, MM12,

MM13), and directly off City infrastructure, without an intervening master meter. CRW customers supplied without intervening master meters are considered regular City customers, for the purposes of modeling system demands. CRW customers supplied through City infrastructure and via master meters are included as modeled demands at the meter location. Similarly, CRW customers supplied directly off the SFWB line are represented as a single demand at the location of the master meter.

- The City service area includes all areas within the City's Urban Growth Boundary (UGB) as shown in **Figure 1** including 10 pressure zones. The City is supplied through both the SFWB 30-inch transmission line via the SFWB Division Street Pump Station, and through the SFWB 42-inch transmission lines via the Hunter Avenue Pump Station. Currently, CRW serves some areas within the City's UGB, including the Barlow Crest area and portions of the South End. These areas have been discussed in detail between the City and CRW in the *Joint Engineering Study Technical Memorandum* (Murraysmith 2018, **Appendix D**).

Demand Definition

The following demand conditions were used to evaluate system capacity.

- Average daily demand (ADD) is the total annual water volume used system-wide divided by 365 days per year.
- Maximum day demand (MDD) is the largest 24-hour water volume for a given year. In western Oregon, MDD usually occurs each year between July 1st and September 30th, referred to as the peak season.
- Peak hour demand (PHD) is estimated as the largest hour of demand on the peak use day.
- Fire flow demand is the flow rate required by the fire marshal to fight a fire at each hydrant. Demands are based on building size, material, and use. Fire flow demands are modeled in addition to MDD system demands.
- Equivalent Dwelling Units (EDUs) are used to quantify water demands for all forms of development in terms of typical water demand for single family residential units. Water demand per EDU is calculated as the total water demand for all single-family residential units in the system divided by the total number of single-family residential units.

Demand Summary

Demand projections were developed for Oregon City pressure zones and relevant master meters from individual water provider projections and are summarized in **Tables 1** and **2**. Demand projections include existing through the year 2040. The existing condition was approximated as the City's 2015 demands, as these were the most recent data available at the start of the CIP update process, and 2016 demands for West Linn and CRW.

City demands were calculated on a parcel level using Metro and Clackamas County household and employment projections (*Population Forecasts for Clackamas County Service Districts*, EcoNorthwest, 2016). EDUs were developed for each parcel based on residential, commercial, and industrial zoning classifications. Parcels were spatially assigned to the nearest model node within the same pressure zone and demands for each time period were calculated using 2012 WDSMP unit demands of 287 gallons per day per EDU (gpd/EDU). Water demand forecasts assume development occurs within the City's UGB and for the three concept plan areas as illustrated in **Figure 1**. These include the Park Place Concept Area, the South End Concept Area, and the Beavercreek Road Concept Area.

City MDD and PHD were calculated using peaking factors typical of similar systems in the region. Peaking factors of 2.3 for MDD:ADD and 2.0 for PHD:MDD were used.

CRW demands were distributed to master meter locations based on actual 2016 billing records and projected using a 1.5% per year growth rate, as presented in CRW's *Table 101.B South Storage Capacity Summary (1.5% Growth Forecast)* (CRW 2016, **Appendix E**).

West Linn demands were projected from actual 2016 billing records and the same 1.5% growth rate as used in CRW demand projections.

City and SFWB Facilities

-  SFWB Intake
-  Master Meter
-  Pump Station
-  Reservoir
-  SFWB Water Treatment Plant
-  UGB
-  City Service Area
-  CRW Service Area
-  West Linn Service Area
-  Concept Plan Areas

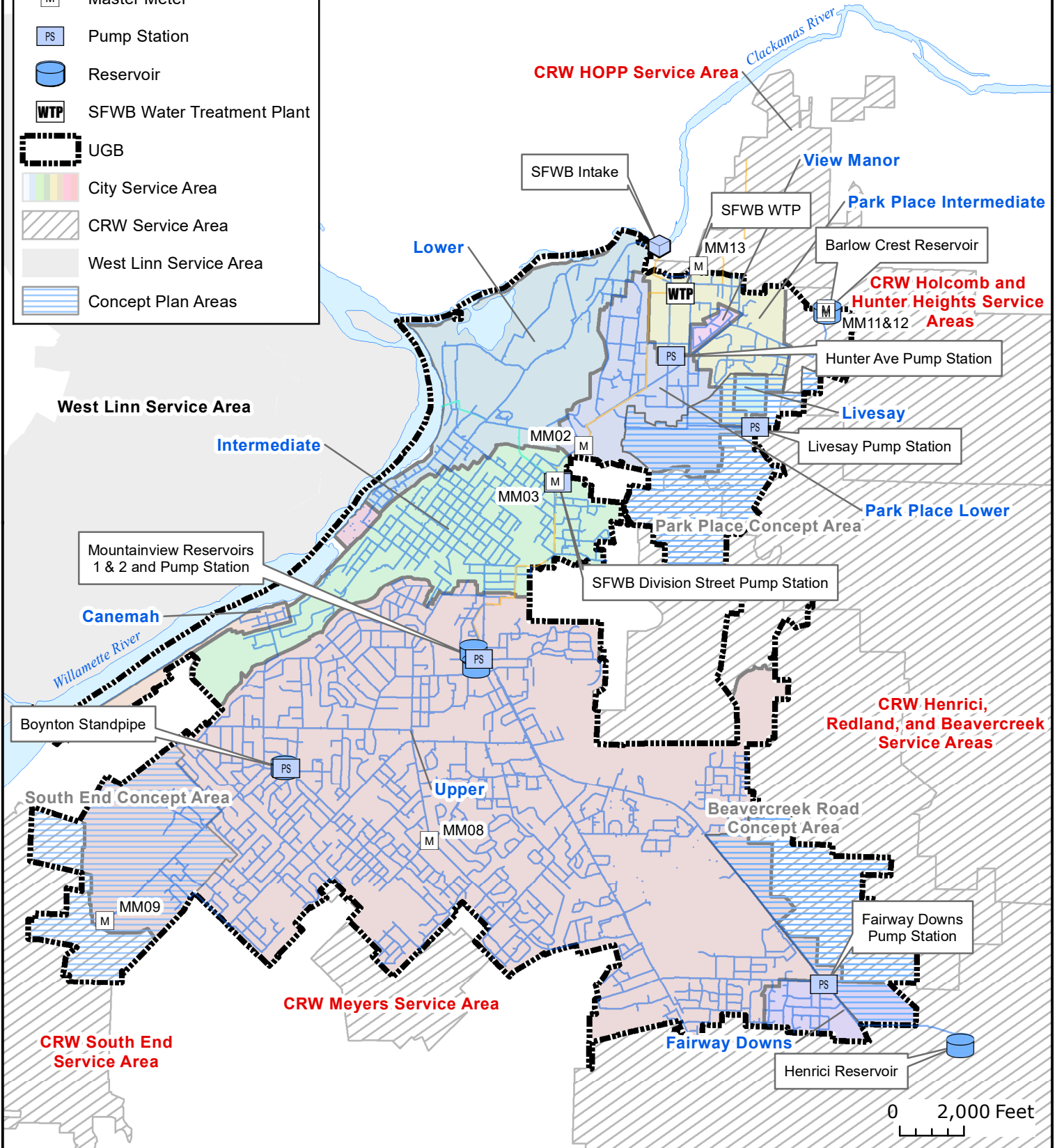


Table 1
Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone

Demand by Zone Zone	ADD (mgd)					MDD (mgd)					PHD (mgd)				
	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040
Lower	0.2	0.3	0.4	0.5	0.6	0.5	0.8	1.0	1.2	1.3	1.0	1.6	1.9	2.4	2.5
Intermediate	0.5	0.5	0.5	0.6	0.6	1.2	1.2	1.2	1.3	1.4	2.3	2.4	2.4	2.6	2.7
Upper	2.3	2.7	2.9	3.4	3.5	5.4	6.2	6.8	7.9	8.2	10.5	12.1	13.3	15.5	16.0
Fairway Downs	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.1	0.1	0.1	0.1	0.2	0.2
Park Place Lower	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.2
Park Place Intermediate	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.8	0.8
Park Place Livesay	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.03	0.04	0.00	0.02	0.04	0.06	0.1
Park Place View Manor	0.04	0.04	0.04	0.04	0.05	0.10	0.10	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Canemah	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.05	0.06	0.06	0.06	0.07
Total	3.4	3.9	4.3	5.1	5.2	7.9	9.1	10.0	11.7	12.1	15.4	17.8	19.5	22.9	23.7

Notes:

- 1 ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2015 data for the City pressure zone demands.

Table 2
CRW and West Linn Demands

Demand (meter)	ADD (mgd)					MDD (mgd)					PHD (mgd)				
Zone	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO
West Linn Total - MM03	2.9	3.1	3.3	3.9	6.0	7.2	7.8	8.4	9.7	15.2	14.1	15.1	16.3	18.9	29.6
CRW Zones- MM02	1.3	1.4	1.5	1.7	2.6	3.3	3.5	3.8	4.4	6.9	6.4	6.9	7.4	8.6	13.4
Barlow Crest PS - MM12	0.2	0.2	0.3	0.3	0.5	0.7	0.8	0.8	1.0	1.5	1.4	1.5	1.7	1.9	3.0
HOPP Forsythe - MM13	0.02	0.02	0.02	0.02	0.04	0.05	0.05	0.05	0.06	0.10	0.09	0.1	0.1	0.1	0.2
Leland/Meyers - MM08	0.09	0.09	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.6
South End - MM09	0.04	0.04	0.04	0.05	0.07	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4
CRW Metered Total	1.6	1.8	1.9	2.2	3.4	4.3	4.6	5.0	5.8	9.0	8.3	9.0	9.7	11.2	17.6

Notes:

- 1 BO = buildout; ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2016 data for the West Linn and CRW demands.
- 3 Future buildout demands include growth as determined by each water service provider.

Design Criteria

System Pressures

Water systems are constrained by service pressures and pipe velocity. For typical water systems, the acceptable service pressure range under ADD operating conditions is 40 to 100 pounds per square inch (psi). Where mainline pressures exceed 80 psi, services must be equipped with individual pressure reducing valves (PRVs) to protect water heaters per the *Oregon Plumbing Specialty Code (Section 608.2, 2014)*. Many of the City's customers fall within this category. During a fire flow event or emergency, the minimum service pressure is 20 psi as required by *Oregon Health Authority, Drinking Water Program (OAR 333.061.0050(8)(e))* regulations. Recommended service pressure criteria are summarized in **Table 3**.

Table 3
Recommended Service Pressure Criteria

Service Pressure Criterion	Pressure (psi)
Normal range, during ADD	50-100
Maximum without PRV	80
Minimum, during emergency or fire flow	20

The acceptable flow velocity under MDD conditions is less than 4 feet per second (fps) velocity. The system should also be able to provide fire flow at less than 10 fps. However, velocity criteria are secondary to pressure and fire flow requirements.

Fire Flow Demands

Fire flow demands within the City's system are assigned based on land use type and summarized in **Table 4**. Fire flow requirements are set by the fire marshal and are consistent with tables in **Appendix B** of the *Oregon Fire Code (OFC, 2014)*.

Table 4
Required Fire Flow Summary

Land Use Type	Required Fire Flow (gallons per minute) ¹	Required Duration (hours)
Single Family and Duplex Residential <3,600 sq ft	1,000	2
Single Family and Duplex Residential >3,600 sq ft	1,500	2
Medium Density Residential, Neighborhood and Community Service (Commercial)	2,500	2
High Density Residential, Commercial, Industrial, and Institutional	3,000	3

Notes:

- 1 A minimum service pressure of 20 psi is required at all services throughout the system during all fire flow.

Facility Criteria

Pump stations to zones with gravity storage are required to supply MDD with the largest pump out of service (firm capacity). This standard applies to all pump stations with the exception of the Fairway Downs Pump Station, which currently pumps to a closed zone (no reservoir) and thus is required to provide adequate supply for MDD and fire flow. In the future, the Fairway Downs zone is expected to be served by a new reservoir, eliminating the additional pumping capacity requirements for fire flow.

Reservoirs storage is allocated into multiple components including emergency, fire, equalization, and operational. Emergency storage is based on the amount of risk a system is willing to accept and is intended for supply during a treatment plant outage, or other emergency. A typical volume for emergency storage is two times ADD. Reservoir storage for fire flow demands is required for the maximum combination of fire flow demand and fire flow duration within each pressure zone. For an entirely residential zone, this value is 180,000 gallons (1,500 gpm x 2 hours). Equalization storage is the volume differential between MDD and PHD. Sometimes a value of 0.25xADD is substituted for equalization in place of an exact volume. Finally, operational storage is available to limit pump cycling or to sustain system pressures. This is the volume of water typically cycled throughout the day while supply is off, or the water surface required to sustain minimum pressures within the pressure zone. **Table 5** lists the water system facility criteria used to evaluate the City's system.

Table 5
Water System Facility Criteria

Water Facility Type	Criteria
Pump Station to Gravity Storage	Firm capacity for MDD
Pump Station to Closed Zone	Firm capacity for MDD + fire flow
Reservoir Storage (sum of components)	Emergency = 2xADD
	Fire flow = maximum fire flow x duration within zone
	Equalization = 0.25xADD
	Operational = Based on zone specific HGL or Pump Cycling

System Evaluation

Distribution and Fire Flow Deficiencies

The system was evaluated at existing and future demands, based on the pressure design criteria presented in **Table 3** and the fire flow criteria presented in **Table 4**. The results of both analyses (existing and future) were similar.

Figure 2 highlights areas of high velocity and low pressures under existing MDD. For both existing and year 2040 conditions, low pressures are generally not an issue, although higher velocities can be seen in one of the parallel Molalla Avenue transmission mains near the Mountainview Site.

Figure 3 highlights available fire flow at existing MDD throughout the system. Based on minimum pressure and fire flow criteria, the system performs adequately with fire flow deficiencies generally isolated to small diameter or dead-end pipes. This is true for both existing and future demand scenarios, although these deficiencies are typically more extreme under future system demands.

The results of the existing MDD condition analysis are shown in **Figures 2 and 3**, as deficiencies visible under the existing condition remain localized to the same areas under future conditions.

The City operates many of its zones at the higher end of pressure recommendations (**Figure 2**). This places stress on distribution piping and increases risk of water losses. For new developments, distribution piping should be designed within the recommended pressure ranges including redundant PRVs where pressures are in excess of 80 psi. Individual PRVs owned and maintained by the property owner may be required to further reduce local distribution pressure.

City staff have expressed concerns about balancing supply and demand between the Henrici Reservoir and Boynton Standpipe. While filling the Henrici Reservoirs from the Mountainview Pump Station, the system experiences high pressures and increased water losses. Additional transmission capacity is required to improve supply to and from the Henrici Reservoir while maintaining pressures within recommended ranges and is documented in **Appendix F, Molalla Avenue Streetscape Concurrent Waterline Improvements** (Murraysmith, October 2018).

Reservoir Capacity Analysis

Reservoir storage is provided for four purposes: emergency supply, fire flow, equalization, and operations. The total distribution storage requirement is the sum of the components. An evaluation of reservoir storage was performed including a review of each component. Because some zones can be supplied by multiple reservoirs or supplemented by pump station capacity, the following assumptions were developed for the reservoir storage analysis:

- Barlow Crest Reservoir supplies Park Place Intermediate Zone, View Manor, Livesay, and CRW MM13 (Forsythe)
- Mountainview Reservoirs 1 & 2 supply the Lower Zone, Intermediate Zone, and Canemah
- Boynton & Henrici Reservoirs supply Upper Zone, Fairway Downs, CRW MM08 (Leland) and MM09 (South End)
- The Upper Zone storage deficiencies can be supplied by the excess storage in Mountainview Reservoirs 1 & 2 depending on adequate pumping capacity at the Mountainview Pump Station.
- Proposed reservoirs for the Beavercreek Road Concept Area (Fairway Downs Reservoir) and the Park Place Concept Area (Holly Lane Reservoir) were included in the analysis and sized for growth within their respective service areas.

- Many zones can be alternately supplied by either the Barlow Crest or Mountainview Reservoirs via control valves and PRVs which provides system redundancy. For the purposes of this analysis, demands from these zones were only assigned to one of the supplying reservoirs.
- SFWB Water Treatment Clear Well supplies the Park Place Lower Zone. As discussed in the *SFWB Water Master Plan* (2016), the 2 million-gallon (MG) clear well has adequate capacity for storage within the zone.

The reservoir storage analysis is presented in **Table 6**. A negative value in available storage represents the additional storage required.

Table 6
Reservoir Storage Calculations

Reservoir	Existing Storage (MG)	Total Storage Required (MG)					Available Storage (MG)				
		Existing	2020	2025	2035	2040	Existing	2020	2025	2035	2040
Barlow Crest	1.75	0.7	0.7	0.8	0.9	1.0	1.1	1.0	1.0	0.8	0.7
Mountainview	12.5	2.7	3.0	3.2	3.6	3.8	9.8	9.5	9.3	8.9	8.7
Henrici/Boynton ¹	4	6.7	7.7	8.4	9.8	10.5	-2.7	-3.7	-4.4	-5.8	-6.5
Holly Lane	0		na			0.5			na		
Fairway Downs	0		na			1.1			na		

Notes:

- MG = millions of gallons, na = not applicable
- Existing condition assumed to be 2015/2016 depending on data source.
- Storage deficit shown in Henrici/Boynton by 2035 can be provided by the excess storage in the Mountainview Reservoirs, if the Mountainview Pump Station can meet the MDD demands of the Upper Zone and emergency power supply at the station is adequate for operation.

Through the 20-year time frame (2040), all zones have adequate storage. For the Upper and Fairway Downs Zones, this assumes that any storage deficiency is minimized by pumping capacity at the Mountainview Pump Station. For 2040, this results in 6.5 MG of emergency storage for the upper zones located in the Mountainview Reservoirs, which places additional risk on the City. Therefore, an additional 6.5 MG storage is recommended within the Upper Zone beyond the year 2040, the 20-year time frame. A future update of the 2012 WDSMP and this Amendment should include further evaluation of the need for this additional storage.

Pump Station Capacity Analysis

Two types of systems are considered in the pump station analysis. The first is an open system, with at least one reservoir that sets the hydraulic grade for the pressure zone. In an open system, the pump station firm capacity must be equal to or greater than MDD for the pressure zone(s) served by the pump station. The second is a closed system, which is a zone without a reservoir. In a closed

system, the pump station must be able to provide MDD + fire flow with the largest pump out of service.

Only the existing Fairway Downs Pump Station supplies a closed zone. With the development of the upper Beavercreek Road Concept Area, a new reservoir and pump station will be required. An open system will replace the existing closed system, and the reservoir will be sized to supply the fire flow needs of the expanded Fairway Downs Pressure Zone. As previously summarized, storage requirements in the Intermediate Zone and limitations in storage at Henrici/Boynton should be considered in sizing the Fairway Downs Reservoir and associated pump station.

As shown in **Table 7**, all existing pump stations meet system demands for the next 20 years through year 2040. Improvements to the Mountainview Pump Station firm capacity may be required beyond 2040 in conjunction with additional storage in the Upper Zone.

Table 7
Pump Station Capacity Calculations

Pump Station	Firm Capacity (GPM)	MDD (GPM)					Available Pumping Capacity (GPM)				
		Existing ⁴	2020	2025	2035	2040	Existing ⁴	2020	2025	2035	
Hunter Ave	1,800	800	850	900	1,100	1,250	1,000	950	900	700	550
Mountainview ¹	8,000	3,900	4,500	4,950	5,800	6,300	4,100	3,500	3,050	2,200	1,700
Fairway Downs ²	1,050	50	50	50	50	na	0	0	0	0	na
Holly Lane	na		na			100			na		
Fairway Downs ³	na		na			250			na		

Notes:

GPM = gallons per minute, MDD = maximum day demand, na = not applicable

1 Mountainview Pump Station required to also have emergency power supply for MDD supply operations, as some emergency storage for the Upper Zones is located in the Mountainview Reservoirs.

2, 3 Existing Fairway Downs Pump Station to be decommissioned when development occurs and replaced by new Fairway Downs Pump Station. Existing station pumps to closed zone, therefore pumping capacity required at MDD + fire flow (1,000 gpm). Check valves from Upper Zone also available for fire flow in the zone. Additional fire flow demand not required for new pump station with gravity storage.

4 Existing condition assumed to be 2015/2016 depending on data source.

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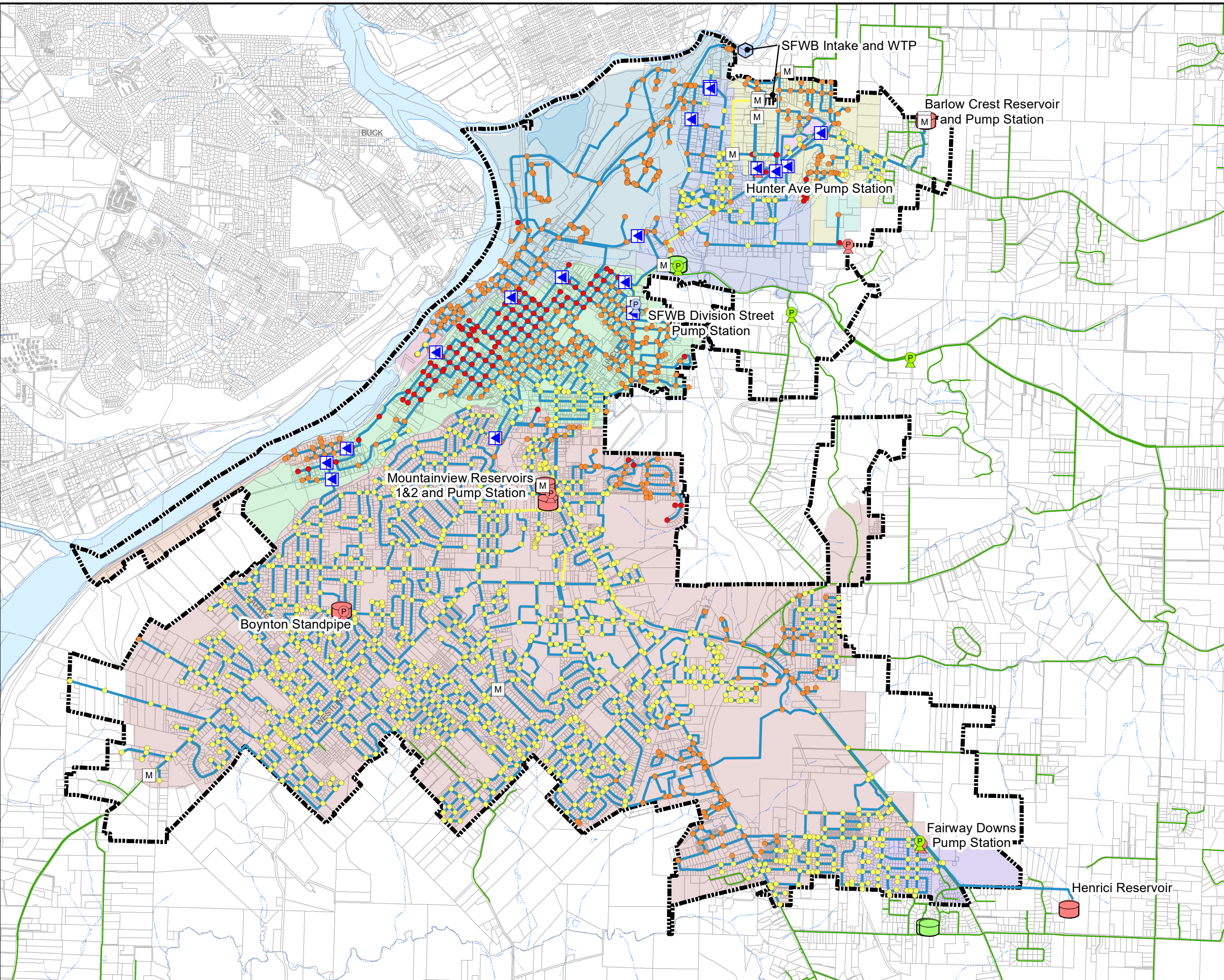


Figure 2
City of Oregon City
Static Pressure Analysis

- PIPE VELOCITY**
- < 4 fps
 - 4 - 10 fps
 - > 10 fps
- STATIC PRESSURE**
- < 20 psi
 - 20 - 40 psi
 - 40 - 80 psi
 - 80 - 120 psi
 - > 120 psi
- CRW MAINS**
- UGB**
- PRESSURE ZONE**
- CANEMAH DISTRICT
 - FAIRWAY DOWNS
 - INTERMEDIATE ZONE
 - LOWER ZONE
 - PAPER MILL ZONE
 - PARK PLACE - INTERMEDIATE
 - PARK PLACE - LIVESAY RD
 - PARK PLACE - LOWER
 - PARK PLACE - VIEW MANOR
 - UPPER ZONE
- Water Facilities**
- SFWB, Intake
 - SFWB, WTP
 - Master Meter
 - SFWB, Pump Station
 - CRW, Pump Station
 - CRW, Reservoir
 - OC, Pump Station
 - OC, Reservoir
 - OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.

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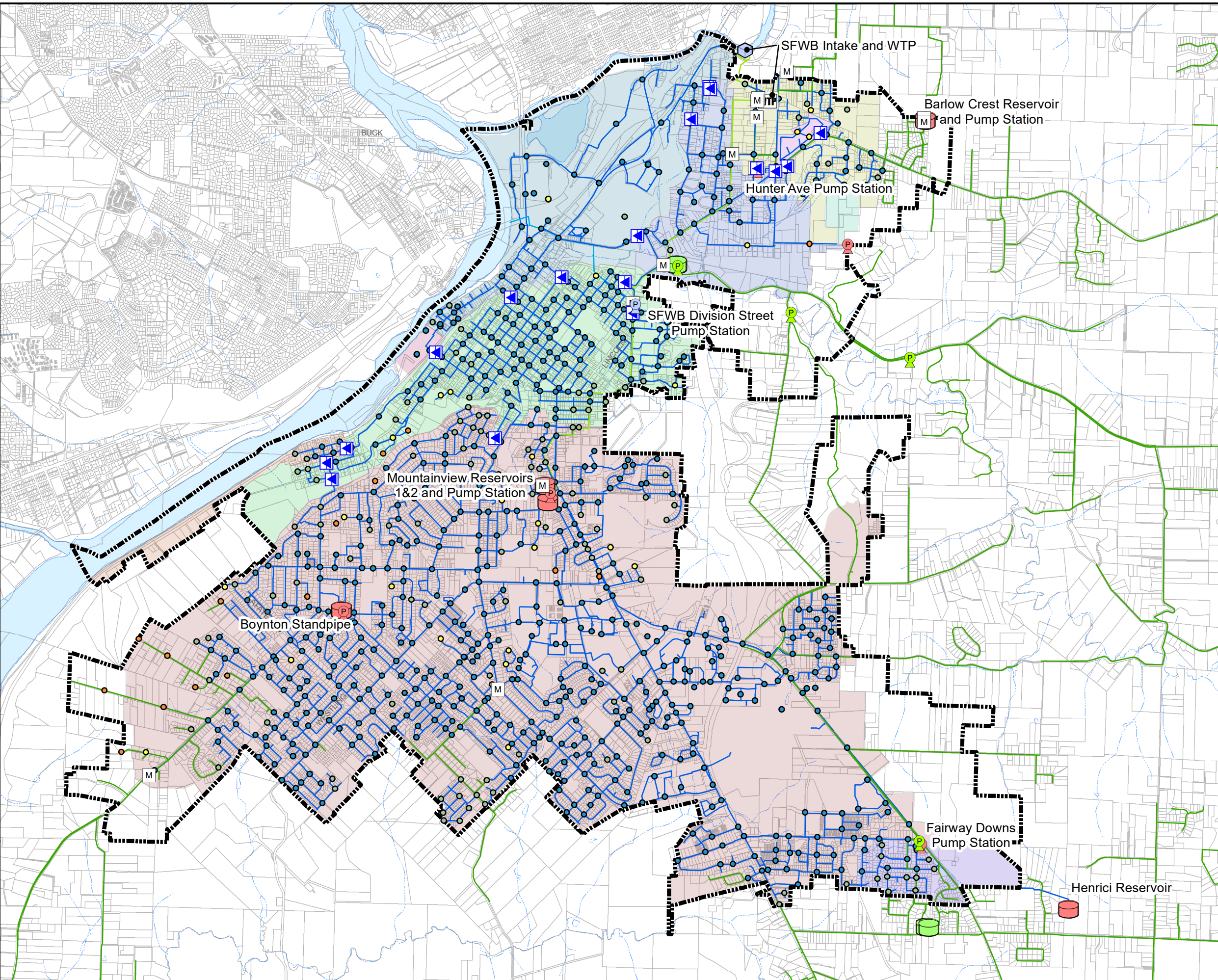


Figure 3
City of Oregon City
Available Fireflow

- AVAILABLE FIREFLOW**
- 0
 - <1000
 - 1000 - 1500
 - 1500 - 3000
 - >3000

- WATER MAINS**
- OREGON CITY
 - SFWB
 - WEST LINN
 - CRW
 - UGB

- PRESSURE ZONE**
- CANEMAH DISTRICT
 - FAIRWAY DOWNS
 - INTERMEDIATE ZONE
 - LOWER ZONE
 - PAPER MILL ZONE
 - PARK PLACE - INTERMEDIATE
 - PARK PLACE - LIVESAY RD
 - PARK PLACE - LOWER
 - PARK PLACE - VIEW MANOR
 - UPPER ZONE

- Water Facilities**
- SFWB, Intake
 - SFWB, WTP
 - Master Meter
 - SFWB, Pump Station
 - CRW, Pump Station
 - CRW, Reservoir
 - OC, Pump Station
 - OC, Reservoir
 - OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.

Capital Improvement Program

Capital projects were developed based on deficiencies identified in the system evaluation and future year 2040 system demands including new growth areas. The Capital Improvement Program (CIP) is divided into three types of improvement projects: “Capacity and Operations,” “Development and Growth,” and “Repair and Replacement.” Descriptions of these categories are defined below and further summarized in **Table 8**.

- Capacity and Operations - Projects are typically those to meet existing system demands, reservoir turnover, or to meet the needs of areas within the system that will require upsizing to provide for in-fill growth. Dead-end pipes with fire flow limitations where at least 500 gpm of fire flow is available were excluded from the capacity improvements.
- Development and Growth - Projects differ in that they are specifically targeted at new large development areas and are typically not required to supply existing demands.
- Repair and Replacement - Projects include both routine repair and replacement of pipes, pump replacement, reservoir maintenance, and PRV repair/replacement.

Table 8
Capital Improvement Program Projects

Improvement Type	Improvement Addresses:	Timing Trigger
Capacity and Operations	Capacity limitations and system operations	Mitigate projected deficiencies
Development and Growth	New development areas	Developer driven
Repair and Replacement	Routine maintenance on infrastructure and annual pipe replacement	Annual and cyclical investments based on infrastructure life cycle

Cost Assumptions

All project descriptions and cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency. Since construction costs change periodically, an indexing method to adjust present estimates in the future is useful. The Engineering News-Record (ENR)

Construction Cost Index (CCI) is a commonly used index for this purpose. For purposes of future cost estimate updating; the August 2018 ENR CCI (20-city average) is 11124.

Joint Work with CRW and Neighboring Provider Upgrades

The City participates in joint infrastructure planning and supply discussions with regional water suppliers and distributors such as SFWB, CRW, Lake Oswego, and West Linn. Neighboring communities have recognized the benefits of collaborative planning and have worked together through Intergovernmental Agreements (IGAs) and joint projects like the South End supply line and Barlow Crest supply, to provide water to regional customers. This collaboration encourages purveyors to invest in essential facilities, without building redundant infrastructure. As communities develop, this collaboration will continue to be important to efficiently serve all customers. In addition, an increased focus on system interties has improved regional resiliency, in the event of a major failure at one or more of the water treatment plants within the region. Recent and anticipated system intertie investments include:

- CRW's Backbone Project to extend CRW WTP supply to CRW zones south of the Clackamas River.
- Continued operation and maintenance of City/CRW and SFWB/CRW interties.
- Operation and maintenance of the West Linn-Lake Oswego emergency connection booster station. This provides West Linn an alternate supply from the newly completed Lake Oswego–Tigard WTP upgrades, and improves regional resiliency through interconnections.

Improvements identified in the City CIP exclude analysis of alternatives related to major regional projects such as the CRW Backbone Project. The City will continue to explore opportunities for collaboration with neighboring providers at which time some of the City capital projects may be modified to account for a broader regional supply and/or distribution solution.

Improvement Descriptions

Capacity and Operations Projects

Capacity and operations projects were identified through model evaluations, discussions with City staff, and pump station/reservoir capacity reviews. These improvements are summarized for both the City and SFWB, although only the City improvements are included in the CIP.

SFWB Improvements

SFWB improvements identified in the *SFWB Water Master Plan* (CH2M and MWH, 2016) are required to maintain system operations, expand capacity, and address redundancy. These projects address limited capacity in the 30-inch SFWB supply line which causes operational difficulties at the Division Street Pump Station, and eventual capacity limitations in the rest of the SFWB system. A 42-inch connection on Cleveland St between the 30-inch and 42-inch SFWB supply lines

(referenced earlier in *System Supply and Demands*) was completed recently in December 2018. Key SFWB transmission improvements include:

- Increased transmission capacity between the WTP and the Mountainview Pump Station (upsizing the existing 30-inch line)
- Increased capacity at the Division Street Pump Station

Henrici Reservoir Operations

Based on existing transmission capacity, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. Both reservoirs provide storage for the Upper Zone and are simultaneously filled by the Mountainview Pump Station. The Boynton Standpipe is centrally located while the Henrici Reservoir is located beyond the perimeter of the Upper Zone to the southeast. When the Mountainview Pump Station output is increased to fill the Henrici Reservoir, high pressure issues are seen near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands.

Project constraints and opportunities include:

- Existing transmission main(s) in heavily trafficked Beaver Creek Road
- Secondary transmission route(s) in backyards and other difficult to access locations
- Concurrent streetscape improvement project along Molalla Avenue
- Additional transmission and distribution requirements for growth including the expanded Fairway Downs Zone

After evaluating alternatives, a parallel transmission route was identified along Molalla Avenue, and a new transmission line was identified between Glen Oak Road and the Henrici Reservoir. The combined improvements provide additional capacity and improved transmission to and from the Henrici Reservoir. The projects will likely be constructed in multiple phases with the Molalla Avenue portion of the project constructed first to align with the streetscaping work. Both improvements are required to provide the full operational benefits. **Table 9** presents a flow split analysis between Boynton and Henrici Reservoirs under existing ADD. Without improvements, approximately 67% of the available excess flow from the Mountain View Pump Station is conveyed to the Boynton Standpipe and 33% is conveyed to Henrici. With all improvements, the flow split is approximately 50% between the reservoirs.

Table 9
Reservoir Filling Rates - Mountainview to Henrici Transmission Upsizing

Scenario	Boynton Standpipe (gpm) ¹	Henrici Reservoir (gpm) ¹
No Improvements	4,200	2,100
Parallel Main on Molalla Ave	4,200	2,500
Upsize Beaver Creek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beaver Creek Transmission	3,500	3,500

Note:

1 Filling rates during existing ADD, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.

Development and Growth Projects

Development improvements were identified through a variety of means including discussions with the City and reviewing existing concept plans. Most projects include only the main line infrastructure required to serve the development areas, and do not include full distribution piping. Pipe layouts were based on either proposed street networks or additional studies, if available. Unless otherwise noted, development areas can be served by extending existing transmission and distribution piping.

Park Place Development

The Park Place Concept Area is located east of Oregon City and Highway 213, north and south along S Redland Road, and east and west along S Holly Lane. Portions of the area are currently served by CRW and development is described in the *Park Place Concept Plan* (2008). Proposed improvements for the area include pipe looping into the existing City system at the Park Place Intermediate and the Park Place Lower zones, a new 1.0MG reservoir and pump station, and intermediate PRV's.

Joint transmission along S Redland Road to CRW's Holly Lane and Redland Pump Stations has been discussed between the City and CRW. This is advantageous to both providers as it limits unnecessary parallel infrastructure, provides emergency connections between both systems and provides a secondary supply to the City via CRW.

Details of the pressure zone delineation for the Park Place Concept Area are presented in **Table 10**.

Table 10
Park Place Concept Area Supply

Location	Ground Elevation (ft)	HGL (ft)	Supply	Storage
East of Trail View Dr	>400	794	CRW via Barlow Crest PS	CRW Hunter Heights Reservoir
North of S Redland Rd	>310	549	New transmission piping from Park Place Intermediate	Barlow Crest Reservoir
North of S Redland Rd	200-310	430	PRV'd from Park Place Intermediate	Barlow Crest Reservoir
Along S Redland Rd	40-200	320	Master Meter from SFWB supply at Redland Rd and Anchor Way	SFWB WTP Clearwell
South of S Redland Rd	>200	350	New Park Place PS	New Holly Lane Reservoir

Beavercreek Road Development

The Beavercreek Road Concept Area is located within the existing UGB, northeast of Beavercreek Road. The area will require service to the City's Upper and Fairway Downs Zone pressure zones. The City and CRW have discussed service in this area extensively in the *Joint Engineering Study Technical Memorandum (Appendix D)* and the prior meetings leading up to that document. Various alternatives were explored, including joint construction of a reservoir to serve both CRW and the Fairway Downs Zone. City staff reviewed the alternative approaches with the City Commission and confirmed the City's desire to pursue development of City-owned infrastructure, independent of CRW, to serve the Beavercreek Road Concept Area within the UGB. The capital improvements presented in this 2012 WDSMP Amendment reflect this direction.

Pipe networks were based approximately on planned street alignments, as presented in the *Beavercreek Road Concept Plan* (Otak 2008). The Fairway Downs Zone is expected to serve areas above 480-feet elevation, within the UGB at a pressure zone hydraulic gradeline of 650-feet. Pumps will be sized to meet MDD demands, with additional peak hour or fire flow supply available from the new 1.75 MG reservoir.

Repair and Replacement Projects

Significant investment in infrastructure repair and replacement will be required as infrastructure reaches the end of its useful life. A Repair and Replacement Program is intended to apply proactive investment for reservoir coatings, PRV repair/replacement, pump station mechanical/electrical replacement, and pipeline repair/replacement. The program priorities are established based on

condition assessments with funding established based on standard life spans for facility types as shown in **Table 11**.

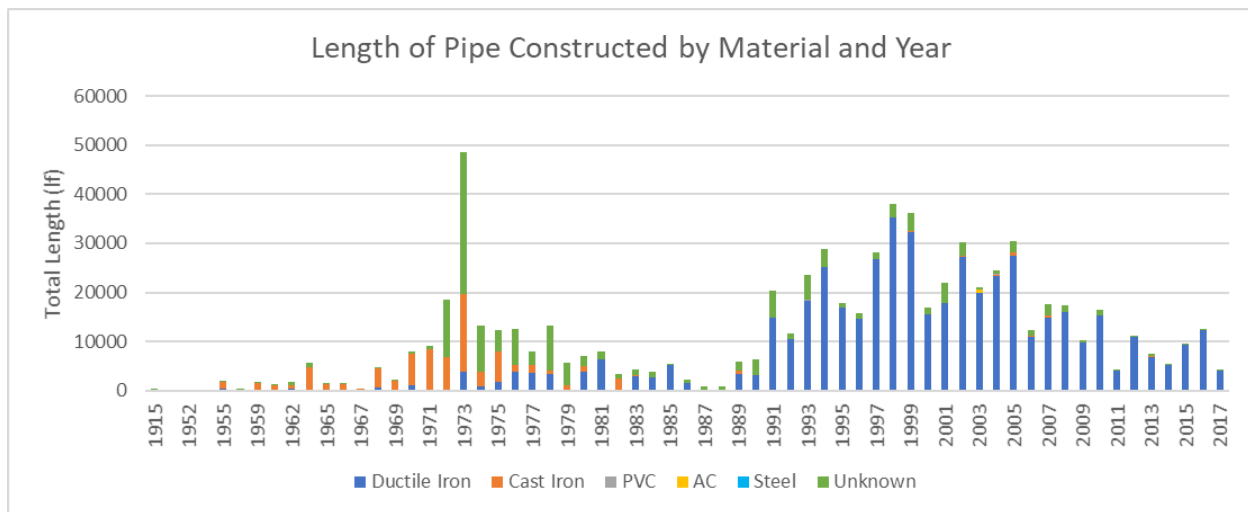
Table 11
Repair and Replacement Summary

Facility	Work Required	Frequency
Pipeline	Repair or Replacement	75 years
PRV	Inspection	Annual
	Major Rehabilitation and Rebuild	5 years
	Replacement	25 years
Reservoir – Steel	Exterior Overcoat	15 years
	Interior Removal and Recoat	30 years
	Exterior Removal and Recoat	30 years
Reservoir – Concrete	Minor Touch Up Rehabilitation	Annual
	Major Rehabilitation and Repairs	25 years
Pump Station - Mountainview	Pump, Mechanical & Electrical Replacements	10 years
Pump Station – Hunter Ave	Pump, Mechanical & Electrical Replacements	20 years
Pump Stations - Other	Pump, Mechanical & Electrical Replacements	20 years

Pipe Replacement

An evaluation was performed to identify the length of pipeline reaching the end of its useful life within the year 2035, 20-year planning horizon. An age distribution for piping was extracted from the City GIS and is presented in **Figure 4**. Pipe installations older than 75-years or with known leakage issues were identified for the 20-year planning horizon. This amounts to 90,000 linear-feet of pipe or approximately 4,500 linear-feet of pipe per year over 20-years as shown in **Table 12**. Specific pipe segments were identified for the 0 to 5-year time frame by City staff based on the known condition and leak issues. These include pipelines located along Main Street between 10th Street and 15th Street, between the Mountainview Reservoirs and Gaffney Lane to the south, crossing I-205 near the intersection of Agnes Avenue and Main Street, and those listed in the CIP **Table 17** as an “Oregon City Operations – Small Waterline Replacement” project. Specific information on small water projects are also summarized in **Appendix G**.

Figure 4
Pipe Distribution by Age and Material



Note:

- 1 Approximately 18 percent of pipe has unknown installation date, not shown in **Figure 4**. The pipe construction material is approximately evenly split between Ductile Iron, Cast Iron, and Unknown. Installation dates were assumed evenly distributed over 50 years between 1943 and 1993.

Table 12
Pipe Replacement Projects

Timeframe	Length of Pipe for Repair and Replacement (linear-feet) ¹	Location Description
0 – 5 Years	29,000	Including but not limited to: - Main Street between 10th Street and 15th Street - Between Mountainview Reservoir and Gaffney Lane - I-205 crossing near Agnes Avenue and Main Street - OC Operations, Small Waterline Replacement Projects
6 – 10 Years	17,000	3,500 linear-feet per year based on pipe condition assessments
11 – 20 Years	43,000	4,500 linear-feet per year based on pipe condition assessments
TOTAL	89,000	

Notes:

- 1 Approximately 18-percent of pipe has unknown installation date. Assumed replacement of those pipes to be evenly distributed over 50 years.

Pressure Reducing Valve Station Rehabilitation, Repair, and Recommended Settings

Pressure Reducing Valve (PRV) stations are vital for supply to zones without gravity storage. The PRVs should be inspected and maintained annually with major rehabilitation scheduled every 5 years, and replacement scheduled every 25 years. **Table 13.1** lists the approximate condition and year slated for rehabilitation for the PRV stations throughout the system.

Table 13.1
Pressure Reducing Valve Rehabilitation Schedule

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
11th St & Washington St	1993	Fair / Dirty	Cleaning required	2021/2022	2026/2027
15th St & Madison St	2016	New		2021/2022	2041/2042
16th St & Division St	1971	Bad	Used to buffer intermediate zone from high pressures caused by the Division Street Pump Station. Small diameter valve inoperable.	Needs Replacement	2019/2020
18th St & Anchor Way	1992	Bad/Fair		Needs Replacement	2019/2020
3rd St & Bluff	2018	New		2023/2024	2043/2044
4th Ave & Jerome St	1958	Bad	Redundant to 3rd & Ganong, for high demand both PRVs required	Needs Replacement	2019/2020
5th Ave & Canemah	1958	Bad	Required to adequately supply Canemah Zone	Needs Replacement	2019/2020 and add power
99E & Main St	1997	Out of service	Abandon and remove the 99E and Main PRV Station, replace with pipe connection between the Paper Mill Zone and Lower Zone that results in eliminating the Paper Mill Zone and expands the Lower Zone (Appendix H)	NA	NA
Abernethy Rd & Redland Rd	1963	Bad	Required based on location and distance from redundant PRVs	Needs Replacement	2019/2020
Apperson Blvd & La Rae Rd	1999	Fair		2022/2023	2027/2028

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
Harley Ave & Forsythe Rd (North)	1988	Fair	Remove South PRV, reconfigure piping as needed for continued operation of North PRV. Relief valve settings need updating. Individual Customer PRV's required on service lines as needed for service pressures exceeding 70psi per City Standard.		2021/2022
Harley Ave & Forsythe Rd (South)	1973	Bad	Remove South PRV and coordinate project with improvements to North PRV as noted above.	Removal 2021/2022	Removal 2021/2022
Jennifer Estates	2002	Fair	Ground settling around vault.	2022/2023	2027/2028
Swan Ave & Holcomb Blvd	1999	Fair		2022/2023	2027/2028
View Manor	1999	Fair	Remove PRV with property redevelopment. Existing piping in poor condition – PRV settings updated to minimize pressure impacts on the local pipe.	Maintain until PRV removal with property redevelopment	Removal with redevelopment
3rd Ave & Ganong St	2008	Good		2028/2029	2033/2034
Hunter Ave Pump Station	1998	Good		2022/2023	2027/2028
East St & Maple St	2015	Good		2021/2022	2040/2041

Table 13.2 lists the valve diameters and settings for existing City PRVs. Photo documentation of PRV stations by the City is included in **Appendix G**. Additional analysis for redevelopment of the Paper Mill Zone and related PRV stations is provided in **Appendix H, Mill Redevelopment Water Distribution Analysis** (Murraysmith, 2018).

Table 13.2
Pressure Reducing Valve Recommended Settings

Pressure Reducing Valve Station	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting
11th St & Washington St ¹	3	10		67	58	
15th St & Madison St ¹	2	6		61	56	
16th St & Division St	1.252	6		na	100	
18th St & Anchor Way	4	8		53	48	
3rd St & Bluff ¹	3	8		42	39	
4th Ave & Jerome St	2	6		55	50	
5th Ave & Canemah	1.25	4		83	78	
99E & Main St			To be removed			
Abernethy Rd & Redland Rd ¹	4	8		102	97	
Apperson Blvd & La Rae Rd ¹	2	4	6	84	79	77
Harley Ave & Forsythe Rd (North) ¹	12			61		
Harley Ave & Forsythe Rd (South)			To be removed			
Jennifer Estates	4	8		51	46	
Swan Ave & Holcomb Blvd	4	8		65	55	
View Manor	4	8		40	35	
3rd Ave & Ganong St	2	6		79	79	
Hunter Ave Pump Station	3	6		45	51	
East St & Maple St	6			46		

Notes:

Updated PRV settings recommended in the *Mill Redevelopment Technical Memorandum* (Murraysmith, 2018) (**Appendix H**).
Valve is not currently functioning.

Facility Rehabilitation and Repair

The lifespan of system reservoirs and pump stations can be significantly increased if regular rehabilitation and repairs are made. It is recommended that regular maintenance on Oregon City's steel tanks (Barlow Crest, Boynton, and Henrici) include periodic exterior overcoats, and less frequent complete exterior and interior removal and recoat. Regular maintenance on the concrete tanks (Mountainview 1 & 2) is recommended to include frequent touch up and rehabilitation, and major repairs when needed. Costs for this rehabilitation are dependent on facility condition, age, material, and size. **Table 14** includes an approximate schedule for rehabilitation of existing reservoirs. **Table 15** includes an approximate schedule for safety and seismic upgrades, and suggested improvements. When new reservoirs are constructed, they will need to be added to the rehabilitation schedule.

Pump stations require annual inspection and maintenance with pump, mechanical, and electrical replacement generally every 20 years, with the exception being Mountainview pump station replacement schedule every 10 years. Costs for pump replacement depend on pump size and condition. **Table 16** includes an approximate schedule for pump station improvements.

Table 14
Reservoir Coating and Rehabilitation Schedule

Facility		Concrete	Steel		
Name	Construction/ Rehab Year	Major Repairs	Exterior Overcoat	Interior Removal and Recoat	Exterior Removal and Recoat
Barlow Crest	1999	-	2024	2024	2039
Mountainview 1	2007	2032	-	-	-
Mountainview 2	1952/2007 ¹	2032	-	-	-
Boynton	1984	-	-	-	2028
Henrici	1994	-	2019/2020	2019/2020	2035

Notes:

- 1 Mountainview 2 built in 1916 and expanded in 1952, underwent seismic upgrades and rehabilitation in 2007.
- 2 Limited redundancy for Barlow Crest Reservoir means it is difficult to take offline. Coordination with CRW to PRV water from Hunter Heights
- 3 Biannual minor repairs for Concrete tanks, annual exterior touch-up for steel tanks. Assumed within O&M budget, separate from CIP budget.

Table 15
Reservoir Seismic and Safety Improvements

Facility	Seismic Analysis/Seismic Upgrades	Safety Upgrades
Barlow Crest	2019/2020	2024
Mountainview 1	-	-
Mountainview 2	-	2020
Boynton	2022/2023	-
Henrici	2019/2020	2019/2020

Table 16
Pump Station Rehabilitation and Maintenance Schedule

Pump Station	Pump Install Year	Replacement Year	Pump, Mechanical, and Electrical Rehab or Replacement
Hunter Ave	1999	2019/ 2022	Drives, PLC/ Pumps, SCADA electrical, transfer switch generator
Mountainview	2018	2023/ 2028	Drives/ Pumps, SCADA electrical
Fairway Downs	2018	NA	Pump station to be removed with Beaver Creek Road Concept Area Development
Boynton	1984	Removal Project 2022	Remove pumps (non-operational), decommission pump station
Livesay	2012	NA	Decommission pump station when Park Place Concept Area Develops

Capital Improvement Program Summary

The capital projects are described in **Table 17**, “Capital Improvement Program” including project descriptions, priorities, and Class 5 costs estimates. Projects are illustrated in **Figure 5**. A summary of total CIP costs is presented in **Table 18**.

Table 17
Capital Improvement Program

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Diameter (in)	Capacity	Cost Estimate ¹
Central Point	Development	1	Project recently completed by development	Pipe	New 8" looped distribution pipe along Skellenger/Orchard Grove area		8		Developer-constructed project
Leland McCord	Development	2		Pipe	New transmission along Leland Rd	1300	12		\$370,000
	Development	3		Pipe	New distribution along McCord Rd	2,400	12		\$681,500
	Operations (City/CRW)	4		Master Meter	Move the Master Meter, MM08, to the UGB and update CRW connection, timing based on development				\$200,000
South End	Development	5		Pipe	New distribution within development - backbone only	19,000	12		\$5,394,500
	Operations (City/CRW)	6		Master Meter	Move the Master Meter, MM09, to the UGB and update CRW connection, timing based on development				\$200,000
Upper Zone	Development	7		Pipe	New distribution loop North of Beaver Creek and South of Hilltop	2,200	12		\$624,500
	Capacity	8	5-10	Pipe	Finish looping along Maplelane Road to increase transmission to existing area	1,600	12		\$454,500
	Pipe Replacement	34	0-5	Pipe	Replace aging 16" piping near Molalla Ave (replacement size may be 12-inch or smaller if MAP ID 22 is implemented prior to MAP ID 34)	8,800	12 to 16-inch		\$2,498,500
	Operations	37	0-5	PRV	New PRV on Newell Ct to manage high pressures				\$200,000
Lower Zone	Capacity	9	0-5	Pipe	Upsize existing I-205 crossing to improve fire flow and distribution looping	700	12		\$199,500
	Capacity	35	5-10	Pipe	Upsize existing piping on Abernethy Road for fire flow supply to Lower Zone	2,600	12		\$738,000
	Pipe Replacement	36	0-5	Pipe	Replace aging pipe on Main between 10th and 15th	1,400	12		\$397,500
Park Place Concept Area	Development	10	0-5	Pipe	Joint OC/CRW transmission from SFWB along Redland Rd for replacement of aging pipe and new transmission to Park Place Concept Area	6,900	24		\$3,538,000
	Development	11		Pipe	Transmission at the Park Place Intermediate Level (above 310')	1,300	12		\$370,000
	Development	12		Pipe	Transmission from the 16" Barlow Crest Transmission to PP Int Concept (above 310') - redundant transmission and adequate fire flow above 200'	2,600	12		\$738,000
	Development	13		PRV	New PRV from 550' to 430' (supply to area between 200' and 310'). Note: Livesay Pump Station shall be removed with redevelopment of this area along S Livesay Rd				\$200,000
	Development	14		Pipe	New 430' distribution piping (supply to area between 200' and 310')	1,700	12		\$483,500
	Development	15		PRV	New PRV from 430' to 320' (alternate emergency supply and fire flow to PP Concept Area)				\$200,000
	Development	16		Pipe	New 320' distribution piping (supply to area below 200')	6,200	12		\$1,760,500
	Development	17		Pipe	Replace existing 320' distribution piping (supply to area below 200')	2,100	12		\$597,000
	Development	18		Reservoir	New 350' Reservoir (supply to area above 110')			1MG	\$2,000,000
	Development	19		Pump Station	New Pump Station from 320' to 350' (supply to area above 110')			100 GPM	\$1,194,000
	Development	20		PRV	New PRV from 350' to 320' (emergency fire flow to PP Concept Area from new reservoir)				\$200,000
	Development	21		Pipe	New 350' transmission and distribution (supply above 350' and transmission to new Holly Lane PS)	10,000	12		\$2,839,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Diameter (in)	Capacity	Cost Estimate ¹
Henrici Transmission Improvements	Capacity	22	5-10	Pipe	Parallel transmission line between Mountainview Reservoirs and Beaver Creek Rd - Increase transmission to Henrici Reservoir	4,200	24		\$2,153,500
	Capacity	23	0-5	Pipe	Parallel transmission line between Beaver Creek Rd and Glen Oak Rd along Streetscape improvements - Increase transmission to Henrici Res	7,300	18		\$2,963,000
	Capacity	24	0-5	Pipe	New crossing north of Glen Oak Rd from Molalla to OC Public Schools property - distribution for development, increase transmission to Henrici	2,600	12		\$738,000
	Capacity	25	5-10	Pipe	OC HS crossing to Beaver Creek Rd - Increase looping and transmission to Henrici	3,000	12		\$852,000
	Capacity	26	0-5	Pipe	New parallel transmission between Fairway Downs and Henrici Reservoir	4,000	24		\$2,051,500
Beaver Creek Road Concept Area	Development	27		Pipe	New Upper Zone distribution - supply new development below 480', improve transmission	11,900	12		\$3,379,500
	Development	28		Pipe	New Fairway Downs distribution - supply new development below 480'	13,700	12		\$3,890,500
	Development	29		PRV	New PRV between Fairway Downs and Upper Zone - emergency fire flow				\$200,000
	Development	30	0-5	Reservoir	New Fairway Downs Reservoir - supply new development			1.75 MG	\$3,500,000
	Development	31	0-5	Pump Station	New Fairway Downs Pump Station - supply new development			250 GPM	\$1,194,000
	Development	32	0-5	Pipe	New Fairway Downs Transmission - supply new development	5,000	16		\$1,654,000
	Development	33	0-5	Pipe	Transfer existing Henrici transmission to Fairway Downs transmission - supply new development				\$200,000
Oregon City Operations – Small Waterline Replacement List ²	Pipe Replacement		0-5	Pipe	S. Center St from S. 2nd to 1st St	700	8		\$134,000
	Pipe Replacement		0-5	Pipe	Barker Ave from South End Rd to Barker Rd	800	8		\$154,500
	Pipe Replacement		0-5	Pipe	Warner-Parrott Rd from King Rd to Boynton St	1,100	12		\$313,000
	Pipe Replacement		0-5	Pipe	Belle Ct and Glenwood Ct from Holmes Ln to Linn Ave	1,500	8		\$288,500
	Pipe Replacement		0-5	Pipe	Valley View Dr from Park Dr to McCarver Ave	1,000	8		\$192,000
	Pipe Replacement		0-5	Pipe	Canemah Ct from Canemah Rd to Telford Rd	1,700	8		\$326,000
	Pipe Replacement		0-5	Pipe	Randall St from Canemah Rd to Hartke Lp	700	8		\$134,000
	Pipe Replacement		0-5	Pipe	Hartke Lp and Alderwood Pl	3,700	8		\$712,000
	Pipe Replacement		0-5	Pipe	Harrison St from 7th St to Division St	600	8		\$115,000
	Pipe Replacement		0-5	Pipe	Division St from Harrison St to 13th/14th St	4,300	8		\$827,000
	Pipe Replacement		0-5	Pipe	Division St from Anchor Way PRV Station to Davis Rd	1,300	8		\$250,500
Maintenance and Repair Projects			0-5	Pipe	Repair and Replacement Program	18,000	8-12		\$3,699,000
	Pipe Replacement		5-10	Pipe	Repair and Replacement Program	14,500	8-12		\$2,996,500
			10-20	Pipe	Repair and Replacement Program	41,000	8-12		\$8,033,500
	Facility Rehabilitation (PRV Rebuild and Replacement)		0-5	PRV Rebuild	11th St & Washington St, 15th St & Madison St, 3rd St & Bluff, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station, East St & Maple St, View Manor – continue to schedule rehabilitation and rebuilds every 5 years until the PRV is removed with redevelopment, 99E & Main St – removal of PRV Station with re-zoning the Paper Mill Zone to the Lower Zone	10			\$100,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Diameter (in)	Capacity	Cost Estimate ¹
Maintenance and Repair Projects			0-5	PRV Replacement	16th St & Division St, 18th St & Anchor Way, 4th Ave & Jerome St, 5th Ave & Canemah, Abernethy Rd & Redland Rd, Harley Ave & Forsythe Rd (North) including removal of Harley Ave & Forsythe Rd (South)	6.5			\$1,300,000
			5-10	PRV Rebuild	3rd Ave & Ganong St	1			\$10,000
			5-10	PRV Replacement	11th St & Washington St, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station	5			\$1,000,000
	Facility Rehabilitation (Reservoir Coating/Rehab, Seismic/Safety)	Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir- Exterior Overcoat				\$722,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Safety Upgrades				\$100,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Seismic Analysis/Seismic Upgrades ³				\$975,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Steel Interior Removal and Recoat				\$789,000
		Barlow Crest	10-20	Reservoir	Barlow Crest Reservoir-Steel Exterior Removal and Recoat				\$1,059,000
		Boynton	0-5	Reservoir	Boynton Reservoir-Seismic Analysis/Seismic Upgrades (may require new reservoir) ³				\$975,000
		Boynton	5-10	Reservoir	Boynton Reservoir-Steel Exterior Removal and Recoat				\$1,059,000
		Henrici	0-5	Reservoir	Henrici Reservoir- Exterior Overcoat				\$722,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Safety Upgrades				\$100,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Seismic Analysis/Seismic Upgrades ³				\$975,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Steel Interior Removal and Recoat				\$789,000
		Henrici	10-20	Reservoir	Henrici Reservoir-Steel Exterior Removal and Recoat				\$1,059,000
		Mountainview	0-5	Reservoir	Mountainview 2 Reservoir-Safety Upgrades				\$100,000
		Mountainview	10-20	Reservoir	Mountainview 1 Reservoir-Concrete Major Repairs				\$200,000
		Mountainview	10-20	Reservoir	Mountainview 2 Reservoir-Concrete Major Repairs				\$200,000
	Facility Rehabilitation (Pump Stations)	Hunter Ave	0-5	Pump Station	Hunter Ave PS - PLC, Pumps, drives, SCADA/ electrical, transfer switch generator				\$375,000
		Mountainview	0-5	Pump Station	Mountainview PS - Drives				\$95,000
		Mountainview	5-10	Pump Station	Mountainview PS - Pumps, SCADA/electrical				\$380,000
	Facility Rehabilitation (Decommission)	Fairway Downs	timing based on development	Pump Station	Decommission				\$50,000
		Boynton	0-5	Pump Station	Decommission				\$50,000
		Livesay	timing based on development	Pump Station	Decommission				\$50,000

Notes:

1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

2 Oregon City Operations – Small Waterline Replacement Projects not shown on CIP map.

3 Seismic upgrade costs are placeholders. Additional evaluations required to refine cost estimates, risk, and improvement strategies for reservoir seismic improvements.

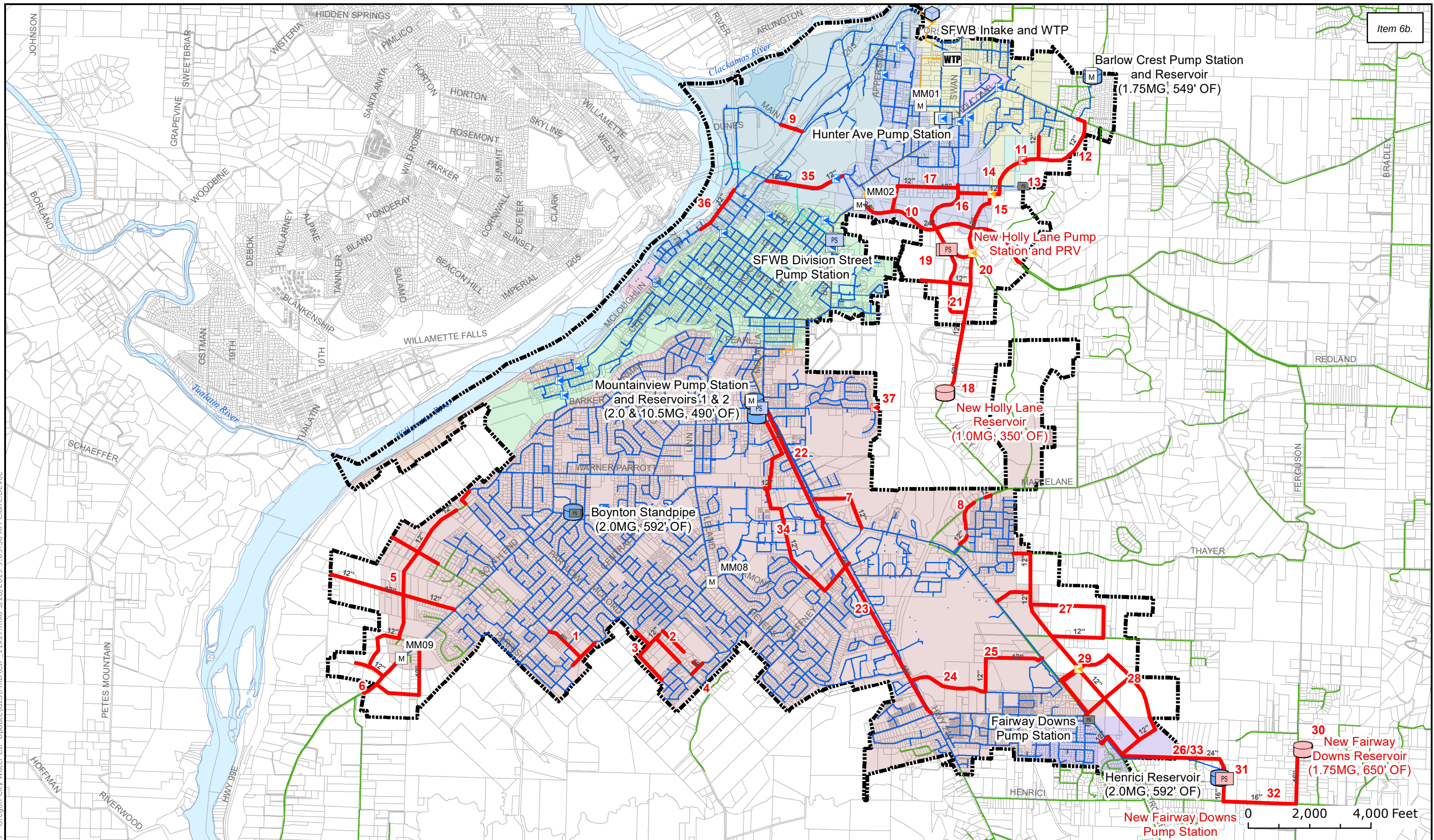
Table 18
Total Water CIP Summary Costs

Year	Development, Capacity & Operations Costs ¹	Pipe Replacement Costs ¹	Facility Rehabilitation Costs ¹	Total CIP Project Costs ¹
0 – 5 Years	\$19,134,000	\$7,145,500	\$8,167,000	\$34,446,500
5 – 10 Years	\$4,198,000	\$2,996,500	\$1,390,000	\$8,584,500
10 – 20 Years	\$-	\$8,033,500	\$3,577,000	\$11,610,500
SUBTOTAL	\$23,332,000	\$18,175,500	\$13,134,000	\$54,641,500
Time Based on Development	\$25,522,500	\$-	\$100,000	\$25,622,500
TOTAL	\$48,854,500	\$18,175,500	\$13,234,000	\$80,264,000

Notes:

- 1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers (AACE)*. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

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Item 6b.



City of Oregon City Water CIP Analysis

Figure 5 CIP Projects

PRESSURE ZONE

- Canemah
- Fairway Downs
- Intermediate
- Lower
- Paper Mill

Pressure Zones

- Park Place - Intermediate
- Park Place - Livesay
- Park Place - Lower
- Park Place - View Manor
- Upper

CIP Facilities

- PRV
- Tank
- Pump Station
- Emergency PRV

Existing Facilities

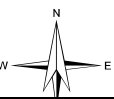
- Intake
- Master Meter
- PRV

Existing Facilities

- Pump Station
- Reservoir
- WTP
- Abandon Pump Station

Legend

- CIP Projects
- OC Water Mains
- CRW Water Mains
- SFWB Water Mains
- UGB taxlots





Appendix



APPENDIX A
WATER DISTRIBUTION MODEL
CALIBRATION TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Water Distribution Model Calibration

Oregon City, Oregon

Date: June 20, 2017

Project: 16-1915

To: Jon Archibald
City of Oregon City

From: Shad Roundy, PE
Sven MacAller, EIT
Murraysmith

Re: City of Oregon City, Water Distribution Model Calibration

Model Calibration

Model calibration is performed to ensure that results of model simulations reflect what is happening in a real-world system and involves adjusting model parameters to match field data. For a water distribution system, hydraulic models attempt to reflect flow and pressure within the system by adjusting parameters such as pipe geometry, friction coefficients, demand distribution, boundary conditions, and operational parameters.

The required level of model accuracy can vary by type and size of the water system including system operations. Ultimately, model accuracy depends on the quality of data used to populate the model and the quality of the data that has been collected in the field. Boundary conditions such as pressure reducing valve (PRV) settings, pump operation, and reservoir levels are critical.

Oregon City Field Tests

For calibration of the Oregon City Distribution System, 22 fire flow tests were conducted to collect field data. These tests were distributed throughout the system and at least one was performed in each pressure zone except Jennifer Estates and Paper Mill. The Jennifer Estates zone had not been identified at the time the calibration plan was developed and the Paper Mill zone does not currently serve any customers. Fire flow tests were conducted between January 5th 2016 and

January 30th 2016 including both a static pressure reading and a flow and residual pressure reading. Boundary condition data including reservoir level and pump operation was collected during the fire flow testing period and was used for the model calibration effort. Model calibration confidence levels were evaluated using the criteria shown in Table 1.

The model calibration process has two steps. The first component of model calibration is to match field-measured static pressure with model simulated pressure. Demand distribution, system connectivity, service elevations, and reservoir water surface elevations are verified during the static model calibration.

Table 1
Calibration Confidence

Confidence Level	Static Test Percent Error	Residual Fire Flow Pressure Difference
High	0 – 5%	≤10 psi
Medium	5 – 10%	10-20 psi
Low	> 10%	>20 psi

The second component of calibration utilizes fire flow tests to verify pipe diameters, system connectivity, friction coefficients, and pump operations. Fire flow testing consists of recording static pressure at a hydrant and then “stressing” the system by flowing an adjacent hydrant. While the adjacent hydrant is flowing, residual pressure is measured at the first hydrant to determine the pressure drop. Boundary condition data, such as reservoir levels and pump on/off status, must also be known to accurately model the system conditions during the time of the flow test. The recorded time of each fire hydrant flow test was used to collect boundary condition information from the City’s system supervisory control and data acquisition (SCADA) system.

Calibration Results

For static pressure calibration, error is measured as a percent pressure difference between model results and results measured in the field. A negative sign (-) indicates that the model pressure is lower than the field test, and a positive sign indicates that the model is over estimating pressure compared to test data. The static tests for the Oregon City distribution system calibrated between 3 and 5-percent of field measured values resulting in a high level of accuracy. A summary of the static test calibration results is shown in Table 2 and Figure 1.

Fire flow tests are used to simulate pressure drops within the system due to high demands. Calibration results for these tests are expressed as a difference in the pressure drop recorded in the field and the modeled system. For example, if field results show a pre-flow test pressure of

100 psi and 80 psi during the fire flow test, the pressure drop is 20 psi. If the model also shows 100 psi as a static condition and 85 psi during the fire flow test, the modeled pressure drop is 15 psi. The differential between these two pressure drops (5 psi) is the “Residual Fire Flow Pressure Difference”. A negative sign on the “Residual Fire Flow Pressure Difference” indicates that the model is overpredicting the pressure drop caused by the fire flow test, while a positive sign indicates that the model is underpredicting the pressure drop. Overpredicting the pressure drop is preferred as it adds conservatism to the model. Because the reported result is based on comparing pressure drop as opposed to actual pressure, any error in the static calibration is not carried over to the fire flow calibration.

As with the static pressure, the fire flow tests calibrated to a high confidence level. All pressure differentials are within a 10-psi range (17 tests are within 5 psi and 5 tests are between 5 and 7 psi). A summary of the fire flow test calibration results is shown in Table 2 and Figure 2.

Calibration Notes

Pressure Reducing Valves

The Oregon City Distribution system is relatively complex with numerous pressure zones, PRVs, pump stations, and reservoirs. The system is sensitive to operational settings at these facilities. PRV settings were initialized from the City’s master plan document and may not reflect the current operational settings. Several PRV settings were modified slightly in the model to improve model calibration. These changes were done only after exhausting other potential operational settings (reservoir levels, pump settings) and after adjusting pipe friction coefficients. PRV settings were changed at the 5th and Canemah, Abernathy and Redland, and Harley and Forsythe PRV stations within a 5-psi range of those reported in the master plan.

View Manor is served by a single PRV and is a small, closed pressure zone. Based on static and fire flow tests, the initial setting of 100 psi at the PRV was unrealistic as only 38 psi was measured during the static test and 30 psi during the fire flow test. The initial setting of 100 psi was reduced to 39 psi for the model calibration.

The Canemah pressure zone is served by two PRVs at 3rd and Ganong, and 4th and Jerome. During fire flow testing, both PRVs should open to supply water demand. The 3rd and Ganong PRV station is on a 2-inch line, while the 4th and Jerome station is on a 6-inch line. Using the initial PRV settings, the zone was served primarily by the 3rd and Ganong station and there was significant headloss in the 2-inch pipe resulting in modeled pressure drop significantly higher than what was recorded during fire flow testing. This was an indication that more flow was entering via the 6-inch line and the 4th and Jerome PRV station. In order to increase flow through the 4th and Jerome PRV, the setting was changed to allow the PRV to open at a higher pressure. The final settings used in the calibration at the 4th and Jerome PRV station were 65 and 70 psi for the large and small PRVs respectively (master plan settings indicated 50 and 65 psi settings).

Fairway Downs Pressure Zone

The Fairway Downs pressure zone is served by the Fairway Downs Pump Station and a check valve that bypasses the pump station and supplies water from the Upper Zone. City staff reported that during this flow test the pumps were operating at a diminished capacity (approximately 850 gpm total) and the check valve opened. In the model, the pressure drop from the fire flow test could not be replicated with the check valve open, even if all pumps were off. A good calibration was achieved using only pump 1 and 2, both at approximately 85% capacity and the check valve closed. This discrepancy indicates that there is either significant additional headloss in the check valve that is not replicated in the model or significant headloss in the piping within the pressure zone. When using the model to evaluate this pressure zone, care should be taken with regard to pump and check valve operation and further investigation of pumping capacity and check valve operation may be required.

Division Street Pump Station

Adjacent to the Division Street Pump Station there is a valve that recirculates water from the discharge side to the suction side of the pump station. This operational scheme is implemented to ensure adequate pressure to supply the CRW demand and the suction side pressure demands of the 16th and Division Street Pump Station. This operation is somewhat unique and should be considered when using the model for system evaluation. There may be a more efficient operational scheme that could be implemented in the future.

Table 2
Calibration Results

Test	Pressure Zone	Static Test Percent Error	Residual Fire Flow Pressure Difference
1	PP View Manor	-1%	1.5
2	PP Intermediate	-2%	0.8
3	PP Intermediate	-1%	3.4
4	PP Lower	-5%	6.4
5	PP Lower	-4%	3.3
6	Lower	-2%	6.9
7	Lower	-2%	2.2
8	Lower	0%	-2.7
9	Canemah	1%	-2.8
10	Intermediate	0%	5.2
11	Intermediate	1%	-1.7
12	Intermediate	-2%	-3.2
13	Intermediate	3%	-7.0
22	Intermediate	1%	-3.3
14	Upper	-5%	-1.8
15	Upper	2%	2.2
16	Upper	-5%	0.7
17	Upper	-3%	-1.3
18	Upper	4%	-7.1
19	Upper	-3%	2.3
20	Upper	-4%	-3.3

Legend

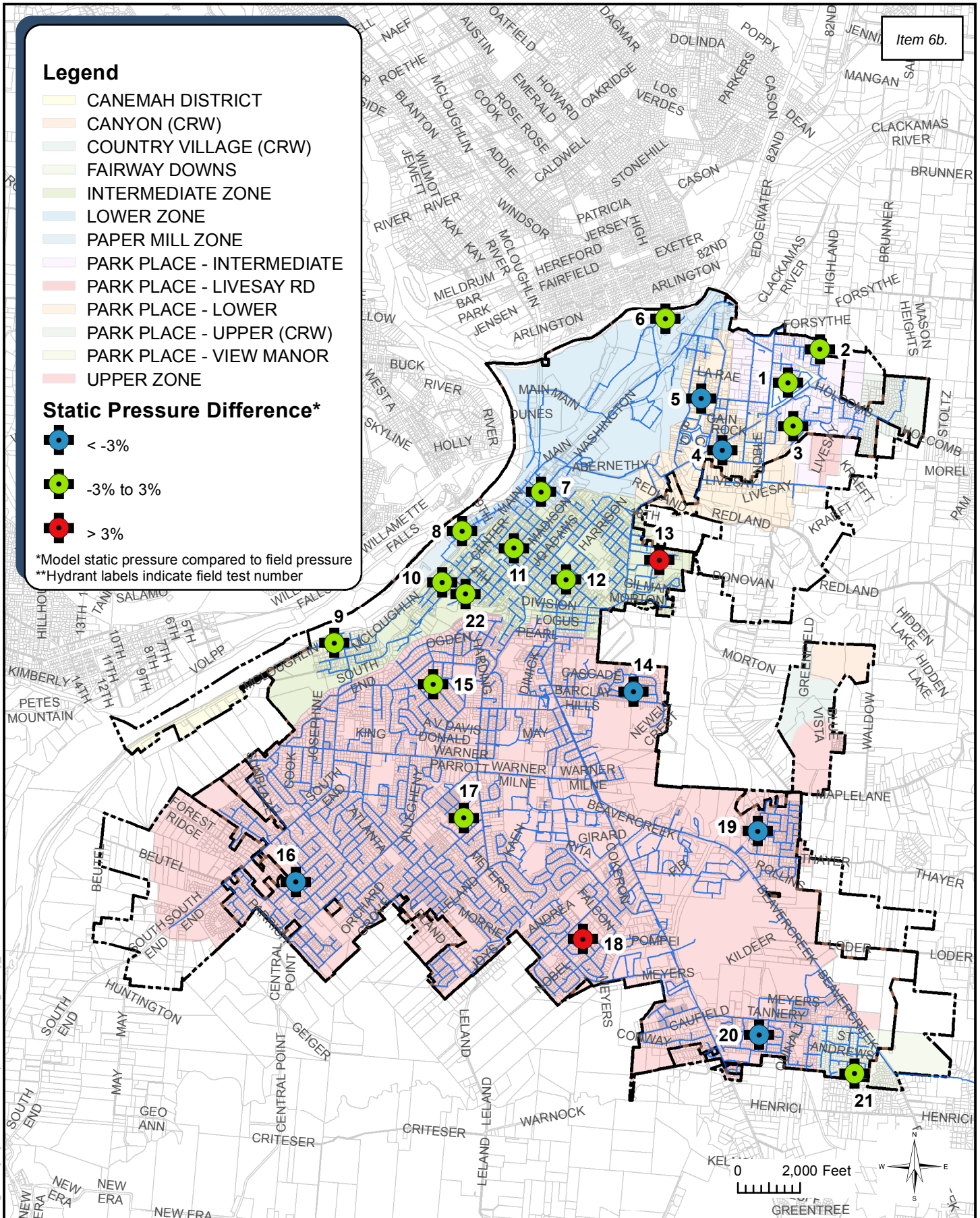
- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Static Pressure Difference*

- < -3%
- 3% to 3%
- > 3%

*Model static pressure compared to field pressure
 **Hydrant labels indicate field test number

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Legend

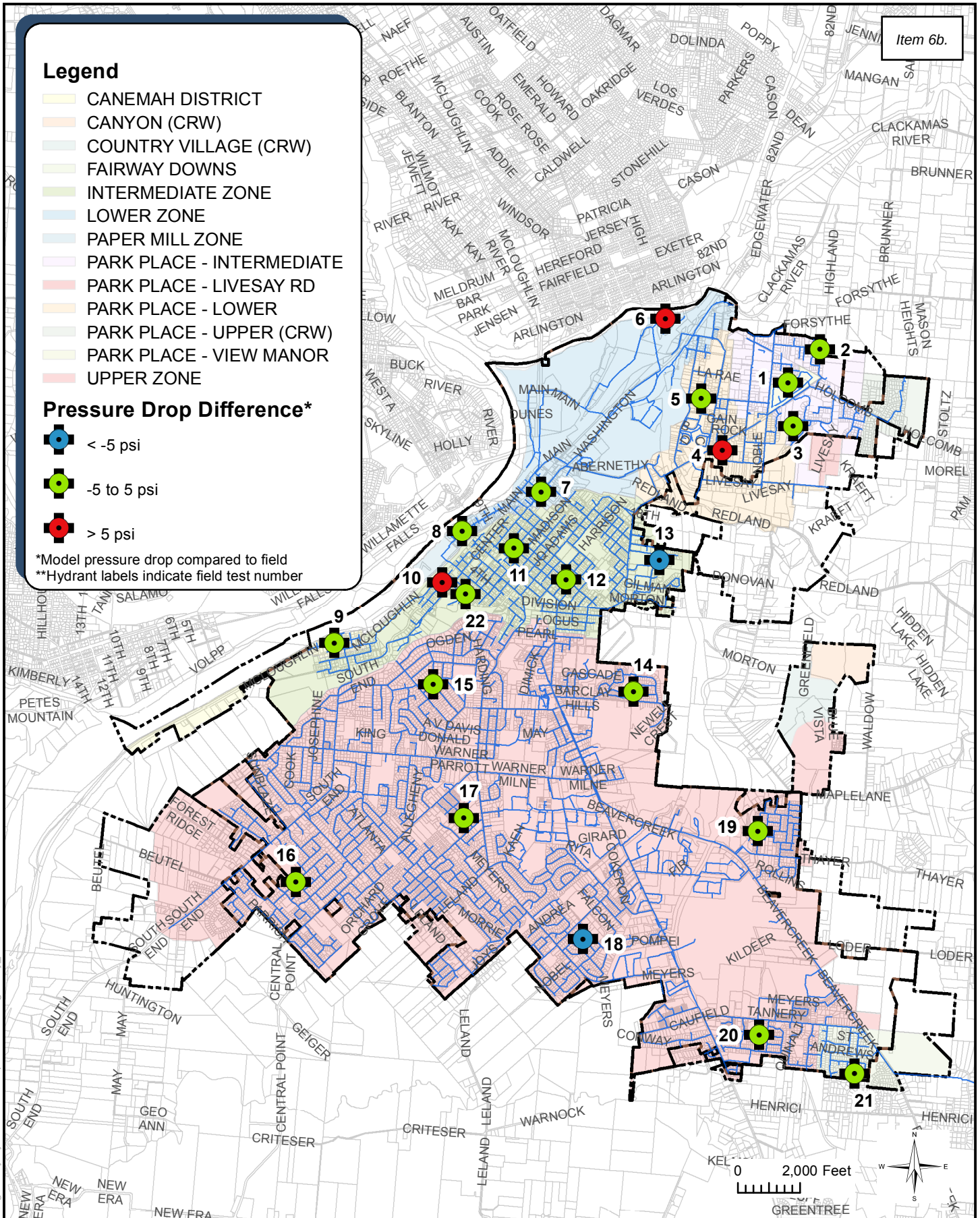
- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Pressure Drop Difference*

- < -5 psi
- 5 to 5 psi
- > 5 psi

*Model pressure drop compared to field
 **Hydrant labels indicate field test number

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City of Oregon City Hydraulic Model Update

Figure 2 Calibration Results Fireflow Tests



Figure B1
Existing Combined SFWB/Oregon City/Clackamas River Water Hydraulic Schematic

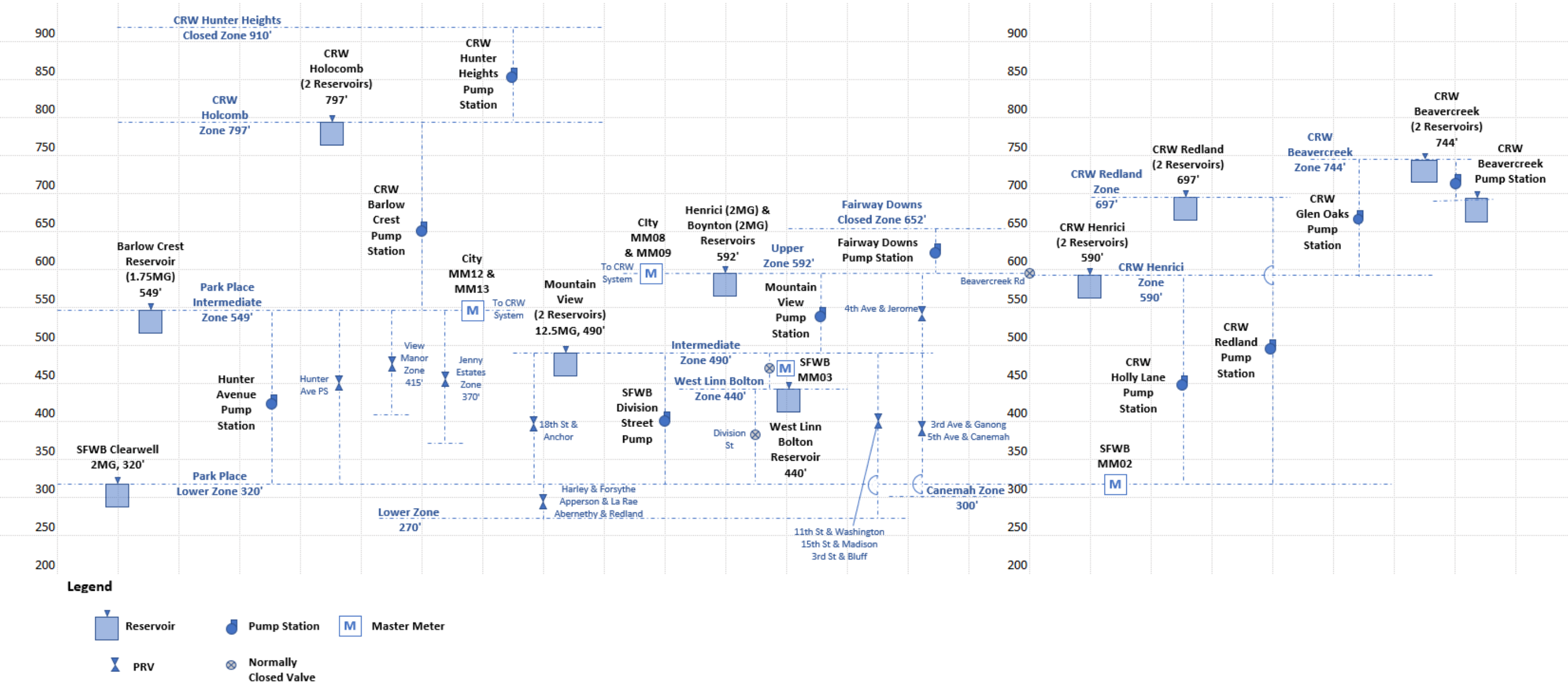
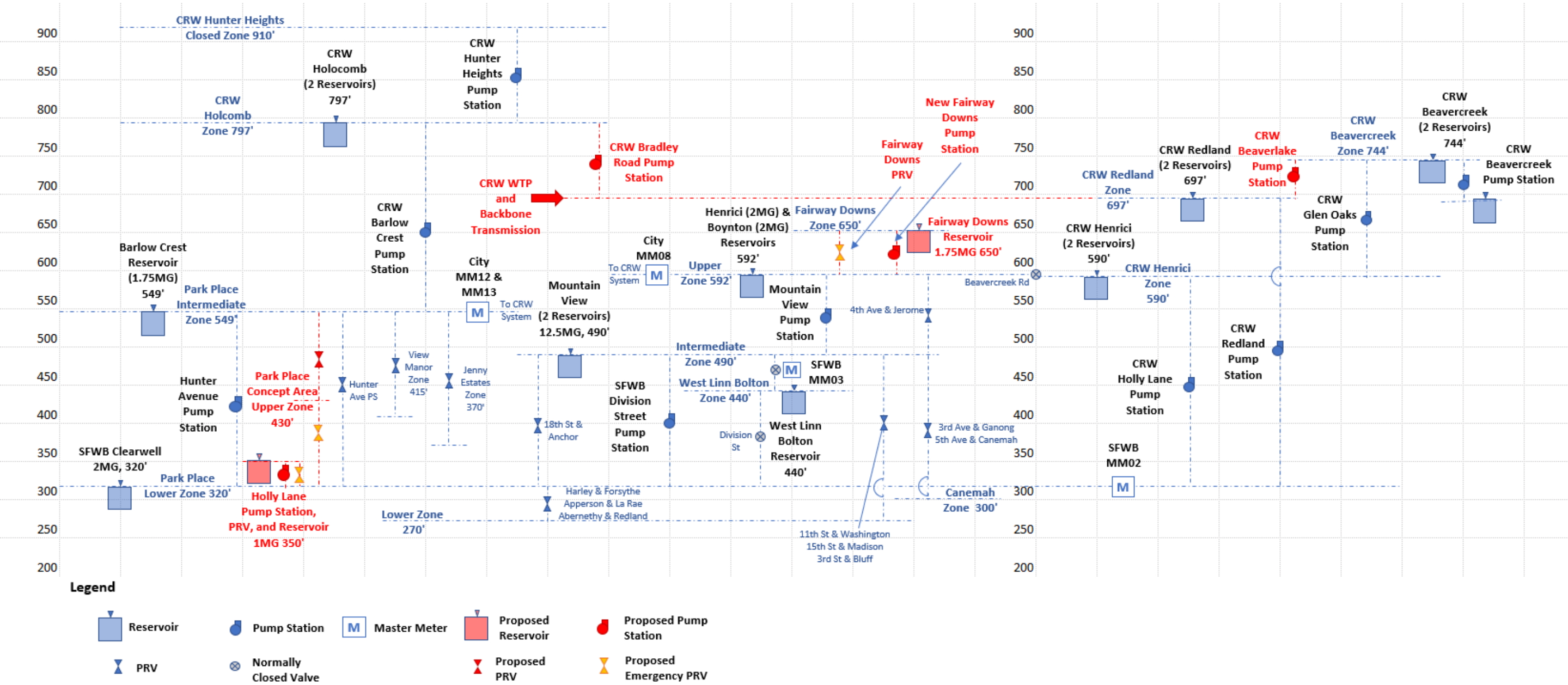


Figure B2
Proposed Combined SFWB/Oregon City/Clackamas River Water Hydraulic Schematic





APPENDIX C
EMERGENCY WATER SUPPLY
ANALYSIS TECHNICAL MEMORANDUM,
MURRAYSMITH

Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System CIP Update (17-2119)

To: Mr. Martin Montalvo
Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Emergency Water Supply Analysis

Introduction

The City of Oregon City (City) is in the process of updating its Capital Improvement Program (CIP) developed in the Water System Master Plan (WMP, 2012). Amendment No. 1 to the CIP Update includes documentation of emergency water supply operations. Specifically, the emergency water supply may be required if the South Fork Water Board (SFWB) 30-inch main on Quail Ct and Hiram Ave is out of operation due to repair and during completion of a 42-inch pipeline capital improvement project on Cleveland Street planned for November 2018. This technical memorandum documents the findings and recommendations of the Emergency Water Supply Analysis.

Existing Conditions

SFWB Supply and Transmission

The SFWB supplies treated drinking water to the City of Oregon City, the Clackamas River Water District (CRW) south of the Clackamas River, and the City of West Linn. Two transmission lines supply water from the SFWB Water Treatment Plant (WTP): a 30-inch line to City and CRW master meters and the Division Street Pump Station, and a 42-inch line to the Hunter Ave Pump Station.

As described in the SFWB Water Master Plan (2016), the 30-inch line may be undersized by 2021. To increase transmission capacity, the CIP includes a 42-inch connection along Cleveland Road between the existing 42- and 30-inch lines. In late August 2018, an existing leak in the 30-inch supply main intensified. In response, the SFWB and the City installed dewatering pumps. According to the City, the situation has stabilized, but there are concerns the entire line may fail,

if any attempts are made at repairs. Therefore, the City and SFWB have accelerated the process for the 42-inch connection.

West Linn Intertie Upgrades

In 2015, the City of West Linn improved its Lake Oswego Booster Station Intertie by installing two new 2,200 gallons per minute (gpm) pumps. These improvements came partly in response to the Lake Oswego – Tigard WTP expansion on the Clackamas River. This intertie is expected to be available for emergency supply.

SFWB Supply Limitations

This analysis focuses on three SFWB supply interruption scenarios:

1. Only the 30-inch line is out of service:
 - a. Prior to the completion of the connection of the new 42-inch line on Cleveland Street, a failure in the 30-inch line eliminates supply to the Division Street Pump Station, without affecting the 42-inch supply to Hunter Ave.
 - b. The 42-inch connection is successfully constructed, and installation requires the 30-inch line to be shut off for the duration of the final connection.
2. The SFWB WTP is completely offline and both the 30-inch and 42-inch lines are unable to provide water supply. The Division Street Pump Station is also not operable.

Under the first scenario, the City, CRW, and West Linn pressure zones supplied by the 30-inch line will either need to use alternate supply or rely on emergency storage. Under the second scenario, CRW and the City are assumed to rely on emergency storage, while West Linn uses alternate supply from Lake Oswego. The second scenario assumes that excess capacity from the Lake Oswego intertie can optionally supply CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Pressure zone supply under all scenarios for Oregon City, CRW, and West Linn are listed in **Table 1** and highlighted in **Figure 1**.

SFWB Supply Operations and Service Interruption

The SFWB Clear Well controls system pressure in the 30-inch and 42-inch transmission mains including suction side pressures at the Division Street and Hunter Ave Pump Stations. When the Clear Well water surface drops below a set point, a transfer valve (day/night valve) at the Division Street Pump Station opens to supply system demands and pressure from the Mountainview Reservoirs to customers supplied directly off the transmission mains. Excess head from the Mountainview Reservoirs is eliminated via an orifice plate at the valve with differential head regulated by the Clear Well water surface.

The supply interruptions described in this Emergency Plan, are different than when the WTP Clear Well is nominally offline and the Mountainview Reservoirs supply the system via the transfer valve.

During the emergency supply interruptions, the Clear Well is unavailable to regulate pressure and the transfer valve should remain closed to eliminate risk of over pressurizing the system.

During closure of the transfer valve, some services directly off the transmission mains will be without water including 27 CRW customers downstream of the CRW Redland and Anchor Way Master Meter (MM02). To avoid water service interruptions during the emergency shutdown, a new pressure reducing valve (PRV) is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to these customers.

Table 1
Pressure Zone Supply Alternatives

SFWB Supply Scenario	System	Alternate Supply	Emergency Storage	Normal Operations
Scenario 1: Pressure Zones Affected by 30-inch Outage including near-term 42-inch pipeline connection	Oregon City	Park Place Lower, Lower, Livesay	Intermediate, Canemah, Upper, Fairway Downs, Paper Mill	Park Place Intermediate, View Manor, Jennifer Estates
	CRW		Redland, Henrici, Beaver Creek Zones and South End and Leland/Meyers Master Meters	Hunter Heights, Holcomb (City's Park Place Upper), HOPP Master Meter
	West Linn	All Zones		
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City	See note 1	All Zones	
	CRW	See note 1	All Zones	
	West Linn	All Zones (from Lake Oswego)		

Notes

1 Optional supply from Lake Oswego. Excess capacity from the Lake Oswego intertie can augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing.

Scenario 1: 30-inch Supply Line Outage

Under this scenario, the 30-inch transmission main is off-line, and the 42-inch transmission main continues normal operation. Therefore, the goal of any operational change is to utilize the 42-inch line and minimize demands on the Mountainview Reservoirs. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland and Holly Lane Pump Stations. CRW to rely on emergency storage in their Redland, Henrici, and Beavercreek Reservoirs for zones normally supplied via MM02. A new PRV is required at the Holly Lane Pump Station to serve 27 customers adjacent to MM02.
- Oregon City to close distribution bypass pressure reducing valves (PRVs) providing supply from the Mountainview Reservoirs to zones capable of being supplied by the 42-inch line. Fire flow PRVs remain open with existing settings to passively provide fire flow demands. The updated PRV settings are listed in **Table 2** including closure of bypass PRVs at 18th & Anchor Way, 3rd & Bluff, 11th & Washington, and 15th & Madison. Fire flow PRV settings are not modified.

This scenario is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing "CLOSED" butterfly valve to the new 42-inch piping.

Scenario 2: Complete SFWB Outage

Under this scenario, both the 30-inch and 42-inch lines are off-line. Therefore, the goal of the any operational change is to balance water stored in reservoirs with system demands. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.

- Shut down of the Hunter Ave Pump Station to eliminate supply from SFWB 42-inch to Barlow Crest and Hunter Heights Reservoirs.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland, Holly Lane, and Barlow Crest Pump Stations. CRW to rely on emergency storage from their reservoirs in all zones.
- Oregon City to modify PRV settings and operations, providing supply from the Barlow Crest Reservoir to zones capable of being supplied by the Mountainview Reservoirs as listed in **Table 2** including closure of the bypass PRV at Hunter Ave Pump Station and a slight adjustment to the Hunter Ave Pump Station fire flow PRV.
- Note that PRV isolation of the Park Place Lower and Lower Zones from the Mountainview Reservoirs is not recommended for this scenario since the Barlow Crest Reservoir supply is more limiting than the Mountainview Reservoir supply with the existing 42-inch supply line to Hunter Avenue Pump Station unavailable.

Analysis and Findings

Assumptions

The following assumptions were made for all system analysis:

- System analysis was performed under wintertime Average Day Demands (ADD), conservatively estimated at 75% of ADD and verified with 2016 master meter records.
- It was assumed all reservoirs would be filled prior to the start of work and a 20% factor of safety was assumed, limiting available storage to 80% of reservoir capacity.
- Only gravity storage was available for supply.
- All interzone pumps and PRVs were assumed operational, except where specifically listed. Therefore, pressure zones could be grouped by limiting reservoir or supply including: Oregon City Mountainview, Oregon City Barlow Crest, CRW Hunter Heights, and CRW MM02.

The analysis consisted of a calculation of supply duration available in the reservoir groups, a system pressure check in Oregon City under the updated supply scenario, and a fire flow pressure check in Oregon City under the updated supply scenario.

System Pressures and Supply Availability

Under both limited SFWB supply scenarios described in the prior section, the City can maintain adequate pressures in all zones. Pressures vary by less than 3 pounds per square inch (psi) between SFWB supply scenarios during winter time demands, therefore only Scenario 1 is presented in **Figure 2**. Reservoir supply duration varies between scenarios and zones and is presented in **Table 3**. These calculations assume that the City will continue wheeling water to CRW's master meters at South End, Meyers, and HOPP, in addition to the assumptions listed

earlier in this document. Approximately 4 days of emergency storage is available in the Oregon City system. If the Mountainview Reservoirs are not isolated from the Park Place and Park Place Lower Zones, the available storage in the Oregon City system reduces to less than 4 days.

Approximately 3 days of emergency storage is available in the CRW system with all reservoirs operations. However, it should be noted that the one of the CRW Redland Reservoirs is temporarily off-line (as of October 2018) affecting near-term emergency storage availability by approximately 50-percent in the Redland zone (see *SFWB Hydraulics – Catastrophic Failure: Emergency Water Main Repair Modeling*, Carrollo, 2018).

Fire flow Availability

If a fire occurs during limited SFWB operations, no additional changes need to be made to system operations. PRVs should be set so that fire flows will be available, even if the distribution bypass PRV is closed. It should be understood, however, that fighting a fire will significantly impact emergency storage and decrease the total time the system can operate without water shortages.

Figure 3 presents the fire flow available throughout the City’s system under both Scenario 1 and Scenario 2 of reduced SFWB supply.

Table 2
PRV Settings for SFWB Supply Alternatives

PRV Station	Scenario 1: Operation under 30-inch Failure & 42-inch Connection	Scenario 2: Complete SFWB Outage	Distribution Bypass or Main Valve Setting (psi)				Fire flow Valve Setting (psi)			
			Diameter (in)	Existing	30-in Failure	Complete Outage	Diameter (in)	Existing	30-in Failure	Complete Outage
18 th & Anchor Way	Closed for distribution, open during fire flow in Lower or Park Place Lower	Required for distribution and fire flow to Park Place Lower and Livesay	4	53	CLOSE	NC	8	48	NC	NC
3rd & Bluff	Closed for distribution, open during fire flow in Lower Zone	Supply to Lower, available for fire flow	3	42	CLOSE	NC	10	39	NC	NC
11 th & Washington			3	67	CLOSE	NC	10	58	NC	NC
15 th & Madison ²			6	56	CLOSE	NC	6	51	NC	NC
Hunter Ave Pump Station PRV	Required for distribution and fire flow supply to Park Place Lower and Lower	Closed for distribution, available for fire flow	3	45	NC	CLOSE	6	51	NC	48

Notes:

1. NC = No change from existing settings required.
2. Additional 1.25-inch PRV also closed during Scenario 1.

Table 3
Emergency Storage Supply Availability Under Limited SFWB Supply Scenarios

SFWB Supply Scenario	Storage System/Zones	Total Storage (MG)	Available Storage (MG)	System Demands (GPM)	Available Supply (Days)
Scenario 1: Pressure Zones Affected by the 30-inch Outage	Oregon City/ Mountainview	16.5	12.1	1,898	4.4
	CRW/ MM02	3.8	3.0	651	3.2
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City/ Mountainview	16.5	12.1	2,208	3.8 – 4.8 (see note 9)
	Oregon City/ Barlow Crest	1.8	1.4	120	8.1
	CRW/ Hunter Heights	1.2	1.0	135	4.9
	CRW/ MM02	3.8	3.0	651	3.2 – 4.2 (see note 9)

Notes:

1. All tanks assumed initially full and operational. Available storage assumed to be 80% of full storage and available by gravity – Boynton Standpipe limited to minimum elevation of Henrici Reservoir at 20% full.
2. Demands at 75% of ADD. All CRW demands wheeled through Oregon City (HOPP area, South End, Leland/Meyers, and Joint User Customers) continued supply at 75% ADD. No supply to West Linn.
3. All interzone pump stations assumed operational, except where specifically shut off.
4. For scenario 1, Oregon City Mountainview Zones include Upper, Fairway Downs, Intermediate, and Canemah. For Scenario 2, additional zones include Lower and Park Place Lower and Livesay.
5. CRW MM02 Zones include Redland, Henrici, and Beavercreek. All reservoirs assumed operational. Available supply will be reduced from what is shown in the table when one of the Redland Reservoirs is offline.
6. Oregon City Barlow Crest Zones include Park Place Intermediate, Park Place View Manor, and Park Place Jenny Estates.
7. CRW Hunter Heights Zones include Hunter Heights and Holcomb (including the City customers in the Barlow Crest area).
8. For Scenario 2, Mountainview Reservoirs supply the Park Place Lower and Lower Zones to preserve supply in the Barlow Crest Reservoir. Without isolating Barlow Crest, the controlling emergency supply reduces to approximately 2 days within the Barlow Crest service area.
9. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing. The higher-end supply times assume up to 700 gpm of excess capacity are provided by the Lake Oswego intertie to supplement storage.

Alternate Supply Analysis

Given the limited time available for supply shut down and the unpredictability of the construction process, alternate supply and distribution were explored from CRW and Lake Oswego via West Linn.

Supply from CRW's WTP may be an option for emergency supply once Phase I of the Backbone Project is completed and interties to Oregon City are established. The Backbone Project extends

transmission piping from the CRW WTP on the north side of the Clackamas to customers south of the Clackamas. Existing connections along the Backbone path were reviewed for a potential supply from the CRW zones supplied by the 42-inch to the CRW zones supplied by the 30-inch and indirectly, the Mountainview Reservoirs. However, available piping is 4-inch diameter and adequate connections are not currently available. Once the Backbone Project is complete, potential intertie locations may be located at the Barlow Crest Reservoir, CRW's Redland and Anchor Way master meter, or along Beavercreek Road. The Backbone Project and associated interties will not be implemented in time to address near-term emergency supply associated with the near-term SFWB pipe break and 42-inch pipeline improvement.

Alternate supply may be available from the Lake Oswego – Tigard WTP, via the Lake Oswego Emergency Booster Station and through West Linn's Bolton Pressure Zone to the Mountain View Reservoirs. Initial review of the system and pump curves for the emergency pump station indicate approximately 225 ft of total dynamic head (TDH) with two pumps operating. This is adequate head to pump from the Emergency Booster Station to the Mountain View Reservoirs. Based on winter-time demands, the pump station would operate almost continuously throughout the day. Two scenarios were considered:

- (1) In the first scenario, the West Linn distribution piping and valving are not isolated. Maximum pressures exceed 170 psi and may affect two-thirds to three quarters of the zone.
- (2) In the second scenario, portions of the West Linn distribution piping are isolated to serve as a transmission main. Maximum pressures exceed 170 psi, but only affect one-third of the zone (see **Figure 4**).

Because the affected customers in the Bolton Pressure Zone may not have individual PRVs to handle pressures greater than 100 psi and the distribution piping is aging with potential leakage concerns, the alternate supply scenario from the Lake Oswego Booster Station to the Mountainview Reservoirs is not recommended.

A third alternative was considered late in the emergency supply analysis. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. This operation does not affect pressures in the West Linn system. Valving requires field verification and emergency operations require testing. Excess capacity from the intertie booster may be limited after demands are supplied to West Linn during peak demand hours of the day. The benefit of the back feed from the Bolton Reservoir is to help refill City and CRW reservoirs normally supplied from the SFWB Clearwell during low demand hours of the day. The reservoir refill occurs through the Division Street Pump Station for the City and the Holly Lane and Redland Pump Stations for CRW.

Future Connections

Additional interconnects to the CRW system after the construction of the CRW backbone project may be explored. A secondary supply south of the Clackamas River greatly increases system resiliency and improves service to CRW, Oregon City, and West Linn customers. The backbone project will not be available for the immediate risks of the 30-inch leak and the 42-inch pipe connection associated with Scenario 1.

Recommendations

The following steps are recommended procedures for implementation of Scenario 1 and Scenario 2 operations. The steps should be field verified (including valve IDs) and tested prior to implementation.

During testing and implementation, all valve operations must be performed slowly to minimize the risk of water hammer and pressure transients. Prior to draining system pipelines, air/vacuum combination release valves should be identified and inspected for functionality to avoid damage from pressure transients. Draining should occur slowly to minimize risks of vacuum pressures.

Scenario 1: 30-inch Supply Line Outage

- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs nominally supplied by the 30-inch line prior to isolating the leak. These reservoirs include:
 - City Mountainview
 - City Henrici
 - City Boynton
 - CRW Redland
 - CRW Henrici
 - CRW Beaver Creek
- Isolate the leak and close valves
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)

- Shut off the CRW Redland and Holly Lane Pump Stations
- Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beaver Creek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
- Isolate the leak by closing adjacent valving on the 30-inch line
- Close the bypass PRVs at the following locations per recommendations listed in Table 2, to minimize demands on the Mountainview Reservoirs. Maintain fire flow valves at existing settings.
 - 18th & Anchor PRV Station
 - 3rd & Bluff PRV Station
 - 11th & Washington PRV Station
 - 15th & Madison PRV Station
- Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

Scenario 1 is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing “CLOSED” butterfly valve to the new 42-inch piping.

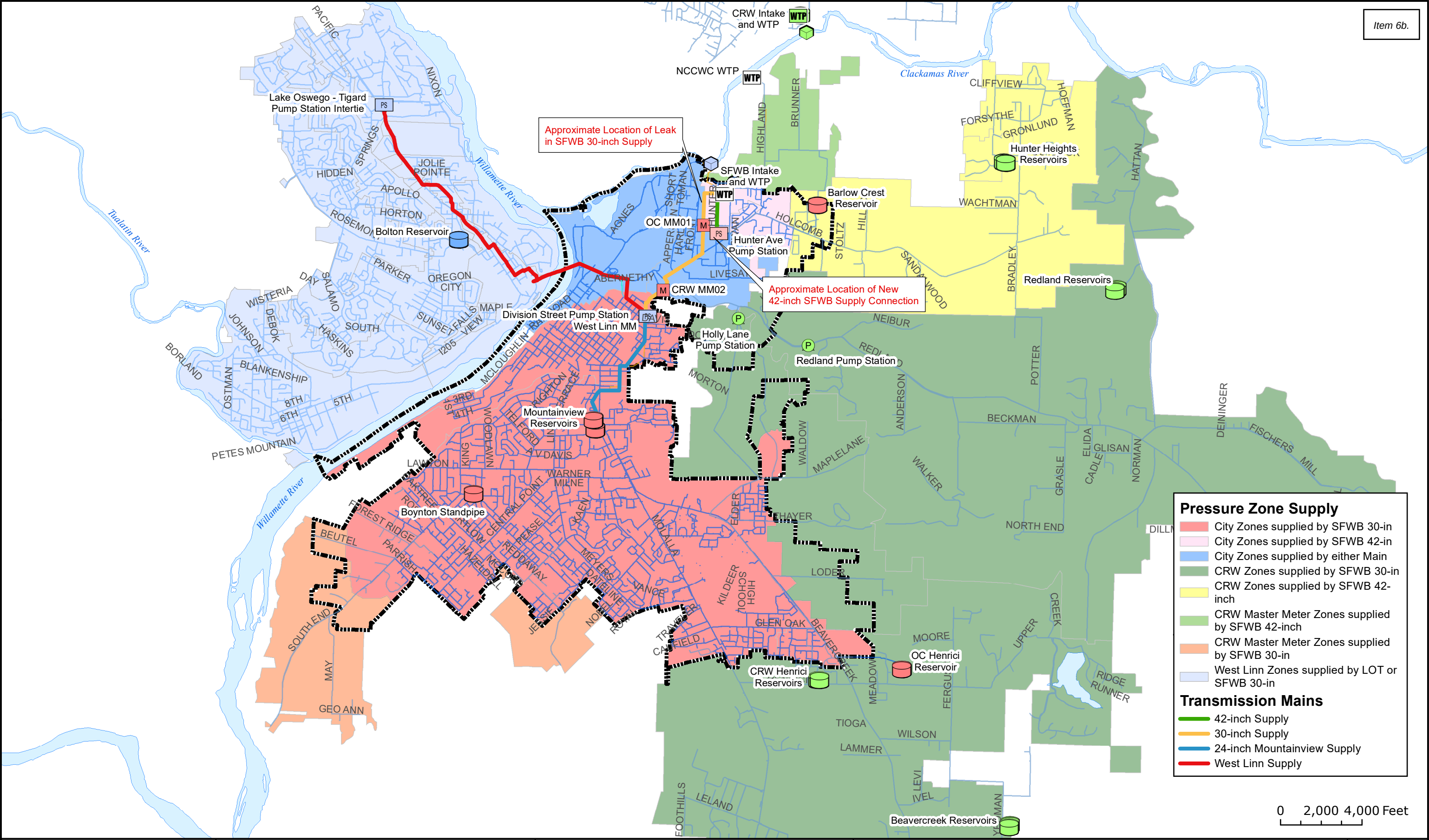
Scenario 2: Complete SFWB Outage

- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs. These reservoirs include:
 - City Mountainview

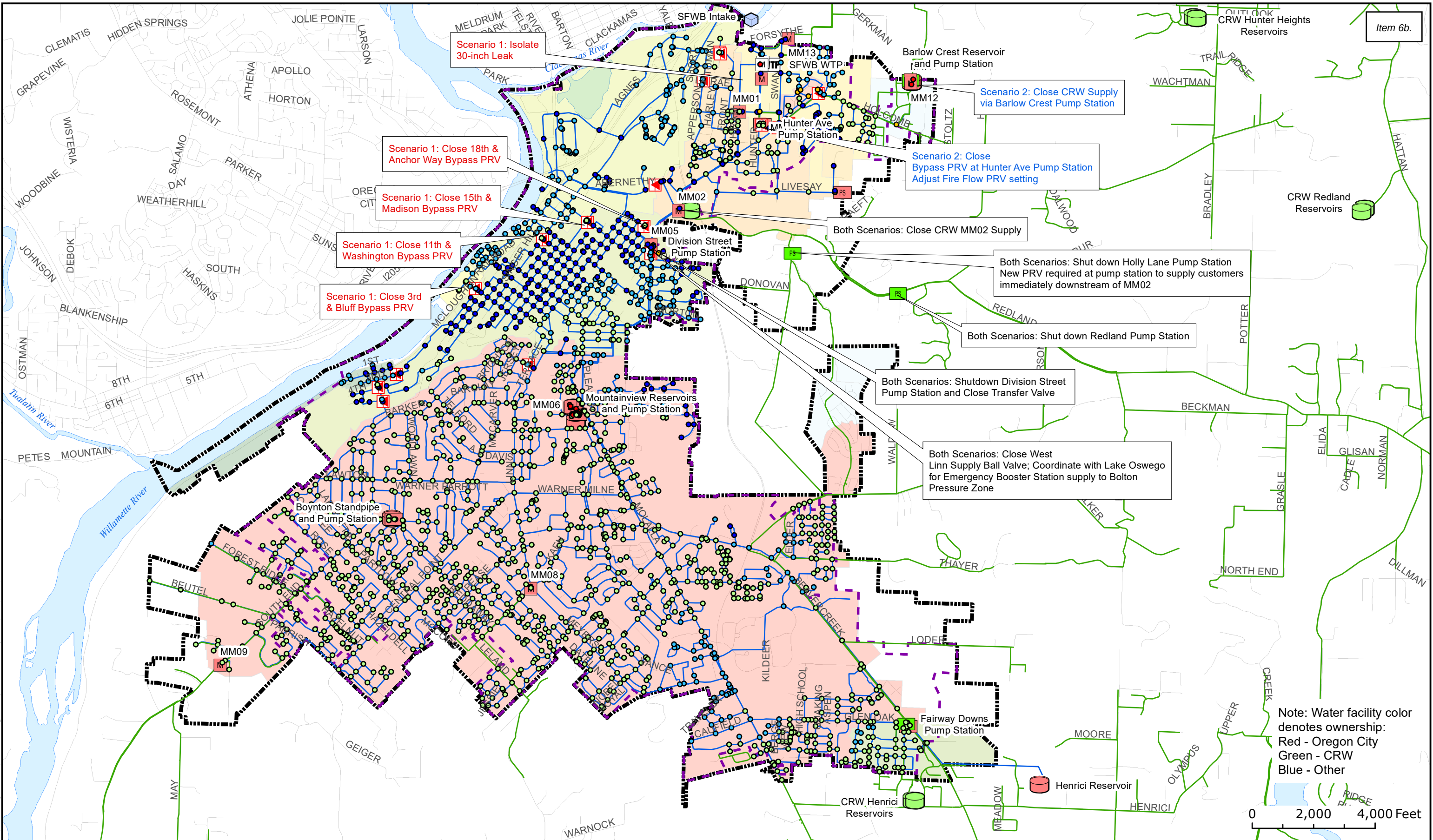
- City Henrici
 - City Boynton
 - City Barlow Crest
 - CRW Redland
 - CRW Henrici
 - CRW Beavercreek
 - CRW Hunter Heights
- Isolate the CRW, West Linn, and Oregon City systems
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)
 - Shut off the Barlow Crest Pump Station (CRW supply to Holcomb/Hunter Ave)
 - Shut off the CRW Redland and Holly Lane Pump Stations
 - Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beavercreek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
 - Shut off the Hunter Ave Pump Station
 - Close Hunter Avenue bypass PRV and adjust fire flow PRV to less than 48 psi
 - Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

Note: Additional emergency supply to the City and CRW systems may be available from the booster station intertie with Lake Oswego to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir during low demand hours of the day. Valving requires field verification and emergency operations require testing.

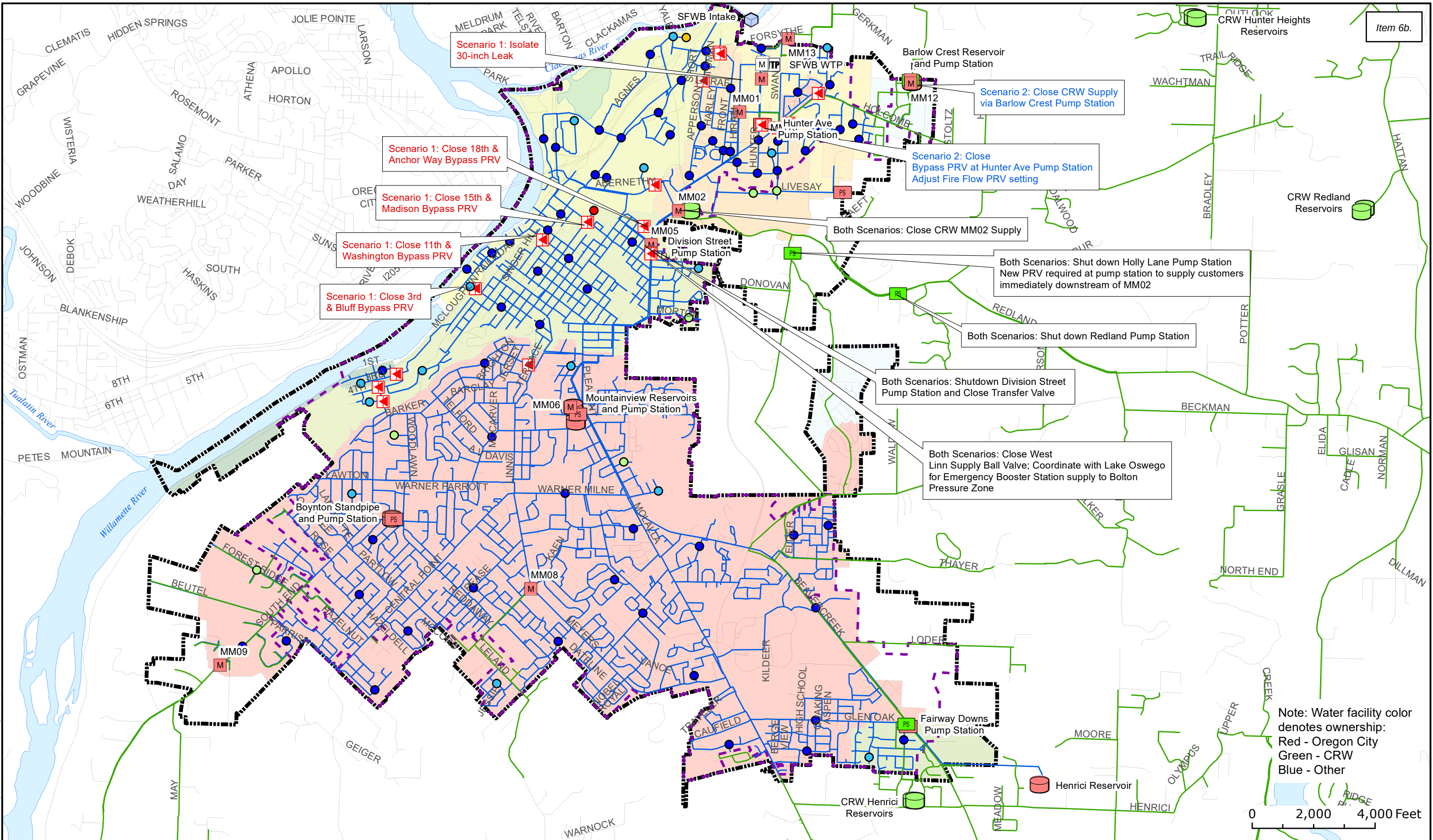
Cc: South Fork Water Board, West Linn, Clackamas River Water, Lake Oswego



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Bolton Zone Supply Status

- Unaffected West Linn Zones
- Transmission Main Overpressurize/No Supply
- PRV - Supply OK
- Alternate Supply via Willamette PZ
- Bolton Reservoir Supply

Valve Operation

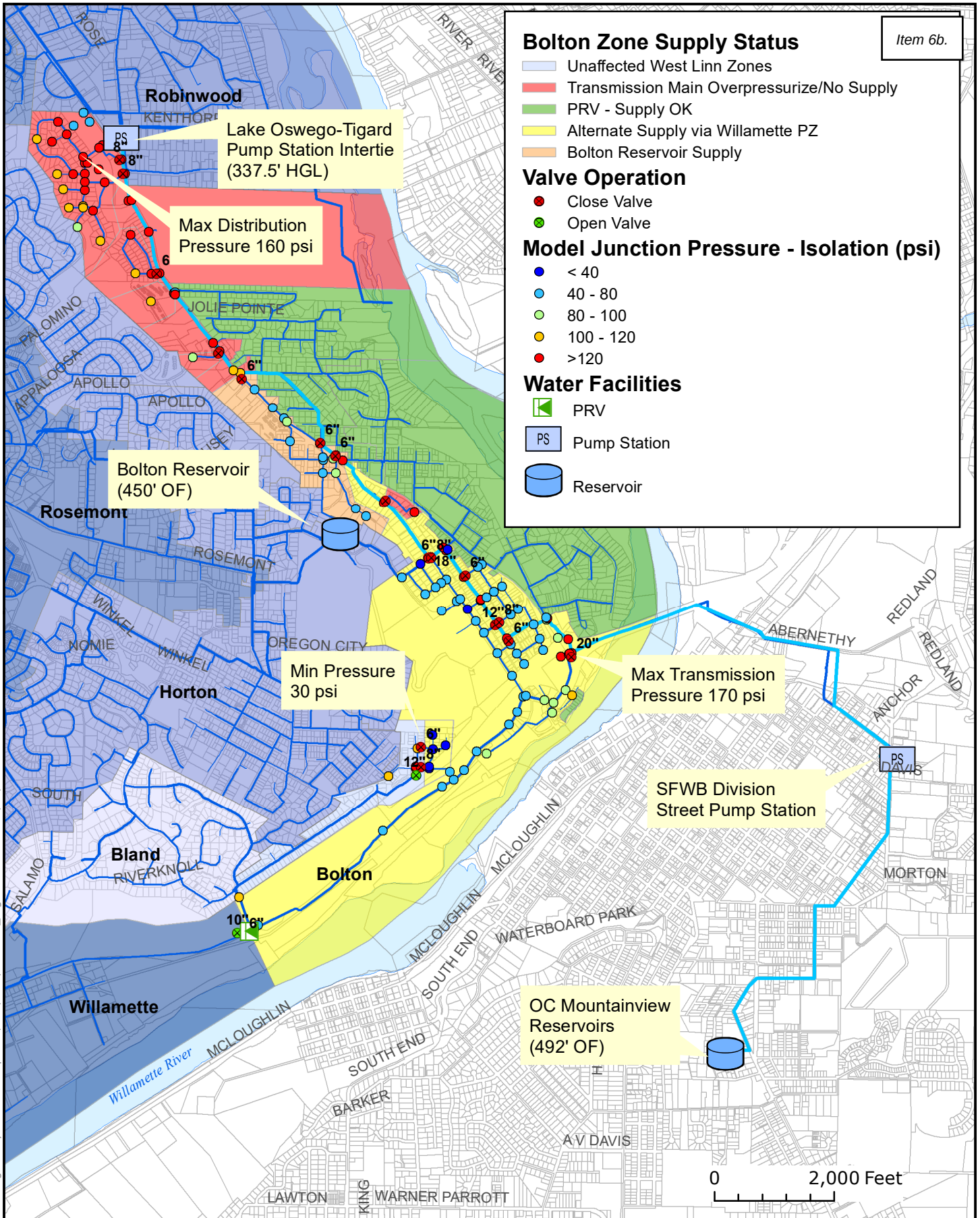
- Close Valve
- Open Valve

Model Junction Pressure - Isolation (psi)

- < 40
- 40 - 80
- 80 - 100
- 100 - 120
- > 120

Water Facilities

- PRV
- PS Pump Station
- Reservoir



**Figure 4:
SFWB Supply Main Failure
Alternate Supply Analysis**

**Lake Oswego-Tigard Supply
West Linn Pressures
Transmission Isolation**



APPENDIX D

JOINT ENGINEERING STUDY TECHNICAL MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: June 11, 2018

Project: 16-1922

To: Mr. Martin Montalvo – Operations Manager
Ms. Aleta Froman-Goodrich, PE – City Engineer
City of Oregon City

Mr. Bob George, PE – Chief Engineer
Clackamas River Water District

From: Brian Ginter, PE
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Murraysmith



Re: Clackamas River Water / City of Oregon City Joint Engineering Analysis
Water Service Dual interest Area Technical Analysis

Purpose

Clackamas River Water (CRW) and the City of Oregon City (City) are engaged in discussions with the goal of defining their adjoining service area boundaries for existing and future conditions to provide more efficient and economic water service to all customers. Murraysmith was selected by both providers to perform the engineering analysis and facilitate discussions between the two water providers.

The purpose of this white paper is to develop a framework for defining current and long-term service area boundaries, orderly service transfers, and infrastructure management through a study of current dual interest areas and overlapping service identified by the providers. This report will:

- Present the historical events regarding boundary realignment
- Identify typical dual interests present between service providers
- Document the identified water service dual interest focus areas
- Propose individual or policy-based solutions for each dual interest area
- Develop an approach to guide future dual interest resolution
- Provide an action plan for the next steps

This report also fulfills the study requirements set forth in the May 2014 Settlement Agreement between CRW and the City.

Introduction

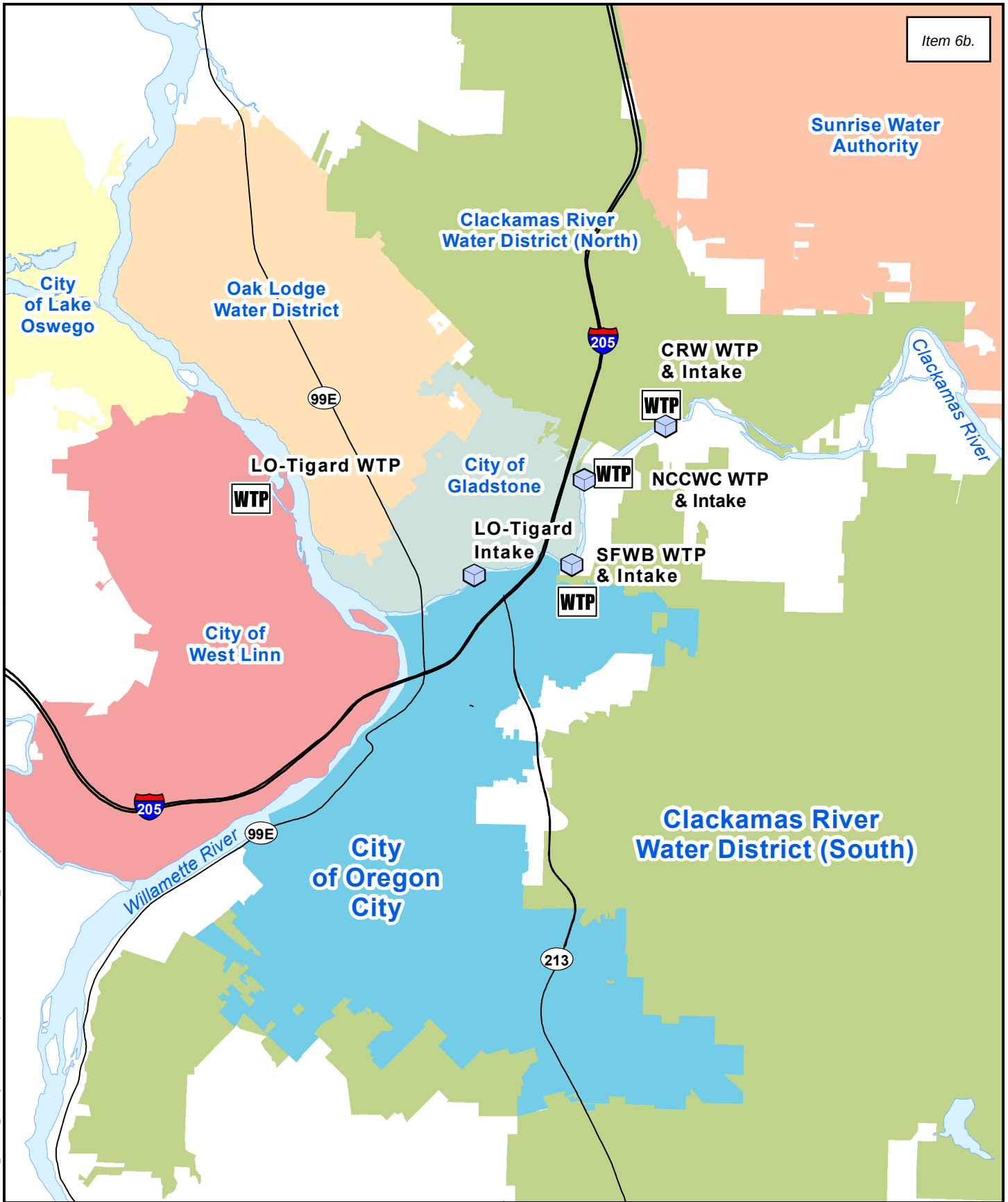
The Clackamas River is the primary water source for municipal water supply to Oregon City and the surrounding urban and semi-urban areas, as illustrated in **Figure 1**. Three separate Water Treatment Plants (WTPs) along the river supply six different water providers, including the City and CRW (**Table 1**).

Table 1
Water Treatment Facilities along the Clackamas River

Water Treatment Plant	South Fork Water Board WTP	North Clackamas County Water Commission WTP	Clackamas River Water WTP
Water Provider Served	Oregon City	Sunrise Water Authority	Clackamas River Water (North)
	West Linn	Gladstone	Sunrise Water Authority
	Clackamas River Water (South)	Oak Lodge Water District	

Historically, these water providers have coexisted and provided service to separate areas. Cities generally supplied the urban centers and water districts or water authorities have served the semi-urban areas both within and outside the Metro Urban Growth Boundary (UGB). With development and subsequent UGB expansion cities can legally serve areas that were once limited to water district or water authority service. Under ORS 222.520 to 222.580, a city may annex and withdraw territory, and assume facilities, from special districts if the facilities are non-essential to the operation of the remaining district water system. This same rule does not apply to water authorities – their service areas are protected and cannot be withdrawn by cities.

This study is the result of a legal dispute over the right to withdraw territory between Oregon City and CRW. As a municipal corporation, the City provides water service to residents within city limits and some areas within the UGB, but is limited in its ability to serve customers outside the UGB. CRW, a domestic water supply district organized under ORS 264, borders the City to the north, south, and east and primarily serves customers within unincorporated Clackamas County outside the UGB, as well as customers within the city limits and the UGB.



- City of Oregon City
- Clackamas River Water District
- City of Gladstone
- City of Lake Oswego
- Oak Lodge Water District
- Sunrise Water Authority
- City of West Linn
- Major Roads
- Water Intake
- Oregon City UGB
- WTP Water Treatment Plant


 N
 1 inch = 6,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 1 Vicinity Map



In November of 2013, CRW and Sunrise Water Authority (SWA) approved Ordinance 03-2013 and Resolution 2013-02 respectively (collectively known as the 190 Agreement) to form the Clackamas Regional Water Supply Commission (CRWSC). CRW and SWA created the CRWSC to oversee the efficient supply of domestic water services within the two water providers' service areas. The City and South Fork Water Board (SFWB) were concerned the 190 Agreement would extend SWA boundary protection rights under ORS 450.987 as a Water Authority to CRW, thus limiting the City's right to annex and withdraw CRW territory.

In December of 2013, the City and SFWB filed an appeal to the Land Use Board of Appeals (LUBA) stating that the creation of the CRWSC infringed on the City's expansion rights and constituted material harm to the City and SFWB. This appeal led to discussions between CRW and the City regarding the goals of the CRWSC. In May 2014, a Settlement Agreement was signed by the City and CRW calling for this engineering study to provide direction for existing and future disputes.

This study is focused only on service provision dual interests between Oregon City and CRW. For the remainder of this study, areas and service providers north of the Clackamas River and west of the Willamette River will be ignored.

Dual interest Characterization

Neither party disputes the City's right to annex and withdraw CRW territory. Rather it is how prior annexations and withdrawals have occurred that is the primary driver of dual interest. The agreements for service transitions are outdated or do not address the current challenges, which has led to irregular policies and an uncertainty in long-term service provider boundaries. This uncertainty has led to CRW's reluctance to invest in areas that might soon be taken by the City, animosity over the condition of existing infrastructure in areas that are eligible for annexation, and a general short-term perspective on coordinated planning. The lack of a clear plan has at times resulted in annexation without withdrawal of territory resulting in continued uncertainty for both water providers related to long-term service requirements. All compiled, this has meant customers of both providers have seen failing infrastructure, frequent road repairs, higher costs, and a lack of clarity regarding long term service. As annexations and withdrawals are becoming more and more frequent, and in order to efficiently and effectively plan for the long-term service to all customers in the area, the parties concluded that a formalized process should be developed that is acceptable to both water providers.

Remuneration for Assets

Typically, urbanization and city expansion occurs where there is no existing public water service provider. However, CRW already provides water service to much of the semi-urban area surrounding the City. When the City expands service into these area, existing CRW infrastructure, often with remaining useful life, might be present, however the infrastructure may be inadequate by City standards. This creates a potential source of dual interest between the two water providers associated with:

- CRW's willingness to invest in the renewal or replacement of aging infrastructure that may ultimately be withdrawn by the City;
- The City's desire to efficiently transfer service to City rate payers without constructing redundant facilities; and
- Identification of critical infrastructure that must remain within CRW's ownership for continued water service to CRW customers.

In order to address these sources of dual interest, both water providers have acknowledged the need to develop a fair and objective remuneration policy that encourages coordinated planning and equitable, long-term focused investment in infrastructure development and renewal.

Reduce Isolated CRW Service Areas

When newly annexed areas are inconsistently withdrawn, isolated pockets of CRW customers are created within City service area. To supply these customers, either parallel and redundant infrastructure must be constructed and maintained, or the City must wheel water through their infrastructure to supply CRW infrastructure and customers. Traditionally, the latter has been chosen and facilitated in two ways – as a master meter connection or as Joint Users. These two mechanisms are detailed below:

- **Master Meters:** Master meters cleanly divide two systems and retain infrastructure maintenance responsibility with the system paying for the water by recording the totalized flow through a single supply point. They can supply entire pressure zones or a limited area such as a single road. Typically, master meters are used in areas that are not predicted to transition soon, or where a significant number of customers are served in the receiving system.
- **Joint Users:** Joint users are CRW customers that are supplied through City, CRW, or jointly owned infrastructure without an intervening master meter. Joint Users are not ideal in that the supplying system must take on a significant amount of risk if the receiving system does not adequately maintain its pipes but certain conditions such as system looping, or a limited number of customers, prevent the use of master meters.

Master meters and Joint Users are both integral solutions to serving isolated customers. The problem arises when these short-term solutions are selected without thought to long-term service goals.

For long term service, the simplest technical solution is often annexation and withdrawal of CRW service areas. However, political motives and a reluctance to be included in city limits stalls this type of solution. The City currently has a policy (Oregon City Municipal Code 13.04.260B) to charge 1.5 times the retail rates for service to customers outside of city limits. This policy may discourage orderly transition of service in the interest of protecting the customer as Master Metered or Joint User customers currently only pay their system's nominal rate.

The inconsistent application of master meters and Joint Users, the lack of certainty regarding annexation and withdrawal of territory, and the economic consequences for both water providers and customers require the development of an approach to isolated service that can be consistently and fairly applied.

Water Service Provider Goals

The consultant team met individually with CRW and City staff to understand both providers' goals (without the influence of the other provider). The following goals that influence each water providers' definition of success in this study were identified in the discussions.

- Joint Engineering Study Goals for Both Providers
 - The City and the CRW are both committed to providing high quality potable water service to customers at reasonable rates.
 - Both providers recognize the benefits of continued collaboration to provide seamless service to dual interest area customers that may be transferred, but each also recognizes their first duty is to customers within their own long-term service areas.
 - Both providers desire certainty of long-term water service area boundaries to inform ongoing system development and renewal/replacement capital investment.
 - Both providers are amenable to wheeled water from the other purveyor's WTP in cases where a higher level of service could be provided more economically and long-term agreements are in place to support investments needed to achieve and maintain the level of service.
 - Both providers recognize the value of interconnected systems with redundant emergency supply and are committed to working together with neighboring water providers to minimize impacts on customers during emergencies as well as periods of growth and transition.
- City Specific Goals
 - The City wants to be the water service provider to existing and future annexed City residents and businesses.
 - The City is part owner of SFWB, and therefore prefers to supply the City's customers with water sourced from the SFWB WTP, thereby serving the City's ultimate service area and customers. This results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

- CRW Specific Goals
 - CRW prefers to supply the district's customers with water sourced from the CRW WTP as this results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

Keeping these goals in mind, existing dual interests and solutions to key areas identified during scoping will be explored in the next section.

Study Area

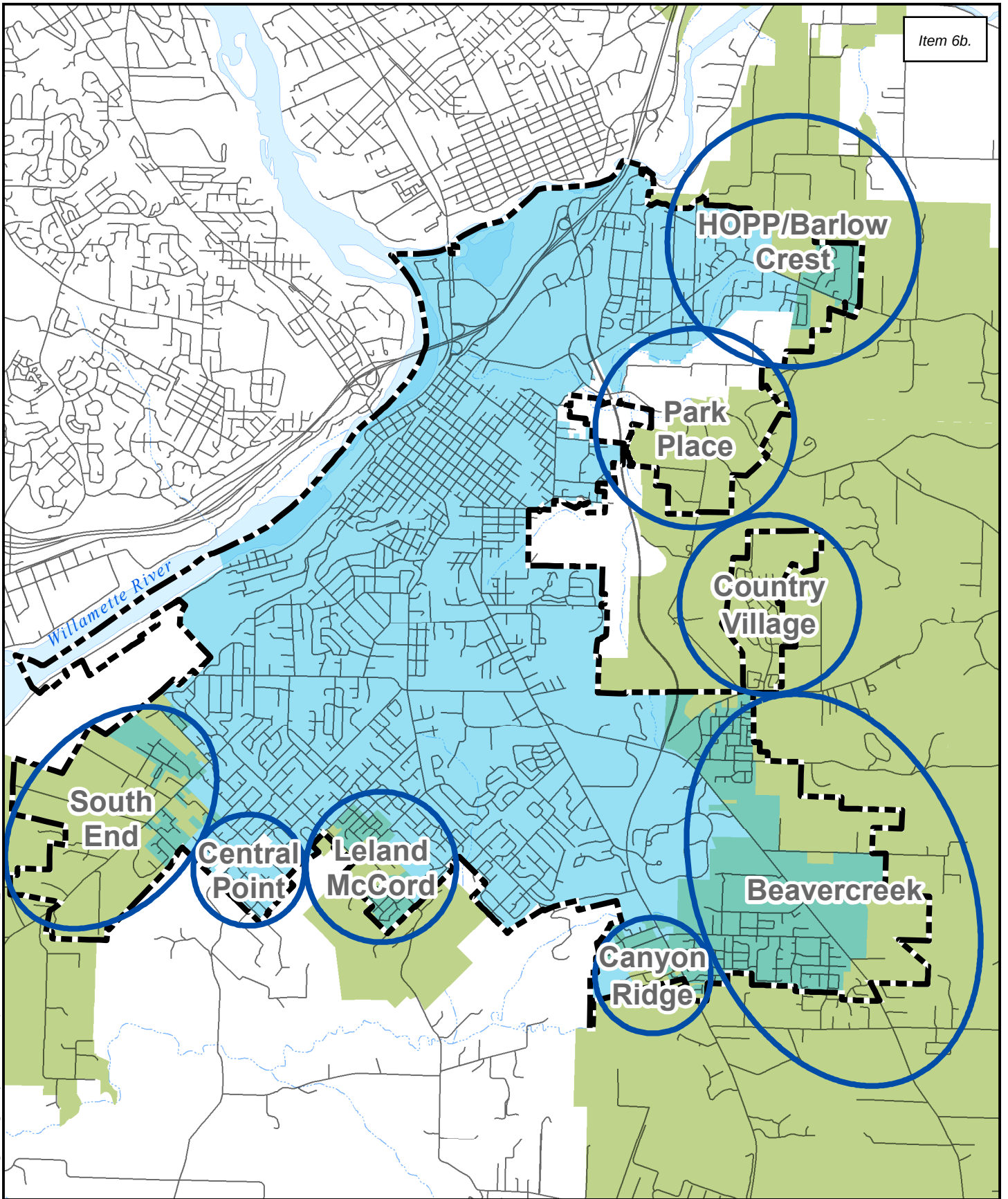
Figures 2A and 2B highlights the overall study area of this white paper and identifies the individual focus areas discussed in detail later in this section. Study dual interest areas are generally located near the Oregon City city limits or the edge of the UGB, where annexation and withdrawals occur.

Focus Areas:

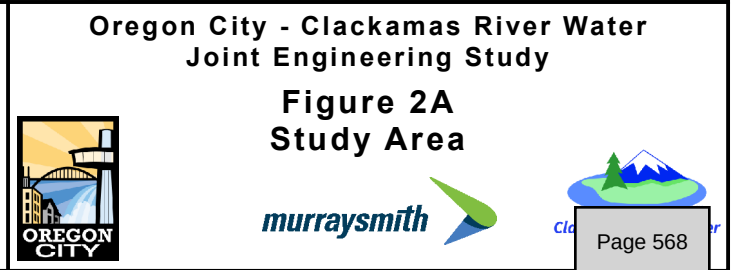
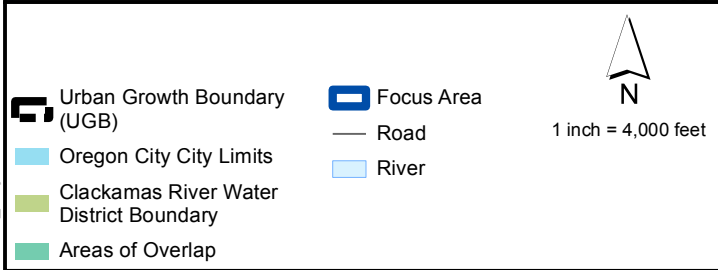
- South End
- Central Point
- Canyon Ridge
- Leland McCord
- Country Village
- Beavercreek
 - Beavercreek Concept Plan
 - Fairway Downs
 - Thayer and Loder Roads
 - Henrici Ridge
 - Park Place
- HOPP/Barlow Crest

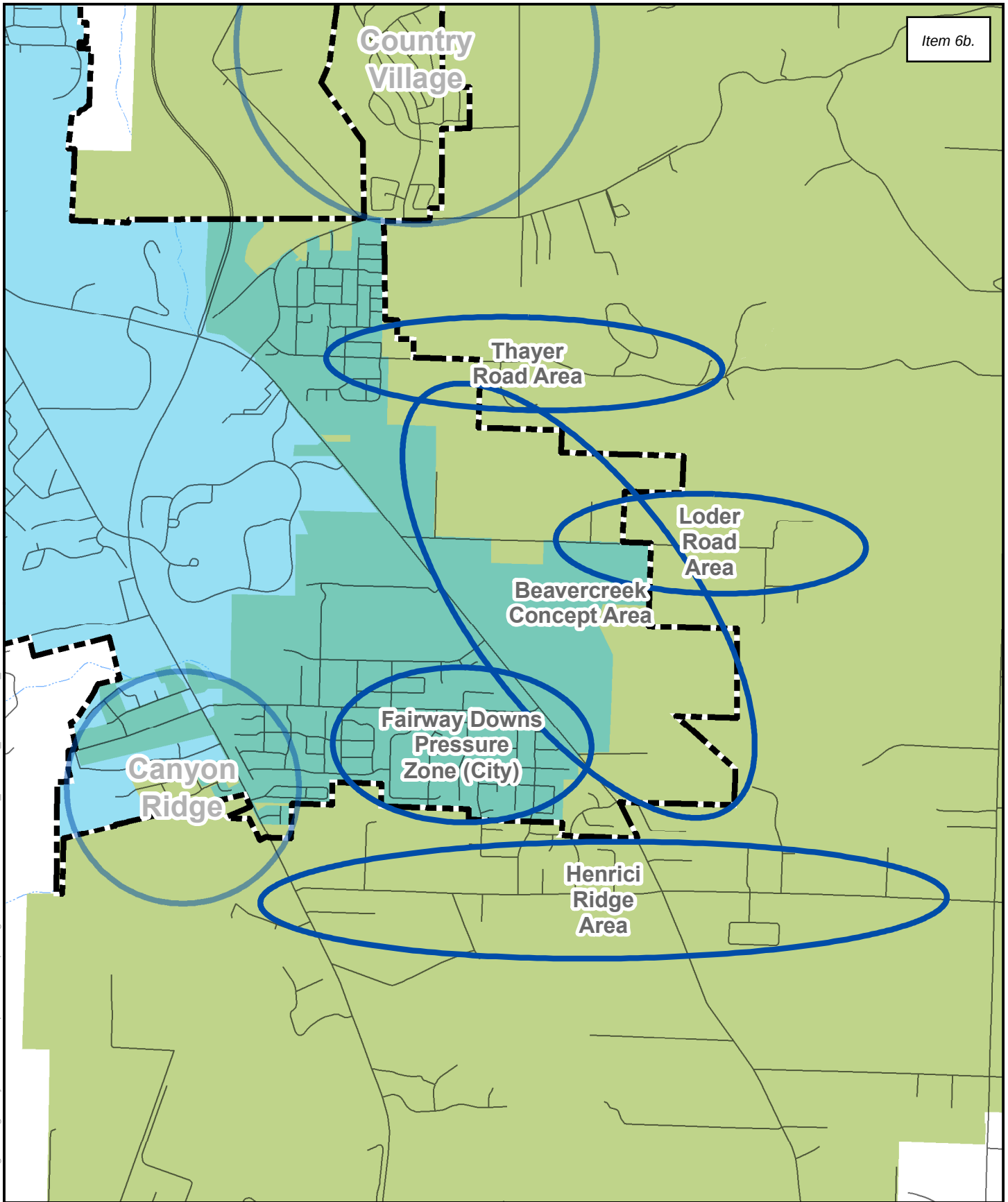
Study Area Discussion

The following section details existing conditions, dual interests, and proposed solutions for each study area. While specific solutions are unique, the general goals described in the previous section helped drive a common approach to the solution process.



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Urban Growth Boundary (UGB)

Oregon City City Limits

Clackamas River

Water District Boundary

Areas of Overlap

Focus Area

Beaver Creek Areas

Road

River

N

1 inch = 2,000 feet

**Oregon City - Clackamas River Water
Joint Engineering Study**

Figure 2B

Study Area - Beaver Creek

OREGON CITY

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Clackamas River

Page 569

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Comments Regarding Mapping

The figures in this section present the existing and proposed service conditions in the focus areas. Existing infrastructure is color coded: dark blue represents City ownership, green CRW ownership, light blue joint ownership, and yellow SFWB or other ownership. Taxlots currently served by CRW are highlighted in colors representing either their existing or future service category. City taxlots have not been highlighted because there is assumed to be no change of service at the individual customer scale. Future conditions maps are only presented if deemed necessary and are intended to be used as a guide for long-term service; intermediate steps may be necessary to achieve this configuration and other alternatives may be preferred, based on actual timing and character of annexation and urban development. Finally, all mapping is limited by the accuracy of the data provided by the City and CRW. Best efforts have been made to resolve lingering inaccuracies but due to ongoing service transitions and the nature of two separate system databases, some inaccuracies are likely.

South End

The South End Concept Area is a prime example of dual interests that arise when service transitions occur without a long-term service plan. As the City developed, the geopolitical boundary and service area expanded south into CRW service areas, effectively isolating the CRW South End Area from the rest of the CRW system. Additionally, City annexation occurred at the individual taxlot level, resulting in an inconsistent patchwork of City and CRW service areas and infrastructure. Both providers will continue to collaborate to develop a long-term solution in this area. In this study, the existing condition will be explained and key areas of agreement will be noted, but a finalized solution and transition phasing was not developed.

Most customers in the South End Area are served via a jointly-owned 12-inch diameter transmission main in South End Road and supplied with water wheeled through the City system from the SFWB WTP. CRW customers south of Impala Way are master metered, while north of Impala Way CRW and City mains are served as City customers and CRW joint users. **Figure 3** presents the existing system infrastructure and service provider for taxlots currently served by CRW in the South End area.

Both providers have recognized the need for a consistent approach to service and infrastructure transitions in South End. To achieve this goal, policy-level agreements are required, including:

- A remuneration methodology and agreement for the transfer of infrastructure assets
- An updated cost-assignment for installation and maintenance of shared and interfacing (master meter) infrastructure
- A methodology and agreement of triggers for the transfer of service area
- A methodology and agreement for wheeled service (master meter or Joint User status) and development of a wheeling charge

Each of these policy level agreements will continue to appear throughout the discussions of the dual interest areas and are explained in greater detail in the **Typical Dual interest/Solutions** section

UPPER ZONE (CITY)

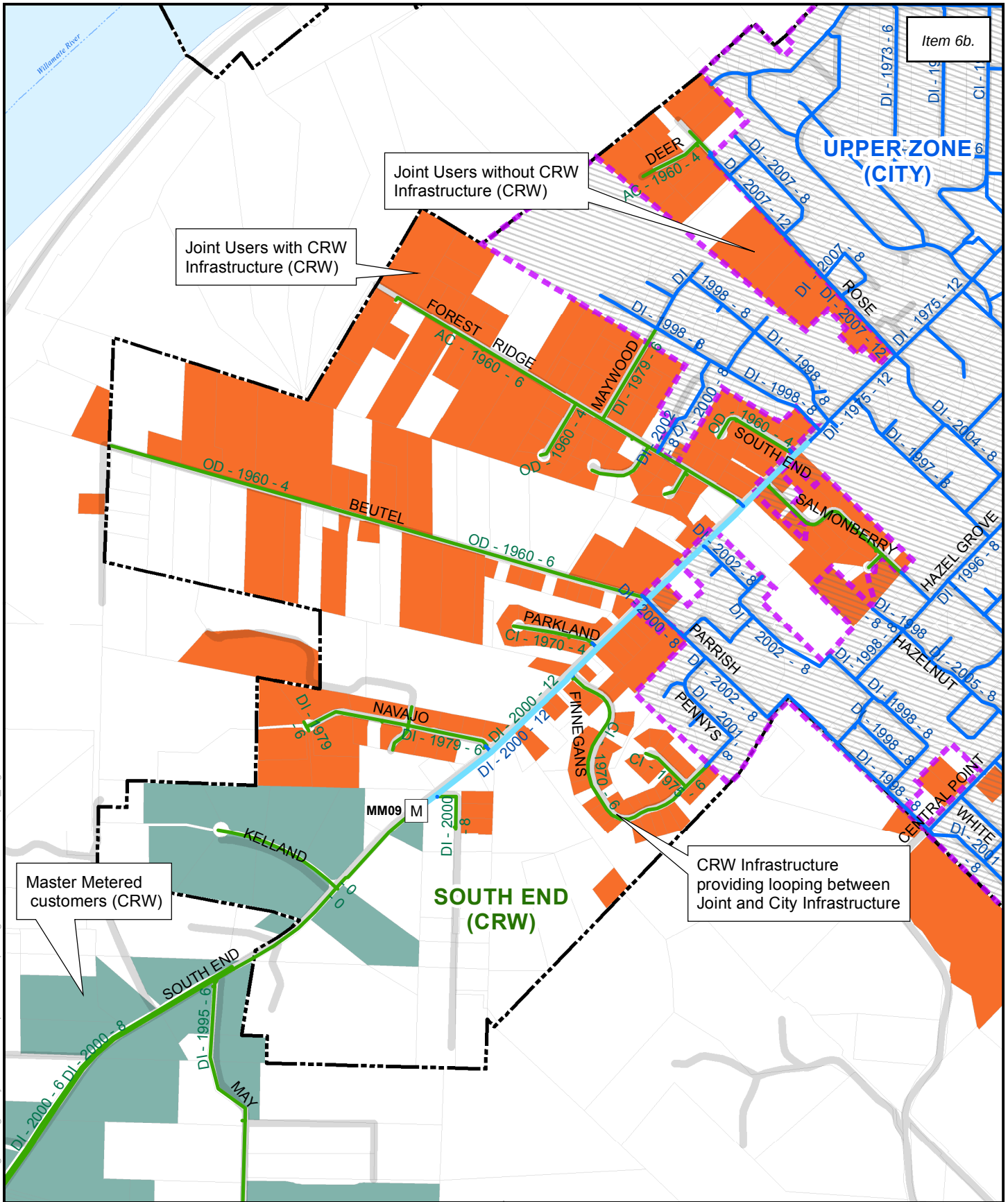
Joint Users without CRW Infrastructure (CRW)

Joint Users with CRW Infrastructure (CRW)

CRW Infrastructure providing looping between Joint and City Infrastructure

Master Metered customers (CRW)

SOUTH END (CRW)



UGB
 City Limits
 Joint
 CRW
 City
 SFWB

Current Service

Master Meter
 Joint User

1 inch = 1,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 3 - Existing South End

Page 571

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(page 19 of this report). Given the complexity of the South End area water service boundary overlap and uncertainty of future development timing and character, a specific plan for service transfers and infrastructure/territory withdrawal was not developed. A general understanding that the City will ultimately annex and withdraw all territory within the UGB was agreed upon.

Resolution: Ongoing collaborative communication and planning will be required; service agreements (especially Joint User) addressing ongoing leak detection and mitigation.

Central Point

The Central Point area is an example of incomplete annexation and withdrawal. Existing infrastructure in the area is entirely City owned and CRW customers are classified as Joint User served via City mains. **Figure 4** illustrates the existing service configuration in Central Point.

Both providers agreed that given the lack of CRW infrastructure and the adjacent City service area, the City should provide service to all customers in this area. Recently, local development has been the primary driver of provider transitions, and additional efforts should be made to complete all transitions in the near future. There may be a few remaining taxlots outside the present UGB that will necessitate Joint User service, but within the UGB, all efforts should be made to withdraw these customers. One specific issue that will need to be addressed is the City's policy (Oregon City Municipal Code 13.04.260B) for water service outside the City limits. Currently, these customers pay 1.5 times the City retail rate.

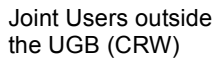
Resolution: All customers within the UGB to be withdrawn by the City; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.

Canyon Ridge

The Canyon Ridge area is another example of a CRW service area completely reliant on City supply, although without an intervening master meter. Existing service is provided by CRW through the Joint User agreement via CRW distribution mains in Canyon Ridge Drive and City mains in Molalla Avenue. Canyon Ridge customers are primarily single family homes within the UGB and outside of city limits while others CRW customers are large lots outside the UGB. **Figure 5** shows the current service configuration in Canyon Ridge.

City development west of Canyon Ridge is expected to require looping to the CRW main in Canyon Ridge Drive. To maintain service area continuity and minimize the need for redundant infrastructure, the City should annex and withdraw all CRW customers and infrastructure within the UGB. Taxlots outside the UGB will necessarily remain CRW Joint Use customers served from City mains. East of Molalla Ave these areas are Urban Reserve while west of Molalla customers are Rural Reserve and as such cannot be considered for UGB expansion for several decades, if ever.

Resolution: City to withdraw customers and infrastructure within the UGB; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.



Unannexed Island Joint Users without CRW Infrastructure (CRW)

Annexed Island Joint Users without CRW Infrastructure (CRW)

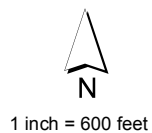
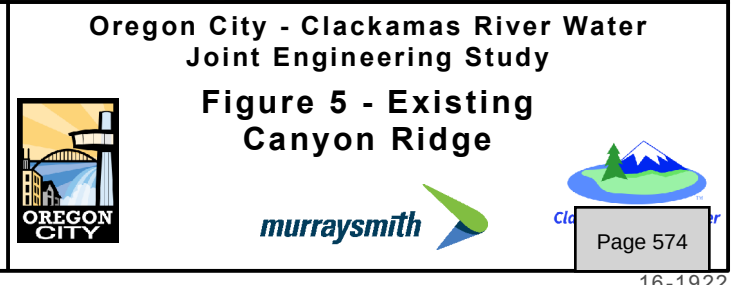
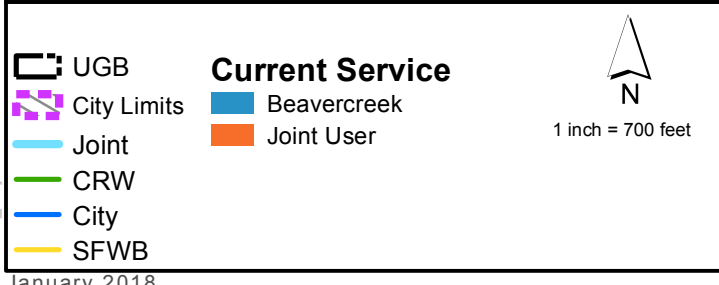
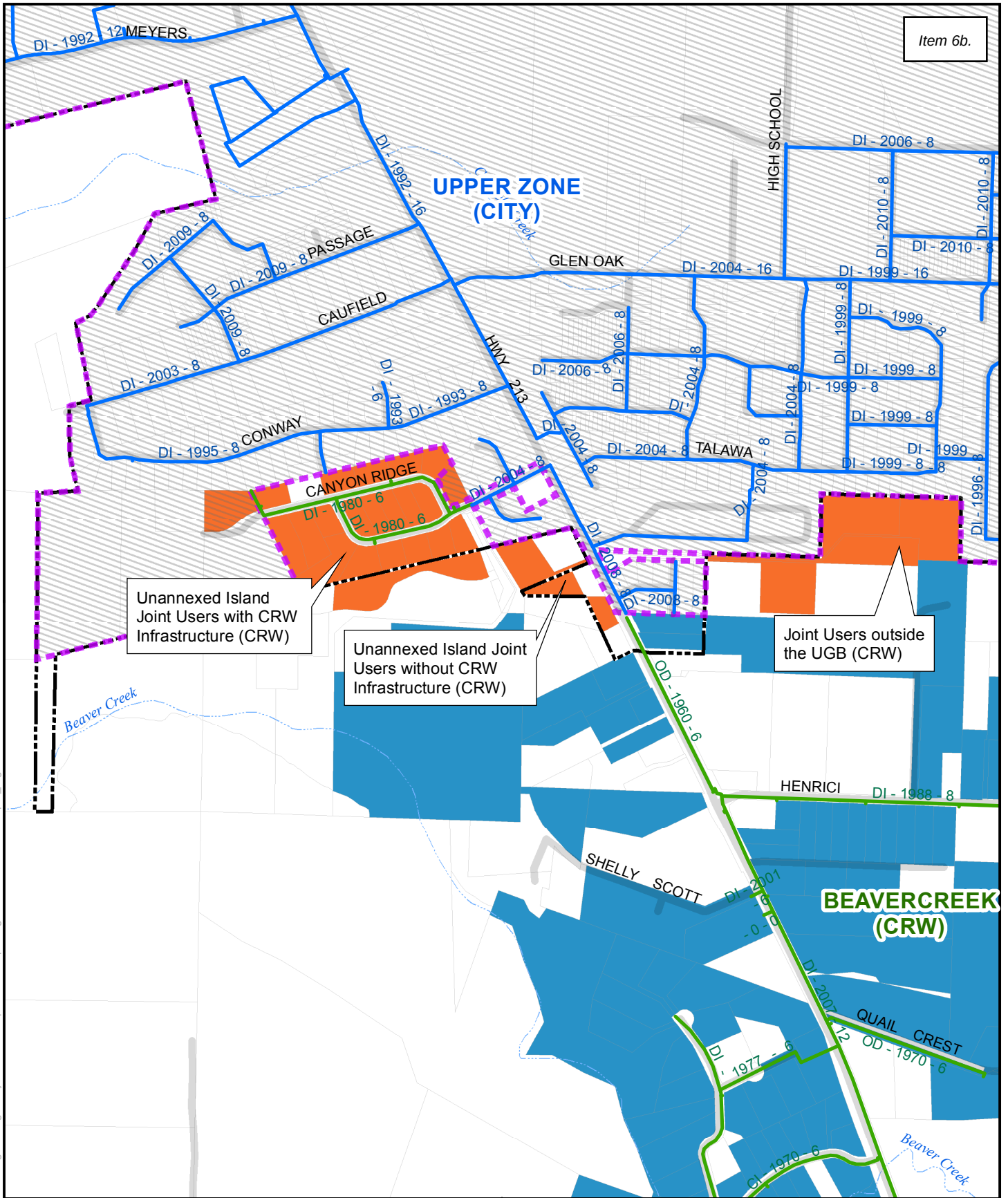


Figure 4 - Existing Central Point



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Leland McCord

The Leland McCord area is similar to the South End area in that supply to CRW customers is entirely dependent on water wheeled through the City system. The City supplies water to a master meter at the intersection of Leland and Meyers Road. CRW and City mains run parallel in Leland Road to just south of Kalal Court, beyond which CRW mains continue in Leland past the UGB. Additional City development and infrastructure has continued along the south-east edge of the UGB, further isolating CRW service area. **Figure 6A** shows the existing infrastructure and service boundaries in the Leland McCord area.

Following the logic used for South End and Central Point, the City should serve customers in the Leland McCord area within the UGB. A master meter should be installed at the UGB to serve remaining CRW customers outside the UGB from the existing CRW distribution main. **Figure 6B** shows the long-term resulting infrastructure and customer configuration after transfers.

Recent City development south of Jessie Ave to the UGB has extended City infrastructure to the point where looping through the CRW service areas is required and will necessitate either redundant infrastructure or infrastructure withdrawal. However, most of the CRW infrastructure is failing 1960's steel pipe which the City will not withdraw from the district. Both parties prefer to minimize the construction of unnecessary parallel infrastructure. CRW, however, is reluctant to replace the mains without guaranteed return on investment while the City is unwilling to accept the immediate risk by withdrawing the failing infrastructure. Development of a remuneration policy for infrastructure withdrawal would minimize investment in parallel infrastructure, and incentivize system renewal in dual interest areas to the benefit of both City and CRW customers.

Resolution: Continued collaboration; eventual transition to City service within UGB with development; Master meter for customers outside the UGB; City to pursue current extraterritorial service policy change; collaboration for replacement of Leland Road and McCord Road CRW mains applying the remuneration methodology.

Country Village

Country Village is unique in that it is an area served by CRW with limited drivers for development already within the UGB. The area is served by CRW from a single critical transmission main that is not eligible for City withdrawal. This CRW transmission main is the primary supply main from the CRW Holly Lane Pump Station to the CRW owned Henrici Reservoirs, feeding SFWB wholesale water to CRW's Henrici and Beaver Creek pressure zones. Because the main is vital to the CRW transmission network, a redundant line would be necessary for the City to annex, withdraw, and provide service. **Figure 7** illustrates the focus area, key infrastructure, and service areas.

Master Meter supplying
CRW Leland/McCord area

MM08

Parallel City/CRW
mains along Leland Rd

UPPER ZONE
(CITY)

Aging CRW
Infrastructure

Recent City development
and system expansion

LELAND McCORD
(CRW)

- UGB
- City Limits
- Joint
- CRW
- City
- SFWB

Current Service

- Master Meter
- Joint User

1 inch = 600 feet

Oregon City - Clackamas River Water
Joint Engineering Study

**Figure 6A - Existing
Leland McCord**



CRW Infrastructure
to be abandoned -
Master Meter and Leland main

Planned CRW replacement
with withdrawal and
remuneration

Transfer and loop
to City infrastructure

Master Meter moved
to UGB (CRW)

UPPER ZONE
(CITY)

LELAND McCORD
(CRW)

Leland MM

- | | |
|----------|-----------------------|
| Joint | Future Service |
| CRW | Master Metered |
| City | Joint User |
| SFWB | City |
| Transfer | UGB |
| New Main | City Limits |
| Abandon | |

1 inch = 600 feet

Oregon City - Clackamas River Water
Joint Engineering Study

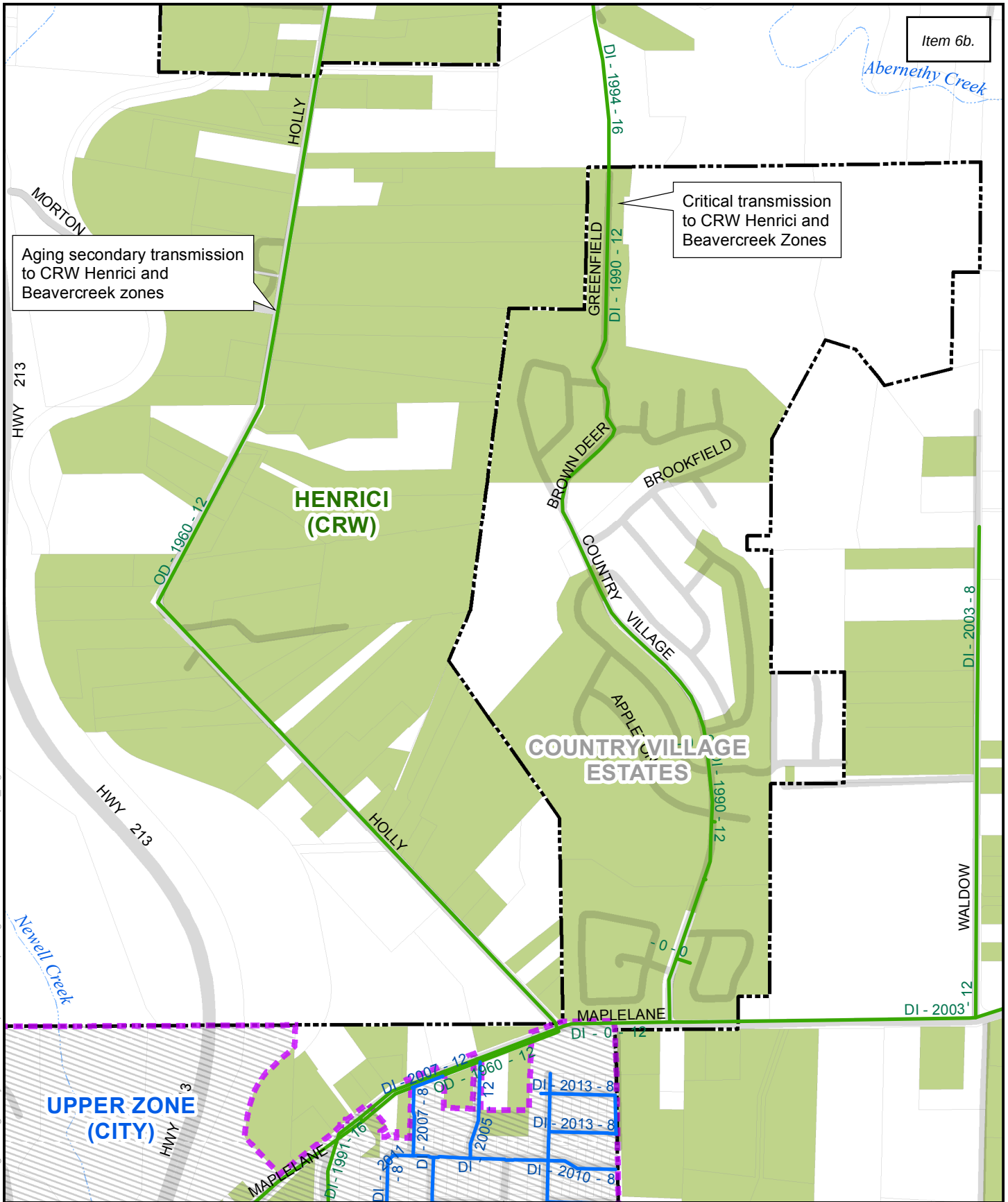
Figure 6B - Future
Leland McCord



Abernethy Creek

Critical transmission to CRW Henrici and Beaver Creek Zones

Aging secondary transmission to CRW Henrici and Beaver Creek zones



UGB
 City Limits
 Joint
 CRW
 City
 SFWB

Current Service

 Henrici

N

1 inch = 750 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 7 - Existing Country Village

Page 578

16-1922

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Additionally, the area is not adjacent to other City service and there is minimal development expected between Country Village Estates and City service areas. Although customers are within the UGB, CRW should continue to serve existing and future customers in the area, until such a time that the City has either built out infrastructure to serve the area or redevelopment requires annexation and extension of other City services to the area.

Resolution: No change from present service arrangement.

Beavercreek and Surrounding Areas

Service to the Beavercreek area affects recommendations for both City and CRW service areas including the City's Beavercreek Concept Area, the City's Upper Zone, the City's Fairway Downs Zone, CRW's Beavercreek Zone, CRW's Henrici Zone, the Henrici Ridge Area, and the City's Park Place Concept Area. Because the Beavercreek area is so highly linked to both systems, an opportunity to minimize redundant existing and future facilities, and potentially provide additional flexibility and resiliency to both systems, is present if both providers agree to the development of jointly owned facilities.

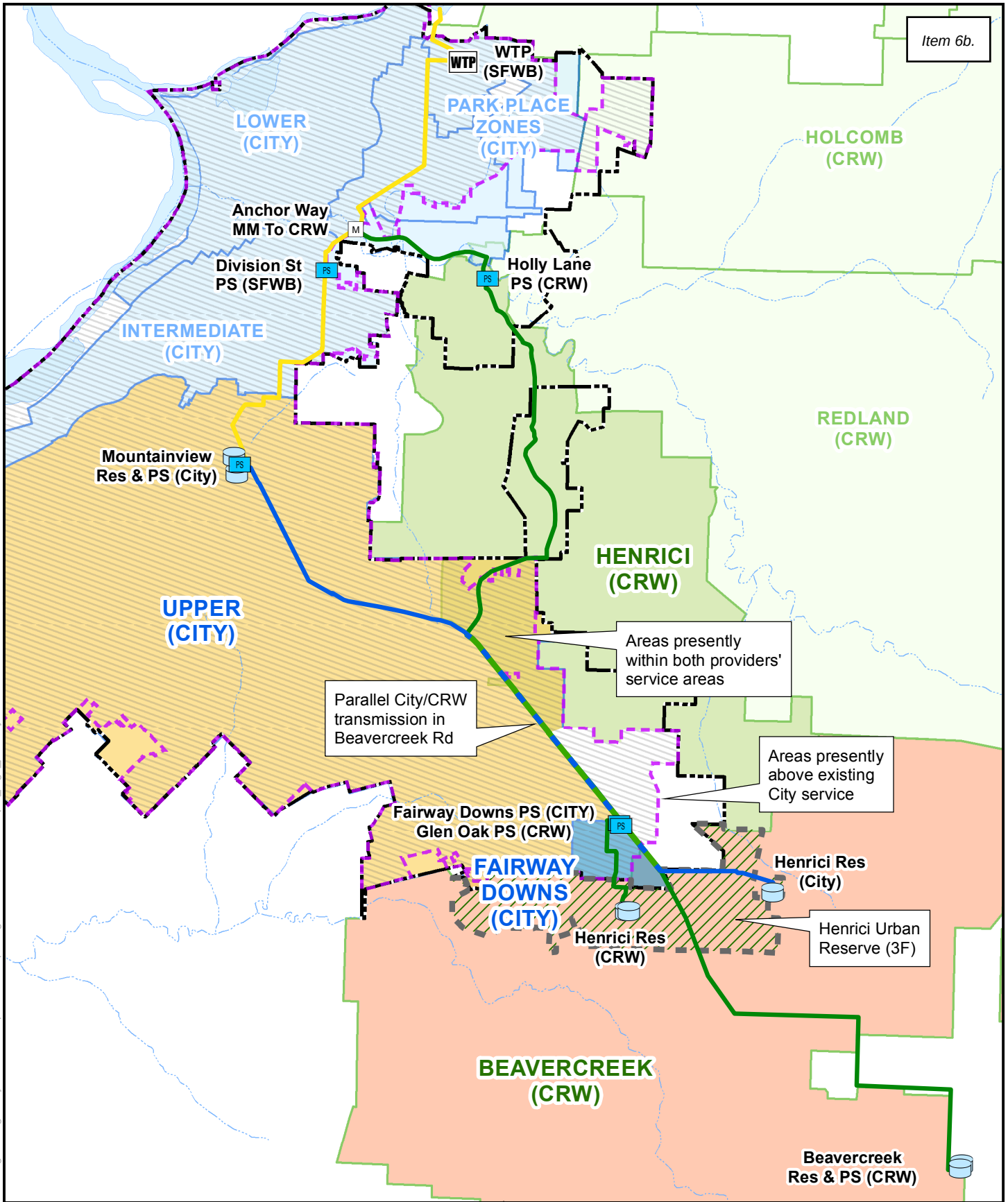
Existing Service

Currently, CRW and the City have essentially duplicate pressure zones at similar hydraulic grades serving partially redundant areas: CRW's Henrici zone (590 ft reservoir overflow) and the City's Upper zone (592 ft). The City's Upper Zone serves most of the southern part of the City within the UGB while CRW's Henrici Zone serves areas outside the UGB and provides some overlapping service along the eastern limits of the UGB.

Because of these essentially redundant zones, there are two separate pathways for water to reach an HGL of 590 ft. Within the City's system, water can be pumped from the SFWB WTP via the SFWB Division Street Pump Station to the City's Intermediate Zone (490 ft), then via the City's Mountainview Pump Station to the City's Upper Zone and City Henrici Reservoir (592 ft). Within CRW's system, water can be delivered from the SFWB WTP through the Anchor Way master meter, then pumped via the CRW Holly Lane Pump Station to the CRW Henrici Zone and CRW Henrici Reservoirs (590 ft). Two interties exist between the two systems at the 590 ft level, and could allow for supply in either direction.

Both systems also provide service to elevations requiring hydraulic grades greater than 590 ft. The City serves the closed Fairway Downs Pressure Zone (652 ft) via the Fairway Downs Pump Station. Supply to this zone is provided by the City's Upper Zone. CRW serves the Beavercreek Pressure Zone (744 ft) via the Glen Oak Pump Station. Supply to this zone is provided by CRW's Henrici Zone.

Figure 8 illustrates the configuration of existing infrastructure serving the Beavercreek area and associated service areas.



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LEGEND

- UGB
- City Limits
- CRW
- City
- SFWB
- Parallel City/CRW

PRESSURE ZONES

- City
- CRW

Oregon City - Clackamas River Water Joint Engineering Study

FIGURE 8 - EXISTING BEAVERCREEK

1 inch = 3,750 feet

Page 580

Expected Development

Development is expected in the Beavercreek area, although there is uncertainty over timing and extent. Within the UGB and north of Beavercreek Road, the City's Beavercreek Concept Plan calls for a mixed-use neighborhood. This development is expected to be served primarily by the City's Upper zone, and elevations above 480-ft (approximately south of Loder Road) will require a hydraulic grade similar to the City's existing Fairway Downs zone. However, the City's existing Fairway Downs Pump Station does not have capacity for this expansion and additional investment will be required to serve this area.

Continued development is expected in the CRW service areas outside the UGB, with the added confusion of possible service area withdrawal within the development timeframe. This is especially key for the Henrici Ridge area, which is currently designated as Urban Reserve and will be among the areas next considered for UGB expansion. When that occurs, City service to the area (to be consistent with service area goals) would require an even higher hydraulic grade than the City's Fairway Downs zone.

To meet the developing needs of the Beavercreek area, additional storage and transmission facilities will be required for both the City and CRW. Both providers have independently developed alternatives for service to the area, and through extensive discussions, we have developed a shared infrastructure alternative that may be more cost effective and in-line with the providers' goals set forth earlier in this report.

Demand and Storage Characterization

Existing and buildout demands and storage capacities for applicable CRW and City service areas were calculated and are presented in **Table 2**. For this analysis, storage needs for the existing pressure zones serving elevations in the Beavercreek area and the pressure zones supplying these zones were evaluated. Service area transfers likely to occur were included in buildout figures. Based on these estimates, the City will need to build additional storage at the City's Upper zone elevation and CRW will require additional storage at the CRW Beavercreek zone level. A summary of key assumptions for this analysis follows:

- Since the existing City Fairway Downs zone does not have existing storage, the *Existing Average Day Demand* (ADD) of this zone is included in the City Upper zone demands for the purposes of calculating existing storage needs. This also applies to demands for the CRW areas served from master meters at South End and Leland.
- *Build-out Average Day Demand* is based on recent planning documents and future service area boundaries described in this report. A comprehensive analysis of City and CRW pressure zone boundaries and a refined estimate of build-out development needs has not been completed. This analysis is intended to provide an order of magnitude estimate of storage volume needs for the purpose of evaluating alternatives.

- *Total Available Storage* is based on the volume of storage currently serving each pressure zone. For the City's Upper Zone, the 2010 Water System Master Plan considers the full volume of the City's Mountain View Reservoir No. 1, which provides suction supply to the City's Mountain View Pump Station serving the Upper zone, to be available storage for the Upper zone. This assumption should be verified before final decisions regarding City Upper zone storage needs are made, as it could result in a change to the long-term storage need in the Upper zone.
- *Existing Storage Need* and *Build-out Storage Need* are the sum of the three components of water system storage – equalizing, fire suppression and emergency – as defined in each water provider's Water System Master Plan. These volumes are calculated based on the zone's existing and build-out demand projection.
- *Existing Available Capacity* and *Build-out Available Capacity* are calculated as the difference between the *Total Available Storage* and *Existing (or Build-out) Storage Need* for the zone. A negative value represents a capacity deficit.

Table 2
Beavercreek Area Demands and Storage Capacity

	Existing Average Day Demand (MGD)	Build-out Average Day Demand (MGD)	Total Available Storage (MG)	Existing Storage Need (MG)	Existing Storage Surplus (MG)	Build-out Storage Need (MG)	Buildout Storage Surplus (MG)
City Upper	2.9	5.5	14.5	9.1	5.4	16.5	-2.0
City Fairway Downs	--	0.6	--	--	--	1.8	-1.8
CRW Henrici	0.2	0.2	1.5	0.6	0.9	0.6	0.9
CRW Beavercreek	0.6	1.7	2.0	1.8	0.2	4.7	-2.7

Notes:

1. MG = Million Gallons; MGD = Million Gallons per Day

The individual and shared infrastructure alternatives will need to address these storage requirements to be considered viable. **Table 3** presents a summary of each alternative and planning level cost estimates for service to the Beavercreek Area. More detailed descriptions of each alternative are given in the following sections.

Table 3
Supply Alternatives to the Beavercreek Area

City Independent Infrastructure Alternative				CRW Independent Infrastructure Alternative			Shared Infrastructure Alternative			Preliminary Buildout Cost Sharing			
Item		Size	Total Cost ¹	Item		Size	Total Cost ²	Item		Size	Total Cost ³	City Cost	CRW Cost
Pump Stations	Fairway Downs Improvements		100,000	Beaver Lake	3MGD	1,700,000	New Station at the City's Henrici Site	3MGD	1,700,000	500,000	1,200,000		
	Beavercreek	2 MG	4,000,000	Beavercreek Elevated	3.5 MG	7,000,000	Beavercreek Elevated	2x2.75 MG	11,000,000	4,000,000	7,000,000		
Transmission	Fairway Downs Pump Station to New Reservoir	16-inch 10,750 lf	3,400,000	Grasle Road	12-inch 13,480 lf	3,200,000	New Pump Station to Beavercreek Reservoirs	12-inch 3,200 lf	800,000	200,000	500,000		
	Total \$ 7,500,000			Total \$ 11,900,000			Total \$ 13,500,000			\$ 4,700,000	\$ 8,700,000		
									Cost decrease:	37%	27%		

Notes:

1. City costs updated from 2013 City Technical Memo
2. CRW costs updated from 2015 Backbone Project Memo
3. Unit costs for shared infrastructure solution – reservoir 2\$/gal; Pipe 20\$/in-lf
4. Joint costs consistent with CRW pump station cost, study unit costs
5. Cost division based on buildout demand for pump station and transmission piping, storage requirements for elevated reservoirs

The values presented are only planning level estimates and need to be verified prior to development of infrastructure designs. In particular, the capacity of existing City Upper Zone and CRW Henrici zone transmission piping to supply the expanded Beavercreek service area at build-out will need to be confirmed as additional transmission improvements to address existing deficiencies may have a significant impact on cost estimates.

A. City Service to Beavercreek Concept Area and Fairway Downs

In the Oregon City Technical Memorandum dated November 5, 2013, the City presented three options to serve the Beavercreek area within the UGB. Based on our understanding that CRW does not have excess capacity in the existing CRW Beavercreek Reservoirs, two of the three options are infeasible. The remaining option for the City would be to build a new 2 MG Beavercreek Reservoir with a 16-inch diameter transmission main and improve the existing Fairway Downs Pump Station (City Independent Infrastructure Alternative in **Table 3**).

Additional costs and political investment would be incurred during the land acquisition and permitting process. The City does not currently own property for a reservoir at the proper elevation. This is a significant hurdle, and should not be disregarded.

While the City has planned for service within the existing UGB, the planning does not provide adequate pressures for the Henrici Ridge area that is currently designated as Urban Reserve. If this alternative is selected, the City will need to consider capital costs for additional infrastructure to serve this higher elevation area once development occurs.

B. CRW Service to Beaver Creek Pressure Zone and Fairway Downs

CRW's current planning for improved service to their Beaver Creek pressure zone is part of the larger CRW Backbone Project. Overall, the project is designed to improve system connectivity and transmit water from the CRW WTP to CRW service areas south of the Clackamas River. Phase 1 of the Backbone Project is currently in various stages of design and construction and will transmit water to the Redland Reservoirs and associated pressure zone. Phase 2 would construct transmission and pumping improvements to transmit water from the Redlands Reservoirs south to the Henrici and Beaver Creek pressure zones as well as north to the Holcomb pressure zone (CRW Independent Infrastructure Alternative in **Table 3**).

Phase 2 currently plans for service to the entire existing Beaver Creek pressure zone. However, it is probable that some of this area will eventually be City territory and supplied by the City, rendering some of the Phase 2 facilities oversized and unused with remaining useful life. CRW cost estimates in Table 3 were updated similarly to City estimates, and storage capacity in the elevated tank was decreased to reflect the volume required to serve CRW customers to buildout.

C. Shared Infrastructure to Serve the Beaver Creek Area

Typical of dual interests between the City and CRW, planning in the Beaver Creek area has been limited by boundaries that are subject to change. It is expected that the lifespan of infrastructure built now will extend beyond the lifespan of the current UGB. Opportunity to develop shared infrastructure to serve both providers' customers and facilitate transfer of service area without construction of parallel redundant infrastructure is a goal of this study. Already, the City and CRW serve similar elevations from their Henrici Reservoirs. Emergency interties exist between the two systems and additional overlap of service and infrastructure is expected with continued development if coordination does not occur.

To optimize the use of existing infrastructure, one possible alternative would be a new pump station at the City's Henrici Reservoir to replace CRW's Glen Oak Pump Station, new transmission main along Henrici Road to increase the capacity of CRW's existing transmission to CRW's Beaver Creek Reservoirs, and two new elevated tanks at the existing CRW Beaver Creek Reservoir site for additional storage for both providers (Shared Infrastructure Alternative in **Table 3**). A PRV and meter could be installed at the existing City Fairway Downs Pump Station to supply the City's expanded Fairway Downs zone.

Benefits of Shared Infrastructure Development

Shared infrastructure will allow for greater flexibility with construction phasing, minimize the land acquisitions required, provide redundant supply pathways, reinforce emergency supply pathways

and allow for future infrastructure consolidation. Other potential benefits include minimizing operational & maintenance costs and future infrastructure renewal needs.

Given the uncertainty of development timing, shared infrastructure could be built in stages, with existing facilities providing supply until upgrades are required. The shared Beaver Creek Reservoirs could be built one at a time, allowing for future demolition of the existing ground level tank to provide a site for the second elevated tank. The CRW Glen Oak Pump Station can continue to be used to supply the Beaver Creek zone as is, until the new shared Henrici Pump Station is completed. When the UGB is expanded and/or CRW areas are annexed by the City, shared infrastructure would simplify the transition process because independent infrastructure service to the area would require significant parallel and costly redundant facilities throughout the area. Ultimately, with a shared solution there will be opportunity to decommission aging redundant facilities when the cost to maintain these facilities exceeds their value as backup infrastructure. This is specifically true for the City's existing Fairway Downs Pump Station, CRW's Henrici Reservoir and CRW's Glen Oak Pump Station.

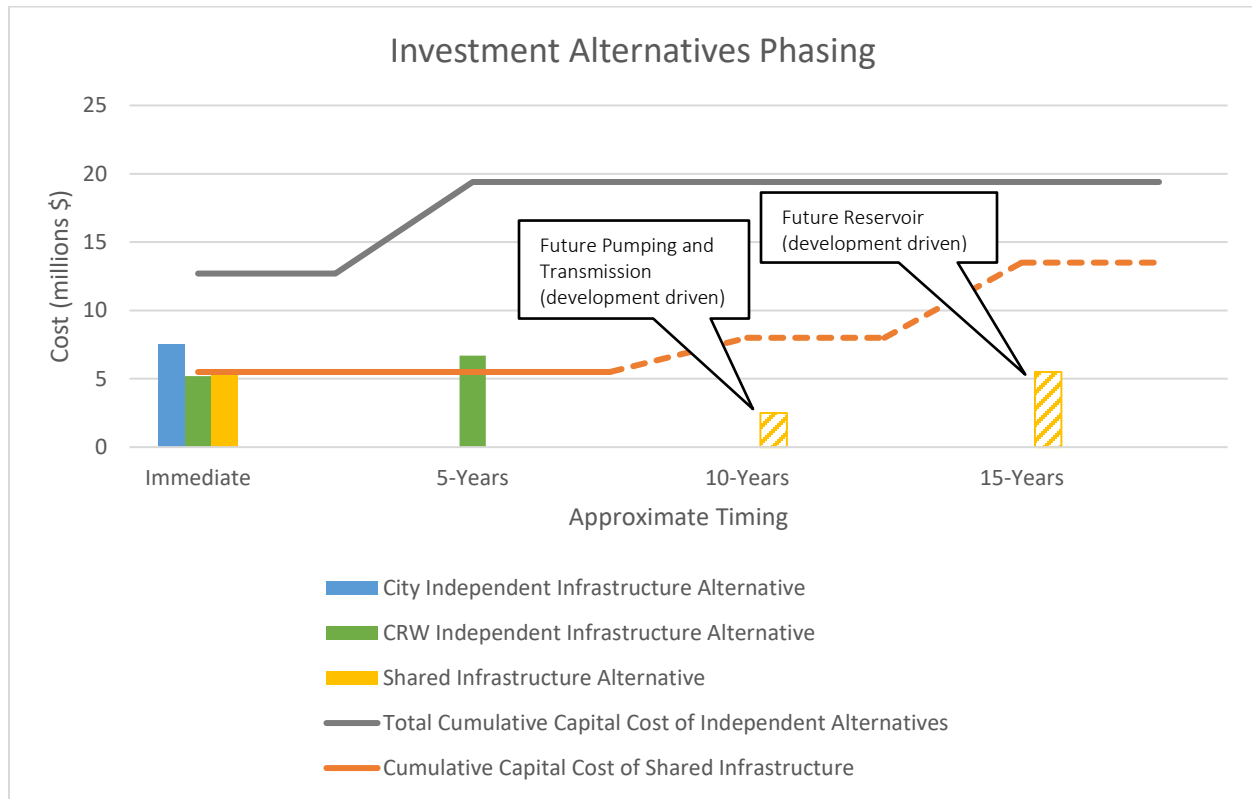
Figure 9 illustrates the capital cost over time of the individual and shared infrastructure alternatives. The shared infrastructure alternative is based on a potential phasing schedule, with the first reservoir built immediately, the transmission and pump station built in 10 years, and the second reservoir built in 15 years. These dates are conceptual to illustrate the potential phasing opportunity and are dependent on development of the City's Beaver Creek concept plan area. The individual alternatives must be built within the next 5 years, if not sooner, with limited flexibility for shifts in development timing.

Utilizing existing infrastructure will minimize both monetary and political cost of additional land acquisition for new infrastructure siting. The City's Henrici Reservoir site has capacity for both a new pump station and additional reservoir, if deemed necessary in the future. CRW's Beaver Creek site has capacity for at least one additional reservoir, with a second reservoir potentially able to be built at the site of the existing ground level tank.

The shared infrastructure alternative will also provide redundant pathways for service and emergency supply to the Beaver Creek and Fairway Downs zones. Given recent emphasis on seismic resiliency this redundancy aligns with resiliency goals. The primary supply via the SFWB Division Street Pump Station and the City's Mountainview Pump Station have adequate supply for normal service. The secondary supply via the master meter at Redland and Anchor Way, the CRW Holly Lane Pump Station, and the emergency intertie between the City and CRW at Beaver Creek provides redundancy not necessarily guaranteed in independent infrastructure alternatives.

Another benefit of a shared infrastructure alternative is the potential for continued consolidation of redundant and aging infrastructure. As the system is served today, the City and CRW have redundant pressure zones at the 590 HGL. Four tanks, (two CRW and two City-owned), serve this zone, although none of the tanks currently meet updated seismic standards and some are approaching the end of their useful lives. A shared infrastructure solution lays the groundwork for continued development of efficient infrastructure investment through partnership.

Figure 9
Infrastructure Investment Phasing Alternatives



Service Transitions in Affected Areas

Within each pressure zone, there are additional specific areas that will be affected more than others by the solutions to serve the Beavercreek Area.

Thayer and Loder Roads:

At present, CRW supplies customers along Thayer and Loder Roads via CRW distribution mains branching from the CRW transmission line along Beavercreek Road. Both mains begin within city limits and extend outside the UGB. In both cases, areas within the UGB are part of the City's Beavercreek Concept Area and should be annexed and withdrawn by the City. The City will then need to connect the existing CRW mains in each road to the City transmission main in Beavercreek Road. This will transition supply from the CRW Henrici zone to the City's Upper zone. At the UGB, master meters or Joint User status may be negotiated to supply remaining CRW customers outside the UGB.

Henrici Ridge:

Henrici Ridge is the area just south of the UGB along Henrici Road that cannot be served by the City's existing grades. As an Urban Reserve area, it is expected to eventually be annexed into the UGB and City service. If the shared infrastructure alternative is not selected, future service by the City to this area will require significant investment in parallel infrastructure.

Park Place Concept Area:

The Park Place area is located entirely within the UGB and outside of city limits. The area, currently served by CRW, is supplied from SFWB via the Redland and Anchor Way Master Meter and pumped up to higher pressures by the Holly Lane or the Redland Pump Stations (see **Figure 10A**). Until urban development occurs, the area should be served as is.

The 2008 Park Place Concept Plan calls for a City distribution network starting south of Ogden Middle School and connecting north to existing City distribution mains along Holcomb Boulevard. A reservoir at Holly Lane and Morton Road is proposed to provide additional storage.

Given the limited number of existing services, it is recommended that the providers plan for future City service to the entire Park Place area. CRW will need to maintain transmission from the existing Anchor Way MM through Park Place to reach CRW's Holly Lane and Redland Road Pump Stations. Some existing CRW transmission infrastructure through this area is aging and will need to be replaced. It is suggested both providers fund a shared transmission main from the master meter to Holly Lane.

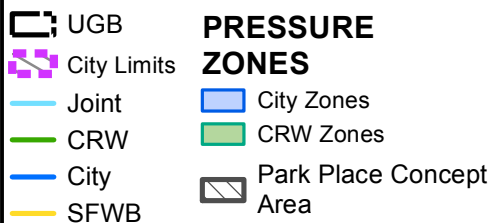
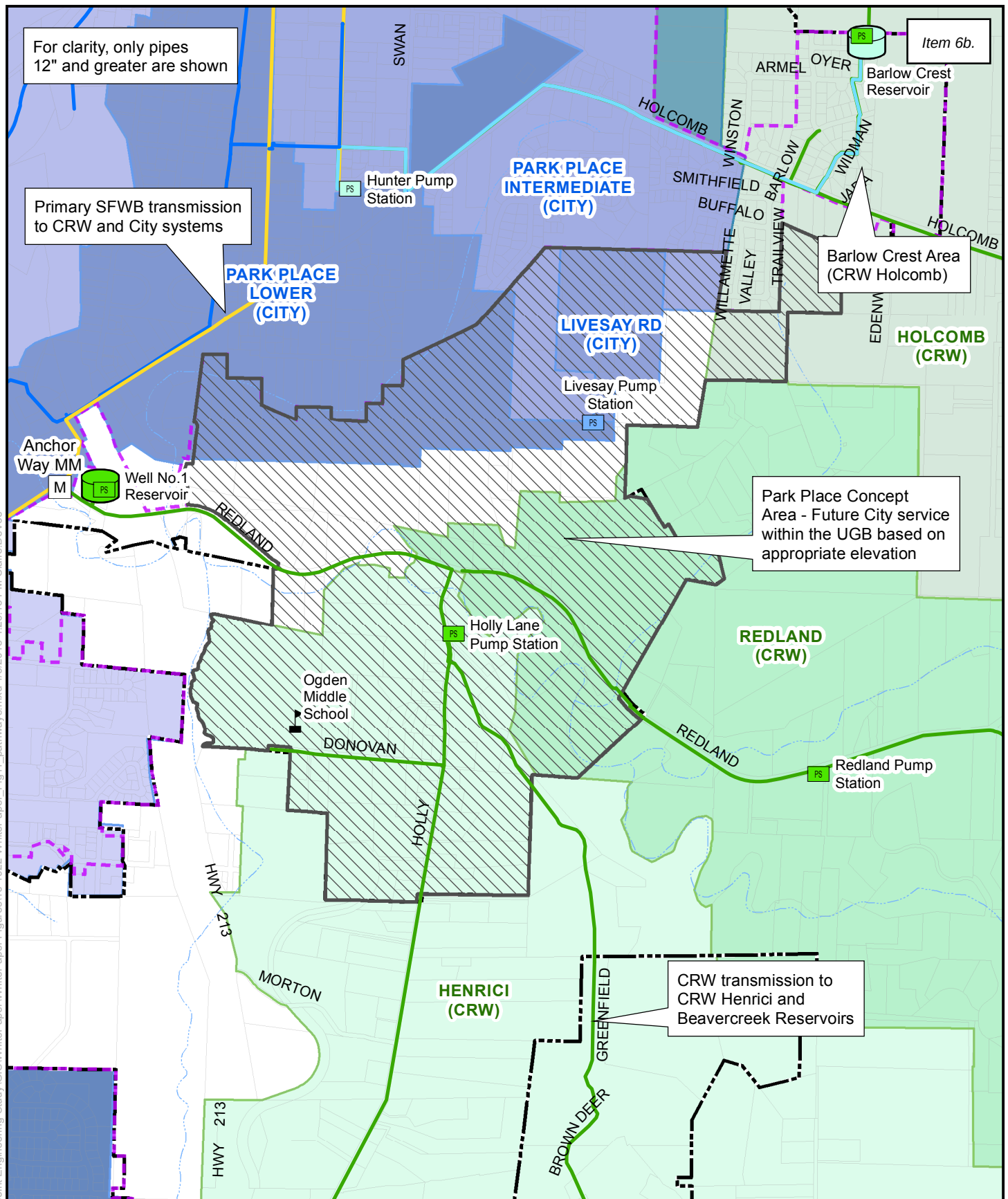
Existing CRW infrastructure is critical for CRW supply from the SFWB supply at Master Meter 02 to the CRW system. As such, the only water mains that may be eligible for withdrawal and remuneration are a portion of the CRW 12-inch diameter steel main in Holly Lane, extending south from CRW's Holly Lane Pump Station to the UGB, and a CRW 12-inch diameter ductile iron main in Donovan Road that serves the middle school. The possible shared improvement along Redland Ave would require relocating the Anchor Way Master Meter to Holly Lane (which would become a City to CRW master meter) and would replace aging infrastructure and serve the common needs of both utilities – water transmission backbone piping in Redland Road between Anchor Way and the UGB.

Figure 10B illustrates the proposed future service area and infrastructure withdrawals.

In order to accommodate the phased development of the Park Place area, the City should develop a detailed Park Place water service master plan to include:

- Confirmed siting, configuration, and capacity of future storage identified as the proposed Holly Lane Reservoir
- Confirmed water main sizing and backbone transmission facilities to serve the Lower Park Place pressure zone, including SFWB transmission main connections and pressure reduced supply from the Intermediate Park Place pressure zone

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1 inch = 1,250 feet

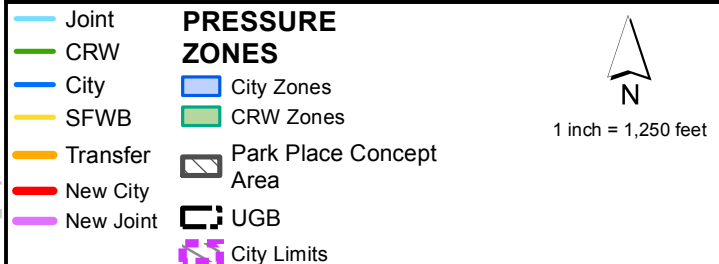
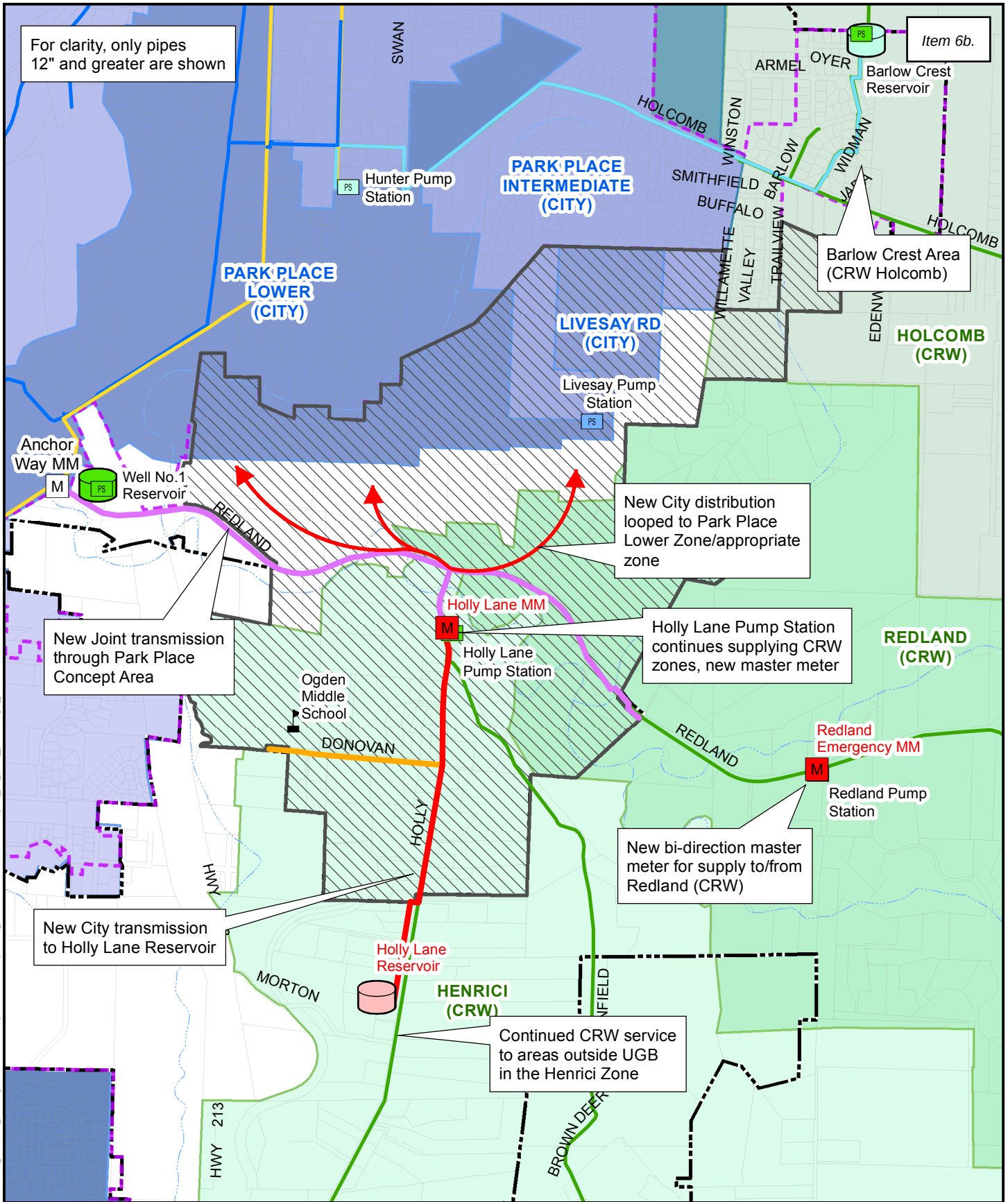
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FIGURE 10A - EXISTING
PARK PLACE



For clarity, only pipes 12" and greater are shown

Item 6b.



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FIGURE 10B - FUTURE PARK PLACE





Page 589

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- Coordination with CRW to determine if new shared transmission in Redland Road is feasible and to determine if potential withdrawal of mains between Holly Lane and the UGB is feasible and desirable.

These studies will inform how infrastructure develops in the near-term and will support CRW development of additional infrastructure to provide limited service until annexation and withdrawal occurs with the full development of the City water system facilities to provide service.

Resolution: Continued discussions regarding shared storage and transmission infrastructure in the Beavercreek and Park Place areas; Partial developer driven transfers and potential master meter relocation to the UGB

HOPP/Barlow Crest

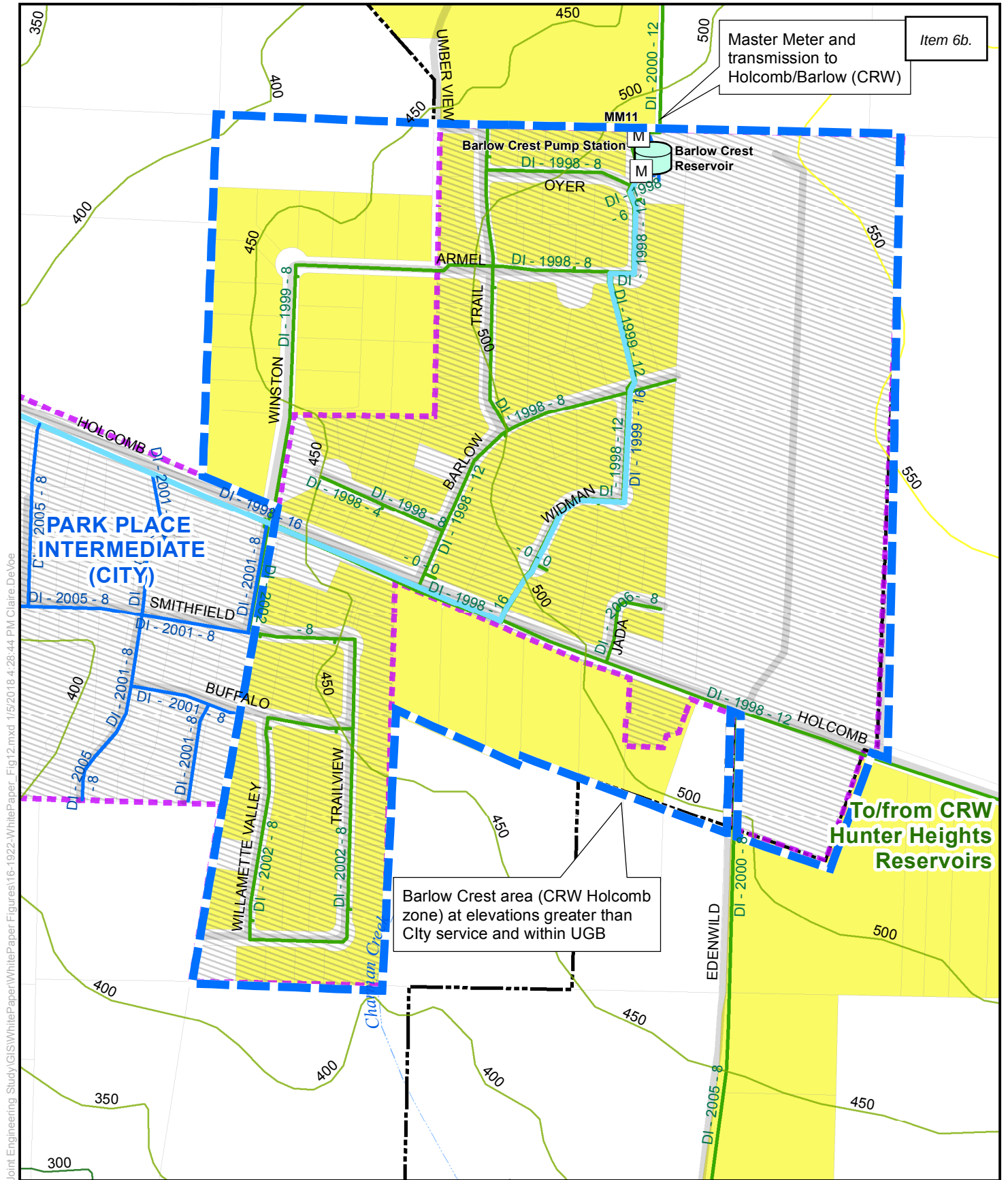
The Holcomb-Outlook-Park Place focus area includes the CRW Holcomb-Barlow master metered zone, the CRW Holcomb pressure zone, and City service areas near Holcomb Road. Existing service to the HOPP area was set up under the 1998 HOPP Agreement which terminates in the year 2028, and includes jointly owned facilities and transmission mains. Presently, the SFWB WTP is the sole water supplier to the area. **Figure 11** illustrates the focus area, critical facilities, and customer designations.

North of the City, the CRW Holcomb-Barlow zone is served via multiple master meters from the City's Park Place Intermediate zone. This area is not expected to develop in the near future and should continue to be served as is via master metering.

Similarly, within the existing City service area, City customers should continue to be served without change.

The main point of dual interest in the HOPP area is the CRW/City interface at Barlow Crest. The CRW Holcomb pressure zone (797-ft HGL) is currently supplied with SFWB sourced water wheeled through jointly funded infrastructure from the SFWB WTP to the jointly owned Barlow Crest Reservoir (549-ft overflow). The CRW Barlow Crest Pump Station pumps from the jointly owned Barlow Crest Reservoir to the CRW Hunter Heights Reservoirs (797-ft overflow) which provide gravity supply to the CRW Holcomb pressure zone.

Much of the CRW Holcomb zone located within the UGB has been annexed into the city limits. However, the City does not have the existing infrastructure to provide service to this area as the Barlow Crest Pump Station is an essential facility for CRW's supply to the Hunter Heights Reservoir which serves CRW's Holcomb pressure zone both inside and outside the UGB.



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Legend

- UGB
- City Limits
- Joint
- CRW
- City
- SFWB

Current Service

- Holcomb
- Barlow Crest Area

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**Figure 11
HOPP/Barlow Crest**

1 inch = 400 feet

January 2018

Page 591

Additionally, the CRW Backbone Project Phase 2 is proposed to include a new pump station and transmission facilities to boost water from the CRW Redland pressure zone to the Holcomb pressure zone/Hunter Heights Reservoir. This will provide a second supply route and water source to the Barlow Crest pressure zone. These improvements will allow CRW to supply the Holcomb zone from CRW's WTP.

Given the current understanding of the CRW Backbone Project, existing infrastructure, and the goals outlined in this white paper, there are two alternatives to consider:

A) Continued service as is, recognizing the City will continue to annex the land within the UGB but will not withdraw the territory from CRW. CRW would remain the service provider for the entire Holcomb pressure zone area inside and outside the UGB serving customers above an elevation of approximately 450 feet. The Phase 2 Backbone Project improvements would provide a second feed to the Holcomb pressure zone, allowing for a second source, the CRW WTP, to supply this area. The primary advantage of this option is that infrastructure and master meters are already in place to continue service as is for areas above an elevation of 450 feet. The primary disadvantage is that this alternative is not consistent with the goal of City service within the UGB, where feasible.

B) The City continues to annex and withdraw territory within the UGB and the associated distribution piping. An additional master meter would be installed at the UGB to deduct City supplied Holcomb pressure zone demand from the total supply from the CRW's Barlow Crest Pump Station. If improvements identified in the Phase 2 Backbone Project area constructed, future supply could be provided by CRW from either the CRW Barlow Crest Pump Station or the future CRW Bradley Road Pump Station with master metering to totalize the demand of the City area in the joint Holcomb pressure zone inside the UGB. This option would most effectively meet the goal of aligning service area boundaries with associated geo-political boundaries. However, it creates a complicated master metering and water wheeling arrangement.

Alternative A is recommended as it does not require the construction of additional master metering infrastructure, and minimizes disruption to existing rate payers. It is also compatible with the CRW Backbone Project as all water supply impacts are to CRW customers only.

In order to facilitate City management of sewer service, including the ability to take action in the event of non-payment by a customer, an agreement between the two agencies should be developed similar to the existing agreement between CRW and the City of Milwaukie.

Resolution: No change from the existing condition; development of a billing and customer shut off agreement

Typical Dual interests/Solutions

This section outlines proposed policy-level criteria for service area and infrastructure transfer.

Annexation and Withdrawal

Areas under consideration for withdrawal should meet the following criteria:

- Located within the UGB. Areas located within city limits should be given highest priority for withdrawal from the district, if possible.
- Adjacent to existing city limits. Priority should be given to CRW areas surrounded by City service area.
- Priority should be given to areas currently receiving additional City services such as sewer, etc.

The City and CRW will need to collaborate for the development of a plan and typical procedure for implementing service transfers once areas have been identified for withdrawal.

Infrastructure Remuneration

A remuneration policy should be developed to encourage proper maintenance and replacement of aging infrastructure and to encourage sizing to meet long-term needs regardless of the future water service provider ownership. The economic analysis was completed as part of this project and addresses the specific financial elements and further detail the parameters of the policy.

Master Meters and Joint Users

Master meters are required when water is supplied through wheeling and meets one or more of the following criteria:

- The service area crosses the UGB at which point a meter would be placed at the UGB
- The total length of pipe past the meter is greater than 1,000 lf
- The service area is not predicted to be withdrawn by the other provider in the near future.

Master meters are preferable to joint user customers when infrastructure reliability is questionable, proven through leak history and/or obsolete pipe material.

Joint User Customers should only be allowed where:

- The provider whose service boundary they reside within cannot supply the customer with water from their infrastructure
- AND the number of customers does not warrant the cost of a master meter

In these limited cases, Joint User is the only way to reasonably serve these customers. As an example, customers outside the UGB and served via private service lines off City mains (located within the UGB) must be Joint User because there is no justification for the City to extend service beyond the UGB.

In addition, a formal supply agreement between CRW and SFWB should be developed to address ongoing master metered supply to CRW.

Jointly Developed Infrastructure

Jointly developed infrastructure should continue to be encouraged where applicable to minimize redundant facilities and encourage future collaboration.

Summary of Customer and Infrastructure Withdrawal Potential

Table 4 illustrates the maximum number of the existing customers and length of water main infrastructure in each focus area, potentially eligible for withdrawal by the City from CRW if the recommendations and agreed strategies presented in the study area are executed. These areas are illustrated graphically in **Figure 12**. **Table 5** summarizes the total number of customers and the share of CRW's south system demand that could be withdrawn through this process.

Additional Action Items

The following action items will require additional study and are recommended to conclude the dual interest resolution process. It is suggested that all action items will be completed within a year of this study, although certain items are dependent on the completion of others.

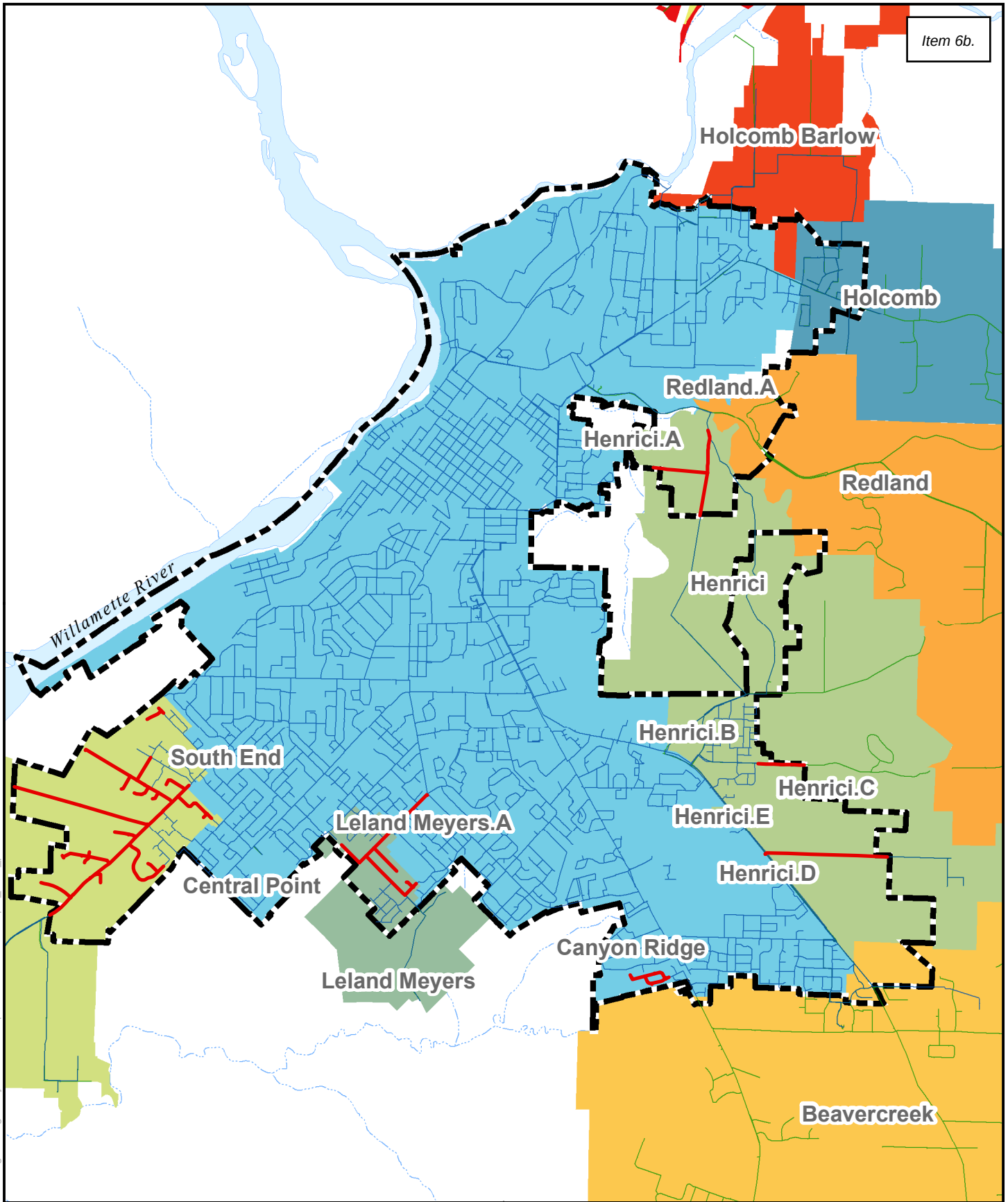
- Adopt a Remuneration Policy as outlines in the Remuneration Methodology TM (FCS Group, 2018).
- Adopt an updated, stand-alone Joint User Agreement
- Perform and adopt the findings of a Wheeling Charge Study to determine fair City and CRW rates for Joint User or Master Metered customers based on a defensible methodology such as cost of service
- Develop a water supply agreement for supply from SFWB to CRW
- Develop process for systematic transitions of service with communication to customers

Throughout this process, certain areas have been identified where mapping of service provider transition has not been completed. A common mapping convention and agreed schedule for updates should be coordinated, to include:

- Consistent and agreed upon Joint User properties
- Accurate service area boundaries
- Shared GIS data that avoids duplication by mapping of the other provider's infrastructure

Summary

As urban areas expand, boundary disputes as typified by the dual interests between Oregon City and Clackamas River Water become ever more common. The two water providers have a long history of working together to develop creative solutions to address the unique challenges they face. Formalizing this process in a common framework, rather than a rigid set of specific solutions, ensures common goals lead the process, and not individual opinions or short term changes in priorities. Developing methodologies and strategies that adapt to unique situations is more important for long-term cooperation and dual interest resolution. It is the goal of this study to provide a framework for Oregon City and Clackamas River Water to continue to efficiently provide high quality water to current and future customers for years to come, and minimizes conflict or misunderstanding.



- Urban Growth Boundary (UGB)
- City of Oregon City
- Clackamas River Water District
- Water Mains
- Potential Transfers
- River

N
 1 inch = 4,000 feet

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**Figure 12 - Potential
Customer & Infrastructure
Transfers**



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 January 2018

Table 4
Summary of Dual interest Areas by CRW Pressure Zone

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Holcomb-Barlow		549	Master metered from OC Park Place Intermediate Zone (Barlow Crest Res.)	No change	72	
Holcomb		797	Master metered from Barlow Crest Pump Station	No change	726	
Hunter Heights		910	Pumped up from CRW Holcomb	No change	70	
Redland		697	Master metered from Anchor Way and pumped via Redland PS		1082	
Redland.A				Development triggered transfers within Park Place Concept Area	8	
Henrici		590	Master metered from Anchor Way and pumped via Holly Lane PS		262	
Henrici.A				Development triggered transfers within Park Place Concept Area	46	2600' 12" 1960 OD; 1650' 12" 2004 DI
Henrici.B				Transfers within expanding development north of Thayer Road	14	
Henrici.C				Customer transfers along Thayer Road within UGB	7	1400' 12" 2003 DI
Henrici.D				Customer transfers along Loder Road within UGB	21	3700' 8" 1988 DI
Henrici.E				Additional Henrici Pressure Zone potential transfers	6	
Beavercreek		744	Pumped from CRW Henrici via Glen Oak PS	No change	1389	
Canyon Ridge		592	Joint Users supplied directly from OC Upper Zone		8	

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Canyon Ridge.A				Customer transfers within UGB	21	2200' 6" 1980 DI
Leland Meyers		592	Master metered from OC Upper Zone		33	
Leland Meyers.A				Customer transfers within UGB	59	1650' 6" 1960 OD; 3650' 8" 1960 OD; 250' 4" CI 1970; 1450' 6" 1970 CI
Central Point		592	Joint Users supplied directly from OC Upper Zone		2	
Central Point.A				Joint User customer transfer within UGB	9	
South End		592	Master metered and Joint Users supplied directly from OC Upper Zone	TBD based on future development potential	334*	3500' 4-6" 1960 AC; 5500' 4-6" 1960 OD; 1000' 8" 1966 DI; 4000' 4-6" 1970's CI; 4050' 6" 1980's DI; 650' 8" 2000 DI; 6050' 12" 2001 DI**

*Total CRW South End customer count within the UGB

**4100 lf of water main constructed as a joint project with a cost sharing agreement

Table 5
Summary of Potential Transfers

	Customer Count	Existing Water Mains (lf)	Existing Reimbursable Water Wains (lf)	2016 Demand (gpd)	Percent of Demand
Total CRW-South	4,170	679,000		1,212,250	100%
Possible Transfers Excluding South End	190	18,500	6,750	48,500	4%
South End Transfers	330	24,750	6,750	83,500	7%
Total Possible Transfers	530	43,250	13,500	131,750	11%
Remaining CRW within UGB	210	14,500		141,750	12%

Table 101.A -Revised

Revised - 2/16/2017

North Storage Capacity Summary (1.5% growth forecast)

152nd Reservoir Storage Reduced from 5mg to 4mg

Site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Otty	2015		1.59	3.02	5,000	0.76	1.20	3.18	5.14	6.54	1.41
	2020		1.69	3.21	5,000	0.80	1.20	3.20	5.20	6.54	1.34
	2025		1.82	3.46	5,000	0.87	1.20	3.64	5.71	6.54	0.84
	2030		1.96	3.73	5,000	0.93	1.20	3.92	6.05	6.54	0.49
	2035		2.11	4.02	5,000	1.01	1.20	4.22	6.43	6.54	0.12
	2054		2.81	5.34	5,000	1.34	1.20	5.62	8.16	6.54	-1.62
Mather	2015		2.25	4.28	5,000	1.07	1.20	4.50	6.77	10	3.23
	2020		2.39	4.54	5,000	1.14	1.20	4.78	7.12	10	2.89
	2025		2.58	4.89	5,000	1.22	1.20	5.16	7.58	10	2.42
	2030		2.78	5.27	5,000	1.32	1.20	5.56	8.08	10	1.92
	2035		2.99	5.68	5,000	1.42	1.20	5.98	8.60	10	1.40
	2054		3.98	7.56	5,000	1.89	1.20	7.96	11.05	10	-1.05
152nd Windswept HWY 224/Carver	2016		0.13	0.25	5,000	0.06	0.00	0.26	0.32	4	3.68
	2019		0.15	0.29	5,000	0.07	0.00	0.3	0.37	4	3.63
	2024		0.17	0.32	5,000	0.08	0.00	0.34	0.42	4	3.58
	2029		0.19	0.36	5,000	0.09	0.00	0.38	0.47	4	3.53
	2034		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
	2054		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
Mather & 152nd Storage Combined	2015/16								7.09	14	6.91
	2019								7.49	14	6.51
	2024								8.00	14	6.00
	2029								8.55	14	5.45
	2034								9.12	14	4.88
	2054								11.57	14	2.43

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. 152nd Reservoir available storage (CRW) does not include SWA clearwell storage volume

Note 6. Fire storage for the Windswept HWY 224/Carver site (pressure zone) rely on Mather Reservoir for fire storage

Table 101.B

12/20/20

Item 6b.

South Storage Capacity Summary (1.5% growth forecast)

site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Holcomb & Hunter Heights	2014		0.25	0.69	1,500	0.17	0.18	0.50	0.85	1.20	0.35
	2019		0.27	0.74	1,500	0.19	0.18	0.54	0.91	1.20	0.30
	2024		0.29	0.80	1,500	0.20	0.18	0.58	0.96	1.20	0.24
	2029		0.31	0.86	1,500	0.22	0.18	0.62	1.02	1.20	0.19
	2034		0.33	0.93	1,500	0.23	0.18	0.66	1.07	1.20	0.13
	2054		0.45	1.26	1,500	0.32	0.18	0.90	1.40	1.20	(0.20)
Redland (.75MG / new 1.25 MG)	2014		0.41	1.15	1,500	0.28	0.18	0.82	1.28	1.05	(0.23)
	2019		0.44	1.24	1,500	0.31	0.18	0.88	1.37	2.00	0.63
	2024		0.48	1.33	1,500	0.33	0.18	0.96	1.47	2.00	0.53
	2029		0.51	1.44	1,500	0.36	0.18	1.02	1.56	2.00	0.44
	2034		0.55	1.55	1,500	0.39	0.18	1.10	1.67	2.00	0.33
	2054		0.75	2.09	1,500	0.52	0.18	1.50	2.20	2.00	(0.20)
Henrici	2014		0.19	0.53	1,500	0.13	0.18	0.38	0.69	1.55	0.86
	2019		0.20	0.57	1,500	0.14	0.18	0.40	0.72	1.55	0.83
	2024		0.22	0.62	1,500	0.16	0.18	0.44	0.78	1.55	0.78
	2029		0.24	0.67	1,500	0.17	0.18	0.48	0.83	1.55	0.72
	2034		0.26	0.72	1,500	0.18	0.18	0.52	0.88	1.55	0.67
	2054		0.35	0.97	1,500	0.24	0.18	0.70	1.12	1.55	0.43
Beavercreek	2014		0.61	1.72	1,500	0.43	0.18	1.22	1.83	1.20	(0.63)
	2019		0.66	1.86	1,500	0.47	0.18	1.32	1.97	1.20	(0.77)
	2024		0.71	2.00	1,500	0.50	0.18	1.42	2.10	1.20	(0.90)
	2029		0.77	2.16	1,500	0.54	0.18	1.54	2.26	1.20	(1.06)
	2034		0.83	2.32	1,500	0.58	0.18	1.66	2.42	1.20	(1.22)
	2054		1.12	3.14	1,500	0.79	0.18	2.24	3.21	1.20	(2.01)

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. Redland storage volumes changed to 2 mg in year 2019 to incorporate Backbone Redland Reservoir 1.25mg and demolition of Reservoir No. 1 (.3mg). Reservoir No.2 (.75mg).



**APPENDIX F
MOLLALLA AVENUE STREETSCAPE
CONCURRENT WATERLINE
IMPROVEMENTS TECHNICAL
MEMORANDUM, MURRAYSMITH**

Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Molalla Ave Streetscape Concurrent Waterline Improvements

Introduction

The City of Oregon City (City) is currently working on an update of its water distribution system Capital Improvement Program (CIP). Simultaneously, the City is proceeding with design on the Molalla Avenue Streetscape Project which includes improvements along Molalla Avenue from Beaver Creek Road to the intersection with Highway 213. This document is intended to document the purpose and cost of the Molalla Avenue project prior to completion of the updated CIP.

The Molalla Avenue project is intended to minimize existing Upper Zone over-pressurization and balance supply and demand between the Henrici Reservoir and the Boynton Standpipe. Additionally, the project is required to serve future growth within the City. The Molalla Avenue project is a portion of a larger set of capital projects to improve system capacity and operations. Other associated projects include the following:

- Parallel transmission line from the Mountainview Pump Station to Beaver Creek Avenue
- Parallel transmission line from Beaver Creek Ave to Glen Oak Road (along the Streetscape Project to Sebastian Way)
- Improved looping and upsized transmission between Highway 213 and Beaver Creek Road, north of Glen Oak Road
- Upsized transmission between Glen Oak Road and the Henrici Reservoir

The Molalla Avenue project and other capital projects are presented in Figure 1.

Project Background and Summary

The South Fork Water Board (SFWB) supplies the City's Mountainview Reservoirs with treated water via a 30-inch supply main and the Division Street Pump Station. The City's Mountainview Pump Station in turn supplies Henrici Reservoir and the Boynton Standpipe. These tanks set the hydraulic Grade Line (HGL) in the Upper Zone. The tanks also act as suction supply for the Fairway Downs Pump Station, which supplies a small, closed zone near the Henrici Reservoir.

Growth is expected in the Upper and Fairway Downs Zones as described in the Beavercreek Concept Plan. This growth will require extension of Upper Zone distribution, and the construction of a new pump station and reservoir to replace the existing Fairway Downs Pump Station and extend the existing Fairway Downs Zone.

Under current conditions, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. The Boynton Standpipe is centrally located while the Henrici Tank is located southeast of the system. When flow from the Mountainview Pump Station is increased to fill the Henrici Reservoir, high pressure issues are experienced by customers near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands. This problem is expected to increase as the Mountainview Pump Station is expected to operate at higher flow rates to keep up with growth related demands.

An evaluation of the supply from the Henrici Reservoir and the Boynton Standpipe was performed with and without capital improvements as presented in Table 1. Prior to improvement, demands are distributed at a 67/33-percent split with the majority of demand supplied through the Boynton Standpipe. The improved system, which includes the Molalla Avenue project, results in an improved flow split of 50/50-percent between the reservoir and standpipe.

Table 1
Reservoir Filling Rates – Boynton Standpipe and Henrici Reservoir

Scenario	Boynton Standpipe (gpm)	Henrici Reservoir (gpm)
No Improvements	4,200	2,100
Only add Parallel Main on Molalla Ave	4,200	2,500
Only upsize Beavercreek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beavercreek Transmission	3,500	3,500

1. 2015 ADD demands, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.
2. Parallel main sizing evaluated between 12-inch and 24-inch. Improvements on Molalla Avenue between Beaver Creek Road and Glen Oak Road are recommended at 18-inch sizing.

Demands in the Upper Pressure Zone, Fairway Downs Pressure Zone, and CRW Master Meters 8&9 can be used to determine the ratio of the Molalla Avenue project serving existing and future

customers. These demands for existing and future time frames are summarized in Table 2. The ratio of existing to future services by 2035 is estimated at 68-percent existing and 32-percent future. The ratio of existing to future services by buildout is estimated at 42-percent existing and 58-percent future.

Table 2
Existing and Future Demand Summary and Ratios Associated with Molalla Avenue Project

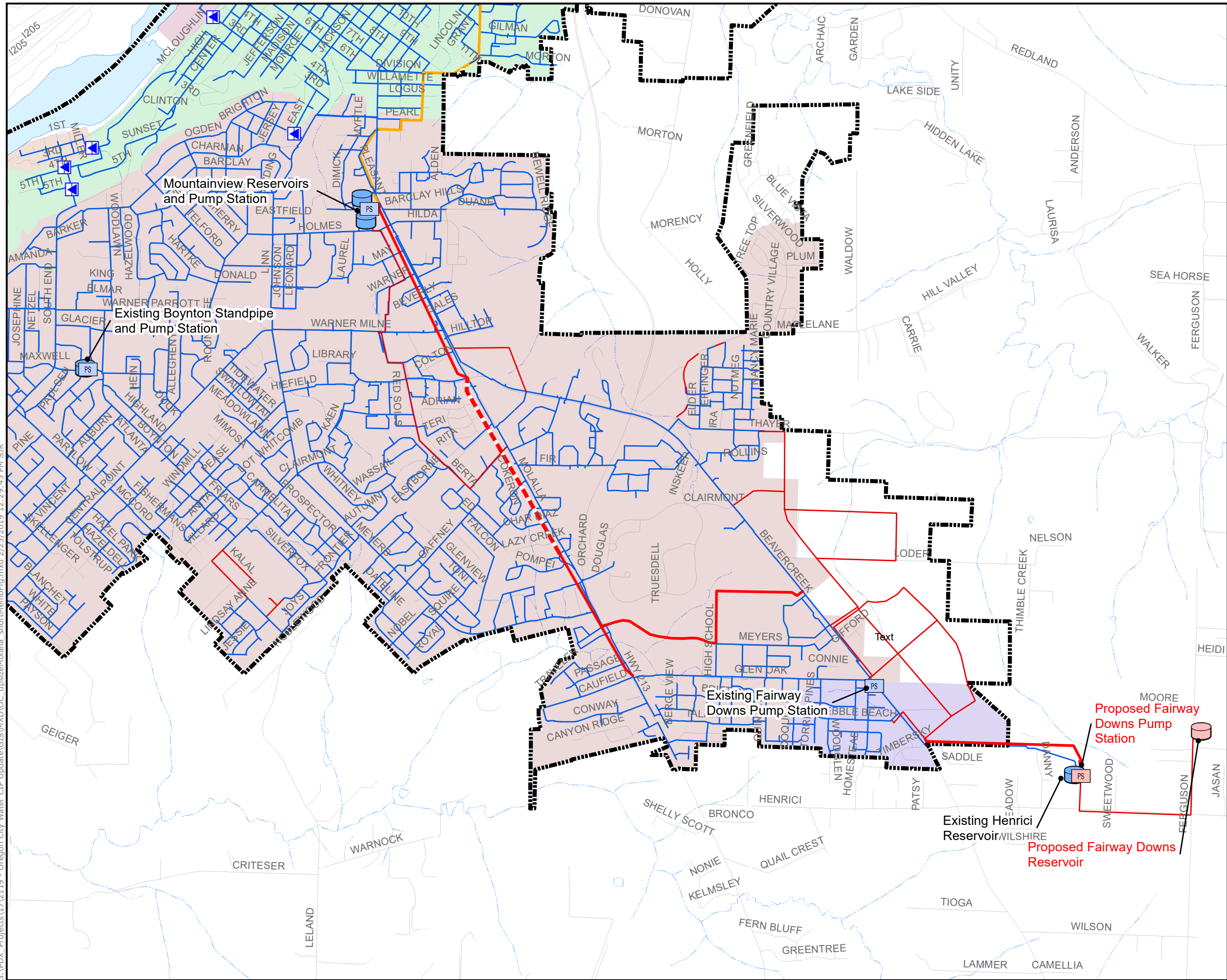
Pressure Zone or Master Meter	Existing Average Day Demand	2035 Average Day Demand	Buildout Average Day Demand
Upper	1,600	2,370	3,860
Fairway Downs	20	20	40
CRW Master Meters 8 & 9	80	110	180
TOTAL	1,700	2,510	4,080

Demands in gallons per minute.

Preliminary costs were estimated for the Molalla Avenue project for the CIP update as summarized below. Cost estimates represent a Class 5 budget estimate in 2018 dollars, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +50 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate.

- Project cost estimate for 18-inch pipeline on Molalla Avenue at approximately 4,200 linear feet
- Cost estimates include labor, materials, and markups
- Cost estimates exclude land or right-of-way acquisition
- Markups include 40-percent for engineering, overhead, and contractor profits
- Markups include 30-percent for construction contingency
- Total project cost is estimated at \$1.7 million (\$407 per linear foot)

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Item 6b.

City of Oregon City Molalla Ave Streetscape CIP Project Impacts

CIP PROJECTS

- Parallel Transmission along Streetscape
- Mountainview to Henrici Transmission Projects
- Other CIP Projects
- PS Pump Station
- Reservoir

EXISTING WATER MAINS

- Oregon City
- SFWB
- West Linn
- UGB

PRESSURE ZONE

- Canemah
- Fairway Downs
- Intermediate
- Lower
- Paper mill
- Park Place Intermediate
- Park Place Livesay
- Park Place Lower
- Park Place View Manor
- Upper

FIGURE 1

0 1,250 2,500 Feet

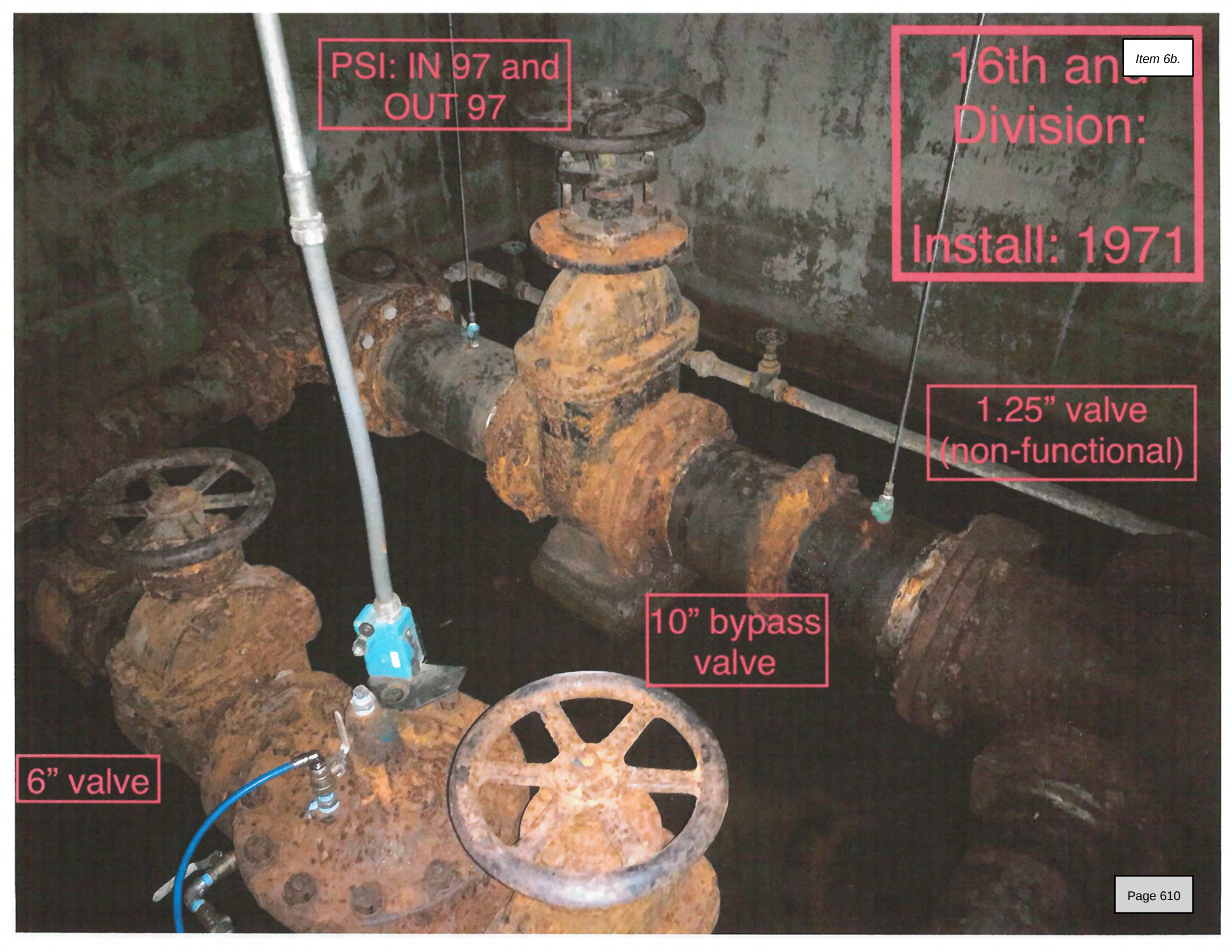




APPENDIX G
SMALL WATERLINE REPLACEMENT
PROJECTS & PRV PHOTO
DOCUMENTATION, OREGON CITY

Updated 12/30/2018 for PW Ops Higher Priority List for Small Water Pipeline Replacement Project List For Projects Originally Listed in

#	Project Location	Project Area Beginning	Project Area End	Existing Diameter	Proposed Diameter [1]	Length	Unit Construction Cost [2]	Total Construction Cost	CIP Cost (w/ Mark Up) [3]
	Street Name	Street Name	Street Name	(in)	(in)	(ft)	(\$/ft)	(\$)	(\$)
1	S. Center St	S. 2nd	1st St	6	8	700	\$140	\$98,000	\$150,500
2	Barker Ave	South End Rd	Barker Rd	6	8	800	\$140	\$112,000	\$172,000
3	Warner-Parrott Rd	King Rd	Boynton St	10	12	1100	\$200	\$220,000	\$337,900
4	Belle Ct and Glenwood Ct	Holmes Ln	Linn Ave	6	8	1500	\$140	\$210,000	\$322,600
5	Valley View Dr	Park Dr	McCarver Ave	4	8	1000	\$140	\$140,000	\$215,000
6	Canemah Ct	Canemah Rd	Telford Rd	6	8	1700	\$140	\$238,000	\$365,600
7	Randall St	Canemah Rd	Hartke Lp	6	8	700	\$140	\$98,000	\$150,500
8	Hartke Lp and Alderwood Pl			6	8	3700	\$140	\$518,000	\$795,600
9	Harrison St	7th St	Division St	6	8	600	\$140	\$84,000	\$129,000
10	Division St	Harrison St	13th/14th St	6	8	4300	\$140	\$602,000	\$924,700
11	Division St	Anchor Way PRV Station	Davis Rd	6	8	1300	\$140	\$182,000	\$279,600
	Total					17400		\$2,502,000	\$3,843,100
NOTES:									
[1] Proposed pipe diameters are matching the existing diameter, 8-Inch Minimum.									
[2] Unit Construction Costs are based on units costs included in the 2012 Water Master Plan for developed areas.									
[3] CIP Cost includes a 20% contingency, 10% design engineering, 10% construction engineering, and 8% administration cost allowance in accordance with Appendix D and then rounded to the nearest \$100.									



PSI: IN 97 and
OUT 97

Item 6b.

16th and
Division:
Install: 1971

1.25" valve
(non-functional)

10" bypass
valve

6" valve

Harley and Forsythe
(South):

Install: 1973

Item 6b.

1.25" valve
non-functional

PSI: IN 82 and
OUT 82

6" bypass
valve

4" valve

Harley and
Forsythe (North)

Install: 1988

4" relief
valve

Item 6b.

4" relief
valve

PSI: IN 81 and
OUT 81

12" valve

Abernethy and
Redland:

Install: 1963

PSI: IN 125
and OUT 125

8" valve

4" relief valve

4" relief valve

Install:
1993

4" valve

Apperson and
Larae:

Install: 1999

PSI: IN 99 and
OUT 94

4" valve

2" valve

6" valve

Hunter Pump
Station:

Install: 1998

6" valve

PSI: IN 152 and
OUT 52

3" valve

Item 6b.

PSI: IN 135 and
OUT 34

Jennif
Estates:

Item 6b.

Install: 2002

8" valve

4" valve

Swan and
Holcomb:
Install: 1999

PSI: IN 152
and OUT 50

8" valve

4" valve

View Manor:
Install: 1999

PSI: IN 99
and OUT 32

Item 6b.

8" valve

4" valve

4th and Main
(mill):

Install: 1997

PSI: IN 110 and
OUT 110

10" valve

3" valve

10" bypass valve

5th and
Canemah:
Install: 1958

PSI: IN 132 and
OUT 90

1.25" valve

6" bypass
valve

4" valve

4th and
Jerome:

Install: 1958

Item 6b.

2" valve

6" valve

PSI: IN 135
and 52 OUT

3rd and
Ganong:

Item 6b.

Install: 2008

PSI: IN 160 and
OUT 86

6" valve

2" valve

3" relief valve

PSI: IN 135
and OUT 60

3rd and Bluff:
Install: 2018

8" valve

3" valve

PSI: IN 100
OUT 46

East St.
Install: 2015

6" valve

PSI: IN 158 and
OUT 78

15th and
Madison:
Install: 2016

Item 6b.



6" valve

2" valve

10" valve

11th and
Washington:

Install: 1993

PSI: IN 168 and
OUT 80

3" valve

PSI: IN 128 and
OUT 54

18th and
Anchor Way:
Install: 1992

Item 6b.

8" valve

4" valve

4" relief valve



APPENDIX H
MILL REDEVELOPMENT WATER
DISTRIBUTION ANALYSIS TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: January 18, 2018

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Natalie Jennings, PE
MurraySmith

Re: Mill Redevelopment Water Distribution Analysis

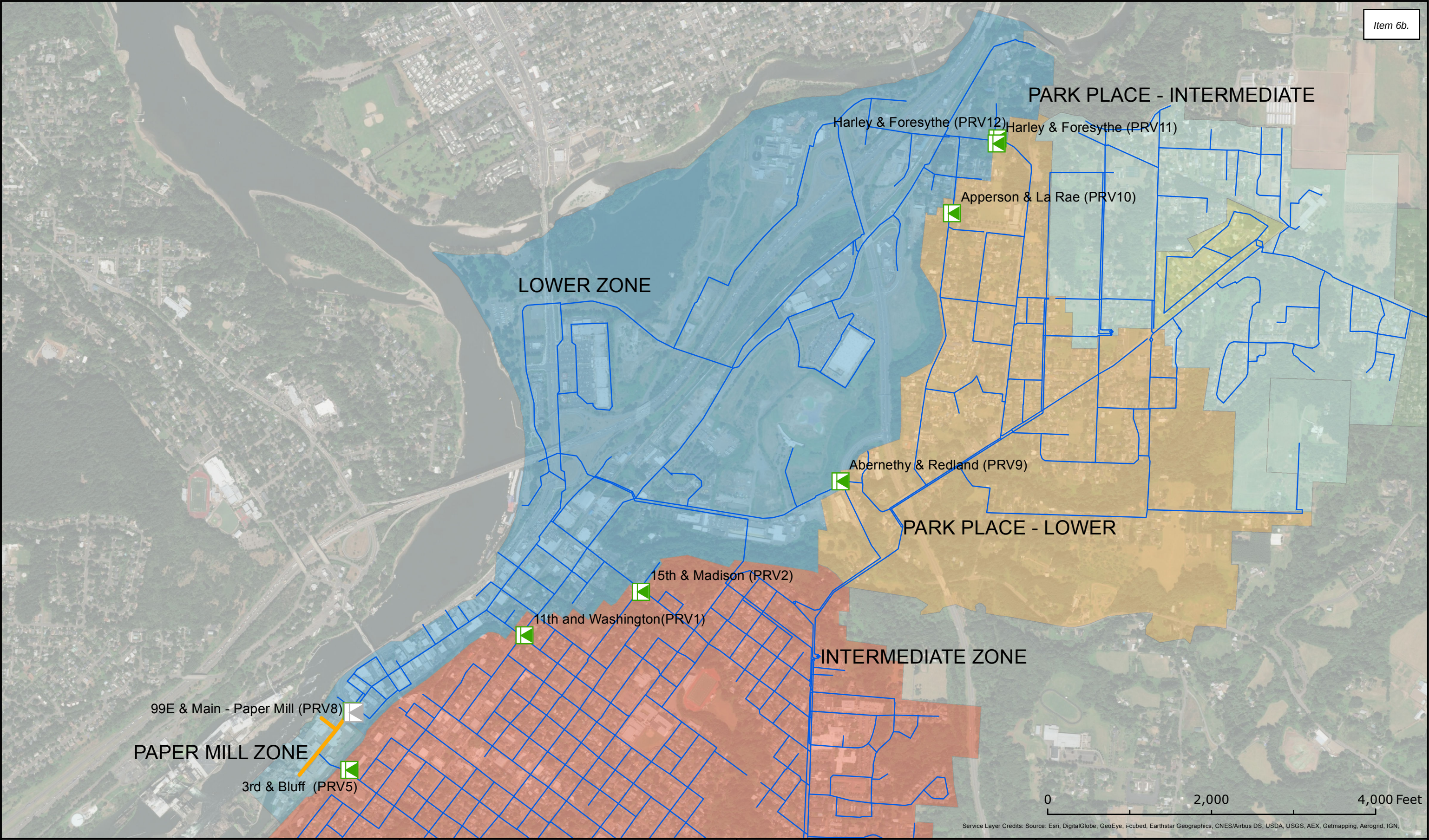
Background Information

The City of Oregon City (City) is evaluating expansion of the water distribution system to accommodate commercial redevelopment along the Willamette River, in the Paper Mill Zone. The development area and preliminary pipeline configuration are shown in Figure 1. The Paper Mill Zone is supplied through two pressure reducing valve (PRV) stations located at 3rd and Bluff and 99 E & Main. This technical memorandum documents recommended modifications to PRV stations to combine the Paper Mill Zone and the Lower Zone. Additionally, local pipeline sizing recommendations are provided to supply domestic and fire flow demands to the Mill Redevelopment Area.

Demand Summary

To evaluate the system capacity, domestic demand conditions were analyzed for average day demand (ADD), maximum day demand (MDD), and peak hour demand (PHD). Fire flow demands were evaluated during MDD including, 3,500 gallon-per-minute (gpm) and 5,000 gpm fire flow requirements.

The City's water demand data is summarized in the *Water Distribution System Master Plan* (West Yost, 2012) by service type and largest user for the full distribution system. Future demands in the Mill Redevelopment Area were developed by applying unit demands to number of dwelling units, square footage of office and retail space, or number of hotel rooms as shown in Table 1.



**City of Oregon City
Water Distribution System**

Legend

- PRVs
- Existing Pipes
- Mill Redevelopment Piping



**Mill Redevelopment Area
Proposed Piping and
New Combined Lower Zone**

Table 1
Water Demands by Type

Category	Unit	Number of Units, Rooms, or Square Feet	Unit Demand (gpm)	Total Demand (gpm)
Residential	dwelling unit	240	0.14	35
Office Space	1,000 Sq. Ft.	436	0.08	36
Retail Space	1,000 Sq. Ft.	119	0.08	10
Hotel	Rooms	115	0.07	9
Total				90

Maximum day and peak hour demands for the Mill Redevelopment Area are estimated using the historical peaking factors from the master plan, established by the dividing max day by average day for MDD:ADD, and peak hour by average day for PHD:ADD, as shown in Table 2.

Table 2
Peaking Factors

Unit	Peaking Factor
MDD:ADD	2.3
PHD:ADD	4.5

Table 3 summarizes the demands in the proposed Mill Redevelopment Area, and the new, combined, Paper Mill/Lower Pressure zone.

Table 3
Water Demands by Zone

Demand	Mill Redevelopment Area ¹	Paper Mill and Lower Zones Combined
ADD	98 gpm	272 gpm
MDD	225 gpm	626 gpm
PHD	440gpm	1,225 gpm

¹ Includes existing demands in addition to the Mill Redevelopment demands.

Design Criteria

This section presents the planning and analysis criteria used to analyze performance of the City water distribution system. Criteria are presented in Table 4 for distribution system piping, service pressures, and recommended fire flow. Performance guidelines are based on a review of State requirements, American Water Works Association (AWWA) acceptable practice guidelines, and *Recommended Standards for Water Works, Ten States Standards* (Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2012).

Service Pressures

The desired service pressure range under ADD and normal operating conditions is 40 to 80 pounds per square inch (psi). The maximum 80 psi service pressure limit is required by the *Oregon Plumbing Specialty Code* (OPSC) 608.2. If mainline pressures exceed 80 psi, service connections should be equipped with individual PRVs.

Distribution Piping

In general, distribution flow velocities should not exceed 10 feet-per-second (fps) under the PHD conditions and drop below 3.5 fps under normal demand conditions. The minimum pipe size is 8-inch diameter for new permanently dead ended residential water mains and primary feeder mains in residential areas, however areas with large fire flow demands will require larger pipe diameters.

Fire Flow

The amount of water recommended for fire suppression purposes is typically associated with the local building type or land use of a specific location within the distribution system. Fire flow recommendations are typically much greater in magnitude than the MDD in any local area. Adequate hydraulic capacity for these potentially large fire flow demands controls pipe sizing and system operation.

During a fire flow event or emergency, the minimum service pressure is 20 psi as required by Oregon Health Authority, Drinking Water Services, and OAR 333-061-0025(7). The system should be capable of providing fire flow capacity while simultaneously delivering MDD and maintaining 20 psi throughout the distribution system. The system should meet this criterion with operational storage depleted and firm pumping capacity.

Two fire flow scenarios were requested by the City for evaluation in the Mill Redevelopment Area including 5,000 gpm and 3,500 gpm fire flow demands.

Table 4
Water System Performance Criteria

System Facility	Evaluation Criterion	Value	Design Standard/Guideline
Service Pressure	Normal Range (ADD Conditions)	40-80 psi	AWWA M32
	Maximum without individual PRV	80 psi	AWWA M32, Oregon Plumbing Specialty Code, Section 608.2
	Minimum, during MDD with Fire Flow	20 psi	AWWA M32, OAR 333-061
	Minimum, during PHD	75% of normal, not less than 40 psi	Murraysmith recommended, AWWA M32
	Velocity during PHD	Not to exceed 10 fps	AWWA M32

Distribution Piping	Minimum Pipe Diameter	8-inch recommended for fire flow, except in short mains without fire service	Industry Standard
Required Fire Flow and Duration	Single Family Residential	1,500 gpm for 2 hours	2014 Oregon Fire Code, Scenario 1: Requested by Oregon City
	Medium Density Residential, Commercial	3,000 gpm for 3 hours	
	Public, Industrial	3,500 gpm for 3 hours	
	Public, Industrial	5,000 gpm for 3 hours	Scenario 2: Requested by Oregon City

System Evaluation

Two types of infrastructure improvements are needed to service the proposed Mill Redevelopment Area including modifications to existing PRV stations, and new water lines.

Pressure Reducing Valve Stations

Current PRV settings in both the Paper Mill Zone and Lower Zone result in high pressures exceeding the 80-psi maximum requirement. Additionally, complete isolation of the Paper Mill Zone is unnecessary, as the elevations in this zone are similar to the adjacent Lower Zone. Recommendations to modify PRV stations include the following:

- A reduction in PRV settings for all PRV stations between the Intermediate Zone and the Paper Mill/Lower Zones to maintain maximum pressure below 120 psi and reduce risk of leakage. Recommended settings are provided in Table 5. Individual building PRVs are still required within the pressure zones.
- Combine the Paper Mill and Lower Zones by abandoning the 99E and Main PRV station. A pipe connection routing around the PRV station is required to maintain looped service.

Table 5
Recommended PRV Settings

Valve Name	Valve #	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting	Priority Opening
11 th & Washington	1	3	10		67	58		1
15 th & Madison	2	1.25	6	10	61	56	51	4
Abernathy & Redland	9	4	8		102	97		3
Apperson & La Rae	10	2	4	6	84	79	77	5
Harley & Forsythe (south)	11	1.5	4		71	66		2
Harley & Forsythe (north)	12	1.5	12		66	61		7
3 rd & Bluff	5	3	10		42	39		6
99E & Main	8	3	10		abandon	abandon		n/a

Water Line Improvements

Water line improvements are required to serve the Mill Redevelopment Area. Improvements are focused on upsizing and extension of the pipeline on the proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area. This improvement route eliminates pipeline improvements adjacent to the 3rd and Bluff PRV station and the associated 10-inch piping along the cliff face on Highway 99E that was recently replaced in the Hwy 99E Bluff Waterline Replacement Project. The existing section under the adjacent highway and railroad are also preserved.

To supply a 5,000 gpm fire flow, the pipe size on proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area is recommended at 14-inch diameter with dead-end piping of 16-inches as shown in Figure 2. To supply a 3,500 gpm fire flow, the pipe size is recommended at 12-inch diameter with dead-end piping of 14-inches as shown in Figure 3.

The City's InfoWater hydraulic model was used to evaluate system capacity and size improvements. Figures showing pressure results for the pipe sizing and PRV analysis are provided in Appendix A.

Figure 2
Proposed Water Line Alignments in Mill Redevelopment Area 5,000 gpm Fire Flow

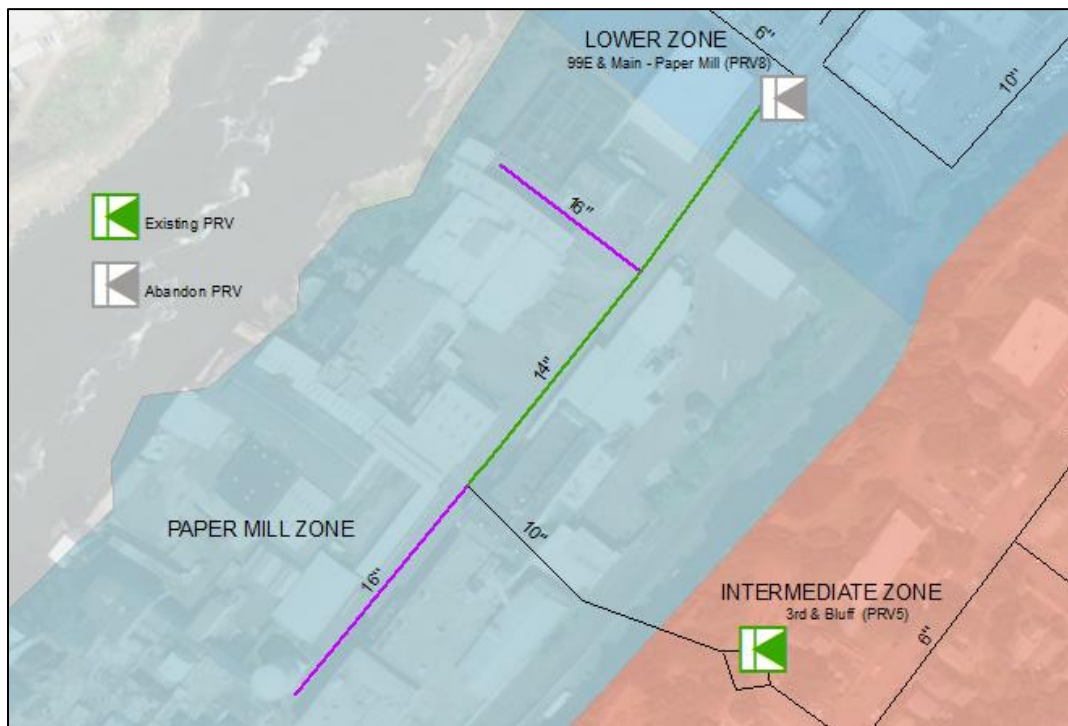
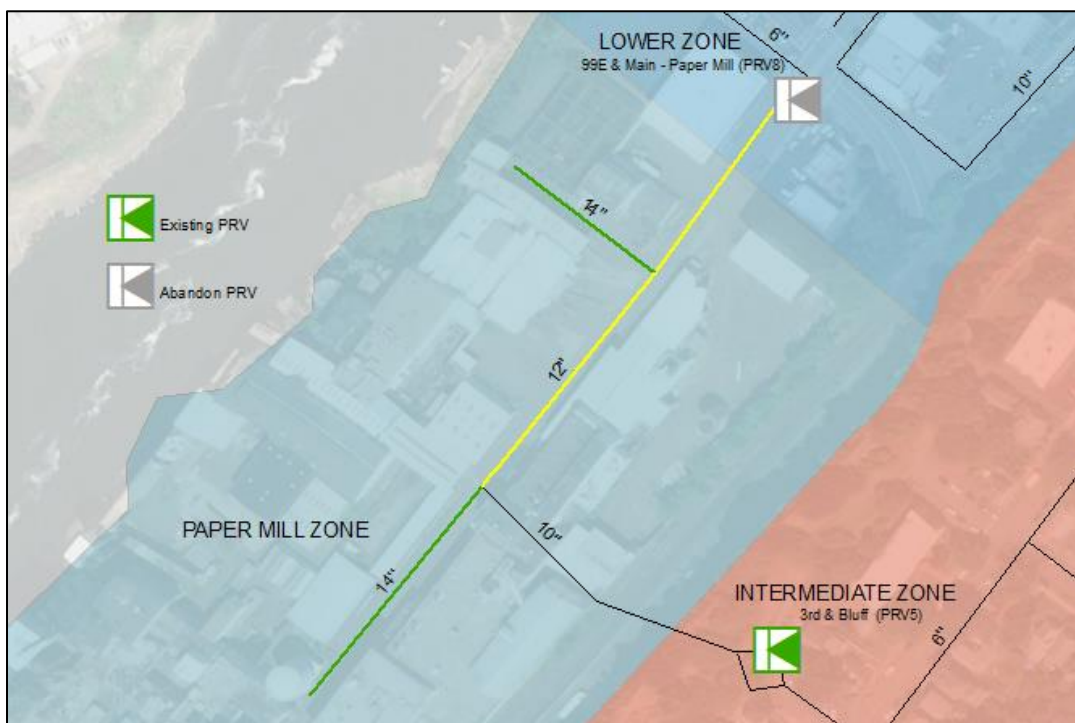


Figure 3
Proposed Water Line Alignments in Mill Redevelopment Area 3,500 gpm Fire Flow



Summary of Recommendations

Development can occur as desired by the City in the Mill Redevelopment Area. Several PRV and piping changes are needed to achieve design criteria specified herein, including combining two pressure zones. Specific changes within the zone include:

- Combination of the Paper Mill Zone and Lower Zone
- Abandonment of the PRV on 99E & Main
- Construction of new mains in the Mill Redevelopment Area
- Adjustments of PRV settings in PRV stations to the new Combined Paper Mill/Lower Zone

SJR:ncj

Appendix A

The City InfoWater hydraulic model was used to perform model simulations for domestic and fire flow demands and evaluate system pressures and velocities. The simulation results are summarized in the following figures.

Figure A1 – Average Day Demand

Figure A2 – Peak Hour Demand

Figure A3 – Maximum Day Demand + 3,500 gpm Fire Flow

Figure A4 – Maximum Day Demand + 5,000 gpm Fire Flow

Figure A1
Results: ADD

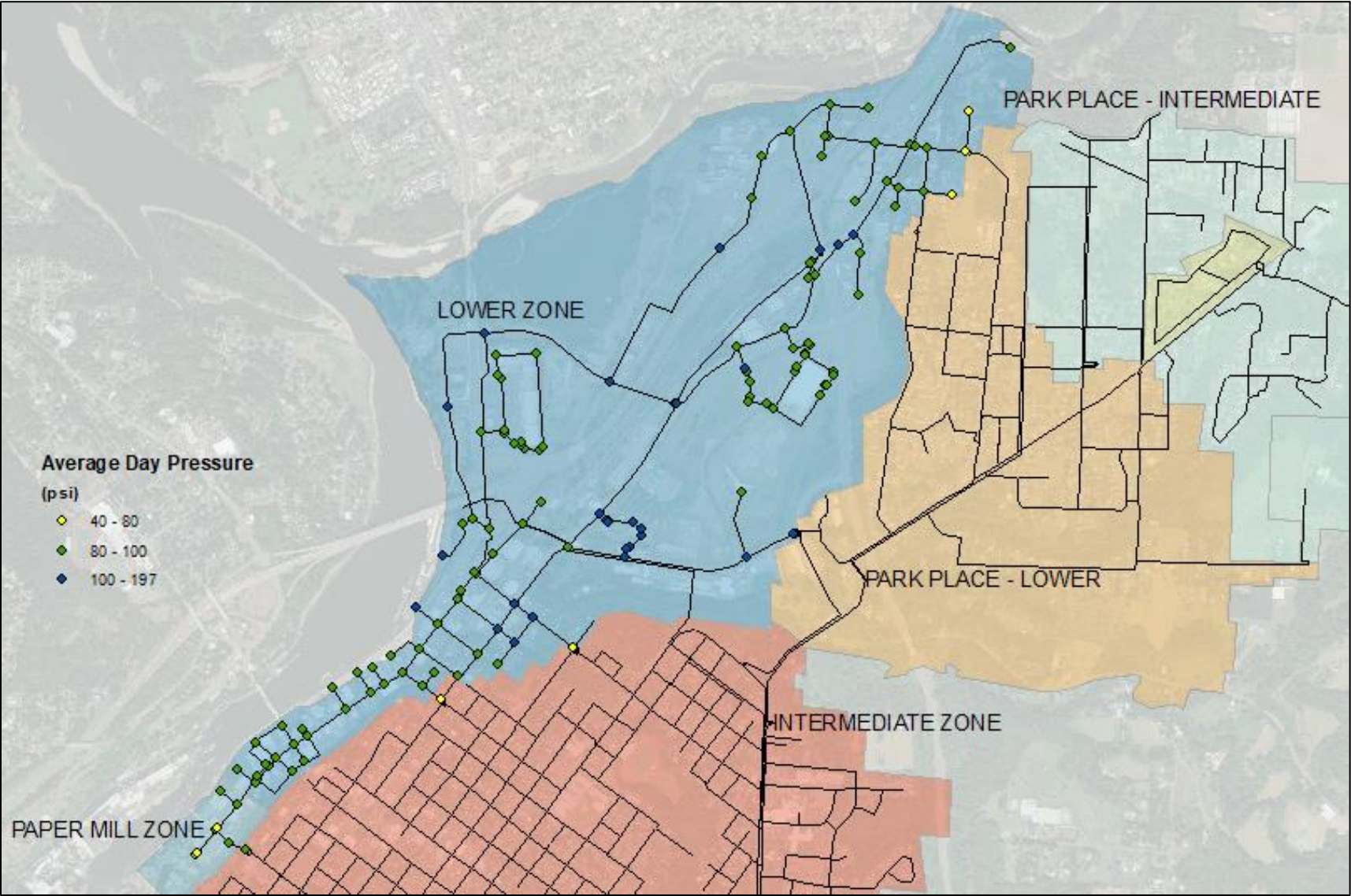


Figure A2
Results: PHD

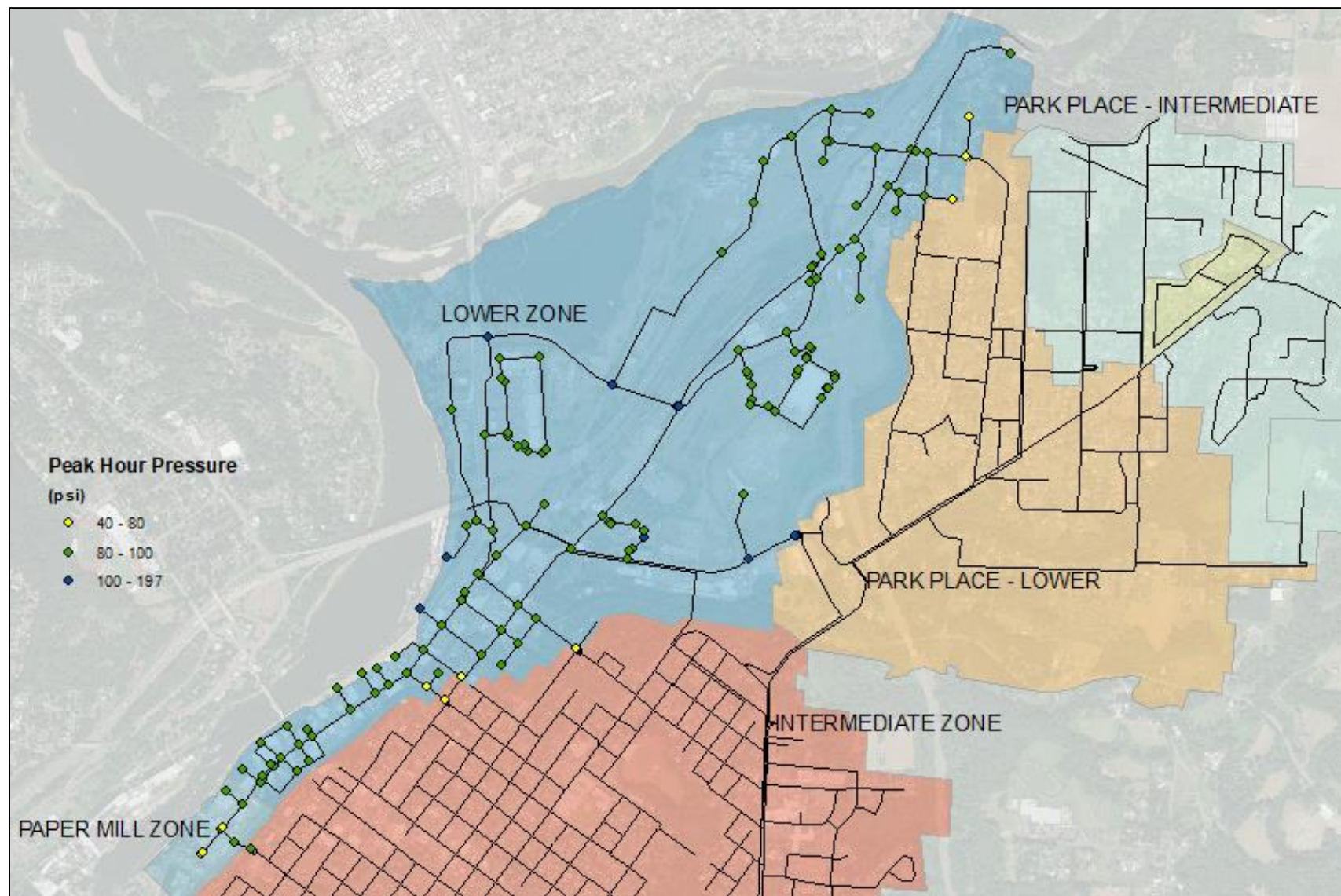


Figure A3
Results: MDD +3,500 gpm Fire Flow

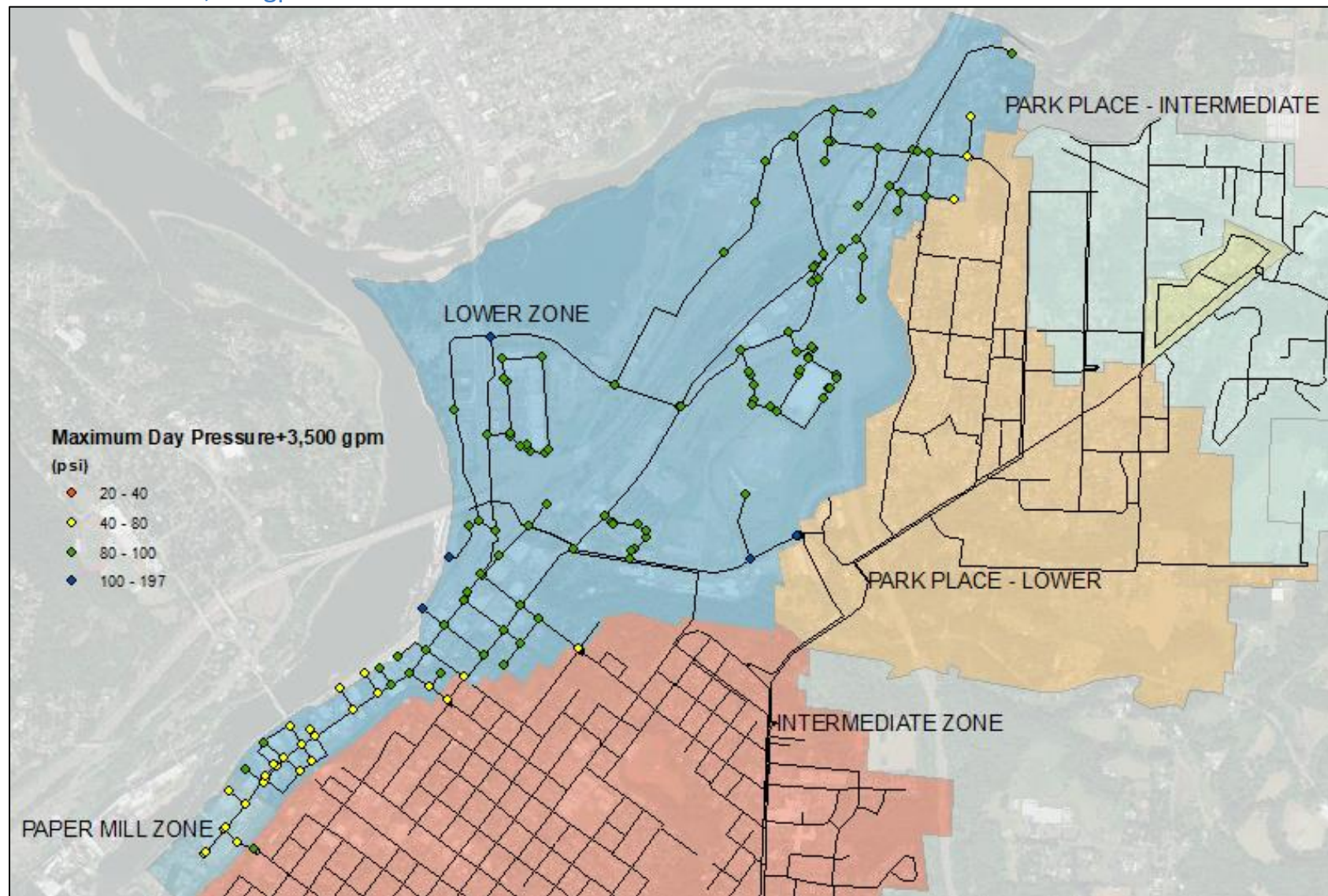
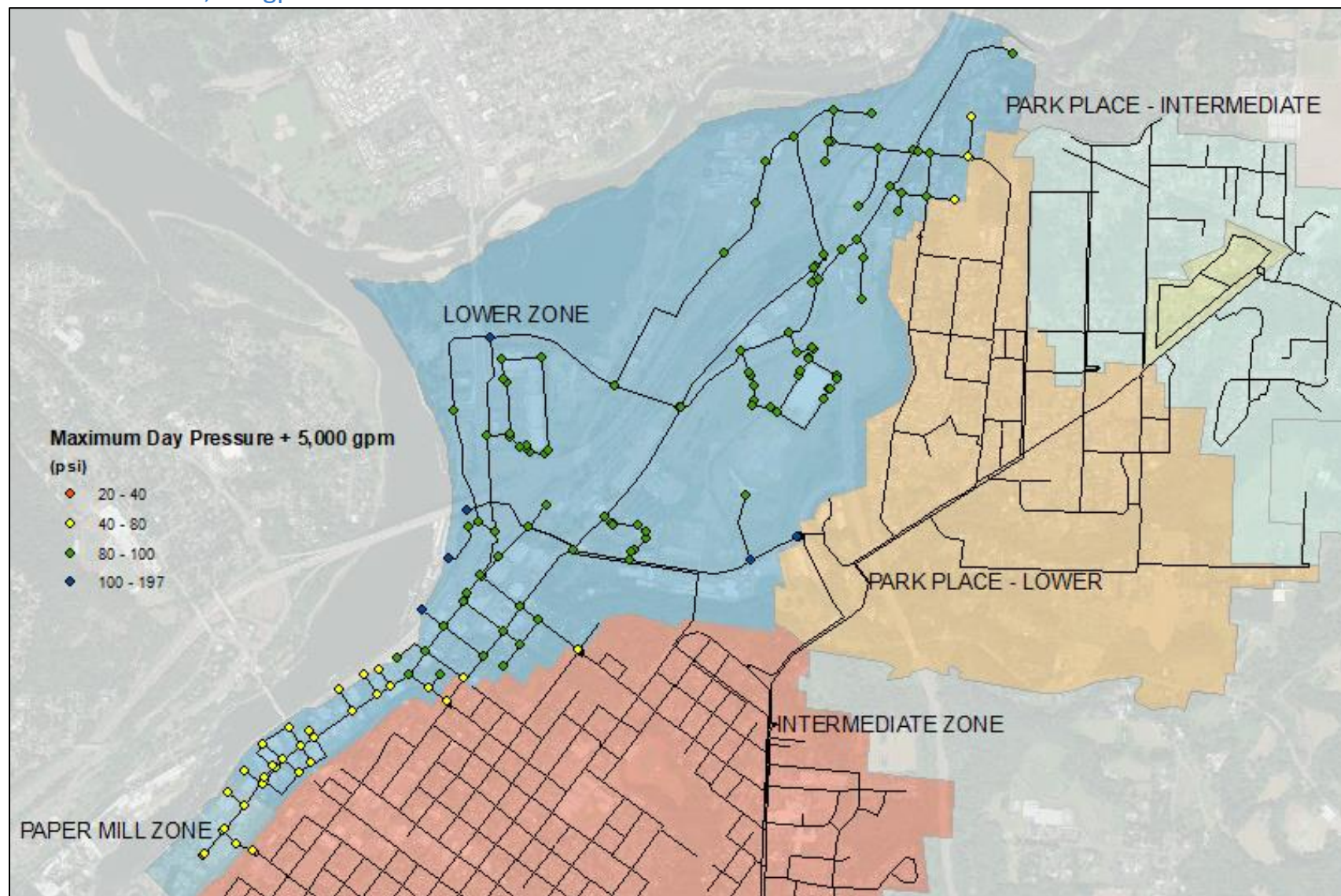
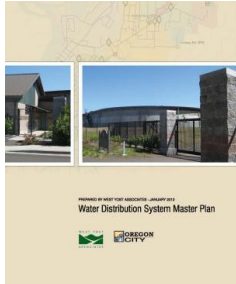


Figure A4
Results: MDD +5,000 gpm Fire Flow





Oregon City's Water Distribution System Master Plan (Water Master Plan) was adopted in February, 2012, and is available on line.

The 2012 [Water Master Plan](#) presents the results of the water distribution system planning effort conducted for the City of Oregon City. The plan summarizes the components of the existing water distribution system, analyzes local water demand patterns, evaluates the performance of the water system with respect to critical service standards, identifies the improvements necessary to remedy system deficiencies and accommodate future growth.

Based on this analysis, the study recommends specific projects for inclusion in the water distribution system Capital Improvement Program (CIP). These projects will ensure that the water distribution system continues to provide adequate and reliable service to the City. Finally, the master plan presents a financing plan that will facilitate successful implementation of the recommended CIP.



LAND USE TRANSMITTAL

DISTRIBUTION OF APPLICATION

- Building Official
- Development Services
- Public Works Operations
- City Engineer
- Public Works Director
- Parks Manager
- Community Services Director
- Police
- Economic Development Manager
- Traffic Engineer
- Natural Resource Committee
- City Manager's Office
- Oregon City Neighborhood Associations
- Clackamas County Transportation
- Clackamas County Planning
- Clackamas Fire District #1
- ODOT – Division Review
- Oregon City School District
- Oregon Department of Fish and Wildlife (ODFW)
- Tri-Met
- Metro
- PGE
- South Fork Water Board
- Hamlet of Beavercreek
- Holcomb Outlook CPO
- Central Point / Leland Road / New Era CPO
- Other – See Email List

HEARING DATE: City Commission Hearing: December 14, 2020
HEARING BODY: ____ Staff Review; ____ PC; ____ HRB; X CC
FILE # & TYPE: GLUA-19-0002: LEG 19-0001, LEG 19-0005 Stormwater
PROJECT FILE: <https://www.orcity.org/planning/project/glua-19-0-00016-leg-19-00002-amendments-water-master-plan>
PLANNER: Christina Robertson-Gardiner, Senior Planner, 503-496-1564, crobertson@orc.org
APPLICANT: Oregon City
OWNER: Oregon City
REQUEST: Amendments to the Water Master Plan
LOCATION: City-Wide

Please send your comments to crobertson@orc.org by November 30, 2020 to be added to the staff report.

This application material is referred to you for your information, study and official comments. If extra copies are required, please contact the Planning Department. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return the attached copy of this form to facilitate the processing of this application and insure prompt consideration of your recommendations. Please check the appropriate spaces below.

XX The proposal does not conflict with our interests.
____ The proposal conflicts with our interests for the reasons attached.
____ The proposal would not conflict our interests if the changes noted below are included.

Signed

Comments:



LAND USE TRANSMITTAL

DISTRIBUTION OF APPLICATION

- Building Official
- Development Services
- Public Works Operations
- City Engineer
- Public Works Director
- Parks Manager
- Community Services Director
- Police
- Economic Development Manager
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- ___ The proposal does not conflict with our interests.
 ___ The proposal conflicts with our interests for the reasons attached.
X The proposal would not conflict with our interests if the changes noted below are included.

Signed

Blair M. Gorman 10-29-2020

Comments: *See attached.*

[SENT VIA EMAIL 10-29-2020]



Clackamas River Water

October 29, 2020

City of Oregon City

ATTN: (Via Email)- Christina Robertson-Gardiner; cc: Patty Nelson

RE: GLUA-19-0002, Amendments to the Water Master Plan

As noted on the cover transmittal sheet, the proposed amendment to the City's Water Master Plan would not conflict with the interests of Clackamas River Water (CRW) if the following changes are noted/included:

- CRW may have infrastructure in these areas that is needed to continue to serve parts of the District outside of these areas. Therefore, note that such infrastructure (such as water transmission mains) shall remain the property of CRW regardless of the planning actions taken by the City, in accordance with State statute and the 2018 Joint Engineering Study between the City and CRW.
- Where applicable, infrastructure eligible for reimbursement shall follow the terms of the Remuneration Agreement between the City and CRW.
- If the City intends to construct water infrastructure to serve properties in certain areas still in CRW's service area, the District asks that the City follow established procedures for withdrawal of these areas as outlined by statute.
- CRW infrastructure may exist in certain areas that can currently, or with minor modification, serve properties in some of these areas. CRW remains willing to serve those customers that remain within our boundaries in a manner that can help the City accomplish Goal 11.3 of its Comprehensive Plan ("Water Distribution").
- For further information and clarification, please reference the attached letter dated June 2, 2020, which was previously sent to the City.

CRW welcomes continued discussions with Oregon City regarding coordinated planning for the most cost-effective delivery of water to our customers and citizens. Thank you for the opportunity to provide comment.

Adam M. Bjornstedt, P.E., Chief Engineer
Clackamas River Water

Attachment: Letter dated 6/2/2020 addressing City Resolution 20-15

CC: Todd Heidgerken, CRW



Clackamas River Water

June 2, 2020

Mayor Holladay and Oregon City Commissioners
PO Box 3040
Oregon City, OR 97045
Sent via email to recorderteam@orc.org

RE: Resolution No. 20-15

Mr. Mayor and Commissioners,

On behalf of Clackamas River Water, I write to provide the following information as you consider adoption of Resolution No. 20-15. It is our understanding from the staff report, reviewing the recording of the May 12 work session and the language contained in the resolution, that it is the intent of the City of Oregon City to be the sole water provider for the Beaver Creek Road (Thimble Creek) Concept Area. State statutes are in place to allow cities like Oregon City to become the water service provider for property that has been annexed and then withdrawn from the Clackamas River Water District. Absent a withdrawal by the City, the area continues to be part of the District. Although the area of focus has been annexed by the City, the City has not taken the steps it must take to withdraw that territory from Clackamas River Water. We ask your consideration of the following points:

Clackamas River Water requests that if the City is prepared to be the water service provider, that the process outlined in state statute be followed. This means that if the City is prepared to provide water service to the area, our request is that the area be withdrawn. This simple request is being made to allow for an orderly transition of existing service and proper water planning of the area between Clackamas River Water and the City of Oregon City.

Clackamas River Water has been the identified water provider for some of the area included in the Beaver Creek Road (Thimble Creek) Concept Area for many decades. Although the City has annexed the area, much of the area discussed during the May 12 work session has not yet been withdrawn from Clackamas River Water. Since this withdrawal process has not happened, Clackamas River Water continues to be responsible for planning and providing water service to the area. An obvious way to address this issue would be for the City to complete the process and withdraw the area to become the identified water provider. Absent this action, Clackamas River Water will continue to have the duty to serve this area.

Clackamas River Water is not trying to compete with Oregon City to serve the area. It is unfortunate that it has been suggested that Clackamas River Water is attempting to compete to serve the area. As noted above, Clackamas River Water has only asked that if Oregon City is ready and willing to serve the area, that the withdrawal process be followed. This is not a competition; it is simply a request to the City to follow the process set out in statute. Our intent has been to provide water service to Clackamas River

Tuesday, June 02, 2020
Page 2 of 2

Water customers, some of which, we recognize, may eventually be served by Oregon City once areas have been annexed and withdrawn.

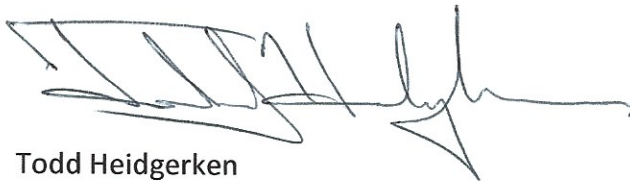
Clackamas River Water has the infrastructure in place to serve the area. With minor improvements, Clackamas River Water can serve the anticipated development in the southern portion of the Beaver Creek Road (Thimble Creek) Concept Area. The list of Clackamas River Water improvements indicated in the staff report would not be needed to serve the anticipated development in the southern portion. Development in this area could be served with water without time delay and with only minor improvements.

Clackamas River Water and Oregon City have successful examples of cooperating to provide water service where City infrastructure does not exist. The HOPP (Holcomb, Outlook and Park Place) Agreement is an example where Clackamas River Water and Oregon City worked together to provide service to an area within the City where the City did not have water infrastructure to provide service. There is no reason a similar agreement could not be crafted to allow for the efficient and cost-effective water service to portions of the Beaver Creek Road (Thimble Creek) Concept Area.

As you consider the adoption of Resolution No. 20-15 and take steps to provide water service to the Beaver Creek Road (Thimble Creek) Concept Area, we would ask that you do this in a manner that is consistent with state statutes. Withdrawal of the area by Oregon City will leave no question about which entity is to provide water service. Absent this action, Clackamas River Water will have a duty to continue to serve the area as it is designated until such time that the City is prepared to complete the withdrawal process.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Todd Heidgerken', with a stylized flourish extending to the right.

Todd Heidgerken
General Manager

cc John Lewis
Patty Nelson

From: [Adam Bjornstedt](#)
To: [Christina Robertson-Gardiner](#); [Patty Nelson](#)
Cc: [Adam Bjornstedt](#)
Subject: RE: WMP Amendment - CRW Comments - Clarification request
Date: Monday, December 7, 2020 11:27:03 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.

Please consider this as a clarifying response to CRW's 10/29/2020 letter addressing Oregon City's proposed water master plan amendments. In that letter, the first bullet describes the need to consider existing CRW water infrastructure that is necessary to serve other areas of the District. The comments therein included a reference to the 2018 Joint Engineering Study and state statute. Please note that the reference to the Joint Engineering Study was for information purposes only, since the Study includes some definition and discussion of existing water infrastructure. As long as any action by the City in implementing its Master Plan is done in accordance with state statute, including where existing District water infrastructure exists, CRW takes no exception. The other bullet points of the 10/29/2020 letter remain as written, for the City's consideration.

Respectfully submitted,

Adam M. Bjornstedt, P.E.
 Chief Engineer



Clackamas River Water

16770 SE 82nd Drive | Office: 503.722.9246
 Clackamas, OR 97015-2439 | Cell: 503-729-1600
www.crwater.com

Note- I can best be reached via email at abjornstedt@crwater.com or cell phone at 503-729-1600.

This e-mail is intended solely for the intended recipient or recipients. If this e-mail is addressed to you in error or you otherwise receive this e-mail in error, please advise the sender, do not read, print, forward or save this e-mail, and promptly delete and destroy all copies of this e-mail. This email may contain information that is confidential, proprietary or secret and should be treated as confidential by all recipients. This e-mail may also be a confidential attorney-client communication, contain attorney work product, or otherwise be privileged and exempt from disclosure. If there is a confidentiality or non-disclosure agreement or protective order covering any information contained in this e-mail, such information shall be treated as confidential and subject to restriction on disclosure and use in accordance with such agreement or order, and this notice shall constitute identification, labeling or marking of such information as confidential, proprietary or secret in accordance with such agreement or order. The term 'this e-mail' includes any and all attachments.

From: Christina Robertson-Gardiner <crobertson@orc.org>
Sent: Monday, December 7, 2020 11:11 AM
To: Patty Nelson <pnelson@orc.org>; Adam Bjornstedt <abjornstedt@crwater.com>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

Patty and Adam,

I will add this email exchange into the record for the agenda that is going out today. However, as this is such a sensitive topic for the City Commission, I would recommend that CRW send a clarifying email to be added to the record for at the Planning Commission hearing on 12.14 if that works for both of you.



[What's your Vision for Oregon City?](#)

Christina Robertson-Gardiner, AICP, Senior Planner
695 Warner Parrott Rd, Oregon City, OR 97045

crobertson@orccity.org

503) 496-1564 Direct

(503) 722-3789 Main

[Interactive Maps and Apps](#)

[On-Line Submittal of Land Use Applications](#)

[COVID-19 \(Coronavirus\) Information](#)

The City of Oregon City is open for business and continues to offer services and programs online and virtually. Some City facilities are open to the public, find current openings [here](#), we encourage visitors to wear a mask, practice physical distancing, and reschedule in-person visits if you are feeling unwell. The City has installed additional shielding and is providing hand sanitizer as well as occupancy limits to ensure our staff and visitors have a safe, no touch experience. Our goal is to be responsive to our community throughout this pandemic; we appreciate your understanding and cooperation.

PUBLIC RECORDS LAW DISCLOSURE: This email is subject to the State Retention Schedule and may be made available to the public.

From: Patty Nelson <pnelson@orccity.org>

Sent: Monday, December 7, 2020 10:57 AM

To: Adam Bjornstedt <abjornstedt@crwater.com>; Christina Robertson-Gardiner <crobertson@orccity.org>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

Christina – Can you please advise if you need something formal from CRW regarding the reference to 2018 Joint Engineering Study. See below

From: Adam Bjornstedt <abjornstedt@crwater.com>

Sent: Monday, December 7, 2020 10:54 AM

To: Patty Nelson <pnelson@orccity.org>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

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I guess I'm not sure why any edit needs to be made. It's just a general reference- wasn't meant to be something that would hold some sort of legal weight to it. Do we really need to send a statement?

Adam

From: Patty Nelson <pnelson@orccity.org>

Sent: Monday, December 7, 2020 10:50 AM

To: Adam Bjornstedt <abjornstedt@crwater.com>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

Adam – I confirmed with Christina that it would be best if you could send something today to delete that reference in CRW response – that would be best.

Is that possible?

From: Patty Nelson

Sent: Monday, December 7, 2020 10:47 AM

To: Adam Bjornstedt <abjornstedt@crwater.com>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

That is what I was thinking.

I wonder if a redaction of the reference to changes noted needs to be made to delete reference to "2018 Joint Engineering Study between the City and CRW"??

I have an inquiry into Christina in Planning.

From: Adam Bjornstedt <abjornstedt@crwater.com>

Sent: Monday, December 7, 2020 10:02 AM

To: Patty Nelson <pnelson@orccity.org>

Subject: RE: WMP Amendment - CRW Comments - Clarification request

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Patty,

Our reference to the JES was simply to capture that the issue of existing infrastructure was partly covered in the "discussion" which led to the study's report. As long as the Remuneration Agreement

and state statute are followed, I don't think you need to specifically mention the study in your commission report.

Adam

From: Patty Nelson <pnelson@orccity.org>
Sent: Monday, December 7, 2020 9:50 AM
To: Adam Bjornstedt <abjornstedt@crwater.com>
Subject: WMP Amendment - CRW Comments - Clarification request

Adam- More specifically here is the comment I am referring to and asking for clarification:

The amendment would not conflict with the interests of Clackamas River Water (CRW) if the following changes are noted/included:

CRW may have infrastructure in these areas that is needed to continue to serve parts of the District outside of these areas. Therefore, note that such infrastructure (such as water transmission mains) shall remain the property of CRW regardless of the planning actions taken by the City, in accordance with State statute and the 2018 Joint Engineering Study between the City and CRW

The remuneration agreement covers infrastructure transfers and compensation. State statute outlines the process. What in the 2018 Joint Engineering Study is CRW referencing here? Is this a left over from the letter to the Commission when we had our resolution regarding service?

M. Patty Nelson, P.E.



Patty Nelson, P.E.
pnelson@orccity.org
 Special Projects Senior Engineer
 City of Oregon City
 PO Box 3040
 625 Center Street
 Oregon City, Oregon 97045
 503-496-1506 Direct phone
 503-657-0891 City phone
 503-496-1576 Fax

Website: www.orccity.org | **Employment:** www.orccity.org/Human-Resources/Open-Positions.htm

This e-mail is a public record of the City of Oregon City and is subject to public disclosure unless exempt from disclosure under Oregon Public Records Law. This e-mail is subject to the State Retention Schedule.

The City of Oregon City is open for business and continues to offer services and programs online and virtually. Some City facilities are open to the public, find current openings [here](#), we encourage visitors

to wear a mask, practice physical distancing, and reschedule in-person visits if you are feeling unwell.

The City has installed additional shielding and is providing hand sanitizer as well as occupancy limits to ensure our staff and visitors have a safe, no touch experience. Our goal is to be responsive to our community throughout this pandemic; we appreciate your understanding and cooperation.

Kattie Riggs

From: Roseann Johnson <RoseannJ@hbapdx.org>
Sent: Wednesday, January 20, 2021 3:39 PM
To: Rocky Smith, Jr.; Rachel Lyles Smith; Frank O'Donnell; Denyse McGriff
Cc: Kattie Riggs; Laura Terway; Patty Nelson; Tony Konkol
Subject: HBA Public Comment- Ordinance No. 21-1001

Commission President Smith and Oregon City Commissioners:

I am submitting written comments regarding this evening's public hearing for Ordinance No. 21-1001, Amendments to the Water Master Plan.

The Home Builders Association of Metropolitan Portland (HBA) represents over 850 companies and tens of thousands of women and men who work in the residential building and remodeling industries throughout the greater Portland area. We work to promote housing affordability and are dedicated to maximizing housing choice for all who reside in the region.

As described in the Ordinance No 21-1001 staff report executive summary, the City of Oregon City ("City") updates to both water rates and water system development charges (SDCs) is contingent on the adoption of a new Capital Improvement Plan (CIP) list in the Water Master Plan update. The public hearing for increased SDCs is currently scheduled for March 3, 2021 and the proposed SDC calculation is based on the Water SDC Methodology Report finalized in December 2020 and published [HERE](#). According to the report, the proposed water SDC would increase from \$6,692 (\$7,094 as of 1/1/21) to \$11,724 for a 5/8" meter. This represents a **39.5% increase** for the smallest water meter and the one most often used for residential units.

Given the updated Water Master Plan determines water rates and SDCs, the City should **postpone adoption of Ordinance No. 21-1001 in order to simultaneously review all documents related to projects, rates and SDC calculations together**. Doing so will allow the City to make comprehensive water-related policy decisions.

The need to balance water projects, rates and SDCs is all the more important given Oregon City's housing cost burden. According to the American Community Survey, between 2014 and 2018 Oregon City became severely housing cost burdened, meaning that over 25% of its households spend more than half of their income on their rent or mortgage payment. While the City does not control its residents' wages and salaries, it can directly reduce the amount tenants and homeowners pay for their housing by reducing barriers to housing production and supply within the City. In order to do this, the City should **reduce water SDC fees by removing water CIP projects that are unlikely to be built in the projected time frame**. HBA's specific recommendation outline is below:

1. Reduce Residential Water SDCs by Refining the Water SDC Improvement Fee Cost Basis.

- a. Remove all 100% SDC-eligible 15-20 year projects from the Water Master Plan's SDC improvement fee cost basis.
- b. Rationale: The City's current voter-approved annexation policy presents a significant barrier to buildable land supply and as such, calls to question the need for 100% growth-related capital improvement projects in this timeframe. Because voters can delay annexations indefinitely, such water capital improvements are more likely to occur later than the projected time frame and the City should remove these projects to obtain a more realistic SDC cost basis.
- c. Removing these projects decreases the improvement fee cost basis by \$11,627,500. **The revised calculated SDC for a 5/8" water meter, including South Fork Water Board treatment portion, would be \$9,706.**

- d. Example: In the interest of projects moving forward, the City of Molalla recently reduced transportation SDC rates to its 2019 schedule and, importantly, will conduct a work session this month to determine which transportation master plan projects could be removed to decrease overall SDC rates.

HBA will have additional recommendations for water SDC phase-in, vesting, collection and financing after the water SDC increase public hearing documentation is published. However, because the Water Master Plan amendments under review tonight have a direct impact on the SDC methodology and fee schedule scheduled for review later, it is imperative the City pause adoption of the Water Master Plan in order to look simultaneously at these inextricably linked plan and policy documents. The City should delay the adoption of Ordinance No. 21-1001 in order to analyze the Water Master Plan update's full effects on current and future residents.

HBA appreciates the opportunity to provide comment and to continue working with the City on policies to support housing affordability and timely housing production.

Sincerely,

Roseann

Roseann Johnson

Assistant Director of Government Affairs

Home Builders Association of Metro Portland

c 971.221.6734 | d 503.603.4515 | o 503.684.1880

RoseannJ@Hbapdx.org | hbapdx.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 Lewis, PE

Agenda Date: 01/20/2021

SUBJECT:

First and Second Reading of Ordinance No. 21-1004, Amending Oregon City Municipal Code Chapter 8.26, Section 8.26.050 – Business Food Waste Requirements and Declaring an Emergency

STAFF RECOMMENDATION:

Staff recommends the approval of a first and second reading of Ordinance No. 21-1004, adopting delayed timelines due to the COVID-19 Pandemic for Business Food Waste Requirements.

EXECUTIVE SUMMARY:

Oregon City proposes adoption of the below new business food waste requirement timelines providing longer implementation timelines due to COVID-19 emergency pandemic for Oregon City businesses. Proposed timelines comply with Oregon Revised Statutes (ORS) 459a Reuse and Recycle statewide policy.

As part of the 2030 Regional Waste Plan, Metro Council has adopted Metro Ordinance No. 18-1418 amending Metro Code to add the Business Food Waste Requirement. Under this Ordinance, each local government must require:

- (1) covered businesses in its jurisdiction to separate and recover food waste;
- (2) delivery of collected business food waste to a facility authorized by Metro; and
- (3) property owners and managers to provide space to a covered business to allow the source separation and collection of food waste.

Oregon City passed Ordinance No.19-1011 in December 2019 to comply with state laws. Due to the ongoing COVID-19 pandemic, Metro and City staff are proposing the below delayed implementation timelines.

BACKGROUND:

Oregon City Commission passed Ordinance No. 19-1011 Business Food Waste Requirements on December 20, 2019. The Ordinance aligned with regional solid waste goals and Oregon Revised Statutes solid waste requirements for Oregon City and its solid waste partners. Due to the emergency COVID-19 pandemic event, the metro region has seen a quarantine/decrease of the use of businesses. Oregon City's priorities in response to COVID-19 are protecting public health by following guidance from public health officials and mitigating financial impacts. Oregon City, aligning with solid waste partners, will be implementing the below delayed timetable.

Adopted Ordinance No. 19-1011 Business Food Waste required businesses to comply with the food waste requirements as determined by the quantity of food waste they generate per week. Implementation will begin with the business group producing more than 1000 pounds and will progress to the other groups according to the timeline noted below:

- Business Group 1 March 31, 2020-March 31, 2021 >0.5 ton (1,000 pounds) per week food waste generated
- Business Group 2 March 31, 2021-Sept. 30, 2022 >0.25 ton (500 pounds) per week food waste generated
- Business Group 3 Sept. 30, 2022-Sept. 30, 2023 >0.125 ton (250 pounds) per week food waste generated

Metro issued Administrative Rule of Metro Code Chapter 5.10 on September 17, 2020, extending the effective dates as proposed below, due to the COVID-19 pandemic:

- Business Group 1 March 31, 2021 – March 31, 2022 >0.5 ton (1,000 pounds) per week food waste generated
- Business Group 2 March 31, 2022 – September 30, 2023 >0.25 ton (500 pounds) per week food waste generated
- Business Group 3 March 31, 2023 – September 30, 2024 >0.125 ton (250 pounds) per week food waste generated

Covered businesses that demonstrate they generate less than 250 pounds per week of food waste are not subject to food waste requirements.

OPTIONS:

1. Approve first and second reading of Ordinance No. 21-1004.
2. Approve first reading of Ordinance No. 21-1004.
3. Deny Ordinance No. 21-1004.

Funding Source(s): EnterTextHere

ORDINANCE NO. 21-1004

AN ORDINANCE OF THE CITY OF OREGON CITY AMENDING OREGON CITY MUNICIPAL CODE CHAPTER 8.26, SECTION 8.26.050 – BUSINESS FOOD WASTE REQUIREMENTS AND DECLARING AN EMERGENCY

WHEREAS, Metro regulates solid waste generated within the Metro Region (Oregon City is in the Metro Region) pursuant to Metro's constitutional, statutory and Charter authority as set forth in Metro Code; and

WHEREAS, on or about July 26, 2018, Metro adopted Ordinance No. 18-1418, implementing business food waste requirements to reduce food waste; and

WHEREAS, on November 20, 2019 Oregon City adopted Ordinance No. 19-1011, adopting the 2030 Regional Waste Plan Business Food Waste Requirements abiding by approved ORS 459A; and

WHEREAS, due to the COVID-19 pandemic, the implementation timelines are proposed to be delayed to help Oregon City businesses and because the Code language is already in effect, the City is declaring this an emergency.

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The City hereby amends the portion of the existing Oregon City Municipal Code Chapter 8.26, specifically 8.26.050, which is attached hereto as Exhibit 'A' showing the redlines and Exhibit 'B' clean version of the amended Code.

Section 2. Emergency Clause and Effectiveness. The changes to the Metro requirement timeline triggering these amendments took place September 7, 2020. Coordinated operation requires emergency implementation allowing this Ordinance to take effect immediately.

Read for the first time at a regular meeting of the City Commission held on the 20th day of January, and the City Commission finally enacted the foregoing Ordinance this 20th day of January 2021.

ROCKY SMITH, JR.
Commission President

Attested to this 20th day of January 2021,

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

CHAPTER 8.26 BUSINESS FOOD WASTE REQUIREMENTS

8.26.010 – Purpose

The purpose of this chapter is to comply with the Business Food Waste Requirement set forth in Metro Code Chapter 5.10. The business food waste requirement provides an opportunity to increase recycling of food waste and to assist the Metro region to achieve waste reduction goals. This Chapter is not intending for this requirement to apply to food that is fit for human consumption and accepted for donation by a charitable organization or the use of food waste for animal consumption in compliance with applicable regulations.

8.26.020 – Definitions

As used in this title, the following words and terms shall have the meanings herein ascribed to them, unless the content makes such meaning contradictory thereto:

"Business" means any person or persons, or any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies.

"Covered Business" means any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies, producing food waste as defined in this chapter.

"City" means the City of Oregon City, Oregon.

"Food separate" means to separate food waste items from other solid waste.

"Food waste" is solid waste generated from the distribution, storage, preparation, cooking, handling, selling or serving of food for human consumption. Food waste includes but is not limited to excess, spoiled or unusable food and includes inedible parts commonly associated with food preparation such as pits, shells, bones, rinds, and peels. Food waste does not include liquids or large amounts of oils and meats which are collected for rendering, fuel production or other non-disposal applications, or any food fit for human consumption that has been set aside, stored properly and is accepted for donation by a charitable organization or any food collected to feed animals in compliance with applicable regulations.

"Franchise" includes a franchise, certificate, contract, or license issued by a local government unit authorizing a person to provide solid waste management services.

"Source separate" means to separate recyclable material from other solid waste.

8.26.040 – Applicability

The requirements of this chapter shall apply to all Covered Businesses within the City, except any business activity exempt from a Business License, as defined in Oregon City Municipal Code 5.04.030.

Covered businesses subject to the business food waste requirement include but are not limited to:

- a. Cafeterias and Buffets
- b. Caterers
- c. Correctional Facilities
- d. Food Service Contractors
- e. Restaurants
- f. Grocery Retail
- g. Grocery Wholesale
- h. Specialty Food Markets
- i. Warehouse Clubs

Covered businesses subject to the business food waste requirement only if the entity has a full-service restaurant or on-site food preparation or service:

- a. Colleges and Universities
- b. Drinking Places
- c. Elementary and Secondary Schools
- d. Hospitals
- e. Hotels
- f. Nursing and Residential Care
- g. Retirement and Assisted Living

8.26.050 - Business Food Waste Requirements

1. Businesses shall:
 - a. Food separate from the waste stream all food waste items;
 - b. Provide and maintain food waste container in all internal maintenance or work areas in sizes and quantities sufficient to allow all food waste to be collected and stored; and
 - c. Post accurate signs or adhere labels where food items are collected or stored that identify the materials that the business must source separate and provide source separation instructions.
2. Businesses must comply with the food waste requirements as determined by the quantity of food waste they generate per week. Implementation will begin with the business group producing more than 1000 pounds and will progress to the other groups according to the dates noted below.
 - Business Group 1 ~~1~~-March 31, 202~~1~~0-March 31, 202~~2~~4 ≥0.5 ton (1,000 pounds) per week food waste generated
 - Business Group 2 March 31, 202~~2~~4-Sept. 30, 202~~3~~2 ≥0.25 ton (500 pounds) per week food waste generated
 - Business Group 3 Sept. 30, 202~~3~~2-Sept. 30, 202~~4~~3 ≥0.125 ton (250 pounds) per week food waste generated

Covered Businesses that demonstrate they generate less than 250 pounds per week of food waste are not subject to food waste requirements.

3. Persons and entities that own, manage, or operate premises with business tenants and that provide garbage collection service to those business tenants, shall provide food waste collection systems adequate to enable the business tenants to comply with the requirements of this section.

8.26.070 - Certification Requirements

1. A business that is required to have a business license pursuant to Chapter 5.04 of this Code shall certify to the City in writing, in a form approved by the city manager, upon application for an initial business license and with each annual application for renewal of a business license, that the business is in compliance with the requirements of Oregon City Municipal Code 8.26.050.
2. Failure to submit a certification as required shall be grounds for denial of issuance or renewal of a business license.
3. A business that is not required to have a business license pursuant to Chapter 5.04 of this Code, or that is exempted from the business license requirement by state law, shall certify to the City in writing at least once each calendar year, in a form approved by the city manager, that it is in compliance with the requirements of Oregon City Municipal Code 8.26.050.

8.26.080 – Violations

Code enforcement and penalties will be used as a last resort and reserved for those few uncooperative businesses that refuse to improve their waste prevention recycling practices. Code enforcement actions will be handled as follows:

1. Businesses found to be out of compliance may receive a written notice of non-compliance that describes the violation, how the violation can be cured, and an offer of assistance.
2. If the business does not rectify the violation within the timeframe specified, the enforcement procedures and penalties found in Chapter 1.24 of this Code may be used.

CHAPTER 8.26 BUSINESS FOOD WASTE REQUIREMENTS

8.26.010 – Purpose

The purpose of this chapter is to comply with the Business Food Waste Requirement set forth in Metro Code Chapter 5.10. The business food waste requirement provides an opportunity to increase recycling of food waste and to assist the Metro region to achieve waste reduction goals. This Chapter is not intending for this requirement to apply to food that is fit for human consumption and accepted for donation by a charitable organization or the use of food waste for animal consumption in compliance with applicable regulations.

8.26.020 – Definitions

As used in this title, the following words and terms shall have the meanings herein ascribed to them, unless the content makes such meaning contradictory thereto:

"Business" means any person or persons, or any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies.

"Covered Business" means any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies, producing food waste as defined in this chapter.

"City" means the City of Oregon City, Oregon.

"Food separate" means to separate food waste items from other solid waste.

"Food waste" is solid waste generated from the distribution, storage, preparation, cooking, handling, selling or serving of food for human consumption. Food waste includes but is not limited to excess, spoiled or unusable food and includes inedible parts commonly associated with food preparation such as pits, shells, bones, rinds, and peels. Food waste does not include liquids or large amounts of oils and meats which are collected for rendering, fuel production or other non-disposal applications, or any food fit for human consumption that has been set aside, stored properly and is accepted for donation by a charitable organization or any food collected to feed animals in compliance with applicable regulations.

"Franchise" includes a franchise, certificate, contract, or license issued by a local government unit authorizing a person to provide solid waste management services.

"Source separate" means to separate recyclable material from other solid waste.

8.26.040 – Applicability

The requirements of this chapter shall apply to all Covered Businesses within the City, except any business activity exempt from a Business License, as defined in Oregon City Municipal Code 5.04.030.

Covered businesses subject to the business food waste requirement include but are not limited to:

- a. Cafeterias and Buffets
- b. Caterers
- c. Correctional Facilities
- d. Food Service Contractors
- e. Restaurants
- f. Grocery Retail
- g. Grocery Wholesale
- h. Specialty Food Markets
- i. Warehouse Clubs

Covered businesses subject to the business food waste requirement only if the entity has a full-service restaurant or on-site food preparation or service:

- a. Colleges and Universities
- b. Drinking Places
- c. Elementary and Secondary Schools
- d. Hospitals
- e. Hotels
- f. Nursing and Residential Care
- g. Retirement and Assisted Living

8.26.050 - Business Food Waste Requirements

1. Businesses shall:
 - a. Food separate from the waste stream all food waste items;
 - b. Provide and maintain food waste container in all internal maintenance or work areas in sizes and quantities sufficient to allow all food waste to be collected and stored; and
 - c. Post accurate signs or adhere labels where food items are collected or stored that identify the materials that the business must source separate and provide source separation instructions.
2. Businesses must comply with the food waste requirements as determined by the quantity of food waste they generate per week. Implementation will begin with the business group producing more than 1000 pounds and will progress to the other groups according to the dates noted below.
 - Business Group 1 March 31, 2021-March 31, 2022 ≥ 0.5 ton (1,000 pounds) per week food waste generated
 - Business Group 2 March 31, 2022-Sept. 30, 2023 ≥ 0.25 ton (500 pounds) per week food waste generated
 - Business Group 3 Sept. 30, 2023-Sept. 30, 2024 ≥ 0.125 ton (250 pounds) per week food waste generated

Covered Businesses that demonstrate they generate less than 250 pounds per week of food waste are not subject to food waste requirements.

3. Persons and entities that own, manage, or operate premises with business tenants and that provide garbage collection service to those business tenants, shall provide food waste collection systems adequate to enable the business tenants to comply with the requirements of this section.

8.26.070 - Certification Requirements

1. A business that is required to have a business license pursuant to Chapter 5.04 of this Code shall certify to the City in writing, in a form approved by the city manager, upon application for an initial business license and with each annual application for renewal of a business license, that the business is in compliance with the requirements of Oregon City Municipal Code 8.26.050.
2. Failure to submit a certification as required shall be grounds for denial of issuance or renewal of a business license.
3. A business that is not required to have a business license pursuant to Chapter 5.04 of this Code, or that is exempted from the business license requirement by state law, shall certify to the City in writing at least once each calendar year, in a form approved by the city manager, that it is in compliance with the requirements of Oregon City Municipal Code 8.26.050.

8.26.080 – Violations

Code enforcement and penalties will be used as a last resort and reserved for those few uncooperative businesses that refuse to improve their waste prevention recycling practices. Code enforcement actions will be handled as follows:

1. Businesses found to be out of compliance may receive a written notice of non-compliance that describes the violation, how the violation can be cured, and an offer of assistance.
2. If the business does not rectify the violation within the timeframe specified, the enforcement procedures and penalties found in Chapter 1.24 of this Code may be used.

**Solid Waste
Administrative Rule**

AR 5.10-4000

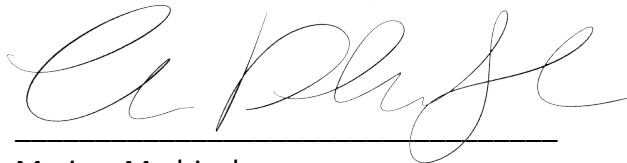
**Administrative Rule of Metro Code Chapter 5.10
Administrative Rule Adoption Record and Findings**

**AR 5.10-4000 through 4085
Business Food Waste Requirement Administrative Rules**

These administrative rules are adopted under the authority of Metro Code Chapter 5.10, which authorizes the Chief Operating Officer (COO) to adopt and amend administrative rules. In accordance with Metro Code, the COO provided an opportunity for public comment and held a public hearing on these rules before their adoption.

The COO finds that these administrative rules are necessary to implement certain provisions of Metro Code Chapter 5.10 and hereby adopts Administrative Rules Nos. 5.10-4000 through 4085. The requirements of these administrative rules are in addition to all other requirements and provisions in Metro Code Chapter 5.10. These rules have the same force and effect as any other provision of Metro Code Chapter 5.10.

It is so ordered:



Marissa Madrigal
Metro Chief Operating Officer

9/17/20

Date

SOLID WASTE

ADMINISTRATIVE RULES

AR 5.10-4000 through 4085

Business Food Waste Requirement

Effective: October 31, 2018

Revised September 10, 2020

Table of Contents

5.10 - 4000	Purpose
5.10 - 4005	Policy and Legal Authority
5.10 - 4010	Definitions
5.10 - 4015	Applicability of Rules
5.10 - 4020	Effective Dates
5.10 - 4025	Exemptions
5.10 - 4030	Compliance Waivers
5.10 - 4035	Access to Services Payments
5.10 - 4040	Local Government Requirements
5.10 - 4045	Local Government Annual Implementation Plan
5.10 - 4050	Local Government Performance Standard
5.10 - 4055	Business Assistance
5.10 - 4060	Local Government Enforcement of the Requirement
5.10 - 4065	Local Government Temporary Waivers to Covered Businesses
5.10 - 4070	Metro Enforcement of the Requirement
5.10 - 4075	Self-Haul of Source-Separated Food Waste
5.10 - 4080	Compliance Verification and Reporting
5.10 - 4085	Funding Guidelines

5.10 – 4000 Purpose

1. The purpose of these rules is to implement the provisions of the business food waste requirement set forth in Metro Code Section 5.10.410-5.10.470.
2. The purpose of the business food waste requirement is to provide a region-wide standard for the separation and collection of food waste from food-waste-generating businesses. For the purposes of these rules, Covered Businesses are defined as organizations that cook, assemble, process, serve, or sell food or do so as service providers for other enterprises.
3. Food is identified as a primary material for recovery within the Regional Solid Waste Management Plan because of its prevalence in the region's waste stream and the negative environmental impacts of disposing food in a landfill.
4. The prevention of food waste, the donation of edible food for human consumption and the use of food waste to feed animals are the region's preferred methods for managing surplus food. Food that has been stored properly, is fit for human consumption and is accepted for donation and food that has been set aside and is destined for animal consumption in compliance with applicable regulations is not subject to this administrative rule.

5.10 – 4005 Policy and Legal Authority

1. Metro Code Chapter 5.10 requires local governments to establish mandatory programs to separate and collect food waste from certain food-waste generating businesses referred to in these rules as “Covered Businesses.”
2. These administrative rules are issued under the authority of Metro Code Section 5.10.080. These rules are in addition to all other requirements and provisions in Metro Code Chapter 5.10.

5.10 – 4010 Definitions

Unless otherwise specifically defined, all terms used are as defined in Metro Code Chapter 5.00.

“**Covered Business**” means an organization that cooks, assembles, processes, serves, or sells food or does so as a service provider for other enterprises.

“**Business Groups**” means groups of Covered Businesses subject to the business food waste requirement by certain effective dates as delineated in the Applicability section of these rules.

“**Food waste**” means waste from fruits, vegetables, meats, dairy products, fish, shellfish, nuts, seeds, grains, coffee grounds, and other food that results from the distribution, storage, preparation, cooking, handling, selling or serving of food for human consumption. Food waste includes but is not limited to excess, spoiled or unusable food and includes inedible parts commonly associated with food preparation such as pits, shells, bones, and peels. Food waste does not include liquids or large amounts of oils and meats which are collected for rendering, fuel production or other non-disposal applications, or any food fit for human consumption that has been set aside, stored properly and is accepted for donation by a charitable organization and any food collected to feed animals in compliance with applicable regulations.

5.10 – 4015 Applicability of Rules and Effective Date

1. The business food waste requirement applies to all local governments within the Metro boundary.
2. Covered Businesses subject to the business food waste requirement include, but are not limited to:

Cafeterias & buffets	Grocery retail
Caterers	Grocery wholesale
Colleges & universities*	Hospitals*
Correctional facilities	Hotels*
Drinking places*	Limited service restaurants
Elementary and secondary schools*	Nursing & residential care*
Food product manufacturing	Retirement & assisted living*
Food service contractors	Specialty food markets
Full service restaurants	Warehouse clubs

*Only those businesses with full-service restaurants or on-site food preparation or service are subject to these rules.

3. Covered Businesses must meet the food waste requirement according to a schedule determined by the quantity of food waste they generate on average, in three phases as listed below. Implementation will begin with Business Group 1 and progress to the other groups according to the Effective Dates described in Rule 4020. Covered Businesses that demonstrate they generate less than 250 pounds per week of food waste are not subject to this requirement.

Business Group 1	Business Group 2	Business Group 3
≥0.5 ton (1,000 pounds) per week food waste generated	≥0.25 ton (500 pounds) per week food waste generated	≥0.125 ton (250 pounds) per week food waste generated

4. A person that provides space to a Covered Business must allow or facilitate provision of a food waste collection service for the Covered Business.

5.10 – 4020 Effective Dates

These rules are effective on October 31, 2018.

Local governments must meet the following deadlines:

1. Local Government Adoption of Requirement: July 31, 2019.
2. Implement Requirement for all Covered Businesses in Business Group 1: March 31, 2021-March 31, 2022.
3. Implement Requirement for all Covered Businesses in Business Group 2: March 31, 2022-September 30, 2023.
4. Implement Requirement for all Covered Businesses in Business Group 3: September 30, 2023-September 30, 2024.

5.10 – 4025 Exemptions

1. Governments Outside Metro Boundary: A local government outside of the Metro Boundary is exempt from this business food waste requirement.
2. No Commercial District: A local government that does not have a commercial zone or commercial district is exempt from this business food waste requirement.

5.10 – 4030 Compliance Waivers

Metro may grant a compliance waiver to a local government that meets the standards below.

1. Business quantity minimum threshold: Metro will waive application of the business food waste requirement for a local government with five or fewer Covered Businesses within its boundary. Metro will review the number of Covered Businesses in each local government jurisdiction annually. If Metro determines that a local government exceeds the minimum number of Covered Businesses during the review period, Metro will notify the local government of its findings in writing and will require the local government to comply with these rules within 12 months of the notification.

5.10 – 4035 Access to Services Payments

1. Franchised waste haulers: Metro may provide payments on a temporary basis to a waste hauler operating within the region under local government commercial collection franchise authority that is not within reasonable proximity of food waste transfer or processing services. Reasonable proximity is defined as within a distance that is equal to the average uncongested travel time one way to the nearest in-region transfer station that accepts municipal solid waste. Metro will establish zones to clearly define areas that are outside reasonable proximity and may apply a travel time inflator to account for congestion. Payment will be based on the number of loads per week of food waste generated within the zone at a 50% capture rate and the additional time required to deliver these loads to the nearest food waste transfer or processing services. Metro will determine whether a waste hauler is eligible to receive payment, the payment amount, disbursement method, and frequency of payments.
2. Metro will calculate the payment amount for a waste hauler using the following elements:
 - a. Average cost per hour to operate collection vehicle in the Metro region.
 - b. Number and type of Covered Businesses entities within the zone and within the waste hauler's collection franchise boundary.
 - c. Estimated total tons per week generated by Covered Businesses within the zone at a 50% capture rate.
 - d. Number of loads per week generated by Covered Businesses within the zone. Load size will be based on the average size of route truck food waste loads delivered to Metro Central Transfer Station over a 12 month period.
 - e. Maximum additional time round trip beyond reasonable proximity required to transport loads to food waste transfer or processing services.
 - f. Additional hours multiplied by cost per hour.
3. Metro will periodically review the elements used to calculate the payments and will make any adjustments that are necessary including utilizing new sources of data. Metro will notify waste haulers and local governments of any adjustments to the payment calculation elements within 30 days.
4. The following criteria must be met in order for a waste hauler to qualify for payment:
 - a. The local government must adopt a legally-enforceable mechanism that meets the business food waste requirement and performance standard by the adoption deadline.
 - b. Waste haulers must enter into a contractual agreement with Metro.
 - c. Waste haulers must submit annual reports to Metro no later than March 31. Reports must demonstrate that funds have been included in Detailed Cost Reports submitted annually by waste haulers to local governments.
 - d. Metro may request that local governments confirm that the payments received by waste haulers have been included in required Detailed Cost Reports and are factored into the collection rate-setting process. Cooperative programs may provide confirmation on behalf of member jurisdictions.
5. Metro will revoke payments if the waste hauler does not report payments or provides false or incomplete information.

6. Metro will discontinue payments to a waste hauler once transfer or processing services become available within reasonable proximity as determined by Metro. Metro will notify local governments and affected waste haulers at least 30 days before discontinuing payments.
7. Metro will re-evaluate the payments periodically and will automatically renew them until Metro determines that circumstances have changed. The waste hauler or local government does not need to take any action to renew payments unless otherwise directed by Metro.
8. Covered Businesses: Metro may provide payments on a temporary basis to a Covered Business that transports its own source-separated food waste. Food waste must be generated solely from its own operations and generated from a single location within the Metro boundary that is not within reasonable proximity of food waste transfer or processing services. Reasonable proximity is defined as within a distance that is equal to the average uncongested travel time one way to the nearest in-region transfer station that accepts commercially-derived municipal solid waste. Metro will determine whether a Covered Business is eligible to receive a payment, the payment amount, disbursement method and frequency.
9. Metro will calculate the payment amount for a Covered Business using the following elements:
 - a. Average cost per hour to operate collection vehicle in the Metro region.
 - b. Total loads and tons per week of acceptable food waste delivered to Metro Central Transfer Station based on actual delivery weights recorded by the Metro Central scale house.
 - c. Location zone of the point of generation of the food waste.
 - d. Maximum additional time round trip beyond reasonable proximity required to deliver loads to the nearest food waste transfer or processing services.
 - e. Additional hours multiplied by cost per hour.
10. Metro will periodically review the elements used to calculate the payments and will make any adjustments that are necessary including utilizing new sources of data. Metro will notify the Covered Business of any adjustments to the payment calculation elements within 30 days.
11. The following criteria must be met in order for a Covered Business to qualify for payment:
 - a. The business must be located within the jurisdictional boundaries of a local government that has adopted a legally-enforceable mechanism that meets the business food waste requirement and performance standard by the adoption deadline.
 - b. The business must apply for a payment and submit all required information in a format prescribed by Metro.
 - c. The business must fully comply with all program criteria or standards.
 - d. The business must demonstrate to Metro that its food waste is being disposed as waste in a landfill. A business does not qualify for payments if it transports its food waste to other locations for other uses or recovery.
 - e. A business must have a credit account with Metro for use of Metro Central station including obtaining Metro-issued RFID tags. Cash transactions are ineligible for access payments.
12. Metro will discontinue payment to a Covered Business once a transfer or processing facility becomes available within reasonable proximity to the business as determined by Metro. Metro will notify any affected Covered Businesses at least 30 days before discontinuing payments.

13. Metro will re-evaluate the payments periodically and will automatically renew them until Metro determines that circumstances have changed. Metro may revoke a payment to a Covered Business any time for a violation of any criteria or payment condition.

5.10 – 4040 Local Government Requirements

1. A local government must implement one of the following:
 - a. Adopt a legally-enforceable mechanism that meets the performance standard in rule 4050. A legally-enforceable mechanism includes but is not limited to local code, regulation, ordinance, or law.
 - b. Adopt the Business Food Waste Requirement Model Ordinance and require business food waste be delivered to a solid waste facility authorized by Metro.
2. A local government must require Covered Businesses within its jurisdiction to:
 - a. Separate food waste from all other solid waste for collection.
 - b. Recover food waste that is controlled by the business, agents, and employees. This requirement does not apply to food wastes controlled by customers or the public. At its discretion, a Covered Business may also collect food waste from customers but must ensure that food wastes are free of non-food items. K-12 schools may also include student-generated food waste from school cafeteria meals but must ensure that food wastes are free of non-food items.
3. A local government must require persons or entities that lease or provide space to a Covered Business to allow or facilitate the provision of food waste collection service for those Covered Businesses.
4. A local government must submit annual implementation plans to Metro according to the procedures set forth in these Administrative Rules.
5. A local government may:
 - a. Implement the program in the manner that is most efficient and effective for local conditions, local solid waste system considerations, geography, and that which best suits the Covered Businesses as long as the local government complies with the performance standard and deadlines.
 - b. Grant temporary waivers to a Covered Business according to the procedures set forth in these Administrative Rules.
 - c. Designate another agency or partner to implement the program on their behalf. A designated agency is a county agency, city agency or contracted agent that is responsible for designing and implementing the business food waste requirement according to the procedures set forth in these Administrative Rules.

5.10 – 4045 Local Government Annual Implementation Plan

A local government is required to submit to Metro an annual implementation plan regarding the business food waste requirement. A local government may develop and implement its plan individually or through cooperative or partnership agreements between governments. A local government may implement the business food waste requirement in a manner that best suits local conditions as long as

the local government meets or exceeds the performance standard. An implementation plan must meet the performance standard set forth in these Administrative Rules.

5.10 – 4050 Local Government Performance Standard

1. Business Notice of Requirement. After a local government adopts the business food waste requirement and according to the implementation schedule, the local government must send notice to Covered Businesses that outlines the requirement and how to comply and receive assistance. A local government must establish a mechanism to notify new Covered Businesses of the business food waste requirement.
2. Business Compliance. A local government must require that Covered Businesses comply with the business food waste requirement including, but not limited to:
 - a. Adherence with the implementation schedule.
 - b. Correctly-labeled and easily-identifiable collection receptacles.
 - c. Arranging for food waste collection service as necessary.
 - d. Ensuring building owners or managers of single or multi-tenant buildings containing Covered Businesses allow or otherwise enable the provision of food waste collection service to lessees or occupants subject to the business food waste requirement.
3. A local government must ensure appropriate collection receptacles and service are made available.
4. A local government must require that franchised or otherwise licensed waste haulers deliver food waste to a facility that complies with federal, state, regional and local laws and regulations.

5.10 – 4055 Business Assistance

A local government must provide educational materials and offer technical assistance to Covered Businesses to assist with program set-up, understanding program requirements and separation standards.

- a. Educational materials must include, at a minimum:
 - i. Labels for collection containers that clearly communicate what is allowed in the food waste collection system.
 - ii. Signs and/or posters that provide clear and simple instructions.
 - iii. All signs and program materials must be designed to be understood by people with limited English proficiency.
 - iv. Program contact phone number for businesses to call for program assistance.
- b. Technical assistance offered must include, at a minimum:
 - i. Education and assistance with food waste prevention techniques and edible food donation programs.
 - ii. Assistance with food waste collection program set up and training on-site at the business.
 - iii. Assistance with mitigating issues arising from program participation such as odors or vectors.
 - iv. Ensure correct labeling of all food waste collection receptacles.
 - v. Serve as a facilitator between the business and solid waste hauler as needed to assist with the provision of appropriate collection receptacles and service frequency.

5.10 – 4060 Local Government Enforcement of the Business Food Waste Requirement

A local government must establish a method for ensuring compliance with the business food waste requirement. Covered Businesses may be subject to enforcement actions should they not meet the compliance dates listed in section 5.10 – 4020.

5.10 – 4065 Local Government Temporary Compliance Waivers to Covered Businesses

1. A local government may establish a method for granting temporary waivers to Covered Businesses. A local government must obtain Metro approval of the waiver method and conditions.
2. Temporary waivers must meet the following minimum standard:
 - a. May not exceed 12 months, annual renewal allowed.
 - b. In order to be renewed, a local government must annually review waivers to determine if conditions that warrant the waiver are still in place and cannot be remedied.
 - c. Covered Businesses seeking a temporary waiver must agree to periodic waiver verification site visits. Local governments are responsible for determining if one or more of the following criteria warrant a temporary waiver:
 - i. Less than 250 pounds per week of food in the disposed waste.
 - ii. Food waste produced by the Covered Business is not suitable for inclusion in the program, or cannot be made suitable without unreasonable expense.
 - iii. Physical barriers to compliance exist and cannot be immediately remedied.
 - iv. Compliance results in unreasonable capital expense.
 - v. Compliance results in a violation of other government ordinance, health or safety code.

5.10 – 4070 Metro Enforcement of the Requirement

A local government may request that Metro assist with enforcement of the business food waste requirement. Metro will provide enforcement assistance after Metro and the local government establish an Intergovernmental Agreement.

5.10 – 4075 Self-Haul of Source-Separated Food Waste

The local government may allow a Covered Business to self-haul source-separated food waste generated by that business. The local government must require the Covered Business to comply with these rules, including without limitation delivery of the food waste to a facility authorized by Metro.

5.10 – 4080 Compliance Verification and Reporting

Local governments must collect and report data to Metro to demonstrate compliance and assist with program evaluation. Metro will determine reporting requirements and frequency, review data and make a determination of compliance as set forth in Annual Implementation Plans.

5.10 – 4085 Funding Guidelines

1. Metro may provide funding to support the implementation of the business food waste requirement to local governments upon adoption of the requirements by the Metro Council. Metro intends to

provide funding for the first five fiscal years of the business food waste requirement, subject to Metro Council approval of funding amounts during the annual budget process. After the first five years of implementation, ongoing program maintenance funding may also be provided subject to Metro Council approval during the annual budget process.

2. A local government must use funds for business assistance, infrastructure, compliance, and enforcement efforts to implement the business food waste requirement. Metro will review and approve the intended uses prior to distributing funds.
3. If a local government has designated another agency or partner to implement the program, Metro may, at its sole discretion, distribute funds to the designated agency. A designated agency is a county agency, city agency or contracted agent that is responsible for designing and implementing a waste reduction program including the business food waste requirement, on behalf of a local government.
4. In order to receive funding, a local government or its designated agency must submit documentation demonstrating compliance with the requirements of Metro Code 5.10.410-5.10.470 and these rules and enter into an Intergovernmental Agreement with Metro.
5. Metro will withhold funding associated with the implementation of the business food waste requirement from governments that do not comply with the business food waste requirement. If governments remain out of compliance for more than two years, funding associated with other programs may also be withheld or Metro may seek any remedy under applicable state law. Governments that are, in the sole opinion of Metro, actively making good faith efforts to adopt the business food waste requirement will remain eligible for associated funding. Metro will determine how any withheld funds will be utilized.

ORDINANCE NO. 19-1011

AN ORDINANCE OF THE CITY OF OREGON CITY AMENDING THE OREGON CITY MUNICIPAL CODE BY ADDING A NEW CHAPTER 8.26 BUSINESS FOOD WASTE REQUIREMENTS

WHEREAS, Metro regulates solid waste generated within the Metro region pursuant to Metro's constitutional, statutory, and charter authority and as set forth in Metro Code; and

WHEREAS, on or about July 26, 2018, Metro adopted Ordinance No. 18-1418 to implement business food waste requirements to recycle and reduce food waste; and

WHEREAS, the Metro region has had a voluntary business food waste collection program in place for over ten years, yet only fourteen percent of the total food waste is recovered; and

WHEREAS, the State of Oregon Department of Environmental Quality, via Oregon Revised Statutes 459A.010, has set a food waste recovery goal of 25% by 2020; and

WHEREAS, the State of Oregon Department of Environmental Quality has added a required food waste collection program for nonresidential generators for compliance with state law under Oregon Administrative Rule 340 Division 90; and

WHEREAS, the City Commission of Oregon City seeks to comply with Oregon Administrative Rule 340-090-0040 and Metro Recycling and Waste Reduction mandating requirements for food waste disposal.

NOW, THEREFORE, THE CITY OF OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The Oregon City Municipal Code is hereby amended by the addition of a new Chapter 8.26 "Business Food Waste Requirements" to read as follows:

CHAPTER 8.26 BUSINESS FOOD WASTE REQUIREMENTS

8.26.010 – Purpose

The purpose of this chapter is to comply with the Business Food Waste Requirement set forth in Metro Code Chapter 5.10. The business food waste requirement provides an opportunity to increase recycling of food waste and to assist the Metro region to achieve waste reduction goals. This Chapter is not intending for this requirement to apply to food that is fit for human consumption and accepted for donation by a charitable organization or the use of food waste for animal consumption in compliance with applicable regulations.

8.26.020 – Definitions

As used in this title, the following words and terms shall have the meanings herein ascribed to them, unless the content makes such meaning contradictory thereto:

"Business" means any person or persons, or any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies.

"Covered Business" means any entity, corporate or otherwise, engaged in commercial, professional, charitable, political, industrial, educational, or other activity that is nonresidential in nature, including public bodies, producing food waste as defined in this chapter.

"City" means the City of Oregon City, Oregon.

"Food separate" means to separate food waste items from other solid waste.

"Food waste" is solid waste generated from the distribution, storage, preparation, cooking, handling, selling or serving of food for human consumption. Food waste includes but is not limited to excess, spoiled or unusable food and includes inedible parts commonly associated with food preparation such as pits, shells, bones, rinds, and peels. Food waste does not include liquids or large amounts of oils and meats which are collected for rendering, fuel production or other non-disposal applications, or any food fit for human consumption that has been set aside, stored properly and is accepted for donation by a charitable organization or any food collected to feed animals in compliance with applicable regulations.

"Franchise" includes a franchise, certificate, contract, or license issued by a local government unit authorizing a person to provide solid waste management services.

"Source separate" means to separate recyclable material from other solid waste.

8.26.040 – Applicability

The requirements of this chapter shall apply to all Covered Businesses within the City, except any business activity exempt from a Business License, as defined in Oregon City Municipal Code 5.04.030.

Covered businesses subject to the business food waste requirement include but are not limited to:

- a. Cafeterias and Buffets
- b. Caterers
- c. Correctional Facilities
- d. Food Service Contractors
- e. Restaurants
- f. Grocery Retail
- g. Grocery Wholesale
- h. Specialty Food Markets
- i. Warehouse Clubs

Covered businesses subject to the business food waste requirement only if the entity has a full-service restaurant or on-site food preparation or service:

- a. Colleges and Universities
- b. Drinking Places
- c. Elementary and Secondary Schools
- d. Hospitals

- e. Hotels
- f. Nursing and Residential Care
- g. Retirement and Assisted Living

8.26.050 - Business Food Waste Requirements

1. Businesses shall:
 - a. Food separate from the waste stream all food waste items;
 - b. Provide and maintain food waste container in all internal maintenance or work areas in sizes and quantities sufficient to allow all food waste to be collected and stored; and
 - c. Post accurate signs or adhere labels where food items are collected or stored that identify the materials that the business must source separate and provide source separation instructions.
2. Businesses must comply with the food waste requirements as determined by the quantity of food waste they generate per week. Implementation will begin with the business group producing more than 1000 pounds and will progress to the other groups according to the dates noted below.
 - Business Group 1-March 31, 2020-March 31, 2021 ≥ 0.5 ton (1,000 pounds) per week food waste generated
 - Business Group 2 March 31, 2021-Sept. 30, 2022 ≥ 0.25 ton (500 pounds) per week food waste generated
 - Business Group 3 Sept. 30, 2022-Sept. 30, 2023 ≥ 0.125 ton (250 pounds) per week food waste generated

Covered Businesses that demonstrate they generate less than 250 pounds per week of food waste are not subject to food waste requirements.

3. Persons and entities that own, manage, or operate premises with business tenants and that provide garbage collection service to those business tenants, shall provide food waste collection systems adequate to enable the business tenants to comply with the requirements of this section.

8.26.070 - Certification Requirements

1. A business that is required to have a business license pursuant to Chapter 5.04 of this Code shall certify to the City in writing, in a form approved by the city manager, upon application for an initial business license and with each annual application for renewal of a business license, that the business is in compliance with the requirements of Oregon City Municipal Code 8.26.050.
2. Failure to submit a certification as required shall be grounds for denial of issuance or renewal of a business license.
3. A business that is not required to have a business license pursuant to Chapter 5.04 of this Code, or that is exempted from the business license requirement by state law, shall certify to the City in writing at least once each calendar year, in a form approved by the city manager, that it is in compliance with the requirements of Oregon City Municipal Code 8.26.050.

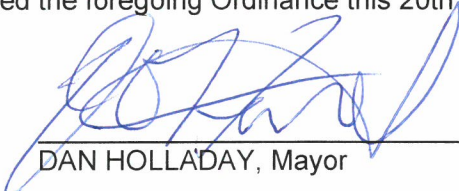
8.26.080 – Violations

Code enforcement and penalties will be used as a last resort and reserved for those few uncooperative businesses that refuse to improve their waste prevention recycling practices. Code enforcement actions will be handled as follows:

1. Businesses found to be out of compliance may receive a written notice of non-compliance that describes the violation, how the violation can be cured, and an offer of assistance.
2. If the business does not rectify the violation within the timeframe specified, the enforcement procedures and penalties found in Chapter 1.24 of this Code may be used.

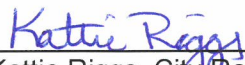
Section 2. Severability. If any provision of this Ordinance or its application to any person or circumstances is held to be unconstitutional or invalid for any reason, the remainder of this Ordinance or the application of the provisions to other persons or circumstances shall not be affected.

Read for the first time at a regular meeting of the City Commission held on the 6th day of November 2019, and the City Commission enacted the foregoing Ordinance this 20th day of November 2019.



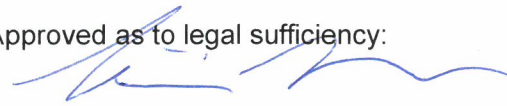
 DAN HOLLADAY, Mayor

Attested to this 20th day of November 2019:



 Katie Riggs, City Recorder

Approved as to legal sufficiency:



 City Attorney



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 01/20/2021
From: Community Development Director Laura Terway

SUBJECT:

First Reading of Ordinance No. 21-1003, Amending the Oregon City Municipal Code; Title 12: Streets, Sidewalks, and Public Places, Title 13: Public Services, and Title 17: Zoning (GLUA 20-33, LEG 20-01, Public Works Code Amendments Package #1)

STAFF RECOMMENDATION:

Approve the first reading of Ordinance No. 21-1003 and continue the Public Hearing to February 3, 2021.

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 will be 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.

At the January 6, 2021, City Commission Hearing, the City Commission requested additional edits to the proposed redlines and requested staff to return with a 1st Reading of the amended packet on January 20, 2021. A Memo from Josh Wheeler (Exhibit 1) details the proposed revisions.

Ordinance No. 21-1003 Package #1

OCMC 13.04 & OCMC 13.08 Water and Sewer Services

OCMC 12.04 Obstructions

OCMC 17.80 Communication Facilities

The City of Oregon City Public Works Department is implementing a number of projects which require various changes to the City Code. The Oregon City Municipal Code contains development standards for private and public development and construction. Additionally, the City's Comprehensive Plan anticipates the need for amendments from time to time in order to maintain a balance of predictability for developers and neighborhood livability for residents.

The proposed code revisions generally address the need for clarifications in technical development review and to address new policy direction on obstructions in the Right of Way. Larger policy questions may be addressed during the existing Oregon City Comprehensive Plan Update (www.oc2040.com), which looks at broader community policy within a robust public outreach framework, which could result in additional code revisions in the future.

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. The Planning Commission voted 7-0 to recommend approval of Planning file GLUA 20-00033: LEG-20-00001 to the City Commission on November 9, 2020.

At the November 18, 2020 City Commission Hearing, the City Commission requested additional information on the infiltration and inflow (I&I) program and code amendments, land use review of capital projects, sidewalk obstructions, and definitions, and regulating additional land within the Geohazard Overlay District.

Staff is proposing to work through the items with the City Commission at a series of work sessions. As there are multiple chapters involved with this proposal, the larger package of amendments will be divided into a series of smaller amendments, which will each be considered independently through separate Ordinances.

This approach will allow the City Commission and the public the ability to review each package closely while moving efficiently through the review process. The items which the City Commission has identified comfort with will be proposed for approval sooner than the other items of concern, which will be modified in work sessions until they are ready to move forward to a hearing. The tentative schedule may be found below and will be updated as revised:

February 9, 2021 City Commission Work Session

The review process for the Capital Improvement Projects (CIP)

January 20, 2021 City Commission Hearing

Proposed 1st Reading of ORD no. 21-1003 for the adoption of the following chapters:

- OCMC 13.04 & OCMC 13.08 Water and Sewer Services
- OCMC 12.04 Obstructions
- OCMC 17.80 Communication Facilities

February 3, 2021 City Commission Hearing

Proposed 2nd Reading of ORD no. 21-1003 for the adoption of the following chapters:

- OCMC 13.04 & OCMC 13.08 Water and Sewer Services
- OCMC 12.04 Obstructions
- OCMC 17.80 Communication Facilities
- Resolution 21-01 – Sidewalk Sales
- Resolution 21-02 – Sanitary Sewer Design Standards
- Resolution 21-03 – Sidewalk Obstruction Standard Operating Policy

March 3, 2021 City Commission Hearing

Proposed 1st Reading for the adoption of the following chapters:

- OCMC 13.24 & OCMC 13.34 Telecommunication Facilities
- OCMC 16.12 Driveways, Overhead Utilities
- OCMC 17.04 Definitions
- OCMC 17.62 Site Plan and Design Review
- Title 17 miscellaneous chapters (cross-reference edits)

March 9, 2021 City Commission Work Session

Regulating additional land within the Geologic Hazard Overlay District

March 16, 2021 City Commission Hearing

Proposed 2nd Reading for the adoption of the following chapters:

- OCMC 13.24 & OCMC 13.34 Telecommunication Facilities
- OCMC 16.12 Driveways, Overhead Utilities
- OCMC 17.04 Definitions
- OCMC 17.62 Site Plan and Design Review
- Title 17 miscellaneous chapters (cross-reference edits)

April 7, 2021 City Commission Hearing

Proposed 1st Reading for the adoption of the following chapters:

- OCMC 17.44 Geologic Hazards Overlay District

April 21, 2021 City Commission Hearing

Proposed 2nd Reading for the adoption of the following chapters:

- OCMC 17.44 Geologic Hazards Overlay District

The following policies will be reviewed for changes through a separate resolution process which will be scheduled for the meeting after the 1st reading of the associated code package.

- Undergrounding Private Utilities – Standard Operating Policy (January 20, 2021)
- Sidewalk Obstructions – Standard Operating Policy (January 20, 2021)
- Sanitary Sewer Design Standards (January 20, 2021)
- Inflow and Infiltration Reduction in Private Laterals and Downspouts – Standard Operating Policy (Date TBD)
- New Sewer Service Line Fee (Date TBD)

OPTIONS:

1. Approve the first reading of Ordinance No. 21-1003 and continue the Public Hearing to February 3, 2021.
2. Continuation of first reading of Ordinance No. 21-1003 to February 3, 2021.
3. Continuation to a different date certain.

BUDGET IMPACT:

Amount: Unknown

FY(s):

Funding Source(s):

ORDINANCE NO. 21-1003

AN ORDINANCE OF THE CITY OF OREGON CITY AMENDING THE OREGON CITY MUNICIPAL CODE; TITLE 12: STREETS, SIDEWALKS, AND PUBLIC PLACES, TITLE 13: PUBLIC SERVICES, AND TITLE 17: ZONING

WHEREAS, the City of Oregon City Public Works Department is implementing a number of projects which require various changes to the City Code; and

WHEREAS, the City's Comprehensive Plan anticipates the need for amendments from time to time in order to maintain a balance of predictability for developers and neighborhood livability for residents; and

WHEREAS, the Oregon City Municipal Code contains development standards for private and public development and construction; and

WHEREAS, the unrelated proposed code revisions generally address the need for clarifications in technical development review, to address new policy direction with respect to obstructions in a Right of Way, and will provide greater certainty for developers and property owners; and

WHEREAS, as there are multiple chapters proposed for revision, the larger package of amendments will be 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 public the ability to review each package closely while moving efficiently through the review process; and

WHEREAS, the amendments will result in greater transparency within the Oregon City Municipal Code; and

WHEREAS, the hearing dates for the remainder of the project amendments and their implementing ordinances will be provided in the City Commission's Staff Reports for Legislative File: GLUA 20:00033, LEG 20-00001 to allow the public to fully participate in the hearings process.

NOW, THEREFORE, THE CITY OF OREGON CITY ORDAINS AS FOLLOWS:

- Section 1.** The City Commission adopts the amendments to Oregon City Municipal Code attached as Exhibit 'A,' amending Oregon City Municipal Code Title 12: Streets, Sidewalks and Public Places, Title 13: Public Services, and Title 17: Zoning.
- Section 2.** The Commission adopts the "Planning Staff Report and Recommendation for Legislative File: LEG 20-0001" attached as Exhibit 'B' to support its decision.
- Section 3.** Severability. If any provision of this Ordinance or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this Ordinance that can be given effect without the invalid provision or application, and to this end, the provisions of this Ordinance are severable.

Section 4. Effective Date. This Ordinance shall take effect 30 days from the date of adoption.

Read for the first time at a regular meeting of the City Commission held on the 6th day of January 2021. The City Commission finally enacted the foregoing Ordinance this 20th day of January 2021.

RACHEL LYLES SMITH,
Commission President

Attested to this 20th day of January 2021,

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

Exhibits:

Exhibit A – Amended Sections of the Oregon City Municipal Code Title 12, Title 13, and Title 17

Exhibit B – Planning Staff Report and Recommendation for Legislative File: LEG 20-0001

Oregon City Municipal Code

GLUA 20-33 (LEG 20-01)

Public Works Code Amendments Package #1

Ordinance No. 21-1003 Package #1

OCMC 13.04 & OCMC 13.08 Water and Sewer Services

OCMC 12.04 Obstructions

OCMC 17.80 Communication Facilities

Version: Adopted –Clean Copy





Oregon City Municipal Code

Chapter 12.04 Streets, Sidewalks, and Public Places

12.04.003 Definitions.

Whenever the words or terms and their derivatives are used in this chapter, they shall be given the meaning set forth in OCMC 17.04, unless the context dictates applying a different meaning.

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

- A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.
- B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.
- C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure, or other means.
- D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses, and permits.
- E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way and does not obligate the City to maintain or repair any part of the right-of-way.

12.04.025 - Driveways.

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

12.04.030 - Maintenance and repair.

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

12.04.031 - Liability for sidewalk injuries.

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

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

12.04.032 - Required sidewalk repair.

- A. When the Public Works Director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk.
- B. The notice shall require the owner of the property adjacent to the defective sidewalk to complete the repair of the sidewalk within ninety days after the service of notice. The notice shall also state that if the repair is not made by the owner, the City may do the work and the cost of the work shall be assessed against the property adjacent to the sidewalk.
 - 1. All sidewalks hereafter constructed in the City on improved streets shall be constructed to city standards and widths required in the Oregon City Transportation System Plan and OCMC 16.12. Sidewalks and curbs are to be constructed according to plans and specifications approved by the City Engineer.
 - 2. Sidewalks constructed on unimproved streets shall be constructed of concrete according to lines and grades approved by the City Engineer. On unimproved streets, curbs do not have to be constructed.
- C. The Public Works Director shall cause a copy of the notice to be served personally upon the owner of the property adjacent to the defective sidewalk, or the notice may be served by registered or certified mail, return receipt requested. If after diligent search the owner is not discovered, the Public Works Director shall cause a copy of the notice to be posted in a conspicuous place on the property, and such posting shall have the same effect as service of notice by mail or by personal service upon the owner of the property.
- D. The person serving the notice shall file with the City recorder a statement stating the time, place and manner of service or notice.

12.04.033 - City may do work.

If repair of the sidewalk is not completed within ninety days after the service of notice, the Public Works Director shall carry out the needed work on the sidewalk. Upon completion of the work, the Public Works Director shall submit an itemized statement of the cost of the work to the Finance Director. The City may, at its discretion, construct, repair or maintain sidewalks deemed to be in disrepair by the Public Works Director for the health, safety, and general welfare of the residents of the City.

12.04.034 - Assessment of costs.

Upon receipt of the report, the Finance Director shall assess the cost of the sidewalk work against the property adjacent to the sidewalk. The assessment shall be a lien against the property and may be collected in the same manner as is provided for in the collection of street improvement assessment.

12.04.040 – Sidewalks—Enforcement.

Any person whose duty it is to maintain and repair any sidewalk, as provided by this chapter, and who fails to do so shall be subject to the enforcement procedures of OCMC 1.16, 1.20 and 1.24. Failure to comply with the provisions of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a

retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

12.04.060 - Retaining walls—Maintenance.

When a retaining wall is necessary to keep the earth from falling or sliding onto the sidewalk or into a public street and the property owner or person in charge of that property fails or refuses to build such a wall, such shall be deemed a nuisance. The violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

12.04.070 - Removal of sliding dirt.

It shall be the duty of the owner of any property as mentioned in OCMC 12.04.050, and in case the owner is a nonresident, then the agent or other person in charge of the same, to remove from the street or sidewalk or both as the case may be, any and all earth or dirt falling on or sliding into or upon the same from the property, and to build and maintain in order at all times, the retaining wall as herein required; and upon the failure, neglect or refusal of the land owner, the agent or person in charge of the same to clean away such earth or dirt, falling or sliding from the property into the street or upon the sidewalk, or both, or to build the retaining wall, shall be deemed guilty of a misdemeanor.

12.04.080 - Excavations—Permit required.

It shall be unlawful for any person to dig up, break, excavate, disturb, dig under, or undermine any public street or alley, or any part thereof or any macadam, gravel, or other street pavement or improvement without first applying for and obtaining from the engineer a written permit so to do.

12.04.090 - Excavations—Permit restrictions.

The permit shall designate the portion of the street to be so taken up or disturbed, together with the purpose for making the excavation, the number of days in which the work shall be done, and the trench or excavation to be refilled and such other restrictions as may be deemed of public necessity or benefit.

12.04.100 - Excavations—Restoration of pavement.

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

12.04.110 - Excavations—Nuisance—Penalty.

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

12.04.120 - Obstructions—Permit required.

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

1. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.
2. The applicant shall submit at least the following information in the permitting process in order to allow the City Commission to adequately consider whether to allow the placement of an obstruction and whether any conditions may be attached:
 - a. Site plan showing right-of-way, utilities, driveways as directed by staff;
 - b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;
 - c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);
 - d. Alternative routes if necessary;
 - e. Minimizing obstruction area; and
 - f. Hold harmless/maintenance agreement.
3. If the City Commission adopts a resolution allowing the placement of a permanent obstruction in the right-of-way, the City Engineer shall issue a right-of-way permit with any conditions deemed necessary by the City Commission.
4. Signage that acts as an obstruction is approved through OCMC 15.28

B. Temporary Obstructions.

1. A "temporary obstruction" is defined as an object placed in a public street, sidewalk, road, or alley which is not permanently anchored to another surface such as the pavement, sidewalk, or a building.. A "temporary obstruction" includes, but is not limited to, moving containers, debris dumpsters, and seating.
 - a. Planters and benches are exempt from permitting unless the City Engineer finds by inspection that the planter or bench is impeding use of the right-of-way. If deemed an impeding use, a planter or bench will comply with the requirements for temporary obstructions.
2. The City Engineer, or designee, is authorized to grant a permit for a temporary obstruction.
3. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.
4. The applicant shall submit, and the City Engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the City Engineer:
 - a. Site plan showing right-of-way, utilities, driveways as directed by staff;
 - b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;
 - c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);
- d. Handicap Accessible accessible route complying with Americans with Disability Act (ADA) standards.
 - e. Alternative routes if necessary;
 - f. Minimizing obstruction area; and
 - g. Hold harmless/maintenance agreement.
5. In determining whether to issue a right-of-way permit to allow a temporary obstruction, the City Engineer may issue such a permit only after finding that the following criteria have been satisfied:
 - a. The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;

- b. The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;
 - c. No alternative locations are available that would not require use of the public right-of-way; and
 - d. Any other factor that the City Engineer deems relevant.
- 6. The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.
- 7. Types
 - a. A short-term temporary obstruction is allowed for a period of not more than 60 consecutive calendar days. It is permitted with a temporary obstruction in the right-of-way permit.
 - b. A long-term temporary obstruction is allowed for a period of not more than one year, and it is permitted with a renewable right-of-way permit.
- 8. Signage that acts as an obstruction is approved through OCMC 15.28

- C. Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the City Commission.

12.04.130 - Obstructions—Sidewalk sales and displays.

- A. It is unlawful for any person to use the public sidewalks of the city for the purpose of packing, unpacking or storage of goods or merchandise or for the display of goods or merchandise for sale. It is permissible to use the public sidewalks for the process of expeditiously loading and unloading goods and merchandise.
- B. The City Commission may, in its discretion, designate certain areas of the City to permit the display and sale of goods or merchandise on the public sidewalks under such conditions as may be provided on a regular basis. A business in a designated area will be required to obtain a Renewable Right of Way Permit for this use if sales are intended to last longer than 60 days. A temporary obstruction permit may be issued for sales that occur less than 61 days.

12.04.140 - Obstructions—Nuisance—Penalty.

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

12.04.150 - Street and alley vacations—Cost.

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

12.04.170 - Street design—Purpose and general provisions.

All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings, and engineering specifications. All streets shall be reviewed and approved by the City Engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be

reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

12.04.194 - Traffic sight obstructions.

All streets shall comply with the Traffic Sight Obstructions in OCMC 10.32.

12.04.270 - Standard construction specifications.

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

12.04.280 - Violation—Penalty.

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

Chapter 13.04 - WATER SERVICE SYSTEM

13.04.010 - Application for service.

When water service is requested where connection of the premises to the city mains is required, applications must be made to the City, signed by the owner, or agent of the premises to be served, and the applicant must state fully and truly all the purposes for which water may be required, and must agree to conform to the rules and regulations that are now in force or may hereafter be adopted for the proper operation of the water system. The charges for supplying a water service connection shall be in accordance with a schedule of charges adopted by the city commission. All new water service connections shall be metered.

(Prior code § 3-3-1)

13.04.020 - Use by applicant only.

No person supplied with water from the city mains will be entitled to use it for any purpose other than that stated in his application, or to supply in any way other persons or families.

(Prior code § 3-3-2)

13.04.030 - Permits—Renewal—Change of service.

- A. The city issues engineering permits for water line work in the right-of-way either as a separate public works permit or as part of overall issued public infrastructure construction plans. The various fees for these permits are approved and modified from time to time by the city commission. Failure to meet the conditions of the issued permit shall constitute a violation of the Municipal Code.
- B. When permits for renewal or change of service are granted, the old service will be shut-off and disconnected at the main by the contractor and inspected by employees of the city. The charge for same shall be the reasonable costs as determined by administrative policy. (Prior code § 3-3-3)

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.04.040 - Service pipe—Approval.

Service pipes, of all sizes, within or without the premises, whether for domestic, commercial or fire protection purposes, must be approved by the city.

(Prior code § 3-3-4)

13.04.050 - Service pipe—Installation.

The installation of all service pipes from the main to the meter box shall be made by the contractor and inspected by employees of the water department.

(Prior code § 3-3-5)

13.04.060 - Stopcock and shutoff box.

A stopcock of approved pattern and material will be placed and protected by means of the meter box, which will be furnished and installed by the contractor and inspected by the water department.

(Prior code § 3-3-6)

13.04.070 - Stop and waste cocks.

Just inside the basement wall a stop and waste cock of approved pattern, protected from frost, must in all cases be placed in a convenient location, by means of which the pipes in the building may be drained at night during freezing weather. If the building is not provided with a basement, the stop and

waste cock must be placed near the outside wall thereof. All stores and offices in the building must have separate shutoffs.

(Prior code § 3-3-7)

13.04.080 - Service pipes—Repair and protection.

The service pipe, within the premises, and throughout its entire length to the curb cock must be kept in repair and protected from freezing at the expense of the owner, who shall be responsible for all damages resulting from leaks or breaks in the service pipe.

(Prior code §3-3-8)

13.04.090 - Temporary disconnection.

Should it be desired to discontinue the use of all water supplied to the premise for a period of not less than fifteen days, notice must be given, and payment in full of all arrears made at the utility billing office. The water will then be turned off, and turned on again on application, without charge; provided however, no remission of rates will be made for a period of less than fifteen days.

(Prior code §3-3-9)

13.04.100 - Service for each house.

Hereafter, a separate service direct to the tap in the main, will be required for each house or business that is to be supplied with water. A separate meter provided for each place to be so supplied. Where two or more separate residential or business buildings are presently served by a single service the Public Works Director may require separate meter installations wherever possible. A Double Check Valve Assembly (DCVA) is required for services that are commercial in nature (includes multi-family dwellings)

(Prior code §3-3-10)

13.04.110 - Discontinuance—Defective fixtures.

Water will not be furnished where there is defective or leaking faucets, toilets or other fixtures, or where there are toilets or urinals without self-closing valves, or tanks without self-acting float valves; and when such may be discovered the water superintendent shall have authority to immediately install a meter.

(Prior code §3-3-11)

13.04.120 - Public water usage.

Contractors must obtain a "hydrant meter" from the City for any unmetered City water usage.

(Prior code §3-3-13)

13.04.130 - Shut-off for repairs.

The water may at any time be shut off from the mains without notice, for repairs or other necessary purposes, and the city will not be responsible for any consequent damages. Water for steam boilers for power purposes will not be furnished by direct pressure from the city mains; tanks for holding an ample reserve of water shall always be provided by the owners of the boilers. While water is temporarily shut off from the mains, the hot water faucets should be kept open by the occupants of the premises to allow the steam to escape from the water heater and should damage result to meters by reason of steam or hot water, the owner shall be charged for repairs.

(Prior code §3-3-14)

13.04.140 - Right-of-entry.

Agents of the Public Works Department may have free access at proper hours of the day to all parts of the building and premises in which water may be delivered from the city mains, for the purpose of inspecting the condition of the pipes and fixtures and the manner in which the water is used, and for the purpose of fixing water rates for the premises. Public Works Department staff will not enter into private property without notice and consent of the property owner unless an emergency situation exists, and the property owner did not respond to initial contact or unless previous arrangements have been made to have unnoticed access to the property.

(Prior code §3-3-15)

13.04.150 - Emergency regulations.

Under emergency conditions the city manager may enforce such regulation of the use of water as conditions require.

(Prior code §3-3-16)

13.04.160 - Water for building purposes.

Water for building purposes may be obtained at the rates herein prescribed.

(Prior code §3-3-18)

13.04.170 - Fire protection pipes.

Pipes to be used for fire purposes only will be allowed within buildings only where such pipes are entirely disconnected from those used for any other purposes and have a separate connection to the mains. A Double Check Detector Assembly (DCDA) is required for all stand alone fire lines and is to be installed in a vault as close to the property line as possible. The connection with the city main must be made as prescribed in Sections 13.04.050 and 13.04.060.

(Prior code §3-3-19)

13.04.180 - Use of meters.

- A. The Public Works Department and its agents shall have the right at any time to attach a meter to, or detach a meter from the service pipe of such places and of such places only, as is deemed best; and where water is supplied through a meter to charge for the quantity of water used or measured at the regular established meter rates. When a meter fails to register accurately, the charge shall be according to the average quantity used daily, as shown by the meter when in order.
- B. The Public Works Department and its agents shall immediately install a meter for any unmetered consumer who is found guilty of violating any of the rules and regulations of the Public Works Department.
- C. Any householder desiring metered water service may obtain the service by making written application to the city for the installation of a meter and by agreeing to pay for the quantity of water used or measured at the regular established meter rates.

(Prior code §3-3-20)

13.04.190 - Ownership of meters.

All meters shall be and remain the property of the city and may be removed whenever the Public Works Department may decide to do so.

(Prior code §3-3-21)

13.04.200 - Use of private water and city water.

Buildings supplied with water other than that furnished by the city, may obtain city water at meter rates; provided, that no physical connection shall in any way, directly or indirectly exist between the private system and the city's water system. Approved backflow protection is required immediately behind the meter when potential for cross connection exists (wells). The backflow assembly must be tested in place before city water is turned on. When a connection is found to exist, the water will be shut off.

(Prior code §3-3-22)

13.04.210 - Testing and correcting meters.

When any consumer whose water supply is metered shall make a complaint that the bill for any particular month is excessive, the water superintendent will, upon request, have the meter reread.

(Prior code §3-3-23)

13.04.220 - Failure to comply with rules.

Should anyone fail to comply with the rules and regulations established as conditioned to the use of water, or to pay the water rates at the time and manner hereafter provided, the water may be shut off until payment is made of the amount due, including delinquent payment penalty fees, as well as the amount for the expense of turning the water on. Failure to comply with required annual testing of backflow assemblies will also result in discontinuation of water service.

(Prior code §3-3-24)

13.04.230 - Authority to turn on water.

After the water has been shut off at the curb cock, if it should be turned on by any person other than an employee of the Public Works Department, the water will be again shut off, a section of the service pipe removed, and service will not be furnished until the arrears, current month and an additional charge for the reasonable cost of disconnection and resumption of service, as determined by administrative policy, are paid. If the curb cock is damaged from being operated by parties other than city agents, the party who is responsible will be billed for city agents to repair.

(Prior code §3-3-25)

13.04.240 - Water charged to premises.

All charges for furnishing water within the city shall be chargeable to the premises where water is supplied. Whenever any charge for furnishing water shall not be paid when due, the same shall become delinquent and shall be subject to a delinquent payment penalty fee and discontinuance of service. Written notice of shutoff of water shall be given by mail in advance of such shutoff. After water service has been discontinued, water shall not again be furnished until all outstanding charges shall have been paid in full. All charges for furnishing water or for services relating to the furnishing of water shall be a lien on the property to which the water or water services are supplied. Enforcement of the lien may be commenced at any time after the charge or charges are delinquent for thirty days by suit in equity following the procedures for foreclosure of a mortgage.

(Prior code §3-3-26)

13.04.250 - Applications.

Applications for permits to connect premises with the city water system, or requests to turn off water, shall, in all cases, be in writing and signed by the owner, lessee, or agent of the premises to be served.

(Prior code §3-3-27)

13.04.260 - Water rates.

- A. Water Rates in City. The rates for water furnished by the city to each user within the city limits shall be established by city commission resolution.
- B. Water Rates Outside City. The rates for water furnished by the city to each user outside of the city limits shall be one and one-half times the rate charged to users within the city limits.

(Prior code §3-3-28)

13.04.270 - Meter sizes.

The minimum meter sizes shall be as follows:

<u>Unit</u>	<u>Size in Inches</u>
1 unit	$\frac{3}{4}$
2—4 units	1 (or two $\frac{3}{4}$ " for duplexes)
5—10 units	1- $\frac{1}{2}$
11—30 units	2 disc
31—50 units	2 compound

All services shall have the proper size meters as designated by the Public Works Director and approved by the city engineer on existing and future meter installations, and the user shall pay the minimum charge per Section 13.04.260 above for large-size meters. Proper backflow protection is required on all services 2" and greater in size.

(Prior code §3-3-29)

13.04.280 – Reduced rates and financial assistance

A residential customer may qualify for a reduced user rate, or other financial assistance, if certain criteria are met, including if the income of the residents meet certain criteria. Customers requesting the reduced user rates, or other financial assistance, shall make written application and shall certify as to meeting the income criteria established.

(Prior code §3-3-30)

13.04.300 - Cost participation.

In the event it is necessary for any developer to extend a city water main larger than necessary to serve the particular development, the city may agree to participate with the developer in the excess cost, said cost participation may be paid from the water fund.

(Prior code §3-3-32)

13.04.310 - Water connection—Required.

- A. All new residences, other new buildings, or any other new use requiring domestic water must be connected to the city water service if the same is available at the time of construction and prior to the use thereof.
- B. All residential and other uses connected to a public water supply system must be connected to the city system within sixty days of the city water being made available. All water connections must meet current City standards and regulations.
- C. Domestic – backflow prevention is required on services that:
 - 1. Are commercial in nature (includes multi-family dwellings),
 - 2. Are greater than or equal to two-inches in diameter,
 - 3. Have piping higher than 32 feet above the water main, or
 - 4. Have a potential hazard to the public water supply, in the discretion of the Oregon City Water Division (includes new or existing wells)
 - 5. Irrigation – backflow prevention is required on all irrigation systems.

(Prior code §3-3-33)

13.04.315 - Definitions.

The following definitions shall apply to this chapter:

"Backflow" means any reversal of the normal flow of water from the distribution system that may allow contamination or pollution of the public water supply and render it nonpotable.

"Backflow prevention device or assembly" means any devices or assemblies, or methods approved by the appropriate regulatory agencies for use in the prevention of backflow.

"Contamination" means an impairment of the quality of water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, wastes, etc.

"Cross-connection" means any actual or potential piping connection or structural arrangement allowing the introduction of any liquid, gas, material or substance into any potable water system, thereby rendering it nonpotable.

"Distribution system" means the network of storage facilities, pumps, pipes, valves and other appurtenances between the source and the point of delivery of potable water in the public water system.

"Nonpotable water" means potable water that has been chemically, biologically or physically altered and thereby rendered unfit for human consumption.

"Point of delivery" means the terminal end of a service connection between the distribution system and the consumer's water system at which point the city of Oregon City loses its jurisdiction of and sanitary control over the potable water supply.

"Pollution" means an impairment of the quality of water to a degree that does not create a hazard to public health but affects the aesthetic qualities of such water for domestic use.

"Potable water" means water from any source that has been investigated by the health agency having jurisdiction and has been approved for human consumption.

"Public water supply" means the distribution system supplying potable water to the city of Oregon City consumers.

"Regulatory agencies" means one or more of the following agencies whose specifications and requirements, as presented in their associated publications are accepted as industry standards:

American Water Works Association—Standards C510, C511 and Manual M14.

American Water Works Association, Pacific Northwest Section—Cross-Connection Control Manual, Seventh Edition, 2012.

Department of Human Services—OAR 333-061-0025 (9), OAR 333-061-0070, OAR 333-061-0071.

University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research—Manual of Cross Connection Control, Tenth Edition, 2009.

"Service connection" means the supply piping between the distribution system main and the consumer's water system, normally terminating at the downstream end of the water meter.

"Unprotected cross-connection" means any cross-connection which may exist that allows the introduction of any liquid, gas, material or substance into the public water supply, thereby rendering it nonpotable.

(Ord. 04-1006 §1, 2004: Ord. 98-1001 (part), 1998)

13.04.320 - Control of cross-connections.

The city shall establish, maintain and monitor an on-going cross-connection control program which shall be administered by the Public Works Director and/or their designated appointee(s). Information pertaining to the policies and procedures of the program can be obtained from the Public Works Director.

(Ord. 98-1001 (part), 1998)

13.04.330 - Back-flow prevention assemblies.

The public water supply shall be protected from any existing and/or future unprotected cross-connections by the installation of an approved backflow prevention assembly at or near the point of delivery according to standards and procedures established by one or more of the defined regulatory agencies. Backflow prevention shall be required in circumstances where an unprotected cross-connection condition may exist. Failure to install an approved backflow assembly or conduct a required annual test on a backflow assembly shall result in denial or discontinuation of water service.

(Ord. 04-1006 §2, 2004: Ord. 98-1001 (part), 1998)

13.04.340 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Water Distribution System Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Water Distribution System Design Standards shall be complied with.

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

Chapter 13.08 - SEWER REGULATIONS

13.08.010 - Sewer connections—Required.

- A. All water closets, privies, sinks, bathtubs and drains containing or carrying sewerage in all houses located within the boundaries of any sewer district heretofore established or that may hereafter be established and in which persons are residing shall be connected with the public system of sewers, and within the time specified in the ordinance creating the sewer district.
- B. It is unlawful for any person to reside in any house or upon any premises within the boundaries of any sewer district in the city, after the time specified for connecting the house or premises as provided in the ordinance establishing the sewer district in which the house or premises is located unless the house or premises has been connected with the sewer system owned and operated by the City as provided in this section.

(Prior code §8-5-1)

13.08.015 – Sewer connections – Exemptions

Properties may remain on septic if the public sewer is not physically and legally available as defined by OAR 340-071-0160

13.08.16 – Cross Connections.

Sanitary sewers may not connect or convey any sewage to storm sewers.

13.08.020 - Connection required—Notice.

It shall be the duty of the chief of police to ascertain all houses and premises in the districts, whose owners have not complied with the ordinance providing for the connection of the privies, located therein or upon such premises, and to post a notice thereon, that it shall be unlawful for any person to reside in the house or upon the premises, while the water closets, sinks, bathtubs and drains used in connection with the house or premises, remain unconnected with the public sewer in such district.

(Prior code §8-5-2)

13.08.030 - Privies.

All property owners within a sewer district are required to close and properly fill with earth all privy vaults, cesspools and septic tanks within the time specified in the ordinance establishing the sewer district and hereafter it is unlawful for any property owner to dig or make use of any cesspool, privy vault or septic tank within any sewer district in which there has been a public sewer constructed to serve the premises.

(Prior code §8-5-3)

13.08.040 - Engineer—Approval required.

All connections made with any public sewer or drain in the city shall be made according to the specifications made or approved by the City Engineer.

(Prior code §8-5-4)

13.08.050 - Engineer—Permits.

- A. The city issues engineering permits for sewer line work in the right-of-way either as a separate Public Works permit or as part of overall issued public infrastructure construction plans. The various fees for these permits are approved and modified from time to time by the city commission. Failure to meet the conditions of the issued permit shall constitute a violation of the Municipal Code.
- B. The City Engineer is authorized to grant such permits as deemed necessary for allowing persons to tap the public sewers, and to make connections therewith; provided however, that the permit shall be granted on the express condition that the owner or tenant for whose benefit such connection shall be made, and each succeeding tenant shall in consideration of the privilege thereby granted, hold the city harmless for any loss or damage that may in any way result from or be occasioned by any such tap or connection. (Prior code §8-5-5)

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.08.060 - Bond required.

No person shall be authorized by the engineer to do this work of making connections with any of the public sewers or drains until that person has furnished and filed a surety company bond in the office of the recorder in the sum of five hundred dollars conditioned that to indemnify and save harmless the city from all loss or damage that may be occasioned in any way by accident or the want of care or skill in the prosecution of such work or that may be occasioned by reason of any opening made or caused to be made in a street, market place, or public ground in making of any public or private sewer or drain as aforesaid; and conditioned also to promptly at the proper time replace and restore the street and pavement over the opening to as good state and condition as it was found previous to the opening of the same, and to conform in all respects to the rules and regulations which may from time to time be established by the commission in relation to putting junctions and tapping of the sewers and drains.

(Prior code §8-5-6)

13.08.070 - Acceptance of connection by city.

Each person so licensed who shall make connections with the sewers or drains, shall keep in repair and good order the whole of the work executed until the same is accepted by the City Engineer, or such other person as may be designated for that purpose, which acceptance shall be given in writing, and shall not be given until the expiration of one year after the completion of the work.

(Prior code §8-5-7)

13.08.080 - Notification of engineer.

After the permit has been issued notice in writing must in all cases be left in the office of the City Engineer by the person who is about to make the connection with any sewer or drain, stating the time when the work will be ready for inspection previous to making the connection.

(Prior code §8-5-8)

13.08.090 - Connections to existing work.

- A. No drain pipe can be extended from work previously done and accepted, or new connection at any time be made with such work unless previous notice of at least twenty-four hours is given to the engineer and permit issued.

- B. In case it shall be necessary to connect a drain or sewer pipe with a public sewer when no junction is left in the same, the new connection with the public sewer can only be made when an officer of the city, duly authorized, is present to see the whole of the work done.
- C. Connections from new development shall connect to the system of drains and sewers operated by the City of Oregon City. Alternative connections may be allowed solely at the discretion of the City Engineer.

(Prior code §8-5-9)

13.08.100 - Barriers.

All openings and obstructions in any street must be carefully guarded by the person holding the permit authorizing such opening or obstructions at all times with sufficient barriers, and during the nighttime shall be indicated by colored lights, and such other precautions shall be taken as shall be necessary to guard the public against accidents, and at all times the work shall be so done as to cause the least inconvenience to property owners and the general public.

(Prior code §8-5-10)

13.08.110 - Condition of fixtures.

It is unlawful for any person in possession of premises into which a pipe or other connection with the public sewers or drains has been laid for the purpose of carrying off animal refuse from privies or water closets, slops from kitchens, or other purposes, to allow the same to remain without good and perfect fixtures so attached as to allow a sufficiency of water to be so applied as to properly carry off such matters and to keep the same unobstructed.

(Prior code §8-5-11)

13.08.115 – Condition of service lines.

The service pipe, within the premises, as defined in the Sanitary Sewer Design Standards, and throughout its entire length must be kept in good repair at the expense of the owner, who shall be responsible for all damages resulting from leaks or breaks in the service pipe.

13.08.120 - Permit revocation.

Any person authorized to make connections with sewers or drains who shall be guilty of any violation of the provisions of this chapter shall be immediately deprived of a permit.

(Prior code §8-5-12)

13.08.125 – Right of Entry

Agents of the Public Works Department may have free access to view the inside of private sewer laterals located on private property that connect to city mains by a camera. Public Works Department staff will not enter into private property without notice and consent of the property owner.

13.08.130 - Development and user charges.

The city may also establish connection charges and sewer user fees. The amounts of such charges and fees shall be set by resolution of the city commission. Any connection charge shall be no greater than the amount necessary to reimburse the city for its average cost in inspecting and installing connections.

(Ord. 91-1021 §4, 1991)

13.08.140 - Applications outside city limits.

An applicant owning property outside the city limits may apply for permission to connect with the sewer in like manner as one within the city limits and outside of a created sewer district. An applicant owning property outside the City limits, but within the Urban Growth Boundary, may be forced to connect to public sewer, and annex to the City, if the septic is failing and the public sewer is physically and legally available as defined in OAR 340-071-0160. The City may charge different rates for those properties not within City limits.

(Prior code §8-5-14)

13.08.150 - Permit issuance—Connection supervision.

When permission is granted by the commission and the fees paid by the applicant a copy of the permit shall be given by the City Engineer who, at the expense of the applicant, shall superintend the connection of the sewer with the sewer system in the sewer district in which the privilege has been granted and upon the completion of the connection shall return the same to the recorder with endorsement of the time and place of connection.

(Prior code §8-5-15)

13.08.155 – Sewer rates.

- A. Sewer Rates. The rates for sewer furnished by the city to each user within the city limits shall be established by city commission resolution.

13.08.158 – Service lateral improvement program.

When a sewer service falls into disrepair as determined by the Public Works Department, a fee may be assessed to the property owner. The fee may be paid at one time or through a payment program. The fee for repairing or replacing the service shall be in accordance with a schedule of charges adopted by the city commission.

13.08.159 - Reduced rates and financial assistance

An owner-occupied residence with a 5/8 x 3/4 inch water meter may qualify for a reduced user rate, or other financial assistance, if the income of its residents meets certain criteria. Customers requesting the reduced user rates, or other financial assistance, shall make written application and shall certify as to meeting the income criteria established.

13.08.160 - Entry in lien record.

The recorder shall enter the permit in the docket of the city liens immediately following the entered matter which relates to the system of that sewer district to which permission to connect has been granted, and shall credit the fees paid to the general fund.

(Prior code §8-5-16)

13.08.165 – Failure to comply with rules

Should anyone fail to comply with the rules and regulations established as conditioned to the use of sewer, or to pay the sewer rates or fees at the time and manner hereafter provided, the property may be assessed fines or liens to recover the costs associated with unpaid rates or fees. Failure to pay the charges imposed by this chapter shall subject the user and the premises to the collection and lien provisions imposed for water charges.

13.08.170 - Private connections prohibited.

It is unlawful for any person to connect a private sewer from the property with a private sewer on any other property which is connected with the public sewers without first having made the foregoing application and paying the amount computed by the recorder, as the charge for the privilege, it shall also be unlawful to connect any lot or premises, either directly or indirectly, lying outside of the limits of a sewer district with any public sewer without first complying with the provisions of this chapter.

(Prior code §8-5-17)

13.08.180 - Unlawful substances.

It is unlawful for any person to permit to be drained, any oils, greases, chemicals, storm water, surface water, ground water, roof runoff, subsurface drainage, liquids and substances which might be detrimental to the sewage treatment plant, into any sewer, drain or pipe leading to the plant from any premises in the city.

(Prior code §8-5-18)

13.08.190 - Sanitary requirements.

In factories and workshops where there are fifteen persons or less of each sex, there shall be provided by the proprietor or owner one water closet for each sex, and one for each additional fifteen persons of each sex or minimum thereof. Toilets shall be separate in all cases. Every co-op or lodging house shall be provided with one water closet for every ten rooms or minimum thereof, and one sink for each floor. All residences and public halls shall be provided with at least one water closet and one sink.

(Prior code §8-5-19)

(Prior code §8-5-20)

13.08.210 - STEP systems.

- A. "STEP system" which means a septic tank effluent pump system, meeting the standards and specifications of the city engineer (hereinafter "engineer"), shall be permitted as an alternative to the

standard sewer used in the city. Such system shall be owned, operated, and maintained by the city as provided in this section.

- B. The engineer shall require, as a condition of approval of any STEP system that the property owner utilizing such system grant the city any easements, permits of entry, or licenses which are necessary or convenient for the construction, operation, or maintenance of the STEP system.
- C. Generally, sewer service through normal sewer facilities (i.e. house sewer, laterals, trunks, and treatment plants) shall be provided when available. However, if service through such normal sewer facilities is unavailable, the engineer may permit use of a STEP system, on an interim basis, when such sewer service is determined by the engineer to be practical, and necessary or convenient to the use of the property proposed to be served or when such service is required by the city. The use of a STEP system is declared to be an interim service to served properties and each property owner shall provide the city with a nonremonstrance agreement, waiving all objections, jurisdictional or otherwise, to participation in the formation of a local improvement district to provide such normal sewer facilities in future. The city may record any such waiver of remonstrances in the deed records of the county.
- D. Installation, operation, and, before acceptance by the city, maintenance of a STEP system shall be in accordance with the directions of the engineer and at the expense of the owner of the property serviced by such system. Upon installation, inspection and approval by the engineer, and acceptance by the city, the STEP system shall be owned by the city, which shall thereafter be responsible for maintenance of the system, except as provided in this section. No STEP system shall be accepted unless and until all easements, licenses, and permits necessary for control of the operation, use, and maintenance of such system have been granted. The city may record in the deed records of the county any such easement, license, or permit granted. It shall be the responsibility of the property owner to keep clean and maintain the building sewer from the building to the connection with the public sewer.
- E. The costs of electricity necessary to operate the STEP system shall be borne by the property owner. Any STEP system which is rendered nonoperational by virtue of failure to pay for such costs shall cause the property benefited to be deemed unavailable for human habitation. The owner or occupier of the property served shall be entitled to written notice at least five days before a declaration by the city that the property is to be declared unavailable for occupancy and such person may request in writing a hearing before the city manager prior to such declaration. The decision of the city manager shall be final.
- F. Subject to applicable constitutional limitation, the property owner shall permit entry on the site served for purposes of installation, maintenance, inspection, observation, measurement, sampling or testing of the STEP system. The property owner shall agree to such entry evidenced by a written permit of entry, as a condition precedent to the permit for the use of the STEP system.
- G. The property owner shall be liable for damage to any portion of the STEP system if not caused by the city. The STEP system permit shall indicate that the owner agrees to assume such liability and such assumption shall be a condition precedent to issuance of the permit.
- H. Application for use of a STEP system shall be made by the property owner or owners, who shall remain responsible for compliance with this section and permits thereunder. The property owner may delegate responsibility to the person occupying land for the duties imposed on the property owner under subsections D and G of this section. Such delegation shall be in writing in which the occupier of property accepts such responsibility filed with the engineer and shall be valid for such period as the delegatee occupies the property, unless a shorter period is designated by the engineer. Thereafter, the property owner shall reassume responsibility.
- I. No provision of this section shall be construed to exempt an applicant for obtaining additional permits or meeting additional requirements of city, county, state or other appropriate public body with jurisdiction.

(Ord. 90-1052 §1, 1990: prior code §8-5-22)

13.08.220 - Violation—Penalty.

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

(Ord. 99-1004 §19, 1999: prior code §8-5-21)

13.08.230 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Sanitary Sewer Design Standards, the City of Oregon City standard notes, or City of Oregon City standard drawings provide other design details, in which case the requirements of this chapter and the Public Works Sanitary Sewer Design Standards shall be complied with.

13.08.235 – Design Standards.

The current version of the Oregon City Public Works Sanitary Sewer Design Standards shall be adhered to for all new sewer construction and connections.

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.08.240 – Stormwater and Groundwater Prohibited

- A. Stormwater, including street, roof, or footing drainage, shall not be designed or constructed in a manner to allow discharge into the sanitary sewer system, but shall be removed by a system of storm drains or by some other method separate from the sanitary sewer system. (Language from City of Oregon City Sanitary Sewer Design Standards, §2.00, paragraph three, page 10)
- B. No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or ground water to a public sanitary sewer.
- C. Service laterals from building structure to the face of curb or edge of pavement line shall be maintained by the owner of said structure in such a manner as to prevent infiltration of ground water into the sanitary sewer system.
- D. Historic buildings established before the separation of stormwater and sanitary sewer systems may be exempt from groundwater and subsurface discharge into the sanitary sewer system.
- E. Properties may be exempt if removal of stormwater connections to sanitary sewer system is infeasible due to topography or public system constraints.

13.08.250 – Party Line Sewers Prohibited

No new sewer service lines shall be used by more than one property. Existing party lines shall be modified and separated where practicable per Oregon City Policies and Procedures when repairs or replacements of existing sewers is proposed.


Community Development – Planning

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Oregon City Municipal Code

Chapter 17.80 Communication Facilities

17.80.10 - Purpose.

The provisions of this chapter are designed to protect the visual, aesthetic, and historical features of Oregon City, ensure that wireless communications services are located, designed, installed, maintained, and removed in an appropriate manner for the safety, health, and welfare of the citizens of Oregon City, and to provide for development consistent with the Oregon City Comprehensive Plan by:

- A. Promoting maximum utilization and encourage collocation of new and existing wireless communication antennas to minimize the total number of support structures and towers throughout the city;
- B. Encouraging careful consideration of topography, greenways, and historical significance of potential telecommunication sites and the use of camouflaging and screening to ensure development has minimal impacts on the community, views, and historical areas;
- C. Encouraging the use of existing buildings, light or utility poles, or water towers as opposed to construction of new telecommunication towers; and
- D. Encourage the location of monopole telecommunication towers and antenna arrays in non-residential areas.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.30 - Applicability and exemptions.

- A. **Applicability.** All wireless communication facilities that are not exempt pursuant to this section shall conform to the standards specified in this chapter.
- B. **Exemptions.** The following are exempt from the provisions of this chapter and shall be allowed:
 - 1. Wireless communication facilities that were legally established prior to the effective date of this chapter;
 - 2. Temporary facilities used on the same property for sixty days or less;
 - 3. Temporary wireless communications facilities of all types that are used by a public agency solely for emergency communications in the event of a disaster, emergency preparedness, or public health or safety purposes;
 - 4. Any maintenance or repair of previously approved wireless communications facilities provided that such activity does not increase the height, width, or mass of the facility;

5. Dish antennas used for residential purposes;
6. VHF and UHF receive-only television antennas and radio transmitter antennas on public facilities used for public safety, provided they are fifteen feet or less above the existing or proposed roof;
7. Amateur Stations on properties zoned residential are exempt from the standards of this chapter. Amateur Stations on properties zoned non-residential are exempt from the standards of this chapter, provided the antenna is fifteen (15) feet or less above the existing or proposed roof. Amateur Stations located on: (1) public facilities/property; or (2) properties zoned non-residential with an antenna in excess of fifteen feet above the existing or proposed roof, shall be reviewed under the Compatibility Review process set forth in this chapter and shall be subject to the Design Standards of Section 17.80.110; and
8. Wireless Communication Facilities for public safety are exempt from the following Sections: Section 17.80.090.C.17, Section 17.80.090.D.2, Section 17.80.090.D.5, and Section 17.80.100.
9. Small wireless facility within the right-of-way

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.035 Modifications to Existing Facilities.

All modifications and expansions to existing wireless communication facilities are permitted in every zone, subject to the requirements of this Section. Certain modifications are deemed minor in nature and are deemed “eligible modifications” These modifications include the addition, removal, and/or replacement of transmission equipment that do not make a substantial change to the physical dimensions (height, mass, width) of the existing tower, support structure, or base station. Replacement of an existing tower may also be considered an eligible modification if such replacement meets the standards in paragraph 4 below.

1. For the purpose of this Section, “substantial change” means the following:
 - a. The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of 1 additional antenna array with separation from the nearest existing antenna not to exceed 20 feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this subsection by up to an additional 5% if necessary to avoid interference with existing antennas; or
 - b. The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved (not to exceed 4) or more than 1 new equipment shelter; or
 - c. The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than 20 feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this subsection to the extent necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
 - d. The mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.
2. Increases to height allowed by this subsection above the existing tower shall be based on the existing height of the tower, excluding any tower lighting required in the original land use approval or in the proposed modification request.

3. To the extent feasible, additional equipment shall maintain the appearance intended by the original facility, including, but not limited to, color, screening, landscaping, mounting configuration, or architectural treatment.
4. To be considered an eligible modification, a replacement tower shall not exceed the height of the original tower by more than 10%, or the diameter of the original tower by more than 25% at any given point.

17.80.40 - Collocation of additional antenna(s) on existing support towers.

Except for “eligible modifications” authorized in Section 17.80.035, the following standards shall apply for the placement of antenna(s) and auxiliary support equipment on an existing wireless communication facility support tower.

- A. Compatibility Review. Required for property zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC.
- B. Site Plan and Design Review. Required for all cases other than those identified in Section 17.80.040.A.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.50 - Collocation of additional antenna(s) on support structures.

Except for “eligible modifications” authorized in Section 17.80.035, the following standards shall apply for the placement of antenna(s) and auxiliary support equipment on a support structure.

- A. Compatibility Review. Required if the following exist:
 1. Property is zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC; and
 2. Property is not located in the McLoughlin or Canemah Historical Conservation Districts; and
 3. Antenna(s) and auxiliary support equipment are setback a minimum of ten feet from each edge of the support structure and do not exceed a total height of twelve feet or a total width of eight feet, unless the antenna(s) is less than four inches in diameter and does not exceed a total height of twenty feet.
- B. Site Plan and Design Review. Required if the property is zoned GI, CI, I, C, MUC-1, MUC-2, MUE, MUD or NC and does not meet all the criteria of Section 17.80.050.A.
- C. Conditional Use Review. Required for all cases other than those identified in Sections 17.08.050.A and 17.08.050.B.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.60 - Collocation of additional antenna(s) on existing utility poles, light standards, and light poles.

The following standards shall apply for the collocation of additional antenna(s) on existing utility poles, light standards, and light poles that meet the following requirements:

- A. Site Plan and Design Review. Required for property zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC.
- B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.060.A.
- C. Permits. The applicant shall apply for and obtain all permits necessary for the construction, installation, and operation of its facilities in the streets. The applicant shall pay all applicable fees due for city permits. All construction and maintenance of any and all of the applicant's Facilities within the streets incident to the applicant's provision of telecommunications services shall, regardless of who performs installation and/or construction, be and remain the responsibility of the applicant.
- D. Installation of Equipment. The applicant's facilities shall be installed and maintained in accordance with the laws of the State of Oregon and the ordinances and standards of the city regulating such construction.
- E. Common Users. The applicant's facilities shall be attached to utility poles, light standards, and light poles located within the streets. The applicant shall also allow and encourage other wireless carriers to collocate facilities on the utility poles, light standards, and light poles with the applicant's facilities, provided such collocation does not interfere with the applicant's facilities or jeopardize the physical integrity of the structure and provided the owner of the structure consents to such collocation.
- F. Scale of Facilities. This section establishes standards for attaching facilities to utility poles, light standards, and light poles in the streets in a manner that minimizes the facilities' potential incompatibility with adjacent uses.
 - 1. Facilities may be collocated on existing utility poles, light standards, and light poles, provided:
 - a. Facilities do not jeopardize the physical integrity of the utility pole, light standard, or light pole;
 - b. Triangular "top hat" style antenna mounts are prohibited;
 - c. The device used to mount the facilities does not project more than ten feet above the utility pole, light standard, or light pole;
 - d. Antennas will be mounted flush with the device referenced in Section 17.80.060.F.1.c. or the existing utility pole, light standard, or light pole, within a unicast-style top cylinder, or on davit arms that are no greater than five feet in length as measured from the center of the utility pole, light standard, or light pole;
 - e. The visual impact of any facilities located in the streets must be minimized by utilizing the smallest antennas, equipment, and equipment cabinets available that will satisfy engineering requirements and the service objectives of the site. Whenever possible, facilities shall be painted or otherwise treated architecturally so as to minimize visual impacts;
 - f. All antennas, cabling, mounting hardware, and associated microcell/equipment cabinets mounted on an existing utility pole, light standard, or light pole must be painted to match the color of the utility pole, light standard, or light pole. If cabinets

require a special heat-reducing paint finish, they must be a neutral color such as beige, off-white, or light gray; and

- g. The existing utility pole, light standard, or light pole is not replaced with a taller utility pole, light standard, or light pole, except as authorized in Section 17.80.060.F.2.
2. Replacement Utility Poles, Light Standards, and Light Poles. For purposes of this section, "replacement utility poles, light standards, and light poles" shall mean a utility pole, light standards, or light pole that a) replaces an existing or original utility pole, light standard, or light pole to accommodate facilities; and b) does not result in an increase in the total number of utility, guy, or support poles in the streets. Facilities may be attached to replacement utility poles, light standards, and light poles in the streets, provided:
- a. The replacement utility poles, light standards, and light poles are of sufficient integrity to support the facilities;
 - b. The replacement utility poles, light standards, and light poles, and any subsequent replacements, are no more the twenty feet taller than the original utility pole, light standard, or light pole; and
 - c. The utility pole, light standard, or light pole the replacement utility pole, light standard, or light pole replaces is promptly removed.
3. The applicant shall not locate any facilities, such as cabinets, at grade within the streets, but may connect its facilities in the streets to facilities located on property adjacent to the streets in accordance with applicable city codes and with the permission of the adjacent property owner.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.70 - Construction or modification of a support tower. Except

for "eligible modifications" authorized in Section 17.80.035:

- A. Site Plan and Design Review. Required if the following exists:
 - 1. Property is zoned GI, CI, I, C, MUC-2 or MUE; and
 - 2. No adjacent parcel is zoned for residential use.
- B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.070.A.
- C. Prohibited Zoning Districts and Locations. No new support towers shall be permitted within the Canemah Historic Neighborhood, McLoughlin Conservation District, The Oregon Trail-Barlow Road Historic Corridor, five hundred feet of the Willamette Greenway Corridor, or any new Historic Districts unless the applicant can demonstrate that failure to allow the support tower would effectively prevent the provision of communication services in that area. If the applicant makes such a demonstration, the minimum height required to allow that service shall be the maximum height allowed for the tower.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.80 - Site review process.

No wireless communications facilities, as defined in Section 17.80.020, may be constructed, collocated, modified to increase height, installed, or otherwise located within the city except as provided in this section or unless otherwise authorized by Section 17.80.035. Depending on the type and location of the wireless communication facility, the facility shall be subject to the following review unless collocation or an increase in height was granted through a prior land use process. A Conditional Use Review shall require Site Plan and Design Review to occur concurrently with the Conditional Use Review process.

- A. **Compatibility Review.** A wireless communication facility that, pursuant to Sections 17.80.030—17.80.050, is subject to a compatibility review shall be processed in accordance with Standards of Section 17.80.110. The criteria contained in Section 17.80.110 shall govern approval or denial of the compatibility review application. No building permit shall be issued prior to completion of the compatibility review process.
- B. **Site Plan and Design Review.** A wireless communication facility that, pursuant to Sections 17.80.040—17.80.070, is subject to site plan and design review shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.62, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.62 shall govern approval or denial of the site plan and design review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the site plan and design review process, including any local appeal.
- C. **Conditional Use Review.** A wireless communication facility that, pursuant to Sections 17.80.050—17.80.070, is subject to conditional use review, shall be processed in accordance with the Standards of Section 17.80.110 and Chapter 17.56, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.56 shall govern approval or denial of the conditional use review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the Conditional Use Review process, including any local appeal.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.90 - Permit application requirements.

- A. **Eligible Modification Requirements** – For an application under Section 17.80.035, the following information is required:
 - 1. Application fee;
 - 2. Planning Division land use application form;
 - 3. Description of the project design and dimensions;
 - 4. A written response demonstrating compliance with each criterion listed in OCMC Chapter 17.80.035;
 - 5. Signature of the property owner(s) on the application form or a statement from the property owner(s) granting authorization to proceed with building permit and land use process; and
 - 6. Elevations showing all improvements and connections to utilities.
- B. **Compatibility Review Requirements** — For an application under Sections 17.80.030.B.7, 17.80.040.A or 17.80.050.A, the following information is required:
 - 1. Application fee(s).
 - 2. Planning Division land use application form;

3. A narrative of the proposed project that includes a description of the following:
 - i. Need for the project;
 - ii. Rationale and supporting evidence for the location; and
 - iii. Description of the project design and dimensions.
 - iv. A written response demonstrating compliance with each criterion listed in OCMC Chapter 17.80.110
4. Documentation demonstrating compliance with non-ionizing electromagnetic radiation (NIEER) emissions standards as set forth by the Federal Communications Commission (FCC) particularly with respect to any habitable areas within the structure on which the antenna(s) is collocated on or in structures directly across from or adjacent to the antenna(s);
5. Documentation that the auxiliary support equipment shall not produce sound levels in excess of standards contained in Section 17.80.110G., or designs showing how the sound is to be effectively muffled to meet those standards;
6. Signature of the property owner(s) on the application form or a statement from the property owner(s) granting authorization to proceed with building permit and land use process;
7. Documentation of the integrity of the support tower, support structure, utility pole, light standard, or light pole to safely handle the load created by the collocation;
8. Elevations showing all improvements and connections to utilities; and
9. Color simulations of the site after construction demonstrating compatibility.
- C. Site Plan and Design Review. For an application under Sections 17.80.040.B, 17.80.050B., 17.80.060A., or 17.80.070A. the following information is required:
 1. The information required in OCMC Chapter 17.80.90A.;
 2. Pre-application notes;
 3. A written response demonstrating compliance with each criterion listed in the Site Plan and Design Review Standards of Chapter 17.62.050 and all other applicable criterion as defined by the community development director; and
 4. Supplemental requirements listed in OCMC Chapter 17.80.90D. as needed.
- D. Conditional Use Review. For an application under Sections 17.80.050C., 17.80.060B., or 17.80.070B. the following information is required:
 The information required in OCMC Chapter 17.80.90.A;
 1. Pre-application notes;
 2. A written response demonstrating compliance with each criterion listed in the Site Plan and Design Review Standards of Chapter 17.62.050, 17.56, and all other applicable criterion as defined by the community development director as applicable;
 3. For an application under Section 17.80.070. Construction of Modification of a Support Tower, the requirements listed under Section 17.80.090D. Supplemental Information are required;
 4. Responses to conditional use review criteria under Chapter 17.56.010;

5. For an application under Section 17.80.050C. Collocation of Additional Antenna(s) on Support Structures, rationale for being unable to collocate in areas identified in Sections 17.80.050A. and 17.80.050B. shall be provided;
 6. For an application under Section 17.80.060B. Collocation of Additional Antenna(s) on Utility Poles, Light Standards, and Light Poles, rationale for being unable to collocate in areas identified in Section 17.80.060A. shall be provided; and
 7. For an application under Section 17.80.070B. Construction or Modification of a Support Tower, rationale for being unable to collocate in areas identified in Section 17.80.070A. shall be provided.
 8. Supplemental information listed in OCMC Chapter 17.80.90D.
- E. Supplemental Information. The applicant shall submit the following information for all applications subject to conditional use and site plan and design review:
1. The capacity of the support tower in terms of the number and type of antennas it is designed to accommodate.
 2. A signed agreement, as supplied by the city, stating that the applicant shall allow collocation with other users, provided all safety, structural, technological, and monetary requirements are met. This agreement shall also state that any future owners or operators will allow collocation on the tower.
 3. Documentation demonstrating that the Federal Aviation Administration has reviewed and approved the proposal, and Oregon Aeronautics Division has reviewed the proposal. Alternatively, a statement documenting that notice of the proposal has been submitted to the Federal Aviation Administration and Oregon Aeronautics Division may be submitted. The review process may proceed and approval may be granted for the proposal as submitted, subject to Federal Aviation Administration approval. If Federal Aviation Administration approval requires any changes to the proposal as initially approved, then that initial approval shall be void. A new application will need to be submitted, reviewed, and approved through an additional site plan and design review or conditional use review process. No building permit application shall be submitted without documentation demonstrating Federal Aviation Administration review and approval and Oregon Aeronautics Division review.
 4. A visual study containing, at a minimum, a graphic simulation showing the appearance of the proposed tower, antennas, and auxiliary support equipment from at least five points within a one-mile radius. Such points shall be chosen by the provider with a review and approval by the community development director to ensure that various potential views are represented.
 5. Documentation that one or more wireless communications service providers will be using the support tower within sixty days of construction completion.
 6. A site plan, drawn to scale, that includes:
 - a. Existing and proposed improvements;
 - b. Adjacent roads;
 - c. Parking, circulation, and access;
 - d. Connections to utilities, right-of-way cuts required, and easements required;

- e. A landscape plan describing the maintenance plan and showing areas of existing and proposed vegetation to be added, retained, replaced, or removed; and
 - f. Setbacks from property lines or support structure edges of all existing and proposed structures. Plans that have been reduced, but have not had their scale adjusted, will not be accepted as satisfying this requirement.
7. An alternatives analysis for new support towers demonstrating compliance with the Support Tower Location Requirements of Chapter 17.80.100.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.100 - Support tower location requirements.

No new support tower shall be permitted under the provisions of Chapter 17.80.070 unless the applicant demonstrates to the satisfaction of the community development director, and the results are verified by a State of Oregon certified professional engineer, that no existing collocation or modification possibility can accommodate the service needs of the applicant's proposed support tower. All proposals for new support towers must be accompanied by a statement and documentation from a qualified engineer, as determined by the community development director, that the necessary service cannot be provided by collocation on, or modification to, an existing support tower or structure for one or more of the following reasons:

- A. No existing support towers or support structures are located within the geographic area required to meet the applicant's engineering requirements;
- B. Existing support towers or support structures are not of sufficient height to meet the applicant's engineering requirements;
- C. Existing support towers or support structures do not have sufficient structural strength to support the applicant's proposed antenna(s) and related equipment.
- D. The applicant's proposed antenna would cause electromagnetic interference with the antenna(s) on the existing support tower or support structure, or the existing antenna would cause interference with the applicant's proposed antenna(s);
- E. The applicant demonstrates that there are other limiting factors that render existing support towers and support structures unsuitable; or
- F. That fees, costs, or contractual provisions required by the owner in order to share or adapt to an existing support tower or support structure for collocation are unreasonable.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.110 - Design standards.

Installation, collocation, construction, or modification of all support towers, structures, and antennas shall comply with the following standards, unless it qualifies as an “eligible modification” under Section 17.80.035 or an adjustment is obtained pursuant to the provisions of Section 17.80.120.

- A. Support Tower. The support tower shall be self-supporting.

- B. Height Limitation. Support tower and antenna heights shall not exceed the maximum heights provided below.
1. If the property is zoned GI, CI or I; and no adjacent parcel is zoned residential the maximum height of a support tower, including antennas, is one hundred twenty feet.
 2. If the property is zoned: a. GI, CI or I, and an adjacent parcel is zoned residential; or b. C, MUC-2 or MUE; the maximum height of a support tower, including antennas, is one hundred feet.
 3. If the property is zoned MUC-1, MUD or NC; the maximum height of a support tower, including antennas, is seventy-five feet.
 4. For all cases other than those identified in Section 17.80.110.B.1-3 above, the maximum height of a support tower, including antennas, is seventy-five feet.
- C. Collocation. New support towers shall be designed to accommodate collocation of additional providers.
1. New support towers of a height greater than seventy-five feet shall be designed to accommodate collocation of a minimum of two additional providers either outright or through future modification of the tower.
 2. New support towers of a height between sixty feet and seventy-five feet shall be designed to accommodate collocation of a minimum of one additional provider either outright or through future modification of the tower.
- D. Setbacks. The following setbacks shall be required from property lines, not the lease area, for support towers, auxiliary support equipment, and perimeter fencing.
1. Support towers not designed to collapse within themselves shall be setback from all property lines a distance equal to the proposed height of the support tower.
 2. Support towers designed to collapse within themselves shall be setback from the property line a distance equal to the following:
 - a. If the property is zoned GI, CI, I, C, MUC-2 or MUE; and no adjacent parcel is zoned for a residential use the underlying zone setback shall apply;
 - b. If the property is zoned:
 - i. GI, CI, I, C, MUC-2 or MUE and an adjacent parcel is zoned residential; or
 - ii. MUC-1, MUD or NC; the setback shall be a minimum of twenty-five feet from all adjacent residentially zoned property lines and the underlying zoning setback for all other adjacent property lines; or
 - c. For all cases other than those identified in Section 17.80.110.D.2.a. and b. above, the setback shall be a minimum of twenty-five feet from all adjacent property lines.
- E. Auxiliary Support Equipment. The following standards shall be required.
1. If the property is zoned:
 - a. For GI, CI, I, MUC-1, MUC-2, C, MUD, MUE or NC, the auxiliary support equipment footprint shall not exceed an area of three hundred forty square feet and fifteen feet in height at the peak;

- b. For all cases other than those identified in Section 17.80.110.E.1.a. above, the auxiliary support equipment shall be:
 - i. Located underground or completely screened by landscaping or an architecturally significant masonry wall. The wall shall be finished with brick, stone, or stucco. The community development director may approve an alternate screening material if it is compatible with adjacent development and is architecturally significant. No exposed CMU is allowed on the exterior of the wall.
 - 2. Only one auxiliary accessory cabinet shall be allowed per service provider located on a support structure.
- F. Landscaping. In all zoning districts, existing vegetation shall be preserved to the maximum extent practicable. Screening of a site is mandatory.
 - 1. If the property is zoned:
 - a. GI or CI, and no adjacent parcel is zoned residential, landscaping may not be required if water quality issues are addressed and appropriate screening around the facility is proposed;
 - b. For all cases other than those identified in Section 17.80.110.F.1.a. above, landscaping shall be placed completely around the perimeter of the wireless communication facility, except as required to gain access. The minimum planting height shall be a minimum of six feet at the time of planting, densely placed so as to screen the facility. The landscaping shall be compatible with vegetation in the surrounding area, and shall be kept healthy and well maintained as long as the facility is in operation. Failure to maintain the site will be grounds to revoke the ability to operate the facility.
 - c. The community development director may approve an alternative landscaping plan that visually screens the facility and is consistent with the intent of this standard.
- G. Noise Reduction. Noise generating equipment shall be baffled to reduce sound level measured at the property line to the following levels except during short durations for testing and operation of generators in emergency situations:
 - 1. For any property where no adjacent parcel is zoned residential, the sound level at the property line shall not be greater than fifty dB;
 - 2. For all other cases, the sound level shall not be greater than forty dB when measured at the nearest residential parcel's property line.
- H. Lighting.
 - 1. Unless required by the Federal Aviation Administration or the Oregon Aeronautics Division, artificial lighting of wireless communication towers and antennas shall be prohibited.
 - 2. Strobe lighting is prohibited unless required by the Federal Aviation Administration.
 - 3. Security lighting for equipment shelters or cabinets and other on-the-ground auxiliary equipment shall be initiated by motion detecting lighting. The lighting shall be the minimal necessary to secure the site, shall not cause illumination on adjacent properties in excess of a measurement of 0.5 footcandles at the property line, and shall be shielded to keep direct light within the site boundaries.

I. Color.

Unless otherwise required by the Federal Aviation Administration, all support towers and antennas shall have a non-glare finish and blend with the natural background.

J. Signage.

Support towers and antenna(s) shall not be used for signage, symbols, flags, banners, or other devices or objects attached to or painted on any portion of a wireless communication facility.

K. Access Drives.

1. On a site with an existing use, access shall be achieved through use of the existing drives to the greatest extent practicable. If adequate intersection sight distance is unavailable at the existing access intersection with a city street, an analysis of alternate access sites shall be required.
2. Site shall be serviced by an access adequate to ensure fire protection of the site.
3. New access drives shall be paved a minimum of twenty feet deep from the edge of the right-of-way (though the use of pervious paving materials such as F-mix asphalt, pavers, or geotech webbing is encouraged) and designed with material to be as pervious as practicable to minimize stormwater runoff.
4. New access drives shall be reviewed for adequate intersection sight distances.

L. Informing the city. All service providers with facilities within the city of Oregon City shall be required to report in writing to the community development director any changes in the status of their operation.

1. An annual written statement shall be filed with the Planning Manager verifying continued use of each of their facilities in the city's jurisdiction as well as continued compliance with all state and federal agency regulations.
2. The report shall include any of the following changes:
 - a. Changes in or loss of Federal Communication Commission license from the Federal Communication Commission to operate;
 - b. Receipt of notice of failure to comply with the regulations of any other authority over the business or facility;
 - c. Change in ownership of the company that owns wireless communication facility or provides telecommunications services; or
 - d. Loss or termination of lease with the telecommunications facility for a period of six months or longer.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.120 - Adjustments.

Adjustments to the standards of this chapter may be approved by the planning commission at a duly noticed public hearing. The planning commission may grant an adjustment under either of the following circumstances:

1. The planning commission may grant an adjustment when a gap in the applicant's service exists and the gap can only be alleviated through the adjustment of one of more of the standards in

this section. If an adjustment is to be approved, the applicant must demonstrate each of the following:

- a. A gap in coverage or capacity exists in the wireless communication provider's service network that results in network users being regularly unable to connect with the provider's network, or maintain connection;
 - b. The proposed facility will fill the existing service gap. The gap would be filled if the proposed facility would substantially reduce the frequency with which users of the network are unable to connect, or maintain connection, with the provider's network; and
 - c. The gap cannot be filled through collocation on existing facilities, or establishment of facilities that are consistent with the standards of this section on properties other than the proposed site or on the proposed site in a manner which does not require an adjustment under this subsection.
2. The planning commission may grant an adjustment to a standard when the proposed adjustment would utilize existing site characteristics to minimize demonstrated or potential impacts on the use of surrounding properties. For the purposes of this subsection, site characteristics shall include, but need not be limited to, the suitability of the proposed use considering size, shape, location, topography, existence of improvements, and natural features. Applicants for an adjustment under this provision must demonstrate that the adjustment will result in a lower level of impact on surrounding properties than would be generated if the standard were not adjusted. In considering the requested adjustment, the planning commission may consider the following:
 - a. Visual impacts;
 - b. Impacts on views;
 - c. Impacts on property values; and
 - d. Other impacts that the planning commission finds can be mitigated by an adjustment so that the proposed use will have greater compliance in not altering the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary use listed in the underlying district.
 3. Requests for adjustments under this subsection shall only be considered concurrently with the applicable Site Review Process as required by Section 17.80.080. If the Site Review Process required by Section 17.80.080 is a Compatibility Review or a Site Plan and Design Review, the inclusion of an adjustment will require that the application be subject to a Conditional Use Review under Section 17.80.090.C.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.130 - Temporary facilities.

In order to facilitate continuity of services during maintenance or repair of existing installations, or prior to completion of construction of a new wireless communication facility, temporary wireless communication facilities shall be allowed subject to a Type I administrative review. Temporary wireless communication facilities shall not be in use in excess of six-month period. Temporary wireless communication facilities shall not have a permanent foundation, and shall be removed within thirty days of suspension of service they provide.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.140 - Removal for discontinuance of service.

Any wireless communication facility that has not provided service for six months shall be deemed a nuisance and subject to removal as provided in Oregon City Municipal Code Chapter 8.08. The planning manager may grant a six-month extension where a written request has been filed, within the initial six months period, to reuse the support tower or antenna(s).

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.150 - Fees.

Notwithstanding any other provisions of this code, the community development director may require, as part of the application fees for land use permits, an amount sufficient to recover all of the city's costs in retaining consultants to verify statements made in conjunction with the permit application, to the extent that verification requires telecommunication experts.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)



Community Development

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LEGISLATIVE STAFF REPORT AND RECOMMENDATION

A preliminary analysis of the applicable approval criteria for a legislative proposal is enclosed within the following report. The applicant understands that all applicable criteria shall be met, or met with conditions, in order to be approved. The Planning Commission may choose to adopt the findings as recommended by staff or alter any finding as determined appropriate.

December 28, 2020

HEARING DATE: Planning Commission: September 28, 2020
FILE NUMBER: GLUA 20-00033 LEG-20-00001 Public Works Code Amendments
APPLICATION TYPE: Legislative (OCMC 17.50.170)
APPLICANT: Oregon City Public Works
 C/O Josh Wheeler PE, Assistant City Engineer
 PO Box 3040
 Oregon City, OR 97045
REQUEST: Proposed code revisions to the Geologic Hazards Overlay District, and other ancillary Public Works related development code, including refinements to Public Utility Easements (PUE) and undergrounding utility requirements.
LOCATION(S): City Wide

I. BACKGROUND:

1. Existing Conditions

The City of Oregon City Public Works Department proposes changes to the following sections of the Municipal Code :

- 12.04 Streets, Sidewalks, and Public Places (Ordinance 18-1009, adopted July 3, 2019)
- 13.04 Water Service System (Ordinance 10-1003, adopted July 7, 2010)
- 13.08 Sewer Regulations (Ordinance 10-1003, adopted July 7, 2010)
- 13.24 Telecommunications Facilities (Ordinance 13-1014, adopted November 6, 2013)
- 13.34 Utility Facilities in Public Rights-of-Way (Ordinance 13-1014, adopted November 6, 2013)

- 16.12 Minimum Public Improvements and Design Standards for Development (Ordinance 18-1009, adopted July 3, 2019)
- 17.04 Definitions (Ordinance 18-1009, adopted July 3, 2019)
- 17.08 Low-Density Residential Districts (Ordinance 18-1009; adopted July 3, 2019)
- 17.10 Medium Density Residential Districts (Ordinance 18-1009; adopted July 3, 2019)
- 17.12 High-Density Residential Districts (Ordinance 18-1009; adopted July 3, 2019)
- 17.24 NC Neighborhood Commercial District (Ordinance 18-1009; adopted July 3, 2019)
- 17.26 HC Historic Commercial District (Ordinance 18-1009; adopted July 3, 2019)
- 17.29 MUC Mixed-Use Corridor District (Ordinance 18-1009; adopted July 3, 2019)
- 17.31 MUE Mixed-Use Employment District (Ordinance 18-1009; adopted July 3, 2019)
- 17.32 C General Commercial District (Ordinance 18-1009; adopted July 3, 2019)
- 17.34 MUD Mixed-Use Downtown District (Ordinance 18-1009; adopted July 3, 2019)
- 17.35 Willamette Falls Downtown Design District (Ordinance 18-1009; adopted July 3, 2019)
- 17.36 GI General Industrial District (Ordinance 18-1009; adopted July 3, 2019)
- 17.37 CI Campus Industrial District (Ordinance 18-1009; adopted July 3, 2019)
- 17.39 I Institutional District (Ordinance 18-1009; adopted July 3, 2019)
- 17.44 US Geologic Hazards (Ordinance 10-1003; adopted July 7, 2010)
- 17.52 Off-Street Parking and Loading (Ordinance 18-1009; adopted July 3, 2019)
- 17.62 Site Plan and Design Review (Ordinance 18-1009; adopted July 3, 2019)
- 17.80 Communication Facilities (Ordinance 18-1005; adopted May 2, 2018)

These codes have been established and revised over the years. The most recent adopted revision is stated in parentheses.

2. Project Description

The City of Oregon City Public Works Department is implementing a number of projects which all require various changes to the City Code. Those projects are an enhanced Geologic Hazard Code, an Inflow/Infiltration Reduction Pilot Project, a new policy on Undergrounding Existing Overhead Utilities, and policy on Sidewalk Seating and Obstructions of a Sidewalk. Please refer to the *Detailed Summary of Proposed Changes* and the *GLUA 20-0003 Draft Code Revised August 18, 2020*, attached to the staff report for additional detail. Revision to the draft code that occur during the hearings process will be incorporated in updated versions of these two documents.

The proposed code revisions generally address the need for clarifications in technical development review and to address new policy direction on obstructions in the Right of Way. Larger policy questions about how to strike an appropriate balance between development interests and geologic hazard protections should be addressed during the existing Oregon City Comprehensive Plan Update (www.oc2040.com), which looks at broader community policy within a robust public outreach framework which could result in additional code revisions in the future.

Enhanced Geologic Hazard Code

Oregon City is keenly aware of its location in landslide country and its obligation to reduce and mitigate natural hazards risks in its community. Landslides in Newell Creek Canyon in the 1990s and early 2000s spurred action for the City to enhance geologic reporting and construction

requirements in areas of steep slope initially, and later historic landslides areas with the arrival of Lidar data for the region.

In October 2019, the Department of Land Conservation and Development (DLCD) and the Department of Geology and Mineral Industries (DOGAMI) published a new State landslide hazards document titled “Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities” (Exhibit 9). This document provides cities and counties with a high risk of landslides, such as Oregon City, additional tools and analysis to help them better meet Oregon Land Use Goal 7: Natural Hazards (Exhibit 10) by further reducing landslide risk in their communities. This document provides:

“Landslides are a chronic problem in our state, affecting both infrastructure and private property. Approximately 13,048 documented landslides have occurred in Oregon in the last 150 years The combination of geology, precipitation, topography, and seismic activity makes portions of Oregon especially prone to landslides. The Coast Range and the Cascades Range have the most significant landslide hazards in Oregon; these geographic areas and the valley between them contain the bulk of Oregon’s population. We know that precipitation, earthquakes, and human activity are the main triggers of landslides. While we cannot control precipitation and earthquakes, we can change our human activity. Addressing landslide risk is everyone’s responsibility and is codified in Oregon Revised Statute

(ORS) 195.2533: The Legislative Assembly declares that it is the policy of the State of Oregon that: Each property owner, each highway user and all federal, state and local governments share the responsibility for making sound decisions regarding activities that may affect landslide hazards and the associated risks of property damage or personal injury.”¹

As every jurisdiction chooses how best to respond to risk (legal or geologic) and the need to balance the sometimes competing Oregon Land Use Goals and community’s comprehensive Plan and policies, this important document should not be seen as a prescriptive path or regulatory document with approval criteria. Rather, it should be used as a guide to help evaluate the effectiveness of a jurisdictions approach to addressing geologic hazards in their community. Oregon City Development Services, does however, see value in referencing the document in the Geologic Hazards code as a background educational document for the public, applicants, and consultants to better understand the context of geologic hazards in development review.

“DOGAMI and DLCD collaborated on this Guide to help Oregon communities reduce potential losses from landslide events. To do this, we identify land use tools and strategies. The Guide is focused on land use planning approaches to reduce landslide hazard risk and is not intended to address the full range of efforts needed for overall landslide risk reduction and hazard preparedness. Land use planning to reduce landslide hazard risk uses comprehensive plan and implementation provisions (e.g., zoning code, building code, and so forth) and is based on science and policy. Science is a basis for policy, implementation, and decision-making, while policies also shape the science that is pursued and obtained. Much of the expressed need for this Guide (Chapter 4, section C, Key Questions from Interviewees, and Chapter 5, section C, Landslide

¹ Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities, 2019 DOGAMI, DLCD (pages ii)

Guide Interviewees' Key Points) stemmed from communities that pursued and obtained lidar-based land slide mapping with DOGAMI.”²

The Guide is an omnibus look at geologic hazards within Oregon- with a goal of sharing knowledge/provide guidance to both jurisdictions and the general public within the framework of land use review. Chapters topics include types of landslide hazards, the role of geotechnical engineering, types of mitigation, the role of lidar mapping, review of existing codes, and links to other resources. The importance of lidar mapping is a strong theme in the Guide.

“Lidar, a form of laser technology, has significantly increased the ability to locate and map existing landslides. Lidar allows mappers to see the earth’s surface with a much higher level of detail than has ever been available, and as the technology continues to improve, so too does the level of detail. Lidar imagery even allows mappers to see the ground beneath vegetation and trees, as if the earth had been stripped bare. This gives geologists the ability to identify and map landslide features that may have previously been unrecognized or overlooked”³

As one of the earliest pilot areas, Oregon City has been fortunate to have access to Lidar data since 2006, which greatly influenced previous code changes in 2009/2011. Both during the creation of this current Guide and after its adoption, Oregon City staff consulted with staff from both DOGAMI and DLCD to understand the strengths and weaknesses of the current Geologic Hazards code, how it compared to other jurisdictions, and how it could be strengthened.

The Guide identifies the following features of a strong Geologic Hazard Zoning Codes (p.79.):

- Are supported by and incorporate the best available science-based landslide hazard maps and analysis.
- Have clear submittal requirements and approval criteria.
- Employ factors in addition to slope to determine when a geotechnical report is required.
- Define and establish the qualified geoprofessional(s) for the required report in accordance with state licensing regulations.
- Require geotechnical reports to determine whether a proposed development is within the community’s risk tolerance level and to properly condition development.
- Link requirements to degree of risk and geotechnical report recommendations.
- Address soil stabilization through grading, erosion control, vegetation management, and water management.
- Require monitoring by the geotechnical report author during construction.
- Are enforced.
- Contain strong grading, erosion control, and land use planning codes. These codes provide clarity in what is applicable; protect the people, property, and environment; and are effective in limiting or preventing deleterious soil movement.
- Are based on maps and reports that provide details on the hazard areas.

² Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities, 2019 DOGAMI, DLCD (page 2)

³ Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities, 2019 DOGAMI, DLCD (pages 2-3)

- Include specific references to the materials used to establish the code provisions (such as maps and reports) and have those materials adopted and incorporated into the regulatory provisions;
- Have clearly identified application materials (with checklists and handouts to help explain the information) and processes of review.
- Have information located on the community's website so that the code is clear and accessible.
- Have replaced outdated Unified Building Code or UBC references with current International Building Code or IBC references in the code.

In October 2019, DLCD and DOGAMI presented their new landslide guide to the Oregon City City Commission. The City Commission directed staff to review the current city code and determine if any enhancements were needed to achieve these objectives.

As part of furthering this effort, DLCD and DOGAMI commended Oregon City for its use of lidar data and generally meeting all the requirements for a strong geohazard code; however, they recommended improved tracking and reporting post development approval. Since that time, City staff have mapped in the City's GIS system all available geotechnical reports and indemnity agreements received from developers so that this information is now available to the public. In addition, staff identified areas where the code was inconsistent, ambiguous or was the source of confusion for applicants and revisions are proposed to address those issues.

The revisions proposed in this code update provide clarification to existing standards, references the new landslide guide, and codifies the waiver program the City currently follows. Construction specifications, calendar exceptions, and retaining wall standards have also been added. Density, review standards, and stormwater standards have been further clarified. In addition to providing additional data, these standards largely codify existing practice. As mentioned above, the more robust policy discussion about the extent to which development on steep slopes should be limited or development interests protected is reserved for consideration with the new comprehensive plan.

Inflow/Infiltration Reduction Pilot Project

This Pilot Project implements new construction recommended from the Sanitary Sewer Master Plan. Construction recommendations including capital improvement projects. Those projects include installing new storm sewers that will allow disconnection of existing storm sewers from the sanitary sewer system. The Plan also recommends the disconnection of private storm sewers from the sanitary sewer system as well as repair of private sanitary sewer laterals. These two construction projects will reduce inflow and infiltration, respectively, minimizing the amount of stormwater treated at the Tri-City Wastewater Treatment Plant. The Pilot Project is a 5-year project within the McLoughlin and Rivercrest neighborhoods. By using flow monitoring pre and post-construction, the City will determine the success of the Pilot Project. If successful and if budget allows, the City will continue beyond these neighborhoods into other areas of the City.

To implement this project, City Code and Sanitary Sewer Design Standards and Chapter 13.08 of the Oregon City Municipal Code need to be amended to address cross-connections, right of entry, condition of service lines, sewer rates, service lateral improvement program, and reduced rates. Other sections: failure to comply with rules and unlawful substances have also been

revised. Language has been proposed referencing the state administrative rule outlining that property on septic must connect to City sewer if the septic is failing and if that property is physically (of the proper elevation and within 300 feet) and legally available (in city limits or able to be annexed) to the existing public sewer. The code also now proposes to explicitly disallow any cross-connections - any place where connections of storm sewer connect with sanitary sewer. New party line sewers are proposed to be prohibited. Property owners are explicitly required to keep their pipes in good condition to prevent infiltration. The proposed code change also gives the right of public works staff to enter the property so that a service can be televised and inspected. The proposed code changes clarify the sewer rate establishment and reduced rate program to be in line with the water rate program. The service lateral improvement program is also proposed to be codified. Lastly, these code revisions designate the following as unlawful substances within sewer lines: Stormwater, Surface water, groundwater, roof runoff, and subsurface drainage. This follows standards engineering practice. A section prohibiting sending stormwater or groundwater to the sanitary sewer system has also been proposed.

In addition to these changes, staff has taken the opportunity to review the entire sanitary sewer Code - Section 13.08 - to ensure it meets best practices and standards. As a result, the code relating to Sewer Connection – Exemptions, Connections to Existing Work, and Applications Outside City Limits have been revised.

Revisions have also been proposed to Section 13.04 of the Oregon City Municipal Code – Water Service - in order to comply with the Sewer Code of 13.08. Various clarifications have been added to be in conformance with current practices and to be consistent with changes in 13.04.

The Sanitary Sewer Design Standards have proposed revisions to add that no stormwater should be conveyed to the sanitary sewer system. In addition, staff took advantage of the Standards being open to allow for for a greater number construction materials and processes to be used as well as changes to Drop Manholes to be in conformance with the current industry standards.

Undergrounding Existing Overhead Utilities Policy

The City of Oregon City Municipal Code currently requires all development to place utility lines underground. This code has been interpreted to apply to all new utilities as well as existing utilities. With the rising cost of moving existing utilities underground, the City is proposing changes to existing code to reduce the requirement to only those properties where undergrounding will have a greater impact and where it is proportional to do so.

The proposed changes create limits of when an existing overhead line must be placed underground-if the property is at least 200 feet long, at least 1.0 acre in size, or if the subdivision is 6 lots or more, the undergrounding requirement is waived for existing overhead lines. The code changes propose to more specifically define the public utility easement, being 10 feet in most zones, and 5 feet in certain other urban zones. This addresses a conflict that has existed within practice, policy, and the code for quite some time. Definitions of Easement have been updated to be consistent throughout code.

Sidewalk Obstructions Policy

In December 2019, the City Commission requested a review of the current ROW obstruction policies. In response, a new written policy outlining current practices of the Department with respect to the permitting of sidewalk seating and sidewalk obstructions in the downtown area

and 7th Street and amendments to Chapter 12.04 are proposed. These amendments more clearly define the types of obstructions that require a permit.

It should be noted that in summer 2020, the City Commission passed a resolution to waive the fee for sidewalk seating and allow the use of parklets in the right-of-way to address business needs during COVID-19. These code changes are separate from that Resolution. The purpose of the code change is to add a 3rd type of obstruction called 'temporary long term', which would be for temporary items (not attached to the ground) for a period of 61-365 days. The current code defines a temporary item for 0-60 days, and a permanent (attached) obstruction has an indefinite time period.

If adopted, this code change more clearly defines the temporary use of the right of way for items like sidewalk seating or parklets when meeting criteria set forth by the Public Works Department thru consultation with the City Commission.

1. **To implement the above projects, The City of Oregon City Public Works Department anticipates adopting revisions to the following chapters by Ordinance.** Please refer to the Detailed Summary of Proposed Changes for more information on specific recommend changes.

- 12.04 Streets, Sidewalks, and Public Places
- 13.04 Water Service System
- 13.08 Sewer Regulations
- 13.24 Telecommunications Facilities
- 13.34 Utility Facilities in Public Rights-of-Way
- 16.12 Minimum Public Improvements and Design Standards for Development
- 17.04 Definitions
- 17.08 Low-Density Residential Districts
- 17.10 Medium Density Residential Districts
- 17.12 High-Density Residential Districts
- 17.24 NC Neighborhood Commercial District
- 17.26 HC Historic Commercial District
- 17.29 MUC Mixed-Use Corridor District
- 17.31 MUE Mixed-Use Employment District
- 17.32 C General Commercial District
- 17.34 MUD Mixed-Use Downtown District
- 17.35 Willamette Falls Downtown Design District
- 17.36 GI General Industrial District
- 17.37 CI Campus Industrial District
- 17.39 I Institutional District
- 17.44 US Geologic Hazards
- 17.52 Off-Street Parking and Loading
- 17.62 Site Plan and Design Review
- 17.80 Communication Facilities

The City of Oregon City Public Works Department also proposes the following changes be adopted by Ordinance:

- Sanitary Sewer Design Standards
- Engineering Fee Schedule- (*adopting a new fee for Temporary Long-Term ROW obstruction through a separate process after code amendment approval*)

-
The City of Oregon City Public Works Department also proposes the following changes be adopted by Resolution:

- Sidewalk Obstructions Policy
- Undergrounding Private Utilities Policy

3. Public Notice and Comments

Public Works staff presented the proposal to the public at the following public meetings:

- Citizen Involvement Committee – December 2, 2019
 - o Discussed Inflow/Infiltration Policy
 - o Discussed Undergrounding Overhead Utility Policy
- Development Stakeholders Group – November 14, 2019, and February 13, 2020
 (No published meeting minutes available for the 2-12-20 meeting)
 - o Discussed Inflow/Infiltration Policy
 - o Discussed Undergrounding Overhead Utility Policy
 - o Discussed revisions to Geologic Hazards Code
- City Commission Work Session Meeting – December 10, 2019
 - o Discussed Existing unwritten sidewalk policy
- City Commission Work Session Meeting – October 8, 2019
 - o Presentation by DLCD and DOGAMI of new Landslide Guide (No published meeting minutes available)
- Planning Commission – September 23, 2019 (No published meeting minutes available)
 - o Overview of existing Geologic Hazard Code and preview during LEG 19-00003
- City Commission Work Session – June 9, 2020
 - o Presentation of Geologic Hazards Code
- Natural Resource Committee – June 10, 2020
 - o Presentation of Geologic Hazards Code
- City Commission Work Session – June 7, 2020
 - o Presentation of Sidewalk Obstructions and Chapter 16 and 17 revisions
- City Commission Work Session – May 20, 2020
 - o Presentation of Chapter 13 revisions on utilities
- September 23, 2020 Online Geologic Hazards Community Forum. Noticed as part of the Measure 56 Land Use Notice (Exhibit 11)

Only one written comment from AKS Engineering (Exhibit 12a) was received by the public at any of these informational meetings. AKS recommended revisions to sewer specifications, which were added to the revised Sanitary Sewer Design Standards as they provide additional direction for constrained areas and incorporated them into the proposed document.

GLUA 20-00033 LEG-20-00001 Public Works Code Amendments Land Use Public Comment

GLUA 20-00033 LEG-20-00001 Public Works Code Amendments

An overview of the public comment categories submitted to date can be found below. They are separated into technical questions and more policy questions. Please refer to the public comments matrix attached as an exhibit to this staff report for additional detail. The matrix will be updated throughout the Public Hearings process.

Technical Questions

“Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities” (Exhibit 9) As discussed above, the Guide will be added as a reference document in OCMC 17.44 Geologic Hazards this document should not be seen as a prescriptive path or regulatory document with approval criteria. Oregon City Development Services, does, however, see value in referencing the document in the Geologic Hazards code as a background educational document for the public, applicants, and consultants to better understand the context of geologic hazards in development review.

The text of Oregon Land Use Goal 7 should be added or referenced in the code.

Goal 7, Areas Subject to Natural Hazards (Oregon DLCD, is one of the 19 Oregon Statewide Planning Goals.) It contains both requirements and guidelines that are intended to be implemented by local governments as part of their comprehensive plan and zoning efforts. As part of this planning effort, Goal 7 objectives must be balanced against the other goals and implemented in a way that makes sense for Oregon City. Evaluating and balancing the policy objectives set forth in the Goals is done on a city-wide legislative basis rather than as part of individual quasi-judicial development reviews as a means to streamline review as well as avoid ad hoc decision-making. Rather than adopt Goal 7 as a code criterion, the City has elected to to rely on the joint DLCD and DOGAM created Guide, discussed above, which provides more specific guidance on how to best implement the requirements of Goal 7. In fact, DLCD and DOGAMI staff have never raised any concerns that the current Geologic Hazards code does not meet Goal 7 requirements.

How do we trust the staff with the probability of risk based on existing data?

Acknowledging that there is always some risk with any development anywhere, City staff and its licensed consultants are the most qualified to evaluate this risk. They are educated, trained, hold professional engineering licenses and years of experience,. City staff also have geotechnical consultants available through on-call contracts to seek advice and analysis when a second opinion is appropriate. . Staff also rely on the Lidar data provided through DOGAMI and have relationships with DLCD and DOGAMI when needed, additional advisement is warranted.

Need to ensure an active discovery process during construction and not rely on applicant consultants

The City does not rely solely on an applicant consultant. Rather, in addition to staff qualification, the City has four geotechnical consultants available for on-call services. These consultants all have professional engineers, geologists, and structural engineers who can design, analyze, and advise on development or properties that are proposing to do work within a mapped geologic hazard.

Policy Questions Reserved for the 2040 Comprehensive Plan

Clackamas County Multi-Jurisdictional Natural Hazard Mitigation Plan should be added to Comprehensive Plan as part of this project. In 2019, Clackamas County updated this Multi-Jurisdictional Natural Hazards Mitigation Plan (NHMP) to prepare for the long-term effects resulting from hazards. As part of this process, Oregon City also created an updated addendum that is incorporated as part of that

Plan. The relevant substance of the updated Plan and addendum will be considered in the upcoming Comprehensive Plan update process, and specific sections may be added or referenced as part of that review.

Holly Lane should be removed from Transportation System Plan, and a grade-separated interchange should be added to the intersection of Highway 213 and Beaver Creek Road based on geohazard of Holly Lane area. As part of the 2013 Transportation Plan update, the City removed the grade-separated interchange at 213 and Beaver Creek Road as a transportation project. Any discussion about Transportation Plan projects and their relationship with natural hazards can and should occur during the upcoming Comprehensive Plan update process, where these larger policy questions can be discussed with the context of all the State Land Use Goals and Oregon City Comprehensive Plan policies.

OCMC 17.44 Geologic Hazard Overlay should further restrict development. Oregon City is not doing enough, especially in very high-risk areas, and reductions in density should not be based on lots of record; they should be based on the area of the historic landslide. Any large-scale changes in the Geologic Hazards code that affect larger policy questions, such as striking the best balance between housing needs, hazard risk, and property rights, will be addressed during the existing Oregon City Comprehensive Plan Update (www.oc2040.com), which looks at broader community policy within a robust public outreach framework and could result in additional code revisions in the future.

II. DECISION-MAKING CRITERIA

Chapter 17.68 - Zoning Changes and Comprehensive Plan Amendments

17.68.010 - Initiation of the amendment.

A text amendment to the comprehensive Plan, or an amendment to the zoning code or map or the Comprehensive Plan map, may be initiated by:

- A. A resolution request by the City Commission;*
- B. An official proposal by the Planning Commission;*
- C. An application to the Planning Division; or.*
- D. A Legislative request by the Planning Division.*

All requests for amendment or change in this title shall be referred to the Planning Commission.

Finding: Complies as Proposed. The proposal qualifies as initiated as a legislative request by the Public Works Director.

17.68.015 –Procedures.

Applications shall be reviewed pursuant to the procedures set forth in Chapter 17.50.

17.50.170 - Legislative hearing process.

A. Purpose. Legislative actions involve the adoption or amendment of the City's land use regulations, comprehensive Plan, maps, inventories and other policy documents that affect the entire City or large portions of it. Legislative actions which affect land use shall begin with a public hearing before the planning commission.

B. Planning Commission Review.

1. Hearing Required. The planning commission shall hold at least one public hearing before recommending action on a legislative proposal. Any interested person may appear and provide written or oral testimony on the proposal at or prior to the hearing. The community development director shall notify the Oregon Department of Land Conservation and Development (DLCD) as required by the post-acknowledgment procedures of ORS 197.610 to 197.625, as applicable.

Finding: Complies as Proposed. This legislative action will follow the procedures found in OCMC 17.50.170 including meetings with the Planning Commission, and City Commission where applicable.

17.68.020 - Criteria.

The criteria for comprehensive plan amendment or text or map amendment in the zoning code are set forth as follows:

A. The proposal shall be consistent with the applicable goals and policies of the comprehensive Plan;

Finding: Complies as Proposed. This legislative action will be consistent with the applicable goals and policies of the Comprehensive Plan. Therefore, the proposed amendments are consistent with Criterion (A).

The proposed code changes implement several ancillary plans to the Oregon City Comprehensive Plan. Regular Updates to Ancillary Documents like the Sewer Master Plan assure consistency with the Oregon City Comprehensive Plan. The applicable sections of the Comprehensive Plan are addressed below as well as State Land Use Goals. No revisions to the Master Plans or Comprehensive Plan are proposed.

The 2004 Oregon City Comprehensive Plan contains criteria for approving changes to the comprehensive Plan and ancillary documents. Review of the Comprehensive Plan should consider:

1. Plan implementation process.
2. Adequacy of the Plan to guide land use actions, including an examination of trends.
3. Whether the Plan still reflects community needs, desires, attitudes and conditions. This shall include changing demographic patterns and economics.
4. Addition of updated factual information including that made available to the City of regional, state and federal governmental agencies.

“Statements of Principle - Page 3.

Provide efficient and cost-effective services. Water, sewer, fire protection, police services, streets, storm drainage, and other public services are directly affected by land-use decisions. This Plan ensures that land-development decisions are linked to master plans for specific services such as water or sewer and to capital improvement plans that affect budgets and require taxes to build. The City Commission believes that citizens are economically well-served through compact urban form, redevelopment of existing areas, and public investments (for example, street improvements) that are carefully tied to private investments when development occurs.”

“Implementing the Plan – Page 4

The Oregon City Comprehensive Plan is implemented through City Codes, **ancillary plans**, concept plans, and master plans.

Ancillary plans are adopted by the City Commission for such things as parks and recreation, transportation systems, water facilities, and sewer facilities. Usually prepared by City departments through a public process, ancillary plans are approved by the City Planning Commission and adopted by the City Commission to provide operational guidance to city departments in planning for and carrying out city services. These plans are updated more frequently than the comprehensive Plan.”

“Ancillary Plans. – Page 15

Since 1982, several documents have been adopted as ancillary to the 1982 Comprehensive Plan: the *Public Facilities Plan* (1990), *Oregon City Transportation System Plan* (2001), *Oregon City Downtown Community Plan* (1999), *Oregon City Waterfront Master Plan* (2002), *City of Oregon City Water Master Plan* (2003), *City of **Oregon City Sanitary Sewer Master Plan (2003)***, *Drainage Master Plan* (1988, updated in 1999 as the *City of Oregon City Public Works Stormwater and Grading Design Standards*), *Caufield Basin Master Plan* (1997), *South End Basin Master Plan* (1997), *Molalla Avenue Boulevard and Bikeway Improvements Plan* (2001), the *Oregon City Park and Recreation Master Plan* (1999), and the *Oregon City Trails Master Plan* (2004).”

Applicable Comprehensive Plan and Statewide Planning Goals and Policies

Goal 7.1 Natural Hazards

Protect life and reduce property loss from the destruction associated with natural hazards.

Policy 7.1.1

Limit loss of life and damage to property from natural hazards by regulating or prohibiting development in areas of known or potential hazards.

Policy 7.1.8

Provide standards in City Codes for planning, reviewing, and approving development in areas of potential landslides that will prevent or minimize potential landslides while allowing appropriate development.

Finding: Complies as Proposed. This legislative update includes revisions to the Geologic Hazard Code Chapter 17.44. The goal of the code amendments is to address concerns we have heard from the public and the elected officials as well as ensure the code conforms to the document titled “Preparing for Landslide Hazards : A Land Use Guide for Oregon Communities” which was published in October 2019 by the Department of Land Conservation and Development (DLCD) and the Department of Geology and Mineral Industries (DOGAMI).

Although the revisions do not map any new or expand existing mapped landslide areas or steep slopes, the revisions provide clarity and consistency between when the geologic hazard code applies and when development is exempt. The revisions include a reference to the new State landslide document. This reference is made in addition to other State Documents that are to be referenced when reviewing a site

for geologic hazards. It is merely another reference to ensure a fully thought out review of the mapped geologic hazard. The revisions also include additional requirements to address stormwater impacts to a mapped geologic hazard and clarifies that an existing mapped geologic hazard can include steep slopes or historic landslide areas.

Other miscellaneous improvements have been made. The waiver process that the City has been using via in-house policy is now proposed to be codified. Additional criteria have been added to determine when a site work may occur outside of the codified months of the year. Retaining wall design requirements have been added. Language has been added, ensuring indemnification documents are recorded and run with the property.

These revisions improve or enhance the protection of life and property by implementing current scientific understanding of landslide susceptibility for lands currently mapped within the Geologic Hazard Overlay, ensuring that these conditions will be addressed by the applicants during the development review process. Including the DOGAMI landslide guide as an application submittal requirement will offer city staff and its consultants a better understanding of current conditions allowing them to make decisions about development that will reduce the likelihood of loss of life or property.

Goal 9.1 Improve Oregon City's Economic Health

Provide a vital, diversified, innovative economy including an adequate supply of goods and services and employment opportunities to work toward an economically reasonable, ecologically sound and socially equitable economy

Finding: Complies as Proposed. This legislative code update will continue to provide a vibrant economy by ensuring downtown businesses can use sidewalks in a way that is beneficial, by reducing stormwater from entering the sanitary system reducing unneeded treatment at the sewer treatment plant which in turn keeps rates low, and by exempting smaller developments from the requirement of relocating overhead utilities underground in turn reducing the cost to develop.

The Sidewalk Code in Chapter 12.04 is proposed to be amended to include standards for sidewalk seating in the right of way as a long term permanent obstruction. This will allow seating to be used for downtown businesses in a way that supplements the business while also allowing for pedestrian movements. This will help in the economic vitality of those businesses. The code amendment also allows for businesses to provide sidewalk sales on a seasonal basis, whereas currently, the code restricts those sales. This amendment should also assist in the economic vitality of those businesses.

The sewer code amendments set forth in OCMC 13.08 will be amended to require that all stormwater be redirected from the sanitary system back to the stormwater system. Currently, due to the City originally consisting of a combined sewer system, many older areas of the City remain connected improperly to the sanitary system, which contributes unnecessary flows to the Tri-City Wastewater Treatment Plant. As that Plant near capacity, rates and system development charges have had to be raised to add new infrastructure. This code amendment will reduce the flows and ensure that no future expansion will be needed beyond what new housing requires. The effect will be to stabilize sewer rates and system development charges rather than a continued substantial increase to those fees.

Amendments to OCMC Chapter 16.12 will exempt the current requirement that all existing overhead utilities be relocated underground. This imposes an undue burden on smaller developments with very little benefit to the neighborhood. While undergrounding is a requirement that reduces visual air

pollution, which can stagnate property values, it only makes an impact when completed in a larger manner. This code amendment has the potential to retain or improve property values while also reducing the burden on developments.

Goal 9.2 Cooperative Partnerships

Create and maintain cooperative partnerships with other public agencies and business groups interested in promoting economic development.

Policy 9.2.1

Seek input from local businesses when making decisions that will have a significant economic impact on them.

Policy 9.2.2

Carefully consider the economic impacts of proposed programs and regulations in the process of implementing the City's Comprehensive Plan.

Policy 9.2.3

Simplify, streamline, and continuously improve the permitting and development review process.

Finding: Complies as Proposed. This legislative code amendment has been proposed as a response to what other public agencies, local business, and citizens have conveyed to the City.

Tri-City Sewer Treatment Plant, operated by Water Environment Services(WES), is nearing capacity, and WES has requested a reduction of stormwater flows into the sanitary sewer system. This is completed by inflow and infiltration reduction and is implemented by policy and code changes in OCMC Chapter 13.08.

The Downtown Oregon City Association and Oregon City Chamber of Commerce are partners with respect to the vitality of downtown businesses. The Chamber of Commerce requested the City review its policies with respect to sidewalk obstructions and temporary obstructions. Proposed amendments to OCMC Chapter 12.04 are in response to this request.

In October, 2019, DOGAMI / DLCD issued a document entitled "Preparing for Landslide Hazards: A Land Use Guide for Oregon Communities.". In response, the Oregon City Planning Commission, the Oregon City City Commission, and citizens, proposed amendments to OCMC Chapter 17.44 have to address the Guide recommendations.

The Oregon City Development Stakeholders Group (DSG) requested the City look at the requirement to underground existing overhead utilities. During this investigation, the City met with Portland General Electric(PGE) to discuss the reasons this requirement has become expensive compared to previous years. In that discussion, a conversation also occurred concerning the provision for a Public Utility Easement (PUE) commonly used for electric, gas, telephone, cable, fiberoptic franchise utilities. While OCMC Chapters 13.24 and 13.34 provide regulation on franchise utilities, the development code had only minor references to the PUE. The code amendments within OCMC Chapter 16.12 reflect the discussions with not only PGE and the DSG, but also the City of Oregon City Community Development Department. These discussions led to the proposed revisions of not only reducing the undergrounding requirement but also more clearly regulating the provision for and use of the PUE.

All revisions relate to economic impacts and are intended to streamline the development process by providing clarity and common-sense solutions recommended by these proposed revisions.

Goal 11.1 Provision of Public Facilities

Serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities.

Policy 11.1.2

Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.

Policy 11.1.4

Support development on underdeveloped or vacant buildable land within the city where public facilities and services are available or can be provided and where land-use compatibility can be found relative to the environment, zoning, and Comprehensive Plan goals.

Policy 11.1.5

Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.

Policy 11.1.7

Develop and maintain a coordinated Capital Improvements Plan that provides a framework, schedule, prioritization, and cost estimate for the provision of public facilities and services within the City of Oregon City and its Urban Growth Boundary.

Finding: Complies as Proposed. This legislative code amendment relates to the provision of public facilities while also implementing Capital Improvement Plans.

Concerning proposed amendments to OCMC Chapter 12.04 on sidewalks and temporary obstructions, the purpose is to ensure the public sidewalk is maintained for use by the public while also allowing it to be used for seating for adjacent businesses.

Concerning proposed amendments to OCMC Chapter 13.08, the sewer amendments implement plans and programs set forth in the Sanitary Sewer Master Plan.

Proposed amendments to OCMC Chapter 16.12 provide a clearer definitive space for the franchise utilities to be located so that their service can be provided to all developments with ease of maintenance and reduced disruption of service.

Proposed amendments to OCMC Chapter 17.44 support safe development on underdeveloped or vacant buildable land where utilities exist and ensure that these developments are designed in a safer, effective, and more sustainable manner based on the current science available for geologic hazards.

Goal 11.2 Wastewater

Seek the most efficient and economic means available for constructing, operating, and maintaining the City's wastewater collection system while protecting

the environment and meeting state and federal standards for sanitary sewer systems.

Policy 11.2.2

Plan, operate and maintain the wastewater collection system for all current and anticipated city residents within the existing Urban Growth Boundary. Plan strategically for future expansion areas.

Policy 11.2.4

Seek economical means to reduce inflow and infiltration of surface- and groundwater into the wastewater collection system. As appropriate, plant riparian vegetation to slow stormwater, and to reduce erosion and stream sedimentation.

Policy 11.2.5

Implement the City's wastewater policies through the *City of Oregon City Sanitary Sewer Master Plan*.

Finding: Complies as Proposed. This legislative code amendment proposes changes to OCMC Chapter 13.08 concerning sewer flows. These amendments are necessary to implement the inflow and infiltration (I&I) reduction plan. These amendments implement the City of Oregon City Sanitary Sewer Master Plan.

Goal 11.7 Private Utility Operations

Coordinate with utilities that provide electric, gas, telephone and television cable systems, and high-speed internet connection to Oregon City residents to ensure adequate service levels.

Policy 11.7.1

Require local service lines in new subdivisions be placed underground.

Policy 11.7.2

Coordinate with private utility providers to install infrastructure during Street construction and maintenance to reduce the need to repeatedly cut into newly paved streets.

Policy 11.7.3

Adopt lighting practices in streets and other public facilities, and encourage them in private development, that reduce glare, light pollution, light trespass, and energy use, while maintaining even lighting ensuring good visibility and safety for the public.

Policy 11.7.4

Encourage development of broadband networks in street rights-of-way in a coordinated way to provide state-of-the-art technology to residents.

Finding: Complies as Proposed. This legislative code amendment provides for an appropriate Public Utility Easement (PUE) for the franchise utilities (electric, gas, telephone, cable, fiberoptic) and provides exemptions for the relocation of existing overhead utilities to underground. This exemption will not change the requirement to install all new utilities underground to be in line with Policy 11.7.1. The Pavement Cut Standards are not proposed to be amended as part of these amendments; therefore,

Policy 11.7.2 is retained. No changes to the lighting requirements are proposed; therefore, Policy 11.7.3 is retained. The details and clarification of the PUE will improve the execution of Policy 11.7.4.

Goal 12.5 Safety

Develop and maintain a transportation system that is safe.

Policy 12.5.1

Identify improvements that are needed to increase the safety of the transportation system for all users.

Policy 12.5.2

Identify and implement ways to minimize conflict points between different modes of travel.

Policy 12.5.3

Improve the safety of vehicular, rail, bicycle, and pedestrian crossings.

Finding: Complies as Proposed. These legislative code amendments will enhance safety thru the proposed revisions to OCMC 12.04 and 17.44. By ensuring proper space for pedestrians on sidewalks by regulating the seating in the right of way through the changes to the temporary obstruction codes, safety will be improved for pedestrians. By providing more stringent standards to the geologic hazard code, developers of vacant property will have safer properties to build on and those properties that could be affected by a landslide are less likely impacted.

Goal 13.1 Energy Sources

Conserve energy in all forms through efficient land-use patterns, public transportation, building siting and construction standards, and city programs, facilities, and activities.

Finding: Complies as Proposed. This legislative code amendment will not affect the City's adopted public facilities master plans.

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 plan amendment, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone or plan amendment;

Finding: Complies as Proposed. This legislative action will have no negative effect on the provision of public facilities and services.

Inflow/Infiltration : The amendments to OCMC 13.04 and 13.08 will have no negative effect on the public water and sewer systems. In fact, the proposed amendments will improve the public systems by reducing the negative effects of inflow and infiltration currently being experienced by the system. These amendments implement improvements from the City's Sanitary Sewer and Stormwater Master Plans. Zoning is not impacted by this amendment. These amendments allow for proper implementation of the City's Stormwater and Grading Standards and Sanitary Sewer Standards.

Undergrounding overhead utilities and revising development standards as they relate to the Public Works Standards: The amendments to OCMC 13.24, 13.34, 16.12, and Chapter 17 will have no negative effect on the public transportation system. Reducing the requirement of moving existing utilities underground will retain more physical space for the transportation system and other utilities that may be needed within the public right of way. No impact to the City's Transportation System Plan or Utility Master Plans is anticipated. These amendments will not affect the zoning designations for any lands. However, these amendments will address conflicts within current development standards relating to

the provision of a PUE and adjustments to how setbacks are measured as a result as well as limiting development review for activities occurring solely with the City right-of-way. This amendment will remove those conflicts and let zoning standards and public works standards apply in concert with one another.

Sidewalks: The amendments to OCMC 12.04 will have no negative effect on the public transportation system. The amendment and subsequent policy will provide guidelines and requirements for the use of the public right of way, which should reduce the negative impacts experienced in the traveled way. This amendment ensures proper space for sidewalks as described in the City's Transportation System Plan. Zoning is not affected by this amendment.

Geologic Hazards: The amendments to OCMC 17.44 will have no negative effects to public transportation or utility systems. The amendments strengthen requirements to those properties seeking development within geologic hazards. This will enhance the safety of utilities and roadways and will further minimize negative impacts to those systems. No utility or transportation master plan is affected by this amendment. This amendment does not affect zoning. The current properties with mapped geologic hazards will remain as mapped. Therefore, the proposed amendments are consistent with Criterion (B).

C. 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 or plan amendment; and

Finding: Complies as Proposed.: Not applicable. None of the proposed amendments will have any impact on the existing or planned functions, capacity, and level of service of the transportation system. Therefore, the proposed amendments are consistent with Criterion (C).

D. Statewide planning goals shall be addressed if the Comprehensive Plan does not contain specific policies or provisions which control the amendment.

STATEWIDE PLANNING GOAL 1:

To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

Finding: Complies as Proposed. This goal is implemented through the applicable Goals and Policies in Section 1 of the Oregon City Comprehensive Plan: Citizen Involvement. Development of the Plan included a public involvement effort. The applicant, Oregon City Public Works Department, has presented the update for input to the Development Stakeholders Group on May 9, 2019. The update was provided on the City's website during the months of February through May 2019. Local civil engineering consultants and developers were notified via email on February 5, 2019 and April 24, 2019. The standards were presented in a City Commission Work Session on May 7, 2019. The City Commission considered these standards for approval on July 17, 2019. An online Geologic Hazards Community Forum was held on September 23, 2020, which was noticed as part of the Measure 56 Land Use Notice sent to all Oregon City households.

September 23, 2020, Virtual online Community Forum

The purpose of the Community Forum was to educate the public on the municipal code with respect to geotechnical issues, educate the public on various facets of geotechnical science, and to listen to concerns from the public so that the City may implement the best-revised code possible as it looks to update existing codes. The Community Forum consisted of a panel of speakers who spoke about geologic hazards in general, as well as the recommended code revisions. The meeting also contained a Question & Answer session. A link to the video will be added to the staff report as soon as it is uploaded to the city website.

Panel Members and Speaking Topics :

- Dr. Scott Burns, PhD - Portland State University, Department of Geology

Slopes and when to be concerned. History of Oregon City.

- George Freitag, CEG, LEG, LHG - GRI, Principal

Rainfall relationship to geologic hazards

- Tim Pfeiffer, PE, GE - Foundation Engineering, Senior Geotechnical Engineer

Geologic and Geotechnical Basis for the City of Oregon City Geologic Hazards Code

- Tricia Sears, Natural Hazards Planner - Dept. Of Land Conservation and Development (DLCD)

Geologic Hazards Planning in Oregon

- Josh Wheeler, PE - City of Oregon City, Assistant City Engineer

Proposed Code Updates to OCMC 17.44

STATEWIDE PLANNING GOAL 2:

To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Finding: Complies as Proposed. This goal is implemented through the applicable Goals and Policies in Section 2 of the Oregon City Comprehensive Plan: Land Use. Because the Plan is an ancillary document to the City's Comprehensive Plan, the application was processed pursuant to the legislative hearing process outlined in Section 17.50.170 of the Oregon City Municipal Code.

Goal 2 also provides that the public and "affected governmental units" be given the opportunity to review and comment on proposed amendments. In furthering that effort, the City has provided the Oregon Department of Fish and Wildlife notice of the proposed amendment and requested comment and no response was received.

STATEWIDE PLANNING GOAL 3: Agricultural Lands and GOAL 4: Forest Lands

Finding: Not Applicable. By definition, Oregon City does not have rural resource lands such as for agricultural or forest use within its city limits or UGB, and therefore, those goals are not applicable.

STATEWIDE PLANNING GOAL 5:

To protect natural resources and conserve scenic and historic areas and open spaces.

Finding: Complies as Proposed OAR 660-023-0250 specifies the circumstances that trigger Goal 5 review. In relevant part, an amendment affects a Goal 5 resource if the PAPA "amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource." The proposed amendments do not amend any Goal 5 adopted resource list or any standard

adopted in order to protect Goal 5 resources. Therefore, this Goal is met. These amendments further Goal 5 objectives by providing more rigorous review and greater clarity in the Natural Hazards Chapter 17.44 amendments. By clarifying and enhancing the geologic hazard code, natural resources will receive increased protection. The code revisions require stormwater evaluation, which relates to groundwater as well as overland flow and requires the applications to address any downstream impacts or regional impacts relating to stormwater flow, which in some cases relates to designated Natural Resources. No other code revisions relate to Goal 5. See responses under Comprehensive Plan Goal 7.1 for more information.

The first step in the general Goal 5 process is to compile an inventory of resources to determine which resources are significant. OAR 660-023-0030. The proposed amendment does not alter or amend the City's riparian or wetland inventories.⁴ The quantity, quality, and significance determinations for riparian resources similarly remain unchanged. Therefore, this inventory analysis step is not applicable to the City's adoption of The Geologic Hazards Overlay District Code amendments, or the other revisions to utility standards. The second step is determining a program to achieve Goal 5 based on "an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use." OAR 660-023-0040. A "conflicting use" is defined by OAR 660-023-0010 to include "a land use, or other activity reasonably and customarily subject to land use regulations, that could adversely affect a significant Goal 5 resource."

The proposed amendments add clarity to the existing standard; they generally do not further restrict or allow development. To the extent, changes occur, the only effects will be to further limit development that could conflict with riparian areas in favor of providing greater protection for Goal 5 inventoried riparian resources. Given that the proposed amendments will have a negligible impact on development, compliance with Goal 5 can be achieved through a very limited ESEE analysis. As a result, examples of the clarifications, along with a discussion of the identified ESEE consequences include:

- Additional requirements to address stormwater impacts to a mapped geologic hazard and clarifies that an existing mapped geologic hazard can either include steep slopes or historic landslide areas or both.

With the minor amendments to the Geologic Hazards Overlay District Code amendments, the City has chosen to amend its program to achieve Goal 5 with respect to inventoried riparian resources by adopting additional measures to protect those resources from an identified conflicting development uses.

STATEWIDE PLANNING GOAL 6: Air and Water Quality

To maintain and improve the quality of the air, water and land resources of the state

Finding: Complies as Proposed. This application meets Goal 6 by how it addresses removing stormwater from the sanitary sewer system in the Code revisions of 13.08. This will improve the function of the Tri City Wastewater Treatment Plant as regulated by the Department of Environmental Quality (DEQ). See response under Comprehensive Plan Goal 11.2 for more information.

STATEWIDE PLANNING GOAL Goal 7: Areas Subject to Natural Hazards

To protect life and property from natural disasters and hazards.

Finding: Complies as Proposed This legislative update includes revisions to the Geologic Hazard Code Chapter 17.44. The goal of the code amendments is to address concerns we have heard from the public and the elected officials as well as ensure the code conforms to the document titled “Preparing for Landslide Hazards : A Land Use Guide for Oregon Communities” which was published in October 2019 by the Department of Land Conservation and Development (DLCD) and the Department of Geology and Mineral Industries (DOGAMI).

Although the revisions do not map any new or expand existing mapped landslide areas or steep slopes, the revisions provide clarity and consistency between when the geologic hazard code applies and when development is exempt from further review. The revisions include a reference to the new State landslide document that should be considered by applicants and result in a more robust analysis occurring as part of development review. The proposed code revisions also include additional requirements to address stormwater impacts to a mapped geologic hazard and clarifies that an existing mapped geologic hazard can either include steep slopes or historic landslide areas or both.

Other miscellaneous improvements have been made, including:

- The waiver of review in very limited circumstances where the impact of development are deemed to have a *de minimis* impact, as consistent with current city policy. requirements .
- Additional criteria that dictate when site work may occur.
- Retaining wall design requirements have been added.
- Language has been added ensuring indemnification documents are recorded and run with the property.

These revisions improve or enhance the protection of life and property by ensuring current science concerning landslide susceptibility will be addressed. By referencing the new DOGAMI landslide guide, the review requirements have added an additional tool to ensure potential landslide impacts are addressed. Additional tools should make the analysis more informed, potentially leading to reduced risk. If adopted, these standards will be implemented for the review and approval of properties with mapped geologic hazards.

STATEWIDE PLANNING GOAL Goal 9: Economic Development

To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

Finding: Complies as Proposed. This legislative code update will continue to provide a vibrant economy by ensuring downtown businesses can use sidewalks in a way that is beneficial by reducing stormwater from entering the sanitary system reducing unneeded treatment at the sewer treatment plant which in turn keeps rates low, and by exempting smaller developments from the requirement of relocating overhead utilities underground, in turn, reducing the cost to develop.

The Sidewalk Code in Chapter 12.04 is proposed to be amended to include standards for sidewalk seating in the right of way as a long term permanent obstruction. This will allow seating to be used for

downtown businesses in a way that supplements the business while also allow for pedestrian movements. This will help in the economic vitality of those businesses. The code amendment also allows for businesses to provide sidewalk sales on a seasonal basis, whereas now the code restricts those sales. This amendment should also assist in the economic vitality of those businesses.

The sewer code amendments set forth in OCMC 13.08 will be amended to require all stormwater to be redirected from the sanitary system back to the stormwater system. Currently, due to the City originally consisting of a combined sewer system, many older areas of the City remain connected improperly to the sanitary system, which contributes unnecessary flows to the Tri-City Wastewater Treatment Plant. As that Plant nears capacity, rates and system development charges have had to be raised to add new infrastructure. This code amendment will reduce the flows and ensure that no future expansion will be needed beyond what new housing will require stable rates and system development charges rather than a continued substantial increase to those fees.

Amendments to OCMC Chapter 16.12 will exempt the current requirement that all existing overhead utilities shall be relocated underground. This provides an undue burden on smaller developments with very little benefit to the neighborhood. While undergrounding is a requirement that reduces visual air pollution, which can stagnate property values, it only makes an impact when completed in a larger manner. This code amendment has the potential to retain or improve property values while also reducing the burden on development.

Revisions to the Geologic Hazards Overlay District provided additional clarity in the development review process for all parties. Reducing uncertainty provides real value in the larger analysis a property owner makes in determining if a site will be developed or not.

STATEWIDE PLANNING GOAL 10: Housing

To provide for the housing needs of citizens of the state.

Finding: Complies as Proposed. Revisions to 16.12 and 17.44 positively impact housing. By reducing the burden on smaller developments through exemptions for undergrounding existing overhead utilities, the amendments will make developments cost-effective; therefore, enhancing the likely development of the City's buildable lands. By strengthening the geologic hazard code, the lands become more buildable with less risk due to the rigorous reviews necessary to ensure the site is safe. Without this code revisions, a site may have become unbuildable due to the lack of certainty.

STATEWIDE PLANNING GOAL 11: Urban Development

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Finding: Complies as Proposed. This goal is implemented through the applicable Goals and Policies in Section 11 of the Oregon City Comprehensive Plan: Public Facilities. As stated in Section 11, the Code amendments are necessary to maintain compliance with Statewide Planning Goal 11, Public Facilities. Goal 11 requires that public facilities and services be provided in a timely, orderly, and efficient manner. The goal's central concept is that local governments should plan public services in accordance with the community's needs as a whole rather than be forced to respond to individual developments as they occur. The proposed municipal code amendments are created to serve the health, safety, education, welfare, and recreational needs of all Oregon City residents through the planning and provision of adequate public facilities.

Goal 12: Transportation

To provide and encourage a safe, convenient and economic transportation system.

Finding: Complies as Proposed. Revisions to 12.04 enhance the pedestrian areas in the downtown area by ensuring proper areas are available for pedestrians while also allowing for sidewalk seating. Revisions to 16.12 allow for a proper Public Utility Easement (PUE) to ensure the actual right of way is clear of any additional utilities that could cause disruptions to service when under maintenance or create additional obstructions due to the settlement of sidewalk and roadways.

17.68.025 - Zoning for land annexed into the City.

Upon annexation into the City, the property shall be rezoned from County zoning to the corresponding City zoning designation as identified in Table 17.06.030, provided the criteria for a zone change can be met.

Finding: Not applicable. No land is being rezoned as part of this legislative application.

17.68.040 - Approval by the Commission. If the Planning Commission finds that the request or application for an amendment, or change, complies with the criteria of OCMC 17.68.020, it shall forward its findings and recommendation to the City Commission for action thereon by that body.

Finding: Not applicable. No Planning Commission recommendation will relate to OCMC 17.68.020 as no rezoning or annexation is occurring with this legislative application.

17.68.050 - Conditions.

In granting a change in zoning classification to any property, the Commission may attach such conditions and requirements to the zone change as the Commission deems necessary in the public interest and such conditions and restrictions shall thereafter apply to the zone change or map amendment.

Finding: Not applicable. No land is being rezoned as part of this legislative application.

Chapter 17.50 Administration and Procedures

17.50.050 – Pre-application conference.

A. Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.

- 1. To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.*
- 2. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.*
- 3. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.*

B. A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community

Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have not been significantly amended. In no case shall a pre-application conference be valid for more than one year.

- C. *Notwithstanding any representations by City staff at a pre-application conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.*

Finding: Complies as Proposed. Public Works attended PA 19-69 on December 3, 2019

17.50.055 - Neighborhood association meeting.

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

- A. *Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.*
- B. *The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the Citizen Involvement Committee.*
- C. *A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, Citizen Involvement Committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a City facility.*
- D. *If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the Citizen Involvement Committee.*
- E. *To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.*

Finding: Complies as Proposed. Attendance at the Citizen Involvement Committee occurred on December 2, 2019 concerning the inflow/infiltration Policy and Code Amendments and the Undergrounding Overhead Utility Policy and Code amendments. The Citizen Involvement Committee was also invited to participate in the September 23, 2020 Geologic Hazards Webinar, which included a question and answer portion.

17.50.070 - Completeness review and one hundred twenty-day rule.

- C. *Once the Community Development Director determines the application is complete enough to process, or the applicant refuses to submit any more information, the City shall declare the application complete. Pursuant to ORS 227.178, the City will reach a final decision on an application within one hundred twenty calendar days from the date that the application is determined to be or deemed complete unless the applicant agrees to suspend the one hundred twenty calendar day time line or unless State law provides otherwise. The one hundred twenty-day period, however, does not apply in the following situations:*
- 1. Any hearing continuance or other process delay requested by the applicant shall be deemed an extension or waiver, as appropriate, of the one hundred twenty-day period.*
 - 2. Any delay in the decision-making process necessitated because the applicant provided an incomplete set of mailing labels for the record property owners within three hundred feet of the subject property shall extend the one hundred twenty-day period for the amount of time required to correct the notice defect.*
 - 3. The one hundred twenty-day period does not apply to any application for a permit that is not wholly within the City's authority and control.*
 - 4. The one hundred twenty-day period does not apply to any application for an amendment to the City's comprehensive plan or land use regulations nor to any application for a permit, the approval of which depends upon a plan amendment.*
- D. *A one-hundred day period applies in place of the one-hundred-twenty day period for affordable housing projects where:*
- 1. The project includes five or more residential units, including assisted living facilities or group homes;*
 - 2. At least 50% of the residential units will be sold or rented to households with incomes equal to or less than 60% of the median family income for Clackamas County or for the state, whichever is greater; and*
 - 3. Development is subject to a covenant restricting the owner and successive owner from selling or renting any of the affordable units as housing that is not affordable for a period of 60 years from the date of the certificate of occupancy.*
- E. *The one hundred twenty-day period specified in OCMC 17.50.070.C or D may be extended for a specified period of time at the written request of the applicant. The total of all extensions may not exceed two hundred forty-five calendar days.*
- F. *The approval standards that control the City's review and decision on a complete application are those which were in effect on the date the application was first submitted.*

Finding: Complies as Proposed.

Not applicable. Legislative actions are not subject to this standard.

III. Staff recommendation:

Based on the findings identified above and including all items entered into the record, the proposal to amend the Titles 12, 13, 16 and 17 of the Oregon City Municipal Code, is consistent with the Oregon City Comprehensive Plan and State Land Use Goals. Staff recommends approval of Planning file GLUA 20-00033 LEG-20-00001 Public Works Code Amendments.



MEMORANDUM

LEG 20-00001

Additional proposed revisions to Oregon City Municipal Code

Based on comments at the City Commission Regular Meeting on January 6, 2021, we have made the following additional proposed revisions to Oregon City Municipal Code :

1. We re-reviewed all four proposed codes for grammatical errors.
2. We re-reviewed all four proposed codes for gender neutral references.
3. We reviewed all four proposed codes for outdated references.

We also completed a thorough review of each code to ensure proper language, modernized terms, and any changes requested by the City Commission as stated below (the revisions are provided in green to show that they are new revisions since the item was last provided on 1-6-21 :

City Code 12.04

- A. 12.04.032.B.1. – changed the word ‘provided’ to ‘approved’.
- B. 12.04.032.B.2. – changed the word ‘established’ to ‘approved’.

Discussion occurred concerning sidewalk sales and temporary obstruction permit fees. These items are anticipated to be presented along with the 2nd reading of the ordinance, anticipated on February 3, 2021.

Sidewalk sales are proposed through resolution to be on most streets within the downtown area and within most portions of 7th Street.

The current fee for Temporary Obstructions (60 days or less) is \$56.00.

The current fee for Renewable Right of Way Permits (61-365 days) is \$170.00. A discussion is anticipated on February 9 to recommend that fee be \$85.00. If acceptable or another amount is determined, staff will bring a resolution to amend the engineering fees on March 3, 2021.

City Code 13.04

- A. 13.04.100 – changed ‘water superintendent’ to ‘Public Works Director’
- B. 13.04.110 – changed the word ‘are’ to ‘is’.
- C. 13.04.120 – changed the title ‘Plumber’s report’ to ‘Public water usage’.
- D. 13.04.140 – added language to the Right of entry ensuring notice is given when required, feasible, or possible
- E. 13.04.180.A. – gender neutral language is proposed
- F. 13.04.180.B. – changed ‘water department’ to ‘Public Works Department’
- G. 13.04.230 - changed ‘water department’ to ‘Public Works Department’
- H. 13.04.270 – changed ‘water superintendent’ to ‘Public Works Director’ 13.04.280 – language was changed for the reduced rate and financial assistance
- I. 13.04.280 – the ‘clean’ version of the code as presented on 1.4.21 was correct. We have updated the redline version to make the change that was intended. Owner occupied was changed to residential customer. (We recommend speaking to Finance for any questions about the operation of this program)

A question was asked about the out of City rate in 13.04.260.B. There are 94 accounts currently paying the out of city rate.

Also, there was a question about access through right of entry. Our meter readers have informed me that we do have a handful of properties where the meter is in a fenced yard, behind a building, and inside a building. In the case of where the meter is outdoors (we experience this in the older parts of town where meters are in some yards or driveways), the meter reader has been given the right by the property owner to come on the property when needed to read the meter. In the case of meters which are inside buildings (Carousel laundry and the jail come to mind), the meter reader enters the premises during operational hours and the staff present allow the meter reader to go read the meter.

City Code 13.08

No additional revisions are proposed except ‘engineer’ has been changed to ‘City Engineer’.

With respect to 13.08.020, the chief of police is the appropriate person to oversee code enforcement action; therefore, this code is correct.

While privies and cesspools are archaic terms in 13.08.030, we have become aware of such items as recent as 2019 when we worked with a property owner to connect to the City sewer and properly fill in their cesspool; therefore, due to Oregon City existing over 100 years, this code should remain.

City Code 17.80

No additional revisions are proposed.

Thank you,
Josh Wheeler, PE
Assistant City Engineer



MEMORANDUM

LEG 20-00001

Additional proposed revisions to Oregon City Municipal Code - Chapter 13.08

Based on comments at the City Commission Work Session on December 8, 2020, we have made the following additional proposed revisions to Oregon City Municipal Code – Chapter 13.08 :

1. Reviewed the entire document for gender neutral language
 - a. Changed 13.08.050.B., 13.08.060, and 13.08.070.
2. Changed 13.08.190 to replace the word “tenement” with “co-op”.

We also reviewed proposed code revisions in 13.04 and 17.80 for non-gender neutral references and found none; therefore, no additional revisions were made.

Thank you,

Josh Wheeler, PE
Assistant City Engineer



MEMORANDUM

LEG 20-00001

Additional proposed revisions to Oregon City Municipal Code - Chapter 12.04

Based on comments at the City Commission Work Session on December 16, 2020, we have made the following additional proposed revisions to Oregon City Municipal Code – Chapter 12.04 :

1. Removed section 12.04.120.B.7.b.1 therefore removing any calendar restriction to the use of long term temporary obstructions

We also are providing a Resolution in an effort to address City Commission comments concerning sidewalk sales effectively allowing sales in the downtown and 7th street area.

Thank you,

Josh Wheeler, PE
Assistant City Engineer



Oregon City Municipal Code

Chapter 12.04 Streets, Sidewalks, and Public Places

12.04.003 Definitions.

Whenever the words or terms and their derivatives are used in this chapter, they shall be given the meaning set forth in OCMC 17.04, unless the context dictates applying a different meaning.

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

- A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.
- B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.
- C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure, or other means.
- D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses, and permits.
- E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.

12.04.025 - Driveways.

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

12.04.030 - Maintenance and repair.

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

12.04.031 - Liability for sidewalk injuries.

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

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

12.04.032 - Required sidewalk repair.

- A. When the Public Works Director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk.
- B. The notice shall require the owner of the property adjacent to the defective sidewalk to complete the repair of the sidewalk within ninety days after the service of notice. The notice shall also state that if the repair is not made by the owner, the City may do the work and the cost of the work shall be assessed against the property adjacent to the sidewalk.
1. All sidewalks hereafter constructed in the City on improved streets shall be constructed to city standards and widths required in the Oregon City Transportation System Plan and OCMC 16.12. Sidewalks and curbs are to be constructed according to plans and specifications ~~approved~~provided by the City Engineer.
 2. Sidewalks constructed on unimproved streets shall be constructed of concrete according to lines and grades ~~approved~~established by the City Engineer. On unimproved streets, curbs do not have to be constructed.
- C. The Public Works Director shall cause a copy of the notice to be served personally upon the owner of the property adjacent to the defective sidewalk, or the notice may be served by registered or certified mail, return receipt requested. If after diligent search the owner is not discovered, the Public Works Director shall cause a copy of the notice to be posted in a conspicuous place on the property, and such posting shall have the same effect as service of notice by mail or by personal service upon the owner of the property.
- D. The person serving the notice shall file with the City recorder a statement stating the time, place and manner of service or notice.

12.04.033 - City may do work.

If repair of the sidewalk is not completed within ninety days after the service of notice, the Public Works Director shall carry out the needed work on the sidewalk. Upon completion of the work, the Public Works Director shall submit an itemized statement of the cost of the work to the Finance Director. The City may, at its discretion, construct, repair or maintain sidewalks deemed to be in disrepair by the Public Works Director for the health, safety, and general welfare of the residents of the City.

12.04.034 - Assessment of costs.

Upon receipt of the report, the Finance Director shall assess the cost of the sidewalk work against the property adjacent to the sidewalk. The assessment shall be a lien against the property and may be collected in the same manner as is provided for in the collection of street improvement assessment.

12.04.040 – Sidewalks—Enforcement.

Any person whose duty it is to maintain and repair any sidewalk, as provided by this chapter, and who fails to do so shall be subject to the enforcement procedures of OCMC 1.16, 1.20 and 1.24. Failure to comply with the provisions of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or

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

12.04.060 - Retaining walls—Maintenance.

When a retaining wall is necessary to keep the earth from falling or sliding onto the sidewalk or into a public street and the property owner or person in charge of that property fails or refuses to build such a wall, such shall be deemed a nuisance. The violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

12.04.070 - Removal of sliding dirt.

It shall be the duty of the owner of any property as mentioned in OCMC 12.04.050, and in case the owner is a nonresident, then the agent or other person in charge of the same, to remove from the street or sidewalk or both as the case may be, any and all earth or dirt falling on or sliding into or upon the same from the property, and to build and maintain in order at all times, the retaining wall as herein required; and upon the failure, neglect or refusal of the land owner, the agent or person in charge of the same to clean away such earth or dirt, falling or sliding from the property into the street or upon the sidewalk, or both, or to build the retaining wall, shall be deemed guilty of a misdemeanor.

12.04.080 - Excavations—Permit required.

It shall be unlawful for any person to dig up, break, excavate, disturb, dig under, or undermine any public street or alley, or any part thereof or any macadam, gravel, or other street pavement or improvement without first applying for and obtaining from the engineer a written permit so to do.

12.04.090 - Excavations—Permit restrictions.

The permit shall designate the portion of the street to be so taken up or disturbed, together with the purpose for making the excavation, the number of days in which the work shall be done, and the trench or excavation to be refilled and such other restrictions as may be deemed of public necessity or benefit.

12.04.100 - Excavations—Restoration of pavement.

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

12.04.110 - Excavations—Nuisance—Penalty.

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

12.04.120 - Obstructions—Permit required.

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

1. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.
2. The applicant shall submit at least the following information in the permitting process in order to allow the City Commission to adequately consider whether to allow the placement of an obstruction and whether any conditions may be attached:
 - a. Site plan showing right-of-way, utilities, driveways as directed by staff;
 - b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;
 - c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);
 - d. Alternative routes if necessary;
 - e. Minimizing obstruction area; and
 - f. Hold harmless/maintenance agreement.
3. If the City Commission adopts a resolution allowing the placement of a permanent obstruction in the right-of-way, the City Engineer shall issue a right-of-way permit with any conditions deemed necessary by the City Commission.
4. Signage that acts as an obstruction is approved through OCMC 15.28

B. Temporary Obstructions.

1. A "temporary obstruction" is defined as an object placed in a public street, sidewalk, road, or alley which is not permanently anchored to another surface such as the pavement, sidewalk, or a building for a period of not more than sixty consecutive days. A "temporary obstruction" includes, but is not limited to, moving containers, ~~and~~ debris dumpsters, and seating.
 - a. Planters and benches are exempt from permitting unless the City Engineer finds by inspection that the planter or bench is impeding use of the right-of-way. If deemed an impeding use, a planter or bench will comply with the requirements for temporary obstructions.
2. The City Engineer, or designee, is authorized to grant a permit for a temporary obstruction.
3. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.
4. The applicant shall submit, and the City Engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the City Engineer:
 - a. Site plan showing right-of-way, utilities, driveways as directed by staff;
 - b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;
 - c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);
 - d. Handicap Accessible accessible route complying with Americans with Disability Act (ADA) standards.
 - e. Alternative routes if necessary;
 - f. Minimizing obstruction area; and
 - g. Hold harmless/maintenance agreement.
5. In determining whether to issue a right-of-way permit to allow a temporary obstruction, the City Engineer may issue such a permit only after finding that the following criteria have been satisfied:
 - a. The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;

- b. The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;
 - c. No alternative locations are available that would not require use of the public right-of-way; and
 - d. Any other factor that the City Engineer deems relevant.
6. The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.

7. Types

- a. A short-term temporary obstruction is allowed for a period of not more than 60 consecutive calendar days. It is permitted with a temporary obstruction in the right-of-way permit.
- b. A long-term temporary obstruction is allowed for a period of not more than one year, and it is permitted with a renewable right-of-way permit.
 - 1. ~~Sidewalk seating and planters that act as temporary obstructions shall be limited to March 15 to November 30 of each calendar year.~~

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

- C. Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the City Commission.

12.04.130 - Obstructions—Sidewalk sales and displays.

- A. It is unlawful for any person to use the public sidewalks of the city for the purpose of packing, unpacking or storage of goods or merchandise or for the display of goods or merchandise for sale. It is permissible to use the public sidewalks for the process of expeditiously loading and unloading goods and merchandise.
- B. The City Commission may, in its discretion, designate certain areas of the City to permit the display and sale of goods or merchandise on the public sidewalks under such conditions as may be provided on a regular basis. A business in a designated area will be required to obtain a Renewable Right of Way Permit for this use if sales are intended to last longer than 60 days. A temporary obstruction permit may be issued for sales that occur less than 61 days.

12.04.140 - Obstructions—Nuisance—Penalty.

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

12.04.150 - Street and alley vacations—Cost.

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

12.04.170 - Street design—Purpose and general provisions.

All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings, and engineering specifications. All streets shall be reviewed and approved by the City Engineer

prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

12.04.194 - Traffic sight obstructions.

All streets shall comply with the Traffic Sight Obstructions in OCMC 10.32.

12.04.270 - Standard construction specifications.

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

12.04.280 - Violation—Penalty.

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

Chapter 13.04 - WATER SERVICE SYSTEM

13.04.010 - Application for service.

When water service is requested where connection of the premises to the city mains is required, applications must be made ~~to the City on printed forms furnished by the water office~~, signed by the owner, or agent of the premises to be served, and the applicant must state fully and truly all the purposes for which water may be required, and must agree to conform to the rules and regulations that are now in force or may hereafter be adopted for the proper operation of the water system. The charges for supplying a water service connection shall be in accordance with a schedule of charges adopted by the city commission. All new water service connections shall be metered.

(Prior code § 3-3-1)

13.04.020 - Use by applicant only.

No person supplied with water from the city mains will be entitled to use it for any purpose other than that stated in his application, or to supply in any way other persons or families.

(Prior code § 3-3-2)

13.04.030 - Permits—Renewal—Change of service.

- A. The city issues engineering permits for water line work in the right-of-way either as a separate public works permit or as part of overall issued public infrastructure construction plans. The various fees for these permits are approved and modified from time to time by the city commission. Failure to meet the conditions of the issued permit shall constitute a violation of the Municipal Code.
- B. When permits for renewal or change of service are granted, the old service will be shut-off and disconnected at the main by ~~the contractor and inspected by~~ employees of the city. The charge for same shall be the reasonable costs as determined by administrative policy. (Prior code § 3-3-3)

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.04.040 - Service pipe—Approval.

Service pipes, of all sizes, within or without the premises, whether for domestic, commercial or fire protection purposes, must be approved by the city.

(Prior code § 3-3-4)

13.04.050 - Service pipe—Installation.

The installation of all service pipes from the main to ~~a point at the curb line the meter box~~ shall be made by ~~the contractor and inspected by~~ employees of the water department.

(Prior code § 3-3-5)

13.04.060 - Stopcock and shutoff box.

A stopcock of approved pattern and material will be placed and protected by means of ~~the metera suitable~~ box, which will be furnished and installed by the ~~contractor and inspected by the~~ water department.

(Prior code § 3-3-6)

13.04.070 - Stop and waste cocks.

Just inside the basement wall a stop and waste cock of approved pattern, protected from frost, must in all cases be placed in a convenient location, by means of which the pipes in the building may be

drained at night during freezing weather. If the building is not provided with a basement, the stop and waste cock must be placed near the outside wall thereof. All stores and offices in the building must have separate shutoffs.

(Prior code § 3-3-7)

13.04.080 - Service pipes—Repair and protection.

The service pipe, within the premises, and throughout its entire length to the curb cock must be kept in repair and protected from freezing at the expense of the owner, who shall be responsible for all damages resulting from leaks or breaks in the service pipe.

(Prior code §3-3-8)

13.04.090 - Temporary disconnection.

Should it be desired to discontinue the use of all water supplied to the premise for a period of not less than fifteen days, notice must be given, and payment in full of all arrears made at the utility billing water-office. The water will then be turned off, and turned on again on application, without charge; provided however, no remission of rates will be made for a period of less than fifteen days.

(Prior code §3-3-9)

13.04.100 - Service for each house.

Hereafter, a separate service direct to the tap in the main, will be required for each house or business that is to be supplied with water ~~;- provided that when there are two houses on an inside lot the service shall be divided at the curb, and a~~ separate meter provided for each place to be so supplied. Where two or more separate residential or business buildings are presently served by a single service the Public Works Director~~water superintendent~~ may require separate meter installations wherever possible. A Double Check Valve Assembly (DCVA) is required for services that are commercial in nature (includes multi-family dwellings)

(Prior code §3-3-10)

13.04.110 - Discontinuance—Defective fixtures.

Water will not be furnished where there is~~are~~ defective or leaking faucets, toilets or other fixtures, or where there are toilets or urinals without self-closing valves, or tanks without self-acting float valves; and when such may be discovered the water superintendent shall have authority to immediately install a meter.

(Prior code §3-3-11)

13.04.120 - ~~Plumber's report.~~ Public water usage.

~~Plumbers doing any work by which additional water may be drawn from the city mains, must report the same at the water department as soon as the work is completed, or within twenty-four hours thereafter. Contractors must obtain a "hydrant meter" from the City for any unmetered City water usage.~~

(Prior code §3-3-13)

13.04.130 - Shut-off for repairs.

The water may at any time be shut off from the mains without notice, for repairs or other necessary purposes, and the city will not be responsible for any consequent damages. Water for steam boilers for power purposes will not be furnished by direct pressure from the city mains; tanks for holding an ample reserve of water shall always be provided by the owners of the boilers. While water is temporarily shut off

from the mains, the hot water faucets should be kept open by the occupants of the premises to allow the steam to escape from the water heater and should damage result to meters by reason of steam or hot water, the owner shall be charged for repairs.

(Prior code §3-3-14)

13.04.140 - Right-of-entry.

Agents of the ~~Public Workswater De~~partment may have free access at proper hours of the day to all parts of the building and premises in which water may be delivered from the city mains, for the purpose of inspecting the condition of the pipes and fixtures and the manner in which the water is used, and for the purpose of fixing water rates for the premises. Public Works Department staff will not enter into private property without notice and consent of the property owner unless an emergency situation exists, and the property owner did not respond to initial contact or unless previous arrangements have been made to have unnotified access to the property.

(Prior code §3-3-15)

13.04.150 - Emergency regulations.

Under emergency conditions the city manager may enforce such regulation of the use of water as conditions require.

(Prior code §3-3-16)

13.04.160 - Water for building purposes.

Water for building purposes may be obtained at the rates herein prescribed.

(Prior code §3-3-18)

13.04.170 - Fire protection pipes.

Pipes to be used for fire purposes only will be allowed within buildings only where such pipes are entirely disconnected from those used for any other purposes and have a separate connection to the mains. A Double Check Detector Assembly (DCDA) is required for all stand alone fire lines and is to be installed in a vault as close to the property line as possible. The connection with the city main must be made as prescribed in Sections 13.04.050 and 13.04.060.

(Prior code §3-3-19)

13.04.180 - Use of meters.

- A. The ~~Public Works superintendent of the water De~~partment and its agents shall have the right at any time to attach a meter to, or detach a meter from the service pipe of such places and of such places only, as ~~he may deem~~ is deemed best; and where water is supplied through a meter to charge for the quantity of water used or measured at the regular established meter rates. When a meter fails to register accurately, the charge shall be according to the average quantity used daily, as shown by the meter when in order.
- B. The ~~Public Works Department and its agentswater superintendent~~ shall immediately install a meter for any unmetered consumer who is found guilty of violating any of the rules and regulations of the ~~Public Workswater De~~partment.
- C. Any householder desiring metered water service may obtain the service by making written application to the city for the installation of a meter and by agreeing to pay for the quantity of water used or measured at the regular established meter rates.

(Prior code §3-3-20)

13.04.190 - Ownership of meters.

All meters ~~, except such as are required to be purchased by the water users,~~ shall be and remain the property of the city and may be removed whenever the Public Works Department~~superintendent~~ may decide to do so.

(Prior code §3-3-21)

13.04.200 - Use of private water and city water.

Buildings supplied with water other than that furnished by the city, may obtain city water at meter rates; provided, that no physical connection shall in any way, directly or indirectly exist between the private system and the city's water system. Approved backflow protection is required immediately behind the meter when potential for cross connection exists (wells). The backflow assembly must be tested in place before city water is turned on. When a connection is found to exist, the water will be shut off.

(Prior code §3-3-22)

13.04.210 - Testing and correcting meters.

When any consumer whose water supply is metered shall make a complaint that the bill for any particular month is excessive, the water superintendent will, upon request, have the meter reread.

(Prior code §3-3-23)

13.04.220 - Failure to comply with rules.

Should anyone fail to comply with the rules and regulations established as conditioned to the use of water, or to pay the water rates at the time and manner hereafter provided, the water may be shut off until payment is made of the amount due, including delinquent payment penalty fees, as well as with five dollars in addition the amount for the expense of turning the water on. Failure to comply with required annual testing of backflow assemblies will also result in discontinuation of water service.

(Prior code §3-3-24)

13.04.230 - Authority to turn on water.

After the water has been shut off at the curb cock, if it should be turned on by any person other than an employee of the ~~water d~~Public Works Department, the water will be again shut off, a section of the service pipe removed, and service will not be furnished until the arrears, current month and an additional charge for the reasonable cost of disconnection and resumption of service, as determined by administrative policy, are paid. If the curb cock is damaged from being operated by parties other than city agents, the party who is responsible will be billed for city agents to repair.

(Prior code §3-3-25)

13.04.240 - Water charged to premises.

All charges for furnishing water within the city shall be chargeable to the premises where water is supplied. Whenever any charge for furnishing water shall not be paid when due on or before the fifteenth day following the due date shown on the billing, the same shall become delinquent and shall be subject to a delinquent payment penalty fee and discontinuance of service. Written notice of shutoff of water shall be given by mail at least fifteen days in advance of such shutoff. After water service has been discontinued, water shall not again be furnished until all outstanding charges shall have been paid in full. All charges for furnishing water or for services relating to the furnishing of water shall be a lien on the property to which the water or water services are supplied. Enforcement of the lien may be commenced

at any time after the charge or charges are delinquent for thirty days by suit in equity following the procedures for foreclosure of a mortgage.

(Prior code §3-3-26)

13.04.250 - Applications.

Applications for permits to connect premises with the city water system, or requests to turn off water, shall, in all cases, be in writing and signed by the owner, lessee, or agent of the premises to be served.

(Prior code §3-3-27)

13.04.260 - Water rates.

- A. Water Rates in City. The rates for water furnished by the city to each user within the city limits shall be established by city commission resolution.
- B. Water Rates Outside City. The rates for water furnished by the city to each user outside of the city limits shall be one and one-half times the rate charged to users within the city limits.

~~C. Senior Citizen or Disabled Rates. The principal residence of a person sixty-five years of age or older or certifiable disabled, residing in a residence with a three-quarter inch meter may qualify for a special user rate if meeting certain income criteria as established by city commission resolution. Senior or disabled citizens requesting the special user rate shall make annual written application for this rate and shall certify as to meeting the income criteria established by the city commission.~~

(Prior code §3-3-28)

13.04.270 - Meter sizes.

The minimum meter sizes shall be as follows:

<u>Unit</u>	<u>Size in Inches</u>
1 unit	$\frac{3}{4}$
2—4 units	1 (or two $\frac{3}{4}$ " for duplexes)
5—10 units	1- $\frac{1}{2}$
11—30 units	2 disc
31—50 units	2 compound

All services shall have the proper size meters as designated by the ~~Public Works Director~~^{water superintendent} and approved by the city ~~engineer~~^{manager} on existing and future meter installations, and the user shall pay the minimum charge per Section 13.04.260 above for large-size meters. Proper backflow protection is required on all services 2" and greater in size.

(Prior code §3-3-29)

~~13.04.280 -- Reduced rates and financial assistance Water rates for hardship and handicapped users. The commission may grant water users under sixty-five years in hardship and handicap cases the same adjusted minimum water rates applicable to senior citizens and under their same restrictions. An owner-occupied residence with a 5/8 x 3/4 inch water meter may qualify for a reduced user rate, or other~~

~~financial assistance, if the income of its residents meets certain criteria.~~ A residential customer may qualify for a reduced user rate, or other financial assistance, if certain criteria are met, including if the income of the residents meet certain criteria. Customers requesting the reduced user rates, or other financial assistance, shall make written application and shall certify as to meeting the income criteria established.

(Prior code §3-3-30)

13.04.300 - Cost participation.

In the event it is necessary for any developer to extend a city water main larger than necessary to serve the particular development, the city may agree to participate with the developer in the excess cost, said cost participation may be paid from the water fund.

(Prior code §3-3-32)

13.04.310 - Water connection—Required.

- A. All new residences, other new buildings, or any other new use requiring domestic water must be connected to the city water service if the same is available at the time of construction and prior to the use thereof.
- B. All residential and other uses connected to a public water supply system must be connected to the city system within sixty days of the city water being made available. ~~In the event the existing meter or tap does not meet city standards, required modifications will be performed by the city and the reasonable costs thereof as determined by administrative policy shall be paid by the user. These costs shall be in lieu of the connection charge ordinarily imposed.~~ All water connections must meet current City standards and regulations.

C. Domestic – backflow prevention is required on services that:

- 1. Are commercial in nature (includes multi-family dwellings),
- 2. Are greater than or equal to two-inches in diameter,
- 3. Have piping higher than 32 feet above the water main, or
- 4. Have a potential hazard to the public water supply, in the discretion of the Oregon City Water Division (includes new or existing wells)
- 5. Irrigation – backflow prevention is required on all irrigation systems.

(Prior code §3-3-33)

13.04.315 - Definitions.

The following definitions shall apply to this chapter:

"Back-flow" means any reversal of the normal flow of water from the distribution system that may allow contamination or pollution of the public water supply and render it nonpotable.

"Back-flow prevention device or assembly" means any devices or assemblies, or methods approved by the appropriate regulatory agencies for use in the prevention of back-flow.

"Contamination" means an impairment of the quality of water that creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, wastes, etc.

"Cross-connection" means any actual or potential piping connection or structural arrangement allowing the introduction of any liquid, gas, material or substance into any potable water system, thereby rendering it nonpotable.

"Distribution system" means the network of storage facilities, pumps, pipes, valves and other appurtenances between the source and the point of delivery of potable water in the public water system.

"Nonpotable water" means potable water that has been chemically, biologically or physically altered and thereby rendered unfit for human consumption.

"Point of delivery" means the terminal end of a service connection between the distribution system and the consumer's water system at which point the city of Oregon City loses its jurisdiction of and sanitary control over the potable water supply.

"Pollution" means an impairment of the quality of water to a degree that does not create a hazard to public health but affects the aesthetic qualities of such water for domestic use.

"Potable water" means water from any source that has been investigated by the health agency having jurisdiction and has been approved for human consumption.

"Public water supply" means the distribution system supplying potable water to the city of Oregon City consumers.

"Regulatory agencies" means one or more of the following agencies whose specifications and requirements, as presented in their associated publications are accepted as industry standards:

American Water Works Association—Standards C510, C511 and Manual M14.

American Water Works Association, Pacific Northwest Section—Cross-Connection Control Manual, ~~Sixth~~ Seventh Edition, ~~December 1995~~ 2012.

Department of Human Services—OAR 333-~~061-0025~~ (9), OAR 333-~~061-0070~~ ~~(1)~~, OAR 333-~~061-0071~~.

University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research—Manual of Cross Connection Control, ~~Ninth-Tenth~~ Edition, ~~December 1993~~ 2009.

"Service connection" means the supply piping between the distribution system main and the consumer's water system, normally terminating at the downstream end of the water meter.

"Unprotected cross-connection" means any cross-connection which may exist that allows the introduction of any liquid, gas, material or substance into the public water supply, thereby rendering it nonpotable.

(Ord. 04-1006 §1, 2004: Ord. 98-1001 (part), 1998)

13.04.320 - Control of cross-connections.

The city shall establish, maintain and monitor an on-going cross-connection control program which shall be administered by the Public Works Director and/or their designated appointee(s). Information pertaining to the policies and procedures of the program can be obtained from the Public Works Director.

(Ord. 98-1001 (part), 1998)

13.04.330 - Back-flow prevention ~~devices~~ assemblies.

The public water supply shall be protected from any existing and/or future unprotected cross-connections by the installation of ~~a back-flow-an approved backflow~~ prevention ~~device-assembly~~ at or near the point of delivery according to standards and procedures established by one or more of the defined regulatory agencies. Back-flow prevention shall be required in circumstances where an

unprotected cross-connection condition may exist. Failure to install an approved back-flow ~~device~~ assembly or conduct a required annual test on a back-flow ~~device-assembly~~ shall result in denial or discontinuation of water service.

(Ord. 04-1006 §2, 2004: Ord. 98-1001 (part), 1998)

13.04.340 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Water Distribution System Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Water Distribution System Design Standards shall be complied with.

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

Chapter 13.08 - SEWER REGULATIONS

13.08.010 - Sewer connections—Required.

- A. All water closets, privies, sinks, bathtubs and drains containing or carrying sewerage in all houses located within the boundaries of any sewer district heretofore established or that may hereafter be established and in which persons are residing shall be connected with the public system of sewers, and within the time specified in the ordinance creating the sewer district.
- B. It is unlawful for any person to reside in any house or upon any premises within the boundaries of any sewer district in the city, after the time specified for connecting the house or premises as provided in the ordinance establishing the sewer district in which the house or premises is located unless the house or premises has been connected with the sewer system owned and operated by the City as provided in this section.

(Prior code §8-5-1)

13.08.015 – Sewer connections – Exemptions

Properties may remain on septic if the public sewer is not physically and legally available as defined by OAR 340-071-0160

13.08.16 – Cross Connections.

Sanitary sewers may not connect or convey any sewage to storm sewers.

13.08.020 - Connection required—Notice.

It shall be the duty of the chief of police to ascertain all houses and premises in the districts, whose owners have not complied with the ordinance providing for the connection of the privies, located therein or upon such premises, and to post a notice thereon, that it shall be unlawful for any person to reside in the house or upon the premises, while the water closets, sinks, bathtubs and drains used in connection with the house or premises, remain unconnected with the public sewer in such district.

(Prior code §8-5-2)

13.08.030 - Privies.

All property owners within a sewer district are required to close and properly fill with earth all privy vaults, cesspools and septic tanks within the time specified in the ordinance establishing the sewer district and hereafter it is unlawful for any property owner to dig or make use of any cesspool, privy vault or septic tank within any sewer district in which there has been a public sewer constructed to serve the premises.

(Prior code §8-5-3)

13.08.040 - Engineer—Approval required.

All connections made with any public sewer or drain in the city shall be made according to the specifications made or approved by the City Engineer.

(Prior code §8-5-4)

13.08.050 - Engineer—Permits.

- A. The city issues engineering permits for sewer line work in the right-of-way either as a separate Public Works permit or as part of overall issued public infrastructure construction plans. The various fees for these permits are approved and modified from time to time by the city commission. Failure to meet the conditions of the issued permit shall constitute a violation of the Municipal Code.
- B. The City Engineer is authorized to grant such permits as ~~he may~~ deemed necessary for allowing persons to tap the public sewers, and to make connections therewith; provided however, that the permit shall be granted on the express condition that the owner or tenant for whose benefit such connection shall be made, and each succeeding tenant shall in consideration of the privilege thereby granted, hold the city harmless for any loss or damage that may in any way result from or be occasioned by any such tap or connection. (Prior code §8-5-5)

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.08.060 - Bond required.

No person shall be authorized by the engineer to do this work of making connections with any of the public sewers or drains until ~~that person~~he has furnished and filed a surety company bond in the office of the recorder in the sum of five hundred dollars conditioned that ~~to he will~~ indemnify and save harmless the city from all loss or damage that may be occasioned in any way by accident or the want of care or skill ~~on his part~~ in the prosecution of such work or that may be occasioned by reason of any opening ~~by him~~ made or caused to be made in a street, market place, or public ground in making of any public or private sewer or drain as aforesaid; and conditioned also ~~to that he will~~ promptly at the proper time replace and restore the street and pavement over the opening to as good state and condition as ~~it was~~he found ~~it~~ previous to the opening of the same, and ~~to that he will~~ conform in all respects to the rules and regulations which may from time to time be established by the commission in relation to putting junctions and tapping of the sewers and drains.

(Prior code §8-5-6)

13.08.070 - Acceptance of connection by city.

Each person so licensed who shall make connections with the sewers or drains, shall keep in repair and good order the whole of the work executed ~~by him~~ until the same is accepted by the City Engineer, or such other person as may be designated for that purpose, which acceptance shall be given in writing, and shall not be given until the expiration of one year after the completion of the work.

(Prior code §8-5-7)

13.08.080 - Notification of engineer.

After the permit has been issued notice in writing must in all cases be left in the office of the City Engineer by the person who is about to make the connection with any sewer or drain, stating the time when the work will be ready for inspection previous to making the connection.

(Prior code §8-5-8)

13.08.090 - Connections to existing work.

- A. No drain pipe can be extended from work previously done and accepted, or new connection at any time be made with such work unless previous notice of at least twenty-four hours is given to the engineer and permit issued.
- B. In case it shall be necessary to connect a drain or sewer pipe with a public sewer when no junction is left in the same, the new connection with the public sewer can only be made when an officer of the city, duly authorized, is present to see the whole of the work done.

C. Connections from new development shall connect to the system of drains and sewers operated by the City of Oregon City. Alternative connections may be allowed solely at the discretion of the City Engineer.

(Prior code §8-5-9)

13.08.100 - Barriers.

All openings and obstructions in any street must be carefully guarded by the person holding the permit authorizing such opening or obstructions at all times with sufficient barriers, and during the nighttime shall be indicated by colored lights, and such other precautions shall be taken as shall be necessary to guard the public against accidents, and at all times the work shall be so done as to cause the least inconvenience to property owners and the general public.

(Prior code §8-5-10)

13.08.110 - Condition of fixtures.

It is unlawful for any person in possession of premises into which a pipe or other connection with the public sewers or drains has been laid for the purpose of carrying off animal refuse from privies or water closets, slops from kitchens, or other purposes, to allow the same to remain without good and perfect fixtures so attached as to allow a sufficiency of water to be so applied as to properly carry off such matters and to keep the same unobstructed.

(Prior code §8-5-11)

13.08.115 – Condition of service lines.

The service pipe, within the premises, as defined in the Sanitary Sewer Design Standards, and throughout its entire length must be kept in good repair at the expense of the owner, who shall be responsible for all damages resulting from leaks or breaks in the service pipe.

13.08.120 - Permit revocation.

Any person authorized to make connections with sewers or drains who shall be guilty of any violation of the provisions of this chapter shall be immediately deprived of ahis permit.

(Prior code §8-5-12)

13.08.125 – Right of Entry

Agents of the Public Works Department may have free access to view the inside of private sewer laterals located on private property that connect to city mains by a camera. Public Works Department staff will not enter into private property without notice and consent of the property owner.

13.08.130 - Development and user charges.

The city may also establish connection charges and sewer user fees. The amounts of such charges and fees shall be set by resolution of the city commission. Any connection charge shall be no greater than the amount necessary to reimburse the city for its average cost in inspecting and installing connections.

(Ord. 91-1021 §4, 1991)

13.08.140 - Applications outside city limits.

An applicant owning property outside the city limits may apply for permission to connect with the sewer in like manner as one within the city limits and outside of a created sewer district. An applicant owning property outside the City limits, but within the Urban Growth Boundary, may be forced to connect to public sewer, and annex to the City, if the septic is failing and the public sewer is physically and legally available as defined in OAR 340-071-0160. The City may charge different rates for those properties not within City limits.

(Prior code §8-5-14)

13.08.150 - Permit issuance—Connection supervision.

When permission is granted by the commission and the fees paid by the applicant a copy of the permit shall be given by the City Engineer who, at the expense of the applicant, shall superintend the connection of the sewer with the sewer system in the sewer district in which the privilege has been granted and upon the completion of the connection shall return the same to the recorder with his endorsement of the time and place of connection.

(Prior code §8-5-15)

13.08.155 – Sewer rates.

A. Sewer Rates. The rates for sewer furnished by the city to each user within the city limits shall be established by city commission resolution.

13.08.158 – Service lateral improvement program.

When a sewer service falls into disrepair as determined by the Public Works Department, a fee may be assessed to the property owner. The fee may be paid at one time or through a payment program. The fee for repairing or replacing the service shall be in accordance with a schedule of charges adopted by the city commission.

13.08.159 - Reduced rates and financial assistance

An owner-occupied residence with a 5/8 x 3/4 inch water meter may qualify for a reduced user rate, or other financial assistance, if the income of its residents meets certain criteria. Customers requesting the

reduced user rates, or other financial assistance, shall make written application and shall certify as to meeting the income criteria established.

13.08.160 - Entry in lien record.

The recorder shall enter the permit in the docket of the city liens immediately following the entered matter which relates to the system of that sewer district to which permission to connect has been granted, and shall credit the fees paid to the general fund.

(Prior code §8-5-16)

13.08.165 – Failure to comply with rules

Should anyone fail to comply with the rules and regulations established as conditioned to the use of sewer, or to pay the sewer rates or fees at the time and manner hereafter provided, the property may be assessed fines or liens to recover the costs associated with unpaid rates or fees. Failure to pay the charges imposed by this chapter shall subject the user and the premises to the collection and lien provisions imposed for water charges.

13.08.170 - Private connections prohibited.

It is unlawful for any person to connect a private sewer from ~~the~~^{his} property with a private sewer on any other property which is connected with the public sewers without first having made the foregoing application and paying the amount computed by the recorder, as the charge for the privilege, it shall also be unlawful to connect any lot or premises, either directly or indirectly, lying outside of the limits of a sewer district with any public sewer without first complying with the provisions of this chapter.

(Prior code §8-5-17)

13.08.180 - Unlawful substances.

It is unlawful for any person to permit to be drained, any oils, greases, chemicals, storm water, surface water, ground water, roof runoff, subsurface drainage, liquids and substances which might be detrimental to the sewage treatment plant, into any sewer, drain or pipe leading to the plant from any premises in the city.

(Prior code §8-5-18)

13.08.190 - Sanitary requirements.

In factories and workshops where there are fifteen persons or less of each sex, there shall be provided by the proprietor or owner one water closet for each sex, and one for each additional fifteen persons of each sex or minimum thereof. Toilets shall be separate in all cases. Every ~~tenement-co-op~~ or lodging house shall be provided with one water closet for every ten rooms or minimum thereof, and one sink for each floor. All residences and public halls shall be provided with at least one water closet and one sink.

(Prior code §8-5-19)

~~13.08.200 – Collection.~~

~~The charges imposed by this chapter shall be charged against the occupants and/or owner of the affected premises and shall be collectible with and in the same manner as charges imposed for water service. Failure to pay the charges imposed by this chapter shall subject the user and the premises to the collection and lien provisions imposed for water charges.~~

(Prior code §8-5-20)

13.08.210 - STEP systems.

- A. "STEP system" which means a septic tank effluent pump system, meeting the standards and specifications of the city engineer (hereinafter "engineer"), shall be permitted as an alternative to the standard sewer used in the city. Such system shall be owned, operated, and maintained by the city as provided in this section.
- B. The engineer shall require, as a condition of approval of any STEP system that the property owner utilizing such system grant the city any easements, permits of entry, or licenses which are necessary or convenient for the construction, operation, or maintenance of the STEP system.
- C. Generally, sewer service through normal sewer facilities (i.e. house sewer, laterals, trunks, and treatment plants) shall be provided when available. However, if service through such normal sewer facilities is unavailable, the engineer may permit use of a STEP system, on an interim basis, when such sewer service is determined by the engineer to be practical, and necessary or convenient to the use of the property proposed to be served or when such service is required by the city. The use of a STEP system is declared to be an interim service to served properties and each property owner shall provide the city with a nonremonstrance agreement, waiving all objections, jurisdictional or otherwise, to participation in the formation of a local improvement district to provide such normal sewer facilities in future. The city may record any such waiver of remonstrances in the deed records of the county.
- D. Installation, operation, and, before acceptance by the city, maintenance of a STEP system shall be in accordance with the directions of the engineer and at the expense of the owner of the property serviced by such system. Upon installation, inspection and approval by the engineer, and acceptance by the city, the STEP system shall be owned by the city, which shall thereafter be responsible for maintenance of the system, except as provided in this section. No STEP system shall be accepted unless and until all easements, licenses, and permits necessary for control of the operation, use, and maintenance of such system have been granted. The city may record in the deed records of the county any such easement, license, or permit granted. It shall be the responsibility of the property owner to keep clean and maintain the building sewer from the building to the connection with the public sewer.
- E. The costs of electricity necessary to operate the STEP system shall be borne by the property owner. Any STEP system which is rendered nonoperational by virtue of failure to pay for such costs shall cause the property benefited to be deemed unavailable for human habitation. The owner or occupier of the property served shall be entitled to written notice at least five days before a declaration by the city that the property is to be declared unavailable for occupancy and such person may request in writing a hearing before the city manager prior to such declaration. The decision of the city manager shall be final.
- F. Subject to applicable constitutional limitation, the property owner shall permit entry on the site served for purposes of installation, maintenance, inspection, observation, measurement, sampling or testing of the STEP system. The property owner shall agree to such entry evidenced by a written permit of entry, as a condition precedent to the permit for the use of the STEP system.
- G. The property owner shall be liable for damage to any portion of the STEP system if not caused by the city. The STEP system permit shall indicate that the owner agrees to assume such liability and such assumption shall be a condition precedent to issuance of the permit.
- H. Application for use of a STEP system shall be made by the property owner or owners, who shall remain responsible for compliance with this section and permits thereunder. The property owner may delegate responsibility to the person occupying land for the duties imposed on the property owner

under subsections D and G of this section. Such delegation shall be in writing in which the occupier of property accepts such responsibility filed with the engineer and shall be valid for such period as the delegee occupies the property, unless a shorter period is designated by the engineer. Thereafter, the property owner shall reassume responsibility.

- I. No provision of this section shall be construed to exempt an applicant for obtaining additional permits or meeting additional requirements of city, county, state or other appropriate public body with jurisdiction.

(Ord. 90-1052 §1, 1990: prior code §8-5-22)

13.08.220 - Violation—Penalty.

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

(Ord. 99-1004 §19, 1999: prior code §8-5-21)

13.08.230 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Sanitary Sewer Design Standards, the City of Oregon City standard notes, or City of Oregon City standard drawings provide other design details, in which case the requirements of this chapter and the Public Works Sanitary Sewer Design Standards shall be complied with.

13.08.235 – Design Standards.

The current version of the Oregon City Public Works Sanitary Sewer Design Standards shall be adhered to for all new sewer construction and connections.

(Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

13.08.240 – Stormwater and Groundwater Prohibited

- A. Stormwater, including street, roof, or footing drainage, shall not be designed or constructed in a manner to allow discharged into the sanitary sewer system, but shall be removed by a system of storm drains or by some other method separate from the sanitary sewer system. (Language from City of Oregon City Sanitary Sewer Design Standards, §2.00, paragraph three, page 10)
- B. No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or ground water to a public sanitary sewer.

- C. Service laterals from building structure to the face of curb or edge of pavement line shall be maintained by the owner of said structure in such a manner as to prevent infiltration of ground water into the sanitary sewer system.
- D. Historic buildings established before the separation of stormwater and sanitary sewer systems may be exempt from groundwater and subsurface discharge into the sanitary sewer system.
- E. Properties may be exempt if removal of stormwater connections to sanitary sewer system is infeasible due to topography or public system constraints.

13.08.250 – Party Line Sewers Prohibited

No new sewer service lines shall be used by more than one property. Existing party lines shall be modified and separated where practicable per Oregon City Policies and Procedures when repairs or replacements of existing sewers is proposed.


Community Development – Planning

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Oregon City Municipal Code

Chapter 17.80 Communication Facilities

17.80.10 - Purpose.

The provisions of this chapter are designed to protect the visual, aesthetic, and historical features of Oregon City, ensure that wireless communications services are located, designed, installed, maintained, and removed in an appropriate manner for the safety, health, and welfare of the citizens of Oregon City, and to provide for development consistent with the Oregon City Comprehensive Plan by:

- A. Promoting maximum utilization and encourage collocation of new and existing wireless communication antennas to minimize the total number of support structures and towers throughout the city;
- B. Encouraging careful consideration of topography, greenways, and historical significance of potential telecommunication sites and the use of camouflaging and screening to ensure development has minimal impacts on the community, views, and historical areas;
- C. Encouraging the use of existing buildings, light or utility poles, or water towers as opposed to construction of new telecommunication towers; and
- D. Encourage the location of monopole telecommunication towers and antenna arrays in non-residential areas.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.30 - Applicability and exemptions.

- A. **Applicability.** All wireless communication facilities that are not exempt pursuant to this section shall conform to the standards specified in this chapter.
- B. **Exemptions.** The following are exempt from the provisions of this chapter and shall be allowed:
 1. Wireless communication facilities that were legally established prior to the effective date of this chapter;
 2. Temporary facilities used on the same property for sixty days or less;
 3. Temporary wireless communications facilities of all types that are used by a public agency solely for emergency communications in the event of a disaster, emergency preparedness, or public health or safety purposes;
 4. Any maintenance or repair of previously approved wireless communications facilities provided that such activity does not increase the height, width, or mass of the facility;

5. Dish antennas used for residential purposes;
6. VHF and UHF receive-only television antennas and radio transmitter antennas on public facilities used for public safety, provided they are fifteen feet or less above the existing or proposed roof;
7. Amateur Stations on properties zoned residential are exempt from the standards of this chapter. Amateur Stations on properties zoned non-residential are exempt from the standards of this chapter, provided the antenna is fifteen (15) feet or less above the existing or proposed roof. Amateur Stations located on: (1) public facilities/property; or (2) properties zoned non-residential with an antenna in excess of fifteen feet above the existing or proposed roof, shall be reviewed under the Compatibility Review process set forth in this chapter and shall be subject to the Design Standards of Section 17.80.110; and
8. Wireless Communication Facilities for public safety are exempt from the following Sections: Section 17.80.090.C.17, Section 17.80.090.D.2, Section 17.80.090.D.5, and Section 17.80.100.
9. Small wireless facility within the right-of-way

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.035 Modifications to Existing Facilities.

All modifications and expansions to existing wireless communication facilities are permitted in every zone, subject to the requirements of this Section. Certain modifications are deemed minor in nature and are deemed “eligible modifications” These modifications include the addition, removal, and/or replacement of transmission equipment that do not make a substantial change to the physical dimensions (height, mass, width) of the existing tower, support structure, or base station. Replacement of an existing tower may also be considered an eligible modification if such replacement meets the standards in paragraph 4 below.

1. For the purpose of this Section, “substantial change” means the following:
 - a. The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of 1 additional antenna array with separation from the nearest existing antenna not to exceed 20 feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this subsection by up to an additional 5% if necessary to avoid interference with existing antennas; or
 - b. The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved (not to exceed 4) or more than 1 new equipment shelter; or
 - c. The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than 20 feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this subsection to the extent necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or
 - d. The mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.
2. Increases to height allowed by this subsection above the existing tower shall be based on the existing height of the tower, excluding any tower lighting required in the original land use approval or in the proposed modification request.

3. To the extent feasible, additional equipment shall maintain the appearance intended by the original facility, including, but not limited to, color, screening, landscaping, mounting configuration, or architectural treatment.
4. To be considered an eligible modification, a replacement tower shall not exceed the height of the original tower by more than 10%, or the diameter of the original tower by more than 25% at any given point.

17.80.40 - Collocation of additional antenna(s) on existing support towers.

Except for “eligible modifications” authorized in Section 17.80.035, the following standards shall apply for the placement of antenna(s) and auxiliary support equipment on an existing wireless communication facility support tower.

- A. Compatibility Review. Required for property zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC.
- B. Site Plan and Design Review. Required for all cases other than those identified in Section 17.80.040.A.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.50 - Collocation of additional antenna(s) on support structures.

Except for “eligible modifications” authorized in Section 17.80.035, the following standards shall apply for the placement of antenna(s) and auxiliary support equipment on a support structure.

- A. Compatibility Review. Required if the following exist:
 1. Property is zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC; and
 2. Property is not located in the McLoughlin or Canemah Historical Conservation Districts; and
 3. Antenna(s) and auxiliary support equipment are setback a minimum of ten feet from each edge of the support structure and do not exceed a total height of twelve feet or a total width of eight feet, unless the antenna(s) is less than four inches in diameter and does not exceed a total height of twenty feet.
- B. Site Plan and Design Review. Required if the property is zoned GI, CI, I, C, MUC-1, MUC-2, MUE, MUD or NC and does not meet all the criteria of Section 17.80.050.A.
- C. Conditional Use Review. Required for all cases other than those identified in Sections 17.08.050.A and 17.08.050.B.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.60 - Collocation of additional antenna(s) on existing utility poles, light standards, and light poles.

The following standards shall apply for the collocation of additional antenna(s) on existing utility poles, light standards, and light poles that meet the following requirements:

- A. Site Plan and Design Review. Required for property zoned GI, CI, I, C, HC, MUC-1, MUC-2, MUE, MUD or NC.
- B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.060.A.
- C. Permits. The applicant shall apply for and obtain all permits necessary for the construction, installation, and operation of its facilities in the streets. The applicant shall pay all applicable fees due for city permits. All construction and maintenance of any and all of the applicant's Facilities within the streets incident to the applicant's provision of telecommunications services shall, regardless of who performs installation and/or construction, be and remain the responsibility of the applicant.
- D. Installation of Equipment. The applicant's facilities shall be installed and maintained in accordance with the laws of the State of Oregon and the ordinances and standards of the city regulating such construction.
- E. Common Users. The applicant's facilities shall be attached to utility poles, light standards, and light poles located within the streets. The applicant shall also allow and encourage other wireless carriers to collocate facilities on the utility poles, light standards, and light poles with the applicant's facilities, provided such collocation does not interfere with the applicant's facilities or jeopardize the physical integrity of the structure and provided the owner of the structure consents to such collocation.
- F. Scale of Facilities. This section establishes standards for attaching facilities to utility poles, light standards, and light poles in the streets in a manner that minimizes the facilities' potential incompatibility with adjacent uses.
 - 1. Facilities may be collocated on existing utility poles, light standards, and light poles, provided:
 - a. Facilities do not jeopardize the physical integrity of the utility pole, light standard, or light pole;
 - b. Triangular "top hat" style antenna mounts are prohibited;
 - c. The device used to mount the facilities does not project more than ten feet above the utility pole, light standard, or light pole;
 - d. Antennas will be mounted flush with the device referenced in Section 17.80.060.F.1.c. or the existing utility pole, light standard, or light pole, within a unicast-style top cylinder, or on davit arms that are no greater than five feet in length as measured from the center of the utility pole, light standard, or light pole;
 - e. The visual impact of any facilities located in the streets must be minimized by utilizing the smallest antennas, equipment, and equipment cabinets available that will satisfy engineering requirements and the service objectives of the site. Whenever possible, facilities shall be painted or otherwise treated architecturally so as to minimize visual impacts;
 - f. All antennas, cabling, mounting hardware, and associated microcell/equipment cabinets mounted on an existing utility pole, light standard, or light pole must be painted to match the color of the utility pole, light standard, or light pole. If cabinets

require a special heat-reducing paint finish, they must be a neutral color such as beige, off-white, or light gray; and

- g. The existing utility pole, light standard, or light pole is not replaced with a taller utility pole, light standard, or light pole, except as authorized in Section 17.80.060.F.2.
- 2. Replacement Utility Poles, Light Standards, and Light Poles. For purposes of this section, "replacement utility poles, light standards, and light poles" shall mean a utility pole, light standards, or light pole that a) replaces an existing or original utility pole, light standard, or light pole to accommodate facilities; and b) does not result in an increase in the total number of utility, guy, or support poles in the streets. Facilities may be attached to replacement utility poles, light standards, and light poles in the streets, provided:
 - a. The replacement utility poles, light standards, and light poles are of sufficient integrity to support the facilities;
 - b. The replacement utility poles, light standards, and light poles, and any subsequent replacements, are no more the twenty feet taller than the original utility pole, light standard, or light pole; and
 - c. The utility pole, light standard, or light pole the replacement utility pole, light standard, or light pole replaces is promptly removed.
- 3. The applicant shall not locate any facilities, such as cabinets, at grade within the streets, but may connect its facilities in the streets to facilities located on property adjacent to the streets in accordance with applicable city codes and with the permission of the adjacent property owner.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.70 - Construction or modification of a support tower. Except

for "eligible modifications" authorized in Section 17.80.035:

- A. Site Plan and Design Review. Required if the following exists:
 - 1. Property is zoned GI, CI, I, C, MUC-2 or MUE; and
 - 2. No adjacent parcel is zoned for residential use.
- B. Conditional Use Review. Required for all cases other than those identified in Section 17.80.070.A.
- C. Prohibited Zoning Districts and Locations. No new support towers shall be permitted within the Canemah Historic Neighborhood, McLoughlin Conservation District, The Oregon Trail-Barlow Road Historic Corridor, five hundred feet of the Willamette Greenway Corridor, or any new Historic Districts unless the applicant can demonstrate that failure to allow the support tower would effectively prevent the provision of communication services in that area. If the applicant makes such a demonstration, the minimum height required to allow that service shall be the maximum height allowed for the tower.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.80 - Site review process.

No wireless communications facilities, as defined in Section 17.80.020, may be constructed, collocated, modified to increase height, installed, or otherwise located within the city except as provided in this section or unless otherwise authorized by Section 17.80.035. Depending on the type and location of the wireless communication facility, the facility shall be subject to the following review unless collocation or an increase in height was granted through a prior land use process. A Conditional Use Review shall require Site Plan and Design Review to occur concurrently with the Conditional Use Review process.

- A. **Compatibility Review.** A wireless communication facility that, pursuant to Sections 17.80.030—17.80.050, is subject to a compatibility review shall be processed in accordance with Standards of Section 17.80.110. The criteria contained in Section 17.80.110 shall govern approval or denial of the compatibility review application. No building permit shall be issued prior to completion of the compatibility review process.
- B. **Site Plan and Design Review.** A wireless communication facility that, pursuant to Sections 17.80.040—17.80.070, is subject to site plan and design review shall be processed in accordance with the standards of Section 17.80.110 and Chapter 17.62, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.62 shall govern approval or denial of the site plan and design review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the site plan and design review process, including any local appeal.
- C. **Conditional Use Review.** A wireless communication facility that, pursuant to Sections 17.80.050—17.80.070, is subject to conditional use review, shall be processed in accordance with the Standards of Section 17.80.110 and Chapter 17.56, as applicable. The criteria contained in Section 17.80.110 and Chapter 17.56 shall govern approval or denial of the conditional use review application. In the event of a conflict in criteria, the criteria contained in this chapter shall govern. No building permit shall be issued prior to completion of the Conditional Use Review process, including any local appeal.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.90 - Permit application requirements.

- A. **Eligible Modification Requirements** – For an application under Section 17.80.035, the following information is required:
 - 1. Application fee;
 - 2. Planning Division land use application form;
 - 3. Description of the project design and dimensions;
 - 4. A written response demonstrating compliance with each criterion listed in OCMC Chapter 17.80.035;
 - 5. Signature of the property owner(s) on the application form or a statement from the property owner(s) granting authorization to proceed with building permit and land use process; and
 - 6. Elevations showing all improvements and connections to utilities.
- B. **Compatibility Review Requirements** — For an application under Sections 17.80.030.B.7, 17.80.040.A or 17.80.050.A, the following information is required:
 - 1. Application fee(s).
 - 2. Planning Division land use application form;

3. A narrative of the proposed project that includes a description of the following:
 - i. Need for the project;
 - ii. Rationale and supporting evidence for the location; and
 - iii. Description of the project design and dimensions.
 - iv. A written response demonstrating compliance with each criterion listed in OCMC Chapter 17.80.110
4. Documentation demonstrating compliance with non-ionizing electromagnetic radiation (NIEER) emissions standards as set forth by the Federal Communications Commission (FCC) particularly with respect to any habitable areas within the structure on which the antenna(s) is collocated on or in structures directly across from or adjacent to the antenna(s);
5. Documentation that the auxiliary support equipment shall not produce sound levels in excess of standards contained in Section 17.80.110G., or designs showing how the sound is to be effectively muffled to meet those standards;
6. Signature of the property owner(s) on the application form or a statement from the property owner(s) granting authorization to proceed with building permit and land use process;
7. Documentation of the integrity of the support tower, support structure, utility pole, light standard, or light pole to safely handle the load created by the collocation;
8. Elevations showing all improvements and connections to utilities; and
9. Color simulations of the site after construction demonstrating compatibility.
- C. Site Plan and Design Review. For an application under Sections 17.80.040.B, 17.80.050B., 17.80.060A., or 17.80.070A. the following information is required:
 1. The information required in OCMC Chapter 17.80.90A.;
 2. Pre-application notes;
 3. A written response demonstrating compliance with each criterion listed in the Site Plan and Design Review Standards of Chapter 17.62.050 and all other applicable criterion as defined by the community development director; and
 4. Supplemental requirements listed in OCMC Chapter 17.80.90D. as needed.
- D. Conditional Use Review. For an application under Sections 17.80.050C., 17.80.060B., or 17.80.070B. the following information is required:
 The information required in OCMC Chapter 17.80.90.A;
 1. Pre-application notes;
 2. A written response demonstrating compliance with each criterion listed in the Site Plan and Design Review Standards of Chapter 17.62.050, 17.56, and all other applicable criterion as defined by the community development director as applicable;
 3. For an application under Section 17.80.070. Construction of Modification of a Support Tower, the requirements listed under Section 17.80.090D. Supplemental Information are required;
 4. Responses to conditional use review criteria under Chapter 17.56.010;

5. For an application under Section 17.80.050C. Collocation of Additional Antenna(s) on Support Structures, rationale for being unable to collocate in areas identified in Sections 17.80.050A. and 17.80.050B. shall be provided;
 6. For an application under Section 17.80.060B. Collocation of Additional Antenna(s) on Utility Poles, Light Standards, and Light Poles, rationale for being unable to collocate in areas identified in Section 17.80.060A. shall be provided; and
 7. For an application under Section 17.80.070B. Construction or Modification of a Support Tower, rationale for being unable to collocate in areas identified in Section 17.80.070A. shall be provided.
 8. Supplemental information listed in OCMC Chapter 17.80.90D.
- E. Supplemental Information. The applicant shall submit the following information for all applications subject to conditional use and site plan and design review:
1. The capacity of the support tower in terms of the number and type of antennas it is designed to accommodate.
 2. A signed agreement, as supplied by the city, stating that the applicant shall allow collocation with other users, provided all safety, structural, technological, and monetary requirements are met. This agreement shall also state that any future owners or operators will allow collocation on the tower.
 3. Documentation demonstrating that the Federal Aviation Administration has reviewed and approved the proposal, and Oregon Aeronautics Division has reviewed the proposal. Alternatively, a statement documenting that notice of the proposal has been submitted to the Federal Aviation Administration and Oregon Aeronautics Division may be submitted. The review process may proceed and approval may be granted for the proposal as submitted, subject to Federal Aviation Administration approval. If Federal Aviation Administration approval requires any changes to the proposal as initially approved, then that initial approval shall be void. A new application will need to be submitted, reviewed, and approved through an additional site plan and design review or conditional use review process. No building permit application shall be submitted without documentation demonstrating Federal Aviation Administration review and approval and Oregon Aeronautics Division review.
 4. A visual study containing, at a minimum, a graphic simulation showing the appearance of the proposed tower, antennas, and auxiliary support equipment from at least five points within a one-mile radius. Such points shall be chosen by the provider with a review and approval by the community development director to ensure that various potential views are represented.
 5. Documentation that one or more wireless communications service providers will be using the support tower within sixty days of construction completion.
 6. A site plan, drawn to scale, that includes:
 - a. Existing and proposed improvements;
 - b. Adjacent roads;
 - c. Parking, circulation, and access;
 - d. Connections to utilities, right-of-way cuts required, and easements required;

- e. A landscape plan describing the maintenance plan and showing areas of existing and proposed vegetation to be added, retained, replaced, or removed; and
 - f. Setbacks from property lines or support structure edges of all existing and proposed structures. Plans that have been reduced, but have not had their scale adjusted, will not be accepted as satisfying this requirement.
7. An alternatives analysis for new support towers demonstrating compliance with the Support Tower Location Requirements of Chapter 17.80.100.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.100 - Support tower location requirements.

No new support tower shall be permitted under the provisions of Chapter 17.80.070 unless the applicant demonstrates to the satisfaction of the community development director, and the results are verified by a State of Oregon certified professional engineer, that no existing collocation or modification possibility can accommodate the service needs of the applicant's proposed support tower. All proposals for new support towers must be accompanied by a statement and documentation from a qualified engineer, as determined by the community development director, that the necessary service cannot be provided by collocation on, or modification to, an existing support tower or structure for one or more of the following reasons:

- A. No existing support towers or support structures are located within the geographic area required to meet the applicant's engineering requirements;
- B. Existing support towers or support structures are not of sufficient height to meet the applicant's engineering requirements;
- C. Existing support towers or support structures do not have sufficient structural strength to support the applicant's proposed antenna(s) and related equipment.
- D. The applicant's proposed antenna would cause electromagnetic interference with the antenna(s) on the existing support tower or support structure, or the existing antenna would cause interference with the applicant's proposed antenna(s);
- E. The applicant demonstrates that there are other limiting factors that render existing support towers and support structures unsuitable; or
- F. That fees, costs, or contractual provisions required by the owner in order to share or adapt to an existing support tower or support structure for collocation are unreasonable.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.110 - Design standards.

Installation, collocation, construction, or modification of all support towers, structures, and antennas shall comply with the following standards, unless it qualifies as an “eligible modification” under Section 17.80.035 or an adjustment is obtained pursuant to the provisions of Section 17.80.120.

- A. Support Tower. The support tower shall be self-supporting.

- B. Height Limitation. Support tower and antenna heights shall not exceed the maximum heights provided below.
1. If the property is zoned GI, CI or I; and no adjacent parcel is zoned residential the maximum height of a support tower, including antennas, is one hundred twenty feet.
 2. If the property is zoned: a. GI, CI or I, and an adjacent parcel is zoned residential; or b. C, MUC-2 or MUE; the maximum height of a support tower, including antennas, is one hundred feet.
 3. If the property is zoned MUC-1, MUD or NC; the maximum height of a support tower, including antennas, is seventy-five feet.
 4. For all cases other than those identified in Section 17.80.110.B.1-3 above, the maximum height of a support tower, including antennas, is seventy-five feet.
- C. Collocation. New support towers shall be designed to accommodate collocation of additional providers.
1. New support towers of a height greater than seventy-five feet shall be designed to accommodate collocation of a minimum of two additional providers either outright or through future modification of the tower.
 2. New support towers of a height between sixty feet and seventy-five feet shall be designed to accommodate collocation of a minimum of one additional provider either outright or through future modification of the tower.
- D. Setbacks. The following setbacks shall be required from property lines, not the lease area, for support towers, auxiliary support equipment, and perimeter fencing.
1. Support towers not designed to collapse within themselves shall be setback from all property lines a distance equal to the proposed height of the support tower.
 2. Support towers designed to collapse within themselves shall be setback from the property line a distance equal to the following:
 - a. If the property is zoned GI, CI, I, C, MUC-2 or MUE; and no adjacent parcel is zoned for a residential use the underlying zone setback shall apply;
 - b. If the property is zoned:
 - i. GI, CI, I, C, MUC-2 or MUE and an adjacent parcel is zoned residential; or
 - ii. MUC-1, MUD or NC; the setback shall be a minimum of twenty-five feet from all adjacent residentially zoned property lines and the underlying zoning setback for all other adjacent property lines; or
 - c. For all cases other than those identified in Section 17.80.110.D.2.a. and b. above, the setback shall be a minimum of twenty-five feet from all adjacent property lines.
- E. Auxiliary Support Equipment. The following standards shall be required.
1. If the property is zoned:
 - a. For GI, CI, I, MUC-1, MUC-2, C, MUD, MUE or NC, the auxiliary support equipment footprint shall not exceed an area of three hundred forty square feet and fifteen feet in height at the peak;

- b. For all cases other than those identified in Section 17.80.110.E.1.a. above, the auxiliary support equipment shall be:
 - i. Located underground or completely screened by landscaping or an architecturally significant masonry wall. The wall shall be finished with brick, stone, or stucco. The community development director may approve an alternate screening material if it is compatible with adjacent development and is architecturally significant. No exposed CMU is allowed on the exterior of the wall.
 - 2. Only one auxiliary accessory cabinet shall be allowed per service provider located on a support structure.
- F. Landscaping. In all zoning districts, existing vegetation shall be preserved to the maximum extent practicable. Screening of a site is mandatory.
 - 1. If the property is zoned:
 - a. GI or CI, and no adjacent parcel is zoned residential, landscaping may not be required if water quality issues are addressed and appropriate screening around the facility is proposed;
 - b. For all cases other than those identified in Section 17.80.110.F.1.a. above, landscaping shall be placed completely around the perimeter of the wireless communication facility, except as required to gain access. The minimum planting height shall be a minimum of six feet at the time of planting, densely placed so as to screen the facility. The landscaping shall be compatible with vegetation in the surrounding area, and shall be kept healthy and well maintained as long as the facility is in operation. Failure to maintain the site will be grounds to revoke the ability to operate the facility.
 - c. The community development director may approve an alternative landscaping plan that visually screens the facility and is consistent with the intent of this standard.
- G. Noise Reduction. Noise generating equipment shall be baffled to reduce sound level measured at the property line to the following levels except during short durations for testing and operation of generators in emergency situations:
 - 1. For any property where no adjacent parcel is zoned residential, the sound level at the property line shall not be greater than fifty dB;
 - 2. For all other cases, the sound level shall not be greater than forty dB when measured at the nearest residential parcel's property line.
- H. Lighting.
 - 1. Unless required by the Federal Aviation Administration or the Oregon Aeronautics Division, artificial lighting of wireless communication towers and antennas shall be prohibited.
 - 2. Strobe lighting is prohibited unless required by the Federal Aviation Administration.
 - 3. Security lighting for equipment shelters or cabinets and other on-the-ground auxiliary equipment shall be initiated by motion detecting lighting. The lighting shall be the minimal necessary to secure the site, shall not cause illumination on adjacent properties in excess of a measurement of 0.5 footcandles at the property line, and shall be shielded to keep direct light within the site boundaries.

I. Color.

Unless otherwise required by the Federal Aviation Administration, all support towers and antennas shall have a non-glare finish and blend with the natural background.

J. Signage.

Support towers and antenna(s) shall not be used for signage, symbols, flags, banners, or other devices or objects attached to or painted on any portion of a wireless communication facility.

K. Access Drives.

1. On a site with an existing use, access shall be achieved through use of the existing drives to the greatest extent practicable. If adequate intersection sight distance is unavailable at the existing access intersection with a city street, an analysis of alternate access sites shall be required.
2. Site shall be serviced by an access adequate to ensure fire protection of the site.
3. New access drives shall be paved a minimum of twenty feet deep from the edge of the right-of-way (though the use of pervious paving materials such as F-mix asphalt, pavers, or geotech webbing is encouraged) and designed with material to be as pervious as practicable to minimize stormwater runoff.
4. New access drives shall be reviewed for adequate intersection sight distances.

L. Informing the city. All service providers with facilities within the city of Oregon City shall be required to report in writing to the community development director any changes in the status of their operation.

1. An annual written statement shall be filed with the Planning Manager verifying continued use of each of their facilities in the city's jurisdiction as well as continued compliance with all state and federal agency regulations.
2. The report shall include any of the following changes:
 - a. Changes in or loss of Federal Communication Commission license from the Federal Communication Commission to operate;
 - b. Receipt of notice of failure to comply with the regulations of any other authority over the business or facility;
 - c. Change in ownership of the company that owns wireless communication facility or provides telecommunications services; or
 - d. Loss or termination of lease with the telecommunications facility for a period of six months or longer.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.120 - Adjustments.

Adjustments to the standards of this chapter may be approved by the planning commission at a duly noticed public hearing. The planning commission may grant an adjustment under either of the following circumstances:

1. The planning commission may grant an adjustment when a gap in the applicant's service exists and the gap can only be alleviated through the adjustment of one of more of the standards in

this section. If an adjustment is to be approved, the applicant must demonstrate each of the following:

- a. A gap in coverage or capacity exists in the wireless communication provider's service network that results in network users being regularly unable to connect with the provider's network, or maintain connection;
 - b. The proposed facility will fill the existing service gap. The gap would be filled if the proposed facility would substantially reduce the frequency with which users of the network are unable to connect, or maintain connection, with the provider's network; and
 - c. The gap cannot be filled through collocation on existing facilities, or establishment of facilities that are consistent with the standards of this section on properties other than the proposed site or on the proposed site in a manner which does not require an adjustment under this subsection.
2. The planning commission may grant an adjustment to a standard when the proposed adjustment would utilize existing site characteristics to minimize demonstrated or potential impacts on the use of surrounding properties. For the purposes of this subsection, site characteristics shall include, but need not be limited to, the suitability of the proposed use considering size, shape, location, topography, existence of improvements, and natural features. Applicants for an adjustment under this provision must demonstrate that the adjustment will result in a lower level of impact on surrounding properties than would be generated if the standard were not adjusted. In considering the requested adjustment, the planning commission may consider the following:
 - a. Visual impacts;
 - b. Impacts on views;
 - c. Impacts on property values; and
 - d. Other impacts that the planning commission finds can be mitigated by an adjustment so that the proposed use will have greater compliance in not altering the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary use listed in the underlying district.
 3. Requests for adjustments under this subsection shall only be considered concurrently with the applicable Site Review Process as required by Section 17.80.080. If the Site Review Process required by Section 17.80.080 is a Compatibility Review or a Site Plan and Design Review, the inclusion of an adjustment will require that the application be subject to a Conditional Use Review under Section 17.80.090.C.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.130 - Temporary facilities.

In order to facilitate continuity of services during maintenance or repair of existing installations, or prior to completion of construction of a new wireless communication facility, temporary wireless communication facilities shall be allowed subject to a Type I administrative review. Temporary wireless communication facilities shall not be in use in excess of six-month period. Temporary wireless communication facilities shall not have a permanent foundation, and shall be removed within thirty days of suspension of service they provide.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.140 - Removal for discontinuance of service.

Any wireless communication facility that has not provided service for six months shall be deemed a nuisance and subject to removal as provided in Oregon City Municipal Code Chapter 8.08. The planning manager may grant a six-month extension where a written request has been filed, within the initial six months period, to reuse the support tower or antenna(s).

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

17.80.150 - Fees.

Notwithstanding any other provisions of this code, the community development director may require, as part of the application fees for land use permits, an amount sufficient to recover all of the city's costs in retaining consultants to verify statements made in conjunction with the permit application, to the extent that verification requires telecommunication experts.

(Ord. No. 08-1014, §§ 1—3(Exhs. 1—3), 7-1-2009; Ord. No. 10-1003, § 1(Exh. 1), 7-7-2010)

REFERENCE LINK TO PREVIOUS AGENDA ITEMS AND EXHIBITS FOR GLUA 20-00033 LEG-20-00001 PUBLIC WORKS CODE AMENDMENTS

September 28, 2020 Planning Commission Meeting

[Commission Report.pdf](#) (0.04 MB)
[GLUA 20-00033 LEG 20-00001 Staff Report.pdf](#) (0.56 MB)
[Exhibit 1 Public Works Code Amendments Overview.pdf](#) (1.27 MB)
[Exhibit 2 Public Works Code Amendments FAQ.pdf](#) (0.14 MB)
[Exhibit 3 Detailed Summary of Proposed Changes.pdf](#) (0.28 MB)
[Exhibit 4 GLUA 20-00033 Draft Code Revised September 21, 2020.pdf](#) (2.97 MB)
[Exhibit 5 Sanitary Standards -Proposed Revisions.pdf](#) (0.41 MB)
[Exhibit 6 Sidewalk Obstructions Policy.pdf](#) (0.43 MB)
[Exhibit 7. Undergrounding Utilities Policy- Proposed Revisions.pdf](#) (0.85 MB)
[Exhibit 8 Applicant's Narrative.pdf](#) (0.48 MB)
[Exhibit 9 Preparing for Landslide Hazards A Land Use Guide For Oregon Communities.pdf](#) (19.86 MB)
[Exhibit 10.Goal 7 Natural Hazards.pdf](#) (0.02 MB)
[Exhibit 12 Public Comment Matrix \(as of 9.21.20\).pdf](#) (1.02 MB)

November 9, 2020 Planning Commission Meeting

[Commission Report 11.9.20.pdf](#) (0.04 MB)
[October 30, 2020 Memo from Josh Wheeler, Assistant City Engineer.pdf](#) (0.13 MB)
[OCMC 13.08 -Sewer Regulations Revised for 11.9.20 PC Hearing.pdf](#) (0.09 MB)
[OCMC 16.12 Minimum Public Improvements - Revised for 11.9.20 PC Hearing.pdf](#) (0.40 MB)
[OCMC 17.44 Geologic Hazards Revised for 11.9.20 PC Hearing.pdf](#) (0.27 MB)
[OCMC 17.80 Revised for 11.9.20 PC Hearing.pdf](#) (0.26 MB)
[September 23, 2020 Geologic Hazards Presentation Final.pdf](#) (10.28 MB)
[September 23, 2020 Q&A Session Geologic Hazards Webinar.pdf](#) (0.19 MB)
[GLUA 20-00022 LEG 20-00001 PW Code Amendments Public Comment Matrix 11.09.20- Combined.pdf](#) (13.39 MB)
[New Public Comment: October 10, 2020 Mike Mitchell Email and Public Works Response.pdf](#) (0.18 MB)
[New Public Comment: September 14, 2020 Paul Edgar Email.pdf](#) (0.48 MB)
[New Public Comment: September 30, 2020 Paul Edgar Email.pdf](#) (0.01 MB)
[New Public Comment: September 29, 2020 Paul Edgar Email 2.pdf](#) (0.10 MB)
[New Public Comment: September 29, 2020 Paul Edgar Email 1.pdf](#) (0.90 MB)

November 18, 2020 City Commission Hearing

[Staff Report.pdf](#) (0.04 MB)
[Public Comment Matrix.pdf](#) (13.39 MB)
[October 30, 2020 Memo from Josh Wheeler, Assistant City Engineer.pdf](#) (0.13 MB)
[September 23, 2020 Geologic Hazards Presentation Final.pdf](#) (10.28 MB)
[September 23, 2020 Q&A Session Geologic Hazards Webinar.pdf](#) (0.19 MB)

December 8, 2020 City Commission Worksession

Infiltration and Inflow (I/I) Abatement Program Municipal Code Amendments
[Staff Report.pdf](#) (0.05 MB)
[Proposed Code Amendments - OCMC 13.08.pdf](#) (0.09 MB)

December 16, 2020 City Commission Worksession

Proposed Code Amendments to Oregon City Municipal Code Chapter 12.04
[Staff Report.pdf](#) (0.04 MB)
[OCMC Chapter 12.04 with Redlines.pdf](#) (0.14 MB)

December 16, 2020 City Commission Hearing

Request for Continuance of the Public Works Code Amendments to January 6, 2021 (GLUA 20-33, LEG 20-01
[Staff Report.pdf](#) (0.04 MB)

January 6, 2021 City Commission Hearing

Proposed 1st Reading of the Public Works Code Amendments (GLUA 20-33, LEG 20-01)

[Staff Report.pdf](#) (0.05 MB)

[Ordinance No 21-1003.pdf](#) (0.02 MB)

[Exhibit A- Amended Sections of the Oregon City Municipal Code.pdf](#) (0.61 MB)

[Exhibit B - Staff Report.pdf](#) (0.56 MB)

[Exhibit 1 Memo, Josh Wheeler- Additional Revisions OCMC Chapter 12.04.pdf](#) (0.12 MB)

[Exhibit 2 Memo, Josh Wheeler- Additional Revisions OCMC Chapter 13.08.pdf](#) (0.12 MB)

[Exhibit 3 Proposed Revisions to Chapter 13.04 Water Service System- redline.pdf](#) (0.16 MB)

[Exhibit 4 Proposed Revisions to OCMC 12.04 Streets Sidewalks - redline.pdf](#) (0.15 MB)

[Exhibit 5 Proposed Revisions to Chapter 13.08 Sewer Regulations - redline.pdf](#) (0.19 MB)

[Exhibit 6 Proposed Revisions to OCMC 17.80 Communications Facilities- redline.pdf](#) (0.26 MB)

[Exhibit 7 Reference link to previous agenda items and exhibits.pdf](#) (0.19 MB)

The following meeting agendas, videos, staff report and exhibits for this project are available for viewing at <https://www.orcity.org/meetings> and are part of the record.

Citizen Involvement Committee – December 2, 2019

City Commission Work Session Meeting – December 10, 2019

City Commission Work Session Meeting – October 8, 2019

Planning Commission – September 23, 2019

City Commission Work Session – June 9, 2020

Natural Resource Committee – June 10, 2020

City Commission Work Session – June 7, 2020

City Commission Work Session – May 20, 2020

Planning Commission Meeting- September 28, 2020

Planning Commission Meeting- October 26, 2020

Planning Commission Meeting- November 9, 2020

City Commission Hearing - November 18, 2020

City Commission Worksession- December 8, 2020

City Commission Worksession- December 16, 2020

City Commission Hearing- December 16, 2020



CITY OF OREGON CITY

Staff Report

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

To: City Commission **Agenda Date:** 1/20/2021
From: Community Development Director Laura Terway

SUBJECT:

Resolution No.21-06, Declaring an Emergency and Exempting a Temporary Warming Shelter at The Father's Heart Street Ministry from Planning Code Requirements (January 21, 2021 until March 31, 2021)

STAFF RECOMMENDATION:

Staff recommends the City Commission approve Resolution 21-06.

EXECUTIVE SUMMARY:

The Father's Heart Street Ministry, located at 603 12th Street is requesting an Emergency to Exempt a Temporary Warming Shelter at The Father's Heart Street Ministry from Planning code requirements.

BACKGROUND:

Oregon City Municipal Code (OCMC) 2.52.020 defines "emergencies" to include "any man-made or natural event or circumstance causing or threatening loss of life, injury to person or property, human suffering..., and includes, but is not limited to, severe weather". Section 2.52.040(L) of the OCMC authorizes the City, in cases of emergency, to "order such other measures as are necessary for the protection of life or property, or for the recovery from the emergency", including the temporary exemption of applicable codes.

At the November 4, 2020 City Commission Hearing, The Father's Heart Street Ministry (TFHSM) requested an emergency exemption from Planning code requirements in order to house up to 49 individuals from 6 p.m. to 7 a.m. each day the outside temperature is 33 degrees or below, including wind chill factor, from November 1, 2020 until March 31, 2021. The City Commission approved this request with limitations on the number of occupants based on COVID-19 restrictions from the state and county, and with a more limited timeframe than requested, allowing the emergency warming shelter use through January 21, 2021. The Father's Heart Street Ministry has requested an extension of the current emergency warming shelter approval to March 31, 2021.

The City of Oregon City Building Official and Clackamas Fire District #1 approved the original request made in November, however, their approval is only valid for 90 days and they have yet to approve the current extension request for conformance with the Temporary Emergency Policy prior to use of the facility. Approval is subject to compliance with Oregon City and Clackamas Fire District #1 Temporary Emergency Shelter Policy, including approval by the Building Official and Fire Department, and compliance with all state and county COVID-19 restrictions.

In January of 2020, the Oregon City Municipal Code was updated to include regulations regarding shelters. A Conditional Use land use approval is required prior to utilization of the site as an overnight shelter. TFHSM held a Pre-Application Conference meeting, which is the first step in a Conditional Use process and have indicated that they are proceeding with the land use application review process to pursue a Conditional Use Permit. Since a pre-application meeting has been held, staff recommends approval of the Resolution. The Resolution would become effective on January 21, 2021 at 6 PM.

OPTIONS:

1. Approve Resolution 21-06
2. Instruct Staff to Return with Modifications to Resolution 21-06
3. Do not Approve Resolution 21-06

BUDGET IMPACT:

Amount: N/A

FY(s):

Funding Source(s):

RESOLUTION NO. 21-06**A RESOLUTION DECLARING AN EMERGENCY AND EXEMPTING THE FATHER'S HEART STREET MINISTRY FROM PLANNING CODE REQUIREMENTS ON A TEMPORARY BASIS**

WHEREAS, Oregon City Municipal Code (OCMC) 2.52.020 defines "emergencies" to include "any man-made or natural event or circumstance causing or threatening loss of life, injury to person or property, human suffering...., and includes, but is not limited to, severe weather"; and

WHEREAS, OCMC 2.52.040(L) authorizes the City, in cases of emergency to "order such other measures as are necessary for the protection of life or property, or for the recovery from the emergency"; and

WHEREAS, the City has received information from Clackamas County health officials and existing homeless service providers that there is a need for additional shelter resources during cold weather events; and

WHEREAS, The Father's Heart Street Ministry (TFHSM) located at 603 12th Street has available resources and space to provide needed shelter during the extremely cold weather (Exhibit A); and

WHEREAS, TFHSM is willing to provide shelter and is not requesting any monetary commitment or reimbursement from the City; and

WHEREAS, the zoning designation of the site requires that overnight use of the facility receive Conditional Use land use approval. TFHSM held a Pre-Application Conference, which is the first step in a Conditional Use process; and

WHEREAS, TFHSM facility has previously been approved to house up to 49 individuals from 6 p.m. to 7 a.m. each day that the outside temperature is 33 degrees or below, including wind chill factor, as measured by the National Oceanic and Atmospheric Administration during the duration of the emergency; and

WHEREAS, due to current state-mandated COVID-19 restrictions, the current overnight capacity of TFHSM warming shelter facility is 13 individuals, but may change subject to updates to the state COVID-19 restrictions and guidelines; and

WHEREAS, the forecast identifies freezing weather; and

WHEREAS, the forecasted weather events are natural events that threaten the loss of life, injury to person or property or human suffering; and

WHEREAS, the City Commission is concerned that the expected conditions will require immediate shelter needs, response by city staff and other measures that are currently unanticipated.

NOW, THEREFORE, THE CITY OF OREGON CITY RESOLVES AS FOLLOWS:

Section 1. The Oregon City Commission hereby declares an emergency, limited to the Father's Heart Street Ministry (TFHSM) located at 603 12th Street due to forecasted severe cold weather. Consistent with OCMC 2.52.070 and, by this resolution, the Commission declares an emergency from 6 p.m. on January 21, 2021 until 7 a.m. March 31, 2021.

Section 2. Based on the emergency identified above, the City Commission grants to TFHSM an exemption from the Oregon City Zoning Code for the sheltering of individuals from 6 p.m. to 7 a.m. each day the temperature 33 degrees or below, including wind chill factor, for the duration of the emergency, from January 21, 2021 to March 31, 2021. The number of individuals allowed shall not exceed the number of individuals allowed pursuant to the Oregon Health Authority under Section 4, and shall not exceed 49 individuals in any case.

Section 3. TFHSM must be authorized to temporarily provide shelter provided the facilities comply with the City of Oregon City and Clackamas Fire District #1 Temporary Emergency Policy (Exhibit B).

Section 4. TFHSM must comply with COVID-19 regulations by the state and the Oregon Health Authority which will likely limit the number of individuals onsite.

Section 5. City staff shall request, as necessary, any assistance required from other agencies, including the state of Oregon, Clackamas County, Clackamas County Fire District No. 1, the American Red Cross or other agencies.

Section 6. The City Commission adopts the following procedures to prevent, minimize, respond to or recover from the emergency consistent with OCMC 2.52.040:

- X L. Order such other measures as are necessary for the protection of life or property, or for the recovery from the emergency.

Section 6. This resolution shall take effect January 21, 2021.

Approved and adopted at a regular meeting of the City Commission held on the 20th day of January 2021.

ROCKY SMITH, JR., Commission President

Attested to this 20th day of January 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

Attachment:

Exhibit A – The Father's Heart Street Ministry Request

Exhibit B- The City of Oregon City and Clackamas Fire District #1 Temporary Emergency Policy



Marty & Teri Gant
Founders

Robin Schmidt
Director

Office: (503) 722- 9780

603 12th St.
Oregon City, OR 97045

***"I was hungry
and you gave me
something to eat,***

***I was thirsty
And you gave me
something to drink,***

***I was a stranger
and you invited me in,***

***I needed clothes
and you clothed me, ..."***

Matthew 25:35

The Father's Heart Street Ministry

Item 7a.

December 18, 2020

City Commissioners, Building Division and Fire Department of Oregon City

Thank you once again for allowing us to serve as a temporary emergency shelter during temperatures of 33 windchill or colder. Last season (2019/2020) our Emergency Shelter safely sheltered 49 guests overnight with a total of 2,140 bed nights. This year with COVID safety guidelines in place, we are safely sheltering 13 guests overnight. Although these guidelines have impacted the way we serve, we still continue to serve the most vulnerable in our community, while finding alternatives for those that would put us over our limit of 13.

At the beginning of the pandemic, we were able to place 15 of our guests that are elderly or disabled into hotels through a voucher program. The majority of those are now in transitional or permanent housing. Our Day Center numbers have dropped from an average 120 daily guests to 65 guests. Since then, we have been placing other clients into recovery homes, reentry programs and long-term housing through working with different agencies.

I mention all of the above because those efforts combined with the safety guidelines of COVID have significantly affected the amount of people we serve during the day. We recognize that the COVID safety guidelines allowing 13 to stay overnight will not be enough for the needs of those living unsheltered in our county. We contracted with Clackamas County through the Emergency Solutions Grant to place more of our most vulnerable citizens in hotels with wrap around services. This will allow us to serve more than the 13 allowed to stay safely in our facility.

When we are open for emergency temperatures, we will be taking the utmost precautions to keep our guests as well as our volunteers safe. We are providing a temperature check, questionnaire for possible COVID symptoms and giving each guest their own table, chair and mat to stay at for the evening. One guest at a time may use the restrooms, with the restrooms being sanitized after each use. All guests stay over 6ft. apart and required to wear masks except for eating or while sleeping. Guests remain separated throughout the night in their own area.

All volunteers and staff also have temperature checks, questionnaires for possible COVID symptoms, wear masks at all times and stay 6ft. apart. All hands are washed with soap and water or hand sanitizer frequently and all surfaces are also sanitized with bleach. In addition to this new protocol, TFH continues to meet the requirements for proper supervision, fire watch, and intake forms of HMIS.

We ask for an extension of our emergency warming shelter resolution which ends January 21st. Please grant us an extension from January 22nd through March 31st of 2021 as an emergency warming shelter. We are currently proceeding in the process of the pre app for a conditional use permit at this time. We have completed our first conference held with Planner Kelly Reid.

We are happy to report we have had no signs of COVID related sickness or COVID cases amongst the community we serve, our volunteers or staff since the beginning of COVID.

Sincerely,

Robin Keating, Executive Director
The Father's Heart Street Ministry



TEMPORARY EMERGENCY SHELTER POLICY

City of Oregon City and Clackamas Fire District #1 Joint Policy

The following policy is a collaboration between the City of Oregon City Building Official and the Clackamas Fire District #1 Fire Marshal for Temporary Warming Shelter's within the jurisdictional boundary of the Oregon City city limits.

This policy contains the minimal guidelines to allow a building not normally designated as an "R" (Residential) Occupancy (use of a building or structure, or a portion thereof, for sleeping purposes) to be used as a temporary shelter.

Registration:

Each year prior to opening as an emergency shelter the building manager shall contact the City of Oregon City Building Division to request approval. The approval will be subject to an on-site inspection to verify the building meets the minimum requirements of this policy. Written approval will be provided for building(s) being requested to be used as a Temporary Shelter. All buildings are subject to applicable Land Use Regulations and require written approval from the City of Oregon City Planning Division approving the use of the structure as a Temporary Shelter.

Time Limits:

If approved, a building may be used as a temporary shelter for a maximum of ninety (90) days within any twelve (12) month period of time beginning on the first (1st) day of occupancy or as approved by the local authority having jurisdiction. A thirty (30) day extension may be requested and will be reviewed by the authority having jurisdiction and a determination made depending on the weather requiring a need for additional temporary shelters availability.

Maximum Number of Occupants Allowed:

The maximum number of allowable temporary shelter occupants shall be calculated using an occupant load factor of one (1) individual for every thirty-five (35) square feet of room area.

Life Safety Requirements: The following minimum life safety requirements apply to all buildings being used as a temporary shelter.

1. Fire Sprinklers:

It is not necessary for a building to have fire sprinklers installed to allow it to be used as a temporary shelter. However, buildings with an approved fire sprinkler system installed may have sleeping located on any building or floor area.

In buildings without fire sprinklers installed, the temporary sleeping areas may only be located on the first (ground) or second floor. Sleeping areas are not permitted in basement areas of a non-fire-sprinklered building.

2. Smoke Alarms and Detection:

- All temporary shelter sleeping areas shall be provided with approved smoke alarms or a complete approved smoke detection system.
- All other areas of the building used for temporary shelter operations shall be equipped with smoke alarms or a smoke detection system as approved by the authority having jurisdiction.
- Smoke alarms or Smoke Detection may be battery operated.

3. Carbon Monoxide (CO) Alarms and Detection:

- All temporary shelter sleeping areas shall be provided with approved carbon monoxide alarms or a complete approved detection system in buildings that have a carbon monoxide source such as heater, fireplace, furnace, appliance or cooking source that uses, coal, wood, petroleum products and other fuels that emit carbon monoxide as a by-product of combustion. This would include buildings with an attached garage with a door, ductwork or ventilation shaft that communicates with the rooms intended for sleeping.
- Carbon monoxide may be battery operated.

4. Means of Egress (Exits):

All floor levels with temporary shelter areas shall have a minimum of two means of egress (exits) from each floor level. All means of egress (exits) paths shall be maintained free of obstructions at all times. Exits from sleeping areas shall be as follows:

- Sleeping areas located on the ground floor of a temporary shelter with an occupant load of 49 or less shall have at least one (1) exit and at least one (1) window qualifying as an escape or rescue window as defined by the current Oregon Residential Specialty Code.
- All other floor levels used as temporary shelter sleeping areas that have an occupant load of ten (10) or more shall have at least two (2) exits from the area. The exits

serving the areas shall be separated by a distance equal to at least one-third (1/3) of the longest diagonal distance of the area.

5. Emergency Evacuation Plan:

All temporary shelters shall create and maintain an approved emergency evacuation plan which provides evacuation of all occupants in an emergency event. At a minimum, the emergency evacuation plan shall contain the following:

- Building floor plans. Building floor plans for each floor of the temporary shelter with sleeping areas clearly identified.
- Room size. The square footage of all rooms of the temporary shelter.
- Egress (exit) path. Building floor plans shall clearly show the egress (exit) paths from all areas of the temporary shelter. Egress (exit) path floor plans shall be posted throughout the temporary shelter.
- Life-safety systems. The emergency evacuation plan shall also include information about the fire sprinkler system, fire alarm system of the smoke detection systems.
- Location of the required fire extinguishers placed within the building.

6. Fire Extinguishers:

- Appropriately sized fire extinguishers shall be placed adjacent to the means of egress with clearly marked indicators as to the location.

7. Fire Watch:

- During sleeping hours a fire watch shall be maintained continuously. This means at least one responsible person at least 18 years of age shall be awake and assigned this responsibility. The fire watch person shall be equipped with a working flash light and have access to a phone or carry a cell phone on their person.

8. Smoking or Open Flames:

- Smoking shall not be allowed at any time inside the temporary shelter.
- Open flames shall not be allowed within the temporary shelter except for approved cooking appliance which require a flame for combustion fuel to operate.

9. Documentation:

- Documentation of all fire safety requirements including copies of the temporary shelter evacuation plan shall be maintained on site and shall be available for review at the request of the authority having jurisdiction.

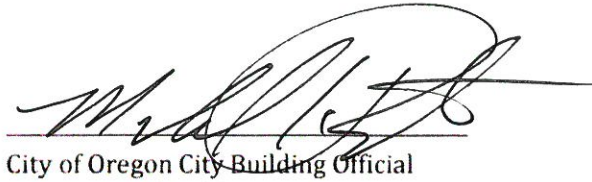
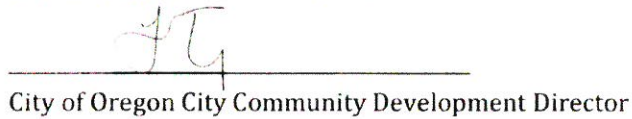
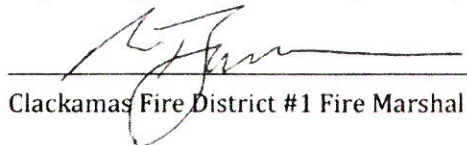
10. Responsible Person In Charge:

- The authority having jurisdiction shall be notified of the Responsible Person In Charge of the temporary shelter and be provided with a means of contact. An alternate Responsible Person In Charge may be listed.

- The responsible Person In Charge is responsible to maintain the list of the aforementioned requirements are complied with.

11. Revocation:

- Failure to maintain the minimum requirements of the policy can result in the temporary shelter approval being revoked by the authority having jurisdiction.


City of Oregon City Building OfficialNovember 29, 2017
Date
City of Oregon City Community Development Director
Date
Clackamas Fire District #1 Fire MarshalNovember 29th, 2017
Date



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: 01/20/2021

SUBJECT:

Resolution No. 21-04, Letter of Support for the McLoughlin Canemah Trail Grant Application

STAFF RECOMMENDATION:

Approve Resolution No. 21-04 authorizing the Commission President to sign a Letter of Support for the Community Paths Grant for the McLoughlin Canemah Trail on behalf of the City Commission.

EXECUTIVE SUMMARY:

The McLoughlin Canemah Trail Plan was adopted March 2018. A new Oregon Department of Transportation Community Paths Grant program is accepting 2021 grant applications for funding such types of trails. To be able to apply for this grant a Letter of Support is required to attach to the application. The grant application is due January 31, 2021.

BACKGROUND:

The McLoughlin Canemah Trail is a part of the Oregon City Loop Trail and is listed in the Oregon City Trails Master Plan and the Oregon City Transportation System Plan. The McLoughlin Canemah Trail Plan was completed in March 2018.

Funding is available to further refine the concept plan and provide the City with 30% design plans which will answer design questions that exist specifically with ODOT and private properties along Highway 99E and the parks property adjacent to the bluff which is used by the Veterans of Foreign Wars (VFW). Upon completion of 30% design, the City will be prepared to apply for a second round of funding that, if granted, could complete the final design and construction of the trail.

The 30% design grant requires a 10% local match. The grant amount requested will be \$100,000, and the City's match will be paid out of transportation funds.

The full project is anticipated to cost \$1,700,000. If the program continues to maintain grant match rules in the current form, then a 30% match will be required for the final design and construction phases. If we reach this point in the project delivery, the funding for this larger match will be determined through the budget process, but its anticipated to justify the use of transportation funds, transportation SDC funds, and parks funds.

To be able to apply for the grant, a support letter from the local municipality is required; therefore, we request approval of a support letter for the Community Paths Grant for a 30% design of the McLoughlin Canemah Trail.

OPTIONS:

1. Approve Resolution No. 21-04 as requested.
2. Approve Resolution No. 21-04 with specific modifications.
3. Deny Resolution No. 21-04. If the Commission chooses to deny the Resolution, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$10,000

FY(s): FY22

Funding Source(s): Transportation Fund

RESOLUTION NO. 21-04

A RESOLUTION SUPPORTING THE NOMINATION OF THE MCLOUGHLIN CANEMAH TRAIL FOR THE 2021 OREGON COMMUNITY PATHS PROGRAM

WHEREAS, Oregon Department of Transportation is soliciting projects for the 2021 Community Paths Grant Program; and

WHEREAS, the Oregon Community Paths Program is dedicated to helping communities create and maintain connections through multiuse paths; and

WHEREAS, the McLoughlin Canemah Trail is a proposed multiuse path as part of the Oregon City Trails Master Plan (Project L19); and

WHEREAS, the McLoughlin Canemah Trail is part of a larger Oregon City Loop Trail; and

WHEREAS, the City desires to participate in the program and will commit to provide the indicated match should the project be awarded the requested grant funds; and

WHEREAS, the City Commission is pleased to support the City's application for the 2021 Oregon Community Paths Program for funding of 30% design of the McLoughlin Canemah Trail.

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. The City Commission supports City staff applying for the Oregon Department of Transportation 2021 Oregon Community Paths Program Grant for the McLoughlin Canemah Trail and authorized the Commission President to sign a letter of support attached as Exhibit A.

Section 2. This resolution becomes effective upon adoption.

Approved and adopted at a regular meeting of the City Commission held on the 20th day of January 2021.

ROCKY SMITH, JR., Commission President

Attested to this 20th day of January 2021:

Approved as to legal sufficiency:

Kattie Riggs, City Recorder

City Attorney

January 2021

Oregon Community Paths Grant Program
Oregon Department of Transportation

RE: McLoughlin to Canemah Trail Grant Application from Oregon City

Dear Grant Selection Committee:

On behalf of the City of Oregon City – City Commission, I would like to submit the following letter of support for Oregon City’s funding request for the Oregon Community Paths Grant Program. We were pleased to participate in the McLoughlin to Canemah Trail Master Planning process as stakeholders for this project in 2017. The City Commission plans to continue to serve on the Project Advisory Committee for the duration of the project.

The McLoughlin-Canemah Trail Master Plan, adopted in 2017, identified an alignment to connect the McLoughlin Promenade to the Canemah Bluff Natural area that was supported by the community and adopted by the City Commission as an amendment to the City’s Transportation System Plan.

We believe that the proposed project, the McLoughlin to Canemah Trail (MCT) Project, will provide a safe and convenient option for walking and bicycling between the McLoughlin neighborhood and the Canemah neighborhood and should be fully supported.

- Oregon City has a recent track record in successfully forming a community-supported vision with the Willamette Falls Legacy Project; that work will form the basis of ongoing community collaboration in the area. The project will create rare opportunities for various organizations in the City to come together toward one goal.
- This innovative grant ensures the public is at the table for critical decisions in the trail planning process. Community engagement is the backbone of this project.
- Unsafe conditions exist for people who currently walk the informal trail route. A formal trail is needed to increase safety and security for trail users and property owners along the route.
- The project area is in a zone with disadvantaged populations and with zoning that supports future multifamily housing development.
- The MCT will be both highly valued and highly utilized by the local community and will provide a crucial connection to transit stops, downtown Oregon City, the former Blue Heron mill site, the future Riverwalk, and the Canemah Bluff natural area.
- The trail area has incredible advantages: a stunning location on the Willamette River, natural habitats, the adjacent burgeoning downtown Oregon City, and trail connections both north and south.

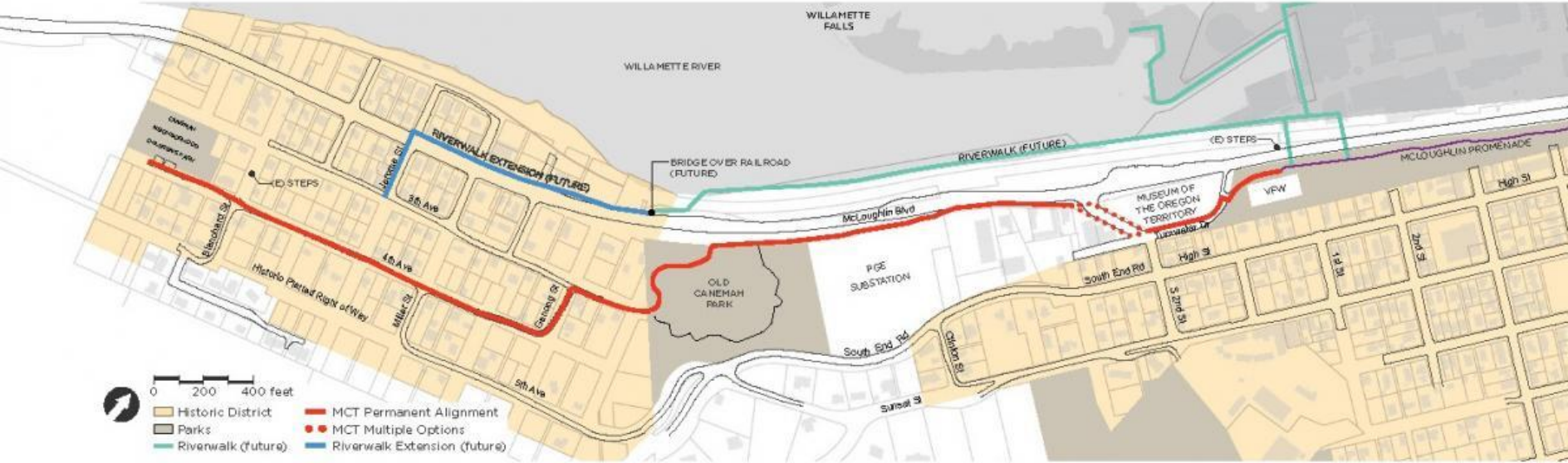
- The trail will increase access to three Oregon City parks, several transit stops, cultural institutions, and will connect residential areas to commercial and industrial businesses.

Thank you for your time and consideration of this grant request. We look forward to working with ODOT and the various stakeholders to ensure that the McLoughlin to Canemah Trail Project is a success for the local community.

Sincerely,

Rocky Smith, City Commission President
As approved at City Commission on January 20, 2021

Permanent Trail Alignment





CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: City Recorder Kattie Riggs

Agenda Date: 01/20/2021

SUBJECT:

Resolution No. 21-07, Calling for a Special Election for the Electors of the City of Oregon City to Select a New Mayor

STAFF RECOMMENDATION:

Staff recommends the City Commission approve Resolution No. 21-07 calling for a Special Election on March 9, 2021.

EXECUTIVE SUMMARY:

With the vacancy left on the Commission from the recall process, the Commission needs to call for a Special Election on March 9, 2021 to elect a member to fill the Mayor position.

BACKGROUND:

On November 10, 2020 an election was held and was successful in the recall of Dan Holladay from the office of Mayor, leaving a vacancy on the Commission.

The Oregon City Charter, Chapter III, Section 9 states in part, "Notwithstanding section 32 of this charter, if at any time after January 2, 1991, the office of Mayor shall become vacant before the normal expiration of that term, a special election shall be held at the next available date to fill that office for the unexpired term..." The Charter also requires the Commission to provide the time, manner, and means for holding a special election in Chapter VI, Section 25. This Resolution is to fulfill that requirement by calling for the Special Election on March 9, 2021 and establishing that Clackamas County will conduct the election pursuant to state law.

The City advertised and accepted candidate filings for the vacant Mayor position from December 7, 2020 until 5:00 PM on January 4, 2021. There were five (5) qualified electors certified to Clackamas County to be placed on the ballot for the March 9, 2021 election.

OPTIONS:

1. Approve Resolution No. 21-07.
2. Provide edits and approve Resolution No. 21-07 with edits.
3. Provide feedback and request staff to return with a revised Resolution No. 21-07.

BUDGET IMPACT:

Amount: \$30,000 (estimated cost)

FY(s): 2020-2021

Funding Source(s): General Fund (nonbudgeted expense)

RESOLUTION NO. 21-07

A RESOLUTION CALLING FOR A SPECIAL ELECTION FOR THE ELECTORS OF THE CITY OF OREGON CITY TO SELECT A NEW MAYOR

WHEREAS, on November 10, 2020 an election was held in Oregon City to recall Dan Holladay from the office of Mayor; and

WHEREAS, on November 30, 2020 the City received the canvass of votes cast for the Recall Election and there were sufficient valid votes to recall Dan Holladay from the office of Mayor, leaving a vacancy; and

WHEREAS, the Oregon City Charter, Chapter III, Section 9 states in part, "Notwithstanding section 32 of this charter, if at any time after January 2, 1991, the office of Mayor shall become vacant before the normal expiration of that term, a special election shall be held at the next available date to fill that office for the unexpired term..." and

WHEREAS, the Oregon City Charter, Chapter VI, Section 25 requires the Commission to provide the time, manner, and means for holding a special election; and

WHEREAS, the City Commission is now calling for a Special Election to fill the vacancy of the Mayor position; and

WHEREAS, the City Recorder, as the City's Elections Officer, has filed with the Clackamas County Elections Division five (5) qualified electors to be placed on the ballot for the position of Mayor.

NOW, THEREFORE, OREGON CITY RESOLVES AS FOLLOWS:

Section 1. A Special City Election is called in and for the City, to be held Tuesday, March 9, 2021. The Clackamas County Clerk shall conduct the election pursuant to state law.

Section 2. Pursuant to Section 25 of the City Charter, the City Recorder shall give at least ten days' notice of the election called by this resolution in a newspaper of general circulation in the City. The notice shall state the purpose of the election is to elect a new Mayor, and the time and place of the election.

Section 1. 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 20th day of January 2021.

ROCKY SMITH, JR.
Commission President

Attested to this 20th day of January 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: 01/20/2021

SUBJECT:

Change Order No. 1 for the Noble Ridge Pump Station Upgrade (CI 19-005)

STAFF RECOMMENDATION:

Authorize the City Manager to execute Change Order No. 1 in the amount of \$10,903.07, for the Noble Ridge Pump Station Upgrade to Boede Construction, Inc. (CI 19-005).

EXECUTIVE SUMMARY:

The original bid was awarded to Boede Construction, Inc. in the amount of \$74,902 in September 2020. After the project was well underway it was determined that the pumps specified in the plans and specifications were no longer available. In response to the need for changes, the Design Engineer together with staff and the Contractor selected different pumps which also triggered the need for a different piping and base configuration which requires additional labor, as well as new fittings, and materials in the amount of \$10,903.07.

BACKGROUND:

In September 2020, the City entered into a Public Improvement Contract with Boede Construction, Inc., in the amount of \$74,902 to construct the Noble Ridge Pump Station Upgrade.

The Noble Ridge Pump Station, located at 13181 Gaffney Lane, requires an upgrade due to the age and condition of the of the pump and piping system. This pump station is listed in the current Sanitary Sewer Master Plan recommending it to be upgraded.

After contracts were signed, an order was placed for the pumps. It was found that the pumps specified were no longer being manufactured. After the consultant, staff, and Contractor decided on the best option for replacement pumps, the contractor ordered the materials. This pump change also triggered the need for different fittings and piping

that is beyond what the original design called for and the original piping had already been delivered; therefore, additional charges are warranted.

Change Order No. 1, for a total of \$10,903.07, includes the following:

- Additional pipe and fittings to install the new pump.
- 30 additional days to complete the work.

The original contract price was awarded at \$74,902. The net increase of Change Order No. 1 is \$10,903.07, resulting in a contract price including change orders equal to \$85,805.07. This represented just under a 14.55 percent contract increase. The original contract was 120 days, the net increase of Change Order No. 1 is a total of 30 days, resulting in a total contract time of 150 days.

OPTIONS:

1. Authorize the City Manager to execute Change Order No. 1.
2. Authorize the City Manager to execute Change Order No. 1 with specific modifications.
3. Deny Change Order No. 1. If the Commission chooses to deny the Change Order, staff requests direction on how to proceed.

BUDGET IMPACT:

Amount: \$10,903.07

FY(s): FY21

Funding Source(s): Sewer Fund

CHANGE ORDER

Item 8c.

DATE OF ISSUANCE 1/21/2021 EFFECTIVE DATE 1/21/2021 No. 1

PROJECT: Noble Ridge Pump Station Upgrade

OWNER City of Oregon City

CONTRACTOR Boede Construction, Inc.

Contract: CI 19-005: Noble Ridge Pump Station Upgrade

OWNER's Contract No. CI 19-005

ENGINEER's Project No. CI 19-005

ENGINEER Josh Wheeler

You are directed to make the following changes in the Contract Documents.

Description:

Reason for Change Order: Redesign by consulting engineer due to pump no longer available.

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$74,902	Original Contract Times: Substantial Completion: <u>120 days (February 28, 2021)</u> Ready for final payment: _____ (days or dates)
Net Increase from previous Change Orders No. _____ to No. <u>1</u> : \$10,903.07	Net change from previous Change Orders No. <u>0</u> to No. <u>1</u> : Substantial Completion: <u>30 days</u> Ready for final payment: _____ (days)
Contract Price prior to this Change Order: \$74,902	Contract Times prior to this Change Order: Substantial Completion: <u>120 days (February 28, 2021)</u> Ready for final payment: _____ (days or dates)
Net Increase of this Change Order: \$10,903.07	Net Increase (Decrease) of this Change Order: Substantial Completion: <u>30 days</u> Ready for final payment: _____ (days)
Contract Price with all approved Change Orders: \$85,805.07	Contract Times with all approved Change Orders: Substantial Completion: <u>150 days (March 28, 2021)</u> Ready for final payment: _____ (days or dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____
ENGINEER (Authorized Signature)

By: _____
OWNER (Authorized Signature)

By: _____
CONTRACTOR (Authorized Signature)

Date: 1/08/2021

Date: _____

Date: _____

EJCDC No. 1910-8-B (1996 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specifications Institute.



BOEDE CONSTRUCTION, INC.
6898 SHERMAN ROAD SE
AUMSVILLE, OR 97325
(503) 510-5561

CHANGE ORDER PROPOSAL

BOEDE Number 1.00

DATE January 8, 2021

JOB NAME Noble Ridge Pump Station

TO: City of Oregon City

JOB LOCATION Oregon city, Oregon

ATTN: Joshua Wheeler

** CHANGE ORDER BECOMES PART OF AND IN CONFORMANCE WITH EXISTING CONTRACT **

Description:

ADDED PIPE AND FITTINGS

BOEDE MANPOWER	HOURS	RATE	TOTAL		
Office	2	\$ 65.00	\$ 130.00		
Superintendent	5	\$ 115.00	\$ 575.00		
Pipe Fitter	22	\$ 105.00	\$ 2,310.00		
Labor	8	\$ 63.00	\$ 504.00		
				Subtotal	\$ 3,519.00
				15% M/U	\$ -
				Subtotal	\$ 3,519.00

EQUIPMENT-PER BLUE BOOK	HOURS	RATE	TOTAL		
			\$ -		
				Subtotal	\$ -
				15% M/U	\$ -
				Subtotal	\$ -

Materials	HOURS	RATE	TOTAL		
New pipe and fittings per attached Quote			\$ 5,634.27		
Concrete form material			\$ 250.00		
				Subtotal	\$ 5,884.27
				15% M/U	\$ 882.64
				Subtotal	\$ 6,766.91

SUBCONTRACTOR	UNIT	RATE	TOTAL		
				Subtotal	\$ -
				5% M/U	\$ -
				Subtotal	\$ -

Final Change Order Cost

Change Order Subtotal	\$10,285.91
Insurance	\$308.58
Bonding	\$308.58
Final Change Order Cost	\$10,903.07

TIME EXTENSION REQUEST:

30 Days after approved change order

DATE

AUTHORIZED SIGNATURE(CONTRACTOR)

Tim Boedigheimer/Mel Boedigheimer

ACCEPTED - The above prices and specifications of this
 Change Order are satisfactory and are hereby accepted.

Date of acceptance

All work to be performed under same terms and
 conditions as specified in original contract unless otherwise stipulated

Signature(owner)

**Public Works**

625 Center Street | PO Box 3040 | Oregon City OR 97045
Ph: (503) 657-0891 | Fax (503) 657-7892

January 8, 2021

John Lewis, PE
Public Works Director
625 Center Street
Oregon City, OR 97045

Dear John:

The contractor, Boede Construction, Inc., is requesting a change order in the amount of \$10,903.07 for additional materials and hours that will be needed to complete the work based on design changes required to complete the project as bid.

The contractor bid the project assuming the existing platform and existing appurtenances would not change during construction; however, after a review of site conditions and a change in design as proposed on the original plans, the existing platform and appurtenances no longer can work as is and additional fittings and labor are required. It was also found during bidding that the pump specified was no longer available; however, the replacement pump provided by the consultant caused dimensional issues not provided on the plans. The construction plans have since been updated to address the issues encountered. The extra work identified by Boede Construction, Inc. electrical is beyond what was identified in the original bid and requires additional manhours and material for Boede Construction, Inc.

The attached provides the breakdown of costs.

Sincerely,

Josh Wheeler, PE
Assistant City Engineer
Public Works Engineering
City of Oregon City

SECTION IIIA**CONTRACT AGREEMENT**

This Agreement, made and entered into this 23rd day of September, 2020, between the CITY OF OREGON CITY ("CITY"), acting by and through the City Commission and **BOEDE CONSTRUCTION, 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: **NOBLE RIDGE PUMP STATION UPGRADE (CI 19-005)** in accordance with the contract documents which are hereby made a part of this agreement.

The contract documents consist of:

Invitation to Bid	Statutory Conditions to Contract Agreement
Scope of Work	Performance Bond
Instructions to Bidders	Payment Bond
Bid Proposal and Bid Schedule	State of Oregon Statutory Public Works Bond
Compliance with ORS 279C.840	General Conditions
Resident Bidder Status	Prevailing Wage Rates for Public Works Contracts in Oregon, dated July 1, 2020
Certification of Drug Testing Program	Prevailing Wage Apprenticeship Rates dated February 1, 2020
Non-Collusion Statement	Definitions of Covered Occupations for Public Works Contracts in Oregon dated July 1, 2018
Asbestos Certification	Special Provisions
Registrations	Contract Drawings
Certification of Non-Discrimination	City of Oregon City Standard Details
Certification of Compliance with Tax Law	Technical Specifications
Bidder Responsibility Form	2018 Oregon Standard Specifications for Construction (ODOT and APWA) as referenced by these documents
Bid Bond	Addendum 1 – 8/19/2020
First Tier Subcontractor Disclosure Form	Addendum 2 – 8/28/2020
Customer Service Acknowledgment Form	All items included within these Contract Documents.
Contract Agreement	
Oregon City Public Improvement Standard Conditions	

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 **120** 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 **seventy-four thousand, nine hundred and two and no/100 dollars (\$74,902.00)**.

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

by:

Anthony J. Konkol III
Anthony J. Konkol III
City Manager

by:

John M. Lewis, P.E.
John M. Lewis, P.E.
Public Works Director

Approved as to Legal Sufficiency:

by:

Carrie R.
City Attorney

City Commission Award Date:

9/16/2020

BOEDE CONSTRUCTION, INC.

Tim Boedigheimer
Printed Name

by:

Tim Boedigheimer
Authorized signature

President
Title

68-0210725
Federal Taxpayer ID Number

Address:

PO Box 88
STayton, OR, 97383



CITY OF OREGON CITY

Staff Report

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

To: City Commission
From: Chief of Police Jim Band

Agenda Date: 1/06/2021

SUBJECT:

OLCC: Liquor License Application – Off-Premises, applying as Lowden, Inc. (dba Pioneer Pizza), 13559 S Redland Road, Oregon City

STAFF RECOMMENDATION:

Staff recommends the City Commission approve OLCC Application for Lowden, Inc. (dba Pioneer Pizza), 13559 S Redland Road, Oregon City.

EXECUTIVE SUMMARY:

The attached application is for an OLCC Off-Premises license for Lowden, Inc. (dba Pioneer Pizza).

BACKGROUND:

The Oregon City Police Department had previously conducted background checks on Lenore R. Lowden and Larry D. Lowden Jr. They are eligible to hold a liquor license. This is an addition of off-premises to their already existing on-premises liquor license. All applicants must obtain an Oregon City business license before submitting their application for an OLCC liquor license. The Oregon City business license application process includes routing of the application for review through various City departments.

OPTIONS:

1. Approve the OLCC Application for Pioneer Pizza
2. Deny the OLCC Application for Pioneer Pizza



OREGON LIQUOR CONTROL COMMISSION

LIQUOR LICENSE APPLICATION

PRINT FORM

RESET FORM

1. Application. **Do not include** any OLCC fees with your application packet (the license fee will be collected at a later time). Application is being made for:

License Applied For:	CITY AND COUNTY USE ONLY
☐ Brewery 1 st Location	Date application received and/or date stamp:
Brewery Additional location (2 nd) ☐ (3 rd) ☐	Name of City or County:
☐ Brewery-Public House (BPH) 1 st location	Recommends this license be:
BPH Additional location (2 nd) ☐ (3 rd) ☐	☐ Granted ☐ Denied
☐ Distillery	By: _____
☐ Full On-Premises, Commercial	Date: _____
☐ Full On-Premises, Caterer	
☐ Full On-Premises, Passenger Carrier	
☐ Full On-Premises, Other Public Location	
☐ Full On-Premises, For Profit Private Club	
☐ Full On-Premises, Nonprofit Private Club	
☐ Grower Sales Privilege (GSP) 1 st location	
GSP Additional location (2 nd) ☐ (3 rd) ☐	
☐ Limited On-Premises	OLCC USE ONLY
☒ Off-Premises	Date application received: 12-7-20
☐ Warehouse	Date application accepted: 12-7-20
☐ Wholesale Malt Beverage & Wine	
☐ Winery 1 st Location	License Action(s):
Winery Additional location (2 nd) ☐ (3 rd) ☐	A/Priv
(4 th) ☐ (5 th) ☐	

2. Identify the applicant(s) applying for the license(s). **ENTITY (example: corporation or LLC) or INDIVIDUAL(S)¹** applying for the license(s):

Lowden, Inc.

12-8-20 RE

Larry D. Lowden Jr.

App #1: NAME OF ENTITY OR INDIVIDUAL APPLICANT

App #2: NAME OF ENTITY OR INDIVIDUAL APPLICANT

Lenore R. Lowden

App #3: NAME OF ENTITY OR INDIVIDUAL APPLICANT

App #4: NAME OF ENTITY OR INDIVIDUAL APPLICANT

3. Trade Name of the Business (Name Customers Will See) Pioneer Pizza		
4. Business Address (Number and Street Address of the Location that will have the liquor license) 13559 S Redland Rd.		
City Oregon City	County Clackamas	Zip Code 97045

¹ **Read the instructions on page 1 carefully.** If an entity is applying for the license, list the name of the entity as an applicant. If individual is applying as a sole proprietor (no entity), list the individual as an applicant.



OREGON LIQUOR CONTROL COMMISSION

LIQUOR LICENSE APPLICATION

5. Trade Name of the Business (Name Customers Will See) Pioneer Pizza			
6. Does the business address currently have an OLCC liquor license? ☒ YES ☐ NO			
7. Does the business address currently have an OLCC marijuana license? ☐ YES ☒ NO			
8. Mailing Address/PO Box, Number, Street, Rural Route (where the OLCC will send your license certificate, renewal application and other mailings as described in <u>OAR 845-004-0065(1)</u> .) PO Box 2498			
City Clackamas		State OR	Zip Code 97015
9. Phone Number of the Business Location 503 655-7587		10. Email Contact for this Application and for the Business pioneerpizza@comcast.net	
11. Contact Person for this Application Lenore R. Lowden		Phone Number 503 706-1178	
Contact Person's Mailing Address (if different)	City	State	Zip Code

Please note that liquor license applications are public records. A copy of the application will be posted on the OLCC website for a period of several weeks.

ATTESTATION: **READ CAREFULLY AND MAKE SURE YOU UNDERSTAND BEFORE SIGNING THIS FORM**

I understand that marijuana is **prohibited** on the licensed premises. This includes marijuana use, consumption, ingestion, inhalation, samples, give-away, sale, etc. I attest that all answers on all forms and documents, and all information provided to the OLCC as a part of this application are true and complete.

I affirm that I have read OAR 845-005-0311 and all individuals (sole proprietors) or entities with an ownership interest (other than waivable ownership interest per OAR 845-005-0311(6)) are listed as license applicants in #2 above. I understand that failure to list an individual or entity who has an unwaivable ownership interest in the business may result in denial of my license or the OLCC taking action against my license in the event that an undisclosed ownership interest is discovered after license issuance.

Applicant(s) Signature

- Each individual (sole proprietor) listed as an applicant must sign the application below.
- If an applicant is an entity, such as a corporation or LLC, at least one **INDIVIDUAL who is authorized to sign for the entity** must sign the application.
- An individual with the authority to sign on behalf of the applicant (such as the applicant's attorney or an individual with power of attorney) may sign the application. If an individual other than an applicant signs the application, please provide written proof of signature authority. Attorneys signing on behalf of applicants may list the state of bar licensure and bar number in lieu of written proof of authority from an applicant. **Applicants are still responsible for all information on this form.**

Pioneer Pizza, Soc/Part.	<i>Lenore R. Lowden</i>	12/7/2020	
App. #1: (PRINT NAME)	App #1: (SIGNATURE)	App #1: Signature Date	Atty. Bar Information (if applicable)
Lenore R. Lowden	<i>Lenore R. Lowden</i>	12/7/2020	
App. #2: (PRINT NAME)	App #2: (SIGNATURE)	App #2: Signature Date	Atty. Bar Information (if applicable)
Larry D. Lowden Jr.	<i>Larry D. Lowden Jr.</i>	12/7/2020	
App. #3: (PRINT NAME)	App #3: (SIGNATURE)	App #3: Signature Date	Atty. Bar Information (if applicable)
App. #4: (PRINT NAME)	App #4: (SIGNATURE)	App #4: Signature Date	Atty. Bar Information (if applicable)



CITY OF OREGON CITY

CITY COMMISSION WORK SESSION

DRAFT MINUTES

Commission Chambers, 625 Center Street, Oregon City
Tuesday, November 04, 2020 at 6:00 PM

CONVENE WORK SESSION AND ROLL CALL

Commission President Rachel Lyles 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.

Absent: 1 - Mayor Dan Holladay

Staffers: 12 - City Manager Tony Konkol, City Attorney Bill Kabeiseman, City Recorder Kattie Riggs, Community Development Director Laura Terway, Public Works Director John Lewis, Parks & Recreation Director Kendall Reid, Interim Finance Director Ryan Bredehoeft, Human Resource Director Patrick Foiles, Police Chief Jim Band, Library Director Greg Williams, Assistant to the City Manager Lisa Oreskovich and Economic Development Manager James Graham.

DISCUSSION ITEMS

1. Willamette Falls Legacy Project Programming Update

Laura Terway, Community Development Director, introduced Brian Moore, Project Manager of the Willamette Falls Legacy Project. Mr. Moore provided an update to the Commission on the work to the conceptual plan for the Riverwalk, including public, semi-public and private use of the spaces. Mr. Moore referenced the renewed emphasis working with the tribes to gain their valued input on planning and refinement.

Ms. Terway expressed there was high-level work being done on the framework for the programming.

Commissioner Smith was concerned about programming in that there has not been a determination if the area is considered a park or not and does that mean that all the programming has to change based on that designation.

Tony Konkol, City Manager, indicated the space may be considered an easement and at some point, the park designation may occur.

Commissioner Lyles Smith asked what the specific boundaries of the easement were and if they were known.

Mr. Moore went back to the presentation and provided more detail on the public spaces within the Riverwalk.

Commissioner McGriff felt it was too early to have the discussion on determining what the public space should be, as that may limit the visioning of what could be done with the space. Commissioner McGriff felt there was a need for continued community input to ensure the public was fully informed and supportive.

City Commission Work Session Minutes**November 04, 2020**

Mr. Konkol mentioned the earlier visioning efforts and idea gathering and how that continues to inform the current work being done.

Commissioner McGriff felt the Riverwalk project should reflect the seasonal aspects that may influence events and programming.

Commissioner Lyles Smith asked Mr. Moore what the appropriate timeline would be going forward for the Commission to check-in regarding the programming. Mr. Moore indicated check-ins should be based on the project delivery schedule and involve public input.

Mr. Moore then went back to the presentation outlining the Willamette Falls Trust grant activity and project scheduling.

Commissioner Lyles Smith asked about tribe input during the early parts of the process and Mr. Moore indicated that it was occurring.

Mr. Moore discussed some issues that the Confederated Tribes of the Grande Ronde have regarding current programming work. The other four tribes involved have issued public statements in support of the programming process.

Commissioner O'Donnell indicated for the public viewing the Work Session, the discussion was only regarding the public easement portion of the Riverwalk and not the overall site, which is private property owned by the Grande Ronde Tribe. Commissioner O'Donnell supports the Tribes doing the programming content and urged the public to read the report associated with the Work Session.

Commissioner McGriff expressed her recommendation emphasizing the various tribal stories from a diversity and inclusion perspective.

CITY MANAGER'S REPORT

There was no City Manager report.

ADJOURNMENT

Commission President Lyles Smith adjourned the meeting at 7:00 PM.

Respectfully Submitted,

Kattie Riggs, City Recorder



CITY OF OREGON CITY

CITY COMMISSION SPECIAL EMERGENCY MEETING

DRAFT MINUTES

Virtual Meeting

Wednesday, September 09, 2020 at 5:15 PM

1. CONVENE MEETING AND ROLL CALL

Mayor Dan Holladay called the meeting to order at 5:18 PM.

PRESENT - 5

Mayor Dan Holladay
Commissioner Denyse McGriff
Commissioner Frank O'Donnell
Commissioner Rachel Lyles Smith
Commissioner Rocky Smith, Jr.

STAFFERS -

City Manager Tony Konkol
City Recorder Kattie Riggs
Police Chief Jim Band
Executive Assistant Lisa Oreskovich
Communication Coordinator Kristin Brown
Human Resources Director Patrick Foiles
Economic Development Manager James Graham

2. GENERAL BUSINESS

- 2a. Resolution No. 20-26, Declaring a State of Emergency in Oregon City due to the wildfires in Clackamas County and Throughout the State

A motion was made by Commissioner Denyse McGriff, seconded by Commissioner Frank O'Donnell, to adopt Resolution No. 20-26, Declaring a State of Emergency in Oregon City due to the wildfires in Clackamas County and throughout the State. The motion carried with the following vote:

Yea: Mayor Holladay, Commissioner McGriff, Commissioner O'Donnell, Commissioner Smith, Commissioner Smith, Jr.

3. ADJOURNMENT

Mayor Holladay adjourned the meeting at 5:32 PM.



CITY OF OREGON CITY

CITY COMMISSION SPECIAL MEETING

DRAFT MINUTES

Commission Chambers, 625 Center Street, Oregon City
Thursday, August 27, 2020 at 6:00 PM

1. CONVENE SPECIAL MEETING

Mayor Dan Holladay called the meeting to order at 6:05 PM.

2. ROLL CALL

Present: 5 - Mayor Dan Holladay, Commissioner Denyse McGriff, Commissioner Frank O'Donnell, Commissioner Rachel Lyles Smith, and Commissioner Rocky Smith, Jr.

Staffers: - 2 City Manager Tony Konkol and City Recorder Kattie Riggs

3. GENERAL BUSINESS

3a. Interview Candidates for Vacant Urban Renewal Commission Position

The interviews were conducted according to the following schedule:

6:00 PM - Doug Neeley
6:15 PM - Stephen VanHaverbeke
6:30 PM - Adam Zagel
6:45 PM - Dirk Schlagenhauser
BREAK - 5 minutes
7:05 PM - Damon Mabee
7:20 PM - Betty Mumm
7:35 PM - Amy Willhite

The City Commission interviewed each of the candidates that submitted for the vacant Urban Renewal Commission position. The questions asked were as follows:

1. *Please describe any experience you have serving on boards and/or committees, including your neighborhood association?*
2. *Explain how you are uniquely qualified to serve and why you would like to serve on the Urban Renewal Commission.*
3. *Once the Urban Renewal Commission goes through the planned training, explain your willingness to attend neighborhood association and other group meetings to explain the findings and proposed course of action, along with answering any questions?*
4. *What do you see as the role of urban renewal in Oregon City?*
5. *Do you have any thoughts regarding the future of Urban Renewal, specifically program improvements, district boundary changes, or closure of the district?*

6. *Knowing you may be faced with competing projects for Urban Renewal dollars, what factors would you consider in choosing among competing projects?*

3b. Discussion and Deliberation for Appointment to Urban Renewal Commission

The City Commission discussed the candidates and decided to write down their top two candidates, so that the City Recorder could tally them and state them in the record.

4. ADJOURNMENT

The meeting was adjourned at 7:25 PM.

Respectfully submitted,

Kattie Riggs, City Recorder

Public Comment for City Commission - 01/20/2021

[illegible]



City of Oregon City

2012 Water Distribution System Master Plan Amendment

Revised 1-20-2021



Table of Contents

Introduction	4
Water Distribution Model	5
System Supply and Demands	5
<i>Demand Definition</i>	6
<i>Demand Summary</i>	6
Design Criteria	11
<i>System Pressures</i>	11
<i>Fire Flow Demands</i>	11
<i>Facility Criteria</i>	12
System Evaluation	12
<i>Distribution and Fire Flow Deficiencies</i>	12
<i>Reservoir Capacity Analysis</i>	13
<i>Pump Station Capacity Analysis</i>	14
Capital Improvement Program.....	18
<i>Cost Assumptions</i>	18
<i>Joint Work with CRW and Neighboring Provider Upgrades</i>	19
Improvement Descriptions.....	19
<i>Capacity and Operations Projects</i>	19
<i>Development and Growth Projects</i>	21
<i>Repair and Replacement Projects</i>	22
Capital Improvement Program Summary.....	29

Figures

Figure 1 Study Area	8
Figure 2 MDD Pressure and Pipe Velocity	16
Figure 3 Fire Flow	17
Figure 4 Pipe Distribution by Age and Material.....	24
Figure 5 CIP Projects Map	34

Tables

Table 1 Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone	9
Table 2 CRW and West Linn Demands	10
Table 3 Recommended Service Pressure Criteria.....	11
Table 4 Required Fire Flow Summary.....	11
Table 5 Water System Facility Criteria.....	12
Table 6 Reservoir Storage Calculations	14
Table 7 Pump Station Capacity Calculations	15
Table 8 Capital Improvement Program Projects	18
Table 9 Reservoir Filling Rates – Mountainview to Henrici Transmission Upsizing	21
Table 10 Park Place Concept Area Supply	22
Table 11 Repair and Replacement Summary	23
Table 12 Pipe Replacement Projects	24
Table 13.1 Pressure Reducing Valve Rehabilitation Schedule	25
Table 13.2 Pressure Reducing Valve Recommended Settings.....	27
Table 14 Reservoir Coating and Rehabilitation Schedule	28
Table 15 Reservoir Seismic and Safety Improvements.....	28
Table 16 Pump Station Rehabilitation and Maintenance Schedule	29
Table 17 Capital Improvement Program	30
Table 18 Total CIP Summary Costs	33

Appendices

Appendix A Water Distribution Model Calibration Technical Memorandum, Murraysmith

Appendix B Hydraulic Profiles

Appendix C Emergency Water Supply Analysis Technical Memorandum, Murraysmith

Appendix D Joint Engineering Study Technical Memorandum, Murraysmith

Appendix E Table 10.1B South Storage Capacity Summary (1.5% Growth Forecast), CRW

Appendix F Molalla Avenue Streetscape Concurrent Waterline Improvements Technical
Memorandum, Murraysmith

Appendix G Small Waterline Replacement Projects & PRV Photo Documentation, Oregon
City

Appendix H Mill Redevelopment Water Distribution Analysis Technical Memorandum,
Murraysmith

Introduction

In 2012, the City of Oregon City (City) adopted the *Water Distribution System Master Plan* (2012 WDSMP) prepared by West Yost Associates, an ancillary document to the City's Comprehensive Plan and the Public Facilities Plan for the City's water distribution system as required by Oregon Administrative Rule (OAR) Chapter 660, Division 11, Public Facilities Planning. The 2012 WDSMP includes the Capital Improvement Program (CIP) which consists of a list of prioritized water distribution system projects and estimated costs were based on 2009 dollars. The CIP is a blueprint for forecasting capital expenditures and is one of the most important means of meeting the City's obligation towards community development and financial public facilities planning.

This document is an amendment to the 2012 WDSMP, developed primarily to provide an updated CIP in current dollars for implementation over a 20-year time frame, through 2040. In order to prepare a comprehensive update, elements of the 2012 WDSMP were either retained as the basis for updated analysis, revised and updated to current conditions, or replaced in their entirety. A summary of the relationship between the original Chapters of the 2012 WDSMP and this Amendment is presented below:

2012 WDSMP Chapter	2020 Amendment
1. Introduction	Documents updates presented herein as a supplement to Chapter 1
2. Existing Water Distribution System	Retained as is, limited system modifications have occurred
3. Water Demand Analysis	Replaces this Chapter with current and forecasted demands through the year 2040
4. Water Distribution System Service Standards	Amends specific criteria for service pressures, fire flows, pump stations and storage
5. Hydraulic Model Update	Replaces this Chapter with comprehensive model update and calibration
6. Existing Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
7. Future Water Distribution System Evaluation	Replaces this Chapter with updated analysis and findings
8. Recommended Capital Improvement Program	Replaces this Chapter with updated CIP based on new existing and future system evaluation
9. Water Distribution System Financing Plan	Proposed method of funding is not changed, however project list is replaced by the project list in the Amendment

This 2012 WDSMP Amendment has been developed in accordance with Oregon Administrative Rule (OAR) 660-011 which requires that "a city or county shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500

persons. The purpose of the plan is to help assure that urban development in such urban growth boundaries is guided and supported by types and levels of urban facilities and services appropriate for the needs and requirements of the urban areas to be serviced, and that those facilities and services are provided in a timely, orderly and efficient arrangement...”

Water Distribution Model

A steady-state hydraulic network model was used to evaluate the performance of the distribution system under existing and future demand conditions to identify deficiencies and evaluate adequacy of improvements. The model uses the Innovyze InfoWater software, and the EPANet hydraulic engine, to simulate system pressures and demands throughout the distribution system. The model was most recently updated and calibrated in 2017, as documented in the *Water Distribution Model Calibration Technical Memorandum* (Murraysmith, 2017, **Appendix A**).

System Supply and Demands

The South Fork Water Board (SFWB) supplies treated water to the City of Oregon City, the Clackamas River Water District (CRW), and the City of West Linn. Until recently, SFWB was the localized sole supply for all three providers. However, West Linn upgraded their connection with Lake Oswego-Tigard to access emergency supply from the Lake Oswego-Tigard Water Treatment Plant, completed in 2017. Additionally, CRW is extending supply from their own treatment through an on-going “Backbone” Project. The diversified supply will decrease the total demand on the SFWB system but will primarily not affect projected demands on the City system, or water wheeled through the City system. Therefore, for this analysis, it was assumed that SFWB would continue to supply all three providers without hydraulic deficiencies.

Currently, the City, West Linn, and CRW share supply via the SFWB 30-inch transmission line and the SFWB Division Street Pump Station, or the SFWB 42-inch transmission line and the City Hunter Avenue Pump Station. The supply system is shown in **Figure 1** and described in the bullets below. Included in **Appendix B** is a hydraulic profile of the complete system. A looped connection between the SFWB 30-inch and 42-inch transmission lines was completed in December 2018 and is not reflected in either the figure or the descriptions. This project serves to bypass a leaking portion of the SFWB 30-inch transmission line near the SFWB Water Treatment Plant (WTP) and does not significantly affect system supply. The planning and modeling for this project are documented in the *Emergency Water Supply Analysis Technical Memorandum* (Murraysmith 2019) included in **Appendix C**.

- West Linn supply is located downstream of the SFWB Division Street Pump Station, directly off SFWB transmission lines, at Master Meter 3 (MM03). West Linn owns and operates their supply line between MM03 and the West Linn Bolton Reservoir. System demands for West Linn are modeled at the Bolton Reservoir.
- CRW demands are supplied via a master meter directly off SFWB infrastructure (MM02), wheeled through City infrastructure to master meters (MM08, MM09, MM11, MM12,

MM13), and directly off City infrastructure, without an intervening master meter. CRW customers supplied without intervening master meters are considered regular City customers, for the purposes of modeling system demands. CRW customers supplied through City infrastructure and via master meters are included as modeled demands at the meter location. Similarly, CRW customers supplied directly off the SFWB line are represented as a single demand at the location of the master meter.

- The City service area includes all areas within the City's Urban Growth Boundary (UGB) as shown in **Figure 1** including 10 pressure zones. The City is supplied through both the SFWB 30-inch transmission line via the SFWB Division Street Pump Station, and through the SFWB 42-inch transmission lines via the Hunter Avenue Pump Station. Currently, CRW serves some areas within the City's UGB, including the Barlow Crest area and portions of the South End. These areas have been discussed in detail between the City and CRW in the *Joint Engineering Study Technical Memorandum* (Murraysmith 2018, **Appendix D**).

Demand Definition

The following demand conditions were used to evaluate system capacity.

- Average daily demand (ADD) is the total annual water volume used system-wide divided by 365 days per year.
- Maximum day demand (MDD) is the largest 24-hour water volume for a given year. In western Oregon, MDD usually occurs each year between July 1st and September 30th, referred to as the peak season.
- Peak hour demand (PHD) is estimated as the largest hour of demand on the peak use day.
- Fire flow demand is the flow rate required by the fire marshal to fight a fire at each hydrant. Demands are based on building size, material, and use. Fire flow demands are modeled in addition to MDD system demands.
- Equivalent Dwelling Units (EDUs) are used to quantify water demands for all forms of development in terms of typical water demand for single family residential units. Water demand per EDU is calculated as the total water demand for all single-family residential units in the system divided by the total number of single-family residential units.

Demand Summary

Demand projections were developed for Oregon City pressure zones and relevant master meters from individual water provider projections and are summarized in **Tables 1** and **2**. Demand projections include existing through the year 2040. The existing condition was approximated as the City's 2015 demands, as these were the most recent data available at the start of the CIP update process, and 2016 demands for West Linn and CRW.

City demands were calculated on a parcel level using Metro and Clackamas County household and employment projections (*Population Forecasts for Clackamas County Service Districts*, EcoNorthwest, 2016). EDUs were developed for each parcel based on residential, commercial, and industrial zoning classifications. Parcels were spatially assigned to the nearest model node within the same pressure zone and demands for each time period were calculated using 2012 WDSMP unit demands of 287 gallons per day per EDU (gpd/EDU). Water demand forecasts assume development occurs within the City's UGB and for the three concept plan areas as illustrated in **Figure 1**. These include the Park Place Concept Area, the South End Concept Area, and the Beavercreek Road Concept Area.

City MDD and PHD were calculated using peaking factors typical of similar systems in the region. Peaking factors of 2.3 for MDD:ADD and 2.0 for PHD:MDD were used.

CRW demands were distributed to master meter locations based on actual 2016 billing records and projected using a 1.5% per year growth rate, as presented in CRW's *Table 101.B South Storage Capacity Summary (1.5% Growth Forecast)* (CRW 2016, **Appendix E**).

West Linn demands were projected from actual 2016 billing records and the same 1.5% growth rate as used in CRW demand projections.

	SFWB Intake
	Master Meter
	Pump Station
	Reservoir
	SFWB Water Treatment Plant
	UGB
	City Service Area
	CRW Service Area
	West Linn Service Area
	Concept Plan Areas



Figure 1 Study Area



Table 1

Oregon City ADD/MDD/PHD Existing through Year 2040 Conditions by Pressure Zone

Demand by Zone	ADD (mgd)					MDD (mgd)					PHD (mgd)				
	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040	EXST	2020	2025	2035	2040
Lower	0.2	0.3	0.4	0.5	0.6	0.5	0.8	1.0	1.2	1.3	1.0	1.6	1.9	2.4	2.5
Intermediate	0.5	0.5	0.5	0.6	0.6	1.2	1.2	1.2	1.3	1.4	2.3	2.4	2.4	2.6	2.7
Upper	2.3	2.7	2.9	3.4	3.5	5.4	6.2	6.8	7.9	8.2	10.5	12.1	13.3	15.5	16.0
Fairway Downs	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.1	0.1	0.1	0.1	0.2	0.2
Park Place Lower	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.2
Park Place Intermediate	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.8	0.8
Park Place Livesay	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.03	0.04	0.00	0.02	0.04	0.06	0.1
Park Place View Manor	0.04	0.04	0.04	0.04	0.05	0.10	0.10	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Canemah	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.05	0.06	0.06	0.06	0.07
Total	3.4	3.9	4.3	5.1	5.2	7.9	9.1	10.0	11.7	12.1	15.4	17.8	19.5	22.9	23.7

Notes:

- 1 ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2015 data for the City pressure zone demands.

Table 2
CRW and West Linn Demands

Demand (meter)	ADD (mgd)					MDD (mgd)					PHD (mgd)				
	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO	EXST	2020	2025	2035	2040 to BO
West Linn Total - MM03	2.9	3.1	3.3	3.9	6.0	7.2	7.8	8.4	9.7	15.2	14.1	15.1	16.3	18.9	29.6
CRW Zones- MM02	1.3	1.4	1.5	1.7	2.6	3.3	3.5	3.8	4.4	6.9	6.4	6.9	7.4	8.6	13.4
Barlow Crest PS - MM12	0.2	0.2	0.3	0.3	0.5	0.7	0.8	0.8	1.0	1.5	1.4	1.5	1.7	1.9	3.0
HOPP Forsythe - MM13	0.02	0.02	0.02	0.02	0.04	0.05	0.05	0.05	0.06	0.10	0.09	0.1	0.1	0.1	0.2
Leland/Meyers - MM08	0.09	0.09	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.6
South End - MM09	0.04	0.04	0.04	0.05	0.07	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4
CRW Metered Total	1.6	1.8	1.9	2.2	3.4	4.3	4.6	5.0	5.8	9.0	8.3	9.0	9.7	11.2	17.6

Notes:

- 1 BO = buildout; ADD = average day demand; MDD = maximum day demand; PHD = peak hour demand; mgd = million gallons per day
- 2 EXST = Existing conditions reflecting 2016 data for the West Linn and CRW demands.
- 3 Future buildout demands include growth as determined by each water service provider.

Design Criteria

System Pressures

Water systems are constrained by service pressures and pipe velocity. For typical water systems, the acceptable service pressure range under ADD operating conditions is 40 to 100 pounds per square inch (psi). Where mainline pressures exceed 80 psi, services must be equipped with individual pressure reducing valves (PRVs) to protect water heaters per the *Oregon Plumbing Specialty Code (Section 608.2, 2014)*. Many of the City's customers fall within this category. During a fire flow event or emergency, the minimum service pressure is 20 psi as required by *Oregon Health Authority, Drinking Water Program (OAR 333.061.0050(8)(e))* regulations. Recommended service pressure criteria are summarized in **Table 3**.

Table 3
Recommended Service Pressure Criteria

Service Pressure Criterion	Pressure (psi)
Normal range, during ADD	50-100
Maximum without PRV	80
Minimum, during emergency or fire flow	20

The acceptable flow velocity under MDD conditions is less than 4 feet per second (fps) velocity. The system should also be able to provide fire flow at less than 10 fps. However, velocity criteria are secondary to pressure and fire flow requirements.

Fire Flow Demands

Fire flow demands within the City's system are assigned based on land use type and summarized in **Table 4**. Fire flow requirements are set by the fire marshal and are consistent with tables in **Appendix B** of the *Oregon Fire Code (OFC, 2014)*.

Table 4
Required Fire Flow Summary

Land Use Type	Required Fire Flow (gallons per minute) ¹	Required Duration (hours)
Single Family and Duplex Residential <3,600 sq ft	1,000	2
Single Family and Duplex Residential >3,600 sq ft	1,500	2
Medium Density Residential, Neighborhood and Community Service (Commercial)	2,500	2
High Density Residential, Commercial, Industrial, and Institutional	3,000	3

Notes:

- 1 A minimum service pressure of 20 psi is required at all services throughout the system during all fire flow.

Facility Criteria

Pump stations to zones with gravity storage are required to supply MDD with the largest pump out of service (firm capacity). This standard applies to all pump stations with the exception of the Fairway Downs Pump Station, which currently pumps to a closed zone (no reservoir) and thus is required to provide adequate supply for MDD and fire flow. In the future, the Fairway Downs zone is expected to be served by a new reservoir, eliminating the additional pumping capacity requirements for fire flow.

Reservoirs storage is allocated into multiple components including emergency, fire, equalization, and operational. Emergency storage is based on the amount of risk a system is willing to accept and is intended for supply during a treatment plant outage, or other emergency. A typical volume for emergency storage is two times ADD. Reservoir storage for fire flow demands is required for the maximum combination of fire flow demand and fire flow duration within each pressure zone. For an entirely residential zone, this value is 180,000 gallons (1,500 gpm x 2 hours). Equalization storage is the volume differential between MDD and PHD. Sometimes a value of 0.25xADD is substituted for equalization in place of an exact volume. Finally, operational storage is available to limit pump cycling or to sustain system pressures. This is the volume of water typically cycled throughout the day while supply is off, or the water surface required to sustain minimum pressures within the pressure zone. **Table 5** lists the water system facility criteria used to evaluate the City's system.

Table 5
Water System Facility Criteria

Water Facility Type	Criteria
Pump Station to Gravity Storage	Firm capacity for MDD
Pump Station to Closed Zone	Firm capacity for MDD + fire flow
Reservoir Storage (sum of components)	Emergency = 2xADD Fire flow = maximum fire flow x duration within zone Equalization = 0.25xADD Operational = Based on zone specific HGL or Pump Cycling

System Evaluation

Distribution and Fire Flow Deficiencies

The system was evaluated at existing and future demands, based on the pressure design criteria presented in **Table 3** and the fire flow criteria presented in **Table 4**. The results of both analyses (existing and future) were similar.

Figure 2 highlights areas of high velocity and low pressures under existing MDD. For both existing and year 2040 conditions, low pressures are generally not an issue, although higher velocities can be seen in one of the parallel Molalla Avenue transmission mains near the Mountainview Site.

Figure 3 highlights available fire flow at existing MDD throughout the system. Based on minimum pressure and fire flow criteria, the system performs adequately with fire flow deficiencies generally isolated to small diameter or dead-end pipes. This is true for both existing and future demand scenarios, although these deficiencies are typically more extreme under future system demands.

The results of the existing MDD condition analysis are shown in **Figures 2 and 3**, as deficiencies visible under the existing condition remain localized to the same areas under future conditions.

The City operates many of its zones at the higher end of pressure recommendations (**Figure 2**). This places stress on distribution piping and increases risk of water losses. For new developments, distribution piping should be designed within the recommended pressure ranges including redundant PRVs where pressures are in excess of 80 psi. Individual PRVs owned and maintained by the property owner may be required to further reduce local distribution pressure.

City staff have expressed concerns about balancing supply and demand between the Henrici Reservoir and Boynton Standpipe. While filling the Henrici Reservoirs from the Mountainview Pump Station, the system experiences high pressures and increased water losses. Additional transmission capacity is required to improve supply to and from the Henrici Reservoir while maintaining pressures within recommended ranges and is documented in **Appendix F, Molalla Avenue Streetscape Concurrent Waterline Improvements** (Murraysmith, October 2018).

Reservoir Capacity Analysis

Reservoir storage is provided for four purposes: emergency supply, fire flow, equalization, and operations. The total distribution storage requirement is the sum of the components. An evaluation of reservoir storage was performed including a review of each component. Because some zones can be supplied by multiple reservoirs or supplemented by pump station capacity, the following assumptions were developed for the reservoir storage analysis:

- Barlow Crest Reservoir supplies Park Place Intermediate Zone, View Manor, Livesay, and CRW MM13 (Forsythe)
- Mountainview Reservoirs 1 & 2 supply the Lower Zone, Intermediate Zone, and Canemah
- Boynton & Henrici Reservoirs supply Upper Zone, Fairway Downs, CRW MM08 (Leland) and MM09 (South End)
- The Upper Zone storage deficiencies can be supplied by the excess storage in Mountainview Reservoirs 1 & 2 depending on adequate pumping capacity at the Mountainview Pump Station.
- Proposed reservoirs for the Beavercreek Road Concept Area (Fairway Downs Reservoir) and the Park Place Concept Area (Holly Lane Reservoir) were included in the analysis and sized for growth within their respective service areas.

- Many zones can be alternately supplied by either the Barlow Crest or Mountainview Reservoirs via control valves and PRVs which provides system redundancy. For the purposes of this analysis, demands from these zones were only assigned to one of the supplying reservoirs.
- SFWB Water Treatment Clear Well supplies the Park Place Lower Zone. As discussed in the *SFWB Water Master Plan* (2016), the 2 million-gallon (MG) clear well has adequate capacity for storage within the zone.

The reservoir storage analysis is presented in **Table 6**. A negative value in available storage represents the additional storage required.

Table 6
Reservoir Storage Calculations

Reservoir	Existing Storage (MG)	Total Storage Required (MG)					Available Storage (MG)				
		Existing	2020	2025	2035	2040	Existing	2020	2025	2035	2040
Barlow Crest	1.75	0.7	0.7	0.8	0.9	1.0	1.1	1.0	1.0	0.8	0.7
Mountainview	12.5	2.7	3.0	3.2	3.6	3.8	9.8	9.5	9.3	8.9	8.7
Henrici/Boynton ¹	4	6.7	7.7	8.4	9.8	10.5	-2.7	-3.7	-4.4	-5.8	-6.5
Holly Lane	0		na			0.5			na		
Fairway Downs	0		na			1.1			na		

Notes:

- 1 MG = millions of gallons, na = not applicable
- 2 Existing condition assumed to be 2015/2016 depending on data source.
- 3 Storage deficit shown in Henrici/Boynton by 2035 can be provided by the excess storage in the Mountainview Reservoirs, if the Mountainview Pump Station can meet the MDD demands of the Upper Zone and emergency power supply at the station is adequate for operation.

Through the 20-year time frame (2040), all zones have adequate storage. For the Upper and Fairway Downs Zones, this assumes that any storage deficiency is minimized by pumping capacity at the Mountainview Pump Station. For 2040, this results in 6.5 MG of emergency storage for the upper zones located in the Mountainview Reservoirs, which places additional risk on the City. Therefore, an additional 6.5 MG storage is recommended within the Upper Zone beyond the year 2040, the 20-year time frame. A future update of the 2012 WDSMP and this Amendment should include further evaluation of the need for this additional storage.

Pump Station Capacity Analysis

Two types of systems are considered in the pump station analysis. The first is an open system, with at least one reservoir that sets the hydraulic grade for the pressure zone. In an open system, the pump station firm capacity must be equal to or greater than MDD for the pressure zone(s) served by the pump station. The second is a closed system, which is a zone without a reservoir. In a closed

system, the pump station must be able to provide MDD + fire flow with the largest pump out of service.

Only the existing Fairway Downs Pump Station supplies a closed zone. With the development of the upper Beavercreek Road Concept Area, a new reservoir and pump station will be required. An open system will replace the existing closed system, and the reservoir will be sized to supply the fire flow needs of the expanded Fairway Downs Pressure Zone. As previously summarized, storage requirements in the Intermediate Zone and limitations in storage at Henrici/Boynton should be considered in sizing the Fairway Downs Reservoir and associated pump station.

As shown in **Table 7**, all existing pump stations meet system demands for the next 20 years through year 2040. Improvements to the Mountainview Pump Station firm capacity may be required beyond 2040 in conjunction with additional storage in the Upper Zone.

Table 7
Pump Station Capacity Calculations

Pump Station	Firm Capacity (GPM)	MDD (GPM)					Available Pumping Capacity (GPM)				
		Existing ⁴	2020	2025	2035	2040	Existing ⁴	2020	2025	2035	
Hunter Ave	1,800	800	850	900	1,100	1,250	1,000	950	900	700	550
Mountainview ¹	8,000	3,900	4,500	4,950	5,800	6,300	4,100	3,500	3,050	2,200	1,700
Fairway Downs ²	1,050	50	50	50	50	na	0	0	0	0	na
Holly Lane	na		na			100			na		
Fairway Downs ³	na		na			250			na		

Notes:

GPM = gallons per minute, MDD = maximum day demand, na = not applicable

1 Mountainview Pump Station required to also have emergency power supply for MDD supply operations, as some emergency storage for the Upper Zones is located in the Mountainview Reservoirs.

2, 3 Existing Fairway Downs Pump Station to be decommissioned when development occurs and replaced by new Fairway Downs Pump Station. Existing station pumps to closed zone, therefore pumping capacity required at MDD + fire flow (1,000 gpm). Check valves from Upper Zone also available for fire flow in the zone. Additional fire flow demand not required for new pump station with gravity storage.

4 Existing condition assumed to be 2015/2016 depending on data source.

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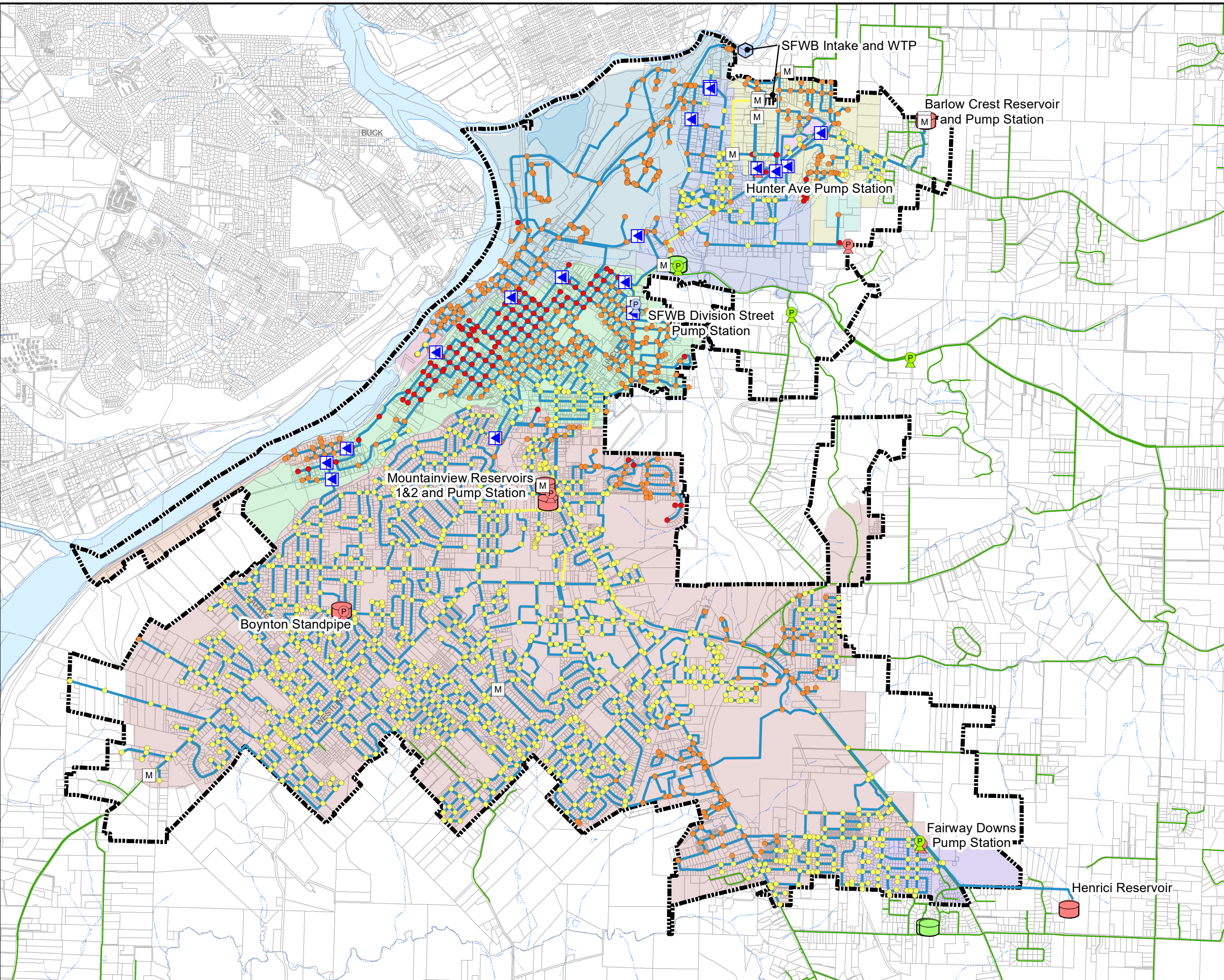


Figure 2
City of Oregon City
Static Pressure Analysis

PIPE VELOCITY

- < 4 fps
- 4 - 10 fps
- > 10 fps

STATIC PRESSURE

- < 20 psi
- 20 - 40 psi
- 40 - 80 psi
- 80 - 120 psi
- > 120 psi
- CRW MAINS



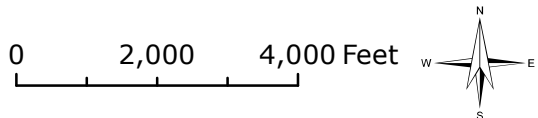
PRESSURE ZONE

- CANEMAH DISTRICT
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Water Facilities

- SFWB, Intake
- SFWB, WTP
- Master Meter
- SFWB, Pump Station
- CRW, Pump Station
- CRW, Reservoir
- OC, Pump Station
- OC, Reservoir
- OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.



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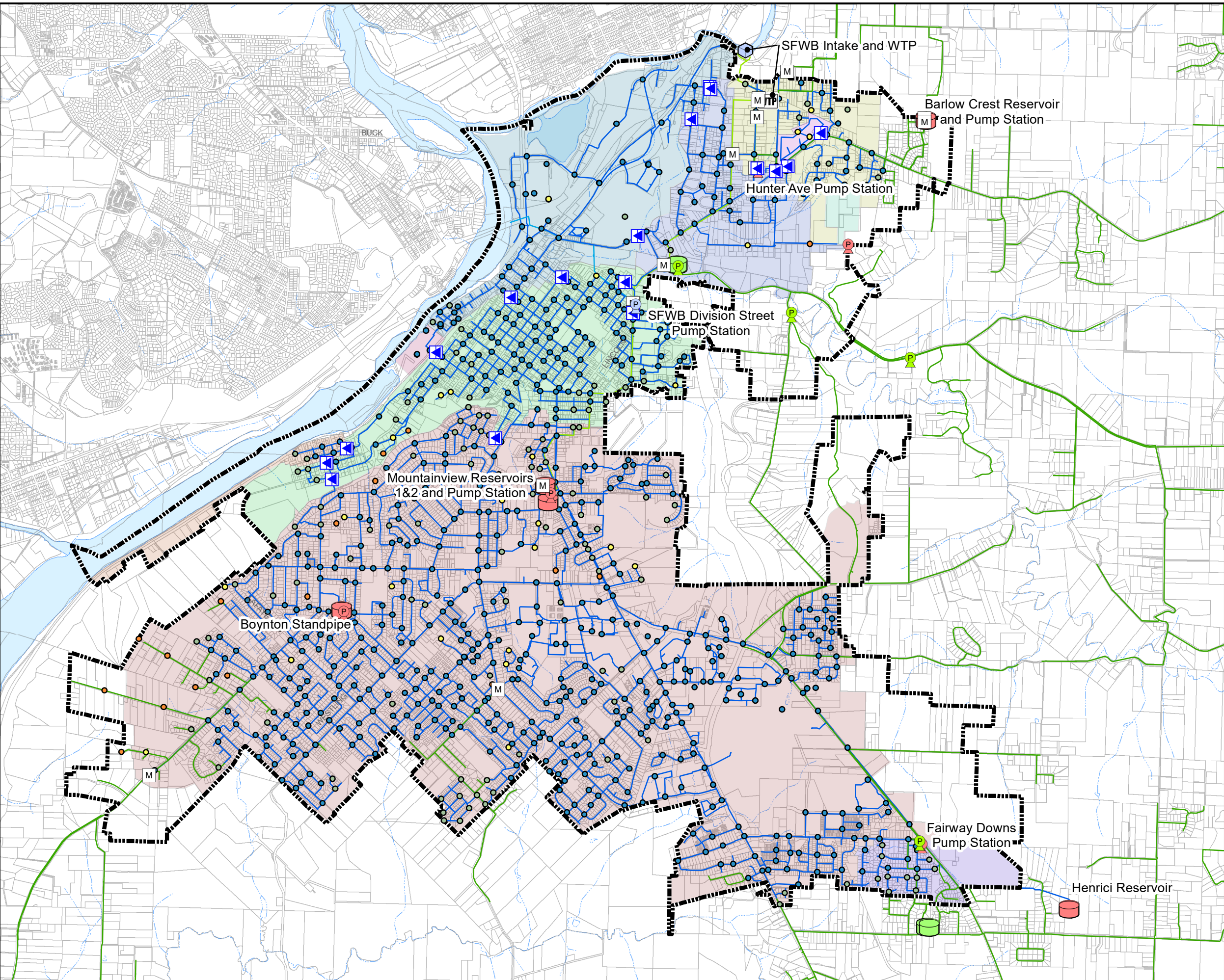
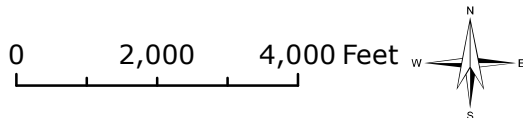


Figure 3
City of Oregon City
Available Fireflow

- AVAILABLE FIREFLOW**
- 0
 - <1000
 - 1000 - 1500
 - 1500 - 3000
 - >3000
- WATER MAINS**
- OREGON CITY
 - SFWB
 - WEST LINN
 - CRW
 - UGB
- PRESSURE ZONE**
- CANEMAH DISTRICT
 - FAIRWAY DOWNS
 - INTERMEDIATE ZONE
 - LOWER ZONE
 - PAPER MILL ZONE
 - PARK PLACE - INTERMEDIATE
 - PARK PLACE - LIVESAY RD
 - PARK PLACE - LOWER
 - PARK PLACE - VIEW MANOR
 - UPPER ZONE
- Water Facilities**
- SFWB, Intake
 - SFWB, WTP
 - Master Meter
 - SFWB, Pump Station
 - CRW, Pump Station
 - CRW, Reservoir
 - OC, Pump Station
 - OC, Reservoir
 - OC, PRV

Note: Figure shows existing MDD conditions of 8.44MGD. Buildout MDD demands did not significantly impact results therefore, this figure is representative of existing and buildout conditions.



Capital Improvement Program

Capital projects were developed based on deficiencies identified in the system evaluation and future year 2040 system demands including new growth areas. The Capital Improvement Program (CIP) is divided into three types of improvement projects: “Capacity and Operations,” “Development and Growth,” and “Repair and Replacement.” Descriptions of these categories are defined below and further summarized in **Table 8**.

- Capacity and Operations - Projects are typically those to meet existing system demands, reservoir turnover, or to meet the needs of areas within the system that will require upsizing to provide for in-fill growth. Dead-end pipes with fire flow limitations where at least 500 gpm of fire flow is available were excluded from the capacity improvements.
- Development and Growth - Projects differ in that they are specifically targeted at new large development areas and are typically not required to supply existing demands.
- Repair and Replacement - Projects include both routine repair and replacement of pipes, pump replacement, reservoir maintenance, and PRV repair/replacement.

Table 8
Capital Improvement Program Projects

Improvement Type	Improvement Addresses:	Timing Trigger
Capacity and Operations	Capacity limitations and system operations	Mitigate projected deficiencies
Development and Growth	New development areas	Developer driven
Repair and Replacement	Routine maintenance on infrastructure and annual pipe replacement	Annual and cyclical investments based on infrastructure life cycle

Cost Assumptions

All project descriptions and cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency. Since construction costs change periodically, an indexing method to adjust present estimates in the future is useful. The Engineering News-Record (ENR)

Construction Cost Index (CCI) is a commonly used index for this purpose. For purposes of future cost estimate updating; the August 2018 ENR CCI (20-city average) is 11124.

Joint Work with CRW and Neighboring Provider Upgrades

The City participates in joint infrastructure planning and supply discussions with regional water suppliers and distributors such as SFWB, CRW, Lake Oswego, and West Linn. Neighboring communities have recognized the benefits of collaborative planning and have worked together through Intergovernmental Agreements (IGAs) and joint projects like the South End supply line and Barlow Crest supply, to provide water to regional customers. This collaboration encourages purveyors to invest in essential facilities, without building redundant infrastructure. As communities develop, this collaboration will continue to be important to efficiently serve all customers. In addition, an increased focus on system interties has improved regional resiliency, in the event of a major failure at one or more of the water treatment plants within the region. Recent and anticipated system intertie investments include:

- CRW’s Backbone Project to extend CRW WTP supply to CRW zones south of the Clackamas River.
- Continued operation and maintenance of City/CRW and SFWB/CRW interties.
- Operation and maintenance of the West Linn-Lake Oswego emergency connection booster station. This provides West Linn an alternate supply from the newly completed Lake Oswego–Tigard WTP upgrades, and improves regional resiliency through interconnections.

Improvements identified in the City CIP exclude analysis of alternatives related to major regional projects such as the CRW Backbone Project. The City will continue to explore opportunities for collaboration with neighboring providers at which time some of the City capital projects may be modified to account for a broader regional supply and/or distribution solution.

Improvement Descriptions

Capacity and Operations Projects

Capacity and operations projects were identified through model evaluations, discussions with City staff, and pump station/reservoir capacity reviews. These improvements are summarized for both the City and SFWB, although only the City improvements are included in the CIP.

SFWB Improvements

SFWB improvements identified in the *SFWB Water Master Plan* (CH2M and MWH, 2016) are required to maintain system operations, expand capacity, and address redundancy. These projects address limited capacity in the 30-inch SFWB supply line which causes operational difficulties at the Division Street Pump Station, and eventual capacity limitations in the rest of the SFWB system. A 42-inch connection on Cleveland St between the 30-inch and 42-inch SFWB supply lines

(referenced earlier in *System Supply and Demands*) was completed recently in December 2018. Key SFWB transmission improvements include:

- Increased transmission capacity between the WTP and the Mountainview Pump Station (upsizing the existing 30-inch line)
- Increased capacity at the Division Street Pump Station

Henrici Reservoir Operations

Based on existing transmission capacity, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. Both reservoirs provide storage for the Upper Zone and are simultaneously filled by the Mountainview Pump Station. The Boynton Standpipe is centrally located while the Henrici Reservoir is located beyond the perimeter of the Upper Zone to the southeast. When the Mountainview Pump Station output is increased to fill the Henrici Reservoir, high pressure issues are seen near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands.

Project constraints and opportunities include:

- Existing transmission main(s) in heavily trafficked Beaver Creek Road
- Secondary transmission route(s) in backyards and other difficult to access locations
- Concurrent streetscape improvement project along Molalla Avenue
- Additional transmission and distribution requirements for growth including the expanded Fairway Downs Zone

After evaluating alternatives, a parallel transmission route was identified along Molalla Avenue, and a new transmission line was identified between Glen Oak Road and the Henrici Reservoir. The combined improvements provide additional capacity and improved transmission to and from the Henrici Reservoir. The projects will likely be constructed in multiple phases with the Molalla Avenue portion of the project constructed first to align with the streetscaping work. Both improvements are required to provide the full operational benefits. **Table 9** presents a flow split analysis between Boynton and Henrici Reservoirs under existing ADD. Without improvements, approximately 67% of the available excess flow from the Mountain View Pump Station is conveyed to the Boynton Standpipe and 33% is conveyed to Henrici. With all improvements, the flow split is approximately 50% between the reservoirs.

Table 9
Reservoir Filling Rates - Mountainview to Henrici Transmission Upsizing

Scenario	Boynton Standpipe (gpm) ¹	Henrici Reservoir (gpm) ¹
No Improvements	4,200	2,100
Parallel Main on Molalla Ave	4,200	2,500
Upsize Beaver Creek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beaver Creek Transmission	3,500	3,500

Note:

1 Filling rates during existing ADD, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.

Development and Growth Projects

Development improvements were identified through a variety of means including discussions with the City and reviewing existing concept plans. Most projects include only the main line infrastructure required to serve the development areas, and do not include full distribution piping. Pipe layouts were based on either proposed street networks or additional studies, if available. Unless otherwise noted, development areas can be served by extending existing transmission and distribution piping.

Park Place Development

The Park Place Concept Area is located east of Oregon City and Highway 213, north and south along S Redland Road, and east and west along S Holly Lane. Portions of the area are currently served by CRW and development is described in the *Park Place Concept Plan* (2008). Proposed improvements for the area include pipe looping into the existing City system at the Park Place Intermediate and the Park Place Lower zones, a new 1.0MG reservoir and pump station, and intermediate PRV's.

Joint transmission along S Redland Road to CRW's Holly Lane and Redland Pump Stations has been discussed between the City and CRW. This is advantageous to both providers as it limits unnecessary parallel infrastructure, provides emergency connections between both systems and provides a secondary supply to the City via CRW.

Details of the pressure zone delineation for the Park Place Concept Area are presented in **Table 10**.

Table 10
Park Place Concept Area Supply

Location	Ground Elevation (ft)	HGL (ft)	Supply	Storage
East of Trail View Dr	>400	794	CRW via Barlow Crest PS	CRW Hunter Heights Reservoir
North of S Redland Rd	>310	549	New transmission piping from Park Place Intermediate	Barlow Crest Reservoir
North of S Redland Rd	200-310	430	PRV'd from Park Place Intermediate	Barlow Crest Reservoir
Along S Redland Rd	40-200	320	Master Meter from SFWB supply at Redland Rd and Anchor Way	SFWB WTP Clearwell
South of S Redland Rd	>200	350	New Park Place PS	New Holly Lane Reservoir

Beavercreek Road Development

The Beavercreek Road Concept Area is located within the existing UGB, northeast of Beavercreek Road. The area will require service to the City's Upper and Fairway Downs Zone pressure zones. The City and CRW have discussed service in this area extensively in the *Joint Engineering Study Technical Memorandum (Appendix D)* and the prior meetings leading up to that document. Various alternatives were explored, including joint construction of a reservoir to serve both CRW and the Fairway Downs Zone. City staff reviewed the alternative approaches with the City Commission and confirmed the City's desire to pursue development of City-owned infrastructure, independent of CRW, to serve the Beavercreek Road Concept Area within the UGB. The capital improvements presented in this 2012 WDSMP Amendment reflect this direction.

Pipe networks were based approximately on planned street alignments, as presented in the *Beavercreek Road Concept Plan* (Otak 2008). The Fairway Downs Zone is expected to serve areas above 480-feet elevation, within the UGB at a pressure zone hydraulic gradeline of 650-feet. Pumps will be sized to meet MDD demands, with additional peak hour or fire flow supply available from the new 1.75 MG reservoir.

Repair and Replacement Projects

Significant investment in infrastructure repair and replacement will be required as infrastructure reaches the end of its useful life. A Repair and Replacement Program is intended to apply proactive investment for reservoir coatings, PRV repair/replacement, pump station mechanical/electrical replacement, and pipeline repair/replacement. The program priorities are established based on

condition assessments with funding established based on standard life spans for facility types as shown in **Table 11**.

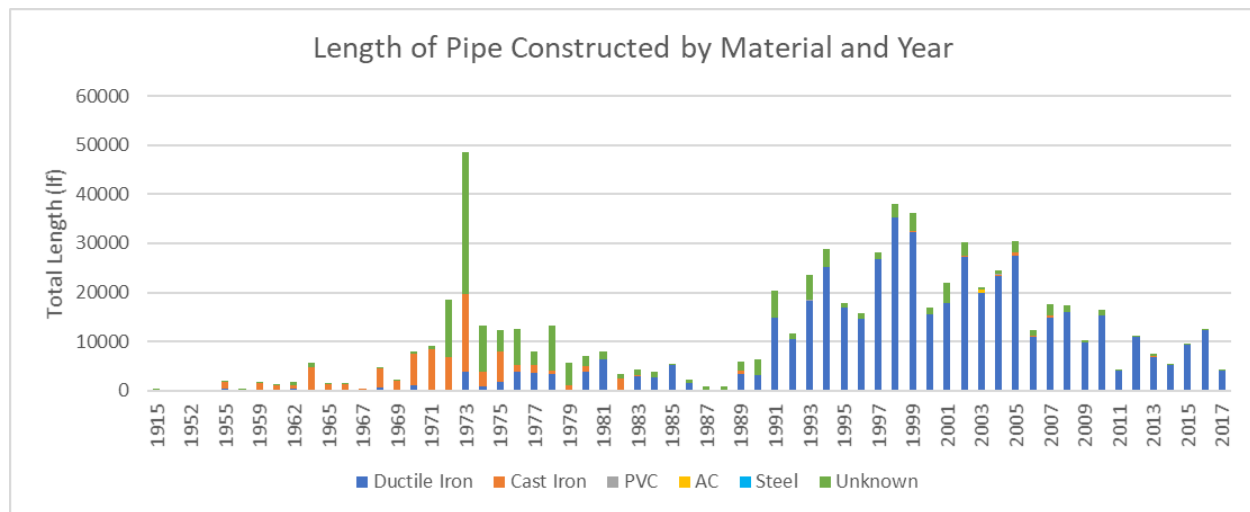
Table 11
Repair and Replacement Summary

Facility	Work Required	Frequency
Pipeline	Repair or Replacement	75 years
PRV	Inspection	Annual
	Major Rehabilitation and Rebuild	5 years
	Replacement	25 years
Reservoir – Steel	Exterior Overcoat	15 years
	Interior Removal and Recoat	30 years
	Exterior Removal and Recoat	30 years
Reservoir – Concrete	Minor Touch Up Rehabilitation	Annual
	Major Rehabilitation and Repairs	25 years
Pump Station - Mountainview	Pump, Mechanical & Electrical Replacements	10 years
Pump Station – Hunter Ave	Pump, Mechanical & Electrical Replacements	20 years
Pump Stations - Other	Pump, Mechanical & Electrical Replacements	20 years

Pipe Replacement

An evaluation was performed to identify the length of pipeline reaching the end of its useful life within the year 2035, 20-year planning horizon. An age distribution for piping was extracted from the City GIS and is presented in **Figure 4**. Pipe installations older than 75-years or with known leakage issues were identified for the 20-year planning horizon. This amounts to 90,000 linear-feet of pipe or approximately 4,500 linear-feet of pipe per year over 20-years as shown in **Table 12**. Specific pipe segments were identified for the 0 to 5-year time frame by City staff based on the known condition and leak issues. These include pipelines located along Main Street between 10th Street and 15th Street, between the Mountainview Reservoirs and Gaffney Lane to the south, crossing I-205 near the intersection of Agnes Avenue and Main Street, and those listed in the CIP **Table 17** as an “Oregon City Operations – Small Waterline Replacement” project. Specific information on small water projects are also summarized in **Appendix G**.

Figure 4
Pipe Distribution by Age and Material



Note:

- 1 Approximately 18 percent of pipe has unknown installation date, not shown in **Figure 4**. The pipe construction material is approximately evenly split between Ductile Iron, Cast Iron, and Unknown. Installation dates were assumed evenly distributed over 50 years between 1943 and 1993.

Table 12
Pipe Replacement Projects

Timeframe	Length of Pipe for Repair and Replacement (linear-feet) ¹	Location Description
0 – 5 Years	29,000	Including but not limited to: - Main Street between 10th Street and 15th Street - Between Mountainview Reservoir and Gaffney Lane - I-205 crossing near Agnes Avenue and Main Street - OC Operations, Small Waterline Replacement Projects
6 – 10 Years	17,000	3,500 linear-feet per year based on pipe condition assessments
11 – 20 Years	43,000	4,500 linear-feet per year based on pipe condition assessments
TOTAL	89,000	

Notes:

- 1 Approximately 18-percent of pipe has unknown installation date. Assumed replacement of those pipes to be evenly distributed over 50 years.

Pressure Reducing Valve Station Rehabilitation, Repair, and Recommended Settings

Pressure Reducing Valve (PRV) stations are vital for supply to zones without gravity storage. The PRVs should be inspected and maintained annually with major rehabilitation scheduled every 5 years, and replacement scheduled every 25 years. **Table 13.1** lists the approximate condition and year slated for rehabilitation for the PRV stations throughout the system.

Table 13.1
Pressure Reducing Valve Rehabilitation Schedule

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
11th St & Washington St	1993	Fair / Dirty	Cleaning required	2021/2022	2026/2027
15th St & Madison St	2016	New		2021/2022	2041/2042
16th St & Division St	1971	Bad	Used to buffer intermediate zone from high pressures caused by the Division Street Pump Station. Small diameter valve inoperable.	Needs Replacement	2019/2020
18th St & Anchor Way	1992	Bad/Fair		Needs Replacement	2019/2020
3rd St & Bluff	2018	New		2023/2024	2043/2044
4th Ave & Jerome St	1958	Bad	Redundant to 3rd & Ganong, for high demand both PRVs required	Needs Replacement	2019/2020
5th Ave & Canemah	1958	Bad	Required to adequately supply Canemah Zone	Needs Replacement	2019/2020 and add power
99E & Main St	1997	Out of service	Abandon and remove the 99E and Main PRV Station, replace with pipe connection between the Paper Mill Zone and Lower Zone that results in eliminating the Paper Mill Zone and expands the Lower Zone (Appendix H)	NA	NA
Abernethy Rd & Redland Rd	1963	Bad	Required based on location and distance from redundant PRVs	Needs Replacement	2019/2020
Apperson Blvd & La Rae Rd	1999	Fair		2022/2023	2027/2028

Pressure-Reducing Valve Station	Installation Year	Condition	Notes	Expected Rehabilitation and Rebuild (scheduled every 5 years)	Expected Replacement (scheduled every 25 years)
Harley Ave & Forsythe Rd (North)	1988	Fair	Remove South PRV, reconfigure piping as needed for continued operation of North PRV. Relief valve settings need updating. Individual Customer PRV's required on service lines as needed for service pressures exceeding 70psi per City Standard.		2021/2022
Harley Ave & Forsythe Rd (South)	1973	Bad	Remove South PRV and coordinate project with improvements to North PRV as noted above.	Removal 2021/2022	Removal 2021/2022
Jennifer Estates	2002	Fair	Ground settling around vault.	2022/2023	2027/2028
Swan Ave & Holcomb Blvd	1999	Fair		2022/2023	2027/2028
View Manor	1999	Fair	Remove PRV with property redevelopment. Existing piping in poor condition – PRV settings updated to minimize pressure impacts on the local pipe.	Maintain until PRV removal with property redevelopment	Removal with redevelopment
3rd Ave & Ganong St	2008	Good		2028/2029	2033/2034
Hunter Ave Pump Station	1998	Good		2022/2023	2027/2028
East St & Maple St	2015	Good		2021/2022	2040/2041

Table 13.2 lists the valve diameters and settings for existing City PRVs. Photo documentation of PRV stations by the City is included in **Appendix G**. Additional analysis for redevelopment of the Paper Mill Zone and related PRV stations is provided in **Appendix H, Mill Redevelopment Water Distribution Analysis** (Murraysmith, 2018).

Table 13.2
Pressure Reducing Valve Recommended Settings

Pressure Reducing Valve Station	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting
11th St & Washington St ¹	3	10		67	58	
15th St & Madison St ¹	2	6		61	56	
16th St & Division St	1.252	6		na	100	
18th St & Anchor Way	4	8		53	48	
3rd St & Bluff ¹	3	8		42	39	
4th Ave & Jerome St	2	6		55	50	
5th Ave & Canemah	1.25	4		83	78	
99E & Main St			To be removed			
Abernethy Rd & Redland Rd ¹	4	8		102	97	
Apperson Blvd & La Rae Rd ¹	2	4	6	84	79	77
Harley Ave & Forsythe Rd (North) ¹	12			61		
Harley Ave & Forsythe Rd (South)			To be removed			
Jennifer Estates	4	8		51	46	
Swan Ave & Holcomb Blvd	4	8		65	55	
View Manor	4	8		40	35	
3rd Ave & Ganong St	2	6		79	79	
Hunter Ave Pump Station	3	6		45	51	
East St & Maple St	6			46		

Notes:

Updated PRV settings recommended in the *Mill Redevelopment Technical Memorandum* (Murraysmith, 2018) (**Appendix H**).
Valve is not currently functioning.

Facility Rehabilitation and Repair

The lifespan of system reservoirs and pump stations can be significantly increased if regular rehabilitation and repairs are made. It is recommended that regular maintenance on Oregon City's steel tanks (Barlow Crest, Boynton, and Henrici) include periodic exterior overcoats, and less frequent complete exterior and interior removal and recoat. Regular maintenance on the concrete tanks (Mountainview 1 & 2) is recommended to include frequent touch up and rehabilitation, and major repairs when needed. Costs for this rehabilitation are dependent on facility condition, age, material, and size. **Table 14** includes an approximate schedule for rehabilitation of existing reservoirs. **Table 15** includes an approximate schedule for safety and seismic upgrades, and suggested improvements. When new reservoirs are constructed, they will need to be added to the rehabilitation schedule.

Pump stations require annual inspection and maintenance with pump, mechanical, and electrical replacement generally every 20 years, with the exception being Mountainview pump station replacement schedule every 10 years. Costs for pump replacement depend on pump size and condition. **Table 16** includes an approximate schedule for pump station improvements.

Table 14
Reservoir Coating and Rehabilitation Schedule

Facility		Concrete	Steel		
Name	Construction/ Rehab Year	Major Repairs	Exterior Overcoat	Interior Removal and Recoat	Exterior Removal and Recoat
Barlow Crest	1999	-	2024	2024	2039
Mountainview 1	2007	2032	-	-	-
Mountainview 2	1952/2007 ¹	2032	-	-	-
Boynton	1984	-	-	-	2028
Henrici	1994	-	2019/2020	2019/2020	2035

Notes:

- 1 Mountainview 2 built in 1916 and expanded in 1952, underwent seismic upgrades and rehabilitation in 2007.
- 2 Limited redundancy for Barlow Crest Reservoir means it is difficult to take offline. Coordination with CRW to PRV water from Hunter Heights
- 3 Biannual minor repairs for Concrete tanks, annual exterior touch-up for steel tanks. Assumed within O&M budget, separate from CIP budget.

Table 15
Reservoir Seismic and Safety Improvements

Facility	Seismic Analysis/Seismic Upgrades	Safety Upgrades
Barlow Crest	2019/2020	2024
Mountainview 1	-	-
Mountainview 2	-	2020
Boynton	2022/2023	-
Henrici	2019/2020	2019/2020

Table 16
Pump Station Rehabilitation and Maintenance Schedule

Pump Station	Pump Install Year	Replacement Year	Pump, Mechanical, and Electrical Rehab or Replacement
Hunter Ave	1999	2019/ 2022	Drives, PLC/ Pumps, SCADA electrical, transfer switch generator
Mountainview	2018	2023/ 2028	Drives/ Pumps, SCADA electrical
Fairway Downs	2018	NA	Pump station to be removed with Beaver Creek Road Concept Area Development
Boynton	1984	Removal Project 2022	Remove pumps (non-operational), decommission pump station
Livesay	2012	NA	Decommission pump station when Park Place Concept Area Develops

Capital Improvement Program Summary

The capital projects are described in **Table 17**, “Capital Improvement Program” including project descriptions, priorities, and Class 5 costs estimates. Projects are illustrated in **Figure 5**. A summary of total CIP costs is presented in **Table 18**.

Table 17
Capital Improvement Program

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Central Point	Development	1	Project recently completed by development	Pipe	New 8" looped distribution pipe along Skellenger/Orchard Grove area		8			Developer-constructed project
Leland McCord	Development	2	2-5	Pipe	New transmission along Leland Rd	1300	12		100%	\$370,000
	Development	3	2-5	Pipe	New distribution along McCord Rd	2,400	12		100%	\$681,500
	Operations (City/CRW)	4	2-5	Master Meter	Move the Master Meter, MM08, to the UGB and update CRW connection, timing based on development				0%	\$200,000
South End	Development	5	15-20	Pipe	New distribution within development - backbone only	19,000	12		100%	\$5,394,500
	Operations (City/CRW)	6	15-20	Master Meter	Move the Master Meter, MM09, to the UGB and update CRW connection, timing based on development				0%	\$200,000
Upper Zone	Development	7	2-5	Pipe	New distribution loop North of Beavercreek and South of Hilltop	2,200	12		100%	\$624,500
	Capacity	8	5-10	Pipe	Finish looping along Maplelane Road to increase transmission to existing area	1,600	12		26.89%	\$454,500
	Pipe Replacement	34	0-5	Pipe	Replace aging 16" piping near Molalla Ave (replacement size may be 12-inch or smaller if MAP ID 22 is implemented prior to MAP ID 34)	8,800	12 to 16-inch		26.89%	\$2,498,500
	Operations	37	0-5	PRV	New PRV on Newell Ct to manage high pressures				26.89%	\$200,000
Lower Zone	Capacity	9	0-5	Pipe	Upsize existing I-205 crossing to improve fire flow and distribution looping	700	12		26.89%	\$199,500
	Capacity	35	5-10	Pipe	Upsize existing piping on Abernethy Road for fire flow supply to Lower Zone	2,600	12		100%	\$738,000
	Pipe Replacement	36	0-5	Pipe	Replace aging pipe on Main between 10th and 15th	1,400	12			\$397,500
Park Place Concept Area	Development	10	0-5	Pipe	Joint OC/CRW transmission from SFWB along Redland Rd for replacement of aging pipe and new transmission to Park Place Concept Area	6,900	24		100%	\$3,538,000
	Development	11	2-5	Pipe	Transmission at the Park Place Intermediate Level (above 310')	1,300	12		100%	\$370,000
	Development	12	2-5	Pipe	Transmission from the 16" Barlow Crest Transmission to PP Int Concept (above 310') - redundant transmission and adequate fire flow above 200'	2,600	12		100%	\$738,000
	Development	13	2-5	PRV	New PRV from 550' to 430' (supply to area between 200' and 310'). Note: Livesay Pump Station shall be removed with redevelopment of this area along S Livesay Rd				100%	\$200,000
	Development	14	4-6	Pipe	New 430' distribution piping (supply to area between 200' and 310')	1,700	12		100%	\$483,500
	Development	15	5-10	PRV	New PRV from 430' to 320' (alternate emergency supply and fire flow to PP Concept Area)				100%	\$200,000
	Development	16	5-10	Pipe	New 320' distribution piping (supply to area below 200')	6,200	12		100%	\$1,760,500
	Development	17	5-10	Pipe	Replace existing 320' distribution piping (supply to area below 200')	2,100	12		100%	\$597,000
	Development	18	15-20	Reservoir	New 350' Reservoir (supply to area above 110')			1MG	100%	\$2,000,000
	Development	19	15-20	Pump Station	New Pump Station from 320' to 350' (supply to area above 110')			100 GPM	100%	\$1,194,000
	Development	20	15-20	PRV	New PRV from 350' to 320' (emergency fire flow to PP Concept Area from new reservoir)				100%	\$200,000
	Development	21	15-20	Pipe	New 350' transmission and distribution (supply above 350' and transmission to new Holly Lane PS)	10,000	12		100%	\$2,839,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Henrici Transmission Improvements	Capacity	22	5-10	Pipe	Parallel transmission line between Mountainview Reservoirs and Beavercreek Rd - Increase transmission to Henrici Reservoir	4,200	24		100%	\$2,153,500
	Capacity	23	0-5	Pipe	Parallel transmission line between Beavercreek Rd and Glen Oak Rd along Streetscape improvements - Increase transmission to Henrici Res	7,300	18		100%	\$2,963,000
	Capacity	24	0-5	Pipe	New crossing north of Glen Oak Rd from Molalla to OC Public Schools property - distribution for development, increase transmission to Henrici	2,600	12		100%	\$738,000
	Capacity	25	5-10	Pipe	OC HS crossing to Beavercreek Rd - Increase looping and transmission to Henrici	3,000	12		100%	\$852,000
	Capacity	26	0-5	Pipe	New parallel transmission between Fairway Downs and Henrici Reservoir	4,000	24		100%	\$2,051,500
Beavercreek Road Concept Area	Development	27	5-10	Pipe	New Upper Zone distribution - supply new development below 480', improve transmission	11,900	12		100%	\$3,379,500
	Development	28	5-10	Pipe	New Fairway Downs distribution - supply new development below 480'	13,700	12		100%	\$3,890,500
	Development	29	5-10	PRV	New PRV between Fairway Downs and Upper Zone - emergency fire flow				100%	\$200,000
	Development	30	0-5	Reservoir	New Fairway Downs Reservoir - supply new development			1.75 MG	80%	\$3,500,000
	Development	31	0-5	Pump Station	New Fairway Downs Pump Station - supply new development			250 GPM	80%	\$1,194,000
	Development	32	0-5	Pipe	New Fairway Downs Transmission - supply new development	5,000	16		80%	\$1,654,000
	Development	33	0-5	Pipe	Transfer existing Henrici transmission to Fairway Downs transmission - supply new development				80%	\$200,000
Oregon City Operations – Small Waterline Replacement List ²	Pipe Replacement		0-5	Pipe	S. Center St from S. 2nd to 1st St	700	8		0%	\$134,000
	Pipe Replacement		0-5	Pipe	Barker Ave from South End Rd to Barker Rd	800	8		0%	\$154,500
	Pipe Replacement		0-5	Pipe	Warner-Parrott Rd from King Rd to Boynton St	1,100	12		0%	\$313,000
	Pipe Replacement		0-5	Pipe	Belle Ct and Glenwood Ct from Holmes Ln to Linn Ave	1,500	8		0%	\$288,500
	Pipe Replacement		0-5	Pipe	Valley View Dr from Park Dr to McCarver Ave	1,000	8		0%	\$192,000
	Pipe Replacement		0-5	Pipe	Canemah Ct from Canemah Rd to Telford Rd	1,700	8		0%	\$326,000
	Pipe Replacement		0-5	Pipe	Randall St from Canemah Rd to Hartke Lp	700	8		0%	\$134,000
	Pipe Replacement		0-5	Pipe	Hartke Lp and Alderwood Pl	3,700	8		0%	\$712,000
	Pipe Replacement		0-5	Pipe	Harrison St from 7th St to Division St	600	8		0%	\$115,000
	Pipe Replacement		0-5	Pipe	Division St from Harrison St to 13th/14th St	4,300	8		0%	\$827,000
Maintenance and Repair Projects			0-5	Pipe	Repair and Replacement Program	18,000	8-12			\$3,699,000
	Pipe Replacement		5-10	Pipe	Repair and Replacement Program	14,500	8-12		26.89%	\$2,996,500
			10-20	Pipe	Repair and Replacement Program	41,000	8-12		26.89%	\$8,033,500
	Facility Rehabilitation (PRV Rebuild and Replacement)		0-5	PRV Rebuild	11th St & Washington St, 15th St & Madison St, 3rd St & Bluff, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station, East St & Maple St, View Manor – continue to schedule rehabilitation and rebuilds every 5 years until the PRV is removed with redevelopment, 99E & Main St – removal of PRV Station with re-zoning the Paper Mill Zone to the Lower Zone	10			26.89%	\$100,000

Improvement Category	Project Type	MAP ID	Timeframe	Facility Type	Description	Length (lf)	Dia (in)	Capacity	SDC Eligible	Cost Estimate ¹
Maintenance and Repair Projects			0-5	PRV Replacement	16th St & Division St, 18th St & Anchor Way, 4th Ave & Jerome St, 5th Ave & Canemah, Abernethy Rd & Redland Rd, Harley Ave & Forsythe Rd (North) including removal of Harley Ave & Forsythe Rd (South)	6.5			26.89%	\$1,300,000
			5-10	PRV Rebuild	3rd Ave & Ganong St	1			26.89%	\$10,000
			5-10	PRV Replacement	11th St & Washington St, Apperson Blvd & La Rae Rd, Jennifer Estates, Swan Ave & Holcomb Blvd, Hunter Ave Pump Station	5			26.89%	\$1,000,000
	Facility Rehabilitation (Reservoir Coating/Rehab, Seismic/Safety)	Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir- Exterior Overcoat				62.86%	\$722,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Safety Upgrades				62.86%	\$100,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Seismic Analysis/Seismic Upgrades ³				62.86%	\$975,000
		Barlow Crest	0-5	Reservoir	Barlow Crest Reservoir-Steel Interior Removal and Recoat				62.86%	\$789,000
		Barlow Crest	10-20	Reservoir	Barlow Crest Reservoir-Steel Exterior Removal and Recoat				62.86%	\$1,059,000
		Boynton	0-5	Reservoir	Boynton Reservoir-Seismic Analysis/Seismic Upgrades (may require new reservoir) ³				0%	\$975,000
		Boynton	10-20	Reservoir	Boynton Reservoir-Steel Exterior Removal and Recoat				0%	\$1,059,000
		Henrici	0-5	Reservoir	Henrici Reservoir- Exterior Overcoat				0%	\$722,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Safety Upgrades				0%	\$100,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Seismic Analysis/Seismic Upgrades ³				0%	\$975,000
		Henrici	0-5	Reservoir	Henrici Reservoir-Steel Interior Removal and Recoat				0%	\$789,000
		Henrici	10-20	Reservoir	Henrici Reservoir-Steel Exterior Removal and Recoat				0%	\$1,059,000
		Mountainview	0-5	Reservoir	Mountainview 2 Reservoir-Safety Upgrades				53%	\$100,000
		Mountainview	10-20	Reservoir	Mountainview 1 Reservoir-Concrete Major Repairs				53%	\$200,000
		Mountainview	10-20	Reservoir	Mountainview 2 Reservoir-Concrete Major Repairs				53%	\$200,000
	Facility Rehabilitation (Pump Stations)	Hunter Ave	0-5	Pump Station	Hunter Ave PS - PLC, Pumps, drives, SCADA/ electrical, transfer switch generator				26.89%	\$375,000
		Mountainview	0-5	Pump Station	Mountainview PS - Drives				26.89%	\$95,000
		Mountainview	5-10	Pump Station	Mountainview PS - Pumps, SCADA/electrical				26.89%	\$380,000
	Facility Rehabilitation (Decommission)	Fairway Downs	5-10	Pump Station	Decommission				0%	\$50,000
		Boynton	0-5	Pump Station	Decommission				0%	\$50,000
		Livesay	5-10	Pump Station	Decommission				0%	\$50,000

Notes:

1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

2 Oregon City Operations – Small Waterline Replacement Projects not shown on CIP map.

3 Seismic upgrade costs are placeholders. Additional evaluations required to refine cost estimates, risk, and improvement strategies for reservoir seismic improvements.

4. The project list may be updated pursuant OAR 660-011-0045 and ORS 223.309

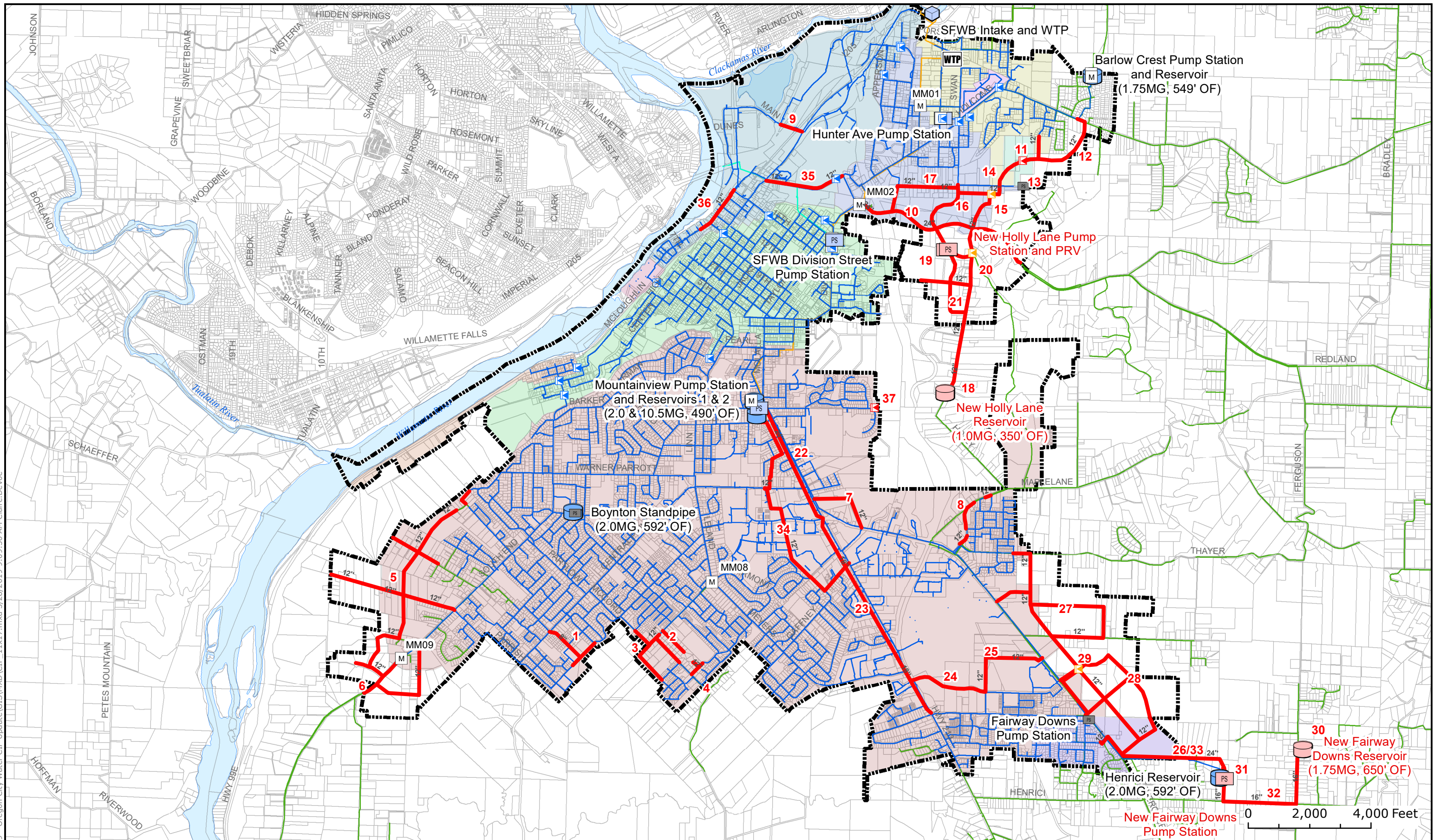
Table 18
Total Water CIP Summary Costs

Year	Development, Capacity & Operations Costs ¹	Pipe Replacement Costs ¹	Facility Rehabilitation Costs ¹	Total CIP Project Costs ¹
0 – 5 Years	\$19,905,500	\$10,041,500	\$8,167,000	\$41,010,000
5 – 10 Years	\$14,225,500	\$2,996,500	\$1,490,000	\$18,712,000
10 – 20 Years	\$11,827,500	\$8,033,500	\$3,577,000	\$23,438,000
TOTAL	\$45,958,500	\$18,175,500	\$13,234,000	\$80,264,000

Notes:

- 1 All project cost estimates are consistent with Class 5 budget estimates, as established by the *American Association of Cost Engineers* (AACE). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. Cost estimates are intended to be used as guidance in establishing funding requirements at the project planning level based on information available at the time of the estimate. Estimates exclude land acquisition, financing, inflation, and operations. Costs were developed in 2018 dollars with markups for contractor profits, overhead, engineering, and construction contingency.

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City of Oregon City Water CIP Analysis

Figure 5 CIP Projects

PRESSURE ZONE

- Canemah
- Fairway Downs
- Intermediate
- Lower
- Paper Mill

Park Place - Intermediate

- Park Place - Livesay
- Park Place - Lower
- Park Place - View Manor
- Upper

CIP Facilities

- PRV
- Tank
- Pump Station
- Emergency PRV

Existing Facilities

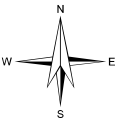
- Intake
- Master Meter
- PRV

Existing Facilities

- Pump Station
- Reservoir
- WTP
- Abandon Pump Station

CIP Projects

- OC Water Mains
- CRW Water Mains
- SFWB Water Mains
- UGB taxlots



Appendix



APPENDIX A
WATER DISTRIBUTION MODEL
CALIBRATION TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Water Distribution Model Calibration

Oregon City, Oregon

Date: June 20, 2017

Project: 16-1915

To: Jon Archibald
City of Oregon City

From: Shad Roundy, PE
Sven MacAller, EIT
Murraysmith

Re: City of Oregon City, Water Distribution Model Calibration

Model Calibration

Model calibration is performed to ensure that results of model simulations reflect what is happening in a real-world system and involves adjusting model parameters to match field data. For a water distribution system, hydraulic models attempt to reflect flow and pressure within the system by adjusting parameters such as pipe geometry, friction coefficients, demand distribution, boundary conditions, and operational parameters.

The required level of model accuracy can vary by type and size of the water system including system operations. Ultimately, model accuracy depends on the quality of data used to populate the model and the quality of the data that has been collected in the field. Boundary conditions such as pressure reducing valve (PRV) settings, pump operation, and reservoir levels are critical.

Oregon City Field Tests

For calibration of the Oregon City Distribution System, 22 fire flow tests were conducted to collect field data. These tests were distributed throughout the system and at least one was performed in each pressure zone except Jennifer Estates and Paper Mill. The Jennifer Estates zone had not been identified at the time the calibration plan was developed and the Paper Mill zone does not currently serve any customers. Fire flow tests were conducted between January 5th 2016 and

January 30th 2016 including both a static pressure reading and a flow and residual pressure reading. Boundary condition data including reservoir level and pump operation was collected during the fire flow testing period and was used for the model calibration effort. Model calibration confidence levels were evaluated using the criteria shown in Table 1.

The model calibration process has two steps. The first component of model calibration is to match field-measured static pressure with model simulated pressure. Demand distribution, system connectivity, service elevations, and reservoir water surface elevations are verified during the static model calibration.

Table 1
Calibration Confidence

Confidence Level	Static Test Percent Error	Residual Fire Flow Pressure Difference
High	0 – 5%	≤10 psi
Medium	5 – 10%	10-20 psi
Low	> 10%	>20 psi

The second component of calibration utilizes fire flow tests to verify pipe diameters, system connectivity, friction coefficients, and pump operations. Fire flow testing consists of recording static pressure at a hydrant and then “stressing” the system by flowing an adjacent hydrant. While the adjacent hydrant is flowing, residual pressure is measured at the first hydrant to determine the pressure drop. Boundary condition data, such as reservoir levels and pump on/off status, must also be known to accurately model the system conditions during the time of the flow test. The recorded time of each fire hydrant flow test was used to collect boundary condition information from the City’s system supervisory control and data acquisition (SCADA) system.

Calibration Results

For static pressure calibration, error is measured as a percent pressure difference between model results and results measured in the field. A negative sign (-) indicates that the model pressure is lower than the field test, and a positive sign indicates that the model is over estimating pressure compared to test data. The static tests for the Oregon City distribution system calibrated between 3 and 5-percent of field measured values resulting in a high level of accuracy. A summary of the static test calibration results is shown in Table 2 and Figure 1.

Fire flow tests are used to simulate pressure drops within the system due to high demands. Calibration results for these tests are expressed as a difference in the pressure drop recorded in the field and the modeled system. For example, if field results show a pre-flow test pressure of

100 psi and 80 psi during the fire flow test, the pressure drop is 20 psi. If the model also shows 100 psi as a static condition and 85 psi during the fire flow test, the modeled pressure drop is 15 psi. The differential between these two pressure drops (5 psi) is the “Residual Fire Flow Pressure Difference”. A negative sign on the “Residual Fire Flow Pressure Difference” indicates that the model is overpredicting the pressure drop caused by the fire flow test, while a positive sign indicates that the model is underpredicting the pressure drop. Overpredicting the pressure drop is preferred as it adds conservatism to the model. Because the reported result is based on comparing pressure drop as opposed to actual pressure, any error in the static calibration is not carried over to the fire flow calibration.

As with the static pressure, the fire flow tests calibrated to a high confidence level. All pressure differentials are within a 10-psi range (17 tests are within 5 psi and 5 tests are between 5 and 7 psi). A summary of the fire flow test calibration results is shown in Table 2 and Figure 2.

Calibration Notes

Pressure Reducing Valves

The Oregon City Distribution system is relatively complex with numerous pressure zones, PRVs, pump stations, and reservoirs. The system is sensitive to operational settings at these facilities. PRV settings were initialized from the City’s master plan document and may not reflect the current operational settings. Several PRV settings were modified slightly in the model to improve model calibration. These changes were done only after exhausting other potential operational settings (reservoir levels, pump settings) and after adjusting pipe friction coefficients. PRV settings were changed at the 5th and Canemah, Abernathy and Redland, and Harley and Forsythe PRV stations within a 5-psi range of those reported in the master plan.

View Manor is served by a single PRV and is a small, closed pressure zone. Based on static and fire flow tests, the initial setting of 100 psi at the PRV was unrealistic as only 38 psi was measured during the static test and 30 psi during the fire flow test. The initial setting of 100 psi was reduced to 39 psi for the model calibration.

The Canemah pressure zone is served by two PRVs at 3rd and Ganong, and 4th and Jerome. During fire flow testing, both PRVs should open to supply water demand. The 3rd and Ganong PRV station is on a 2-inch line, while the 4th and Jerome station is on a 6-inch line. Using the initial PRV settings, the zone was served primarily by the 3rd and Ganong station and there was significant headloss in the 2-inch pipe resulting in modeled pressure drop significantly higher than what was recorded during fire flow testing. This was an indication that more flow was entering via the 6-inch line and the 4th and Jerome PRV station. In order to increase flow through the 4th and Jerome PRV, the setting was changed to allow the PRV to open at a higher pressure. The final settings used in the calibration at the 4th and Jerome PRV station were 65 and 70 psi for the large and small PRVs respectively (master plan settings indicated 50 and 65 psi settings).

Fairway Downs Pressure Zone

The Fairway Downs pressure zone is served by the Fairway Downs Pump Station and a check valve that bypasses the pump station and supplies water from the Upper Zone. City staff reported that during this flow test the pumps were operating at a diminished capacity (approximately 850 gpm total) and the check valve opened. In the model, the pressure drop from the fire flow test could not be replicated with the check valve open, even if all pumps were off. A good calibration was achieved using only pump 1 and 2, both at approximately 85% capacity and the check valve closed. This discrepancy indicates that there is either significant additional headloss in the check valve that is not replicated in the model or significant headloss in the piping within the pressure zone. When using the model to evaluate this pressure zone, care should be taken with regard to pump and check valve operation and further investigation of pumping capacity and check valve operation may be required.

Division Street Pump Station

Adjacent to the Division Street Pump Station there is a valve that recirculates water from the discharge side to the suction side of the pump station. This operational scheme is implemented to ensure adequate pressure to supply the CRW demand and the suction side pressure demands of the 16th and Division Street Pump Station. This operation is somewhat unique and should be considered when using the model for system evaluation. There may be a more efficient operational scheme that could be implemented in the future.

Table 2
Calibration Results

Test	Pressure Zone	Static Test Percent Error	Residual Fire Flow Pressure Difference
1	PP View Manor	-1%	1.5
2	PP Intermediate	-2%	0.8
3	PP Intermediate	-1%	3.4
4	PP Lower	-5%	6.4
5	PP Lower	-4%	3.3
6	Lower	-2%	6.9
7	Lower	-2%	2.2
8	Lower	0%	-2.7
9	Canemah	1%	-2.8
10	Intermediate	0%	5.2
11	Intermediate	1%	-1.7
12	Intermediate	-2%	-3.2
13	Intermediate	3%	-7.0
22	Intermediate	1%	-3.3
14	Upper	-5%	-1.8
15	Upper	2%	2.2
16	Upper	-5%	0.7
17	Upper	-3%	-1.3
18	Upper	4%	-7.1
19	Upper	-3%	2.3
20	Upper	-4%	-3.3

Legend

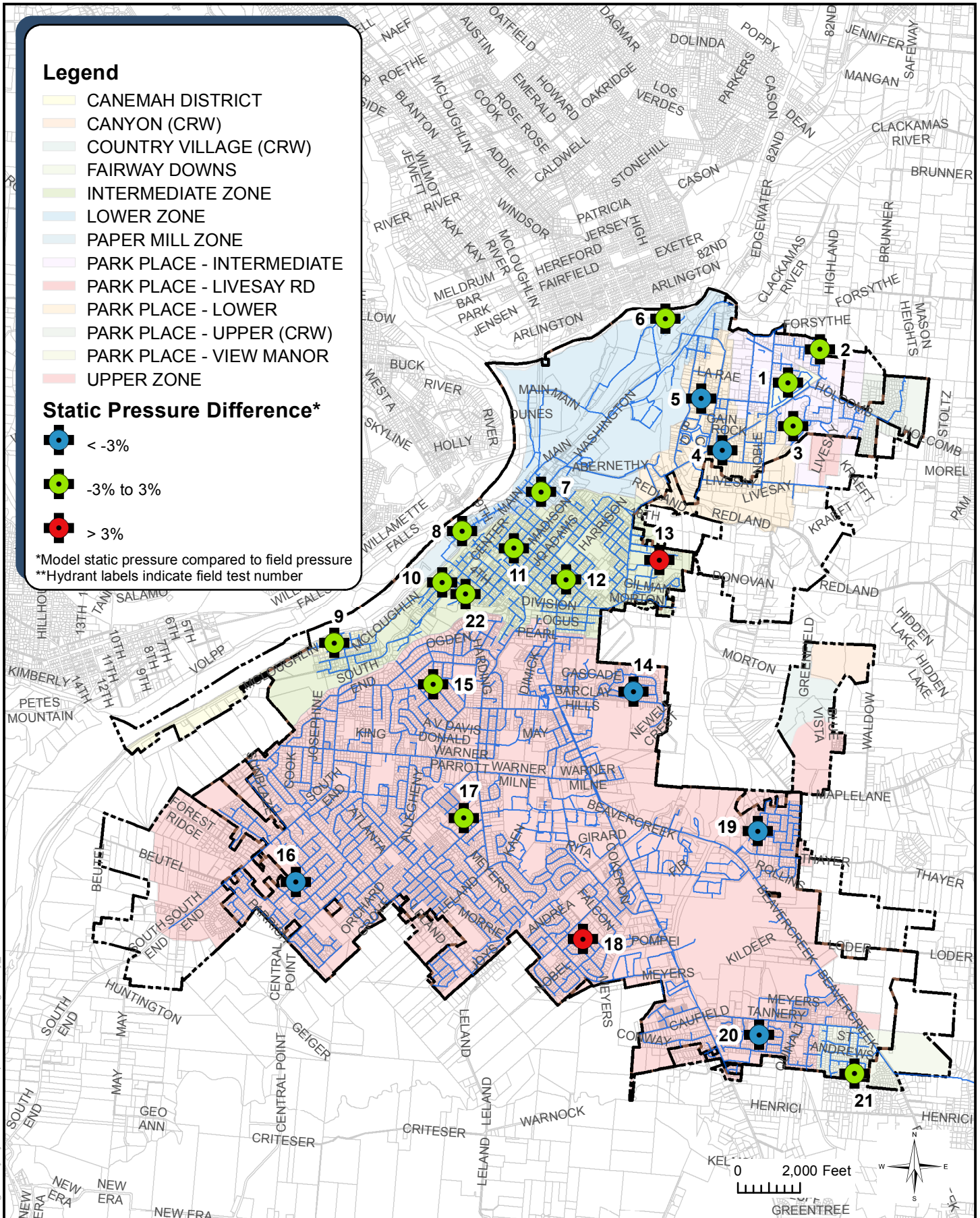
- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Static Pressure Difference*

- < -3%
- 3% to 3%
- > 3%

*Model static pressure compared to field pressure
 **Hydrant labels indicate field test number

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**City of Oregon City
 Hydraulic Model Update**

**Figure 1
 Calibration Results
 Static Pressure**



Legend

- CANEMAH DISTRICT
- CANYON (CRW)
- COUNTRY VILLAGE (CRW)
- FAIRWAY DOWNS
- INTERMEDIATE ZONE
- LOWER ZONE
- PAPER MILL ZONE
- PARK PLACE - INTERMEDIATE
- PARK PLACE - LIVESAY RD
- PARK PLACE - LOWER
- PARK PLACE - UPPER (CRW)
- PARK PLACE - VIEW MANOR
- UPPER ZONE

Pressure Drop Difference*

- +

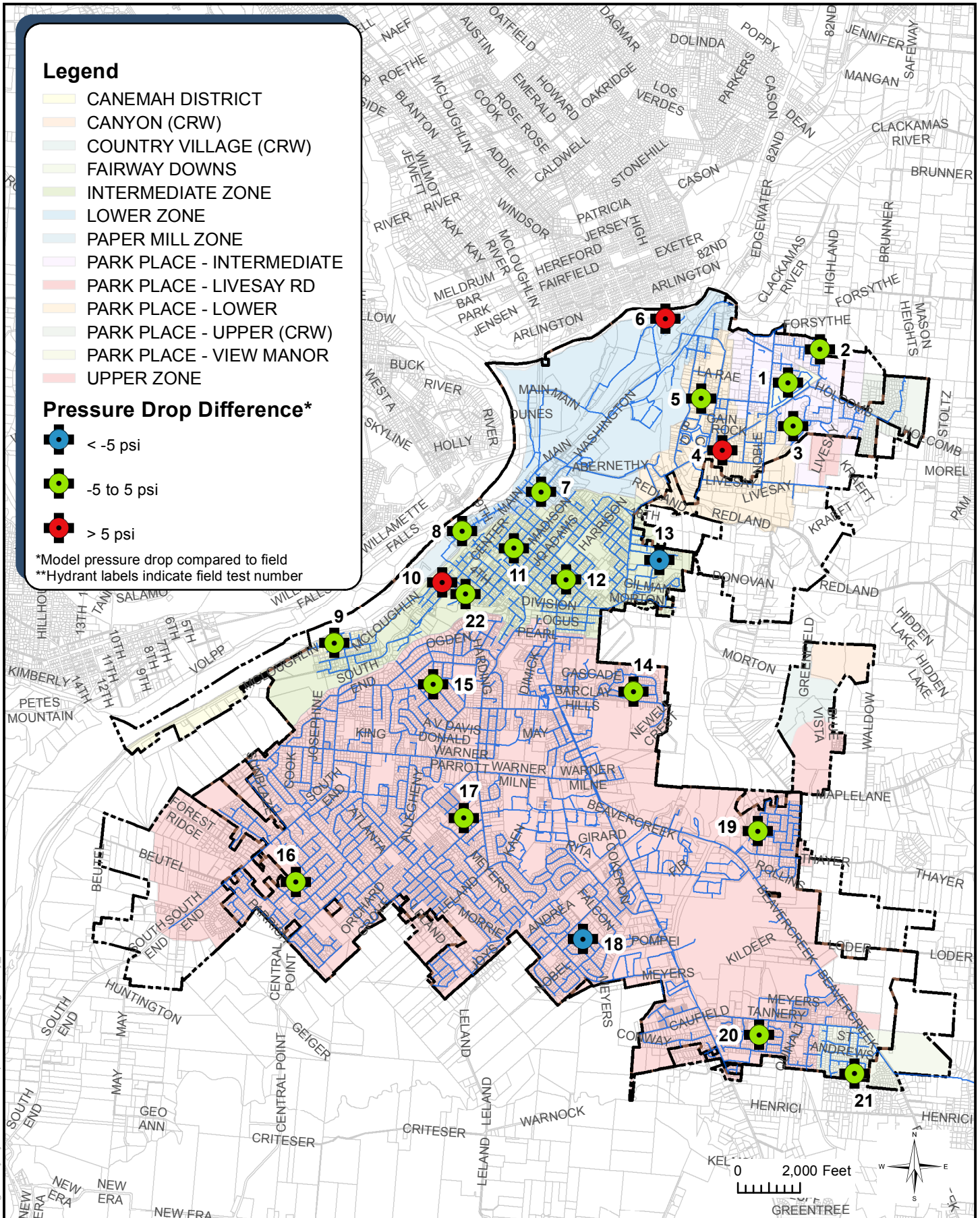
 < -5 psi
- +

 -5 to 5 psi
- +

 > 5 psi

*Model pressure drop compared to field
 **Hydrant labels indicate field test number

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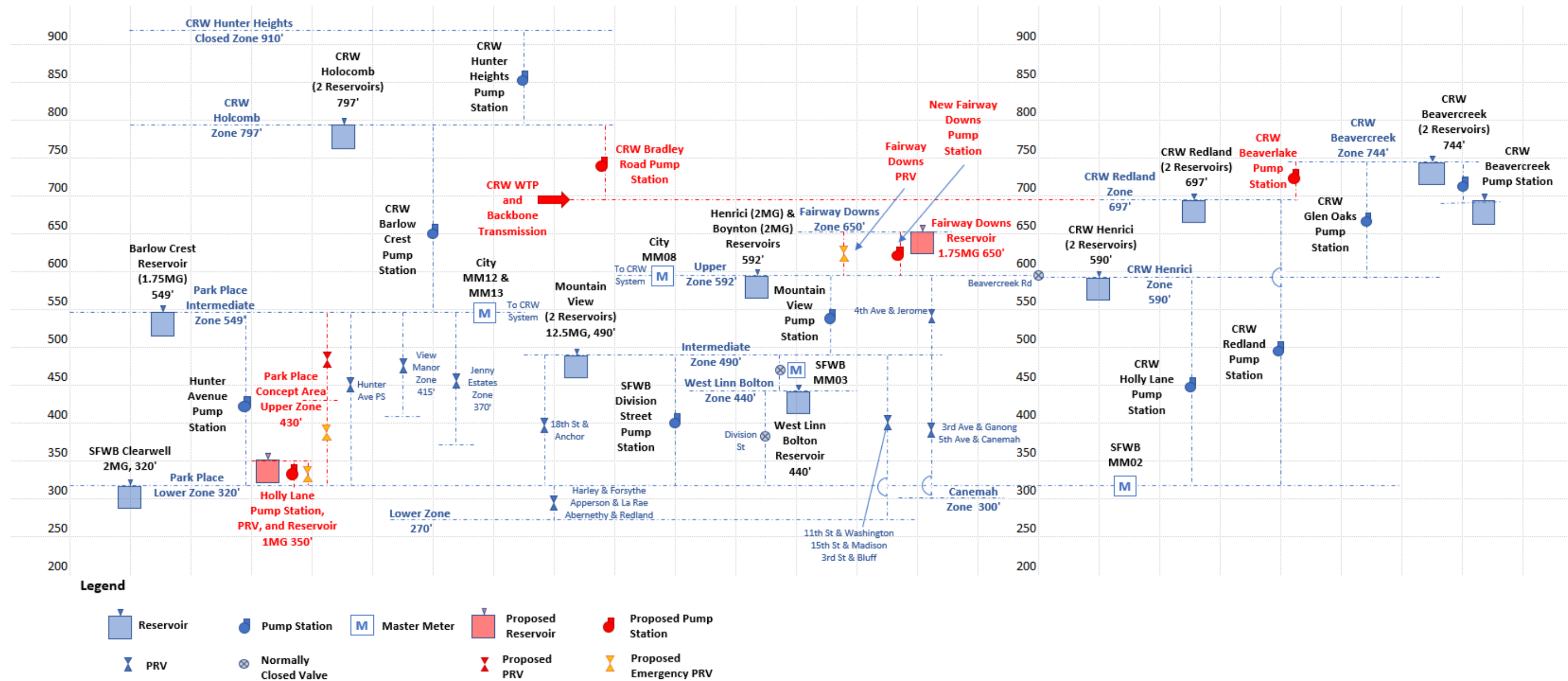


**City of Oregon City
 Hydraulic Model Update**

**Figure 2
 Calibration Results
 Fireflow Tests**



Figure B2
Proposed Combined SFWB/Oregon City/Clackamas River Water Hydraulic Schematic





APPENDIX C
EMERGENCY WATER SUPPLY
ANALYSIS TECHNICAL MEMORANDUM,
MURRAYSMITH

Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System CIP Update (17-2119)

To: Mr. Martin Montalvo
Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Emergency Water Supply Analysis

Introduction

The City of Oregon City (City) is in the process of updating its Capital Improvement Program (CIP) developed in the Water System Master Plan (WMP, 2012). Amendment No. 1 to the CIP Update includes documentation of emergency water supply operations. Specifically, the emergency water supply may be required if the South Fork Water Board (SFWB) 30-inch main on Quail Ct and Hiram Ave is out of operation due to repair and during completion of a 42-inch pipeline capital improvement project on Cleveland Street planned for November 2018. This technical memorandum documents the findings and recommendations of the Emergency Water Supply Analysis.

Existing Conditions

SFWB Supply and Transmission

The SFWB supplies treated drinking water to the City of Oregon City, the Clackamas River Water District (CRW) south of the Clackamas River, and the City of West Linn. Two transmission lines supply water from the SFWB Water Treatment Plant (WTP): a 30-inch line to City and CRW master meters and the Division Street Pump Station, and a 42-inch line to the Hunter Ave Pump Station.

As described in the SFWB Water Master Plan (2016), the 30-inch line may be undersized by 2021. To increase transmission capacity, the CIP includes a 42-inch connection along Cleveland Road between the existing 42- and 30-inch lines. In late August 2018, an existing leak in the 30-inch supply main intensified. In response, the SFWB and the City installed dewatering pumps. According to the City, the situation has stabilized, but there are concerns the entire line may fail,

if any attempts are made at repairs. Therefore, the City and SFWB have accelerated the process for the 42-inch connection.

West Linn Intertie Upgrades

In 2015, the City of West Linn improved its Lake Oswego Booster Station Intertie by installing two new 2,200 gallons per minute (gpm) pumps. These improvements came partly in response to the Lake Oswego – Tigard WTP expansion on the Clackamas River. This intertie is expected to be available for emergency supply.

SFWB Supply Limitations

This analysis focuses on three SFWB supply interruption scenarios:

1. Only the 30-inch line is out of service:
 - a. Prior to the completion of the connection of the new 42-inch line on Cleveland Street, a failure in the 30-inch line eliminates supply to the Division Street Pump Station, without affecting the 42-inch supply to Hunter Ave.
 - b. The 42-inch connection is successfully constructed, and installation requires the 30-inch line to be shut off for the duration of the final connection.
2. The SFWB WTP is completely offline and both the 30-inch and 42-inch lines are unable to provide water supply. The Division Street Pump Station is also not operable.

Under the first scenario, the City, CRW, and West Linn pressure zones supplied by the 30-inch line will either need to use alternate supply or rely on emergency storage. Under the second scenario, CRW and the City are assumed to rely on emergency storage, while West Linn uses alternate supply from Lake Oswego. The second scenario assumes that excess capacity from the Lake Oswego intertie can optionally supply CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Pressure zone supply under all scenarios for Oregon City, CRW, and West Linn are listed in **Table 1** and highlighted in **Figure 1**.

SFWB Supply Operations and Service Interruption

The SFWB Clear Well controls system pressure in the 30-inch and 42-inch transmission mains including suction side pressures at the Division Street and Hunter Ave Pump Stations. When the Clear Well water surface drops below a set point, a transfer valve (day/night valve) at the Division Street Pump Station opens to supply system demands and pressure from the Mountainview Reservoirs to customers supplied directly off the transmission mains. Excess head from the Mountainview Reservoirs is eliminated via an orifice plate at the valve with differential head regulated by the Clear Well water surface.

The supply interruptions described in this Emergency Plan, are different than when the WTP Clear Well is nominally offline and the Mountainview Reservoirs supply the system via the transfer valve.

During the emergency supply interruptions, the Clear Well is unavailable to regulate pressure and the transfer valve should remain closed to eliminate risk of over pressurizing the system.

During closure of the transfer valve, some services directly off the transmission mains will be without water including 27 CRW customers downstream of the CRW Redland and Anchor Way Master Meter (MM02). To avoid water service interruptions during the emergency shutdown, a new pressure reducing valve (PRV) is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to these customers.

Table 1
Pressure Zone Supply Alternatives

SFWB Supply Scenario	System	Alternate Supply	Emergency Storage	Normal Operations
Scenario 1: Pressure Zones Affected by 30-inch Outage including near-term 42-inch pipeline connection	Oregon City	Park Place Lower, Lower, Livesay	Intermediate, Canemah, Upper, Fairway Downs, Paper Mill	Park Place Intermediate, View Manor, Jennifer Estates
	CRW		Redland, Henrici, Beaver Creek Zones and South End and Leland/Meyers Master Meters	Hunter Heights, Holcomb (City's Park Place Upper), HOPP Master Meter
	West Linn	All Zones		
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City	See note 1	All Zones	
	CRW	See note 1	All Zones	
	West Linn	All Zones (from Lake Oswego)		

Notes

1 Optional supply from Lake Oswego. Excess capacity from the Lake Oswego intertie can augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing.

Scenario 1: 30-inch Supply Line Outage

Under this scenario, the 30-inch transmission main is off-line, and the 42-inch transmission main continues normal operation. Therefore, the goal of any operational change is to utilize the 42-inch line and minimize demands on the Mountainview Reservoirs. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland and Holly Lane Pump Stations. CRW to rely on emergency storage in their Redland, Henrici, and Beavercreek Reservoirs for zones normally supplied via MM02. A new PRV is required at the Holly Lane Pump Station to serve 27 customers adjacent to MM02.
- Oregon City to close distribution bypass pressure reducing valves (PRVs) providing supply from the Mountainview Reservoirs to zones capable of being supplied by the 42-inch line. Fire flow PRVs remain open with existing settings to passively provide fire flow demands. The updated PRV settings are listed in **Table 2** including closure of bypass PRVs at 18th & Anchor Way, 3rd & Bluff, 11th & Washington, and 15th & Madison. Fire flow PRV settings are not modified.

This scenario is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing “CLOSED” butterfly valve to the new 42-inch piping.

Scenario 2: Complete SFWB Outage

Under this scenario, both the 30-inch and 42-inch lines are off-line. Therefore, the goal of the any operational change is to balance water stored in reservoirs with system demands. These changes include:

- Shut down of the Division Street Pump Station to eliminate supply from SFWB to the Mountainview and Bolton Reservoirs. The transfer valve at the Division Street Pump Station should be closed to ensure that the Mountainview Reservoir transmission main is isolated from suction side supply piping at the Division Street Pump Station.

- Shut down of the Hunter Ave Pump Station to eliminate supply from SFWB 42-inch to Barlow Crest and Hunter Heights Reservoirs.
- West Linn to utilize the booster station intertie with Lake Oswego and close the supply from SFWB and the Mountainview Reservoirs at the automated ball valve vault located between the Division Street Pump Station and the Bolton Reservoir.
- CRW to shut off their Redland, Holly Lane, and Barlow Crest Pump Stations. CRW to rely on emergency storage from their reservoirs in all zones.
- Oregon City to modify PRV settings and operations, providing supply from the Barlow Crest Reservoir to zones capable of being supplied by the Mountainview Reservoirs as listed in **Table 2** including closure of the bypass PRV at Hunter Ave Pump Station and a slight adjustment to the Hunter Ave Pump Station fire flow PRV.
- Note that PRV isolation of the Park Place Lower and Lower Zones from the Mountainview Reservoirs is not recommended for this scenario since the Barlow Crest Reservoir supply is more limiting than the Mountainview Reservoir supply with the existing 42-inch supply line to Hunter Avenue Pump Station unavailable.

Analysis and Findings

Assumptions

The following assumptions were made for all system analysis:

- System analysis was performed under wintertime Average Day Demands (ADD), conservatively estimated at 75% of ADD and verified with 2016 master meter records.
- It was assumed all reservoirs would be filled prior to the start of work and a 20% factor of safety was assumed, limiting available storage to 80% of reservoir capacity.
- Only gravity storage was available for supply.
- All interzone pumps and PRVs were assumed operational, except where specifically listed. Therefore, pressure zones could be grouped by limiting reservoir or supply including: Oregon City Mountainview, Oregon City Barlow Crest, CRW Hunter Heights, and CRW MM02.

The analysis consisted of a calculation of supply duration available in the reservoir groups, a system pressure check in Oregon City under the updated supply scenario, and a fire flow pressure check in Oregon City under the updated supply scenario.

System Pressures and Supply Availability

Under both limited SFWB supply scenarios described in the prior section, the City can maintain adequate pressures in all zones. Pressures vary by less than 3 pounds per square inch (psi) between SFWB supply scenarios during winter time demands, therefore only Scenario 1 is presented in **Figure 2**. Reservoir supply duration varies between scenarios and zones and is presented in **Table 3**. These calculations assume that the City will continue wheeling water to CRW's master meters at South End, Meyers, and HOPP, in addition to the assumptions listed

earlier in this document. Approximately 4 days of emergency storage is available in the Oregon City system. If the Mountainview Reservoirs are not isolated from the Park Place and Park Place Lower Zones, the available storage in the Oregon City system reduces to less than 4 days.

Approximately 3 days of emergency storage is available in the CRW system with all reservoirs operations. However, it should be noted that the one of the CRW Redland Reservoirs is temporarily off-line (as of October 2018) affecting near-term emergency storage availability by approximately 50-percent in the Redland zone (see *SFWB Hydraulics – Catastrophic Failure: Emergency Water Main Repair Modeling*, Carrollo, 2018).

Fire flow Availability

If a fire occurs during limited SFWB operations, no additional changes need to be made to system operations. PRVs should be set so that fire flows will be available, even if the distribution bypass PRV is closed. It should be understood, however, that fighting a fire will significantly impact emergency storage and decrease the total time the system can operate without water shortages.

Figure 3 presents the fire flow available throughout the City’s system under both Scenario 1 and Scenario 2 of reduced SFWB supply.

Table 2
PRV Settings for SFWB Supply Alternatives

PRV Station	Scenario 1: Operation under 30-inch Failure & 42-inch Connection	Scenario 2: Complete SFWB Outage	Distribution Bypass or Main Valve Setting (psi)				Fire flow Valve Setting (psi)			
			Diameter (in)	Existing	30-in Failure	Complete Outage	Diameter (in)	Existing	30-in Failure	Complete Outage
18 th & Anchor Way	Closed for distribution, open during fire flow in Lower or Park Place Lower	Required for distribution and fire flow to Park Place Lower and Livesay	4	53	CLOSE	NC	8	48	NC	NC
3rd & Bluff	Closed for distribution, open during fire flow in Lower Zone	Supply to Lower, available for fire flow	3	42	CLOSE	NC	10	39	NC	NC
11 th & Washington			3	67	CLOSE	NC	10	58	NC	NC
15 th & Madison ²			6	56	CLOSE	NC	6	51	NC	NC
Hunter Ave Pump Station PRV	Required for distribution and fire flow supply to Park Place Lower and Lower	Closed for distribution, available for fire flow	3	45	NC	CLOSE	6	51	NC	48

Notes:

1. NC = No change from existing settings required.
2. Additional 1.25-inch PRV also closed during Scenario 1.

Table 3
Emergency Storage Supply Availability Under Limited SFWB Supply Scenarios

SFWB Supply Scenario	Storage System/Zones	Total Storage (MG)	Available Storage (MG)	System Demands (GPM)	Available Supply (Days)
Scenario 1: Pressure Zones Affected by the 30-inch Outage	Oregon City/ Mountainview	16.5	12.1	1,898	4.4
	CRW/ MM02	3.8	3.0	651	3.2
Scenario 2: Pressure Zones Affected by Complete SFWB Outage	Oregon City/ Mountainview	16.5	12.1	2,208	3.8 – 4.8 (see note 9)
	Oregon City/ Barlow Crest	1.8	1.4	120	8.1
	CRW/ Hunter Heights	1.2	1.0	135	4.9
	CRW/ MM02	3.8	3.0	651	3.2 – 4.2 (see note 9)

Notes:

1. All tanks assumed initially full and operational. Available storage assumed to be 80% of full storage and available by gravity – Boynton Standpipe limited to minimum elevation of Henrici Reservoir at 20% full.
2. Demands at 75% of ADD. All CRW demands wheeled through Oregon City (HOPP area, South End, Leland/Meyers, and Joint User Customers) continued supply at 75% ADD. No supply to West Linn.
3. All interzone pump stations assumed operational, except where specifically shut off.
4. For scenario 1, Oregon City Mountainview Zones include Upper, Fairway Downs, Intermediate, and Canemah. For Scenario 2, additional zones include Lower and Park Place Lower and Livesay.
5. CRW MM02 Zones include Redland, Henrici, and Beavercreek. All reservoirs assumed operational. Available supply will be reduced from what is shown in the table when one of the Redland Reservoirs is offline.
6. Oregon City Barlow Crest Zones include Park Place Intermediate, Park Place View Manor, and Park Place Jenny Estates.
7. CRW Hunter Heights Zones include Hunter Heights and Holcomb (including the City customers in the Barlow Crest area).
8. For Scenario 2, Mountainview Reservoirs supply the Park Place Lower and Lower Zones to preserve supply in the Barlow Crest Reservoir. Without isolating Barlow Crest, the controlling emergency supply reduces to approximately 2 days within the Barlow Crest service area.
9. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. Valving requires field verification and emergency operations require testing. The higher-end supply times assume up to 700 gpm of excess capacity are provided by the Lake Oswego intertie to supplement storage.

Alternate Supply Analysis

Given the limited time available for supply shut down and the unpredictability of the construction process, alternate supply and distribution were explored from CRW and Lake Oswego via West Linn.

Supply from CRW's WTP may be an option for emergency supply once Phase I of the Backbone Project is completed and interties to Oregon City are established. The Backbone Project extends

transmission piping from the CRW WTP on the north side of the Clackamas to customers south of the Clackamas. Existing connections along the Backbone path were reviewed for a potential supply from the CRW zones supplied by the 42-inch to the CRW zones supplied by the 30-inch and indirectly, the Mountainview Reservoirs. However, available piping is 4-inch diameter and adequate connections are not currently available. Once the Backbone Project is complete, potential intertie locations may be located at the Barlow Crest Reservoir, CRW's Redland and Anchor Way master meter, or along Beavercreek Road. The Backbone Project and associated interties will not be implemented in time to address near-term emergency supply associated with the near-term SFWB pipe break and 42-inch pipeline improvement.

Alternate supply may be available from the Lake Oswego – Tigard WTP, via the Lake Oswego Emergency Booster Station and through West Linn's Bolton Pressure Zone to the Mountain View Reservoirs. Initial review of the system and pump curves for the emergency pump station indicate approximately 225 ft of total dynamic head (TDH) with two pumps operating. This is adequate head to pump from the Emergency Booster Station to the Mountain View Reservoirs. Based on winter-time demands, the pump station would operate almost continuously throughout the day. Two scenarios were considered:

- (1) In the first scenario, the West Linn distribution piping and valving are not isolated. Maximum pressures exceed 170 psi and may affect two-thirds to three quarters of the zone.
- (2) In the second scenario, portions of the West Linn distribution piping are isolated to serve as a transmission main. Maximum pressures exceed 170 psi, but only affect one-third of the zone (see **Figure 4**).

Because the affected customers in the Bolton Pressure Zone may not have individual PRVs to handle pressures greater than 100 psi and the distribution piping is aging with potential leakage concerns, the alternate supply scenario from the Lake Oswego Booster Station to the Mountainview Reservoirs is not recommended.

A third alternative was considered late in the emergency supply analysis. Additional supply from the booster station intertie with Lake Oswego may augment supply to CRW and the City through a back feed to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir. This operation does not affect pressures in the West Linn system. Valving requires field verification and emergency operations require testing. Excess capacity from the intertie booster may be limited after demands are supplied to West Linn during peak demand hours of the day. The benefit of the back feed from the Bolton Reservoir is to help refill City and CRW reservoirs normally supplied from the SFWB Clearwell during low demand hours of the day. The reservoir refill occurs through the Division Street Pump Station for the City and the Holly Lane and Redland Pump Stations for CRW.

Future Connections

Additional interconnects to the CRW system after the construction of the CRW backbone project may be explored. A secondary supply south of the Clackamas River greatly increases system resiliency and improves service to CRW, Oregon City, and West Linn customers. The backbone project will not be available for the immediate risks of the 30-inch leak and the 42-inch pipe connection associated with Scenario 1.

Recommendations

The following steps are recommended procedures for implementation of Scenario 1 and Scenario 2 operations. The steps should be field verified (including valve IDs) and tested prior to implementation.

During testing and implementation, all valve operations must be performed slowly to minimize the risk of water hammer and pressure transients. Prior to draining system pipelines, air/vacuum combination release valves should be identified and inspected for functionality to avoid damage from pressure transients. Draining should occur slowly to minimize risks of vacuum pressures.

Scenario 1: 30-inch Supply Line Outage

- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs nominally supplied by the 30-inch line prior to isolating the leak. These reservoirs include:
 - City Mountainview
 - City Henrici
 - City Boynton
 - CRW Redland
 - CRW Henrici
 - CRW Beavercreek
- Isolate the leak and close valves
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)

- Shut off the CRW Redland and Holly Lane Pump Stations
- Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beaver Creek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
- Isolate the leak by closing adjacent valving on the 30-inch line
- Close the bypass PRVs at the following locations per recommendations listed in Table 2, to minimize demands on the Mountainview Reservoirs. Maintain fire flow valves at existing settings.
 - 18th & Anchor PRV Station
 - 3rd & Bluff PRV Station
 - 11th & Washington PRV Station
 - 15th & Madison PRV Station
- Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

Scenario 1 is useful for the near-term project to connect the new 42-inch pipeline on Cleveland Street to both the 42-inch transmission main and the 30-inch transmission main. During the connection, the 30-inch transmission main will be drained and out of service, while the 42-inch main will remain in service. The following elements should be field verified prior to connection:

- A butterfly valve and tee on the 42-inch main near Cleveland Street and Hunter Ave. The intended construction plan is to open the existing butterfly valve after pressure tests and bacterial testing are complete. A short segment of pipe will be constructed to connect the existing “CLOSED” butterfly valve to the new 42-inch piping.

Scenario 2: Complete SFWB Outage

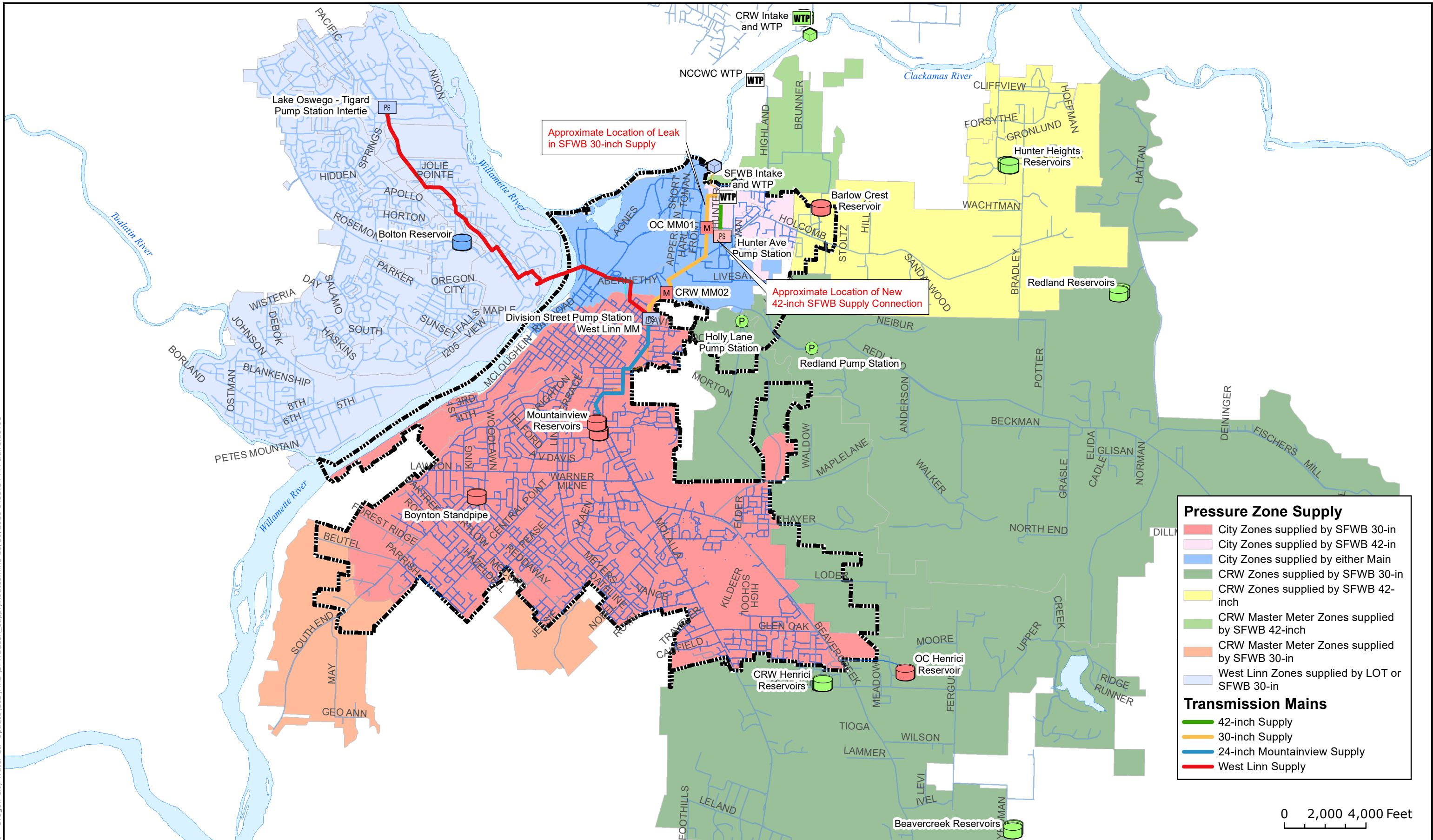
- Coordinate with the City of West Linn to change supply to the Bolton Reservoir
 - Fill the Bolton Reservoir via the Division Street Pump Station
 - Close the automated ball valve at vault between the Division Street Pump Station and the Bolton Reservoir. The valve is located near 17th on Division (Valve 50253/320, ID to be field verified)
 - Coordinate with Lake Oswego to utilize the emergency booster station for supply of the Bolton Reservoir and Bolton Pressure Zone
- Fill all City and CRW reservoirs. These reservoirs include:
 - City Mountainview

- City Henrici
 - City Boynton
 - City Barlow Crest
 - CRW Redland
 - CRW Henrici
 - CRW Beavercreek
 - CRW Hunter Heights
- Isolate the CRW, West Linn, and Oregon City systems
 - Shut off the Division Street Pump Station
 - Verify transfer valve closure between Mountainview Reservoirs transmission main and 30-inch supply line at the Division Street Pump Station
 - Close the 16-inch gate valve located at MM01 - the City supply from the 30-inch to the Park Place Lower zone, at Hiram and Cleveland (Valve 50307/374)
 - Shut off the Barlow Crest Pump Station (CRW supply to Holcomb/Hunter Ave)
 - Shut off the CRW Redland and Holly Lane Pump Stations
 - Close the 14-inch CRW line at MM02, Redland and Anchor – the CRW supply from the 30-inch to Redland, Henrici, and Beavercreek. To avoid water service interruptions during the emergency shutdown, a new PRV is required at the CRW Holly Lane Pump Station to provide emergency supply from the CRW Henrici Reservoir to customers adjacent to MM02.
 - Shut off the Hunter Ave Pump Station
 - Close Hunter Avenue bypass PRV and adjust fire flow PRV to less than 48 psi
 - Fire watch – During the supply alternative, maintain a fire watch. It is strongly encouraged not to open valves unless necessary. If a fire occurs, valve opening between the CRW and Oregon City systems will serve to balance reservoir water supply and support fire flow durations. The valve operations are not required to supply fire flow demands initially and therefore, all valves should be operated slowly and with care to avoid water hammer and pressure transients.

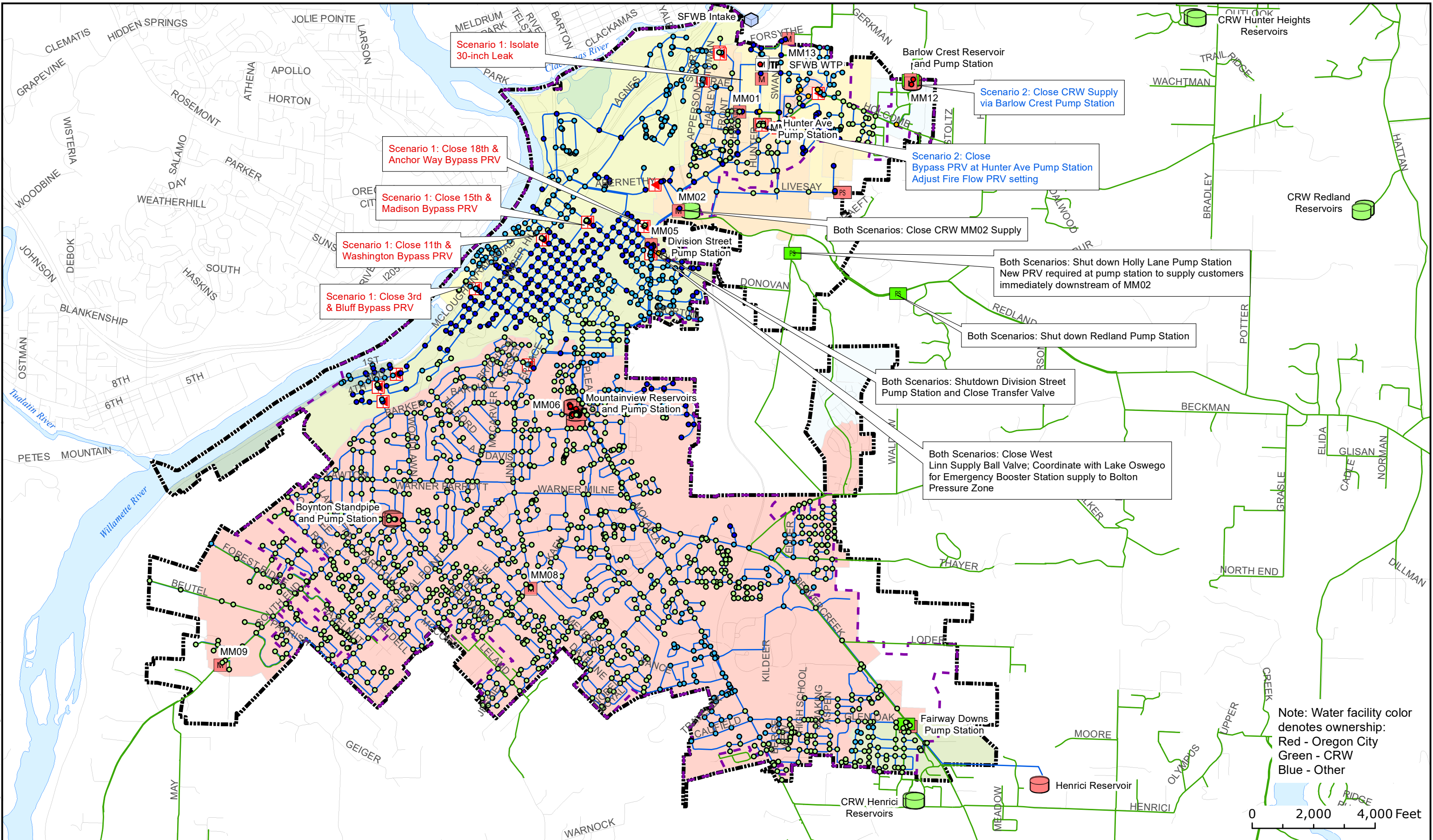
Note: Additional emergency supply to the City and CRW systems may be available from the booster station intertie with Lake Oswego to the Park Place Lower Zone and the suction side of the Division Street Pump Station from the West Linn Bolton Reservoir during low demand hours of the day. Valving requires field verification and emergency operations require testing.

Cc: South Fork Water Board, West Linn, Clackamas River Water, Lake Oswego

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**City of Oregon City
Water CIP Analysis**

**Figure 2:
SFWB Supply Limitation
Static Pressure**

- Model Water Mains
- CRW Water Mains
- OC City Limits
- UGB

Static Pressure (PSI)

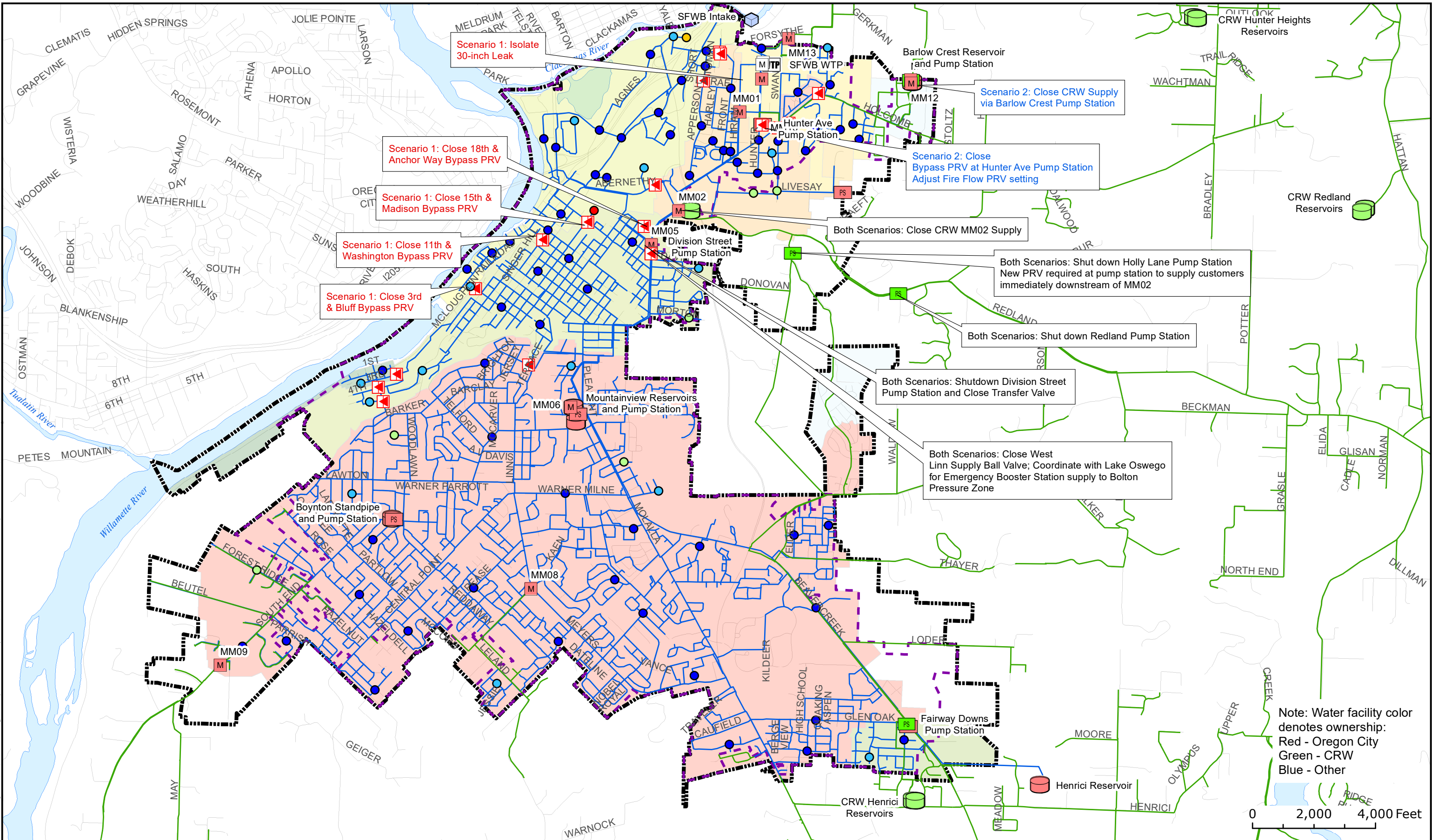
- 25 - 40
- 40 - 80
- 80 - 100
- > 100
- < 25

Water Facilities

- Reservoir
- Pump Station
- Master Meter
- PRV
- Intake
- WTP

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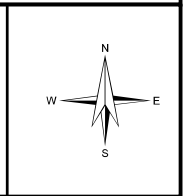
Note: Water facility color denotes ownership:
Red - Oregon City
Green - CRW
Blue - Other



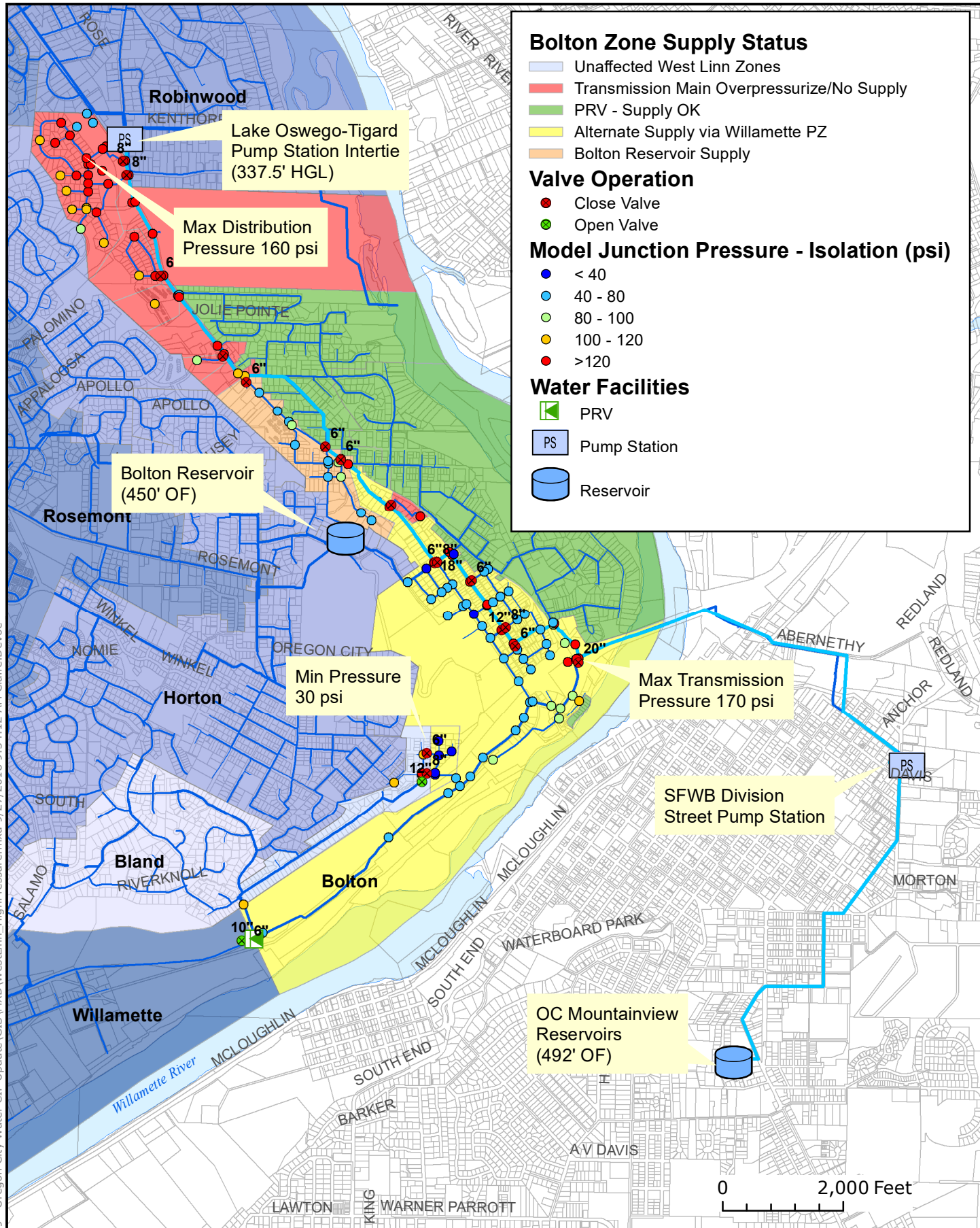
City of Oregon City Water CIP Analysis

Figure 3: SFWB Supply Limitation Fireflow Availability

Model Water Mains	Available Fireflow (GPM)	500 - 1000	Water Facilities	M	Master Meter
CRW Water Mains	1000 - 1500	1000 - 1500		PRV	PRV
OC City Limits	1500 - 3000	1500 - 3000		Intake	Intake
UGB	> 3000	> 3000		WTP	WTP
	< 500	< 500	Reservoir	Reservoir	
			Pump Station	Pump Station	



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**Figure 4:
SFWB Supply Main Failure
Alternate Supply Analysis**

**Lake Oswego-Tigard Supply
West Linn Pressures
Transmission Isolation**



APPENDIX D
JOINT ENGINEERING STUDY TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: June 11, 2018

Project: 16-1922

To: Mr. Martin Montalvo – Operations Manager
Ms. Aleta Froman-Goodrich, PE – City Engineer
City of Oregon City

Mr. Bob George, PE – Chief Engineer
Clackamas River Water District

From: Brian Ginter, PE
Mike Carr, PE
Claire DeVoe
Murraysmith



Re: Clackamas River Water / City of Oregon City Joint Engineering Analysis
Water Service Dual interest Area Technical Analysis

Purpose

Clackamas River Water (CRW) and the City of Oregon City (City) are engaged in discussions with the goal of defining their adjoining service area boundaries for existing and future conditions to provide more efficient and economic water service to all customers. Murraysmith was selected by both providers to perform the engineering analysis and facilitate discussions between the two water providers.

The purpose of this white paper is to develop a framework for defining current and long-term service area boundaries, orderly service transfers, and infrastructure management through a study of current dual interest areas and overlapping service identified by the providers. This report will:

- Present the historical events regarding boundary realignment
- Identify typical dual interests present between service providers
- Document the identified water service dual interest focus areas
- Propose individual or policy-based solutions for each dual interest area
- Develop an approach to guide future dual interest resolution
- Provide an action plan for the next steps

This report also fulfills the study requirements set forth in the May 2014 Settlement Agreement between CRW and the City.

Introduction

The Clackamas River is the primary water source for municipal water supply to Oregon City and the surrounding urban and semi-urban areas, as illustrated in **Figure 1**. Three separate Water Treatment Plants (WTPs) along the river supply six different water providers, including the City and CRW (**Table 1**).

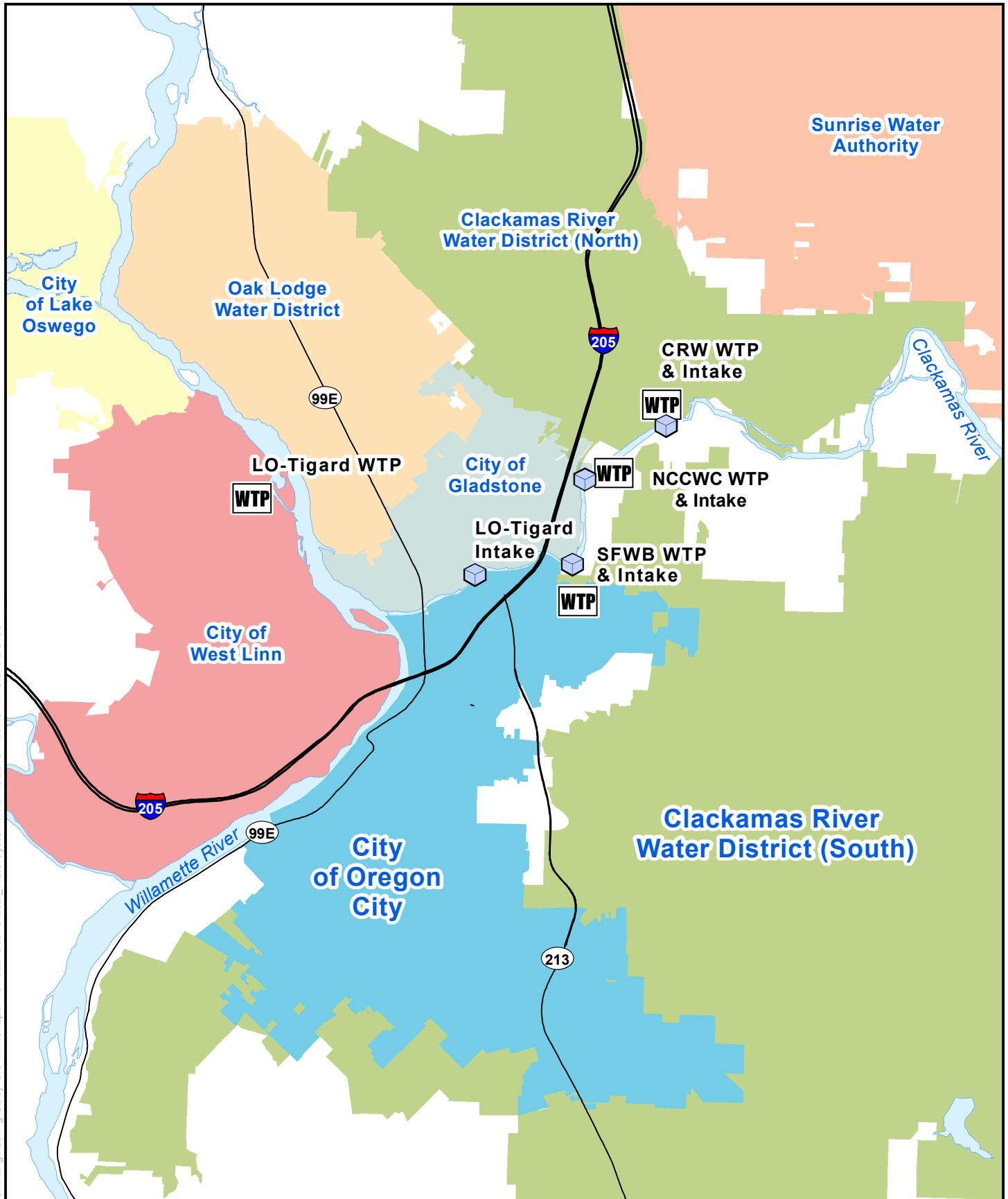
Table 1
Water Treatment Facilities along the Clackamas River

Water Treatment Plant	South Fork Water Board WTP	North Clackamas County Water Commission WTP	Clackamas River Water WTP
Water Provider Served	Oregon City	Sunrise Water Authority	Clackamas River Water (North)
	West Linn	Gladstone	Sunrise Water Authority
	Clackamas River Water (South)	Oak Lodge Water District	

Historically, these water providers have coexisted and provided service to separate areas. Cities generally supplied the urban centers and water districts or water authorities have served the semi-urban areas both within and outside the Metro Urban Growth Boundary (UGB). With development and subsequent UGB expansion cities can legally serve areas that were once limited to water district or water authority service. Under ORS 222.520 to 222.580, a city may annex and withdraw territory, and assume facilities, from special districts if the facilities are non-essential to the operation of the remaining district water system. This same rule does not apply to water authorities – their service areas are protected and cannot be withdrawn by cities.

This study is the result of a legal dispute over the right to withdraw territory between Oregon City and CRW. As a municipal corporation, the City provides water service to residents within city limits and some areas within the UGB, but is limited in its ability to serve customers outside the UGB. CRW, a domestic water supply district organized under ORS 264, borders the City to the north, south, and east and primarily serves customers within unincorporated Clackamas County outside the UGB, as well as customers within the city limits and the UGB.

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- City of Oregon City
- Clackamas River Water District
- City of Gladstone
- City of Lake Oswego
- Oak Lodge Water District
- Sunrise Water Authority
- City of West Linn
- Major Roads
- Water Intake
- Oregon City UGB
- WTP Water Treatment Plant

1 inch = 6,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 1 Vicinity Map



murraysmith



In November of 2013, CRW and Sunrise Water Authority (SWA) approved Ordinance 03-2013 and Resolution 2013-02 respectively (collectively known as the 190 Agreement) to form the Clackamas Regional Water Supply Commission (CRWSC). CRW and SWA created the CRWSC to oversee the efficient supply of domestic water services within the two water providers' service areas. The City and South Fork Water Board (SFWB) were concerned the 190 Agreement would extend SWA boundary protection rights under ORS 450.987 as a Water Authority to CRW, thus limiting the City's right to annex and withdraw CRW territory.

In December of 2013, the City and SFWB filed an appeal to the Land Use Board of Appeals (LUBA) stating that the creation of the CRWSC infringed on the City's expansion rights and constituted material harm to the City and SFWB. This appeal led to discussions between CRW and the City regarding the goals of the CRWSC. In May 2014, a Settlement Agreement was signed by the City and CRW calling for this engineering study to provide direction for existing and future disputes.

This study is focused only on service provision dual interests between Oregon City and CRW. For the remainder of this study, areas and service providers north of the Clackamas River and west of the Willamette River will be ignored.

Dual interest Characterization

Neither party disputes the City's right to annex and withdraw CRW territory. Rather it is how prior annexations and withdrawals have occurred that is the primary driver of dual interest. The agreements for service transitions are outdated or do not address the current challenges, which has led to irregular policies and an uncertainty in long-term service provider boundaries. This uncertainty has led to CRW's reluctance to invest in areas that might soon be taken by the City, animosity over the condition of existing infrastructure in areas that are eligible for annexation, and a general short-term perspective on coordinated planning. The lack of a clear plan has at times resulted in annexation without withdrawal of territory resulting in continued uncertainty for both water providers related to long-term service requirements. All compiled, this has meant customers of both providers have seen failing infrastructure, frequent road repairs, higher costs, and a lack of clarity regarding long term service. As annexations and withdrawals are becoming more and more frequent, and in order to efficiently and effectively plan for the long-term service to all customers in the area, the parties concluded that a formalized process should be developed that is acceptable to both water providers.

Remuneration for Assets

Typically, urbanization and city expansion occurs where there is no existing public water service provider. However, CRW already provides water service to much of the semi-urban area surrounding the City. When the City expands service into these area, existing CRW infrastructure, often with remaining useful life, might be present, however the infrastructure may be inadequate by City standards. This creates a potential source of dual interest between the two water providers associated with:

- CRW’s willingness to invest in the renewal or replacement of aging infrastructure that may ultimately be withdrawn by the City;
- The City’s desire to efficiently transfer service to City rate payers without constructing redundant facilities; and
- Identification of critical infrastructure that must remain within CRW’s ownership for continued water service to CRW customers.

In order to address these sources of dual interest, both water providers have acknowledged the need to develop a fair and objective remuneration policy that encourages coordinated planning and equitable, long-term focused investment in infrastructure development and renewal.

Reduce Isolated CRW Service Areas

When newly annexed areas are inconsistently withdrawn, isolated pockets of CRW customers are created within City service area. To supply these customers, either parallel and redundant infrastructure must be constructed and maintained, or the City must wheel water through their infrastructure to supply CRW infrastructure and customers. Traditionally, the latter has been chosen and facilitated in two ways – as a master meter connection or as Joint Users. These two mechanisms are detailed below:

- **Master Meters:** Master meters cleanly divide two systems and retain infrastructure maintenance responsibility with the system paying for the water by recording the totalized flow through a single supply point. They can supply entire pressure zones or a limited area such as a single road. Typically, master meters are used in areas that are not predicted to transition soon, or where a significant number of customers are served in the receiving system.
- **Joint Users:** Joint users are CRW customers that are supplied through City, CRW, or jointly owned infrastructure without an intervening master meter. Joint Users are not ideal in that the supplying system must take on a significant amount of risk if the receiving system does not adequately maintain its pipes but certain conditions such as system looping, or a limited number of customers, prevent the use of master meters.

Master meters and Joint Users are both integral solutions to serving isolated customers. The problem arises when these short-term solutions are selected without thought to long-term service goals.

For long term service, the simplest technical solution is often annexation and withdrawal of CRW service areas. However, political motives and a reluctance to be included in city limits stalls this type of solution. The City currently has a policy (Oregon City Municipal Code 13.04.260B) to charge 1.5 times the retail rates for service to customers outside of city limits. This policy may discourage orderly transition of service in the interest of protecting the customer as Master Metered or Joint User customers currently only pay their system’s nominal rate.

The inconsistent application of master meters and Joint Users, the lack of certainty regarding annexation and withdrawal of territory, and the economic consequences for both water providers and customers require the development of an approach to isolated service that can be consistently and fairly applied.

Water Service Provider Goals

The consultant team met individually with CRW and City staff to understand both providers' goals (without the influence of the other provider). The following goals that influence each water providers' definition of success in this study were identified in the discussions.

- Joint Engineering Study Goals for Both Providers
 - The City and the CRW are both committed to providing high quality potable water service to customers at reasonable rates.
 - Both providers recognize the benefits of continued collaboration to provide seamless service to dual interest area customers that may be transferred, but each also recognizes their first duty is to customers within their own long-term service areas.
 - Both providers desire certainty of long-term water service area boundaries to inform ongoing system development and renewal/replacement capital investment.
 - Both providers are amenable to wheeled water from the other purveyor's WTP in cases where a higher level of service could be provided more economically and long-term agreements are in place to support investments needed to achieve and maintain the level of service.
 - Both providers recognize the value of interconnected systems with redundant emergency supply and are committed to working together with neighboring water providers to minimize impacts on customers during emergencies as well as periods of growth and transition.
- City Specific Goals
 - The City wants to be the water service provider to existing and future annexed City residents and businesses.
 - The City is part owner of SFWB, and therefore prefers to supply the City's customers with water sourced from the SFWB WTP, thereby serving the City's ultimate service area and customers. This results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

- CRW Specific Goals
 - CRW prefers to supply the district's customers with water sourced from the CRW WTP as this results in better utilization of excess capacity at the WTP, higher certainty and control of water supply, control over water supply costs, control over planning and implementation of capacity expansions, etc.

Keeping these goals in mind, existing dual interests and solutions to key areas identified during scoping will be explored in the next section.

Study Area

Figures 2A and 2B highlights the overall study area of this white paper and identifies the individual focus areas discussed in detail later in this section. Study dual interest areas are generally located near the Oregon City city limits or the edge of the UGB, where annexation and withdrawals occur.

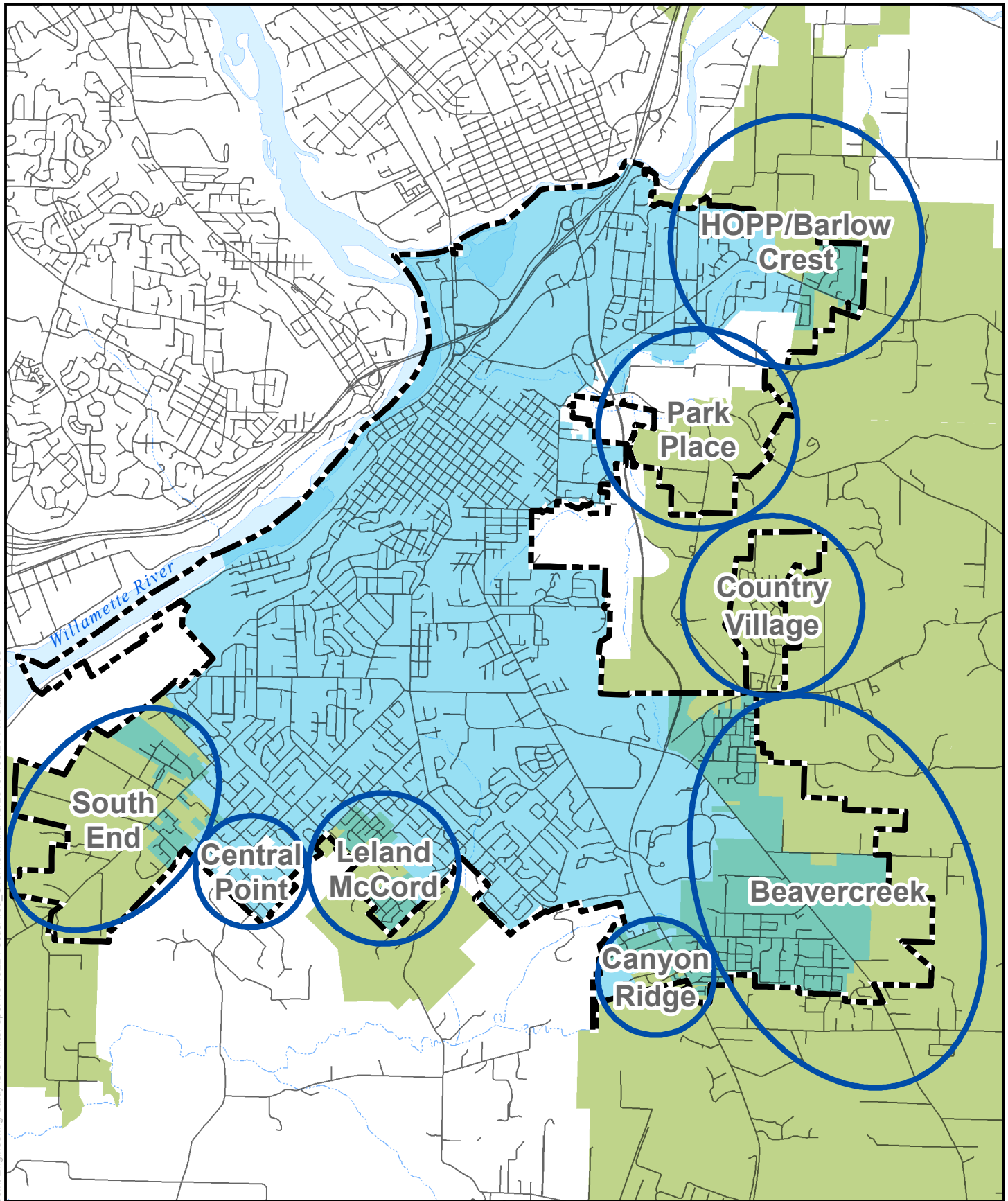
Focus Areas:

- South End
- Central Point
- Canyon Ridge
- Leland McCord
- Country Village
- Beavercreek
 - Beavercreek Concept Plan
 - Fairway Downs
 - Thayer and Loder Roads
 - Henrici Ridge
 - Park Place
- HOPP/Barlow Crest

Study Area Discussion

The following section details existing conditions, dual interests, and proposed solutions for each study area. While specific solutions are unique, the general goals described in the previous section helped drive a common approach to the solution process.

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-  Urban Growth Boundary (UGB)
-  Oregon City City Limits
-  Clackamas River Water District Boundary
-  Areas of Overlap

-  Focus Area
-  Road
-  River

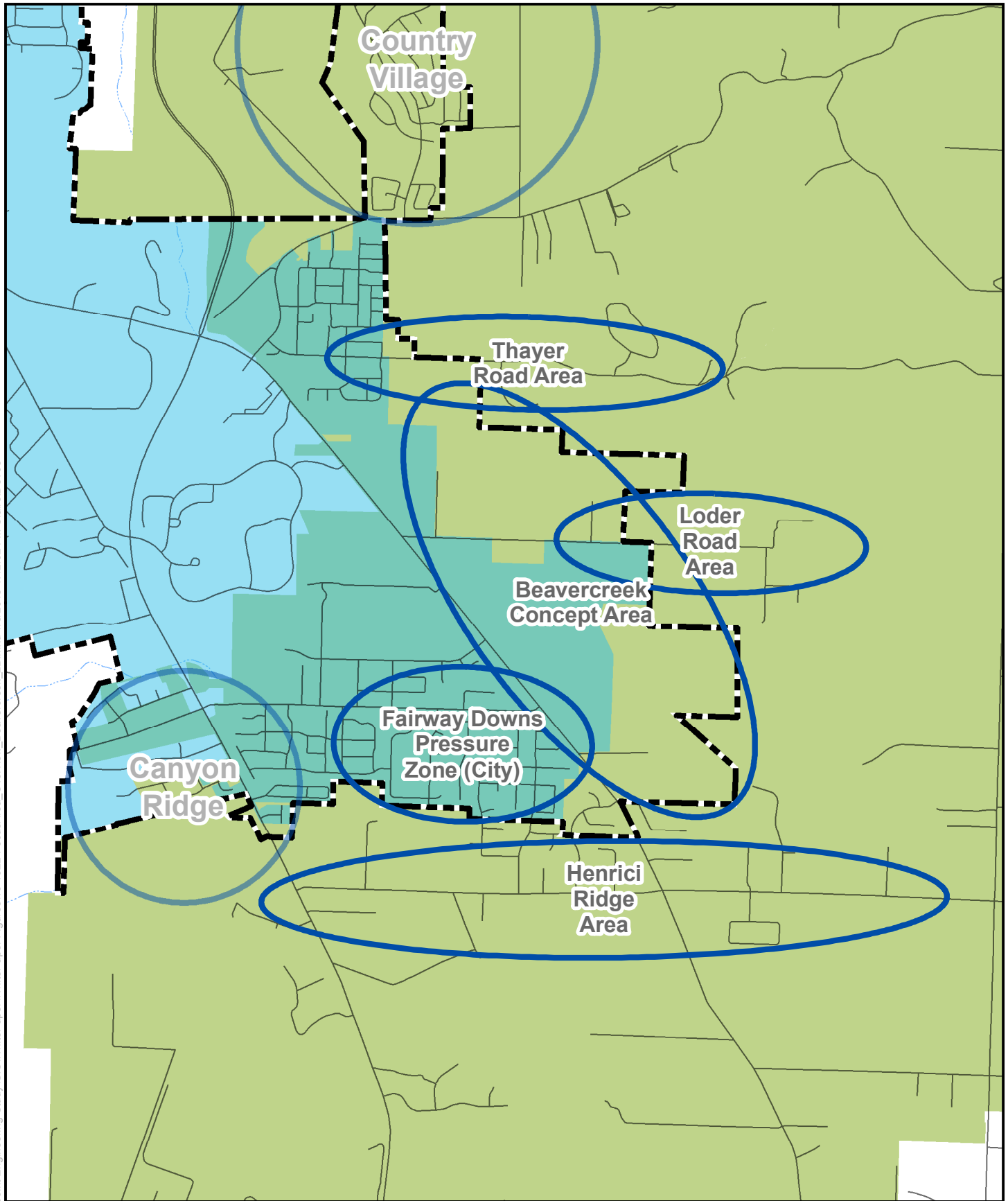

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 1 inch = 4,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 2A Study Area



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- Urban Growth Boundary (UGB)
- Oregon City City Limits
- Clackamas River
- Water District Boundary
- Areas of Overlap
- Focus Area
- Beavercreek Areas
- Road
- River

1 inch = 2,000 feet

Oregon City - Clackamas River Water Joint Engineering Study

Figure 2B Study Area - Beaver Creek



Comments Regarding Mapping

The figures in this section present the existing and proposed service conditions in the focus areas. Existing infrastructure is color coded: dark blue represents City ownership, green CRW ownership, light blue joint ownership, and yellow SFWB or other ownership. Taxlots currently served by CRW are highlighted in colors representing either their existing or future service category. City taxlots have not been highlighted because there is assumed to be no change of service at the individual customer scale. Future conditions maps are only presented if deemed necessary and are intended to be used as a guide for long-term service; intermediate steps may be necessary to achieve this configuration and other alternatives may be preferred, based on actual timing and character of annexation and urban development. Finally, all mapping is limited by the accuracy of the data provided by the City and CRW. Best efforts have been made to resolve lingering inaccuracies but due to ongoing service transitions and the nature of two separate system databases, some inaccuracies are likely.

South End

The South End Concept Area is a prime example of dual interests that arise when service transitions occur without a long-term service plan. As the City developed, the geopolitical boundary and service area expanded south into CRW service areas, effectively isolating the CRW South End Area from the rest of the CRW system. Additionally, City annexation occurred at the individual taxlot level, resulting in an inconsistent patchwork of City and CRW service areas and infrastructure. Both providers will continue to collaborate to develop a long-term solution in this area. In this study, the existing condition will be explained and key areas of agreement will be noted, but a finalized solution and transition phasing was not developed.

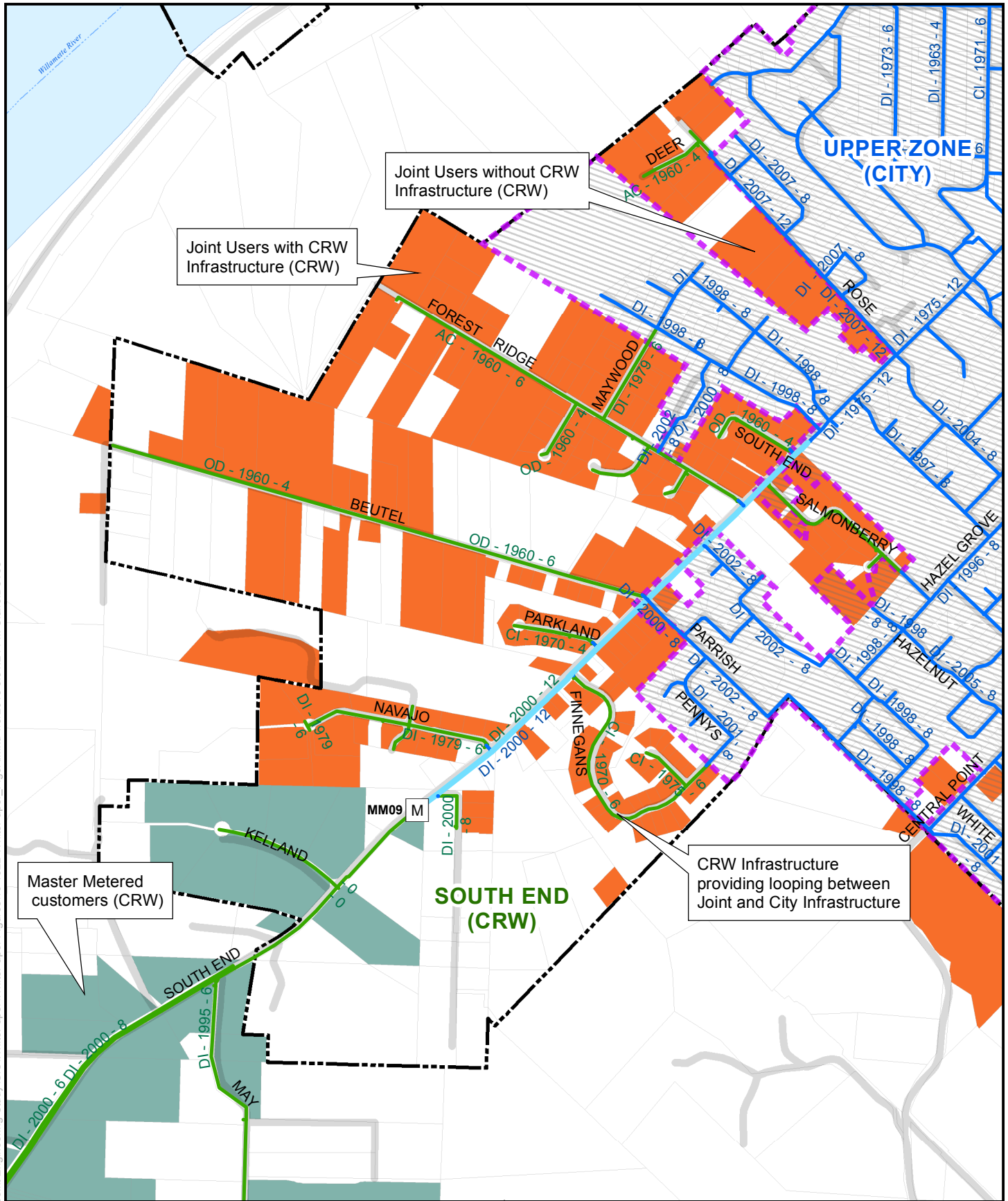
Most customers in the South End Area are served via a jointly-owned 12-inch diameter transmission main in South End Road and supplied with water wheeled through the City system from the SFWB WTP. CRW customers south of Impala Way are master metered, while north of Impala Way CRW and City mains are served as City customers and CRW joint users. **Figure 3** presents the existing system infrastructure and service provider for taxlots currently served by CRW in the South End area.

Both providers have recognized the need for a consistent approach to service and infrastructure transitions in South End. To achieve this goal, policy-level agreements are required, including:

- A remuneration methodology and agreement for the transfer of infrastructure assets
- An updated cost-assignment for installation and maintenance of shared and interfacing (master meter) infrastructure
- A methodology and agreement of triggers for the transfer of service area
- A methodology and agreement for wheeled service (master meter or Joint User status) and development of a wheeling charge

Each of these policy level agreements will continue to appear throughout the discussions of the dual interest areas and are explained in greater detail in the **Typical Dual interest/Solutions** section

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Legend

- UGB
- City Limits
- Joint
- CRW
- City
- SFWB

Current Service

- Master Meter
- Joint User

1 inch = 1,000 feet

N

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Figure 3 - Existing South End

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murraysmith

Clackamas River Water

(page 19 of this report). Given the complexity of the South End area water service boundary overlap and uncertainty of future development timing and character, a specific plan for service transfers and infrastructure/territory withdrawal was not developed. A general understanding that the City will ultimately annex and withdraw all territory within the UGB was agreed upon.

Resolution: Ongoing collaborative communication and planning will be required; service agreements (especially Joint User) addressing ongoing leak detection and mitigation.

Central Point

The Central Point area is an example of incomplete annexation and withdrawal. Existing infrastructure in the area is entirely City owned and CRW customers are classified as Joint User served via City mains. **Figure 4** illustrates the existing service configuration in Central Point.

Both providers agreed that given the lack of CRW infrastructure and the adjacent City service area, the City should provide service to all customers in this area. Recently, local development has been the primary driver of provider transitions, and additional efforts should be made to complete all transitions in the near future. There may be a few remaining taxlots outside the present UGB that will necessitate Joint User service, but within the UGB, all efforts should be made to withdraw these customers. One specific issue that will need to be addressed is the City's policy (Oregon City Municipal Code 13.04.260B) for water service outside the City limits. Currently, these customers pay 1.5 times the City retail rate.

Resolution: All customers within the UGB to be withdrawn by the City; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.

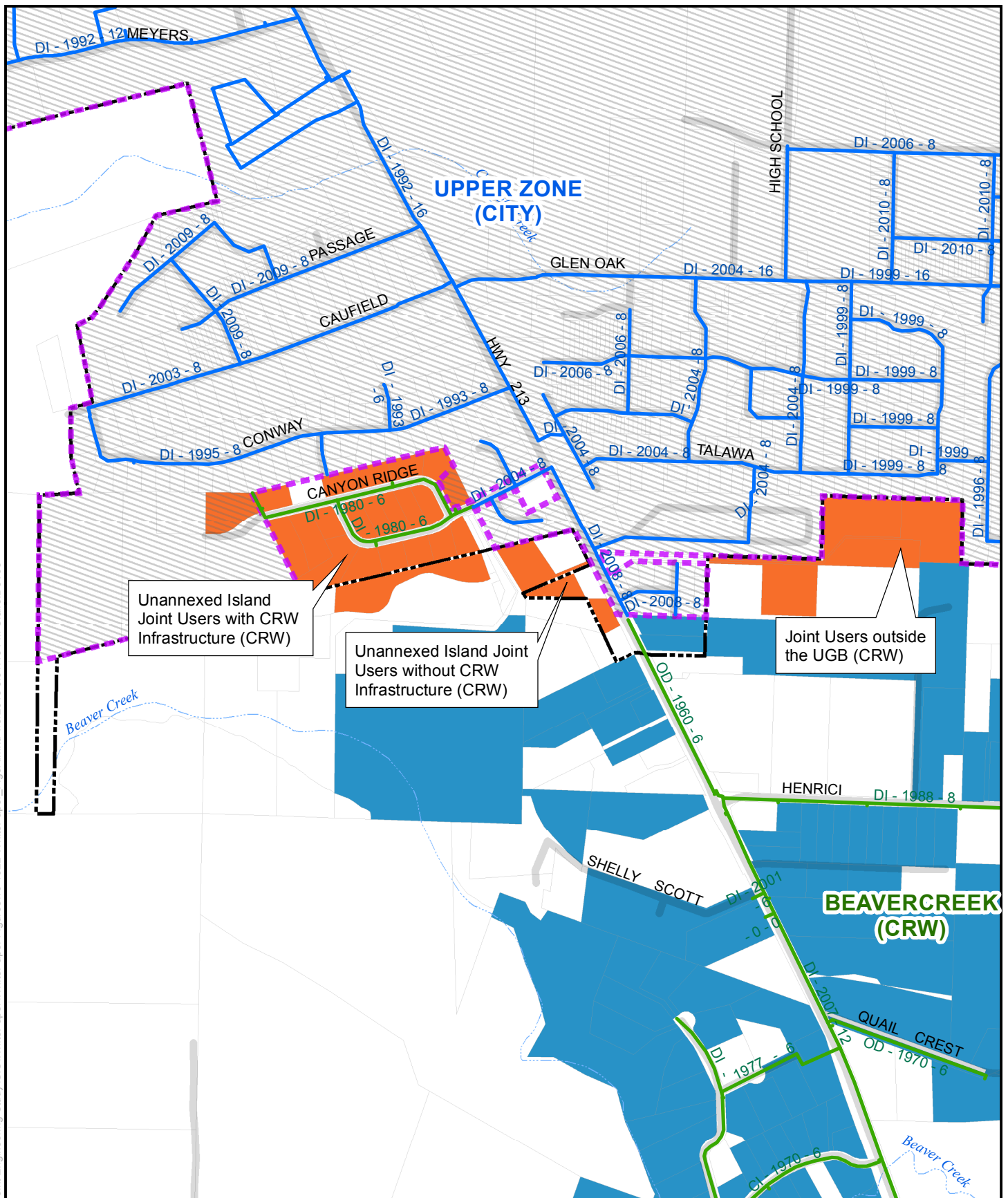
Canyon Ridge

The Canyon Ridge area is another example of a CRW service area completely reliant on City supply, although without an intervening master meter. Existing service is provided by CRW through the Joint User agreement via CRW distribution mains in Canyon Ridge Drive and City mains in Molalla Avenue. Canyon Ridge customers are primarily single family homes within the UGB and outside of city limits while others CRW customers are large lots outside the UGB. **Figure 5** shows the current service configuration in Canyon Ridge.

City development west of Canyon Ridge is expected to require looping to the CRW main in Canyon Ridge Drive. To maintain service area continuity and minimize the need for redundant infrastructure, the City should annex and withdraw all CRW customers and infrastructure within the UGB. Taxlots outside the UGB will necessarily remain CRW Joint Use customers served from City mains. East of Molalla Ave these areas are Urban Reserve while west of Molalla customers are Rural Reserve and as such cannot be considered for UGB expansion for several decades, if ever.

Resolution: City to withdraw customers and infrastructure within the UGB; Joint Users remain outside the UGB; City to pursue current extraterritorial service policy change.

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- UGB
- City Limits
- Joint
- CRW
- City
- SFWB

Current Service

- Beaver Creek
- Joint User

N
1 inch = 700 feet

Oregon City - Clackamas River Water
Joint Engineering Study

**Figure 5 - Existing
Canyon Ridge**



Leland McCord

The Leland McCord area is similar to the South End area in that supply to CRW customers is entirely dependent on water wheeled through the City system. The City supplies water to a master meter at the intersection of Leland and Meyers Road. CRW and City mains run parallel in Leland Road to just south of Kalal Court, beyond which CRW mains continue in Leland past the UGB. Additional City development and infrastructure has continued along the south-east edge of the UGB, further isolating CRW service area. **Figure 6A** shows the existing infrastructure and service boundaries in the Leland McCord area.

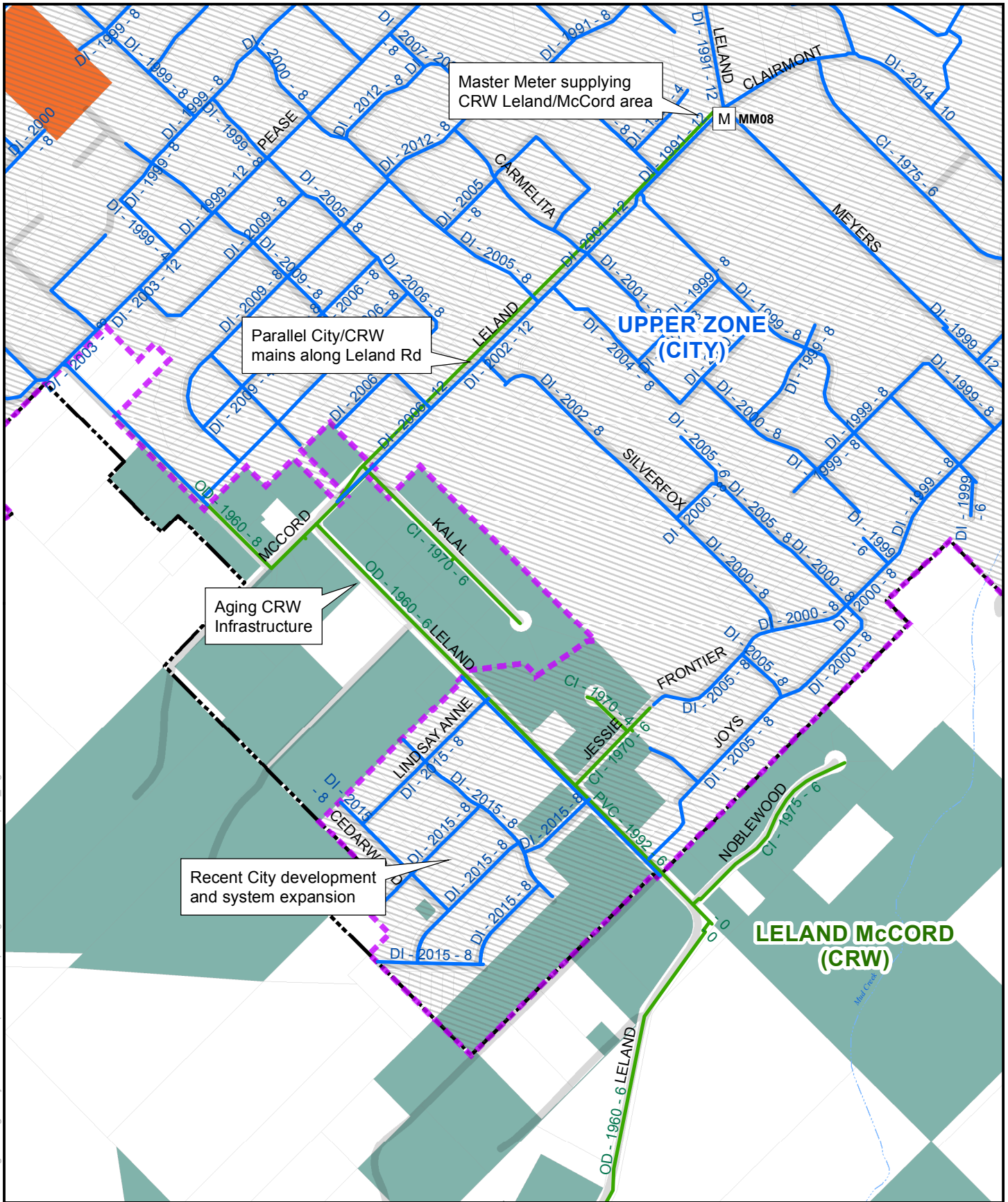
Following the logic used for South End and Central Point, the City should serve customers in the Leland McCord area within the UGB. A master meter should be installed at the UGB to serve remaining CRW customers outside the UGB from the existing CRW distribution main. **Figure 6B** shows the long-term resulting infrastructure and customer configuration after transfers.

Recent City development south of Jessie Ave to the UGB has extended City infrastructure to the point where looping through the CRW service areas is required and will necessitate either redundant infrastructure or infrastructure withdrawal. However, most of the CRW infrastructure is failing 1960's steel pipe which the City will not withdraw from the district. Both parties prefer to minimize the construction of unnecessary parallel infrastructure. CRW, however, is reluctant to replace the mains without guaranteed return on investment while the City is unwilling to accept the immediate risk by withdrawing the failing infrastructure. Development of a remuneration policy for infrastructure withdrawal would minimize investment in parallel infrastructure, and incentivize system renewal in dual interest areas to the benefit of both City and CRW customers.

Resolution: Continued collaboration; eventual transition to City service within UGB with development; Master meter for customers outside the UGB; City to pursue current extraterritorial service policy change; collaboration for replacement of Leland Road and McCord Road CRW mains applying the remuneration methodology.

Country Village

Country Village is unique in that it is an area served by CRW with limited drivers for development already within the UGB. The area is served by CRW from a single critical transmission main that is not eligible for City withdrawal. This CRW transmission main is the primary supply main from the CRW Holly Lane Pump Station to the CRW owned Henrici Reservoirs, feeding SFWB wholesale water to CRW's Henrici and Beaver Creek pressure zones. Because the main is vital to the CRW transmission network, a redundant line would be necessary for the City to annex, withdraw, and provide service. **Figure 7** illustrates the focus area, key infrastructure, and service areas.



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UGB

City Limits

Joint

CRW

City

SFWB

Current Service

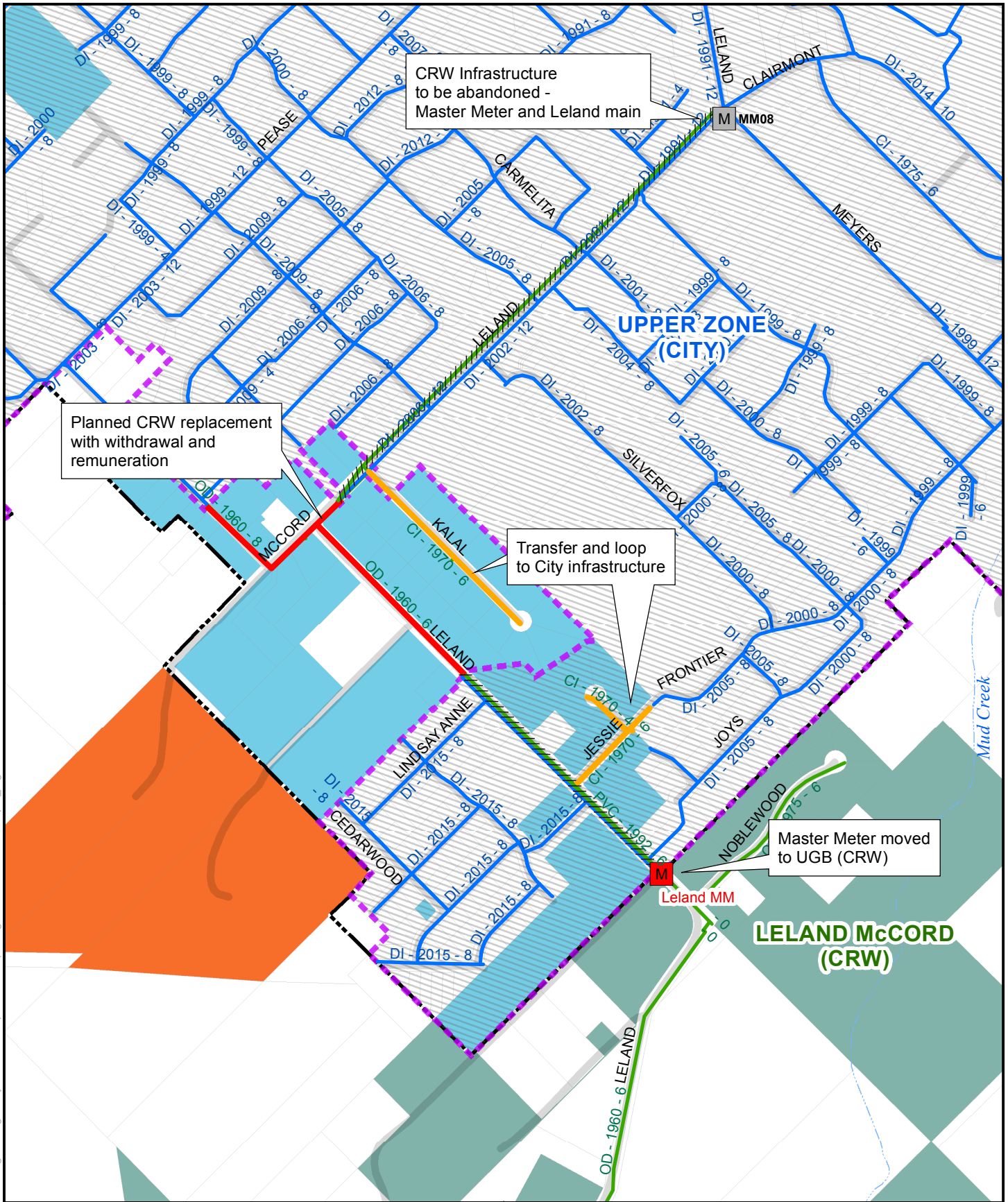
Master Meter

Joint User

1 inch = 600 feet

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Joint Engineering Study

Figure 6A - Existing
Leland McCord



- Joint - CRW - City - SFWB - Transfer - New Main - Abandon	Future Service - Master Metered - Joint User - City - UGB - City Limits
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1 inch = 600 feet

January 2018

Oregon City - Clackamas River Water Joint Engineering Study

Figure 6B - Future Leland McCord





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Additionally, the area is not adjacent to other City service and there is minimal development expected between Country Village Estates and City service areas. Although customers are within the UGB, CRW should continue to serve existing and future customers in the area, until such a time that the City has either built out infrastructure to serve the area or redevelopment requires annexation and extension of other City services to the area.

Resolution: No change from present service arrangement.

Beavercreek and Surrounding Areas

Service to the Beavercreek area affects recommendations for both City and CRW service areas including the City's Beavercreek Concept Area, the City's Upper Zone, the City's Fairway Downs Zone, CRW's Beavercreek Zone, CRW's Henrici Zone, the Henrici Ridge Area, and the City's Park Place Concept Area. Because the Beavercreek area is so highly linked to both systems, an opportunity to minimize redundant existing and future facilities, and potentially provide additional flexibility and resiliency to both systems, is present if both providers agree to the development of jointly owned facilities.

Existing Service

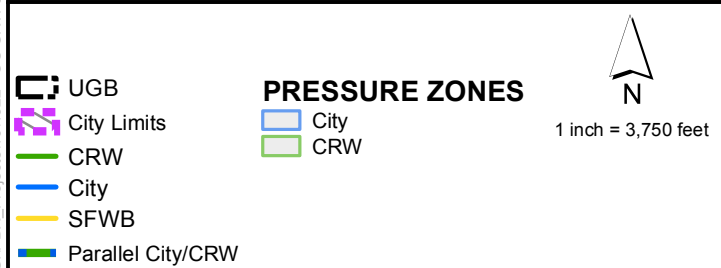
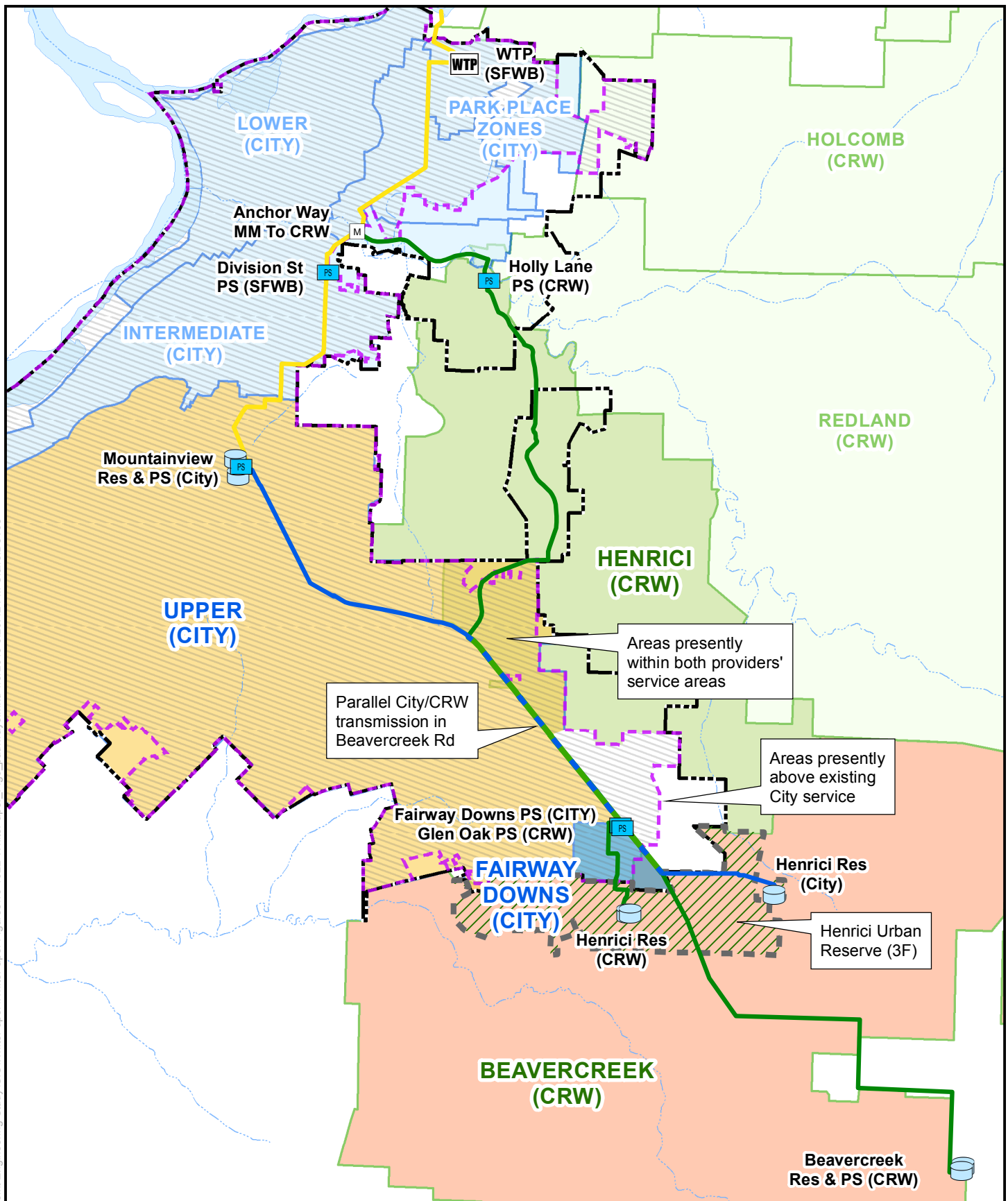
Currently, CRW and the City have essentially duplicate pressure zones at similar hydraulic grades serving partially redundant areas: CRW's Henrici zone (590 ft reservoir overflow) and the City's Upper zone (592 ft). The City's Upper Zone serves most of the southern part of the City within the UGB while CRW's Henrici Zone serves areas outside the UGB and provides some overlapping service along the eastern limits of the UGB.

Because of these essentially redundant zones, there are two separate pathways for water to reach an HGL of 590 ft. Within the City's system, water can be pumped from the SFWB WTP via the SFWB Division Street Pump Station to the City's Intermediate Zone (490 ft), then via the City's Mountainview Pump Station to the City's Upper Zone and City Henrici Reservoir (592 ft). Within CRW's system, water can be delivered from the SFWB WTP through the Anchor Way master meter, then pumped via the CRW Holly Lane Pump Station to the CRW Henrici Zone and CRW Henrici Reservoirs (590 ft). Two interties exist between the two systems at the 590 ft level, and could allow for supply in either direction.

Both systems also provide service to elevations requiring hydraulic grades greater than 590 ft. The City serves the closed Fairway Downs Pressure Zone (652 ft) via the Fairway Downs Pump Station. Supply to this zone is provided by the City's Upper Zone. CRW serves the Beavercreek Pressure Zone (744 ft) via the Glen Oak Pump Station. Supply to this zone is provided by CRW's Henrici Zone.

Figure 8 illustrates the configuration of existing infrastructure serving the Beavercreek area and associated service areas.

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Expected Development

Development is expected in the Beavercreek area, although there is uncertainty over timing and extent. Within the UGB and north of Beavercreek Road, the City's Beavercreek Concept Plan calls for a mixed-use neighborhood. This development is expected to be served primarily by the City's Upper zone, and elevations above 480-ft (approximately south of Loder Road) will require a hydraulic grade similar to the City's existing Fairway Downs zone. However, the City's existing Fairway Downs Pump Station does not have capacity for this expansion and additional investment will be required to serve this area.

Continued development is expected in the CRW service areas outside the UGB, with the added confusion of possible service area withdrawal within the development timeframe. This is especially key for the Henrici Ridge area, which is currently designated as Urban Reserve and will be among the areas next considered for UGB expansion. When that occurs, City service to the area (to be consistent with service area goals) would require an even higher hydraulic grade than the City's Fairway Downs zone.

To meet the developing needs of the Beavercreek area, additional storage and transmission facilities will be required for both the City and CRW. Both providers have independently developed alternatives for service to the area, and through extensive discussions, we have developed a shared infrastructure alternative that may be more cost effective and in-line with the providers' goals set forth earlier in this report.

Demand and Storage Characterization

Existing and buildout demands and storage capacities for applicable CRW and City service areas were calculated and are presented in **Table 2**. For this analysis, storage needs for the existing pressure zones serving elevations in the Beavercreek area and the pressure zones supplying these zones were evaluated. Service area transfers likely to occur were included in buildout figures. Based on these estimates, the City will need to build additional storage at the City's Upper zone elevation and CRW will require additional storage at the CRW Beavercreek zone level. A summary of key assumptions for this analysis follows:

- Since the existing City Fairway Downs zone does not have existing storage, the *Existing Average Day Demand* (ADD) of this zone is included in the City Upper zone demands for the purposes of calculating existing storage needs. This also applies to demands for the CRW areas served from master meters at South End and Leland.
- *Build-out Average Day Demand* is based on recent planning documents and future service area boundaries described in this report. A comprehensive analysis of City and CRW pressure zone boundaries and a refined estimate of build-out development needs has not been completed. This analysis is intended to provide an order of magnitude estimate of storage volume needs for the purpose of evaluating alternatives.

- *Total Available Storage* is based on the volume of storage currently serving each pressure zone. For the City's Upper Zone, the 2010 Water System Master Plan considers the full volume of the City's Mountain View Reservoir No. 1, which provides suction supply to the City's Mountain View Pump Station serving the Upper zone, to be available storage for the Upper zone. This assumption should be verified before final decisions regarding City Upper zone storage needs are made, as it could result in a change to the long-term storage need in the Upper zone.
- *Existing Storage Need* and *Build-out Storage Need* are the sum of the three components of water system storage – equalizing, fire suppression and emergency – as defined in each water provider's Water System Master Plan. These volumes are calculated based on the zone's existing and build-out demand projection.
- *Existing Available Capacity* and *Build-out Available Capacity* are calculated as the difference between the *Total Available Storage* and *Existing (or Build-out) Storage Need* for the zone. A negative value represents a capacity deficit.

Table 2
Beavercreek Area Demands and Storage Capacity

	Existing Average Day Demand (MGD)	Build-out Average Day Demand (MGD)	Total Available Storage (MG)	Existing Storage Need (MG)	Existing Storage Surplus (MG)	Build-out Storage Need (MG)	Buildout Storage Surplus (MG)
City Upper	2.9	5.5	14.5	9.1	5.4	16.5	-2.0
City Fairway Downs	--	0.6	--	--	--	1.8	-1.8
CRW Henrici	0.2	0.2	1.5	0.6	0.9	0.6	0.9
CRW Beavercreek	0.6	1.7	2.0	1.8	0.2	4.7	-2.7

Notes:

1. MG = Million Gallons; MGD = Million Gallons per Day

The individual and shared infrastructure alternatives will need to address these storage requirements to be considered viable. **Table 3** presents a summary of each alternative and planning level cost estimates for service to the Beavercreek Area. More detailed descriptions of each alternative are given in the following sections.

Table 3
Supply Alternatives to the Beavercreek Area

City Independent Infrastructure Alternative				CRW Independent Infrastructure Alternative			Shared Infrastructure Alternative			Preliminary Buildout Cost Sharing			
Item		Size	Total Cost ¹	Item		Size	Total Cost ²	Item		Size	Total Cost ³	City Cost	CRW Cost
Pump Stations	Fairway Downs Improvements		100,000	Beaver Lake	3MGD	1,700,000	New Station at the City's Henrici Site	3MGD	1,700,000	500,000	1,200,000		
	Beavercreek	2 MG	4,000,000	Beavercreek Elevated	3.5 MG	7,000,000	Beavercreek Elevated	2x2.75 MG	11,000,000	4,000,000	7,000,000		
Transmission	Fairway Downs Pump Station to New Reservoir	16-inch 10,750 lf	3,400,000	Grasle Road	12-inch 13,480 lf	3,200,000	New Pump Station to Beavercreek Reservoirs	12-inch 3,200 lf	800,000	200,000	500,000		
	Total \$ 7,500,000			Total \$ 11,900,000			Total \$ 13,500,000			\$ 4,700,000	\$ 8,700,000		
									Cost decrease:		37%	27%	

Notes:

1. City costs updated from 2013 City Technical Memo
2. CRW costs updated from 2015 Backbone Project Memo
3. Unit costs for shared infrastructure solution – reservoir 2\$/gal; Pipe 20\$/in-lf
4. Joint costs consistent with CRW pump station cost, study unit costs
5. Cost division based on buildout demand for pump station and transmission piping, storage requirements for elevated reservoirs

The values presented are only planning level estimates and need to be verified prior to development of infrastructure designs. In particular, the capacity of existing City Upper Zone and CRW Henrici zone transmission piping to supply the expanded Beavercreek service area at build-out will need to be confirmed as additional transmission improvements to address existing deficiencies may have a significant impact on cost estimates.

A. City Service to Beavercreek Concept Area and Fairway Downs

In the Oregon City Technical Memorandum dated November 5, 2013, the City presented three options to serve the Beavercreek area within the UGB. Based on our understanding that CRW does not have excess capacity in the existing CRW Beavercreek Reservoirs, two of the three options are infeasible. The remaining option for the City would be to build a new 2 MG Beavercreek Reservoir with a 16-inch diameter transmission main and improve the existing Fairway Downs Pump Station (City Independent Infrastructure Alternative in **Table 3**).

Additional costs and political investment would be incurred during the land acquisition and permitting process. The City does not currently own property for a reservoir at the proper elevation. This is a significant hurdle, and should not be disregarded.

While the City has planned for service within the existing UGB, the planning does not provide adequate pressures for the Henrici Ridge area that is currently designated as Urban Reserve. If this alternative is selected, the City will need to consider capital costs for additional infrastructure to serve this higher elevation area once development occurs.

B. CRW Service to Beaver Creek Pressure Zone and Fairway Downs

CRW's current planning for improved service to their Beaver Creek pressure zone is part of the larger CRW Backbone Project. Overall, the project is designed to improve system connectivity and transmit water from the CRW WTP to CRW service areas south of the Clackamas River. Phase 1 of the Backbone Project is currently in various stages of design and construction and will transmit water to the Redland Reservoirs and associated pressure zone. Phase 2 would construct transmission and pumping improvements to transmit water from the Redlands Reservoirs south to the Henrici and Beaver Creek pressure zones as well as north to the Holcomb pressure zone (CRW Independent Infrastructure Alternative in **Table 3**).

Phase 2 currently plans for service to the entire existing Beaver Creek pressure zone. However, it is probable that some of this area will eventually be City territory and supplied by the City, rendering some of the Phase 2 facilities oversized and unused with remaining useful life. CRW cost estimates in Table 3 were updated similarly to City estimates, and storage capacity in the elevated tank was decreased to reflect the volume required to serve CRW customers to buildout.

C. Shared Infrastructure to Serve the Beaver Creek Area

Typical of dual interests between the City and CRW, planning in the Beaver Creek area has been limited by boundaries that are subject to change. It is expected that the lifespan of infrastructure built now will extend beyond the lifespan of the current UGB. Opportunity to develop shared infrastructure to serve both providers' customers and facilitate transfer of service area without construction of parallel redundant infrastructure is a goal of this study. Already, the City and CRW serve similar elevations from their Henrici Reservoirs. Emergency interties exist between the two systems and additional overlap of service and infrastructure is expected with continued development if coordination does not occur.

To optimize the use of existing infrastructure, one possible alternative would be a new pump station at the City's Henrici Reservoir to replace CRW's Glen Oak Pump Station, new transmission main along Henrici Road to increase the capacity of CRW's existing transmission to CRW's Beaver Creek Reservoirs, and two new elevated tanks at the existing CRW Beaver Creek Reservoir site for additional storage for both providers (Shared Infrastructure Alternative in **Table 3**). A PRV and meter could be installed at the existing City Fairway Downs Pump Station to supply the City's expanded Fairway Downs zone.

Benefits of Shared Infrastructure Development

Shared infrastructure will allow for greater flexibility with construction phasing, minimize the land acquisitions required, provide redundant supply pathways, reinforce emergency supply pathways

and allow for future infrastructure consolidation. Other potential benefits include minimizing operational & maintenance costs and future infrastructure renewal needs.

Given the uncertainty of development timing, shared infrastructure could be built in stages, with existing facilities providing supply until upgrades are required. The shared Beavercreek Reservoirs could be built one at a time, allowing for future demolition of the existing ground level tank to provide a site for the second elevated tank. The CRW Glen Oak Pump Station can continue to be used to supply the Beavercreek zone as is, until the new shared Henrici Pump Station is completed. When the UGB is expanded and/or CRW areas are annexed by the City, shared infrastructure would simplify the transition process because independent infrastructure service to the area would require significant parallel and costly redundant facilities throughout the area. Ultimately, with a shared solution there will be opportunity to decommission aging redundant facilities when the cost to maintain these facilities exceeds their value as backup infrastructure. This is specifically true for the City's existing Fairway Downs Pump Station, CRW's Henrici Reservoir and CRW's Glen Oak Pump Station.

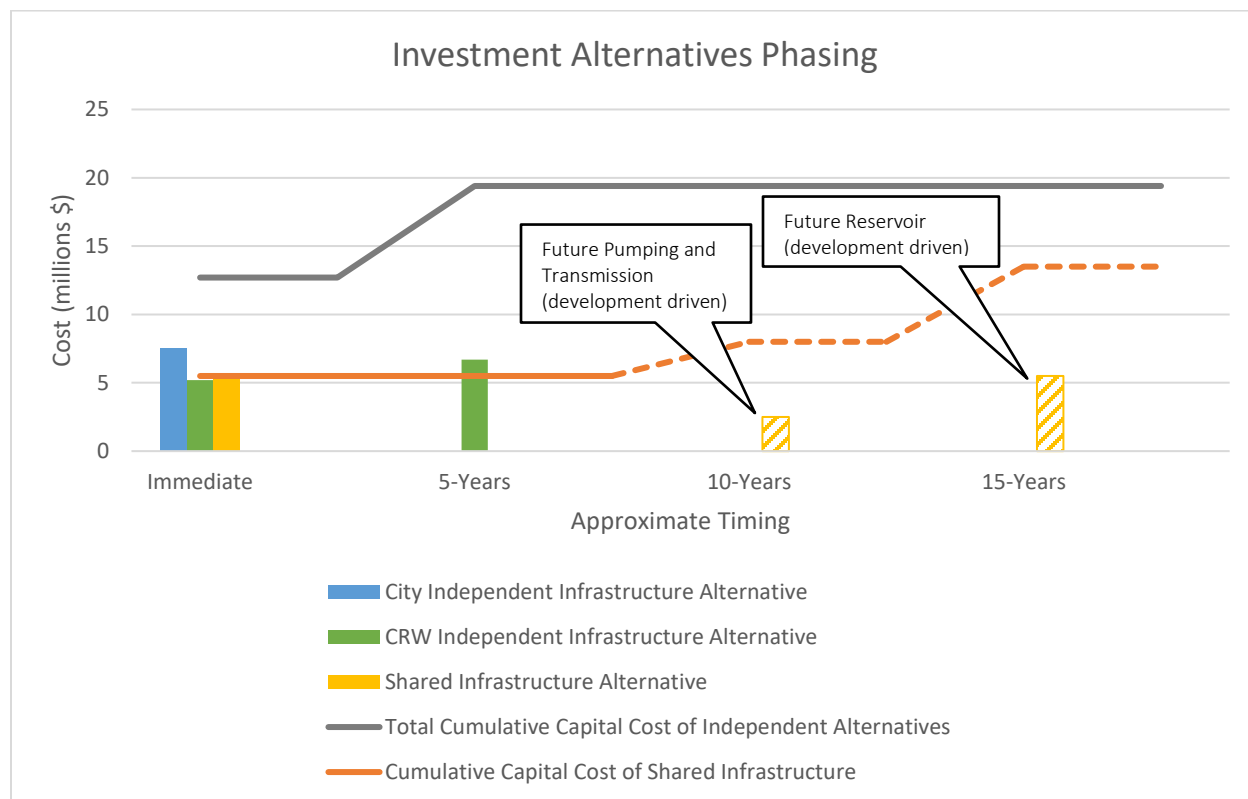
Figure 9 illustrates the capital cost over time of the individual and shared infrastructure alternatives. The shared infrastructure alternative is based on a potential phasing schedule, with the first reservoir built immediately, the transmission and pump station built in 10 years, and the second reservoir built in 15 years. These dates are conceptual to illustrate the potential phasing opportunity and are dependent on development of the City's Beavercreek concept plan area. The individual alternatives must be built within the next 5 years, if not sooner, with limited flexibility for shifts in development timing.

Utilizing existing infrastructure will minimize both monetary and political cost of additional land acquisition for new infrastructure siting. The City's Henrici Reservoir site has capacity for both a new pump station and additional reservoir, if deemed necessary in the future. CRW's Beavercreek site has capacity for at least one additional reservoir, with a second reservoir potentially able to be built at the site of the existing ground level tank.

The shared infrastructure alternative will also provide redundant pathways for service and emergency supply to the Beavercreek and Fairway Downs zones. Given recent emphasis on seismic resiliency this redundancy aligns with resiliency goals. The primary supply via the SFWB Division Street Pump Station and the City's Mountainview Pump Station have adequate supply for normal service. The secondary supply via the master meter at Redland and Anchor Way, the CRW Holly Lane Pump Station, and the emergency intertie between the City and CRW at Beavercreek provides redundancy not necessarily guaranteed in independent infrastructure alternatives.

Another benefit of a shared infrastructure alternative is the potential for continued consolidation of redundant and aging infrastructure. As the system is served today, the City and CRW have redundant pressure zones at the 590 HGL. Four tanks, (two CRW and two City-owned), serve this zone, although none of the tanks currently meet updated seismic standards and some are approaching the end of their useful lives. A shared infrastructure solution lays the groundwork for continued development of efficient infrastructure investment through partnership.

Figure 9
Infrastructure Investment Phasing Alternatives



Service Transitions in Affected Areas

Within each pressure zone, there are additional specific areas that will be affected more than others by the solutions to serve the Beavercreek Area.

Thayer and Loder Roads:

At present, CRW supplies customers along Thayer and Loder Roads via CRW distribution mains branching from the CRW transmission line along Beavercreek Road. Both mains begin within city limits and extend outside the UGB. In both cases, areas within the UGB are part of the City's Beavercreek Concept Area and should be annexed and withdrawn by the City. The City will then need to connect the existing CRW mains in each road to the City transmission main in Beavercreek Road. This will transition supply from the CRW Henrici zone to the City's Upper zone. At the UGB, master meters or Joint User status may be negotiated to supply remaining CRW customers outside the UGB.

Henrici Ridge:

Henrici Ridge is the area just south of the UGB along Henrici Road that cannot be served by the City's existing grades. As an Urban Reserve area, it is expected to eventually be annexed into the UGB and City service. If the shared infrastructure alternative is not selected, future service by the City to this area will require significant investment in parallel infrastructure.

Park Place Concept Area:

The Park Place area is located entirely within the UGB and outside of city limits. The area, currently served by CRW, is supplied from SFWB via the Redland and Anchor Way Master Meter and pumped up to higher pressures by the Holly Lane or the Redland Pump Stations (see **Figure 10A**). Until urban development occurs, the area should be served as is.

The 2008 Park Place Concept Plan calls for a City distribution network starting south of Ogden Middle School and connecting north to existing City distribution mains along Holcomb Boulevard. A reservoir at Holly Lane and Morton Road is proposed to provide additional storage.

Given the limited number of existing services, it is recommended that the providers plan for future City service to the entire Park Place area. CRW will need to maintain transmission from the existing Anchor Way MM through Park Place to reach CRW's Holly Lane and Redland Road Pump Stations. Some existing CRW transmission infrastructure through this area is aging and will need to be replaced. It is suggested both providers fund a shared transmission main from the master meter to Holly Lane.

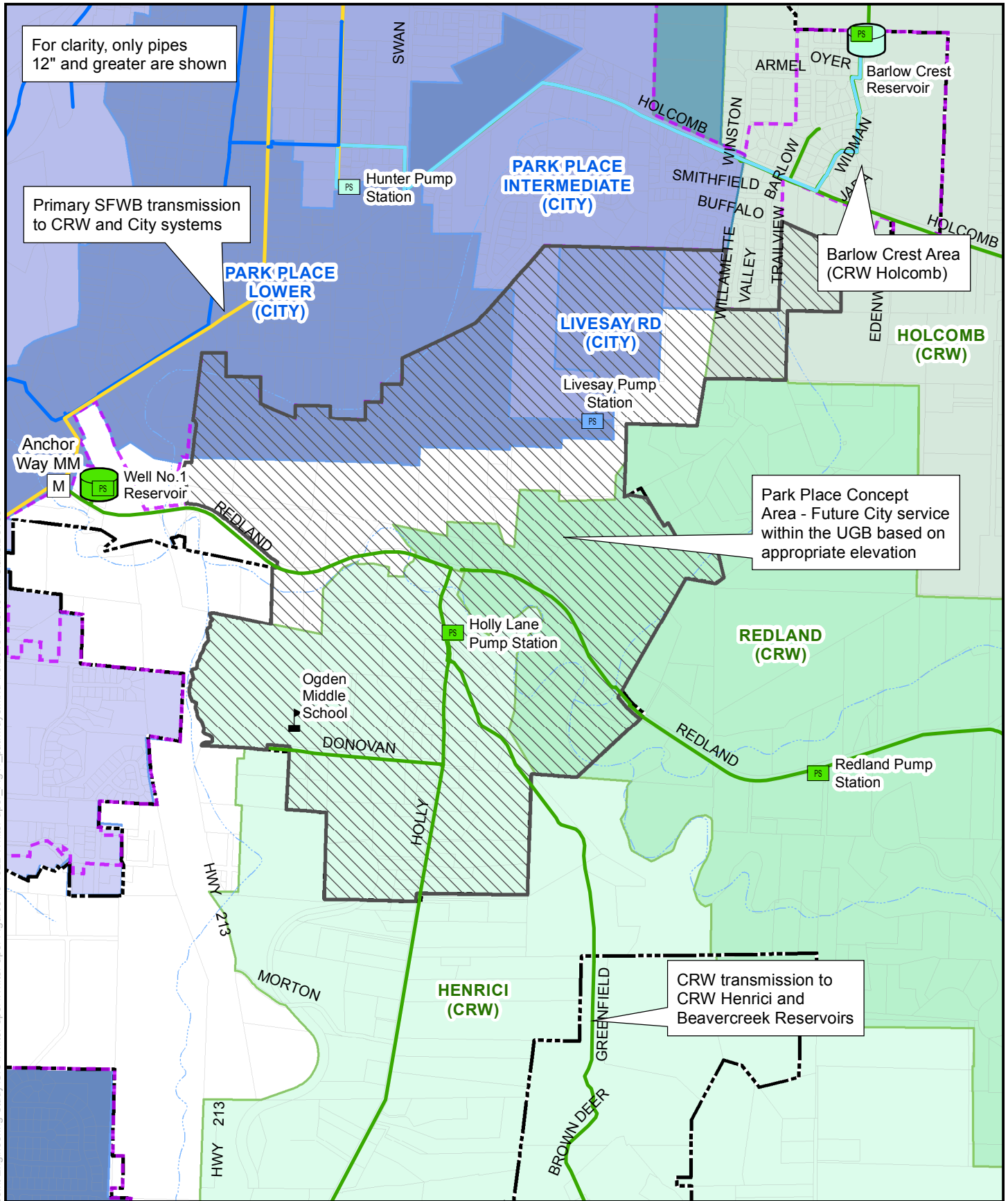
Existing CRW infrastructure is critical for CRW supply from the SFWB supply at Master Meter 02 to the CRW system. As such, the only water mains that may be eligible for withdrawal and remuneration are a portion of the CRW 12-inch diameter steel main in Holly Lane, extending south from CRW's Holly Lane Pump Station to the UGB, and a CRW 12-inch diameter ductile iron main in Donovan Road that serves the middle school. The possible shared improvement along Redland Ave would require relocating the Anchor Way Master Meter to Holly Lane (which would become a City to CRW master meter) and would replace aging infrastructure and serve the common needs of both utilities – water transmission backbone piping in Redland Road between Anchor Way and the UGB.

Figure 10B illustrates the proposed future service area and infrastructure withdrawals.

In order to accommodate the phased development of the Park Place area, the City should develop a detailed Park Place water service master plan to include:

- Confirmed siting, configuration, and capacity of future storage identified as the proposed Holly Lane Reservoir
- Confirmed water main sizing and backbone transmission facilities to serve the Lower Park Place pressure zone, including SFWB transmission main connections and pressure reduced supply from the Intermediate Park Place pressure zone

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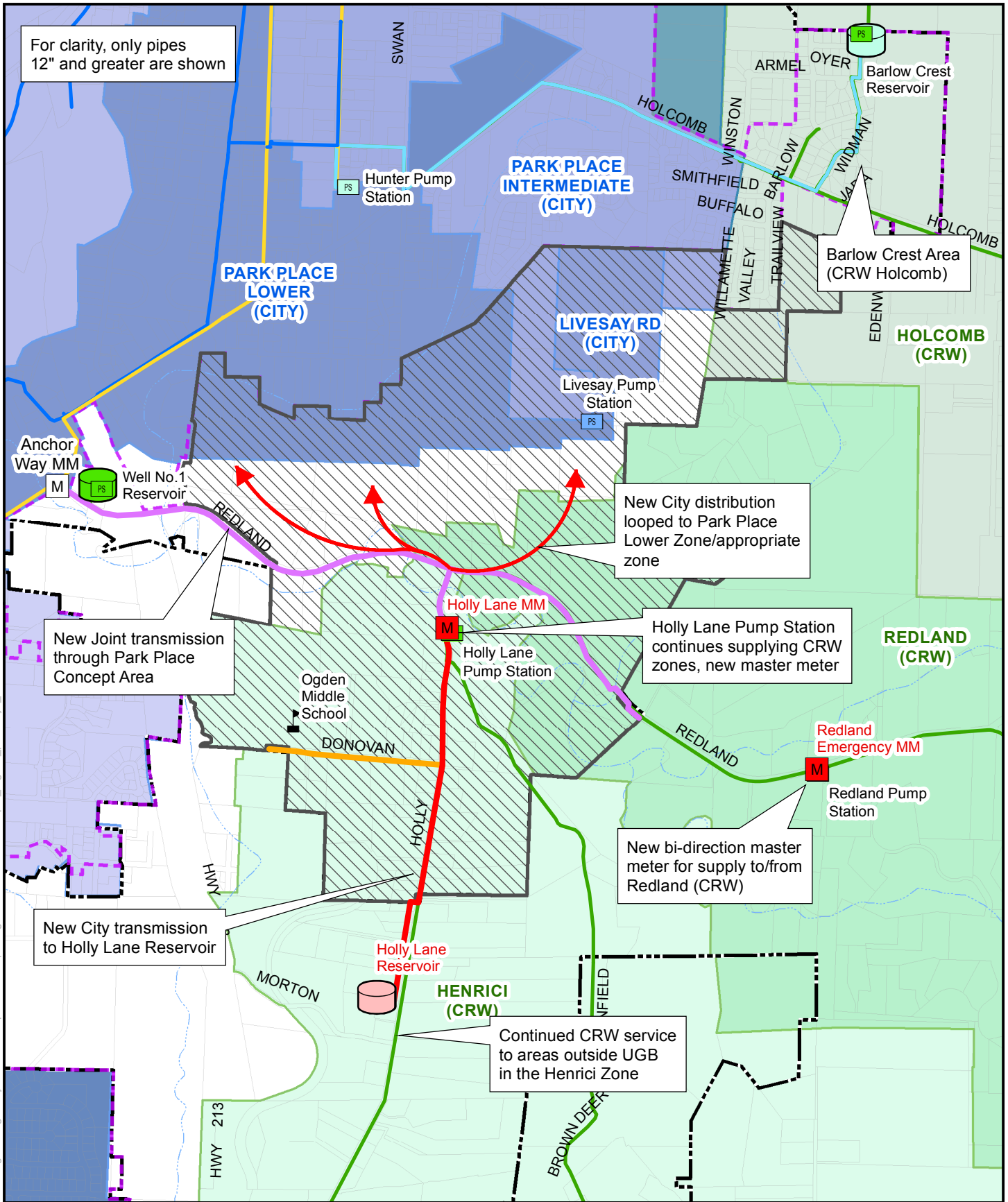
UGB	PRESSURE ZONES
City Limits	City Zones
Joint	CRW Zones
CRW	Park Place Concept Area
City	
SFWB	

1 inch = 1,250 feet

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**FIGURE 10A - EXISTING
PARK PLACE**

For clarity, only pipes 12" and greater are shown



New Joint transmission through Park Place Concept Area

New City distribution looped to Park Place Lower Zone/appropriate zone

Holly Lane Pump Station continues supplying CRW zones, new master meter

New bi-direction master meter for supply to/from Redland (CRW)

New City transmission to Holly Lane Reservoir

Continued CRW service to areas outside UGB in the Henrici Zone

Legend

- Joint
- CRW
- City
- SFWB
- Transfer
- New City
- New Joint

PRESSURE ZONES

- City Zones
- CRW Zones
- Park Place Concept Area
- UGB
- City Limits

N

1 inch = 1,250 feet

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FIGURE 10B - FUTURE PARK PLACE

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- Coordination with CRW to determine if new shared transmission in Redland Road is feasible and to determine if potential withdrawal of mains between Holly Lane and the UGB is feasible and desirable.

These studies will inform how infrastructure develops in the near-term and will support CRW development of additional infrastructure to provide limited service until annexation and withdrawal occurs with the full development of the City water system facilities to provide service.

Resolution: Continued discussions regarding shared storage and transmission infrastructure in the Beavercreek and Park Place areas; Partial developer driven transfers and potential master meter relocation to the UGB

HOPP/Barlow Crest

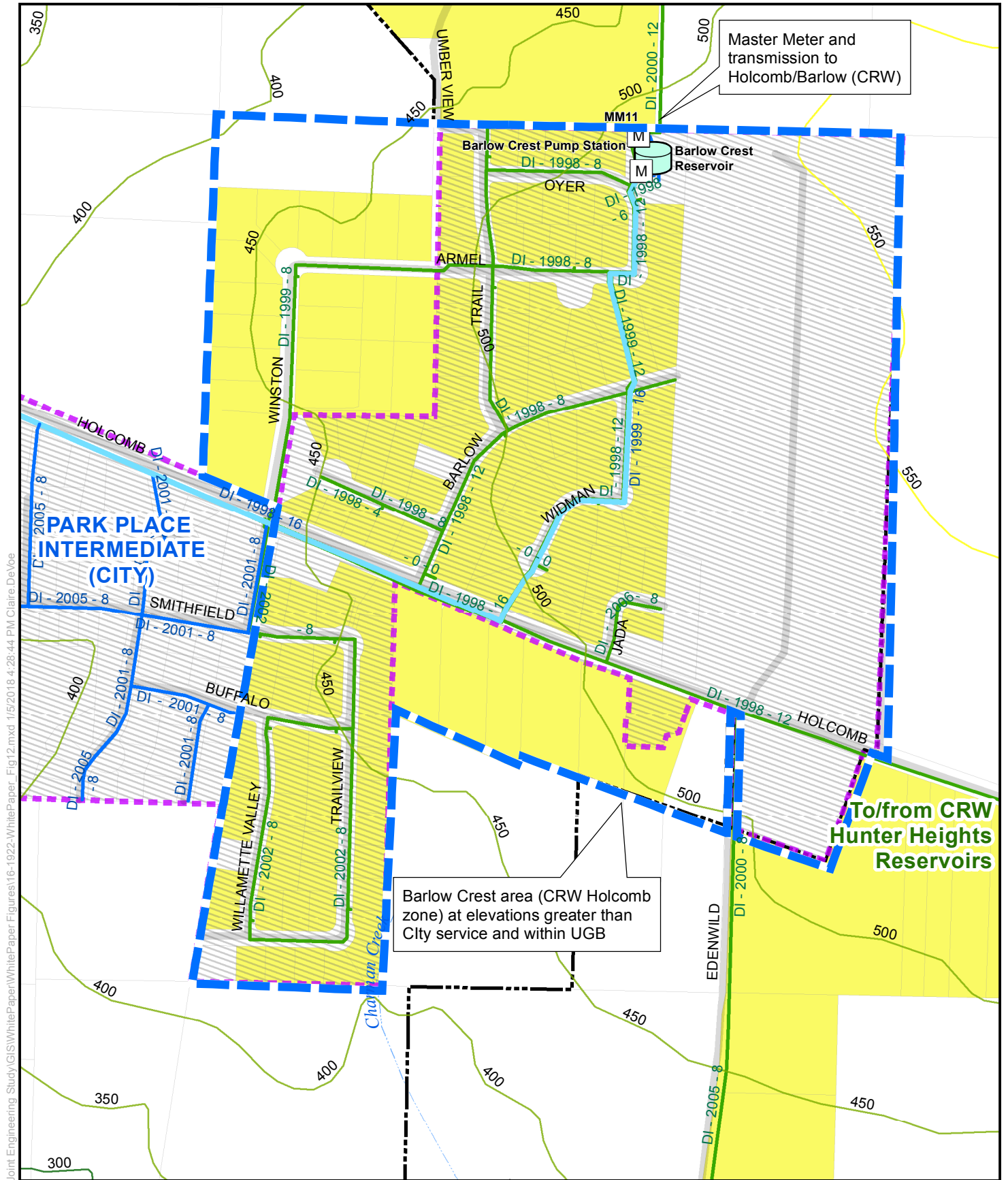
The Holcomb-Outlook-Park Place focus area includes the CRW Holcomb-Barlow master metered zone, the CRW Holcomb pressure zone, and City service areas near Holcomb Road. Existing service to the HOPP area was set up under the 1998 HOPP Agreement which terminates in the year 2028, and includes jointly owned facilities and transmission mains. Presently, the SFWB WTP is the sole water supplier to the area. **Figure 11** illustrates the focus area, critical facilities, and customer designations.

North of the City, the CRW Holcomb-Barlow zone is served via multiple master meters from the City's Park Place Intermediate zone. This area is not expected to develop in the near future and should continue to be served as is via master metering.

Similarly, within the existing City service area, City customers should continue to be served without change.

The main point of dual interest in the HOPP area is the CRW/City interface at Barlow Crest. The CRW Holcomb pressure zone (797-ft HGL) is currently supplied with SFWB sourced water wheeled through jointly funded infrastructure from the SFWB WTP to the jointly owned Barlow Crest Reservoir (549-ft overflow). The CRW Barlow Crest Pump Station pumps from the jointly owned Barlow Crest Reservoir to the CRW Hunter Heights Reservoirs (797-ft overflow) which provide gravity supply to the CRW Holcomb pressure zone.

Much of the CRW Holcomb zone located within the UGB has been annexed into the city limits. However, the City does not have the existing infrastructure to provide service to this area as the Barlow Crest Pump Station is an essential facility for CRW's supply to the Hunter Heights Reservoir which serves CRW's Holcomb pressure zone both inside and outside the UGB.



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UGB City Limits Joint CRW City SFWB	Current Service Holcomb Barlow Crest Area	 N 1 inch = 400 feet	Oregon City - Clackamas River Water Joint Engineering Study Figure 11 HOPP/Barlow Crest
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Additionally, the CRW Backbone Project Phase 2 is proposed to include a new pump station and transmission facilities to boost water from the CRW Redland pressure zone to the Holcomb pressure zone/Hunter Heights Reservoir. This will provide a second supply route and water source to the Barlow Crest pressure zone. These improvements will allow CRW to supply the Holcomb zone from CRW's WTP.

Given the current understanding of the CRW Backbone Project, existing infrastructure, and the goals outlined in this white paper, there are two alternatives to consider:

A) Continued service as is, recognizing the City will continue to annex the land within the UGB but will not withdraw the territory from CRW. CRW would remain the service provider for the entire Holcomb pressure zone area inside and outside the UGB serving customers above an elevation of approximately 450 feet. The Phase 2 Backbone Project improvements would provide a second feed to the Holcomb pressure zone, allowing for a second source, the CRW WTP, to supply this area. The primary advantage of this option is that infrastructure and master meters are already in place to continue service as is for areas above an elevation of 450 feet. The primary disadvantage is that this alternative is not consistent with the goal of City service within the UGB, where feasible.

B) The City continues to annex and withdraw territory within the UGB and the associated distribution piping. An additional master meter would be installed at the UGB to deduct City supplied Holcomb pressure zone demand from the total supply from the CRW's Barlow Crest Pump Station. If improvements identified in the Phase 2 Backbone Project area constructed, future supply could be provided by CRW from either the CRW Barlow Crest Pump Station or the future CRW Bradley Road Pump Station with master metering to totalize the demand of the City area in the joint Holcomb pressure zone inside the UGB. This option would most effectively meet the goal of aligning service area boundaries with associated geo-political boundaries. However, it creates a complicated master metering and water wheeling arrangement.

Alternative A is recommended as it does not require the construction of additional master metering infrastructure, and minimizes disruption to existing rate payers. It is also compatible with the CRW Backbone Project as all water supply impacts are to CRW customers only.

In order to facilitate City management of sewer service, including the ability to take action in the event of non-payment by a customer, an agreement between the two agencies should be developed similar to the existing agreement between CRW and the City of Milwaukie.

Resolution: No change from the existing condition; development of a billing and customer shut off agreement

Typical Dual interests/Solutions

This section outlines proposed policy-level criteria for service area and infrastructure transfer.

Annexation and Withdrawal

Areas under consideration for withdrawal should meet the following criteria:

- Located within the UGB. Areas located within city limits should be given highest priority for withdrawal from the district, if possible.
- Adjacent to existing city limits. Priority should be given to CRW areas surrounded by City service area.
- Priority should be given to areas currently receiving additional City services such as sewer, etc.

The City and CRW will need to collaborate for the development of a plan and typical procedure for implementing service transfers once areas have been identified for withdrawal.

Infrastructure Remuneration

A remuneration policy should be developed to encourage proper maintenance and replacement of aging infrastructure and to encourage sizing to meet long-term needs regardless of the future water service provider ownership. The economic analysis was completed as part of this project and addresses the specific financial elements and further detail the parameters of the policy.

Master Meters and Joint Users

Master meters are required when water is supplied through wheeling and meets one or more of the following criteria:

- The service area crosses the UGB at which point a meter would be placed at the UGB
- The total length of pipe past the meter is greater than 1,000 lf
- The service area is not predicted to be withdrawn by the other provider in the near future.

Master meters are preferable to joint user customers when infrastructure reliability is questionable, proven through leak history and/or obsolete pipe material.

Joint User Customers should only be allowed where:

- The provider whose service boundary they reside within cannot supply the customer with water from their infrastructure
- AND the number of customers does not warrant the cost of a master meter

In these limited cases, Joint User is the only way to reasonably serve these customers. As an example, customers outside the UGB and served via private service lines off City mains (located within the UGB) must be Joint User because there is no justification for the City to extend service beyond the UGB.

In addition, a formal supply agreement between CRW and SFWB should be developed to address ongoing master metered supply to CRW.

Jointly Developed Infrastructure

Jointly developed infrastructure should continue to be encouraged where applicable to minimize redundant facilities and encourage future collaboration.

Summary of Customer and Infrastructure Withdrawal Potential

Table 4 illustrates the maximum number of the existing customers and length of water main infrastructure in each focus area, potentially eligible for withdrawal by the City from CRW if the recommendations and agreed strategies presented in the study area are executed. These areas are illustrated graphically in **Figure 12**. **Table 5** summarizes the total number of customers and the share of CRW's south system demand that could be withdrawn through this process.

Additional Action Items

The following action items will require additional study and are recommended to conclude the dual interest resolution process. It is suggested that all action items will be completed within a year of this study, although certain items are dependent on the completion of others.

- Adopt a Remuneration Policy as outlines in the Remuneration Methodology TM (FCS Group, 2018).
- Adopt an updated, stand-alone Joint User Agreement
- Perform and adopt the findings of a Wheeling Charge Study to determine fair City and CRW rates for Joint User or Master Metered customers based on a defensible methodology such as cost of service
- Develop a water supply agreement for supply from SFWB to CRW
- Develop process for systematic transitions of service with communication to customers

Throughout this process, certain areas have been identified where mapping of service provider transition has not been completed. A common mapping convention and agreed schedule for updates should be coordinated, to include:

- Consistent and agreed upon Joint User properties
- Accurate service area boundaries
- Shared GIS data that avoids duplication by mapping of the other provider's infrastructure

Summary

As urban areas expand, boundary disputes as typified by the dual interests between Oregon City and Clackamas River Water become ever more common. The two water providers have a long history of working together to develop creative solutions to address the unique challenges they face. Formalizing this process in a common framework, rather than a rigid set of specific solutions, ensures common goals lead the process, and not individual opinions or short term changes in priorities. Developing methodologies and strategies that adapt to unique situations is more important for long-term cooperation and dual interest resolution. It is the goal of this study to provide a framework for Oregon City and Clackamas River Water to continue to efficiently provide high quality water to current and future customers for years to come, and minimizes conflict or misunderstanding.

Kattie Riggs

From: Tony Konkol
Sent: Wednesday, January 20, 2021 7:30 PM
To: Kattie Riggs
Cc: Rachel Lyles Smith
Subject: FW: Mesa Fresca I need some help

From: Rachel Lyles Smith <rlsmith@orccity.org>
Sent: Wednesday, January 20, 2021 3:01 PM
To: Rocky Smith, Jr. <rsmith@orccity.org>; Frank O'Donnell <fodonnell@orccity.org>; Denyse McGriff <dmcgriff@orccity.org>
Cc: Tony Konkol <tkonkol@orccity.org>
Subject: Fwd: Mesa Fresca I need some help

FYI....some local business perspective.

Rachel Lyles Smith
Oregon City Commissioner

Sent from my Verizon, Samsung Galaxy smartphone

From: Roy Galvan <mesafrescaoc@gmail.com>
Sent: Wednesday, January 20, 2021 12:31:21 PM
To: Rachel Lyles Smith <rlsmith@orccity.org>
Subject: Mesa Fresca I need some help

Hi,

Nice meet you at the meeting a couple weeks ago! Im having issues with engineering (Aaron Parker) I can barely afford to pay the rent and everyday bills I have two tents outside and I'm getting asked to get a permit for this. This is the type of stuff we are having to deal with its very frustrating.

This email is from Aaron on 1/11

Hi Roy,

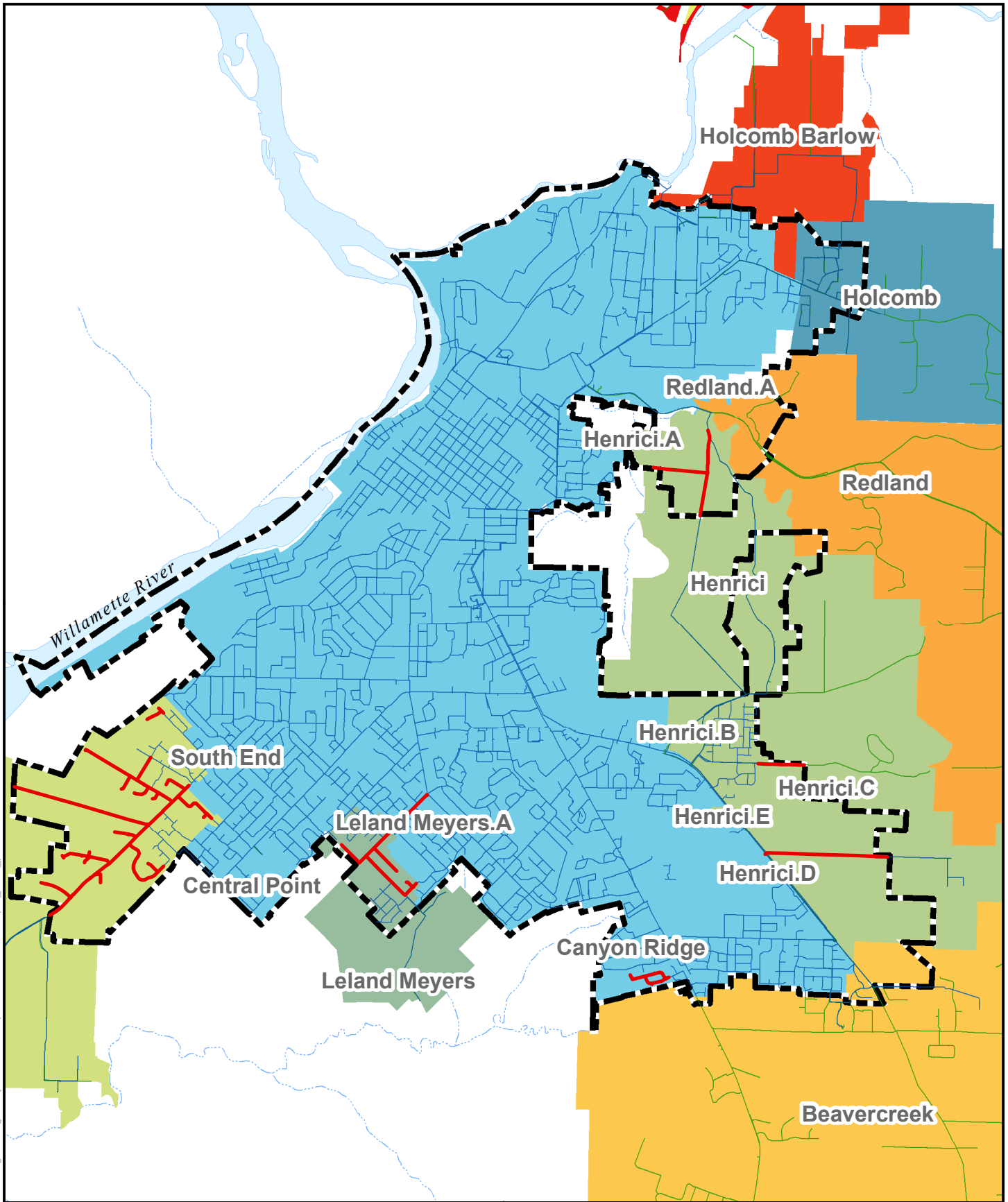
We found that Mesa Fresca is using canopies to cover the permitted sidewalk seating. A permit amendment needs to be applied for. Please provide the following information:

1. Description of the structure materials, sizes, etc. – product links are okay
2. Show that the structures do not block abutting business storefronts or signage
3. Show how the structures will be secured from wind via sandbags or other weighted methods that do not attach the structures to the sidewalk - describe and/or send photos
4. Show that motorists will not have a sight distance obstruction from the structures (that structures are not too close to the intersection)
5. Verify that non-patron pedestrians using the sidewalk or alley are still free to use this public right-of-way and that the 4 foot ADA clear path for pedestrians as specified on your permit is still maintained

Note that Clackamas Fire District will need to review any use of outdoor heating in the canopies. Please let me know if you intend to use outdoor heating.



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- Urban Growth Boundary (UGB)
- City of Oregon City
- Clackamas River Water District
- Water Mains
- Potential Transfers
- River

N
1 inch = 4,000 feet

Oregon City - Clackamas River Water
Joint Engineering Study

**Figure 12 - Potential
Customer & Infrastructure
Transfers**



Table 4
Summary of Dual interest Areas by CRW Pressure Zone

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Holcomb-Barlow		549	Master metered from OC Park Place Intermediate Zone (Barlow Crest Res.)	No change	72	
Holcomb		797	Master metered from Barlow Crest Pump Station	No change	726	
Hunter Heights		910	Pumped up from CRW Holcomb	No change	70	
Redland		697	Master metered from Anchor Way and pumped via Redland PS		1082	
Redland.A				Development triggered transfers within Park Place Concept Area	8	
Henrici		590	Master metered from Anchor Way and pumped via Holly Lane PS		262	
Henrici.A				Development triggered transfers within Park Place Concept Area	46	2600' 12" 1960 OD; 1650' 12" 2004 DI
Henrici.B				Transfers within expanding development north of Thayer Road	14	
Henrici.C				Customer transfers along Thayer Road within UGB	7	1400' 12" 2003 DI
Henrici.D				Customer transfers along Loder Road within UGB	21	3700' 8" 1988 DI
Henrici.E				Additional Henrici Pressure Zone potential transfers	6	
Beavercreek		744	Pumped from CRW Henrici via Glen Oak PS	No change	1389	
Canyon Ridge		592	Joint Users supplied directly from OC Upper Zone		8	

Dual Area	interest	HGL	Description	Potential Customer Transfers	CRW South Customer Count	CRW South Infrastructure Transfer (lf)
Canyon Ridge.A				Customer transfers within UGB	21	2200' 6" 1980 DI
Leland Meyers		592	Master metered from OC Upper Zone		33	
Leland Meyers.A				Customer transfers within UGB	59	1650' 6" 1960 OD; 3650' 8" 1960 OD; 250' 4" CI 1970; 1450' 6" 1970 CI
Central Point		592	Joint Users supplied directly from OC Upper Zone		2	
Central Point.A				Joint User customer transfer within UGB	9	
South End		592	Master metered and Joint Users supplied directly from OC Upper Zone	TBD based on future development potential	334*	3500' 4-6" 1960 AC; 5500' 4-6" 1960 OD; 1000' 8" 1966 DI; 4000' 4-6" 1970's CI; 4050' 6" 1980's DI; 650' 8" 2000 DI; 6050' 12" 2001 DI**

*Total CRW South End customer count within the UGB

**4100 lf of water main constructed as a joint project with a cost sharing agreement

Table 5
Summary of Potential Transfers

	Customer Count	Existing Water Mains (lf)	Existing Reimbursable Water Wains (lf)	2016 Demand (gpd)	Percent of Demand
Total CRW-South	4,170	679,000		1,212,250	100%
Possible Transfers Excluding South End	190	18,500	6,750	48,500	4%
South End Transfers	330	24,750	6,750	83,500	7%
Total Possible Transfers	530	43,250	13,500	131,750	11%
Remaining CRW within UGB	210	14,500		141,750	12%

Table 101.A -Revised

Revised - 2/16/2017

North Storage Capacity Summary (1.5% growth forecast)

152nd Reservoir Storage Reduced from 5mg to 4mg

Site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Otty	2015		1.59	3.02	5,000	0.76	1.20	3.18	5.14	6.54	1.41
	2020		1.69	3.21	5,000	0.80	1.20	3.20	5.20	6.54	1.34
	2025		1.82	3.46	5,000	0.87	1.20	3.64	5.71	6.54	0.84
	2030		1.96	3.73	5,000	0.93	1.20	3.92	6.05	6.54	0.49
	2035		2.11	4.02	5,000	1.01	1.20	4.22	6.43	6.54	0.12
	2054		2.81	5.34	5,000	1.34	1.20	5.62	8.16	6.54	-1.62
Mather	2015		2.25	4.28	5,000	1.07	1.20	4.50	6.77	10	3.23
	2020		2.39	4.54	5,000	1.14	1.20	4.78	7.12	10	2.89
	2025		2.58	4.89	5,000	1.22	1.20	5.16	7.58	10	2.42
	2030		2.78	5.27	5,000	1.32	1.20	5.56	8.08	10	1.92
	2035		2.99	5.68	5,000	1.42	1.20	5.98	8.60	10	1.40
	2054		3.98	7.56	5,000	1.89	1.20	7.96	11.05	10	-1.05
152nd Windswept HWY 224/Carver	2016		0.13	0.25	5,000	0.06	0.00	0.26	0.32	4	3.68
	2019		0.15	0.29	5,000	0.07	0.00	0.3	0.37	4	3.63
	2024		0.17	0.32	5,000	0.08	0.00	0.34	0.42	4	3.58
	2029		0.19	0.36	5,000	0.09	0.00	0.38	0.47	4	3.53
	2034		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
	2054		0.21	0.39	5,000	0.10	0.00	0.42	0.52	4	3.48
Mather & 152nd Storage Combined	2015/16								7.09	14	6.91
	2019								7.49	14	6.51
	2024								8.00	14	6.00
	2029								8.55	14	5.45
	2034								9.12	14	4.88
	2054								11.57	14	2.43

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. 152nd Reservoir available storage (CRW) does not include SWA clearwell storage volume

Note 6. Fire storage for the Windswept HWY 224/Carver site (pressure zone) rely on Mather Reservoir for fire storage

Table 101.B

12/20/2016

South Storage Capacity Summary (1.5% growth forecast)

site	Year	EDU's	ADD	MDD	Largest Fire Flow	Reservoir Storage Calculations			Required Storage	Available Storage	Existing Storage (Deficit) or Surplus
						Equalization	Fire storage	Emergency Storage			
Holcomb & Hunter Heights	2014		0.25	0.69	1,500	0.17	0.18	0.50	0.85	1.20	0.35
	2019		0.27	0.74	1,500	0.19	0.18	0.54	0.91	1.20	0.30
	2024		0.29	0.80	1,500	0.20	0.18	0.58	0.96	1.20	0.24
	2029		0.31	0.86	1,500	0.22	0.18	0.62	1.02	1.20	0.19
	2034		0.33	0.93	1,500	0.23	0.18	0.66	1.07	1.20	0.13
	2054		0.45	1.26	1,500	0.32	0.18	0.90	1.40	1.20	(0.20)
Redland (.75MG / new 1.25 MG)	2014		0.41	1.15	1,500	0.28	0.18	0.82	1.28	1.05	(0.23)
	2019		0.44	1.24	1,500	0.31	0.18	0.88	1.37	2.00	0.63
	2024		0.48	1.33	1,500	0.33	0.18	0.96	1.47	2.00	0.53
	2029		0.51	1.44	1,500	0.36	0.18	1.02	1.56	2.00	0.44
	2034		0.55	1.55	1,500	0.39	0.18	1.10	1.67	2.00	0.33
	2054		0.75	2.09	1,500	0.52	0.18	1.50	2.20	2.00	(0.20)
Henrici	2014		0.19	0.53	1,500	0.13	0.18	0.38	0.69	1.55	0.86
	2019		0.20	0.57	1,500	0.14	0.18	0.40	0.72	1.55	0.83
	2024		0.22	0.62	1,500	0.16	0.18	0.44	0.78	1.55	0.78
	2029		0.24	0.67	1,500	0.17	0.18	0.48	0.83	1.55	0.72
	2034		0.26	0.72	1,500	0.18	0.18	0.52	0.88	1.55	0.67
	2054		0.35	0.97	1,500	0.24	0.18	0.70	1.12	1.55	0.43
Beavercreek	2014		0.61	1.72	1,500	0.43	0.18	1.22	1.83	1.20	(0.63)
	2019		0.66	1.86	1,500	0.47	0.18	1.32	1.97	1.20	(0.77)
	2024		0.71	2.00	1,500	0.50	0.18	1.42	2.10	1.20	(0.90)
	2029		0.77	2.16	1,500	0.54	0.18	1.54	2.26	1.20	(1.06)
	2034		0.83	2.32	1,500	0.58	0.18	1.66	2.42	1.20	(1.22)
	2054		1.12	3.14	1,500	0.79	0.18	2.24	3.21	1.20	(2.01)

Note 1. Equalization storage - 25 percent of maximum (peak) day demand (MDD)

Note 2. Fire Storage - Largest fire flow demand for each service level multiplied by the duration of that flow. See Table B105.2 Minimum Required Fire-flow and Flow Duration for Buildings

Note 3. Emergency Storage - volume allocated for providing water during periods when normal supply is interrupted is calculated to be twice the District's Average Day Demand (ADD)

Note 4. Demands based on 1.5% growth forecast

Note 5. Redland storage volumes changed to 2 mg in year 2019 to incorporate Backbone Redland Reservoir 1.25mg and demolition of Reservoir No. 1 (.3mg). Reservoir No.2 (.75mg).



APPENDIX F
MOLLALLA AVENUE STREETScape
CONCURRENT WATERLINE
IMPROVEMENTS TECHNICAL
MEMORANDUM, MURRAYSMITH



Technical Memorandum

Date: February 25, 2019

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Claire DeVoe, EIT
Murraysmith

Re: Molalla Ave Streetscape Concurrent Waterline Improvements

Introduction

The City of Oregon City (City) is currently working on an update of its water distribution system Capital Improvement Program (CIP). Simultaneously, the City is proceeding with design on the Molalla Avenue Streetscape Project which includes improvements along Molalla Avenue from Beaver Creek Road to the intersection with Highway 213. This document is intended to document the purpose and cost of the Molalla Avenue project prior to completion of the updated CIP.

The Molalla Avenue project is intended to minimize existing Upper Zone over-pressurization and balance supply and demand between the Henrici Reservoir and the Boynton Standpipe. Additionally, the project is required to serve future growth within the City. The Molalla Avenue project is a portion of a larger set of capital projects to improve system capacity and operations. Other associated projects include the following:

- Parallel transmission line from the Mountainview Pump Station to Beaver Creek Avenue
- Parallel transmission line from Beaver Creek Ave to Glen Oak Road (along the Streetscape Project to Sebastian Way)
- Improved looping and upsized transmission between Highway 213 and Beaver Creek Road, north of Glen Oak Road
- Upsized transmission between Glen Oak Road and the Henrici Reservoir

The Molalla Avenue project and other capital projects are presented in Figure 1.

Project Background and Summary

The South Fork Water Board (SFWB) supplies the City's Mountainview Reservoirs with treated water via a 30-inch supply main and the Division Street Pump Station. The City's Mountainview Pump Station in turn supplies Henrici Reservoir and the Boynton Standpipe. These tanks set the hydraulic Grade Line (HGL) in the Upper Zone. The tanks also act as suction supply for the Fairway Downs Pump Station, which supplies a small, closed zone near the Henrici Reservoir.

Growth is expected in the Upper and Fairway Downs Zones as described in the Beavercreek Concept Plan. This growth will require extension of Upper Zone distribution, and the construction of a new pump station and reservoir to replace the existing Fairway Downs Pump Station and extend the existing Fairway Downs Zone.

Under current conditions, the City has difficulties keeping the Henrici Reservoir filled and the Boynton Standpipe from overflowing. The Boynton Standpipe is centrally located while the Henrici Tank is located southeast of the system. When flow from the Mountainview Pump Station is increased to fill the Henrici Reservoir, high pressure issues are experienced by customers near the pump station. This is especially problematic in summer months when the pump station must operate at a higher flow rate to keep up with Upper Zone demands. This problem is expected to increase as the Mountainview Pump Station is expected to operate at higher flow rates to keep up with growth related demands.

An evaluation of the supply from the Henrici Reservoir and the Boynton Standpipe was performed with and without capital improvements as presented in Table 1. Prior to improvement, demands are distributed at a 67/33-percent split with the majority of demand supplied through the Boynton Standpipe. The improved system, which includes the Molalla Avenue project, results in an improved flow split of 50/50-percent between the reservoir and standpipe.

Table 1
Reservoir Filling Rates – Boynton Standpipe and Henrici Reservoir

Scenario	Boynton Standpipe (gpm)	Henrici Reservoir (gpm)
No Improvements	4,200	2,100
Only add Parallel Main on Molalla Ave	4,200	2,500
Only upsize Beavercreek Transmission from Glen Oak Road to Henrici Reservoir	3,600	2,900
Both improvements: Parallel Main on Molalla Ave and Upsize Beavercreek Transmission	3,500	3,500

1. 2015 ADD demands, 2 pumps on at Mountainview Pump Station, reservoirs at low set points.
2. Parallel main sizing evaluated between 12-inch and 24-inch. Improvements on Molalla Avenue between Beaver Creek Road and Glen Oak Road are recommended at 18-inch sizing.

Demands in the Upper Pressure Zone, Fairway Downs Pressure Zone, and CRW Master Meters 8&9 can be used to determine the ratio of the Molalla Avenue project serving existing and future

customers. These demands for existing and future time frames are summarized in Table 2. The ratio of existing to future services by 2035 is estimated at 68-percent existing and 32-percent future. The ratio of existing to future services by buildout is estimated at 42-percent existing and 58-percent future.

Table 2
Existing and Future Demand Summary and Ratios Associated with Molalla Avenue Project

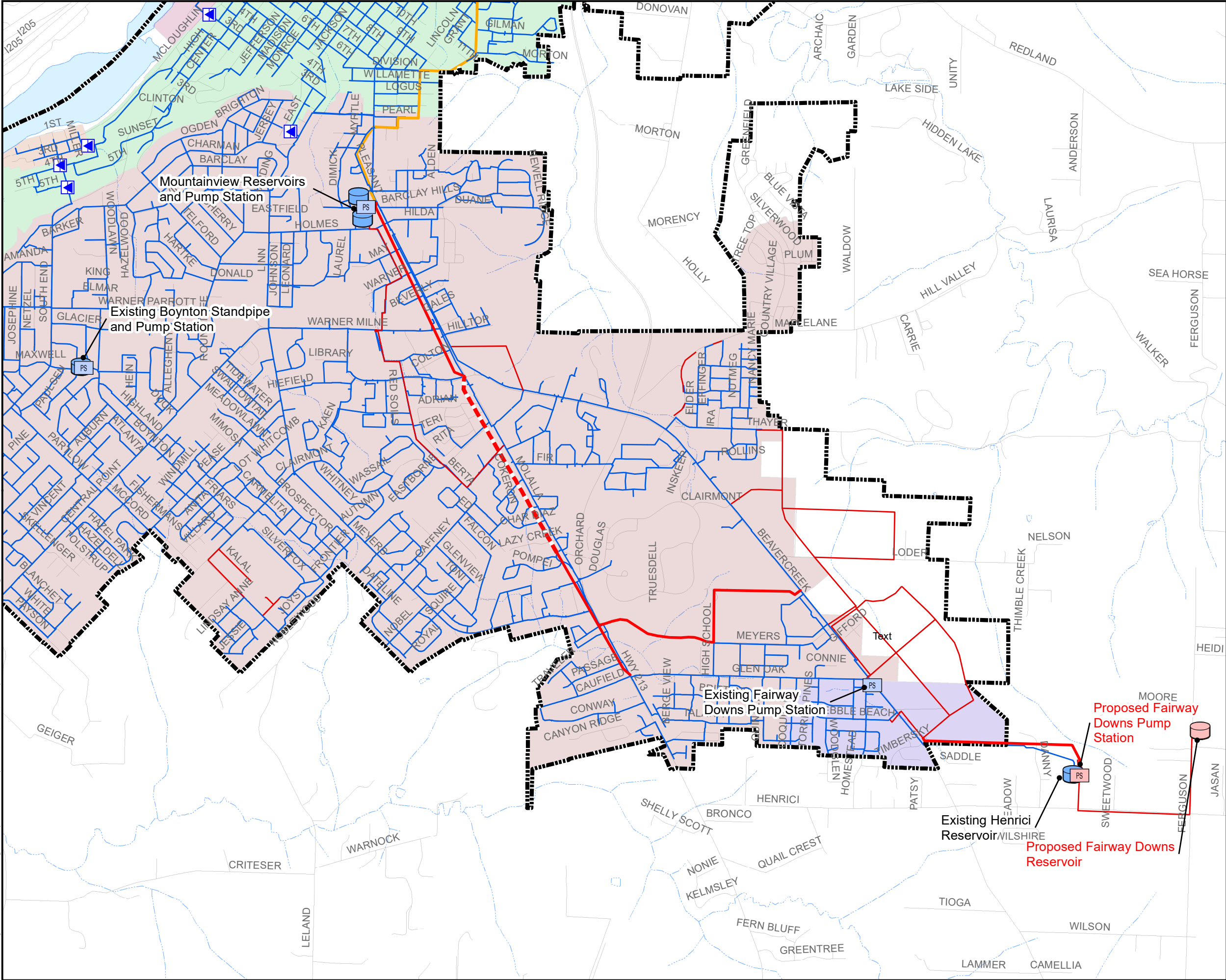
Pressure Zone or Master Meter	Existing Average Day Demand	2035 Average Day Demand	Buildout Average Day Demand
Upper	1,600	2,370	3,860
Fairway Downs	20	20	40
CRW Master Meters 8 & 9	80	110	180
TOTAL	1,700	2,510	4,080

Demands in gallons per minute.

Preliminary costs were estimated for the Molalla Avenue project for the CIP update as summarized below. Cost estimates represent a Class 5 budget estimate in 2018 dollars, as established by the American Association of Cost Engineers. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +50 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate.

- Project cost estimate for 18-inch pipeline on Molalla Avenue at approximately 4,200 linear feet
- Cost estimates include labor, materials, and markups
- Cost estimates exclude land or right-of-way acquisition
- Markups include 40-percent for engineering, overhead, and contractor profits
- Markups include 30-percent for construction contingency
- Total project cost is estimated at \$1.7 million (\$407 per linear foot)

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City of Oregon City Molalla Ave Streetscape CIP Project Impacts

CIP PROJECTS

- Parallel Transmission along Streetscape
- Mountainview to Henrici Transmission Projects
- Other CIP Projects
- PS Pump Station
- Reservoir

EXISTING WATER MAINS

- Oregon City
- SFWB
- West Linn
- UGB

PRESSURE ZONE

- Canemah
- Fairway Downs
- Intermediate
- Lower
- Paper mill
- Park Place Intermediate
- Park Place Livesay
- Park Place Lower
- Park Place View Manor
- Upper

FIGURE 1

0 1,250 2,500 Feet

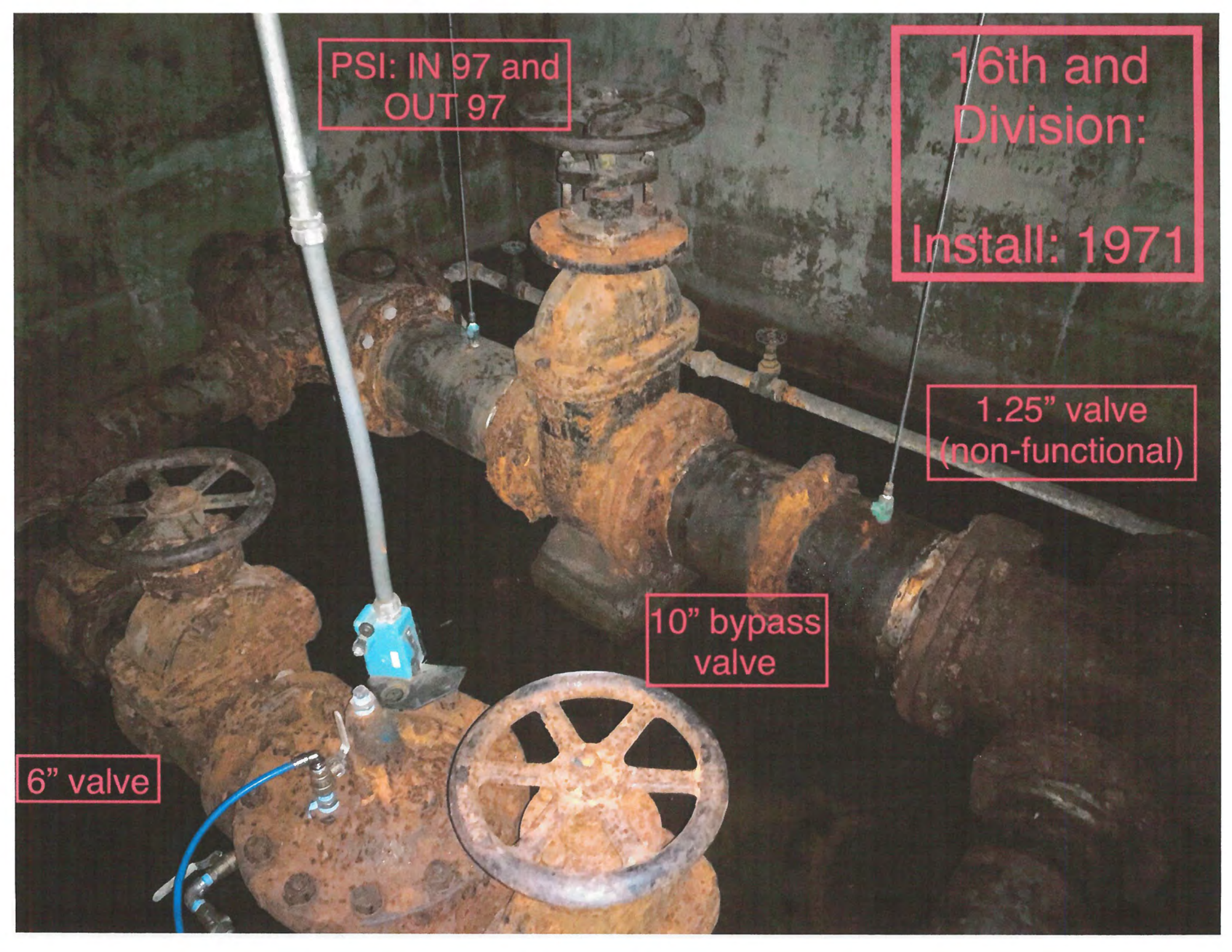




APPENDIX G
SMALL WATERLINE REPLACEMENT
PROJECTS & PRV PHOTO
DOCUMENTATION, OREGON CITY

Updated 12/30/2018 for PW Ops Higher Priority List for Small Water Pipeline Replacement Project List For Projects Originally Listed in

[illegible]



PSI: IN 97 and
OUT 97

16th and
Division:
Install: 1971

1.25" valve
(non-functional)

10" bypass
valve

6" valve

Harley and Forsythe
(South):

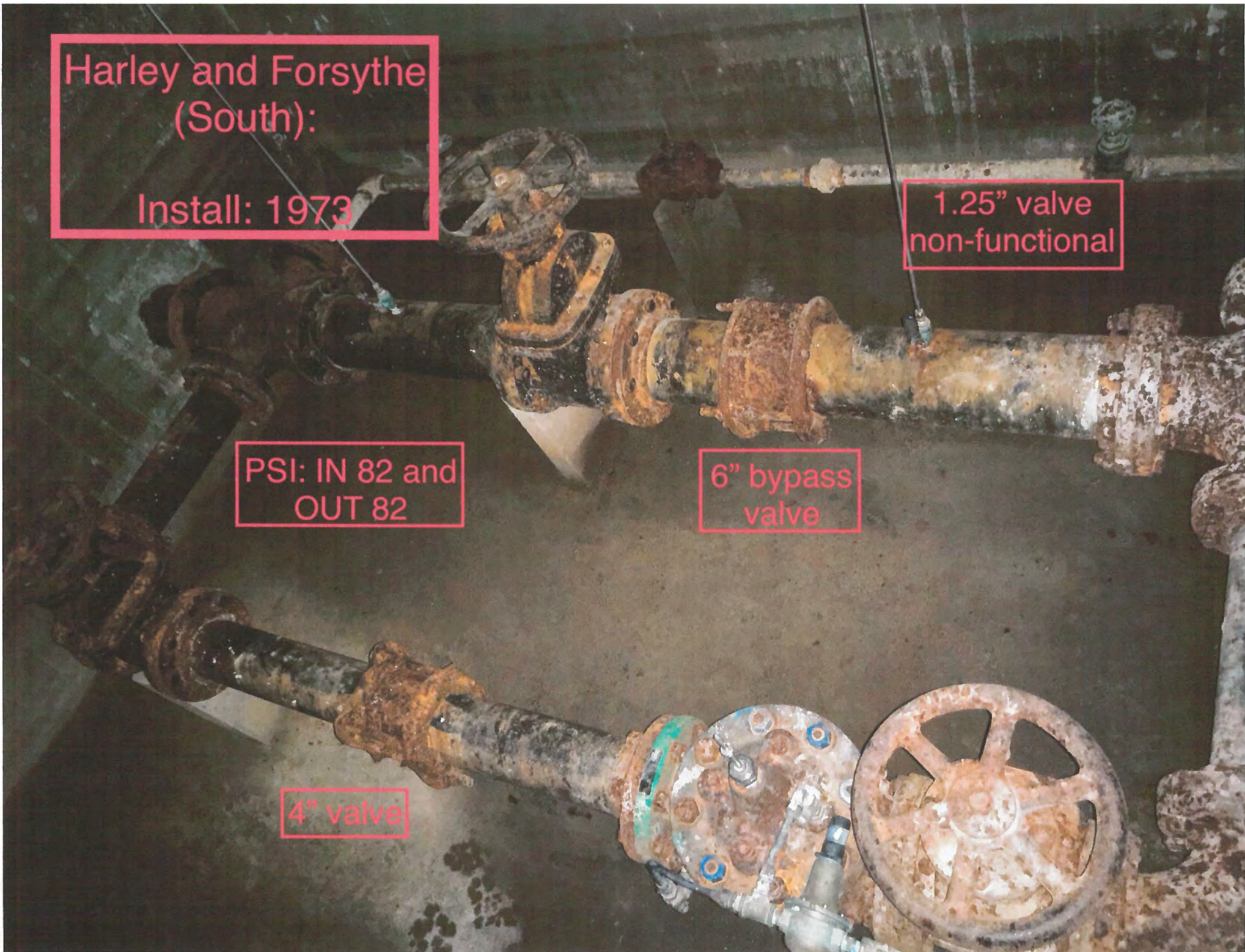
Install: 1973

1.25" valve
non-functional

PSI: IN 82 and
OUT 82

6" bypass
valve

4" valve



Harley and
Forsythe (North)

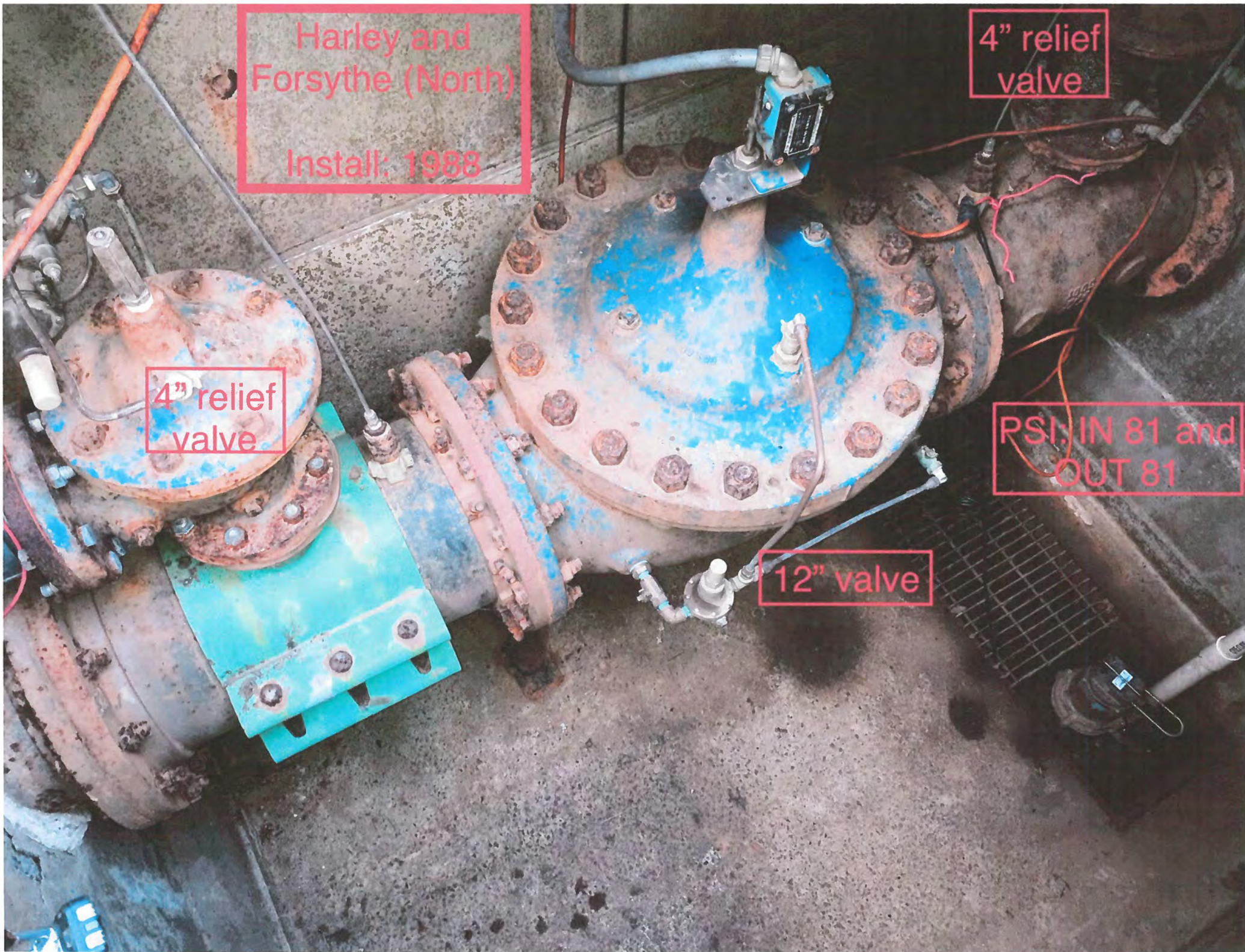
Install: 1988

4" relief
valve

4" relief
valve

PSI: IN 81 and
OUT 81

12" valve



Abernethy and
Redland:
Install: 1963

PSI: IN 125
and OUT 125

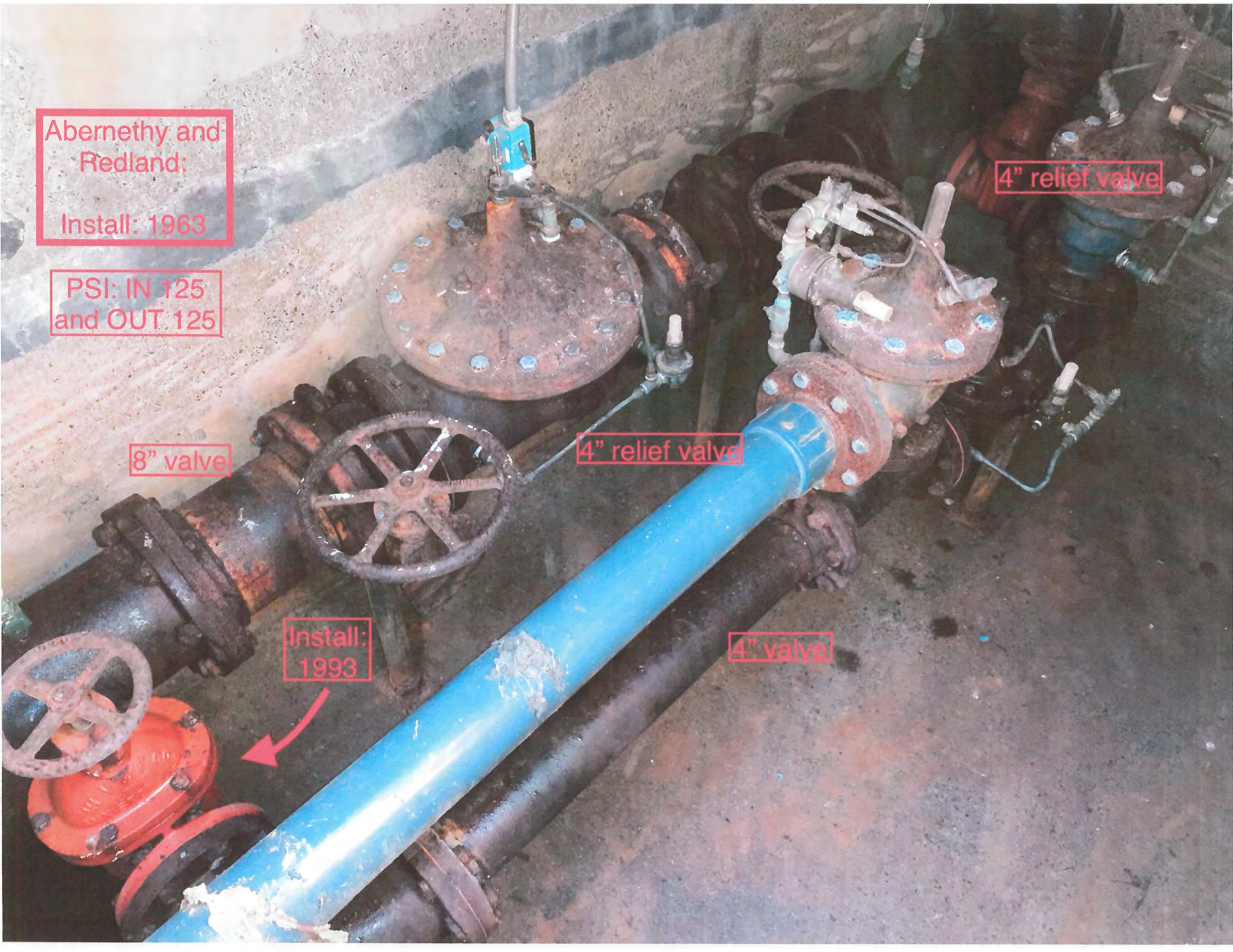
4" relief valve

8" valve

4" relief valve

Install:
1993

4" valve



Apperson and
Larae:

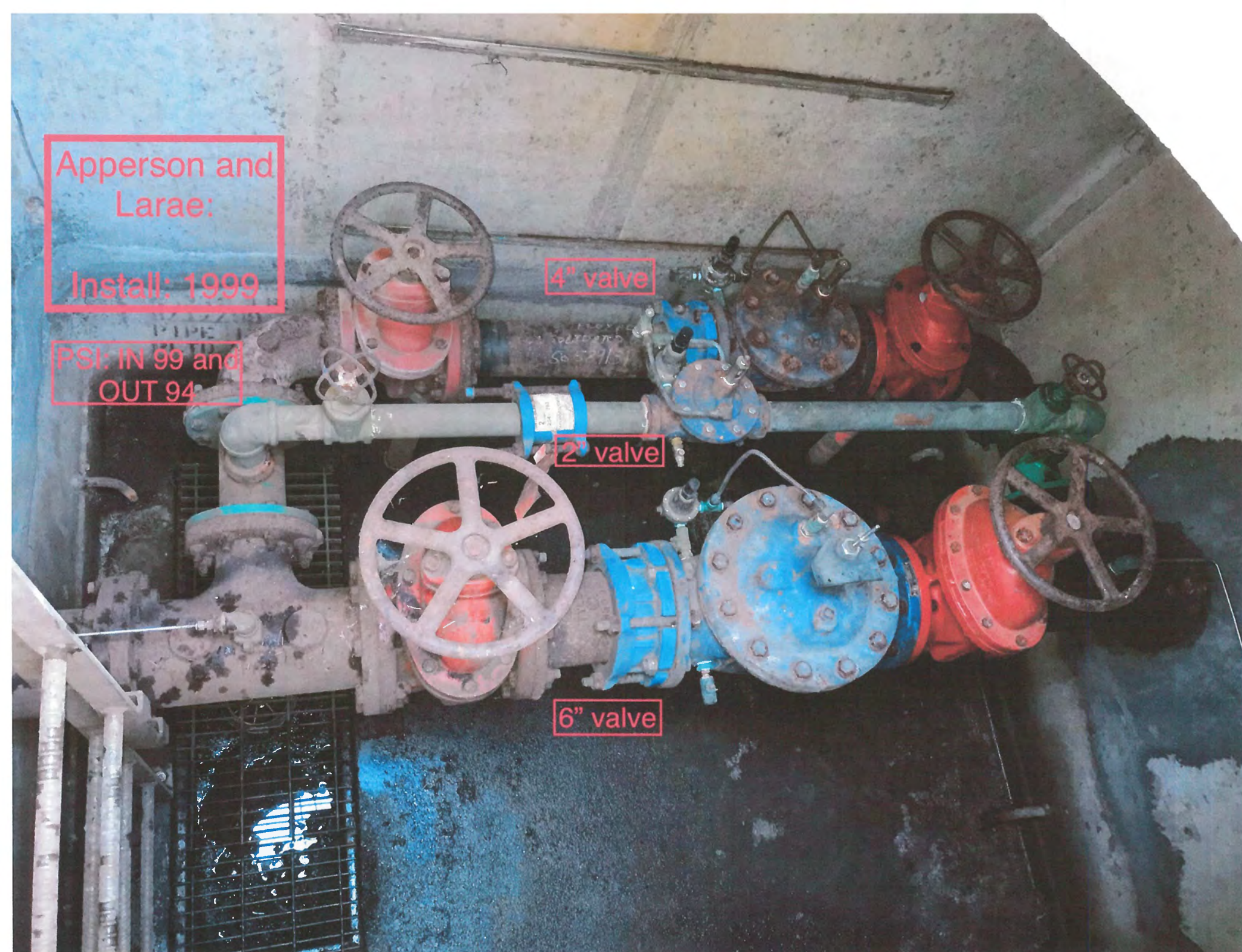
Install: 1999

PSI: IN 99 and
OUT 94

4" valve

2" valve

6" valve



Hunter Pump
Station:

Install: 1998

6" valve

PSI: IN 152 and
OUT 52

3" valve

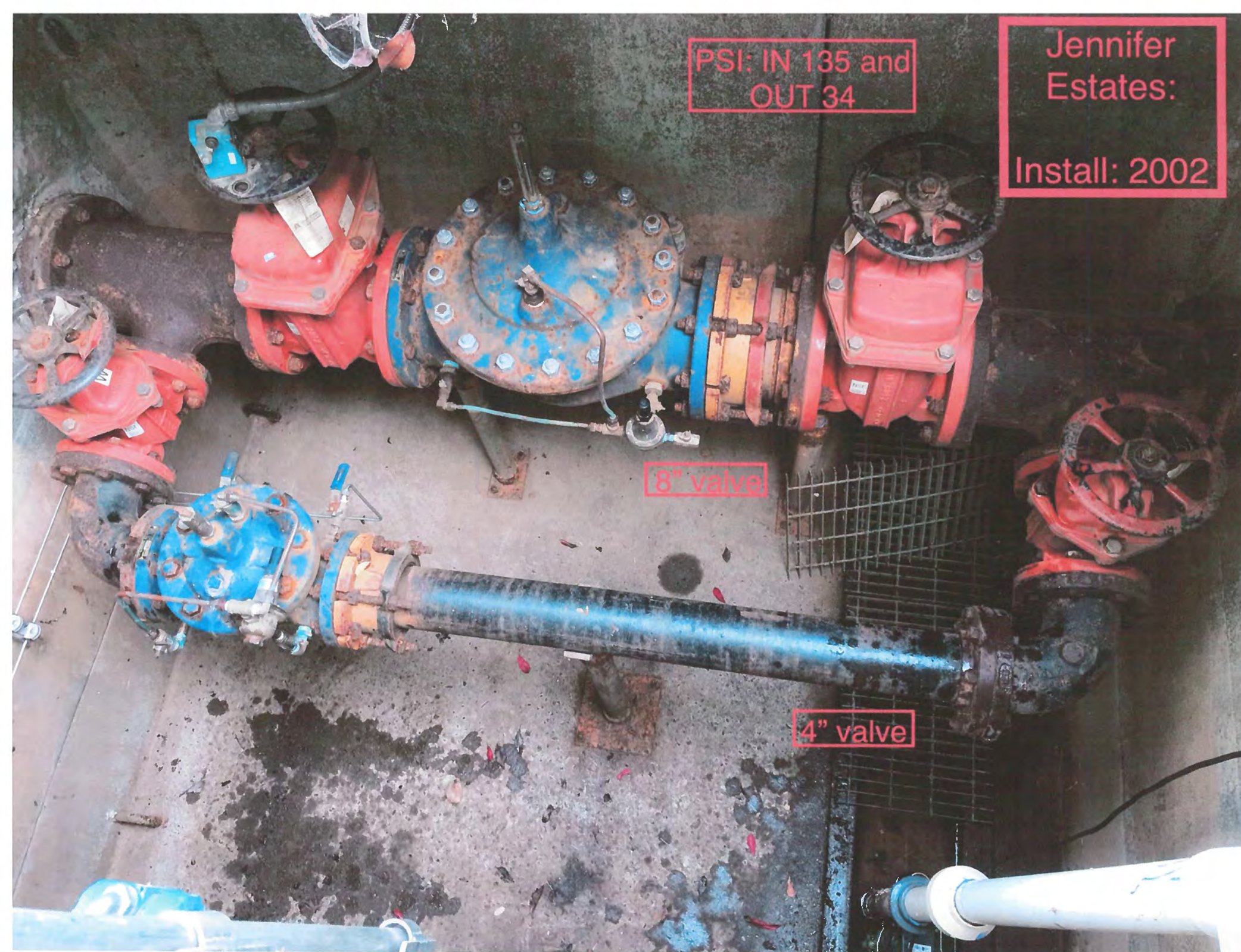


PSI: IN 135 and
OUT 34

Jennifer
Estates:
Install: 2002

8" valve

4" valve



MOORE

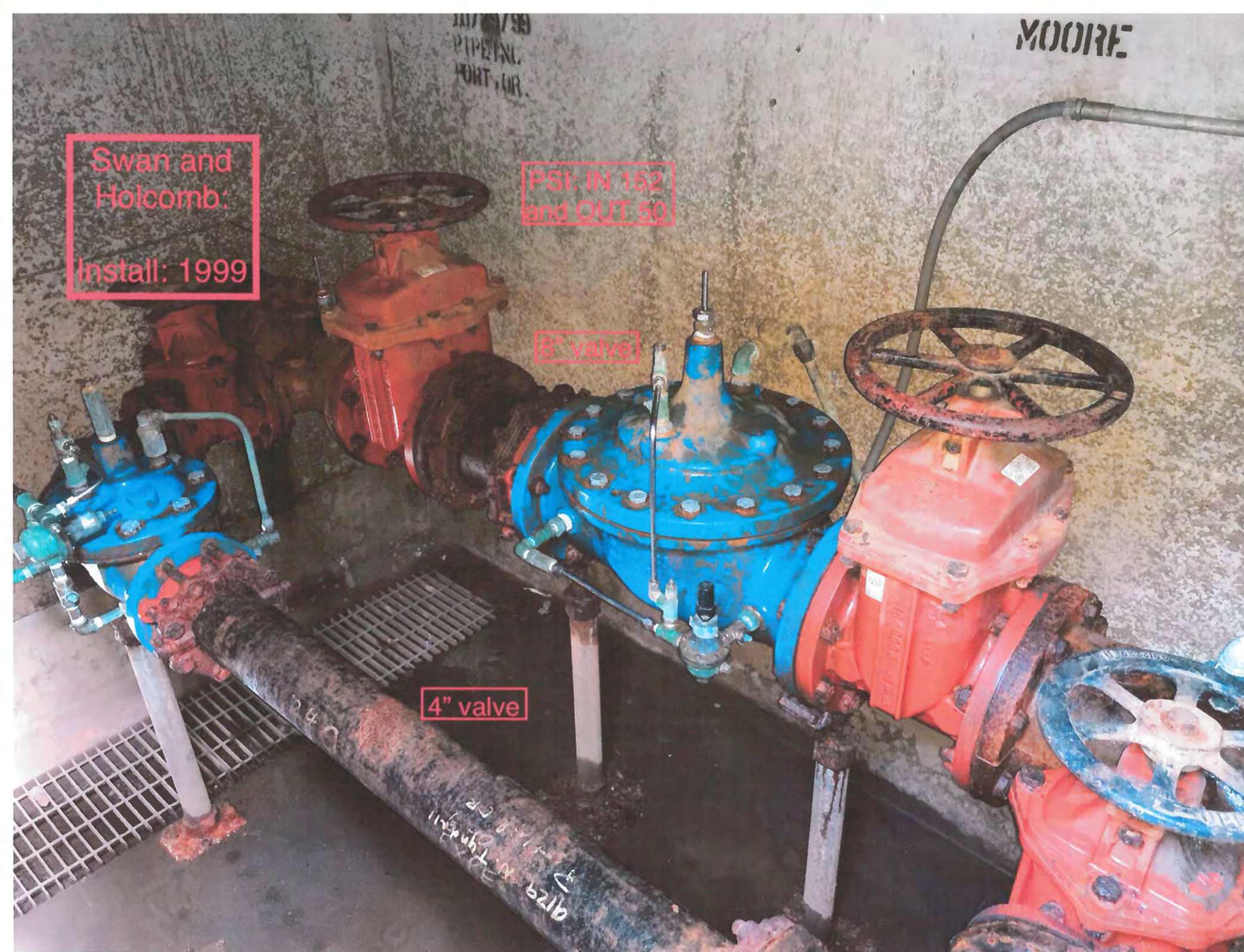
Swan and
Holcomb:

Install: 1999

PSI: IN 152
and OUT 50

8" valve

4" valve



View Manor:

Install: 1999

PSI: IN 99
and OUT 32

8" valve

4" valve



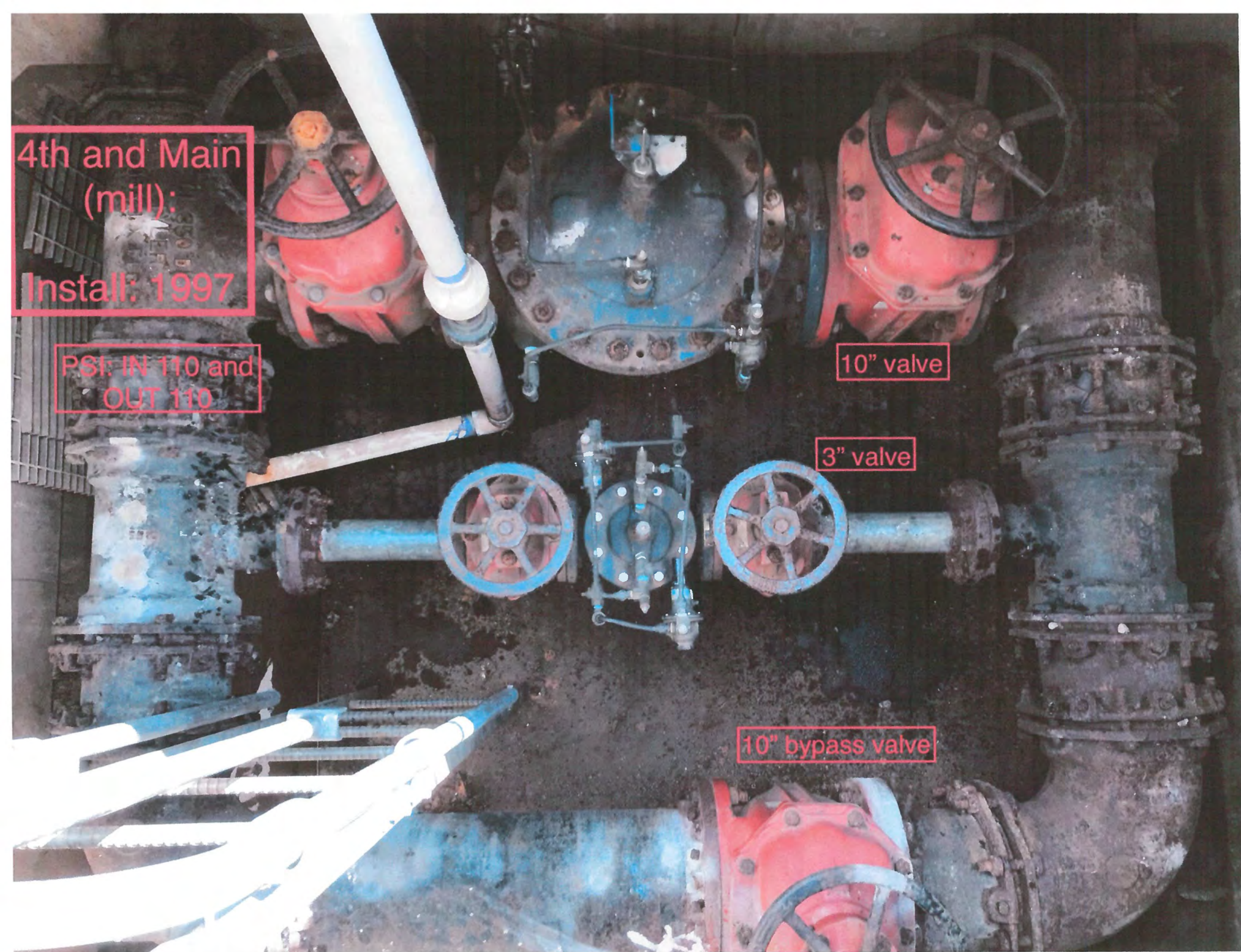
4th and Main
(mill):
Install: 1997

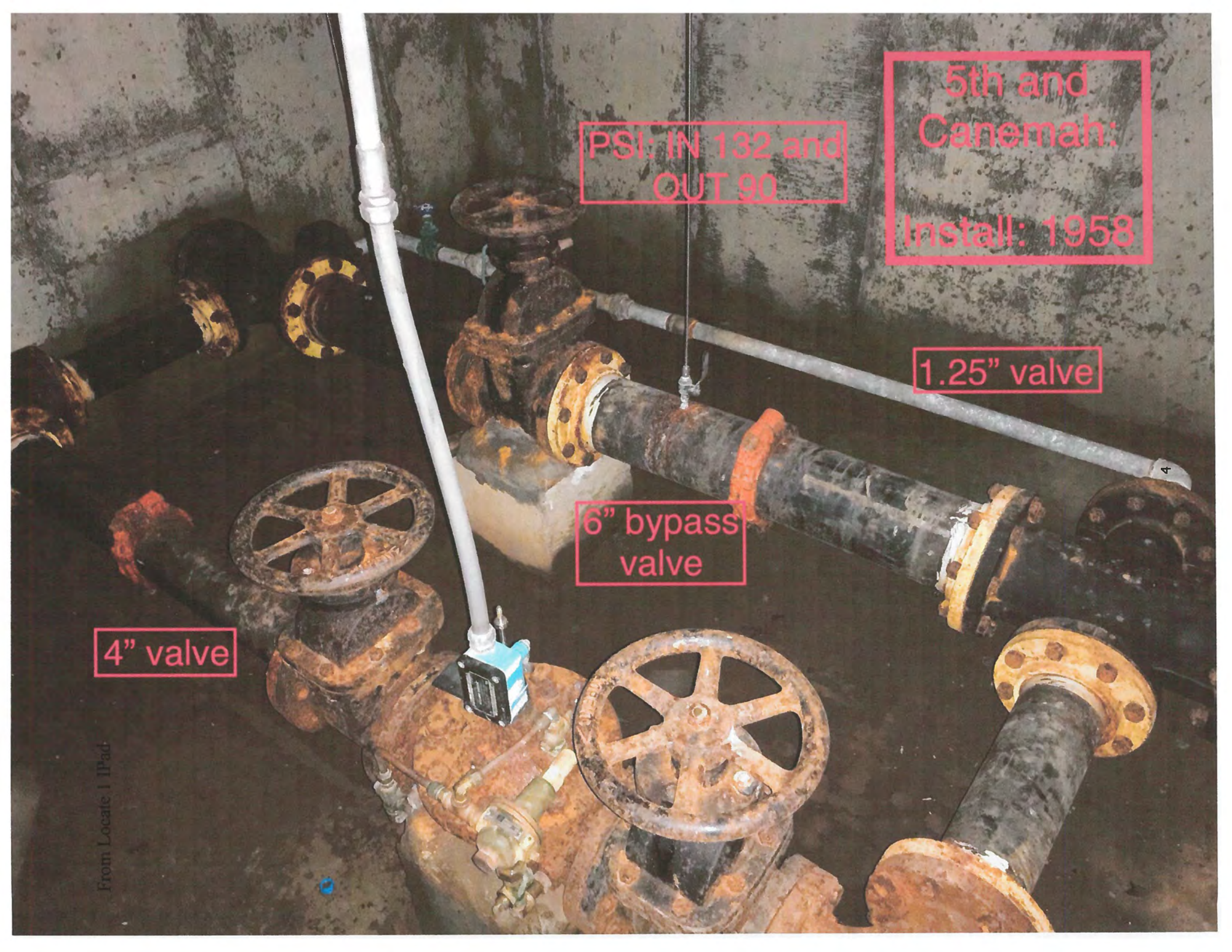
PSI: IN 110 and
OUT 110

10" valve

3" valve

10" bypass valve





PSI: IN 132 and
OUT 90

5th and
Canemah:
Install: 1958

1.25" valve

6" bypass
valve

4" valve

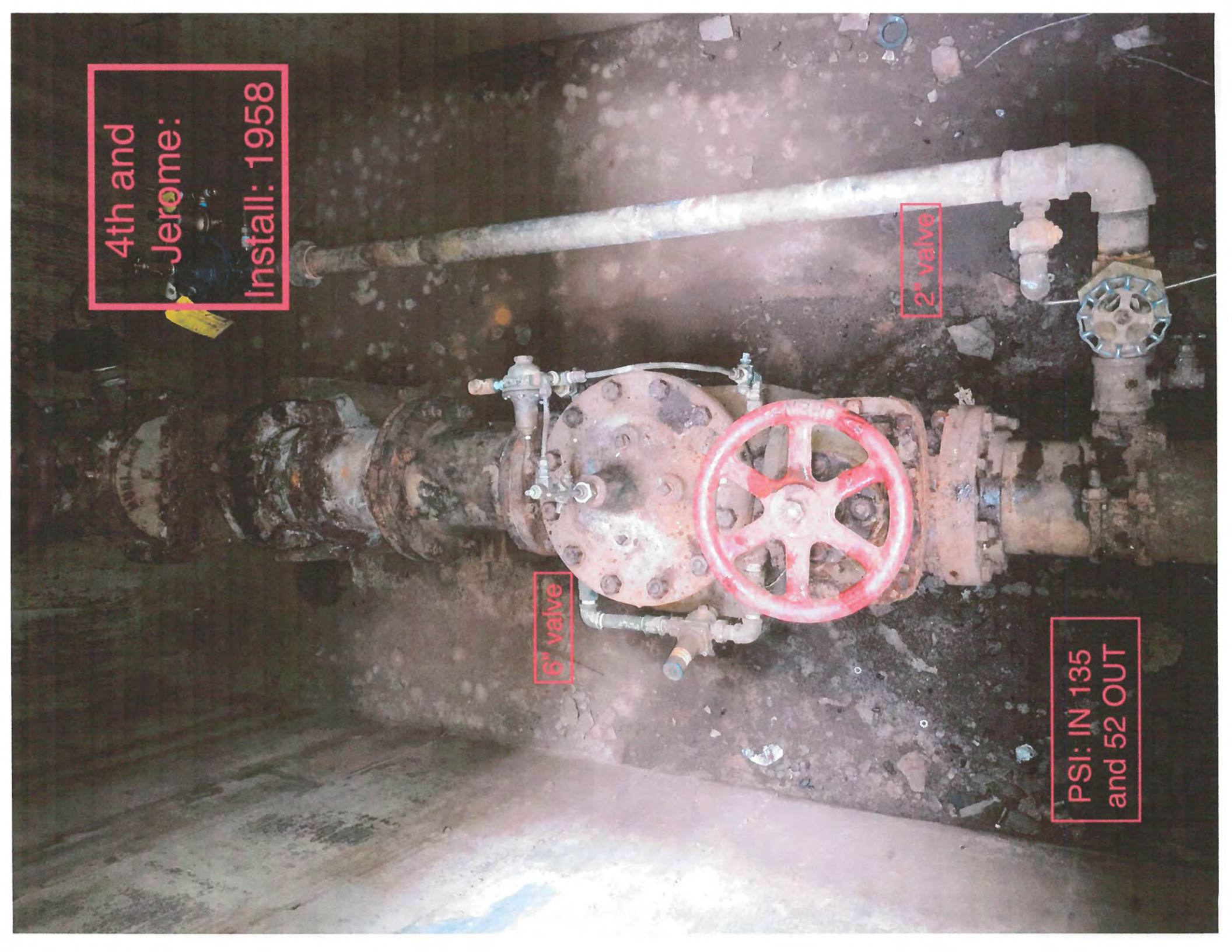
4th and
Jerome:

Install: 1958

2" valve

6" valve

PSI: IN 135
and 52 OUT



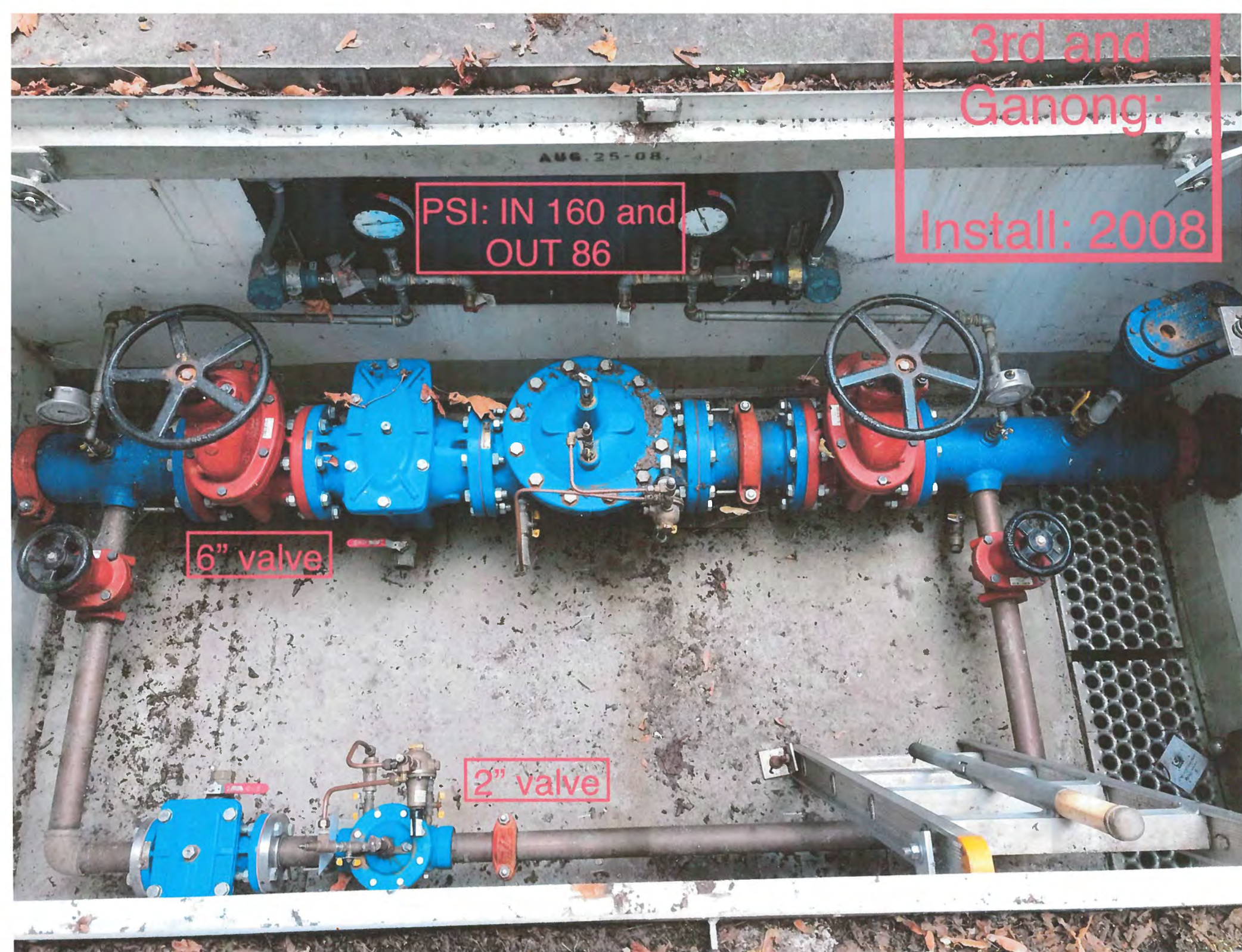
3rd and
Ganong:

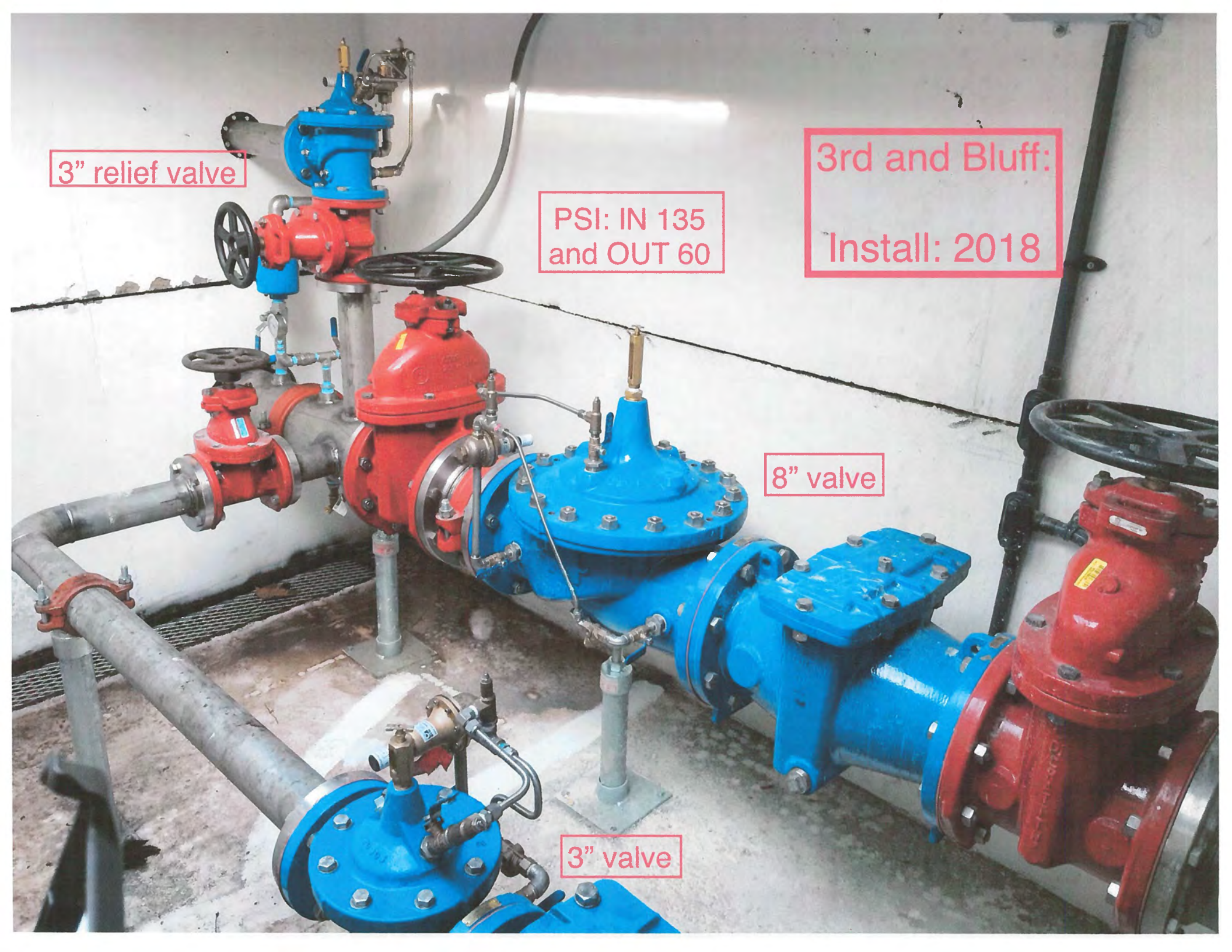
Install: 2008

PSI: IN 160 and
OUT 86

6" valve

2" valve





3" relief valve

The image shows a complex industrial valve assembly mounted on a concrete wall. It features several large valves, some painted red and others blue. A large blue valve with a black handwheel is prominent in the center. To its right is a large red valve. Various pipes and smaller fittings are connected to these main valves. Handwritten labels in red boxes are overlaid on the image to identify specific components and provide operational data.

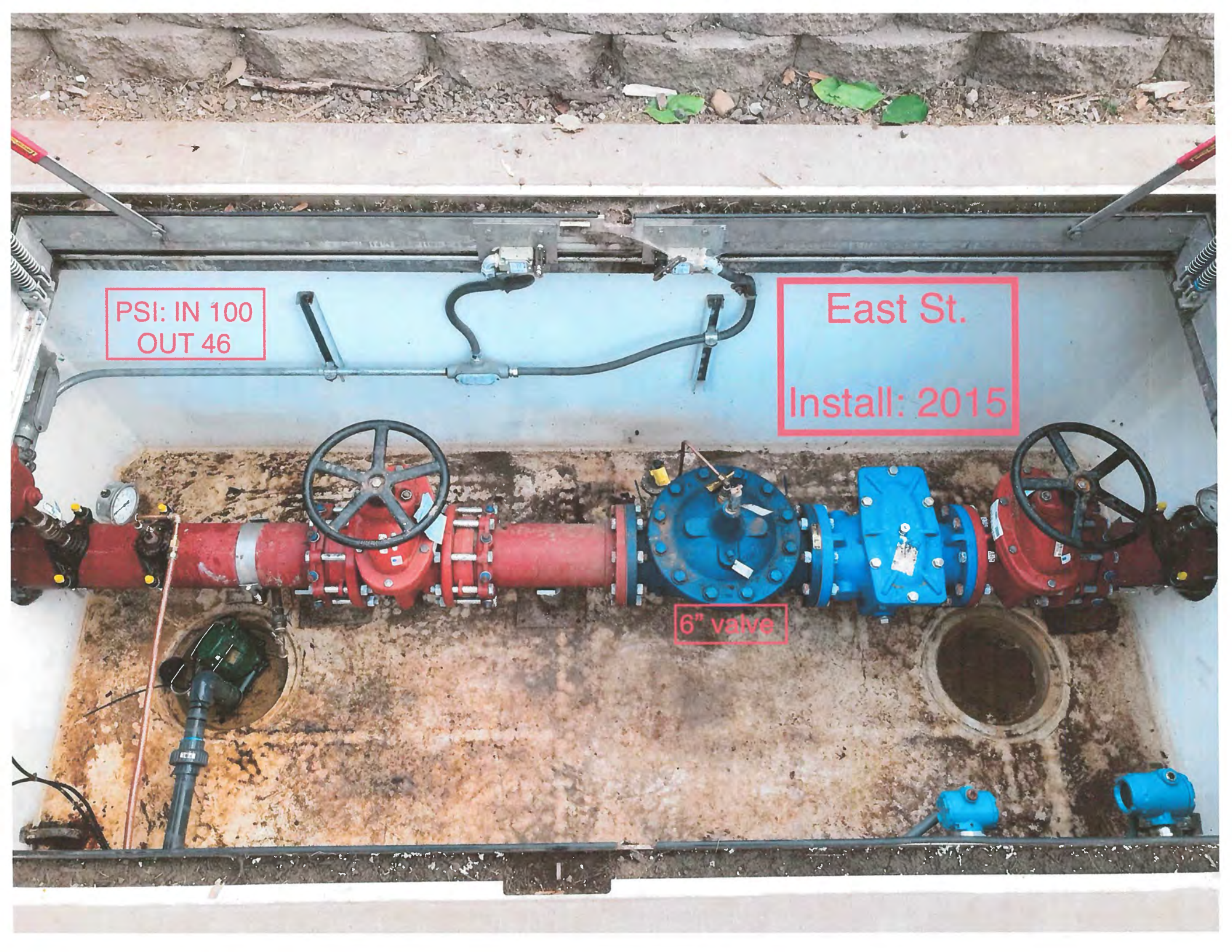
PSI: IN 135
and OUT 60

3rd and Bluff:

Install: 2018

8" valve

3" valve



PSI: IN 100
OUT 46

East St.
Install: 2015

6" valve

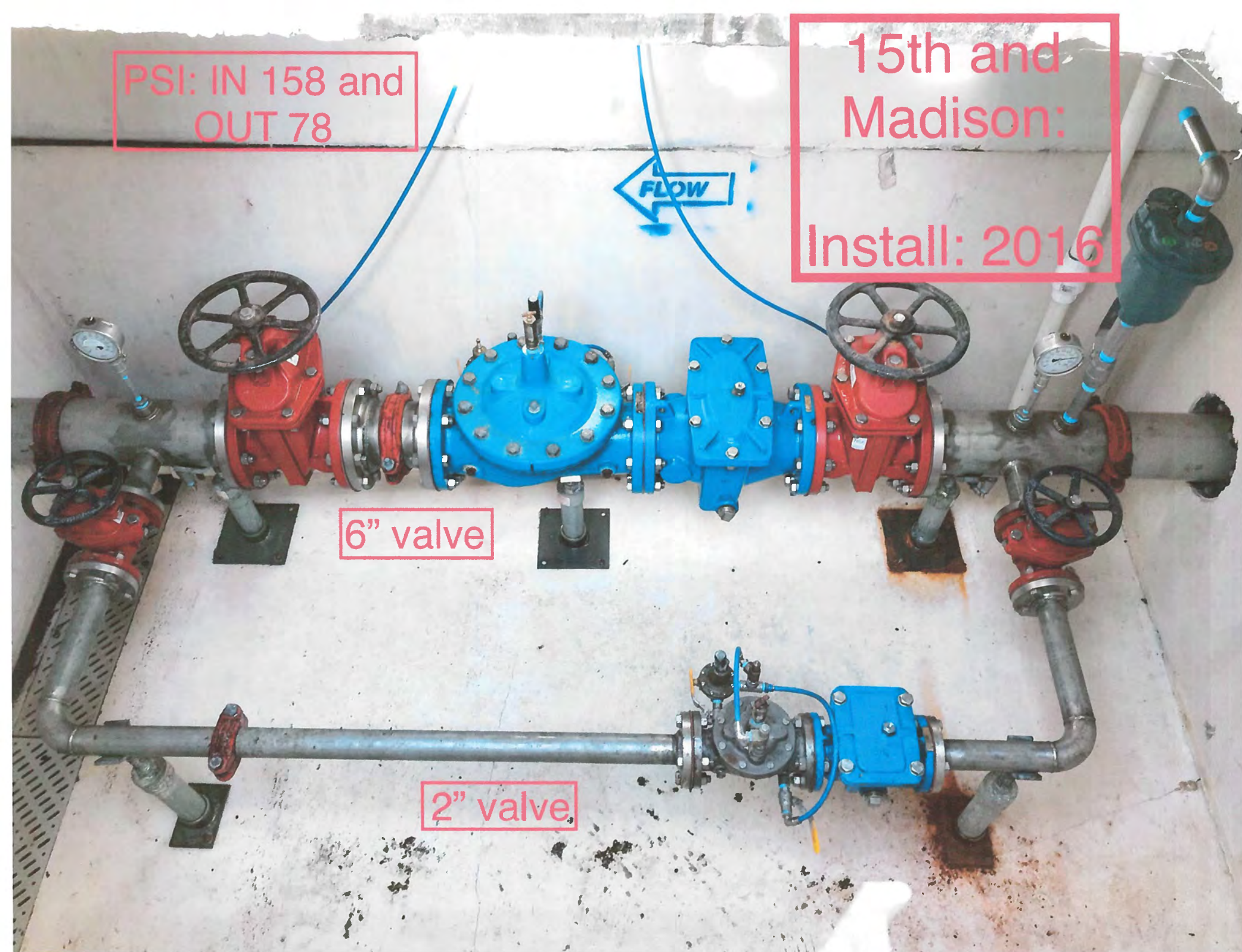
PSI: IN 158 and
OUT 78

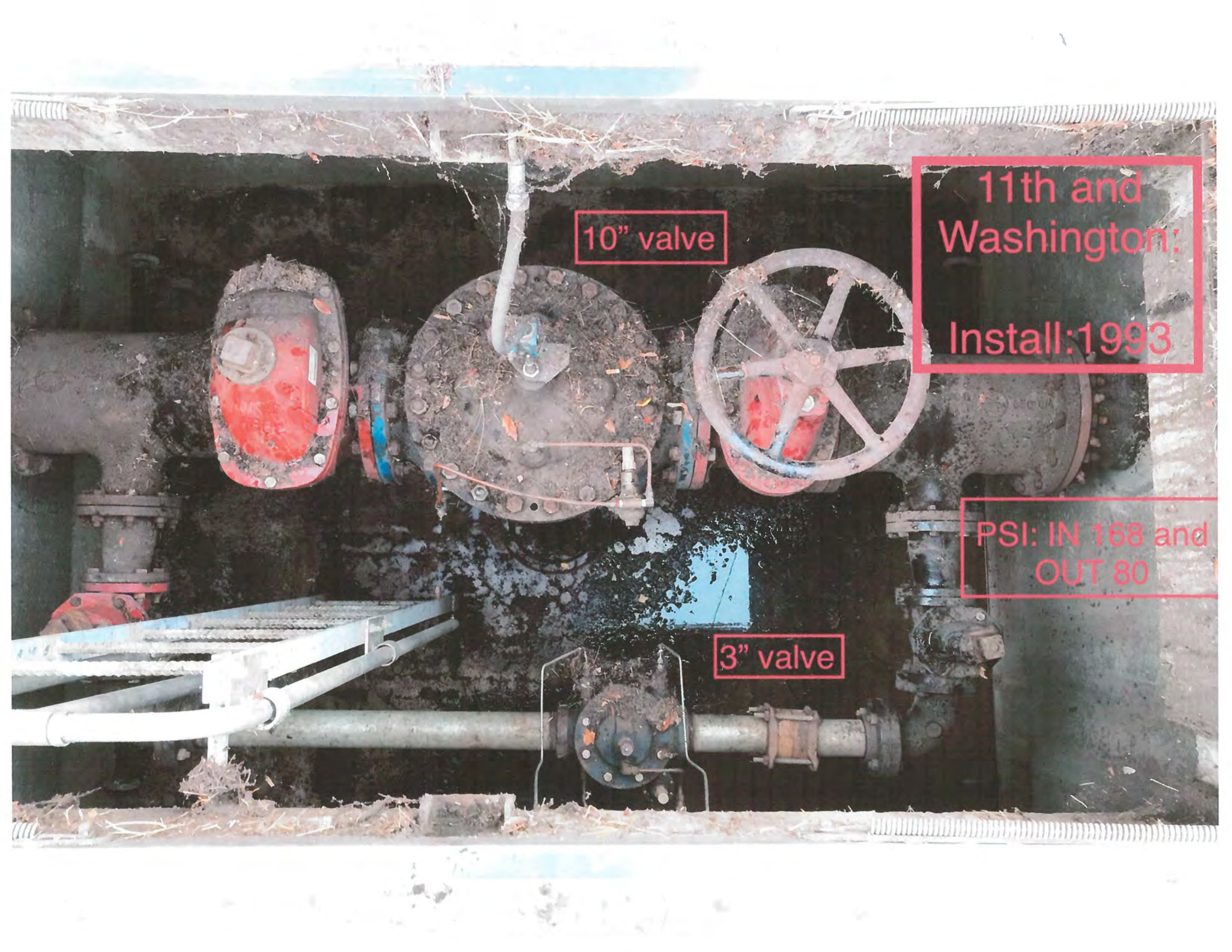
15th and
Madison:
Install: 2016



6" valve

2" valve





10" valve

11th and
Washington:

Install:1993

PSI: IN 168 and
OUT 80

3" valve

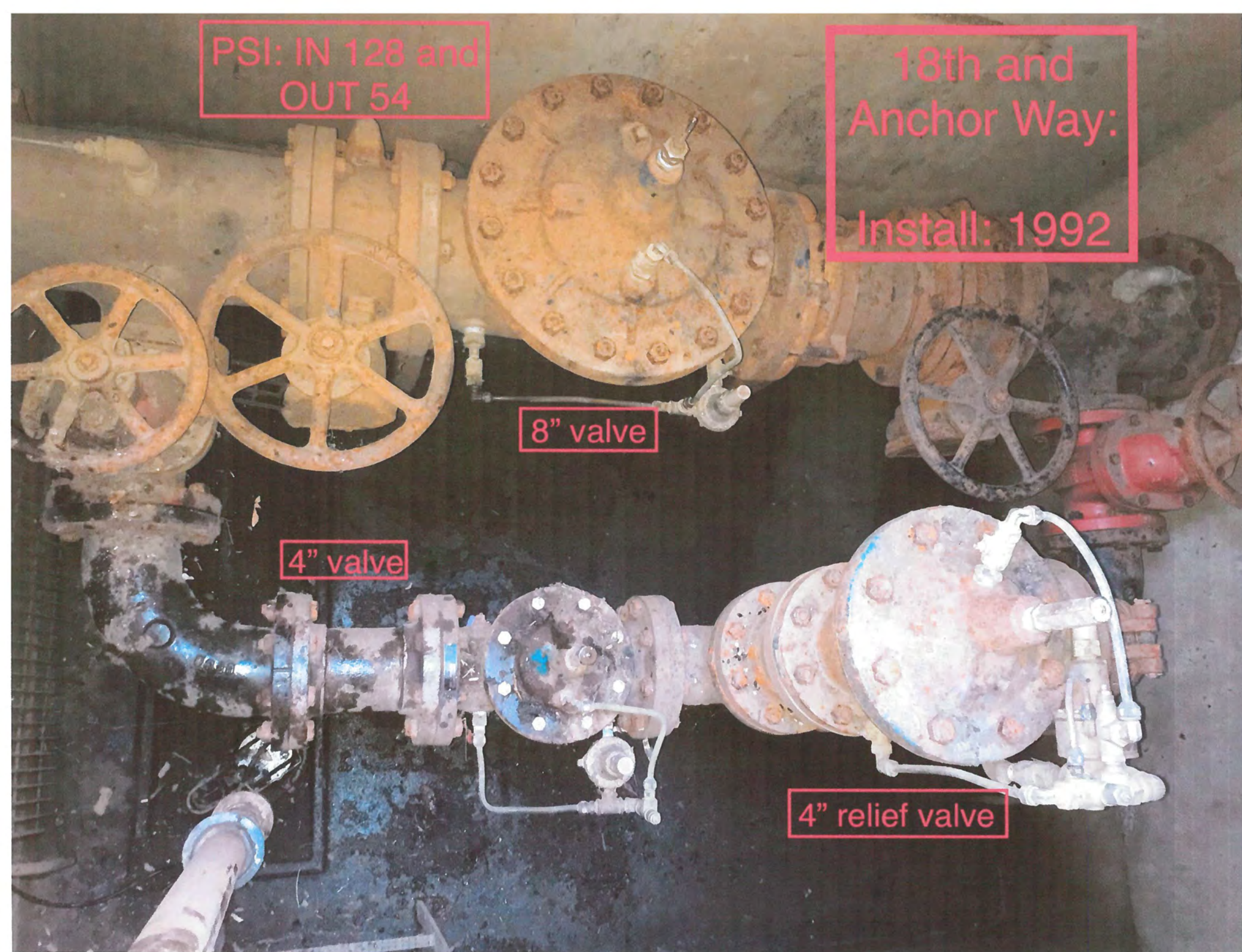
PSI: IN 128 and
OUT 54

18th and
Anchor Way:
Install: 1992

8" valve

4" valve

4" relief valve





APPENDIX H
MILL REDEVELOPMENT WATER
DISTRIBUTION ANALYSIS TECHNICAL
MEMORANDUM, MURRAYSMITH

Technical Memorandum

Date: January 18, 2018

Project: Oregon City Water Distribution System Capital Improvement Program Update

To: Aleta Froman-Goodrich, PE
City of Oregon City

From: Shad Roundy, PE
Natalie Jennings, PE
MurraySmith

Re: Mill Redevelopment Water Distribution Analysis

Background Information

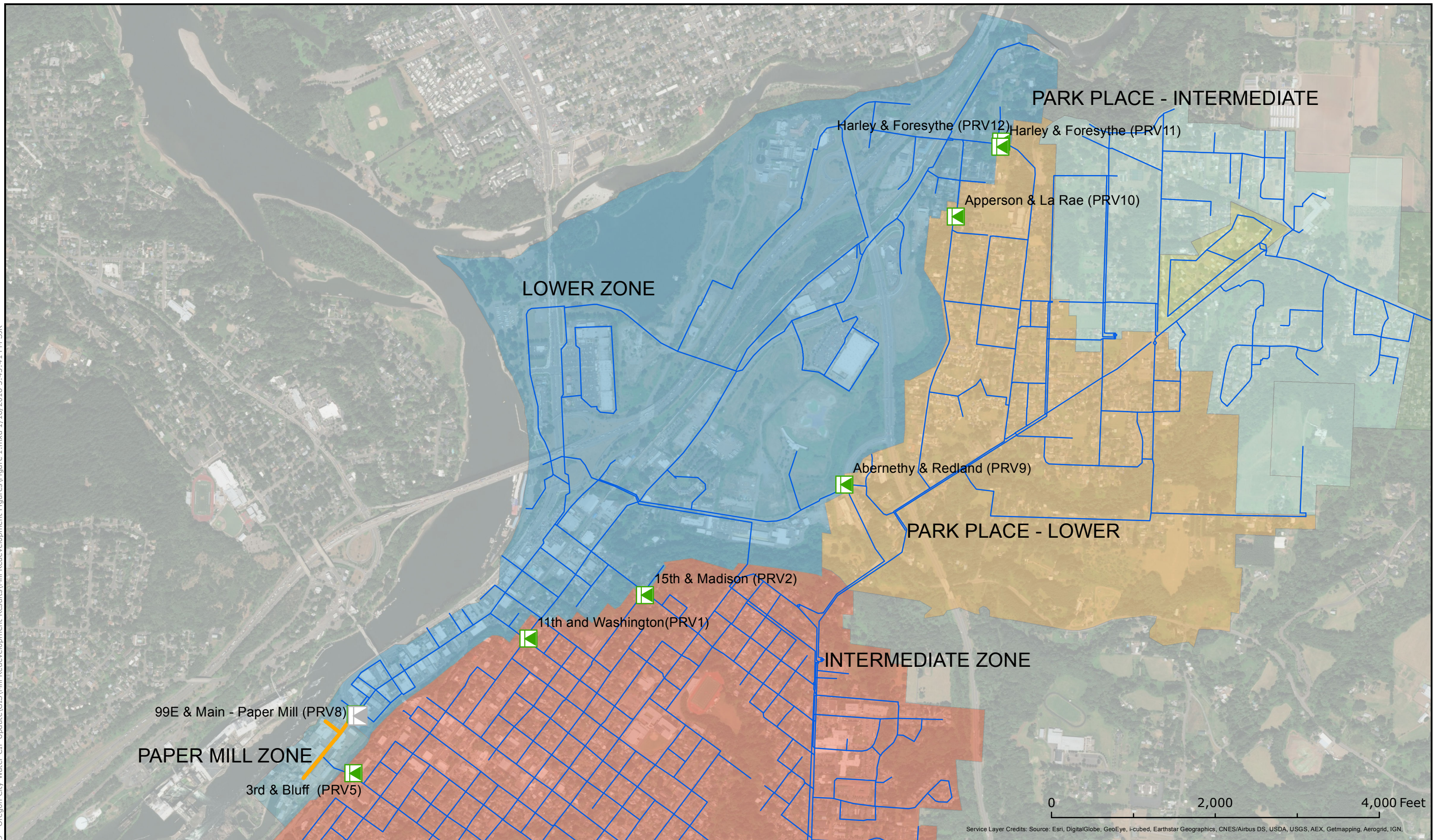
The City of Oregon City (City) is evaluating expansion of the water distribution system to accommodate commercial redevelopment along the Willamette River, in the Paper Mill Zone. The development area and preliminary pipeline configuration are shown in Figure 1. The Paper Mill Zone is supplied through two pressure reducing valve (PRV) stations located at 3rd and Bluff and 99 E & Main. This technical memorandum documents recommended modifications to PRV stations to combine the Paper Mill Zone and the Lower Zone. Additionally, local pipeline sizing recommendations are provided to supply domestic and fire flow demands to the Mill Redevelopment Area.

Demand Summary

To evaluate the system capacity, domestic demand conditions were analyzed for average day demand (ADD), maximum day demand (MDD), and peak hour demand (PHD). Fire flow demands were evaluated during MDD including, 3,500 gallon-per-minute (gpm) and 5,000 gpm fire flow requirements.

The City's water demand data is summarized in the *Water Distribution System Master Plan* (West Yost, 2012) by service type and largest user for the full distribution system. Future demands in the Mill Redevelopment Area were developed by applying unit demands to number of dwelling units, square footage of office and retail space, or number of hotel rooms as shown in Table 1.

G:\PDX Projects\17\2119 - Oregon City Water CIP Update\GIS\Mill Redevelopment Results\Mill Redevelopment Figures\Figure 1.mxd 1/18/2018 3:45:41 PM SJR



		City of Oregon City Water Distribution System	Legend  PRVs  Existing Pipes  Mill Redevelopment Piping		Mill Redevelopment Area Proposed Piping and New Combined Lower Zone
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Table 1
Water Demands by Type

Category	Unit	Number of Units, Rooms, or Square Feet	Unit Demand (gpm)	Total Demand (gpm)
Residential	dwelling unit	240	0.14	35
Office Space	1,000 Sq. Ft.	436	0.08	36
Retail Space	1,000 Sq. Ft.	119	0.08	10
Hotel	Rooms	115	0.07	9
Total				90

Maximum day and peak hour demands for the Mill Redevelopment Area are estimated using the historical peaking factors from the master plan, established by the dividing max day by average day for MDD:ADD, and peak hour by average day for PHD:ADD, as shown in Table 2.

Table 2
Peaking Factors

Unit	Peaking Factor
MDD:ADD	2.3
PHD:ADD	4.5

Table 3 summarizes the demands in the proposed Mill Redevelopment Area, and the new, combined, Paper Mill/Lower Pressure zone.

Table 3
Water Demands by Zone

Demand	Mill Redevelopment Area ¹	Paper Mill and Lower Zones Combined
ADD	98 gpm	272 gpm
MDD	225 gpm	626 gpm
PHD	440gpm	1,225 gpm

¹Includes existing demands in addition to the Mill Redevelopment demands.

Design Criteria

This section presents the planning and analysis criteria used to analyze performance of the City water distribution system. Criteria are presented in Table 4 for distribution system piping, service pressures, and recommended fire flow. Performance guidelines are based on a review of State requirements, American Water Works Association (AWWA) acceptable practice guidelines, and *Recommended Standards for Water Works, Ten States Standards* (Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2012).

Service Pressures

The desired service pressure range under ADD and normal operating conditions is 40 to 80 pounds per square inch (psi). The maximum 80 psi service pressure limit is required by the *Oregon Plumbing Specialty Code* (OPSC) 608.2. If mainline pressures exceed 80 psi, service connections should be equipped with individual PRVs.

Distribution Piping

In general, distribution flow velocities should not exceed 10 feet-per-second (fps) under the PHD conditions and drop below 3.5 fps under normal demand conditions. The minimum pipe size is 8-inch diameter for new permanently dead ended residential water mains and primary feeder mains in residential areas, however areas with large fire flow demands will require larger pipe diameters.

Fire Flow

The amount of water recommended for fire suppression purposes is typically associated with the local building type or land use of a specific location within the distribution system. Fire flow recommendations are typically much greater in magnitude than the MDD in any local area. Adequate hydraulic capacity for these potentially large fire flow demands controls pipe sizing and system operation.

During a fire flow event or emergency, the minimum service pressure is 20 psi as required by Oregon Health Authority, Drinking Water Services, and OAR 333-061-0025(7). The system should be capable of providing fire flow capacity while simultaneously delivering MDD and maintaining 20 psi throughout the distribution system. The system should meet this criterion with operational storage depleted and firm pumping capacity.

Two fire flow scenarios were requested by the City for evaluation in the Mill Redevelopment Area including 5,000 gpm and 3,500 gpm fire flow demands.

Table 4
Water System Performance Criteria

System Facility	Evaluation Criterion	Value	Design Standard/Guideline
Service Pressure	Normal Range (ADD Conditions)	40-80 psi	AWWA M32
	Maximum without individual PRV	80 psi	AWWA M32, Oregon Plumbing Specialty Code, Section 608.2
	Minimum, during MDD with Fire Flow	20 psi	AWWA M32, OAR 333-061
	Minimum, during PHD	75% of normal, not less than 40 psi	Murraysmith recommended, AWWA M32
	Velocity during PHD	Not to exceed 10 fps	AWWA M32

Distribution Piping	Minimum Pipe Diameter	8-inch recommended for fire flow, except in short mains without fire service	Industry Standard
Required Fire Flow and Duration	Single Family Residential	1,500 gpm for 2 hours	2014 Oregon Fire Code, Scenario 1: Requested by Oregon City
	Medium Density Residential, Commercial	3,000 gpm for 3 hours	
	Public, Industrial	3,500 gpm for 3 hours	
	Public, Industrial	5,000 gpm for 3 hours	Scenario 2: Requested by Oregon City

System Evaluation

Two types of infrastructure improvements are needed to service the proposed Mill Redevelopment Area including modifications to existing PRV stations, and new water lines.

Pressure Reducing Valve Stations

Current PRV settings in both the Paper Mill Zone and Lower Zone result in high pressures exceeding the 80-psi maximum requirement. Additionally, complete isolation of the Paper Mill Zone is unnecessary, as the elevations in this zone are similar to the adjacent Lower Zone. Recommendations to modify PRV stations include the following:

- A reduction in PRV settings for all PRV stations between the Intermediate Zone and the Paper Mill/Lower Zones to maintain maximum pressure below 120 psi and reduce risk of leakage. Recommended settings are provided in Table 5. Individual building PRVs are still required within the pressure zones.
- Combine the Paper Mill and Lower Zones by abandoning the 99E and Main PRV station. A pipe connection routing around the PRV station is required to maintain looped service.

Table 5
Recommended PRV Settings

Valve Name	Valve #	Valve 1 Size	Valve 2 Size	Valve 3 Size	Valve 1 Setting	Valve 2 Setting	Valve 3 Setting	Priority Opening
11 th & Washington	1	3	10		67	58		1
15 th & Madison	2	1.25	6	10	61	56	51	4
Abernathy & Redland	9	4	8		102	97		3
Apperson & La Rae	10	2	4	6	84	79	77	5
Harley & Forsythe (south)	11	1.5	4		71	66		2
Harley & Forsythe (north)	12	1.5	12		66	61		7
3 rd & Bluff	5	3	10		42	39		6
99E & Main	8	3	10		abandon	abandon		n/a

Water Line Improvements

Water line improvements are required to serve the Mill Redevelopment Area. Improvements are focused on upsizing and extension of the pipeline on the proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area. This improvement route eliminates pipeline improvements adjacent to the 3rd and Bluff PRV station and the associated 10-inch piping along the cliff face on Highway 99E that was recently replaced in the Hwy 99E Bluff Waterline Replacement Project. The existing section under the adjacent highway and railroad are also preserved.

To supply a 5,000 gpm fire flow, the pipe size on proposed roadway running southwest to northeast through the center of the Mill Redevelopment Area is recommended at 14-inch diameter with dead-end piping of 16-inches as shown in Figure 2. To supply a 3,500 gpm fire flow, the pipe size is recommended at 12-inch diameter with dead-end piping of 14-inches as shown in Figure 3.

The City's InfoWater hydraulic model was used to evaluate system capacity and size improvements. Figures showing pressure results for the pipe sizing and PRV analysis are provided in Appendix A.

Figure 2
Proposed Water Line Alignments in Mill Redevelopment Area 5,000 gpm Fire Flow

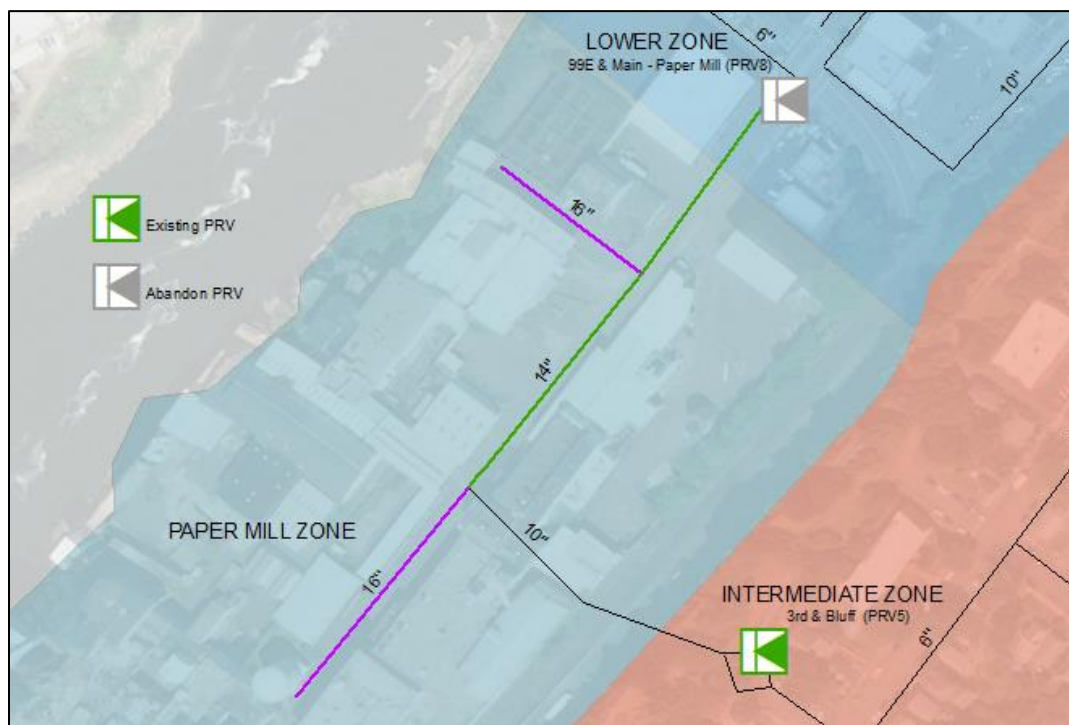
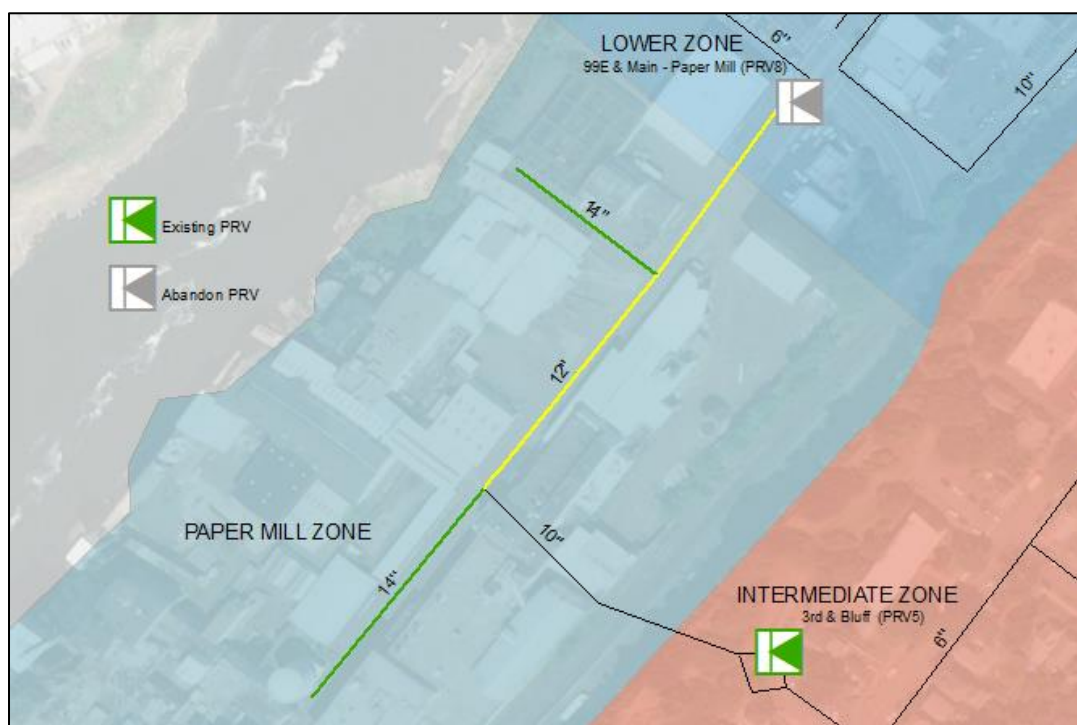


Figure 3
Proposed Water Line Alignments in Mill Redevelopment Area 3,500 gpm Fire Flow



Summary of Recommendations

Development can occur as desired by the City in the Mill Redevelopment Area. Several PRV and piping changes are needed to achieve design criteria specified herein, including combining two pressure zones. Specific changes within the zone include:

- Combination of the Paper Mill Zone and Lower Zone
- Abandonment of the PRV on 99E & Main
- Construction of new mains in the Mill Redevelopment Area
- Adjustments of PRV settings in PRV stations to the new Combined Paper Mill/Lower Zone

SJR:ncj

Appendix A

The City InfoWater hydraulic model was used to perform model simulations for domestic and fire flow demands and evaluate system pressures and velocities. The simulation results are summarized in the following figures.

Figure A1 – Average Day Demand

Figure A2 – Peak Hour Demand

Figure A3 – Maximum Day Demand + 3,500 gpm Fire Flow

Figure A4 – Maximum Day Demand + 5,000 gpm Fire Flow

Figure A1
Results: ADD

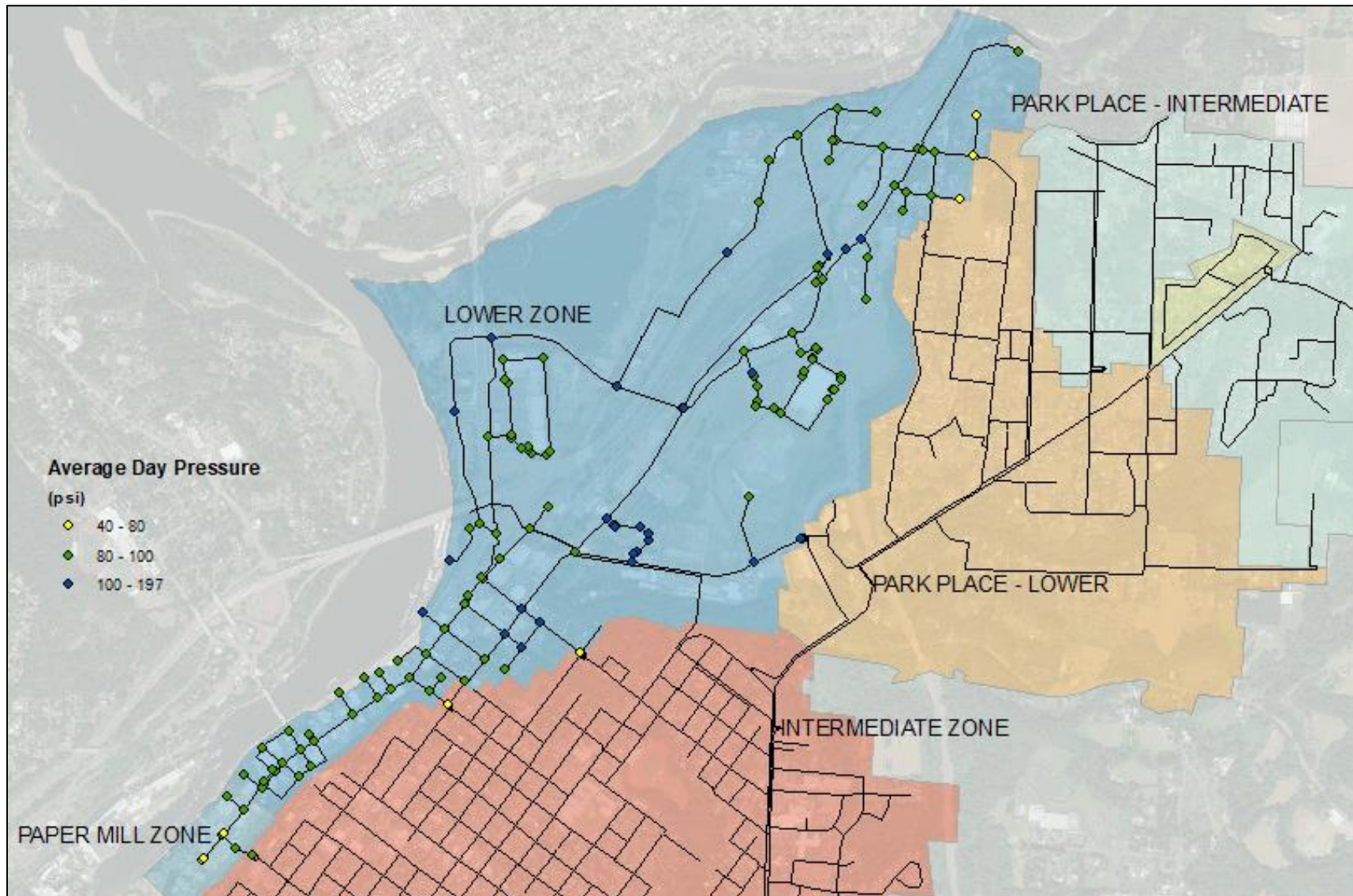


Figure A2
Results: PHD

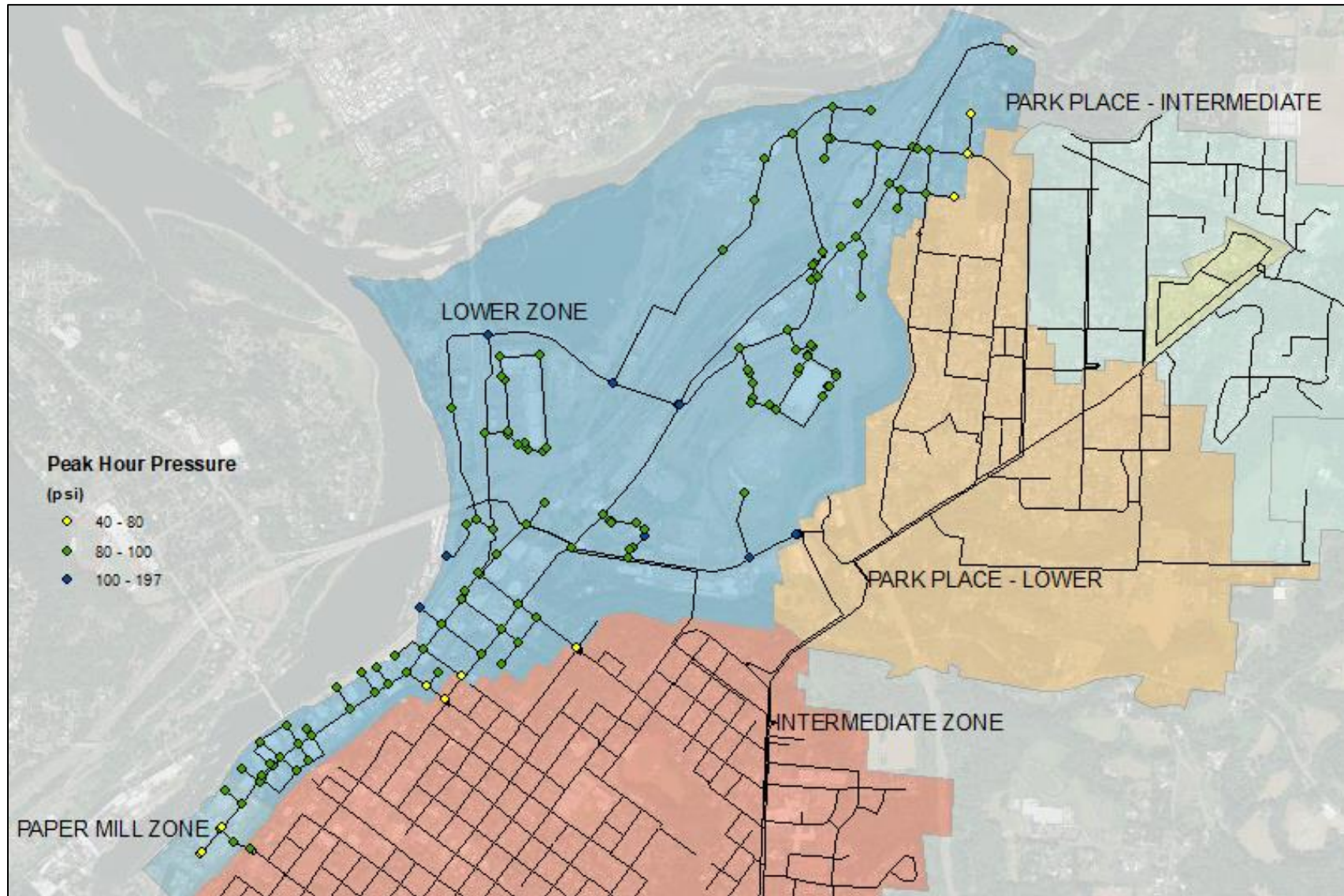


Figure A3
Results: MDD +3,500 gpm Fire Flow

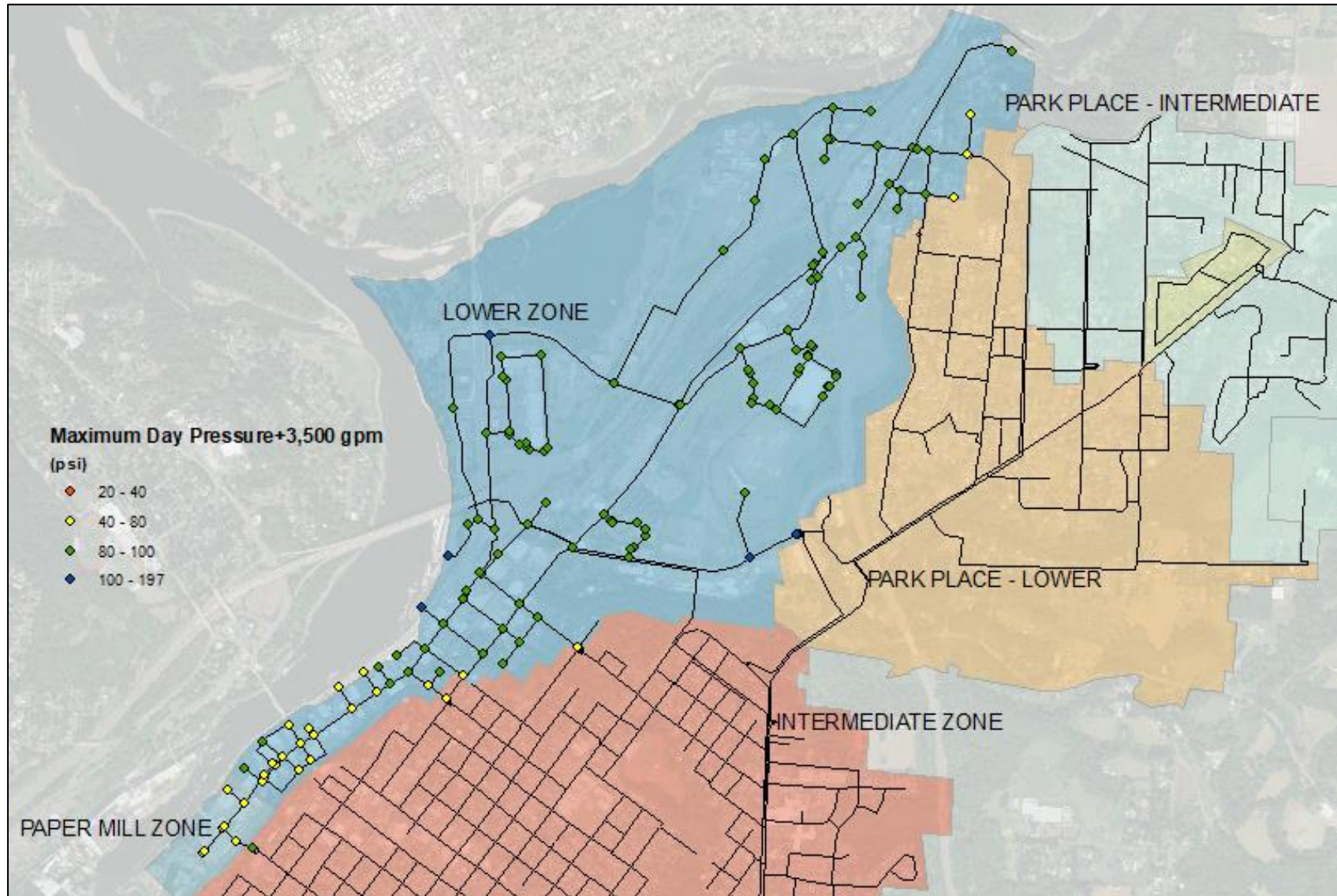


Figure A4

Results: MDD +5,000 gpm Fire Flow

