# CITY COUNCIL - VIRTUAL ONLY AGENDA

**January 18, 2024 at 7:00 PM**

**Remote Video Conferencing**

**PARTICIPANTS MAY ATTEND THE MEETING AT:**
YouTube:
Zoom:

**TO PARTICIPATE REMOTELY OR PROVIDE PUBLIC COMMENT:**
Register with the City Recorder:
CityRecorder@ci.wilsonville.or.us or 503-570-1506
Individuals may submit comments online at: https://www.ci.wilsonville.or.us/SpeakerCard,
via email to the address above, or may mail written comments to:
City Recorder - Wilsonville City Hall
29799 SW Town Center Loop East, Wilsonville, OR 97070

***CITY COUNCIL MISSION STATEMENT***

*To protect and enhance Wilsonville's livability by providing quality service to ensure a safe, attractive, economically vital community while preserving our natural environment and heritage.*

**REVIEW OF AGENDA AND ITEMS ON CONSENT [5:00 PM]**

**COUNCILORS' CONCERNS [5:05 PM]**

**PRE-COUNCIL WORK SESSION [5:10 PM]**

A. Trip Insurance for Travel to Kitakata, Japan *(Villagrana/Assured Partners)* [15 min.]

B. Stafford-65th-Elligsen Intersection Update (*Weigel*) [10 min.]

C. City Charter – Term Limits *(Guile-Hinman)* [30 min.]

D. 2024 State Legislative Session Priorities (*Ottenad*) [10 min.]

**ADJOURN [6:45 PM]**

**AN URBAN RENEWAL AGENCY MEETING WILL IMMEDIATELY FOLLOW THE WORK SESSION**

***CITY COUNCIL MEETING***

*The following is a summary of the legislative and other matters to come before the Wilsonville City Council a regular session to be held, January 18, 2024 at City Hall. Legislative matters must have been filed in the office of the City Recorder by 10:00 a.m. on January 2, 2024. Remonstrances and other documents pertaining to any matters listed in said summary filed at or prior to the time of the meeting may be considered there with except where a time limit for filing has been fixed.*

**CALL TO ORDER [7:00 PM]**

1. Roll Call
2. Pledge of Allegiance
3. Motion to approve the following order of the agenda.

**MAYOR'S BUSINESS [7:05 PM]**

4. Adoption of 2024 State Legislative Priorities
5. Upcoming Meetings

**COMMUNICATIONS [7:20 PM]**

6. Willamette Water Supply Program Project (*Weigel*)

**CITIZEN INPUT AND COMMUNITY ANNOUNCEMENTS [7:35 PM]**

*This is an opportunity for visitors to address the City Council on any matter concerning City's Business or any matter over which the Council has control. It is also the time to address items not on the agenda. It is also the time to address items that are on the agenda but not scheduled for a public hearing. Staff and the City Council will make every effort to respond to questions raised during citizen input before tonight's meeting ends or as quickly as possible thereafter. Please limit your comments to three minutes.*

7. Citizen's Input

**COUNCILOR COMMENTS, LIAISON REPORTS AND MEETING ANNOUNCEMENTS [7:45 PM]**

8. Council President Akervall
9. Councilor Linville
10. Councilor Berry
11. Councilor Dunwell

**CONSENT AGENDA [8:05 PM]**

12. **Resolution No. 3039**

A Resolution Of The City Of Wilsonville Authorizing The City Manager To Enter Into And Execute The Intergovernmental Agreement With Clackamas County Relating To The Stafford-65th-Elligsen Roundabout Project. (*Weigel*)

13. **Resolution No. 3076**

    A Resolution Of The City Of Wilsonville Authorizing An Intergovernmental Agreement With The City Of Wilsonville Urban Renewal Agency Pertaining To A Short Term Urban Renewal Debt For The Coffee Creek Plan District For The Purpose Of Funding The Construction Of Capital Improvement Project By The Agency. (*Katko*)

14. **Resolution No. 3107**

    A Resolution Authorizing The City Manager To Enter Into A Development Agreement With Venture Properties, Inc. Regarding The Funding And Construction Of The Boeckman Creek Regional Trail And Associated Boeckman Creek Trailhead Park In The Frog Pond Terrace Subdivision. (Guile-Hinman/Pepper)

15. **Resolution No. 3108**

    A Resolution Of The City Of Wilsonville Authorizing The City Manager To Enter Into And Execute The Intergovernmental Agreement With Washington County For Design Of Public Utility Improvements On Basalt Creek Parkway. (*Wiegel*)

16. **Resolution No. 3109**

    A Resolution Of The City Of Wilsonville Authorizing Acquisition Of The Fifth Group Of Property And Property Interests Related To Construction Of The Boeckman Road Corridor Project. *(Barrett/Kraushaar)*

17. Minutes of the January 4, 2024 City Council Meeting. (City Recorder)

**NEW BUSINESS [8:10 PM]**

18. **Resolution No. 3099**

    A Resolution Of The City Of Wilsonville Referring The Question Of Forming A Town Center Urban Renewal District For An Advisory Vote Of The Wilsonville Electorate. (*Lorenzen*)

**CONTINUING BUSINESS [8:25 PM]**

19. **Ordinance No. 888** - 2nd Reading (Legislative Land Use)

    An Ordinance Of The City Of Wilsonville To Adopt The 2023 Wastewater Treatment Plant Master Plan As A Sub-Element To The City Of Wilsonville Comprehensive Plan And The Wastewater Treatment Plant Capital Improvement Project List. (*Nacrelli*)

**PUBLIC HEARING [8:30 PM]**

20. **Ordinance No. 886** *1st Reading (Quasi-Judicial Land Use Hearing)*

    An Ordinance Of The City Of Wilsonville Annexing Approximately 5.00 Acres Of Property Located At 7252 SW Frog Pond Lane For Development Of A 17-Lot Residential Subdivision. (*Luxhoj*)

21. **Ordinance No. 887** *1st Reading (Quasi-Judicial Land Use Hearing)*

    An Ordinance Of The City Of Wilsonville Approving A Zone Map Amendment From The Clackamas County Rural Residential Farm Forest 5-Acre (RRFF-5) Zone To The Residential Neighborhood (RN) Zone On Approximately 5.00 Acres Located At 7252 SW Frog Pond Lane For Development Of A 17-Lot Residential Subdivision. *(Luxhoj)*

**CITY MANAGER'S BUSINESS [8:45 PM]**

**LEGAL BUSINESS [8:50 PM]**

**ADJOURN [8:55 PM]**

**INFORMATIONAL ITEMS** – No Council Action Necessary

City Manager Reports

**AN URBAN RENEWAL AGENCY MEETING WILL IMMEDIATELY FOLLOW THE WORK SESSION**

*Time frames for agenda items are not time certain (i.e. agenda items may be considered earlier than indicated). The City will endeavor to provide the following services, without cost, if requested at least 48 hours prior to the meeting by contacting the City Recorder at 503-570-1506 or CityRecorder@ci.wilsonville.or.us: assistive listening devices (ALD), sign language interpreter, and/or bilingual interpreter. Those who need accessibility assistance can contact the City by phone through the Federal Information Relay Service at 1-800-877-8339 for TTY/Voice communication.*

*Habrá intérpretes disponibles para aquéllas personas que no hablan Inglés, previo acuerdo. Comuníquese al 503-570-1506.*

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject:** City Charter – Term Limits<br><br>**Staff Member:** Amanda Guile-Hinman, City Attorney<br><br>**Department:** Legal |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** N/A | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |
| ☐Council Goals/Priorities: | ☐Adopted Master Plan(s): ☒Not Applicable |

**ISSUE BEFORE COUNCIL:**
Whether to consider advancing a charter amendment to the Wilsonville electorate to clarify mayoral term limits and to direct staff regarding next steps.

**EXECUTIVE SUMMARY:**

During public comment at the March 20, 2023 City Council meeting, members of the community requested that the Council consider a charter amendment to treat the mayoral term(s) separately from councilor term(s). Upon discussion with Council at the March 20, 2023 meeting regarding the community input received, staff reviewed information regarding term limits and the process to refer a charter amendment for a vote of the Wilsonville electorate, if so desired by the Council. This staff report discusses how to refer a ballot measure to amend the City Charter to separate the mayoral term(s) from the councilor term(s) and examines similar processes by surrounding jurisdictions.

If Council's direction is to move forward with a ballot measure to amend the City Charter, the next policy question is what type of terms is Council interested in exploring to refer to the voters? Currently, all members of Council are limited to 12 years in a 20 year period, regardless of position (mayor or councilor). The Council could consider separating the mayoral position from councilor position in several different ways. As explained below, Tualatin, where voters amended its charter to create council term limits following an initiative process, recently amended its Charter regarding the mayoral terms. Similarly, Tigard is referring a ballot measure to its voters in May 2024 to repeal and replace its charter, which includes revising its mayoral terms. There are many iterations of options available for calculating the mayoral terms if the Council is interested in treating mayoral terms separate from councilor terms. Upon Council's direction, staff can prepare appropriate authorizing legislation for Council consideration.

This staff report explores the steps necessary to pursue a charter amendment to the City Council term limits in light of recent public comment requesting the City consider proposing such charter amendment. Particularly, this staff report first provides background information regarding the current charter provision concerning term limits, then outlines the steps for Council to refer a ballot measure to the voters, and finally summarizes the steps that the City of Tualatin and City of Tigard took to refer to their respective voters revisions to their term limits provision of their city charters.

## I. Background

In 2019, the City received an initiative petition from voters in Wilsonville to amend the Wilsonville City Charter to impose term limits on all members of the City Council. A similar term limit charter amendment had recently passed in the City of Tualatin in 2016. In the May 2020 primary election, a majority of voters voted in favor of term limits, which provision is now codified in Section 29 of the Wilsonville City Charter. This Section limits terms to 12 years in any 20 year period, regardless of position held (Councilor, Mayor, pro tem member, or any combination thereof). Section 29 states:

> No person shall be eligible to serve on the City Council more than twelve (12) years in any twenty (20) year period, whether serving as Councilor, Mayor, a pro tem member, or a combination thereof. No person may be elected or appointed to an office on the City Council if completing that term of office would cause a violation of these term limits. The calculation of "years" shall include those

> preceding the enactment of this Section, but shall not prevent any member of the City Council from completing a term of office. To be eligible for election or appointment to an office on the City Council, prior years of service on the City Council shall be calculated by first determining the aggregate number of days a person has previously served as a member of the City Council within the period of twenty calendar years prior to the commencement of the proposed term, and then attributing a year of service for every 365.25 days of service within that period.

During the March 20, 2023 City Council meeting, members of the community requested that the Council consider a charter amendment to treat the mayoral term(s) separately from councilor term(s). Staff offered to review the requests and provide information to Council regarding term limits and referring a charter amendment at a future work session.

## II. Steps to Refer a Ballot Measure to the Voters

The requirements to refer a ballot measure are found in both the Wilsonville Code (WC) and state law. Attached hereto as **Attachment 1** is an excerpt of the State's Referral Manual concerning city referrals. While state law provides options with some of the steps, this staff report explains the steps staff recommends to follow to ensure sufficient time for completing the necessary processes.

Pursuant to WC 2.410, to begin the referral process, Council must approve a resolution calling for the referral of a ballot measure and designating either the regular election date or the special election date when the Council seeks to have the electorate vote on the ballot measure. For efficiency, such resolution should include a ballot title written by the City Attorney that complies with the requirements of ORS 250.035(1) that the Council approves as part of the resolution.

ORS 250.035(1) requires a ballot title to include a caption of not more than 10 words identifying the subject matter, a question of not more than 20 words that phrases the chief purpose of the measure so that an affirmative response corresponds to an affirmative vote on the measure, and a statement of not more than 175 words summarizing the measure and its major effect.

In addition to the ballot title, the city will also need to prepare an explanatory statement of 500 words or less describing the ballot measure, which must approved by the Council to be included in the voters' pamphlet. *See* OAR 165-022-0040. This explanatory statement can be approved by Council via the same resolution as the ballot title.

Upon approval of the resolution, the City Recorder publishes notice in a newspaper of general circulation that any voter may challenge the ballot title, with information of the deadline for filing a petition for review of the ballot title and the ballot title provider or information on how to obtain a copy of the ballot title. In addition, the notice may also be published for a minimum of seven (7) days on the City's website.

Assuming no appeal within the allowed timeframe, or upon completion of an appeal of the ballot title, the final ballot title is then certified via a state elections form that is provided to the county elections official who then assigns a measure number.

The timeline for all work is based on the anticipated election date. Assuming a May election date, the above-described steps must be completed by the following dates:

- March 1, 2024 – Last day to file with City Recorder ballot title for publication of notice
- March 21, 2024 – Last day to file Notice of City Election Measure (Form SEL 801) with county elections officials (can only be filed after completion of ballot title challenge process, if any)
- March 25, 2024 – Last day to file arguments for inclusion in voters' pamphlet
- May 21, 2024 – Election Day

## III. Tualatin Charter Amendment and Proposed Tigard Charter Replacement

After Tualatin voters approved a term limit charter amendment in 2016, its council referred a ballot measure to its voters in 2022 to separate the terms of the mayoral position from the councilor position. That ballot measure passed in the May 2022 election. For Council's reference, attached as **Attachment 2** is Tualatin's Resolution referring the amendment to the voters. The Tualatin Charter originally limited a person to serving in any position on Council for 12 years within a 20 year period (what the Wilsonville charter amendment was modeled after). The Tualatin charter amendment changed the term limits as follows:

- If a person served two consecutive terms as Councilor, the person could serve an additional two consecutive terms as Mayor, instead of just one term.

Tigard seeks to clarify confusing language in its current charter concerning term limits. Under Tigard's current charter, no Councilor may serve for more than 8 consecutive years and no Mayor may serve for more than 8 consecutive years, but in no case may any person serve on the Council for more than 12 consecutive years. Thus, Tigard's current charter precludes a person from serving 8 years as Councilor and 8 years as Mayor. Unlike Tualatin or Wilsonville, however, Tigard's charter does not count the filling of an unexpired term to these limitations. If approved by its voters, Tigard's proposed new charter will change the council term limits as follows:

- Setting term limits as two consecutively elected or appointed terms as Councilor and two consecutively elected or appointed terms as Mayor. And no more than four terms total.
- State that a two-year break in service is required to reset term limits.
- Defining that a 'term' is a length of service greater than 3 years.

The proposed new Tigard charter is attached as **Attachment 4**. Tigard's revisions retain the limitation of two terms as Councilor and two terms as Mayor, but removes the 12-consecutive-year limitation. It further requires a minimum of a two-year break before resetting. Defining a

"term" as being more than 3 years appears to avoid the issue of when a Mayor or Councilor is appointed or elected part way through an existing term.

**EXPECTED RESULTS:**
If Council is interested in pursuing a referral to amend the City Charter, staff recommends that staff relatively quickly begin drafting a proposed resolution to refer the matter, a ballot title, and an explanatory statement. Since Council will not hold its regular Council meeting on the first Monday of February, Council will need to consider a resolution to refer an amendment to the City Charter at its February 22, 2024 meeting.

Should Council direct staff to work on drafting the necessary documents, staff anticipates referring a City Charter amendment in the May 21, 2024 election.

**TIMELINE:**
As noted above, the deadline for submission to the City Recorder is March 1, 2024, so if Council wishes to move forward with a referral, staff plans to bring back a resolution for consideration at Council's February 22, 2024 meeting.

**CURRENT YEAR BUDGET IMPACTS:**
N/A

**COMMUNITY INVOLVEMENT PROCESS:**
Once a ballot measure is referred, the City may only answer factual questions but cannot advocate any position on the measure. Factual information can be provided on the City's website and in the Boones Ferry Messenger.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
The separation of or additional term for the mayoral position may allow a mayor to serve additional time as mayor if they also served as city councilor. This can provide additional experience, consistency, and leadership to the mayoral role. Currently, if a councilor has served two terms (8 years) and then is elected mayor, that person can only serve as mayor for one term (four (4) years). Additionally, if a councilor who is in the middle of a first term (2 years) is elected mayor, as mayor, that person can only serve two terms (8 years) as mayor, because the City Charter currently prohibits any candidate from seeking election if they would not be able to serve the full term within the term limits. Similarly, if a councilor who is in the middle of a second term (6 years) is elected mayor, as mayor, that person can only serve only 1 term as mayor.

When the City of Tualatin referred its ballot measure to the voters, only arguments in favor were submitted for the voters' pamphlet. Those statements are provided here as **Attachment 3** explaining the reasons community members in Tualatin believed that revising the term limits for the mayoral position was in the best interest of that community.

**ALTERNATIVES:**
Determine not to move forward with a referral.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**

1. Excerpt of State Referral Manual (with 2023 dates; 2024 dates are included at the end of Attachment 1)
2. City of Tualatin Resolution No. 5582-21
3. Excerpt of May 17, 2022 Washington County Voters Pamphlet regarding Tigard Ballot Measure
4. Tigard Proposed Charter

# County, City, and District Referral Manual

*Published by*

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*Adopted by*

Oregon Administrative Rule No. 165-014-0005

## Secretary of State

**Elections Division** Rev. 02/2022

# 2022 Local Elections Calendar

| District Measures | March 8 | May 17 | August 23 | November 8 |
|---|---|---|---|---|
| **Last Day for County Elections Official to Publish** | | | | |
| → notice of district measure election | | See ORS 255.085 | | |
| **Last Day for County, City, or District Governing Body to File with Local Elections Official** | | | | |
| → ballot title for publication of notice | December 17 | February 25 | June 3 | August 19 |
| **or** | | | | |
| → referral text so a ballot title can be written | | | | |
| **Last Day for Local Governing Body to File with County Elections Official** | | | | |
| → Form SEL 801 Notice of Measure Election - County | January 6 | March 17 | June 23 | September 8 |
| ❗ Form may only be filed upon completion of the ballot title challenge process. | | | | |
| → Form SEL 802 Notice of Measure Election - City | January 6 | March 17 | June 23 | September 8 |
| ❗ Form may only be filed upon completion of the ballot title challenge process. | | | | |
| → Form SEL 803 Notice of Measure Election – District | January 6 | March 17 | June 23 | September 8 |
| ❗ Form may not be filed until after the deadline for the immediately preceding election has passed and only upon completion of the ballot title challenge process. | | | | |
| **Last Day to File with County Elections Official** | | | | |
| → arguments for inclusion in county voters' pamphlet | January 10 | March 21 | June 27 | September 12 |

# 2023 Local Elections Calendar

| District Measures | March 14 | May 16 | August 22 | November 7 |
|---|---|---|---|---|
| **Last Day for County Elections Official to Publish** | | | | |
| → notice of district measure election | | See ORS 255.085 | | |
| **Last Day for County or City Governing Body to File with Local Elections Official** | | | | |
| → ballot title for publication of notice | December 23 | February 24 | June 2 | August 18 |
| **or** | | | | |
| → referral text so a ballot title can be written | | | | |
| **Last Day for Local Governing Body to File with County Elections Official** | | | | |
| → Form SEL 801 Notice of Measure Election - County | January 12 | March 16 | June 22 | September 7 |
| ❗ Form may only be filed upon completion of the ballot title challenge process. | | | | |
| → Form SEL 802 Notice of Measure Election - City | January 12 | March 16 | June 22 | September 7 |
| ❗ Form may only be filed upon completion of the ballot title challenge process. | | | | |
| → Form SEL 803 Notice of Measure Election – District | January 12 | March 16 | June 22 | September 7 |
| ❗ Form may not be filed until after the deadline for the immediately preceding election has passed and only upon completion of the ballot title challenge process. | | | | |
| **Last Day to File with County Elections Official** | | | | |
| → arguments for inclusion in county voters' pamphlet | January 17 | March 20 | June 26 | September 11 |

# Notice of Local Option Tax Measure or General Obligation Bond

County elections officials must file with the Secretary of State a copy of the Notice of Measure Election for each local option tax measure or general obligation bond measure placed on the ballot by a municipal corporation.

# City Referral Steps

**City Governing Body**

**1** Begin process by filing with city elections official the:

→ ballot title (skip to step 4)

**or**

→ referral text (continue to step 2).

81st day before the election

**City Elections Official**

**2** Forward a copy of the referral text to the city attorney for preparation of a ballot title.

next business day after receipt of referral

**City Attorney**

**3** Prepare and files ballot title that impartially summarizes the referral and its major effect.

5th business day after receipt

**4** Publish receipt of ballot title.

next available edition of a newspaper of general circulation in the city

In addition, the notice may also be published on the city's web site for a minimum of seven days.

**Registered Voter** (steps not required)

**5** Voter who is dissatisfied with ballot title can petition circuit court for review.

7th business day after ballot title filed

**6** Voter notifies city elections official of petition filing.

5:00:00 pm 1st business day after the petition is filed with circuit court

**7** File with the county elections official form SEL 802 containing the final ballot title and an explanatory statement, if required.

61st day before the election

**County Elections Official**

**8** Assign measure number.

any time after deadline to file notice of measure election

## Competing Measure

If a qualified initiative is filed by the city elections official at a city governing body meeting that occurs on the 90th day before the election and the governing body refers a competing measure, the ballot title process including the challenge period must be completed no later than the 61st day before the election.

# City Referral Process

Local charter or ordinance requirements do not supersede ORS 250.035 relating to ballot title format or the statement of measures filed under ORS 254.095.

Once a city governing body refers a measure for the voters to decide, a ballot title must be written. All ballot titles must comply with the requirements in ORS 250.035.

## Ballot Title Process

*ORS 250.035, 250.275, 250.285, and 250.296*

A ballot title is a concise and impartial statement prepared by the city governing body or the city attorney that will be printed on the ballot summarizing the referral and its major effect. Any voter may challenge the ballot title in circuit court and the referral may only appear on the ballot once this process is complete.

### 1 Preparation

For any referral, the city governing body may:

→ prepare and file a ballot title with the city elections official

**or**

→ file referral text with the city elections official.

Form SEL 805 Request for Ballot Title – Preparation or Publication of Notice may be used to file:

→ the text of the referral so a ballot title can be written

**or**

→ the ballot title written by the governing body or city attorney for publication of notice.

The city elections official will forward a copy of the referral text to the city attorney for preparation of a ballot title. After receiving the referral, the city attorney writes and files a ballot title with the city elections official.

### 2 Format

Each ballot title must contain all of the following elements:

→ a caption that does not exceed 10 words describing the subject of the referral;

→ a question that does not exceed 20 words plainly phrasing the main purpose of the referral so that an affirmative response to the question corresponds to a yes vote on the referral; and

→ a summary that does not exceed 175 words describing the major effect of the referral.

Additional ballot title requirements apply to referrals requesting a general obligation bond, a local option tax, or a permanent rate limit.

For further information you may contact the Elections Division, your bond counsel, or the Oregon Department of Revenue, Property Tax Division 800 356 4222.

### 3 Notice

After receiving a ballot title from the city governing body or the city attorney, the city elections official publishes notice in the next available edition of a newspaper of general circulation that any voter may challenge the ballot title. It is advisable to also publish the notice on the city website for a minimum of seven days. The notice must include all of the following:

- → a statement that a ballot title has been received and that any voter may file a petition for review of the ballot title;
- → the deadline for filing a petition for review of the ballot title with the circuit court; and
- → the ballot title provided by the city governing body or city attorney or information on how to obtain a copy.

Notice must be published prior to the deadline to file a petition to review the ballot title.

### 4 Ballot Title Appeal

Any registered voter who is dissatisfied with the ballot title may petition the circuit court to review the ballot title. If a registered voter files a petition to review a ballot title with the circuit court, the voter must:

- → name the city governing body or city attorney as respondent, depending who prepared the ballot title;
- → state the reasons why the ballot title is insufficient, not concise or unfair; and
- → notify the city elections official in writing that a petition has been filed.

If the notification of the city elections official is not timely filed, the petition to the circuit court may be dismissed.

### 5 Circuit Court Review

When a petition is filed, the circuit court conducts its review and renders its decision certifying a ballot title meeting the requirements of ORS 250.035. The review of the ballot title by the circuit court shall be the first and final review.

If the Circuit Court certifies a different ballot title, the city elections official forwards the final ballot title to the city official authorized to submit notice of measure election for preparation of form SEL 802.

## Explanatory Statement

*ORS 251.067, 251.285, 251.345, and OAR 165-022-0040*

An explanatory statement is an impartial, simple and understandable statement explaining the measure. The city governing body must prepare and file an explanatory statement of no more than 500 words for a referral **only** if:

- → the county is producing a voters' pamphlet

  **or**

- → the referral will appear in the state voters' pamphlet.

Cities are encouraged to adopt and comply with an ordinance that provides a judicial review procedure for an explanatory statement which is contested. If a city measure is to appear in the state voters' pamphlet, a judicial review procedure is required.

See the State Voters' Pamphlet Manual available at **www.oregonvotes.gov** for additional requirements for referrals appearing in the state voters' pamphlet.

## Certification of Referral to Ballot

*ORS 254.095*

The city governing body must certify that the challenge process is complete and file the final ballot title on:

Form SEL 802 Notice of Measure Election – City.

If the county is producing a voters' pamphlet, the county elections official will reject any SEL 802 that is not accompanied by an explanatory statement.

After receiving a city referral, the county elections official assigns a measure number.

Ballot measure numbers will not be repeated. If the measure is later removed from the ballot, the measure number will not be re-used.

## Withdrawal of Referral

To withdraw a referral, the city governing body must complete and file with the county elections official:

Form SEL 804 Withdrawal - Notice of Measure Election.

The SEL 804 must be submitted no later than the 61st day before the election.

| Date | Description | Reference | Calculation | Election |
|---|---|---|---|---|
| February 12, 2024 | Last day to designate official ballot dropsites. Adjusted under ORS 187.010(3). | OAR 165-007-0030 | -30 | March |
| February 12, 2024 | First day to mail ballots to voters with a non-Oregon mailing address who are not military or overseas voters. | 253.065; 254.470 | -29 | March |
| February 12, 2024 | Last day to file explanatory statements, financial estimates and any statements explaining estimates. | 250.127; 251.215; 251.225 | -99 | Primary |
| February 16, 2024 | Last day to conduct hearings on explanatory statements, financial estimates and any statements explaining estimates. | 250.127; 251.215 | -95 | Primary |
| February 19, 2024 | President's Day | Federal Holiday | | No Mail Delivery |
| February 20, 2024 | Last day to register to vote. Registration cards postmarked by this date or submitted online no later than 11:59 pm are valid. | 247.025 | -21 | March |
| February 20, 2024 | Last day to cancel voters based on information from US Postal Service records. | 247.296 | -91 | Primary |
| February 21, 2024 | First day to mail ballots to voters. | 254.470 | -20 | March |
| February 21, 2024 | First day for political party to request free statewide voter file from Secretary | 247.940 | -3 Months | Primary |
| February 21, 2024 | Last day to prepare and mail submarine ballot to military and overseas voters. | 253.565 | -90 | Primary |
| February 21, 2024 | Last day for major political party to file rules opening primary election. | 254.365 | -90 | Primary |
| February 21, 2024 | Last day to file revised explanatory statements, financial estimates and any statements explaining estimates. | 250.127; 251.215 | -90 | Primary |
| February 23, 2024 | Last day to mail ballots to voters without daily mail service. | 254.470 | -18 | March |
| February 23, 2024 | Last day for Secretary of State to file financial estimates and any statements explaining estimates, if financial estimate committee does not. | 250.127 | -88 | Primary |
| February 26, 2024 | Last day for Secretary of State to notify county clerks of open primary. | OAR 165-007-0030 | -85 | Primary |
| February 26, 2024 | Last day to petition Supreme Court to review explanatory statements or process used to adopt financial estimates and any statements explaining | ORAP Rule 11.30; 250.131; 251.235 | 5 | Revision Deadline |
| February 27, 2024 | Last day to distribute county voters' pamphlet. | 251.315 | -14 | March |
| February 27, 2024 | Last day to mail ballots to voters. | 254.470 | -14 | March |
| February 27, 2024 | Last day to notify Secretary of State of intent to publish or not publish county voters' pamphlet. | OAR 165-007-0030 | -84 | Primary |
| February 29, 2024 | Last day for candidate to register as nonaffiliated to meet 180 day registration requirement for general election. | 249.720 | -180 | General Filing Deadline |
| February 29, 2024 | Monthly initiative petition submission. | 250.105 | | State Initiative |
| March 1, 2024 | Last day for governing body to file referral text or prepared ballot title in order to complete challenge period by deadline to file notice of measure election. | OAR 165-014-0005 | -81 | Primary |
| March 5, 2024 | Last day to conduct public certification test of vote tally system. | 254.235 | -7 | March |

| Date | Description | Reference | Calculation | Election |
|---|---|---|---|---|
| March 7, 2024 | Last day absentee or replacement ballots are required to be mailed to voters. | 247.307; 253.545; 254.470 | -5 | March |
| March 7, 2024 | Deadline to compile list of inactive voters with valid mailing addresses, including those who are inactive due to nonmatching signature or name | 247.281 | -75 | Primary |
| March 12, 2024 | **Election Day.** County Clerk's office open 7 am - 8 pm. Official dropsites open until 8 pm, for minimum of 8 hours. | 254.470 | Election Day | March |
| March 12, 2024 | Seven day campaign finance transaction reporting ends. | 260.057 | Election Day | March |
| March 12, 2024 | Last day for voter to return ballot. Ballots that are mailed must be postmarked by election day. Ballots deposited in an official drop box must be received by 8 | 253.070; 254.470 | Election Day | March |
| March 12, 2024 | Last day for major party or nonpartisan candidate to file declaration of candidacy or nominating petition. | 249.037 | -70 | Primary |
| March 12, 2024 | Last day for district candidate to file declaration of candidacy, nominating petition or to withdraw. | 255.235 | -70 | Primary |
| March 12, 2024 | First day to mail notice to voters who were inactive as of the 75th day before | 247.281 | -70 | Primary |
| March 13, 2024 | Last day for Secretary of State to complete random ordering of alphabet to determine candidate name placement. | 254.155 | -69 | Primary |
| March 14, 2024 | Last day for Secretary of State to distribute random alphabet. | 254.155 | -68 | Primary |
| March 14, 2024 | Last day to file or withdraw candidate statements or measure arguments for state voters' pamphlet. | 251.065; 251.245; 251.255; 251.285 | -68 | Primary |
| March 14, 2024 | Last day for candidate, who files candidacy with county clerk, to file statement for county voters' pamphlet. | OAR 165-022-0010 | -68 | Primary |
| March 15, 2024 | Last day for candidate, other than district candidate, to withdraw. | 249.170 | -67 | Primary |
| March 19, 2024 | Last day to receive valid postmarked ballots by mail. | 253.070; 254.470 | 7 | March |
| March 19, 2024 | Last day to review state voters' pamphlet filings for statutory compliance. | 251.087; 251.260 | 3 business | VP Filing Deadline |
| March 20, 2024 | Last Day to forward ballots. | 253.070; 254.470 | 8 | March |
| March 20, 2024 | Material submitted for state voters' pamphlet available for public inspection. | 251.145 | 4 business | VP Filing Deadline |
| March 20, 2024 | Candidate voters' pamphlet statements, for candidates who file candidacy with county clerk, available for public inspection. | 251.430 | 4 business | VP Filing Deadline |
| March 21, 2024 | Last day for Secretary of State and city elections official to file ballot | 254.085; 254.095 | -61 | Primary |
| March 21, 2024 | Last day to file or withdraw notice of measure election and any required explanatory statement. | 254.095; 254.103; 255.085; OAR 165-022-0010 | -61 | Primary |
| March 21, 2024 | Last day to notify candidates and measure argument filers of required corrections to state voters' pamphlet material. | 251.087; 251.260 | 5 business | VP Filing Deadline |

| Date | Description | Reference | Calculation | Election |
|---|---|---|---|---|
| March 22, 2024 | Last day to mail notice to voters who were inactive as of the 75th day before | 247.281 | -60 | Primary |
| March 25, 2024 | Last day for candidate, who files candidacy with governing body other than county clerk, to file statement for county voters' pamphlet. | OAR 165-022-0010 | -57 | Primary |
| March 25, 2024 | Last day to file measure arguments for county voters' pamphlet. | OAR 165-022-0010 | 2 business | Notice Deadline |
| March 25, 2024 | Last day for candidate or measure argument filer to correct state voters' | 251.087; 251.260 | 7 business | VP Filing Deadline |
| March 27, 2024 | Information identifying voters with ballots challenged for missing or non-matching signatures available for public inspection. | 254.431 | 15 | March |
| March 29, 2024 | Candidate statements, for candidates who file candidacy with governing body other than county clerk, and measure arguments available for public | 251.430 | 4 business | VP Filing Deadline |
| March 29, 2024 | Monthly initiative petition submission. | 250.105 | | State Initiative |
| April 2, 2024 | Last day to resolve ballot challenges. | 254.426; 254.431 | 21 | March |
| April 6, 2024 | Last day to print and mail ballots to military and overseas voters. | 253.065 | -45 | Primary |
| April 8, 2024 | Last day to prepare and deliver abstracts to appropriate elections officials. | 254.545; 255.295 | 27 | March |
| April 8, 2024 | First day the county clerk may provide, in person or by mail, a ballot to voter who will be away during an election. | 254.470 | -43 | Primary |
| April 9, 2024 | Seven day campaign finance transaction reporting begins. | 260.057; 260.118 | -42 | Primary |
| April 16, 2024 | Last day to issue proclamation if provisions of two or more approved county | 254.545 | 35 | March |
| April 18, 2024 | Last day to prepare and electronically deliver precinct level results and Ballot Count Report to Secretary of State. | 254.074; 254.545; OAR 165-007-0030 | 37 | March |
| April 18, 2024 | Last day to certify 50% turnout of eligible voters. | OAR 165-007-0130 | 37 | March |
| April 19, 2024 | Last day for elections official to prepare and deliver acceptance of office form to individuals nominated or elected by write-in. | 254.548 | 38 | March |
| April 22, 2024 | Last day for city elections official to canvass votes for city measures and issue proclamation if provisions of two or more approved measures conflict. | 254.565 | 40 | March |
| April 22, 2024 | Last day to file contest of election, if no recount. Adjusted under ORS 246.021. | 258.036 | 40 | March |
| April 22, 2024 | Last day to establish or divide precincts. Adjusted under ORS 187.010(3). | 246.410 | -30 | Primary |
| April 22, 2024 | Last day to designate official ballot dropsites. Adjusted under ORS 187.010(3). | OAR 165-007-0030 | -30 | Primary |
| April 22, 2024 | First day to mail ballots to voters with a non-Oregon mailing address who are not military or overseas voters. | 253.065; 254.470 | -29 | Primary |
| April 23, 2024 | Last day to file recount demand. | 258.161 | 42 | March |
| April 24, 2024 | Last day for individuals nominated or elected by write-in to file acceptance | 254.548 | 43 | March |
| April 26, 2024 | Last day to deliver a certificate of nomination or election to individuals who filed write-in acceptance forms and, if applicable, issue a proclamation declaring the election of those individuals. | 254.548 | 45 | March |

| Date | Description | Reference | Calculation | Election |
|---|---|---|---|---|
| April 26, 2024 | Last day for district elections authority to determine result of election. | 255.295 | 45 | March |
| April 26, 2024 | Election Day Report due. | DIR. 2006-7 | 45 | March |
| April 30, 2024 | Last day to register to vote or change party affiliation. Registration cards postmarked by this date or submitted online no later than 11:59 pm are valid. | 247.025; 247.203 | -21 | Primary |
| April 30, 2024 | Monthly initiative petition submission. | 250.105 | | State Initiative |
| May 1, 2024 | Last day to mail state voters' pamphlet. | 251.175 | -20 | Primary |
| May 1, 2024 | First day to mail ballots to voters. | 254.470 | -20 | Primary |
| May 3, 2024 | Last day to mail ballots to voters without daily mail service. | 254.470 | -18 | Primary |
| May 6, 2024 | Last day for political party to request free statewide voter file from Secretary | 247.940 | -15 | Primary |
| May 7, 2024 | Last day to distribute county voters' pamphlet. | 251.315 | -14 | Primary |
| May 7, 2024 | Last day to mail ballots to voters. | 254.470 | -14 | Primary |
| May 14, 2024 | Last day to conduct public certification test of vote tally system. | 254.235 | -7 | Primary |
| May 16, 2024 | Last day absentee or replacement ballots are required to be mailed to voters. | 247.307; 253.545; 254.470 | -5 | Primary |
| May 21, 2024 | **Election Day.** County Clerk's office open 7 am - 8 pm. Official dropsites open until 8 pm, for minimum of 8 hours. | 254.470 | Election Day | Primary |
| May 21, 2024 | Last day to file write-in declaration or write-in nomination for precinct committeeperson. Must be filed no later than 8 pm. | 248 | Election Day | Primary |
| May 21, 2024 | Last day for voter to return ballot. Ballots that are mailed must be postmarked by election day. Ballots deposited in an official drop box must be received by 8 | 253.070; 254.470 | Election Day | May |
| May 21, 2024 | Seven day campaign finance transaction reporting ends. | 260.057; 260.118 | Election Day | Primary |
| May 24, 2024 | Last day to submit state initiative petition signatures for early verification. | 250.105 | -165 | General |
| May 24, 2024 | Seven day campaign finance transaction reporting begins for Initiative Petition Committees. | 260.118 | -42 | Submission Deadline |
| May 27, 2024 | Memorial Day | Federal Holiday | | No Mail Delivery |
| May 28, 2024 | Last day to receive valid postmarked ballots by mail. | 253.070; 254.470 | 7 | Primary |
| May 29, 2024 | Last Day to forward ballots. | 253.070; 254.470 | 8 | Primary |
| May 31, 2024 | Monthly initiative petition submission. | 250.105 | | State Initiative |
| June 5, 2024 | Information identifying voters with ballots challenged for missing or non-matching signatures available for public inspection. | 254.431 | 15 | Primary |
| June 5, 2024 | First day to file declaration of candidacy or nominating petition for local offices filled at general election. | 221.180 | 15 | General |
| June 5, 2024 | First day for nonaffiliated and minor political party candidates to file certificates of nomination for general election. | 249.722 | 15 | General |

# ATTACHMENT 2

RESOLUTION NO. 5582-21

A RESOLUTION REFERRING TO THE ELECTORS OF THE CITY OF TUALATIN THE QUESTION OF AMENDING THE CITY CHARTER TO MODIFY MAYORAL TERM LIMITS IN CERTAIN CIRCUMSTANCES.

WHEREAS, under Article XI, section 2 of the Oregon Constitution, the City of Tualatin has "home rule" authority over the civil affairs of its City;

WHEREAS, Article XI of the Oregon Constitution, and ORS Chapters 250 and 251, authorize the City to refer a matter to voters to amend the City's Charter;

WHEREAS, pursuant to Chapter II, section 4, Chapter III, section 6, Chapter VI, section 23, and other relevant provisions of the Charter and State law, the Council has the power to refer a matter to voters; and

WHEREAS, the Council wishes to refer a matter to the voters to consider amending the Charter, as set forth in this resolution.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TUALATIN, OREGON, that:

**Section 1. Measure.** A measure election is hereby called for the purpose of submitting to the electors of the City of Tualatin a measure amending the City Charter to modify Mayoral term limits in certain circumstances, a copy of which is attached as "Exhibit 1," and incorporated herein by reference.

**Section 2. Election Conducted by Mail.** The measure election shall be held in the City of Tualatin on May 17, 2022, at the next statewide primary election. As required by ORS 254.465, the measure election shall be conducted by mail by the County Clerks of Washington & Clackamas Counties, according to the procedures adopted by the Oregon Secretary of State.

**Section 3. Delegation.** The City of Tualatin authorizes the City Manager, or the City Manager's designee, to act on behalf of the City and to take such further action as necessary to carry out the intent and purposes set forth herein, in compliance with the applicable provisions of law.

**Section 4. Preparation of Ballot Title.** The City Attorney has prepared the ballot title for the measure, which is attached as "Exhibit 2," and incorporated by reference. The ballot measure approved and the City Attorney is hereby directed to deposit the ballot title with the city elections officer within the time established by law.

**Section 5. Notice of Ballot Title and Right to Appeal.** Upon receiving the ballot title for this measure, the city elections officer must publish in the next available edition of a newspaper of general circulation in the city a notice of receipt of the ballot title, including notice that an elector may file a petition for review of the ballot title.

**Section 6. Explanatory Statement.** The explanatory statement for the measure, is attached as "Exhibit 3," and incorporated herein by reference, is hereby approved.

**Section 7. Filing with County Elections Office.** The city elections officer shall deliver the Notice of Measure Election to the County Clerks for Washington & Clackamas County for inclusion on the ballot for the May 17, 2022, election.

**Section 8. Effective Date.** This resolution is effective upon adoption.

INTRODUCED AND ADOPTED this 8th day of November, 2021.

CITY OF TUALATIN OREGON

BY Frank Bubenik
Mayor

APPROVED AS TO LEGAL FORM

BY Sean Brady
City Attorney

ATTEST

BY Sherilyn Lombos
City Recorder

# EXHIBIT 1
## RESOLUTION NO. 5582-21

**MEASURE LANGUAGE**

Section 12(a) of the City of Tualatin Charter is amended as follows:

No person shall be eligible to serve on the City Council more than twelve (12) years in any twenty (20) year period, whether serving as Councilor, Mayor, a pro tem member, or a combination thereof, except if a person has served only two terms as a City Councilor, then that person shall be eligible to serve another two consecutive terms as Mayor. No person may be elected or appointed to an office on the City Council if completing that term of office would cause a violation of these term limits. The calculation of "years" shall include those preceding the passage of this Section, but shall not prevent any member of the City Council from completing a term of office that commenced prior to its passage. For the purposes of this Section, years of service on the City Council shall be calculated by first determining the aggregate number of days a person has served as a member of the City Council within an applicable window of twenty calendar years, and then attributing a year of service for every 365.25 days of service. This Section becomes effective immediately upon passage.

# EXHIBIT 2
## RESOLUTION NO. 5582-21

**BALLOT TITLE**

Amends Charter to Modify Mayoral Term Limits in Certain Circumstances.

**QUESTION**

Should the Charter be amended to allow a two-term City Councilor the opportunity to serve two consecutive terms as Mayor?

**SUMMARY**

The Measure would amend the City of Tualatin Charter to modify the term limits for the Office of Mayor. If passed, the Measure would allow a person to serve two terms (8 years) as a City Councilor followed by two consecutive terms (8 years) as Mayor, in a 20-year period.

The existing City Charter imposes term limits on a person serving on City Council as Mayor, a Councilor, or a combination of the two offices, to no more than 12 years in a 20-year period. Under the current Charter language, if a person previously served two terms (8 years) as a City Councilor, the person is limited to serving one term (4 years) as Mayor, in a 20-year period. The measure would modify the Charter such that a person who previously served two terms (8 years) as a City Councilor could serve two consecutive terms (8 years) as Mayor, for a total of 16 years on City Council in a 20-year period. In all other circumstances, the 12-year term limit in a 20-year period applies.

# EXHIBIT 3
## RESOLUTION NO. 5582-21

**EXPLANATORY STATEMENT**

This Measure, if approved, would amend Section 12(a) of the City of Tualatin Charter ("Charter") to create a new term limits provision applicable to the Office of Mayor. If passed, the Measure would allow a person who has previously served two terms (8 years) as a City Councilor to be eligible to serve two consecutive terms (8 years) as Mayor, if elected, in a 20-year period.

The City Council consists of the Mayor and six City Councilors. The Charter provides that the Mayor is elected to a four-year term and each City Councilor is elected to a four-year term. The existing Charter language imposes term limits to prohibit a person from serving on City Council to no more than 12 years in any 20-year period. The 12-year limit in the Charter applies to the total amount of time a person serves on the City Council, whether the person is serving as a Mayor, a Councilor, or any combination of the two offices.

This Measure would amend the Charter to modify the term limits applicable to the Office of Mayor in the circumstance where the person has previously served two terms (8 years) as a City Councilor. Under the existing Charter language, if a person has previously served two terms (8 years) as a City Councilor, the person can only serve one term (4 years) as Mayor, in a 20-year period. If approved, this Measure would allow a person to serve as Mayor for two consecutive terms (8 years), instead of only one term (4 years).

The effect of the Measure would allow a person to possibly serve a total of 16 years on City Council in a 20-year period. In all other circumstances, the general term limits of 12 years in any 20-year period would apply to the Office of Mayor. The Measure does not change the term limits for City Councilors.

This Measure would become effective immediately upon passage.

**Signature:** Frank Bubenik

**Email:** fbubenik@tualatin.gov

**Signature:** Sherilyn Lombos
Sherilyn Lombos (Nov 9, 2021 13:14 PST)

**Email:** slombos@tualatin.gov

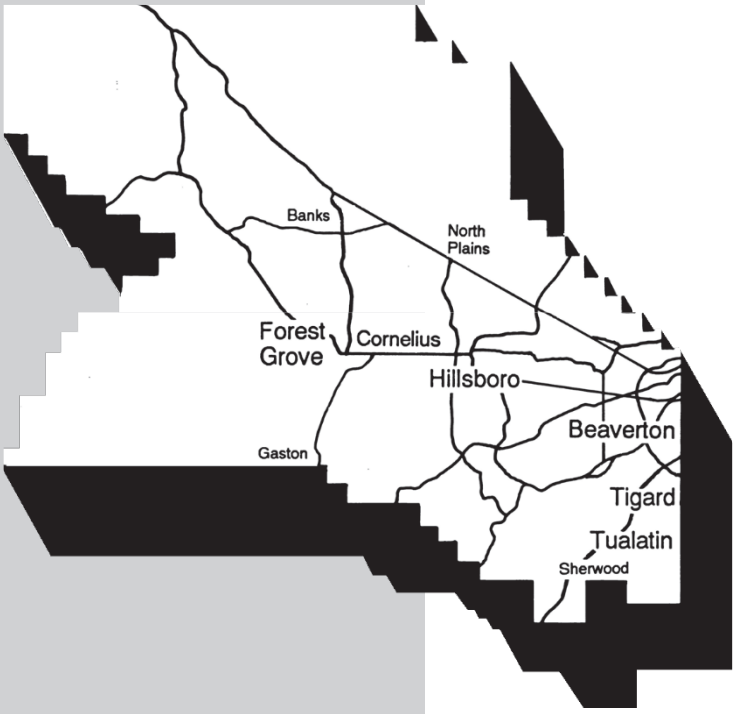
**Signature:** Sarah Brady

**Email:** sbrady@tualatin.gov

**Elections Division**
2925 NE Aloclek Dr, Ste 170
Hillsboro, OR 97124-7523

**www.co.washington.or.us**

# Washington County Voters' Pamphlet




## VOTE-BY-MAIL SPECIAL ELECTION May 17, 2022

## Washington County Board of County Commissioners

Kathryn Harrington, Chair
Nafisa Fai, District 1
Pam Treece, District 2
Roy Rogers, District 3
Jerry Willey, District 4

### ATTENTION

This is your county voters' pamphlet. Washington County Elections prints information as submitted. We do not correct spelling, punctuation, grammar, syntax, errors or inaccurate information. All information contained in this county pamphlet has been assembled and printed by Joe Nelson, Director Washington County Assessment & Taxation.

Dear Voter:
This pamphlet contains information for several districts and there may be candidates/measures that are not included on your ballot. If you have any questions, call 503-846-5800.

# City of Tualatin

# Measure No. 34-309

## Ballot Title

**Amends Charter to Modify Mayoral Term Limits in Certain Circumstances.**

**Question:** Should the Charter be amended to allow a two-term City Councilor the opportunity to serve two consecutive terms as Mayor?

**Summary:** The Measure would amend the City of Tualatin Charter to modify the term limits for the Office of Mayor. If passed, the Measure would allow a person to serve two terms (8 years) as a City Councilor followed by two consecutive terms (8 years) as Mayor, in a 20-year period. The existing City Charter imposes term limits on a person serving on City Council as Mayor, a Councilor, or a combination of the two offices, to no more than 12 years in a 20-year period. Under the current Charter language, if a person previously served two terms (8 years) as a City Councilor, the person is limited to serving one term (4 years) as Mayor, in a 20-year period. The measure would modify the Charter such that a person who previously served two terms (8 years) as a City Councilor could serve two consecutive terms (8 years) as Mayor, for a total of 16 years on City Council in a 20-year period. In all other circumstances, the 12-year term limit in a 20-year period applies.

## Explanatory Statement

This Measure, if approved, would amend Section 12(a) of the City of Tualatin Charter ("Charter") to create a new term limits provision applicable to the Office of Mayor. If passed, the Measure would allow a person who has previously served two terms (8 years) as a City Councilor to be eligible to serve two consecutive terms (8 years) as Mayor, if elected, in a 20-year period.

The City Council consists of the Mayor and six City Councilors. The Charter provides that the Mayor is elected to a four-year term and each City Councilor is elected to a four-year term. The existing Charter language imposes term limits to prohibit a person from serving on City Council to no more than 12 years in any 20-year period. The 12-year limit in the Charter applies to the total amount of time a person serves on the City Council, whether the person is serving as a Mayor, a Councilor, or any combination of the two offices.

This Measure would amend the Charter to modify the term limits applicable to the Office of Mayor in the circumstance where the person has previously served two terms (8 years) as a City Councilor. Under the existing Charter language, if a person has previously served two terms (8 years) as a City Councilor, the person can only serve one term (4 years) as Mayor, in a 20-year period. If approved, this Measure would allow a person to serve as Mayor for two consecutive terms (8 years), instead of only one term (4 years).

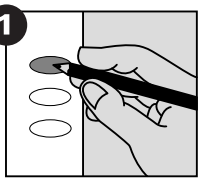
The effect of the Measure would allow a person to possibly serve a total of 16 years on City Council in a 20-year period. In all other circumstances, the general term limits of 12 years in any 20-year period would apply to the Office of Mayor. The Measure does not change the term limits for City Councilors.

This Measure would become effective immediately upon passage.

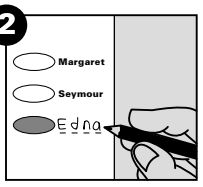
Submitted by:
Sherilyn Lombos, City Manager

### Complete your ballot

Carefully read and follow all instructions printed on your ballot.



To vote, completely fill in the oval next to your choice.




To write-in a candidate:

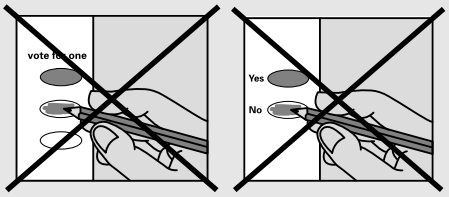
→ Clearly print his or her name on the blank line provided on the ballot

**-and-**

→ Fill in the oval next to the name you wrote-in

### Check for errors

You do not have to vote on all contests. Those you do vote on will still count.




If you vote for more than one option, your vote **will not count** for that candidate or measure.

**Check your ballot carefully**
You can not change your vote after you have returned your ballot

Contact your County Elections Office or call **1 866 673 VOTE** to request a replacement ballot if:

→ you make a mistake
→ your ballot is damaged or spoiled
→ you lose your ballot
→ or for any other reason.

No Arguments in Opposition of this measure were filed.

# City of Tualatin

# Measure No. 34-309 Arguments

## Argument in Favor

**VOTE YES ON 34-309**

Measure 34-309 does not overturn term limits in Tualatin, but instead proposes a narrow and significant improvement to the existing term limits. Since term limits were implemented in 2016, voters have elected a new mayor and the membership of the Council has seen a nearly complete turnover. The results have been intensely positive, but there soon could be one significant negative: the loss of experienced and effective leadership.

The premise behind 34-309 is that a councilor needs two terms (eight years) to get fully educated on the issues and to develop meaningful relationships with other elected officials. After that time, the councilor is able to effectively function as Mayor - the leader of our community. Under Tualatin's current term limits, that experienced and effective mayor is limited to a single term, essentially stopping the engine when it is running at its greatest efficiency, which is clearly not a good policy.

I do not believe that 34-309 represents a radical departure from the spirit of the existing term limits, which allow individuals to serve twelve years in any twenty-year period as a means of preventing any individual to become entrenched in power.

There are significant advantages to adopting 34-309, which will allow a seasoned mayor to be eligible to serve a second, consecutive term. After that second term and a total of sixteen years of service, the former mayor could not run for local office again for a period of eight years. The additional four-year term as mayor would not, therefore, allow the mayor to become entrenched in power. Moreover, if a first term mayor did not perform well, then that mayor would be eligible for another term, but unlikely to be re-elected, which is a form of de facto term limits.

Please join me in voting YES on Measure 34-309 and adopting a better policy for the long-term governance of Tualatin.

This information furnished by:
Robert E. Kellogg

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## Argument in Favor

**Vote YES on Measure 34-309**

I encourage you to support amending the City Charter regarding term limits to allow a mayor to serve two terms even if that person has already served two terms as a council member.

As others have pointed out, it takes time for a new councilor to learn what is required to be an effective council member. Beyond having to learn about and address the myriad of issues cities face every day, the cities in the Portland Metro area must work collaboratively on regional issues. That means a councilor must cultivate professional relationships with their counterparts in other cities, counties, Metro, Tri-Met, and special districts. That is even more true for the mayor. Mayors interact with other mayors in Oregon and nationally on a regular basis. The Mayor is the City's liaison not only regionally but at the State and Federal levels. It takes time for a mayor to establish the position of trust, ability, and knowledge necessary to be listened to on matters that affect Tualatin and other cities. A one-term mayor from a small city, such as Tualatin, will rarely have the time to have achieved the level of respect necessary to have others in power to address our concerns, proposed solutions, requests for legislation or Federal, State, or County funding.

This proposed amendment still serves the purpose of encouraging new residents to serve on the Council while assuring some turnover on the Council. The two-term limit is consistent with what other cities in our area have adopted. Please vote to amend the Charter to allow a person who has previously served two terms as a city councilor to serve two terms as mayor.

Respectfully submitted,

Brenda L. Braden
former Tualatin City Attorney (1994-2012)

This information furnished by:
Brenda Braden

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## Argument in Favor

**YES ON 34-309**

Cities with term limits rely on employees to run them. We are fortunate in Tualatin that these employees competently perform their jobs and avoid the bureaucracy that plagues other small towns. Still, we did not elect them. We did elect our councilors and Mayor for the purpose of providing leadership on local topics like transportation and housing which are important to Tualatin residents.

Tualatin has hundreds of city employees and we need a mayor to grow into their job so they can be as effective at cutting red tape as ceremonial ribbons. The new term limits being proposed will at least allow dedicated citizens to serve as Mayor for 8 years if they have served on city council for at least 8 years.

It's not perfect but it's a chance to give dedicated citizens—who we have selected—adequate time to design, develop, and deploy impactful changes for our community.

Please join me in voting YES on Measure 34-309.

Ross Baker

This information furnished by:
Ross Baker

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## Argument in Favor

**VOTE YES ON TUALATIN CHARTER AMENDMENT 34-309**

As a leader on the Tigard-Tualatin School Board since 2019 and the current Chair, I have seen how critical relationships are for local government leaders when it comes to accessing information and resources in a timely fashion–particularly in moments of crisis. Being able to pick up the phone to call key federal officials, state leaders, and colleagues in other jurisdictions is an important part of the job of locally elected officials.

While this function is especially valuable during crises, it is also true in more "normal" circumstances; having a mayor that is deeply engaged and well-connected to other officials, nearby jurisdictions, and relevant organizations benefits Tualatin's residents and small businesses tremendously–and these relationships are not built overnight.

In today's policy-making environment, cities cannot simply "go it alone." Most of the major issues affecting residents' quality of life require collaboration with public partners: housing and homelessness, transportation, environmental protection,

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# City of Tualatin

## Measure No. 34-309 Arguments

education, and more require collaboration and consultation with the state and federal government, the counties, neighboring cities, Metro, Trimet, the school district, and more. There are also nonprofits and membership associations that are critical for municipal leaders to be engaged with: the League of Cities, the Westside Economic Alliance, the Metropolitan Mayors' Consortium, chambers of commerce, and more.

That is a lot of ground to cover and people/processes to get to know in just four years as mayor.

This proposed charter change would give Tualatin a competitive advantage in regional affairs by providing more time for the mayor to:

1) Build working relationships with federal, state, and local leaders
2) Understand the overlapping jurisdictions and complex decision-making processes in the metro region
3) Gain status and experience in local and regional groups and committees to advance Tualatin's interests

**I encourage voters to vote YES on 34-309 for a more effective and responsive local government.**

Sincerely,

Ben Bowman
Chair, Tigard-Tualatin School Board

This information furnished by:
Ben Bowman

The printing of these arguments does not constitute an endorsement by Washington County, nor does the county warrant the accuracy or truth of any statements made in the arguments.

**Update your registration if you are away from home**

The post office will not forward your ballot.

You can request an **absentee ballot** if you will not be home during an election. The ballot will be sent to the alternate address you provide.

for more information about voting in Oregon

**oregonvotes.gov**

**1 866 673 VOTE / 1 866 673 8683**
*se habla español*

**TTY** **1 800 735 2900**
*for the hearing impaired*

# City of Tigard Charter of 2024

## PREAMBLE

We the people of Tigard, Oregon, are a community that recognizes the value of all individuals. We exercise our power to the fullest extent possible under the constitution and laws of the State of Oregon and enact this home rule Charter.

## ARTICLE I
## Name and Boundaries

**Section 1.1. Title of Enactment.** This enactment may be referred to as the City of Tigard Charter of 2024.

**Section 1.2. Name.** The municipality of Tigard, Washington County, Oregon, continues to be a municipal corporation with the name "City of Tigard."

**Section 1.3. Boundaries.** The City includes all territory within its boundaries as they now exist or are legally modified in the future.

## ARTICLE 2
## Powers of the City

**Section 2.1. Powers of the City.** The City has all powers expressly or impliedly granted or allowed by the constitutions, statutes, and common law of the United States and State of Oregon as fully as if this Charter specifically enumerated each of those powers.

**Section 2.2. Construction.** This Charter is liberally construed so that the City may exercise fully all powers possible under this Charter and under United States and Oregon law.

**Section 2.3. Where Powers Vest.** All powers of the City are vested in the City Council, except as otherwise provided by law or this Charter.

## ARTICLE 3
## Council

**Section 3.1. Council Composition.** The Council is comprised of a Mayor and six Councilors nominated and elected from the City at-large.

**Section 3.2. Oath.** Before carrying out the duties of office, the Mayor and each Councilor must subscribe and swear or affirm an oath to the effect that the person will faithfully discharge to the best of the person's ability the duties of the office being assumed and will support the constitutions and laws of the United States and the State of Oregon and the charter and

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ordinances of the City of Tigard. The oath must be administered and attested to by a notary public or other person duly authorized to administer oaths. The oath may be taken up to 30 days prior to the scheduled date of assuming office.

**Section 3.3. Mayor.** Except as otherwise provided in this Charter, the Mayor is the elected, public policy head of City government. The Mayor is a voting member of Council and has no veto authority. In exercising the powers of the Mayor, the Mayor:

a) Has authority over the agenda for Council meetings.
b) Presides over and facilitates Council meetings as the chair, preserves order, enforces Council rules, and determines the order of business.
c) Signs the authorized writings and records of Council decisions.
d) Appoints members of City boards and committees, as provided by Council rules.

**Section 3.4. Council President.** Council will elect a Council President at its first meeting each year. The Council President will perform the duties of the office of Mayor in the Mayor's absence and may perform other duties of the Mayor at the Mayor's request. In the event the Mayor is unavailable to serve, the Council President will serve as the Mayor Pro Tempore. If the Council President vacates the position, the Council will elect a Council President to serve in that position until the next Council President is elected pursuant to this Section.

**Section 3.5. Terms.** The Mayor and each Councilor's term of office is four years and commences on the first day of January after the election to office. One of the new positions created by this 2024 Charter will be elected to a four-year term and the other to a two-year term in the 2024 general election. Council members currently serving at the time this 2024 Charter is adopted will continue to serve the remainder of their terms.

**Section 3.6 Term Limits.** A Mayor may not be elected or appointed to more than two consecutive terms, and a Councilor may not be elected or appointed to more than two consecutive terms, for a total of no more than four consecutive terms on Council. A partial term only applies to a Council member's term limit calculation if the Council member is elected or appointed to a term greater than three years. Terms are considered "consecutive" if there is less than a two-year break from the date last in office to the first date of the Council member's next term.

**Section 3.7. No Interference.** No Council member may directly or indirectly coerce or attempt to coerce the City Manager, City Attorney, or Municipal Court Judge, or a candidate for the office of City Manager, City Attorney, or Municipal Court Judge, in the appointment or removal of a City employee, in an administrative decision of the officer, or in otherwise executing the officer's powers and duties. Council will determine the appropriate penalty for violation of this prohibition, up to and including removal from office. A due process hearing of the full City Council and a unanimous vote of all Council members, with the exception of the member who is the subject of the vote, is required to remove a Council member. A majority vote of Council

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is required to impose any other penalty. In Council meetings, Council members may discuss or suggest matters with the officer relating to City business.

**Section 3.8. Council Rules.** Every two years, Council will adopt ground rules by resolution. Ground rules will include a code of conduct, process for the selection of board and committee members, and will govern proceedings of the Council where they do not conflict with law or the provisions of this Charter. Council will determine, by majority vote, the appropriate penalty for a violation of the ground rules, up to and including a resolution of censure and removal from Council assignments. A violation of the ground rules will not be considered a basis for challenging the validity of any Council decision.

**Section 3.9. Compensation.** The Council will adopt, by resolution or ordinance, an independent review process for determining the compensation of the Mayor and Councilors.

## ARTICLE 4
## City Officers

This Charter establishes three City offices appointed and removed by a majority of Council—a City Manager, a City Attorney, and Municipal Court Judge. No member of Council may assign or direct the work of any of the following offices:

**Section 4.1. City Manager**. The City Manager is the administrative head of the City government. The City Manager is responsible to the City Council for the proper leadership and administration of all City business including serving as the Budget Officer; appointing and removing all City employees except the Municipal Court Judge and City Attorney; organizing departments; and carrying out all City operations, policies, resolutions, and ordinances.

**Section 4.2. City Attorney**. The City Attorney is the chief legal officer for the City. The City Attorney must be an active member in good standing of the Oregon State Bar. The City Attorney appoints, manages, and may remove any employees who work exclusively in and for the City Attorney's office.

**Section 4.3. Municipal Court and Judges.** The Tigard Municipal Court is established and continues to operate as the City's Municipal Court.

a) All areas within the City and areas outside the City as permitted by state law are within the territorial jurisdiction of the court. The Municipal Court has subject matter jurisdiction over every offense created by City ordinance and to the fullest extent allowed by law over all misdemeanors and violations defined and made punishable under state law, unless limited by City ordinance.
b) All municipal court judges, including judges pro tempore, must be active members in good standing of the Oregon State Bar. The Presiding Judge exercises general supervision over the judicial functions of the Municipal Court and its judges and has authority over the dockets and assignment of cases.

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## ARTICLE 5
## Elections

**Section 5.1. City Elections.** City elections must conform to state law, unless this Charter or City ordinances provide otherwise. All elections for City offices are nonpartisan.

**Section 5.2. Qualification of Electors.** Every person who is a resident of the City and who qualifies as a legal voter under state law may vote in a City election.

**Section 5.3. Eligibility.** Each member of Council must be a qualified elector under state law, registered to vote in the City of Tigard, and have continuously resided within the City for at least one year immediately before the date of election or appointment to office. Except when a state trial court has jurisdiction over the matter, the Council is the final judge of the election and eligibility of its members.

**Section 5.4. Conduct of Election.** Elections to the office of Mayor and Councilor will be held at the general election, except as otherwise provided by this Charter for special elections to fill vacancies. The candidate receiving the highest number of votes for the office of Mayor is elected to the office. The three candidates receiving the highest number of votes for the office of Councilor are elected to the office. If a Council position for less than a full four-year term is on the ballot, the candidate receiving the highest number of votes for that position is elected to the office.

**Section 5.5. Vacancies in Office.** The office of Mayor or Councilor becomes vacant upon the Mayor or Councilor's:

a) Death;
b) Resignation from the office;
c) Recall from office;
d) Ceasing to reside in the city;
e) Ceasing to be a qualified elector under state law or this Charter;
f) Adjudicated incompetence;
g) Conviction of a felony;
h) Absence for 30 days from regular meetings of the Council without the consent of the Council and upon a declaration of vacancy approved by unanimous vote of all Council members except the member who is subject of the vote; or
i) Removal pursuant to Section 3.7 of this Charter.

**Section 5.6. Filling Vacancies.** In the event the office of Mayor or Councilor becomes vacant before the normal expiration of the term, the Council may fill the vacancy for the remainder of the term by election or appointment. A special election may only be called if the election will be held at least one year before the term would otherwise expire.

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## ARTICLE 6
## Council Meetings; Ordinances

**Section 6.1. Rules and Meetings.** The Council may adopt rules regarding Council meetings to the extent the rules do not conflict with law or this Charter. The Council will meet at a time and place designated by its rules and may meet at other times in accordance with its rules and state law.

**Section 6.2. Quorum.** A majority of the Council members is a quorum to conduct business. In the event of a vacancy pursuant to Section 5.5 of this Charter, or loss of contact during a state or federal state of emergency within the City, the quorum is reduced accordingly. Every Council member who is present must be counted for the purpose of constituting a quorum, even if the Council member does not vote on one or more issues.

**Section 6.3. Record of Proceedings.** A record of Council meetings must be kept in a manner prescribed by state law and the Council's rules.

**Section 6.4. Voting.** Except as otherwise provided in this Charter, the express approval of a majority of the Council members present and voting is necessary for any Council decision.

**Section 6.5. Ordaining Clause.** The council exercises its legislative authority by adopting ordinances. The enacting clause for all ordinances must state "The City of Tigard ordains as follows:"

**Section 6.6. Adoption.** Adoption of an ordinance requires:

a) A duly noticed public hearing on the ordinance;
b) Reading the ordinance, by title only, in an open Council meeting; and
c) A roll call vote whether to adopt the ordinance.

**Section 6.7. Record of Vote.** After the adoption of an ordinance:

a) The Mayor must sign the ordinance; and
b) The City Recorder must attest to the adoption and date of adoption of the ordinance and enter into the Council minutes the vote of each member of Council on the ordinance.

**Section 6.8. Effective Date of Ordinances.** Ordinances normally take effect on the 30th day after adoption or on a later day provided in the ordinance. An ordinance may take effect as soon as adopted or on another date less than 30 days after adoption if the ordinance contains an emergency clause.

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## ARTICLE 7
## Public Improvements; Debt

**Section 7.1 Improvements.** The procedure for making, altering, vacating, or abandoning a public improvement will be governed by state law.

**Section 7.2 Special Assessments.** The procedure for levying, collecting, and enforcing special assessments for public improvements or other services charged against real property will be governed by ordinance.

**Section 7.3 Debt Limit.** City indebtedness may not exceed debt limits imposed by state law.

## ARTICLE 8
## Miscellaneous Provisions

**Section 8.1. Ordinance Continuation.** All ordinances and other enactments consistent with this Charter, and in force when this Charter takes effect, remain in effect until amended or repealed.

**Section 8.2. Pending Matters.** All rights, claims, causes of actions, duties, contracts, and legal administrative proceedings that exist when this Charter takes effect continue and are unimpaired by this Charter, except as modified pursuant to the provisions of this Charter, and in each case will be maintained, carried on, or dealt with by the City department, office, or agency appropriate under this Charter.

**Section 8.3. Severability.** The terms of this Charter are severable. If any provision of this Charter is held invalid by a court, the invalidity does not affect the validity of the remaining parts of the Charter.

**Section 8.4. Time of Effect.** This Charter takes effect 30 days after the day on which it is approved by a majority of voters, and except as otherwise provided is operative July 1, 2024. The City may take any action before this Charter's operative date that is necessary to enable the City on or after the operative date to exercise all duties, functions, and powers conferred on the City by this Charter.

**Section 8.5. Saving Clause.** All Charter provisions adopted before this Charter takes effect continue in force and effect until repealed.

**Section 8.6. Amendments.** Amendments to this Charter proposed by initiative must be held at a primary or general election and must receive at least sixty percent approval of the popular vote.

**Section 8.7. Repeal.** All Charter provisions adopted before this Charter takes effect are repealed when this Charter becomes operative on July 1, 2024.

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WILSONVILLE
OREGON

# CITY COUNCIL MEETING
# STAFF REPORT

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject:** 2024 State Legislative Session Priorities<br><br>**Staff Member**:<br>Mark Ottenad, Public/Government Affairs Director<br><br>**Department:** Administration |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☒ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** Adoption during Mayor's Business on January 18 of the 2024 State Legislative Session Priorities provide direction to staff and consultant regarding the City Council's legislative preferences. |
| **Staff Recommendation:** N/A | |
| **Recommended Language for Motion:** N/A | |
| **PROJECT / ISSUE RELATES TO:** | |
| ☐ Council Goals/Priorities | ☐ Adopted Master Plan(s) ☒ Not Applicable |

**ISSUE BEFORE COUNCIL:**

City Administration seeks adoption by the City Council of a set of 2024 State Legislative Session Priorities that complements the 2023-24 State Legislative Agenda for specific public-policy priorities that advance key City objectives and guide how the City reacts to legislative proposals that may arise during the short, 35-day 2024 session of the 82nd Oregon Legislative Assembly.

**EXECUTIVE SUMMARY:**
Starting in 2023 the City Council adopted a set of specific State Legislative Session Priorities that register specific issues of concern, as well as reflect ad-hoc issues of the day for which long-term City policies may not address adequately but for which the City Council considers important.

**The City's draft set of 2024 State Legislative Session Priorities reflect current topical issues and various issues that have been raised over the past few years**. Some of the priorities below with an asterisk (*) are a repeat of 2023 legislative session priorities advanced by the City last year:

1. Restore Recreational Immunity for Public Use of Trails
2. Fund WES Commuter Rail Extension Study*
3. Create a State Residential Housing Infrastructure Fund; Oppose Efforts to Override Land-Use Laws for Urban Growth Boundary (UGB) Expansion
4. Reauthorize and Fund the Business Oregon Regionally Significant Industrial Sites (RSIS) Program*
5. Provide Charbonneau/Wilsonville I-5 Boone Bridge Tolling Waiver/Exemption
6. Extend Sunset on Vertical Housing Development Zone (VHDZ) Incentive
7. Improve Childcare Resources to Benefit Families/Workers and Employers

Attachment 1, draft 2024 State Legislative Session Priorities, provides more details on the above-listed priorities.

**Background Information**
At the start of each two-year-long session of the Oregon legislature, the City Council adopts a State Legislative Agenda that guides how City staff and consultants evaluate proposed legislation in terms of opposing, supporting or remaining neutral. The City's State Legislative Agenda is grounded in long-term City Council-adopted policies embodied in the Comprehensive Plan and other master plans or specific strategy documents and highlights current Council goals and known issues under consideration.

Over the past two legislative sessions, however, unique opportunities have arisen for the City for which the City did not have specific legislative policy guidance. Subjects or issues that City master plans, Comprehensive Plan, or strategic plans do not address that the City Council has expressed interest in or support for or opposition to. Additionally, new issues arise that require the City to advance specific legislative priorities in a timely manner at the legislature. Thus, starting in 2023 the City Council began to adopt a more timely, current set of Legislative Session Priorities.

The City first developed a written State Legislative Agenda in 2011 with citations to specific sources of City authority for each agenda item. All of the legislative agenda items are based on policies established by the City Council over time through the Comprehensive Plan, Goal 9 Economic Opportunities Analysis and other City master plans/strategies and Council direction. Thus, the City's State Legislative Agenda is grounded in long-term City Council-adopted policies that embrace core community values as expressed by the community's elected officials.

In developing the City's legislative agenda and priorities list, staff review existing and prior city policies and practices, examine the legislative agendas and priorities of other metro-area jurisdictions and affiliated organizations such as League of Oregon Cities (LOC), and gather information from lobbyists and other public-affairs professionals about primary issues of concern in the 2024 legislative session.

**City's State Legislators**
After the 2020 Decennial Census, the Oregon legislature redrew House and Senate district boundaries based on population changes. All areas of the City of Wilsonville community are now in one House District and Senate District, whereas for the prior 10 years Charbonneau was segmented into a separate set of districts.

- **House District 26: Representative Courtney Neron of Wilsonville** (Democrat), who has been appointed to serve on the following committees during 2024 session:
    - House Interim Committee On Education - Chair
    - Joint Task Force On Statewide Educator Salary Schedules - Co-Chair
    - House Interim Committee On Early Childhood and Human Services
    - House Interim Committee On Gambling Regulation

- **Senate District 13: Senator Aaron Woods of Wilsonville** (Democrat), former City Planning Commissioner, who has been appointed to serve on the following committees during 2024 session:
    - Joint Committee On Information Management and Technology - Co-Chair
    - Joint Interim Committee On Ways and Means Subcommittee On Transportation and Economic Development - Co-Chair
    - Senate Committee On Conduct
    - Senate Interim Committee On Veterans, Emergency Management, Federal and World Affairs
    - Joint Committee On Conduct
    - Joint Committee On Transportation

Both of Wilsonville's legislators are supporters of public-policy positions that the City has endorsed, and have indicated support to introduce a bill to study the extension of WES Commuter Rail service from Wilsonville to Salem.

**TIMELINE:**
The 2024 "short" legislative session convenes on February 5 and is scheduled to conclude by March 10, 2024.

**CURRENT YEAR BUDGET IMPACTS*:***
No budget impacts are anticipated based solely on adoption of the 2024 State Legislative Session Priorities. Other legislative-related expenses are currently budgeted.

Actions that the legislature takes can impact the City's budget directly or indirectly in a favorable or detrimental manner.

**CITY MANAGER COMMENT:**
The proposed 2024 State Legislative Session Priorities is in accord with Council's direction for City priorities and policies.

**ATTACHMENTS:**

1. Draft City of Wilsonville/SMART 2024 State Legislative Session Priorities, Jan. 18, 2024
2. City of Wilsonville/SMART 2023-24 State Legislative Agenda, Jan. 19. 2023

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# City of Wilsonville / SMART
# 2024 State Legislative Session Priorities

Acting on behalf of the residents and businesses of the City of Wilsonville and SMART, the City Council adopts this list of 2024 State Legislative Session Priorities, which accompanies the 2023-24 State Legislative Agenda, to promote municipal policy positions on specific issues of concern, as well as to reflect ad-hoc issues of the day for which long-term City policies may or may not address adequately but for which the City Council considers important to address in the "short" 2024 session of the 82nd Oregon Legislative Assembly.

*Wilsonville City Council, January 18, 2024*

## SUMMARY OF PRIORITIES

1. Restore Recreational Immunity for Public Use of Trails
2. Fund WES Commuter Rail Extension Study
3. Create a State Residential Housing Infrastructure Fund; Oppose Efforts to Override Land-Use Laws for UGB Expansion
4. Reauthorize and Fund the Business Oregon Regionally Significant Industrial Sites (RSIS) Program
5. Provide Charbonneau/Wilsonville I-5 Boone Bridge Tolling Waiver/Exemption
6. Extend Sunset on Vertical Housing Development Zone (VHDZ) Incentive
7. Improve Childcare Resources to Benefit Families/Workers and Employers

## DETAILED INFORMATION ON PRIORITIES

### 1. Restore Recreational Immunity for Public Use of Trails

On July 6, 2023, the Oregon Court of Appeals issued an opinion effectively ending recreational immunity for any Oregon jurisdictions' improved trails. Public and private landowners of improved trails are no longer protected from liability lawsuits; see *Fields v. City of Newport*, 326 Or. App. 764.

While the Cities of Newport and Medford, League of Oregon Cities, Association of Oregon Counties, Special Districts Association of Oregon, and the Oregon Recreation

and Park Association sought review by the Supreme Court, the Court declined to review the Court of Appeals' decision in *Fields* on Oct. 5, 2023.

At the heart of the dispute is whether a trial court can decide at the beginning of a case whether or not a plaintiff's "primary purpose" when entering land was recreational or not recreational. The key, according to the Oregon Court of Appeals, is the plaintiff's subjective intent, not her objective activities at the time.

CIS (Citycounty Insurance Services), which provides comprehensive property and liability insurance for most Oregon cities that includes Wilsonville, has recommended that cities and counties close trails to the public. At this time, the City has declined to close parks and trails to the public.

Unless the Legislature steps in, from now on when a person using the city's path claims that their subjective intent was not primarily to recreate, then recreational immunity does not apply at the beginning of a suit. Instead, the municipality (or private landowner) will have to defend the lawsuit all the way through a jury trial, so the jury can decide what the plaintiff was thinking about their "primary intent."




**Popular Ice Age Tonquin Trail in Graham Oaks Nature Park**: Villebois neighborhood entry sign, Wilsonville.

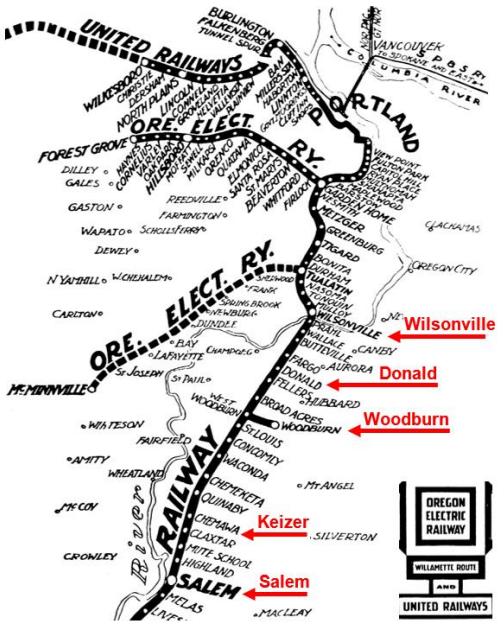
The Oregon legislature has repeatedly stood behind Oregon's policy of encouraging private and public landowners to open their property to the public for recreational activities like hiking, mountain biking, kayaking, hunting, fishing, rock climbing, and accessing the Coast.

The League of Oregon Cities and the Association of Oregon Counties are ready to bring a bill to the Legislature in 2024 to restore recreational immunity.

## 2. Fund WES Commuter Rail Extension Study

During the 2023 regular session, the legislature considered HB 2662-A, which would have established an inter-jurisdictional task force to study connecting the Portland metro-region to Salem/Keizer metro-area with a high-capacity transit option by extending from Wilsonville to Salem the Westside Express Service (WES) Commuter Train. While the bill passed unanimously by the Joint Transportation Committee in May 2023, the legislature was unable to consider advancing the bill along with 400 other bills that stalled during a legislative walk-out boycott.

HB 2662-A was supported by the cities of Aurora, Donald, Hubbard, Keizer, Salem, Wilsonville and Woodburn; Salem Mass Transit ("Cherriots"), SMART (South Metro Area Regional Transit) and Yamhill County Transit; and P & W Railroad. WES sponsor, TriMet, was neutral on the bill.




Working with these jurisdictions, Sen. Woods (D-Wilsonville), Rep. Mannix (R-Keizer) and Rep. Neron (D-Wilsonville) have prepared a legislative concept to be introduced as a bill in the 2024 session. This bipartisan and bicameral bill would create a multi-jurisdictional task force composed of local governments, metropolitan planning organizations, transit agencies and railroad interests to study extending the current rush-hour-only WES commuter train from the current southern terminus in Wilsonville for 31 miles to Salem, with stops in Donald, Woodburn and Keizer. The bill allocates $500,000 to ODOT for conducting the study and working with the Mid-Willamette Valley Council of Governments. The proposed legislation calls for the Willamette Valley Commuter Rail Task Force to report back to the legislature in September 2024 with study findings and recommendations.

A significant transportation-funding package is anticipated to be advanced in the 2025 legislative session. Prospective State "match" funding for advancing the WES Commuter Rail extension would allow ODOT to leverage substantial federal transportation infrastructure funding.

## 3. Create a State Residential Housing Infrastructure Fund; Oppose Efforts to Override Land-Use Laws for UGB Expansion

The Governor's Office has set a target goal for the state to produce 36,000 homes annually over the next decade, with at least half of the new homes affordable to people making 80% or less of the median income. Local governments, however, generally do not build housing, and rather provide the infrastructure that supports new residential development.



**Wilsonville's Villebois "urban village" development:** Extensive infrastructure—including water, sewer, storm-water, roads, sidewalks, parks and other amenities—were funded with a combination of urban renewal (tax increment financing) and system development charges.

Unfortunately the Governor's Housing Production Advisory Council has no representatives of cities that provide the planning and infrastructure that support the development of new homes. The Governor's Office has relied on real-estate interests advocating for simplistic solutions that upend local standards and just add new undeveloped land to cities' Urban Growth Boundaries that does

nothing to actually advance new residential development — especially affordable housing options that provide homebuilders with substantially less profit than market-rate housing. Efforts to override state land-use laws for UGB expansion should be opposed as ineffective for advancing affordable housing options.

**The Governor's Office appears be recognizing that the greatest impediment to advancing more housing is the overall high cost of infrastructure to support new housing development.** The private-sector has consistently shied away from sinking capital into the ground for housing infrastructure due to the speculative nature of the investment and high costs with a long pay-back period.

Thus, new State resources that can include outright grants as well as low-interest loans to cities to advance planning and infrastructure for development of new residential housing is needed. Additional ideas to consider include to expand and incentivize housing production on underused parking lots and commercial lands and buildings; subsidize housing for those making 60 percent and under area median income; and focus efforts on building housing for people with moderate and lower incomes.

## 4. Reauthorize and Fund the Business Oregon Regionally Significant Industrial Sites (RSIS) Program

The City of Wilsonville—together with the League of Oregon Cities, Port of Portland, Metro, Oregon Economic Development Association and local governments across the state—supported the original 2013 bills (HB 2284/HB 2285 and SB 253/SB 246) that authorized the Industrial Site Readiness Program. Several technical issues were identified subsequently by Business Oregon preventing implementation of the program, and SB 333 legislation of 2017 remedied those defects.

Summary Listing of RSIS Designated Sites and Project Detail

| Applicant | Site Name | Acres | Projected Cost | Estimated Jobs |
|---|---|---|---|---|
| Port of Portland | TRIP Phase 2 | 184.0 | $16,623,175 | 3,500 |
| Port of Morrow | East Beach Ind. Park | 982.0 | $7,979,490 | 800 |
| City of Hillsboro | Hillsboro Tech Park | 822.0 | $34,516,759 | 9,000 |
| City of Madras | Madras Airport | 1,146.0 | $27,747,500 | 1,000 |
| City of Pendleton | Pendleton UAS Range Phases 3,4,5 | 302.0 | $18,231,400 | 300 |
| Klamath County | WESGO | 70.8 | $2,020,000 | 150 |
| City of Waldport | Waldport Ind. Park | 100.00 | $15,331,151 | 1,342 |
| City of Scappose | Scappoose Ind. Park | 553.8 | $28,365,986 | 3,765 |
| City of Redmond | South Redmond Track LLI | 789.0 | $42,009,454 | 6,512 |
| Klamath County | Zbindn | 86.0 | $3,787,500 | 150 |
| City of Millersburg | Millersburg Ind. Area | 403.0 | $68,748,927 | 2,100 |
| City of Wilsonville | Wilsonville Ind. Area | 809.13 | $299,240,000 | 5,609 |

**Contact for Program Questions:** Contact Industrial Lands Specialist Jason Harris (503) 505-4968 or jason.harris@biz.oregon.gov.

The RSIS program offers various financing mechanisms to advance industrial sites to a "shovel-ready" status. Due-diligence grants are available for eligible projects that have a public sponsor in order to create better understanding of constraints on regionally significant industrial sites.

Additionally, the program offers direct site preparation assistance by authorizing forgivable loans, low- or no-interest loans and/or a tax-sharing arrangement to local governments and property owners with a public sector partner. The program allows State loans to local governments to be forgiven up to 50% of the site preparation cost, based on performance. A tax-sharing arrangement where 50% of the

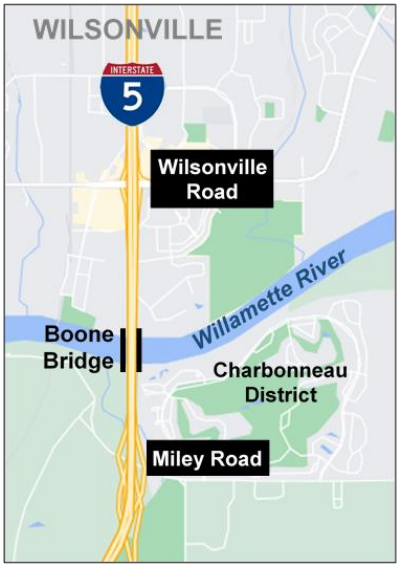
annual corporate and personal income tax revenues from the site reimburse the public investment up to the total site preparation cost.

While authorized, the program has never been funded and sunset in 2023. Over 11 local governments across the state have been accepted into the program—including the City of Wilsonville—but no funding decisions made. The City has identified the cost of infrastructure development as an impediment to advancing "shovel-ready" industrial sites that host family-wage jobs and has actively sought funding sources.

Currently LOC, OEDA, Oregon Business and Industry, Metro and others have discussed working together to reauthorize the RSIS program and provide a $40 million appropriation. Business Oregon and the Employment Department have identified a couple of technical issues for resolution. A similar effort was made during the 2023 legislative session to reauthorize and fund the RSIS program, but like many bills, did not advance during a prolonged legislative boycott/walk-out.

## 5. Provide Charbonneau/Wilsonville I-5 Boone Bridge Tolling Waiver/Exemption

The City of Wilsonville will experience significant adverse effects if the current proposals to toll I-5 are enacted due to historical Oregon Department of Transportation (ODOT) policies that allowed for the use of the interstate freeway to provide local community access—a circumstance that Wilsonville and our south Charbonneau District neighborhood find ourselves in today.




That is, ODOT policy in the 1960s and '70s either allowed or did not address the issue of a city's use of an interstate highway to serve as local access for urban development. In our case, the Charbonneau District of Wilsonville has since its inception in 1971 been continuously dependent upon use of the I-5 Boone Bridge for local access to the remainder of Wilsonville for shopping, medical appointments, entertainment and more.

While policies developed 50+ years ago may not be beneficial to the efficient operation of today's interstate highways, the resulting mobility infrastructure needs of dependent populations should be accommodated when newer policies are considered. That is, the older senior residents of the Charbonneau District live in a residential community with no other route to access the remainder of Wilsonville other than over the I-5 Boone Bridge. In a similar manner, Wilsonville residents, workers and businesses north of the I-5 Boone Bridge/Willamette River who visit or serve Charbonneau are also in the same situation.

ODOT's current tolling policies do *not* address the situation of a community's dependence upon the interstate highway to provide local access when there is no alternate route, as in the case of the Charbonneau District of Wilsonville.

The legislature should provide for a waiver or an exemption from tolling when crossing the I-5 Boone Bridge for Wilsonville residents and businesses would allow ODOT to deal equitably with the residential population dependent historically upon the interstate for local access to essential goods and services, including medical appointments, and other amenities. Such action provides for ODOT's accommodation of those instances where prior ODOT policy or lack thereof helped to create the condition of highway dependency for local access without penalizing those residents and the businesses that serve those residents.

## 6. Extend Sunset on Vertical Housing Development Zone (VHDZ) Incentive

The Vertical Housing Development Zone (VHDZ) incentive program is currently scheduled to sunset on Jan. 1, 2026. The program allows cities and counties to provide a 10-year tax abatement on a portion (up to 80%) of improvement value on qualifying mixed-use development.

Individual projects within a duly established VHDZ must be approved and under construction no later than Jan. 1, 2026. Projects that are not under construction by that date will be ineligible for the incentive, even if they otherwise comply with all applicable statutes, and even if the city's VHDZ is still in place or hasn't expired.



**Wilsonville Town Center VHDZ – First Mixed-Use Commercial/ Residential Project:** New five-story, 114-unit multi-family residential complex with 4,200 square feet of retail space located on the ground floor, along with a few residences. The upper floors consist entirely of residential units and amenities, including a roof deck. Of the building's 114 residential units, 70 are one-bedroom/ one-bathroom apartments, 37 are studio apartments and seven are two-bedroom/two-bathroom apartments.

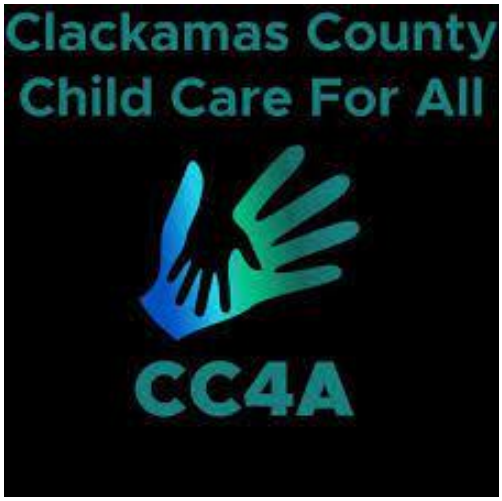
The Wilsonville City Council has approved two VHDZ programs for Villebois Village Center and for the Town Center area, both areas where developers have indicated that building a mixed-use development is financially unfeasible without the VHDZ program. Both the Town Center and Villebois Village Center areas targeted for mixed-use development are long-term projects that will take years to advance.

Since the VHDZ program has no negative financial impacts to State revenue collection, the legislature should have no problem with extending the program, which financially impacts only the sponsoring jurisdiction. Furthermore, mixed-use developments tend to produce more affordable housing, which is a State goal.

## 7. Improve Childcare Resources to Benefit Families/Workers and Employers

Based on information from Wilsonville employers, the City's Economic Development Division has identified the lack of childcare options as an obstacle to workforce recruitment and retention. The City's Economic Development Manager participates in an multi-organizational taskforce known as Clackamas County Childcare For All (CC4A) Coalition, sponsored by the Clackamas Workforce Partnership, the local workforce development board implementing the federal Workforce Innovation and Opportunity Act.

Since 1999, the total number of child care slots in Oregon has dropped by about 6,600. Oregon State University estimates that, for families of infants and toddlers, 35 of 36 counties qualify as child care deserts where there can be as many as 10 children competing for the same child care spot. Extra ordinary Pandemic-era federal support for childcare is scheduled to stop in February 2024.




On July 1, 2023, Oregon inaugurated the new Department of Early Learning (DELC), bringing together the Early Learning Division (ELD) and the Employment Related Day Care (ERDC) program to unify, strengthen and expand Oregon's early learning and care system. Along with the creation of DELC, Oregon is expanding access to affordable child care for eligible families through the Employment Related Day Care (ERDC) program. Starting in July, families are able to receive cash assistance from Temporary Assistance for Needy Families (TANF) and get help paying for child care from ERDC at the same time.

CC4A has proposed a set of legislative concepts for consideration in developing a potential bill. CC4A's "Building a Strong Child Care Sector: Proposed Legislative Concept" endorses a multi-phased approach:

- Phase 1: Stabilize and Increase Child Care Workforce: Align Child Care Educator Salaries with K-12 Educators
- Phase 2: Make Child Care More Available: Provide Funding for New Child Care Providers
- Phase 3: Make Child Care More Affordable: Cap Family Child Care Contributions

The City's Public and Government Affairs Division does not see sufficient support in the upcoming 2024 short session to advance substantive legislation that requires General Fund support or new business or personal taxes to support childcare improvement proposals. Rather, the City should consider supporting a bill that creates a legislative interim multi-organizational workgroup to develop potential new programs to improve childcare resources for consideration during the 2025 regular long session.

# 2023-24

WILSONVILLE OREGON




# State Legislative Agenda

**Wilsonville City Council**

Julie Fitzgerald, Mayor

Kristin Akervall, Council President

Joann Linville, City Councilor

Caroline Berry, City Councilor

Katie Dunwell, City Councilor

**City Appointed Management**

Bryan Cosgrove, City Manager

Amanda Guile-Hinman, City Attorney

**CITY OF WILSONVILLE, OREGON /**
**SOUTH METRO AREA REGIONAL TRANSIT (SMART)**

**Mark Ottenad, Public/Government Affairs Director**
503-570-1505; ottenad@ci.wilsonville.or.us

**Greg Leo, Public Affairs Consultant, The Leo Co.**
503-804-6391; greg@theleocompany.com

29799 SW Town Center Loop East
Wilsonville, OR 97070
www.ci.wilsonville.or.us

SMART
SOUTH METRO AREA REGIONAL TRANSIT

Acting on behalf of the residents and businesses of the City of Wilsonville and SMART, the City Council adopts this legislative agenda to guide municipal policy positions in the 2023-24 sessions of the 82nd Oregon Legislative Assembly.

*Wilsonville City Council, January 19, 2023*

WILSONVILLE OREGON

SMART SOUTH METRO AREA REGIONAL TRANSIT

# 1. GOVERNANCE

## ■ Local Autonomy

1.1 The City of Wilsonville supports the home-rule autonomy of local governments and opposes efforts to preempt local-government authority to work on behalf of the city's residents and businesses. The City seeks opportunities to restore municipal authority where it has previously been preempted by state law.

## ■ State Shared Revenues / Unfunded Mandates

1.2 The City of Wilsonville supports the State Shared Revenue formula and opposes efforts to shift service-costs from the State to local governments, often referred to as "unfunded mandates." The City opposes efforts to reduce traditional "shared revenues," which include alcoholic beverage and cigarette taxes and other state-shared revenues that pay for essential local services.

# 2. TRANSPORTATION & TRANSIT INFRASTRUCTURE

## ■ Transportation

2.1 The City of Wilsonville supports multi-modal transportation options—including roadways, transit services and bike/ped alternatives—for residents, commuting workers and businesses.

2.2 The City of Wilsonville supports strategies and plans that maintain or increase the traffic-handling capacity of I-5 for the timely movement of freight and conduct of commerce, including the stretch of I-5 Boone Bridge crossing the Willamette River.

2.3 The City of Wilsonville supports increased funding by federal and state governments of public transportation infrastructure.

2.4 The City of Wilsonville supports efforts to re-open and maintain the operations of the Willamette Falls Locks and Canal.



## ■ Transit

2.5 The City of Wilsonville supports increased funding and access to increased transit services that provide residents and commuting workers with an affordable option for personal mobility.

2.6 The City of Wilsonville supports expanded Westside Express Service (WES) commuter rail transit service for full-day and Saturday service and extension of service to Salem.

# 3. ECONOMIC & COMMUNITY DEVELOPMENT

## ■ Land Use and Infrastructure Development

3.1 The City of Wilsonville supports sustainable, "smart-growth" concepts that include objectives such as walkable neighborhoods, compact urban development, the conservation of valuable resource lands and the protection of prime agricultural soils outside the urban growth boundary (UGB).



3.2 The City of Wilsonville supports Oregon land-use law that calls for intergovernmental coordination and urban-development activities to occur in cities—areas with municipal governance and supporting infrastructure—and opposes efforts to encourage activities outside of cities that result in urban-level development.

3.3 The City of Wilsonville supports initiatives that reclaim industrial "brownfield" sites in urban settings for productive re-use and that assists cities to develop existing industrial lands. These kinds of initiatives maximize the benefit from existing public resources and reduce the need for urban-growth boundary expansions to accommodate industrial development.

3.4 The City of Wilsonville supports the creation or extension of additional economic-development tools that cities may utilize as they wish, including implementing the Oregon Industrial Site Readiness Program that complies with current state law and making the state "Enterprise Zone" and similar designations available to more cities.

3.5 The City of Wilsonville supports efforts that encourage development of a broad mix of housing types for residents of all income levels. The City specifically advocates for funding of state agencies and local governments to advance affordable housing efforts and related infrastructure.

## ■ Workforce Development

3.6 The City of Wilsonville supports adequate funding for institutions of higher education in order to provide more comprehensive workforce development opportunities for future and current employees of industrial employers.

3.7 The City of Wilsonville supports efforts to improve the overall quality of K–12 education, and in particular to strengthen Science-Technology-Engineering-Math (STEM) education, as well as post-secondary education that prepare tomorrow's workforce.

# 4. ENVIRONMENTAL IMPACT

4.1 The City of Wilsonville supports the protection of the environment and important natural resources for the benefit of human health, quality of life for citizens, recreational opportunities, and wildlife habitat.



# *FAST FACTS:* City of Wilsonville & South Metro Area Regional Transit (SMART)

## ■ Population: *One of Oregon's fastest growing cities*

For the past 30 years, Wilsonville has been one of Oregon's fastest growing cities with population over 10,000. Wilsonville is now the state's 21st largest city.

| Jurisdiction | 2000 Census | 2022 PSU Est. | % Change |
|---|---|---|---|
| City of Wilsonville | 13,991 | 27,414 | 96% |
| Portland metro region* | 1,444,219 | 1,847,040 | 28% |
| State of Oregon | 3,421,399 | 4,278,555 | 25% |

* Clackamas, Multnomah and Washington Counties

## ■ SMART Transit: *I-5 Corridor Public Transportation Service*

South Metro Area Regional Transit (SMART) provides transit services six days per week for 300,000 riders composed of commuting workers and residents. SMART links with regional transit providers, including TriMet and WES (Westside Express Service) commuter trains, Salem Area Mass Transit District ("Cherriots") and Canby Area Transit (CAT), as well as providing in-town fixed-route and paratransit services.

## ■ Education & Workforce Development: *In-Demand Skills Training*

**OregonTech Wilsonville** is the Portland metro-area campus of the Oregon Institute of Technology (OIT), the state's premier university of advanced engineering and applied-technology studies. OregonTech Wilsonville works closely with the region's high-tech employers and area high schools to promote hands-on, practical Science-Technology-Engineering-Math (STEM) curriculum.

**Clackamas Community College, Wilsonville Training Center Campus**

**West Linn-Wilsonville School District and Canby School District**

## ■ Employment: *Over 20,000 Jobs with $1.3 Billion Direct Annual Payroll*

Wilsonville's 1,080 businesses provide 20,800 full-time equivalent jobs, of which about half are in high-wage industrial occupations of manufacturing—primarily in high-tech and software engineering—wholesale distribution and professional services. Nine out of 10 employees commute to jobs in Wilsonville primarily from the Portland metro-area and North Willamette Valley, Canby, Woodburn and Salem/Keizer.

Total annual payroll in Wilsonville exceeds $1.3 billion annually—an +85% increase since 2000—that generates a total direct/indirect regional economic-multiplier impact of over $3.8 billion per year.




SOURCE: Oregon Employment Dept.

## Top-10 Private-Sector Wilsonville Employers

*Sorted descending by Number of Full-Time Equivalent (FTE) Jobs*

| Business | Type | Jobs |
|---|---|---|
| 1. **Siemens EDA** (fka Mentor Graphics) | Software Mfg | 1,040 |
| 2. **Swire Coca-Cola USA** | Mfg + Whlsl Distrib. | 585 |
| 3. **Collins Aerospace** | Manufacturing | 535 |
| 4. **Sysco Food Services** | Wholesale Distrib. | 485 |
| 5. **Columbia Distributing HQ** | Wholesale Distrib. | 425 |
| 6. **Costco Wholesale Wilsonville** | Retail | 330 |
| 7. **DW Fritz Automation** | Manufacturing | 320 |
| 8. **TE Medical** Tyco Electronics Connectivity | Manufacturing | 280 |
| 9. **Fred Meyer Stores Wilsonville** | Retail | 275 |
| 10. **Teledyne FLIR** | Manufacturing | 270 |



**The Wilsonville SMART Transit Center** serves as the TriMet Westside Express Service (WES) commuter rail train station that features a 400-car park-and-ride lot that can be expanded. Each WES train is met by SMART buses that whisk employees to the worksite within 10 minutes of arrival in Wilsonville, providing key 'last-mile' public transit service.

***CITY COUNCIL ROLLING SCHEDULE***
**Board and Commission Meetings**
**Items known as of 01/09/24**

**January**

| | | | | |
|---|---|---|---|---|
| 1/22 | Monday | 6:30 pm | DRB – Panel B | Council Chambers |
| 1/24 | Wednesday | 6:30 pm | Library Board | Library |

**February**

| | | | | |
|---|---|---|---|---|
| 2/5 | Monday | | City Council – CANCELLED | |
| 2/12 | Monday | 6:30 pm | DRB – Panel A | Council Chambers |
| 2/13 | Tuesday | 6:00 pm | DEI Committee | Council Chambers |
| 2/14 | Wednesday | 6:00 pm | Planning Commission | Council Chambers |
| 2/22 | Thursday | 7:00 pm | City Council | Council Chambers |
| 2/26 | Monday | 6:30 pm | DRB – Panel B | Council Chambers |
| 2/27 | Tuesday | 6:30 pm | Wilsonville-Metro CEC | Council Chambers |
| 2/28 | Wednesday | 5:00 pm | Arts, Culture & Heritage | Council Chambers |
| 2/28 | Wednesday | 6:30 pm | Library Board | Library |

**Community Events:**

**JANUARY 2024**

1/19 Healthy Bones and Balance, 8:30 am, Community Center
Advance Healthy Bones and Balance, 9:30 am, Community Center
Play Group, 10:30 am, Library
Developmental and Hearing Screenings for Children, 10:30 am, Library
Bridge for Intermediate Lessons, 10:30 am, Community Center
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center

1/20 Soccer Shots, 9:00 am, Community Center
Town Hall with Rep. Courtney Neron, 11:30 am, Library

1/22 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Life 101 Lecture Series: Understanding and Responding to Dementia Related Behavior, 10:30 am, Community Center
Terrific Toddlers, 10:30 am, Library
Beginning English Class, 11:00 am, Library

Lunch at the Community Center, 12:00 pm, Community Center
Weight Loss Support Group, 12:30 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Bridge Group Play, 1:00 pm, Community Center
TAB Meeting, 4:15 pm, Library
Body Sculpt with Jules Moody, 6:00 pm, Parks & Rec

1/23 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

1/24 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
STEAM Stuff, 1:00 pm, Library
Pinochle/Cribbage, 1:00 pm, Community Center
Teen Afterschool Drop-In Activities, 3:00 pm, Library
Civics 2.0 Program, 6:00 pm, Willamette River 1 and 2

1/25 Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Parenting the Love & Logic Way, 6:00 pm, Parks & Rec
Restorative Yoga, 7:15 pm, Community Center

1/26 Healthy Bones and Balance, 8:30 am, Community Center
Advance Healthy Bones and Balance, 9:30 am, Community Center
Play Group, 10:30 am, Library
Bridge for Intermediate Lessons, 10:30 am, Community Center

Blood Drive, 11:00 am, Library
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center

1/27 Soccer Shots, 9:00 am, Community Center
Saturday Classic Movie & Family Board Games, 1:15 pm, Library

1/29 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Life 101 Lecture Series: Dizziness Workshop, 10:30 am, Community Center
Terrific Toddlers, 10:30 am, Library
Beginning English Class, 11:00 am, Library
Lunch at the Community Center, 12:00 pm, Community Center
Weight Loss Support Group, 12:30 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Bridge Group Play, 1:00 pm, Community Center
Genealogy Club, 1:00 pm, Community Center
Body Sculpt with Jules Moody, 6:00 pm, Parks & Rec

1/30 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
AARP Smart Driver, 9:00 am, Community Center
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

1/31 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Pinochle/Cribbage, 1:00 pm, Community Center
Teen Afterschool Drop-In Activities, 3:00 pm, Library

2/1 Black History Month – All Month
Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Parenting the Love & Logic Way, 6:00 pm, Parks & Rec
Restorative Yoga, 7:15 pm, Community Center

2/2 Play Group, 10:30 am, Library
Bridge for Intermediate Lessons, 10:30 am, Community Center
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
First Friday Films, 3:00 pm, Library

2/3 Soccer Shots, 9:00 am, Community Center
Space Talks, 11:00 am, Library

2/4 Abstract Watercolor Painting, 10:00 am, Parks & Rec

2/5 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Life 101 Lecture Series: Estate Planning, 10:30 am, Community Center
Terrific Toddlers, 10:30 am, Library
Beginning English Class, 11:00 am, Library
Lunch at the Community Center, 12:00 pm, Community Center
Weight Loss Support Group, 12:30 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Bridge Group Play, 1:00 pm, Community Center
Body Sculpt with Jules Moody, 6:00 pm, Parks & Rec

2/6 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
Poetry Club, 1:00 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center

Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

2/7 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
PROFILES (online), 11:00 am
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
STEAM Stuff, 1:00 pm, Library
Pinochle/Cribbage, 1:00 pm, Community Center
Bingo, 1:00 pm, Community Center
Teen Afterschool Drop-In Activities, 3:00 pm, Library
Nutritious (and Delicious) Foods with Sam-Fermented Foods, 6:00 pm, Comm. Ctr

2/8 Winter Walk+Roll to School Day (all day)
Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Grief Support Group, 1:00 pm, Community Center
Art Club, 1:00 pm, Community Center
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Continuing Tai Chi, 3:00 pm, Community Center
2024 Civics Academy, 6:00 pm,
Parenting the Love & Logic Way, 6:00 pm, Parks & Rec
Restorative Yoga, 7:15 pm, Community Center

2/9 Healthy Bones and Balance, 8:30 am, Community Center
Advance Healthy Bones and Balance, 9:30 am, Community Center
Play Group, 10:30 am, Library
Bridge for Intermediate Lessons, 10:30 am, Community Center
Blood Drive, 11:00 am, Library
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center

2/10 Lunar New Year (all day)
Soccer Shots, 9:00 am, Community Center
Oil Painting with Judy Stubb-Quiet Mountain River, 10:00 am, Parks & Rec
Book Notes Concert, 2:00 pm, Library

2/11 Abstract Watercolor Painting, 10:00 am, Parks & Rec

2/12 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Life 101 Lecture Series: Reducing & Preventing Back Pain and Injury, 10:30 am, Com. Ctr.
Terrific Toddlers, 10:30 am, Library
Beginning English Class, 11:00 am, Library
Lunch at the Community Center, 12:00 pm, Community Center
Weight Loss Support Group, 12:30 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Bridge Group Play, 1:00 pm, Community Center
TAB meeting, 4:15 pm, Library
Body Sculpt with Jules Moody, 6:00 pm, Parks & Rec

2/13 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Medicare 101, 10:30 am, Community Center
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
Caregiver/Alzheimer's Support Group, 1:00 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

2/14 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Pinochle/Cribbage, 1:00 pm, Community Center

2/15 Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Grief Support Group, 1:00 pm, Community Center
Walking Book Club, 1:00 pm, Library
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Parenting the Love & Logic Way, 6:00 pm, Parks & Rec
Restorative Yoga, 7:15 pm, Community Center

2/16 Healthy Bones and Balance, 8:30 am, Community Center
Advance Healthy Bones and Balance, 9:30 am, Community Center
Bridge for Intermediate Lessons, 10:30 am, Community Center
Blood Drive, 11:00 am, Library
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center

2/17 Soccer Shots, 9:00 am, Community Center

2/18 Abstract Watercolor Painting, 10:00 am, Parks & Rec

2/19 Office Closed – President's Day
Body Sculpt with Jules Moody, 6:00 pm, Community Center

2/20 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

2/21 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
STEAM Stuff, 1:00 pm, Library
Pinochle/Cribbage, 1:00 pm, Community Center
Bingo, 1:00 pm, Community Center
Teen Afterschool Drop-In Activities, 3:00 pm, Library

2/22 Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Family Storytime, 10:30 am, Library

Grief Support Group, 1:00 pm, Community Center
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Restorative Yoga, 7:15 pm, Community Center

2/23 Healthy Bones and Balance, 8:30 am, Community Center
Advance Healthy Bones and Balance, 9:30 am, Community Center
Play Group, 10:30 am, Library
Bridge for Intermediate Lessons, 10:30 am, Community Center
Stand, Sit and Be Fit, 11:00 am, Community Center
Bridge Group Play, 10:30 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Daddy Daughter "Disco" Dance, 7:00 pm, Community Center

2/24 Soccer Shots, 9:00 am, Community Center
Saturday Classic Movie & Family Board Games, 1:15 pm, Library

2/25 Abstract Watercolor Painting, 10:00 am, Parks & Rec

2/26 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Life 101 Lecture Series: Long Term Care, 10:30 am, Com. Ctr.
Terrific Toddlers, 10:30 am, Library
Beginning English Class, 11:00 am, Library
Lunch at the Community Center, 12:00 pm, Community Center
Weight Loss Support Group, 12:30 pm, Community Center
Mexican Train Dominoes, 1:00 pm, Community Center
Bridge Group Play, 1:00 pm, Community Center
TAB meeting, 4:15 pm, Library
Body Sculpt with Jules Moody, 6:00 pm, Parks & Rec

2/27 Ukulele Jam, 9:00 am, Parks & Rec
Piecemakers Quilters, 9:00 am, Tauchman House
ODHS Drop-In Assistance 10:00 am, Library
Intermediate English Class, 10:30 am, Library
Baby & Toddler Time, 10:30 am, Library
Baby & Toddler Time, 11:15 am, Library
Stand, Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Partners Bridge, 12:30 pm, Community Center
ODHS Drop-In Assistance, 1:00 pm, Library
Virtual Reality Fitness, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Barre Tone with Jessica Norman, 5:45 pm, Community Center
Soul Flow Yoga, 7:15 pm, Community Center

2/28 Healthy Bones and Balance, 8:30 am, Community Center
Advanced Healthy Bones and Balance, 9:30 am, Community Center
Digital Photography Club, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Sit and Be Fit, 11:15 am, Community Center
Lunch at the Community Center, 12:00 pm, Community Center
Pinochle/Cribbage, 1:00 pm, Community Center
Teen Afterschool Drop-In Activities, 3:00 pm, Library

2/29 Gentle Yoga (Morning), 8:30 am, Community Center
I-5 Connection Chorus Group, 10:00 am, Community Center
Bridge for Beginners Lessons, 10:00 am, Community Center
Family Storytime, 10:30 am, Library
Grief Support Group, 1:00 pm, Community Center
Ladies Afternoon Out, 1:00 pm, Community Center
Beginning Tai Chi, 2:00 pm, Community Center
Tai Chi Continuing, 3:00 pm, Community Center
Restorative Yoga, 7:15 pm, Community Center

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3039**<br>Authorize the City Manager to Enter Into and Execute an Intergovernmental Agreement with Clackamas County Relating to the Stafford-65th-Elligsen Roundabout Project.<br><br>**Staff Member:** Zach Weigel, PE, City Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☒ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Staff recommends Council adopt the Consent Agenda. | |
| **Recommended Language for Motion:** I move to adopt the Consent Agenda. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☐Council Goals/Priorities: | ☒Adopted Master Plan(s):<br>2013 Transportation System Plan – Project #SI-03 | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
A City of Wilsonville resolution approving an Intergovernmental Agreement (IGA) between the City of Wilsonville and Clackamas County for the design and construction of the Stafford-65th-Elligsen Roundabout Project.

**EXECUTIVE SUMMARY:**
Clackamas County is undertaking a major transportation enhancement project with a planned roundabout at the intersection of Stafford Road, 65th Avenue, and Elligsen Road (Project). While the planned roadway project is currently located within unincorporated Clackamas County, the intersection is of key importance to Wilsonville's transportation system. This location serves as a major intersection of two Wilsonville arterial roadways, Stafford Road running north-south and Elligsen Road running east-west. The existing intersection actually consists of two offset intersections in a non-standard configuration and does not meet City of Wilsonville level of service or safety standards.

The Wilsonville 2013 Transportation System Plan (TSP) - Updated 2023 identifies a high priority intersection improvement project at this location, identified as Project SI-03 – Stafford Road/65th Avenue Intersection Improvements. The TSP recognizes that the project is outside of the City limits and is part of the Clackamas County transportation system, but recommends that the City of Wilsonville contribute a portion of the funding for the project. Following the TSP, the Wilsonville Transportation System Development Charge (TSDC) Update completed and adopted by City Council in 2017, includes the Project in the TSDC project list. The TSDC update identifies the City's maximum share of eligible costs for the Project as 25% of the project total. Since the TSDC rate adoption 2017, the City has been collecting TSDC from development to contribute to the Project.

In April 2023, Clackamas County staff contacted Wilsonville, letting the City staff know that they are proceeding with design of the Project in 2024. With the understanding that the City has been collecting funds for the Project, Clackamas County offered to include Wilsonville as part of the project team and asked if the City could contribute funding toward the Project. In review of the TSDC funds and project expenses, the City is able to contribute up to $1,000,000 in TSDC funds for the design and construction of the Project. An Intergovernmental Agreement (IGA) is required between Clackamas County and the City of Wilsonville that documents each jurisdiction's responsibilities and compensation amounts for the Project design and construction.

Currently, the existing temporary 65th/Stafford traffic signal built as part of the Boeckman Road Corridor Project (BRCP) is to be removed by the City at the completion of BRCP construction. As part of the IGA, Clackamas County agrees to take over the traffic signal ownership and maintenance responsibilities from the City when the BRCP is substantially complete. The County will then remove the temporary traffic signal as part of the roundabout construction as a cost of the Project.

**EXPECTED RESULTS:**
Approval of the IGA will allow the City of Wilsonville to participate as part of the project team in the design and construction of the Stafford Road, 65th Avenue, and Elligsen Road Roundabout project. The IGA also identifies financial contribution the City of Wilsonville will make to the Project, helping to ensure a high priority transportation improvement project is completed.

**TIMELINE:**
Upon approval of the IGA, the Wilsonville staff will participate in design consultant selection, review construction drawings, and documents at key milestones, and assist with public engagement activities for the Project. Selection of the Project design consultant by a formal request for proposals is anticipated to begin in February 2024. Design work is scheduled to start May 2024 with construction documents ready for bidding by the end of 2026.

**CURRENT YEAR BUDGET IMPACTS:**
There are no current year budget impacts anticipated with approval of the IGA. Per the agreement, the City will make two payment contributions to Clackamas County during the course of the Project. The first payment in the amount of $250,000, will be made when the project plans are complete and ready for construction bidding, anticipated to occur October 2026. The second payment in the amount of $750,000, will be made at 50% of construction completion, anticipated to occur during Fiscal Year 2028. The City project contribution is anticipated to be funded through Transportation System Development Charges, which will be budgeted as part of the appropriate fiscal year budget cycle.

**COMMUNITY INVOLVEMENT PROCESS:**
The Stafford Road/65$^{th}$ Avenue Intersection Improvements is identified as a high priority project in the 2013 Wilsonville Transportation System Plan (TSP). The TSP included an extensive community involvement process to determine the City's transportation enhancement priorities and subsequently adopted by the City Council through a public hearing.

In addition, Clackamas County is planning a robust public engagement program to be implemented as design and construction work get underway. Activities include open houses (in-person & virtual) and stakeholder meetings, as well as engagement through County webpage, social media, and mailers. The City will assist the County's public engagement program utilizing *Let's Talk, Wilsonville!* and Boones Ferry Messenger, as well as City website and social media to make sure the Wilsonville community is involved and informed about the Project.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
The Project will improve the Stafford-65$^{th}$-Elligsen intersection by replacing the existing temporary traffic signal and stop controls with a roundabout, providing a safer, more efficient transportation connection along two important transportation corridors. The roundabout will bring the intersection within level of service operating standards, significantly reducing the associated vehicle delay that occurs through the evening commute time, while also removing the existing confusing offset intersections and improving driver safety.

**ALTERNATIVES:**
Reject the Intergovernmental Agreement and not participate or assist Clackamas County in the design or construction of the Project. This option is not recommended as the City has been collecting Transportation System Development Charges since 2017 to help fund the Project and

would make funding of the Project much more difficult for Clackamas County, delaying or possibly jeopardizing completion of an important transportation enhancement project. In addition, the City would not be able to participate in the design and construction of the Project, missing an opportunity to help ensure the long term needs of the City are met.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**

1. Resolution No. 3039
    A. Intergovernmental Agreement between the City of Wilsonville and Clackamas County Relating to the Stafford-65$^{th}$-Elligsen Roundabout Project.

**RESOLUTION NO. 3039**

**A RESOLUTION OF THE CITY OF WILSONVILLE AUTHORIZING THE CITY MANAGER TO ENTER INTO AND EXECUTE THE INTERGOVERNMENTAL AGREEMENT WITH CLACKAMAS COUNTY RELATING TO THE STAFFORD-65TH-ELLIGSEN ROUNDABOUT PROJECT.**

WHEREAS, ORS 190.03 – 190.010 authorizes agencies to enter into intergovernmental agreements for the performance of any or all activities and functions that a Party to the agreement has the authority to perform; and

WHEREAS, Clackamas County (COUNTY) is proceeding with design and construction of a roundabout at the intersection of SW Stafford Road, SW 65th Avenue, and SW Elligsen Road referred to as the Stafford-65th-Elligsen Roundabout project (Project); and

WHEREAS, the portions of SW Stafford Road, SW 65th Avenue, and SW Elligsen Road within the Project limits are COUNTY roads and are located within unincorporated Clackamas County under COUNTY jurisdiction; and

WHEREAS, the City of Wilsonville (WILSONVILLE) 2013 Transportation System Plan, adopted by the Wilsonville City Council, identifies the Project as a high priority transportation improvement project; and

WHEREAS, the WILSONVILLE Transportation System Development Charge (TSDC) project list, used to establish the TSDC fee and adopted by the Wilsonville City Council, includes the Project making the Project eligible for WILSONVILLE TSDC funding; and

WHEREAS, WILSONVILLE AND COUNTY desire to cooperate in the design, construction, and funding of the Project; and

WHEREAS, WILSONVILLE AND COUNTY deem it in the best interest of the public to cooperate in the planning and execution of the Project; and

WHEREAS, an Intergovernmental Agreement (IGA) is required for COUNTY and WILSONVILLE to allocate responsibilities, provide financial consideration, and cooperate in design of the Project.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

Section 1. The City Council authorizes the City Manager to enter into and execute, on behalf of the City of Wilsonville, the IGA between the City of Wilsonville and Clackamas County relating to the Stafford-65th-Elligsen Roundabout Project, substantially in the form attached as **EXHIBT A**.

Section 2. The City Manager is authorized to sign the Intergovernmental Agreement in substantially the form attached hereto but, with latitude to make minor revisions, as determined by the City Engineer, to reflect needed variances and clarifications.

Section 3. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

JULIE FITZGERALD, MAYOR

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBIT:

A. Intergovernmental Agreement between the City of Wilsonville and Clackamas County Relating to the Stafford-65th-Elligsen Roundabout Project.

**INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF WILSONVILLE AND CLACKAMAS COUNTY RELATING TO THE STAFFORD-65TH-ELLIGSEN ROUNDABOUT PROJECT**

THIS INTERGOVERNMENTAL AGREEMENT ("Agreement") is entered into between the City of Wilsonville, an Oregon municipal corporation ("City"), and Clackamas County, a political subdivision of the state of Oregon ("County"), collectively referred to as the "Parties" and each a "Party."

**RECITALS**

A. This Agreement is entered into pursuant to ORS 190.010, which confers authority on local governments to enter into agreements for the performance of any and all functions and activities that a party to the agreements, its officers or agencies have authority to perform.

B. The intersection at SW Stafford Road, SW 65th Avenue, SW Elligsen Road ("the Stafford/65th/Elligsen Intersection") serves the communities of the County, the City, and Washington County in providing critical connectivity in the area, as shown on Exhibit 'A', attached hereto.

C. The Parties plan to design improvements to the Stafford/65th/Elligsen Intersection, consisting of a new roundabout, adding bike lanes along the intersection approaches, replacement of the Boeckman Creek culvert with a fish passable culvert, new stormwater management facilities, and other associated improvements (the "Project").

D. The Parties desire to provide the basis for a cooperative working relationship for the purpose of providing design, right of way acquisition, and construction as part of the Project.

E. The Parties have determined it is in the public interest to cooperate in the planning and execution of the Project.

**AGREEMENT**

Now, therefore, based on the foregoing, the Parties agree as follows:

**1.** **Term.** This Agreement becomes effective as of the last date of signature by a Party indicated below. Unless terminated earlier pursuant to Section 5 of this Agreement, this Agreement will expire upon the completion of each and every obligation of the Parties set forth in this Agreement, or by December 31, 2031, whichever is sooner.

**2.** **City Obligations.**

a. Review of Relevant Project Documents. The City will review the plans, estimates, and specifications for materials and workmanship to be used in the County's procurement materials and contracts for work associated with the Project. The City's review shall be reasonable timely.

b. Project Schedule. Except as otherwise provided in this Agreement, neither Party may be held liable for failure to adhere to the schedule where that Party proceeds with reasonable diligence and in good faith to advance the Project.

c. Management of Project. The City will name a City project manager (the "City PM") to coordinate reviews and communications with the County. The City PM will work to resolve any dispute with the County PM (defined below).

d. Project Coordination. The City PM shall coordinate in the design, bidding, and public right-of-way acquisition of the Project, and assist the County when necessary to provide timely responses to requests for information. The City will have input in the selection of the design consultant. The City will provide timely engineering review, comments, information or approval, as required to the County or to the County's consultant for purposes of fulfilling the purpose of this Agreement. County or County's consultant will make all reasonable efforts to incorporate City comments and/or proposed revisions into the design documents.

e. Payment Obligations. Except as provided in Section 3(e), the City will be responsible for all City staff time costs associated with the Project. The City also agrees to reimburse the County $1,000,000 for the City's share of the Project. The City will pay the County within 30 days of the receipt of the County's invoice to the City (payment schedule shown below under County Obligations).

**3. County Obligations.**

a. Contracting and Permitting. The County will contract for consultant services for design work, permitting and land use entitlements. The County will select the design consultant with input from the City. The County will manage design work, permitting and land use entitlements. The County will review and be the approving authority for any design exceptions for the Project including any ADA design exceptions. The County will acquire the right of way necessary to complete the Project. Prior to bid, the County will provide the City with plans, estimates, and specifications for materials and workmanship to be used in the County's procurement materials and contracts for work associated with the Project.

b. Existing Temporary Traffic Signal. County will accept, own, operate, and maintain the existing temporary traffic signal upon City issuance of substantial completion for the City's Boeckman Road Corridor Project, estimated to occur on August 27, 2025. County will include removal of the temporary traffic signal as a project expense in the construction contract and will own all equipment once it is salvaged or designated for disposal.

c. Project Schedule. Except as otherwise provided in this Agreement, neither Party may be held liable for failure to adhere to the schedule where that Party proceeds with reasonable diligence and in good faith to advance the Project.

d. Management of the Project. The County will manage the Project, and will timely administer the associated engineering, design and

construction contracts. The County will manage the right-of-way process and utilize County templates and processes in acquiring rights of way for the Project.

The County is responsible for the procurement of consultants and contractors under ORS 279C as necessary for the design and right of way activities described in this Agreement, including but not limited to architects, engineers, surveyors and other consultants, subject to coordination with the City under Section 2.d above.

e. Project Cost. The County shall be responsible for all Project costs except those outlined under Section 2.e above.

f. Invoice Obligations. The County will invoice the City twice during the project. One invoice will be sent for $250,000 when Project plans are ready for construction bidding. The second invoice will be sent for $750,000once construction contract payments exceed 50% of the total construction contract value.

**4. Dispute Resolution and Termination.**

a. In the event of a dispute arising under the terms of this Agreement that is not resolved by the City PM and the County PM, the City Engineer and County Department of Transportation Assistant Director shall attempt to resolve the dispute. In the event this does not resolve the dispute, the City Community Development Director and County Department of Transportation Director shall attempt to resolve the dispute. In the event the dispute cannot be resolved, either Party may pursue any legal or equitable claims to which that Party may be entitled.

b. The Parties may terminate this Agreement at any time by mutual written agreement.

c. Either the City or the County may terminate this Agreement in the event of a breach of the Agreement by the other. Prior to such termination however, the Party seeking the termination shall give the other Party written notice of the breach and of the Party's desire to mutually terminate. If the breaching Party has not entirely cured the breach within ten (10) days of deemed or actual receipt of the notice, then the non-breaching Party may terminate the Agreement at any time thereafter by giving written notice of termination to the other Party stating the effective date of the termination; provided however, if the default is of such a nature that it cannot be completely remedied within such 10-day period, this provision shall be complied with if the breaching Party begins correction of the default within the 10-day period and thereafter proceeds with reasonable diligence and in good faith to effect the remedy as soon as practicable.

d. The City or the County shall not be deemed to have waived any breach of this Agreement by the other Party except by an express waiver in writing. An express written waiver as to one breach shall not be deemed

a waiver of any other breach not expressly identified, even though the other breach is of the same nature as that waived.

e. Nothing herein shall prevent the Parties from meeting to mutually discuss the Project.

f. Any termination of this Agreement shall not prejudice any rights or obligations accrued to the Parties prior to termination.

**5. Indemnification.**

a. Subject to the limits of the Oregon Constitution and the Oregon Tort Claims Act or successor statute, the County agrees to indemnify, save harmless and defend the City, its officers, elected officials, agents and employees from and against all costs, losses, damages, claims or actions and all expenses incidental to the investigation and defense thereof (including legal and other professional fees) arising out of or based upon damages or injuries to person or property caused by the negligent or willful acts of the County or its officers, elected officials, owners, employees, agents or its subcontractors or anyone over which the County has a right to control.

b. Subject to the limits of the Oregon Constitution and the Oregon Tort Claims Act or successor statute, the City agrees to indemnify, save harmless and defend the County, its officers, elected officials, agents and employees from and against all costs, losses, damages, claims or actions and all expenses incidental to the investigation and defense thereof (including legal and other professional fees) arising out of or based upon damages or injuries to persons or property caused by the negligent or willful acts of the City or its officers, elected officials, owners, employees, agents, or its subcontractors or anyone over which the City has a right to control.

**6. Party Contacts.**

a. Zach Weigel or their designee will act as project manager for the City for the Project.

**Contact Information:**
Zach Weigel
City of Wilsonville
29799 SW Town Center Loop East
Wilsonville, OR 97070
(503) 570-1565
weigel@ci.wilsonville.or.us

b. Joel Howie or his designee will act as project manager for County for the Project.

**Contact Information:**

Joel Howie
Clackamas County
150 Beavercreek Road
Oregon City OR 97045
(503) 742-4658
JHowie@clackamas.us

c. Either Party may change the Party contact information, or the invoice or payment addresses by giving prior written notice thereof to the other Party at its then current notice address.

**7. General Provisions.**

a. **Oregon Law and Forum.** This Agreement shall be construed according to the laws of the State of Oregon, without giving effect to the conflict of law provisions thereof.

b. **Applicable Law.** The Parties hereto agree to comply in all ways with applicable local, state and federal ordinances, statutes, laws and regulations.

c. **Non-Exclusive Rights and Remedies.** Except as otherwise provided herein, the rights and remedies expressly afforded under the provisions of this Agreement shall not be deemed exclusive and shall be in addition to and cumulative with any and all rights and remedies otherwise available at law or in equity. The exercise by either Party of any one or more of such remedies shall not preclude the exercise by it, at the same or different times, of any other remedies for the same default or breach, or for any other default or breach, by the other Party.

d. **Record and Fiscal Control System.** All payroll and financial records pertaining in whole or in part to this Agreement shall be clearly identified and readily accessible. Such records and documents should be retained for a period of three (3) years after receipt of final payment under this Agreement; provided that any records and documents that are the subject of audit findings shall be retained for a longer time until such audit findings are resolved.

e. **Access to Records.** The Parties acknowledge and agree that each Party shall have access to each Party's books, documents, papers, and records which are directly pertinent to this Agreement for the purpose of making audit, examination, excerpts, and transcripts for a period of three (3) years after final payment. Copies of applicable records shall be made available upon request. The cost of such inspection shall be borne by the inspecting Party.

f. **Debt Limitation.** This Agreement is expressly subject to the debt limitation of Oregon counties set forth in Article XI, Section 10, of the Oregon Constitution, and is contingent upon funds being appropriated. Any provisions herein which would conflict with law are deemed inoperative to that extent.

g. **Severability.** If any provision of this Agreement is found to be unconstitutional, illegal or unenforceable, this Agreement nevertheless shall remain in full force and effect and the offending provision shall be stricken. The court or other authorized body finding such provision unconstitutional, illegal or unenforceable shall construe this Agreement without such provision to give effect to the maximum extent possible the intentions of the Parties.

h. **Integration, Amendment and Waiver.** Except as otherwise set forth herein, this Agreement constitutes the entire agreement between the Parties on the matter of the Project. There are no understandings, agreements, or representations, oral or written, not specified herein regarding this Agreement. No waiver, consent, modification or change of terms of this Agreement shall bind either Party unless in writing and signed by both Parties and all necessary approvals have been obtained. Such waiver, consent, modification or change, if made, shall be effective only in the specific instance and for the specific purpose given. The failure of either Party to enforce any provision of this Agreement shall not constitute a waiver by such Party of that or any other provision.

i. **Interpretation.** The titles of the sections of this Agreement are inserted for convenience of reference only and shall be disregarded in construing or interpreting any of its provisions.

j. **Independent Contractor.** Each of the Parties hereto shall be deemed an independent contractor for purposes of this Agreement. No representative, agent, employee or contractor of one Party shall be deemed to be a representative, agent, employee or contractor of the other Party for any purpose, except to the extent specifically provided herein. Nothing herein is intended, nor shall it be construed, to create between the Parties any relationship of principal and agent, partnership, joint venture or any similar relationship, and each Party hereby specifically disclaims any such relationship.

k. **No Third-Party Beneficiary.** Neither Party intends that this Agreement benefit, or create any right or cause of action in, or on behalf of, any person or entity other than the County or the City.

l. **No Assignment.** No party shall have the right to assign its interest in this Agreement (or any portion thereof) without the prior written consent of the other Party, which consent may be withheld for any reason. The benefits conferred by this Agreement, and the obligations assumed hereunder, shall inure to the benefit of and bind the successors of the Parties.

m. **Nonwaiver of Government Rights.** Subject to the terms and conditions of this Agreement, by making this Agreement, the County is specifically not obligating itself, or any other governmental entity with respect to any discretionary governmental action relating to the Project or any associated development, operation and use of the improvements to be constructed on the Project Area, including, but not limited to,

condemnation, comprehensive planning, rezoning, variances, environmental clearances or any other governmental approvals that are or may be required.

n. **Counterparts.** This Agreement may be executed in any number of counterparts (electronic, facsimile, or otherwise) all of which when taken together shall constitute one agreement binding on all Parties, notwithstanding that all Parties are not signatories to the same counterpart. Each copy of this Agreement so executed shall constitute an original.

o. **Authority.** Each Party represents that it has the authority to enter into this Agreement on its behalf and the individual signatory for a Party represents that it has been authorized by that Party to execute and deliver this Agreement.

p. **Necessary Acts.** Each Party shall execute and deliver to the others all such further instruments and documents as may be reasonably necessary to carry out this Agreement.

**IN WITNESS HEREOF,** the Parties have executed this Agreement by the date set forth opposite their names below.

| Clackamas County | City of Wilsonville |
|---|---|
| Tootie Smith<br>Chair, Board of County Commissioners | Bryan Cosgrove<br>City Manager |
| Date | Date |

WILSONVILLE
OREGON

## CITY COUNCIL MEETING
## STAFF REPORT

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|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3076**<br>Interagency Agreement (IGA) – City and Urban Renewal Agency/Coffee Creek Plan to Lend and Repay $500,000<br><br>**Staff Member:** Keith Katko, Finance Director<br><br>**Department:** Finance Department |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☒ Consent Agenda | ☒ Approval<br>☐ Denial<br>☐ None Forwarded<br>☐ Not Applicable<br><br>**Comments:** Action provides resources to fund FY 2023-24 Urban Renewal/Coffee Creek Capital Project Fund and is included in the FY 2023-24 Budget. |
| **Staff Recommendation:** Staff recommends Council adopt the Consent Agenda. | |
| **Recommended Language for Motion:** I move to adopt the Consent Agenda. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☐Council Goals/Priorities: | ☐Adopted Master Plan(s): | ☒Not Applicable |

**ISSUE BEFORE COUNCIL:**
City Council action is needed to approve an intergovernmental overnight loan Agreement (IGA) between the City and the Urban Renewal (UR) Agency for $500,000.

**EXECUTIVE SUMMARY:**
Under state law for urban renewal (ORS 457.435 and ORS 457.440), tax increment collections may only be spent to pay principal and interest on indebtedness. A General Fund overnight loan to the Urban Renewal (UR) Agency serves to release the tax collections for urban renewal funded capital projects. The overnight loan moves the taxes collected in the debt service fund to the capital fund for use in future projects. This strategic financing arrangement allows the City to save on the expenses associated with outside bonding. While there are not any current year projects, transferring the funds to the capital fund allows for interest earnings to compound in the capital fund for future use for the projects outlined in the Coffee Creek Urban Renewal Plan.

The City's General Fund has the capacity to loan the funds on an overnight basis and the Coffee Creek Plan District will have sufficient cash balances in its debt service fund to allow for repayment. The UR Agency is able to borrow from the City's General Fund provided both the City and Agency agree to the terms of the borrowing and it serves a public purpose. The terms of the borrowing are as follows:

- The City will lends to Agency $500,000 at the existing Oregon Short Term Fund (LGIP) savings rate at date of overnight loan.
- The overnight loan will take place before FYE 2024 and upon collection of adequate UR tax proceeds to pay back the loan the next day. The Agency will repay the amount from tax increment funds on hand the day after receipt of the loan.
- Total borrowing is subordinate to outstanding senior lien debt.

**EXPECTED RESULTS:**
Authorizing the IGA by the respective Resolution of the City and the UR Agency will provide cash resources of $500,000 to pay for Coffee Creek related expenses.

**TIMELINE:**
The IGA anticipates the loan and repayment occurring before FYE 2024; upon collection of adequate UR tax proceeds to pay back the loan the next day.

**CURRENT YEAR BUDGET IMPACTS:**
This loan and the repayment were included in the adopted FY 2023-24 UR Agency budget.

**COMMUNITY INVOLVEMENT PROCESS:**
This loan and the repayment were discussed as part of the adopted FY 2023-24 UR Agency budget.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
The borrowing will not directly impact local businesses or neighborhoods, however, the construction projects to be funded will have significant positive impact on both.

**ALTERNATIVES:**
Engage in borrowing from a financial institution. Using this process would take more time and cost the Urban Renewal Agency significantly more money.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**
1. Resolution No. 3076
    A. Intergovernmental Agreement between the City and the Urban Renewal Agency

**RESOLUTION NO. 3076**

**A RESOLUTION OF THE CITY OF WILSONVILLE AUTHORIZING AN INTERGOVERNMENTAL AGREEMENT WITH THE CITY OF WILSONVILLE URBAN RENEWAL AGENCY PERTAINING TO A SHORT TERM URBAN RENEWAL DEBT FOR THE COFFEE CREEK PLAN DISTRICT FOR THE PURPOSE OF FUNDING THE CONSTRUCTION OF CAPITAL IMPROVEMENT PROJECT BY THE AGENCY.**

WHEREAS, the Urban Renewal Agency of the City of Wilsonville, Oregon (the "Agency") finds it desirable to authorize an intergovernmental agreement with the City of Wilsonville, Oregon which is to provide short term borrowing proceeds in the amount of $500,000 for its Coffee Creek Plan District for the construction cost for approved capital projects within the district; and,

WHEREAS, ORS 190.010 provides legal authority for the two entities to enter into a binding intergovernmental agreement (the "Agreement); and,

WHEREAS, the use of an Agreement is efficient and less costly than other means of obtaining financing for the Agency; and,

WHEREAS, the Coffee Creek Plan District debt service fund has sufficient cash balances to allow for repayment of the amounts borrowed without violation of terms of outstanding senior debt liens.

**NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:**

To enter into the Agreement with the Urban Renewal Agency of the City of Wilsonville for the purpose of funding the construction of the public projects and for the receipt and repayment of $500,000 plus interest at an interest rate set to the Oregon Short Term Fund (LGIP) rate at the date of the overnight. Borrowing will be deposited in the Agency's capital project fund and repayment will be made from the Agency's debt service fund. The loan will take place before FYE 2024 upon collection of adequate UR tax proceeds to pay back the loan the next day. A copy of the Loan Agreement is marked as Exhibit A, attached hereto and incorporated by reference as if fully set forth herein

1. To authorize the Agency Director, or designee, to negotiate any and all documents to complete the Agreement and transaction related to the borrowing and repayment.

2. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

Julie Fitzgerald, Mayor

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

| | |
|---|---|
| Mayor Fitzgerald | Yes |
| Council President Akervall | Yes |
| Councilor Linville | Yes |
| Councilor Berry | Yes |
| Councilor Dunwell | Excused |

EXHIBIT:

A. Intergovernmental Agreement between the City and the Urban Renewal Agency

**INTERGOVERNMENTAL LOAN AGREEMENT**
**IN AN AMOUNT NOT TO EXCEED $500,000; FROM THE CITY OF WILSONVILLE TO THE URBAN RENEWAL AGENCY OF THE CITY OF WILSONVILLE FOR THE PURPOSE OF FUNDING APPROVED PROJECTS IN THE COFFEE CREEK PLAN**

**THIS INTERGOVERNMENT AGREEMENT** entered into between the City of Wilsonville, an Oregon municipal corporation (the City), and the Urban Renewal Agency of the City of Wilsonville, Oregon, Oregon quasi-municipal corporation (the Agency),

**RECITALS**

**WHEREAS**, the Agency is a public body, corporate and politic, duly activated by the City, exercising its powers to engage in urban renewal activity as authorized by ORS Chapter 457; and

**WHEREAS**, the Coffee Creek Plan District (the "District") was adopted October 17, 2016, setting out goals, objectives and projects (the "Projects") for the Area; and

**WHEREAS**, the Board of the Urban Renewal Agency has determined that a need exists to borrow funds for the Projects, to be repaid with tax increment financing; and

**WHEREAS**, Oregon Revised Statutes 457 and Oregon Constitution Article IX, Section 1(c) authorizes the Urban Renewal Agency to incur debt for the purpose of financing projects of an urban renewal plan, and to repay the debt and related costs with tax increment revenue; and

**WHEREAS**, the City of Wilsonville has approved a maximum indebtedness for the Coffee Creek District of $67,000,000. The Agency has previously issued $4,300,000 of long and short term indebtedness that is subject to the maximum indebtedness limitation, and there is no other indebtedness outstanding for the District to which the maximum indebtedness limitation applies. As a result the Agency has $62,700,000 of capacity (before issuance of the referenced borrowing of this Agreement) to incur indebtedness for the District, and

**WHEREAS**, ORS 294.468 authorizes a municipality to lend unrestricted money from its general fund to other funds of the municipal corporation if authorized by resolution of the governing body, and

**WHEREAS**, the City and Agency have determined that financing the Projects through an intergovernmental agreement as allowed by ORS 190.010, is more cost efficient than external financing methods, is financially feasible, and is in the best interest of both parties.

**NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:**

**Section 1**: **Term and Termination.** This agreement shall become effective upon the date of the last signature hereon, and shall continue in full force and effect until the loan is paid in full.

**Section 2**: **Delegation**. The Designated Representatives, or a person(s) assigned by the Designated Representatives, may, on behalf of the City or Agency, act without further action by the Council, to establish the final principal amounts.

**Section 3**: **Duties of the City.** The City shall authorize all actions and execute all documents necessary or desirable to loan up to $500,000 from the City's General Fund to the Agency's capital project funds as delineated in Section 5, and comply with the laws of the State of Oregon, including the terms and conditions contained within this Agreement. The Agency shall reimburse the City for its expenses incurred in the performance of this Agreement.

**Section 4**: **Duties of the Agency.** The Agency shall authorize all actions and execute all documents necessary or desirable to accept the loan, authorize repayment of the loan under the terms and conditions stated herein, and comply with the laws of the State of Oregon, applicable Urban Renewal Plans. The Agency shall be responsible for its expenses incurred in the performance of this agreement and of its activities contemplated herein.

**Section 5**: **Loan Terms.** The Loan shall be made from the City's General Fund to the Agency's Coffee Creek Plan Capital Improvement Fund in the principal amount of $500,000 on or before June 29, 2024. Interest on the loan, at a rate equal to the Oregon Short-Term Bond fund (LGIP) savings rate at date of the overnight loan shall begin to accrue on the date of transfer and the corresponding loan plus accrued interest shall be repaid by the District not later than June 30, 2024.

**Section 6**: **Consideration**. In consideration of the terms and conditions set forth herein, the City agrees to loan up to $500,000 in exchange for the Agency's obligation to repay the loan solely from the tax increment revenues of the corresponding urban renewal districts. The lien of this pledge shall be subordinate to the lien of any currently outstanding senior lien bonds and to any requirement to fund or maintain debt service funds, reserve funds or similar funds or as part of minim balances or similar requirements for those senior lien bonds.

**Section 7**: **Indemnification**. Subject to the limitations in the Oregon Constitution and the Oregon Tort Claims Act, the parties agree to defend, indemnify and hold each other, its officers, agents and employees harmless from all claims, suits, or actions of whatsoever hind, which arise out of or result from the transfer of funds.

**Section 8**: **Modification**. This agreement may not be altered, modified, supplemented or amended in any manner whatsoever except by mutual agreement of the parties in writing. Any such alteration, modification, supplementation, or amendment, if made, shall be effective only in the specific instance and for the specific purpose given, and shall be valid and binding only if signed by the parties.

**Section 9: Waiver.** No provision of the agreement may be waived except in writing by the party waiving compliance. No waiver of any provision of the Agreement shall constitute waiver of any other provision, whether similar or not, nor shall any one waiver constitute a continuing waiver. Failure to enforce any provision of this Agreement shall not operate as a waiver of such provision or of any other provision.

**Section 10**: **Severability**. The parties agree that if any term or provision of the Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular term and provision held to be invalid.

**Section 11**: **Designated Representative.** The City authorizes the City Manager or the City Manager's designee to act on behalf of the City under this agreement. The Agency authorizes the Executive Director of the Agency or the Executive Director's designee to act on behalf of the Agency under this Agreement.

IN WITNESS WHEREOF, the execution of which having been first duly authorized according to law.

CITY OF WILSONVILLE

_____ _____

Bryan Cosgrove Date
City Manager of the City of Wilsonville, Oregon

URBAN RENEWAL AGENCY OF THE CITY OF WILSONVILLE, OREGON

_____ _____

Bryan Cosgrove Date
Executive Director of the Urban Renewal
Agency of the City of Wilsonville, Oregon

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3107**<br>Authorizing the City Manager to Enter into a Development Agreement with Venture Properties, Inc. Regarding the Funding and Construction of the Boeckman Creek Regional Trail and associated Boeckman Creek Trailhead Park in the Frog Pond Terrace Subdivision.<br><br>**Staff Member:** Amanda Guile-Hinman, City Attorney<br>Amy Pepper, PE, Development Engineering Manager<br><br>**Department:** Legal/Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☒ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Staff recommends Council adopt the consent agenda. | |
| **Recommended Language for Motion:** I move to adopt the consent agenda. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☒Council Goals/Priorities: Increase mobility for all in Wilsonville. | ☒Adopted Master Plan(s): Frog Pond West Master Plan | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**

A City of Wilsonville Resolution approving a Development Agreement for refund of Parks System Development Charges (SDCs) by check in addition to issuing SDC credits on a per lot basis pursuant to Wilsonville Code 11.100(6)(b) for the construction of the Boeckman Creek Regional Trail and associated Boeckman Creek Trailhead Park in the Frog Pond Terrace subdivision.

**EXECUTIVE SUMMARY:**

Frog Pond Terrace is a 19-lot subdivision in the Frog Pond West neighborhood, which has received Development Review Board approval of the subdivision on August 22, 2022 and Council approval for annexation in September 2022. The City's approval of the subdivision was conditioned on, among other conditions of approval, the developer's design and construction of the future Boeckman Creek Trailhead Park and Boeckman Creek Regional Trail, which will provide access to the trail as part of the Frog Pond Terrace project. Since City approval, the subdivision was sold from West Hills Land Development to Venture Properties, Inc. Venture Properties and City staff have worked on modifying the standard development agreement template for Frog Pond West developments to address the design, construction and funding of the Boeckman Creek Regional Trail and an associated Trailhead Park. Consistent with the Frog Pond West Master Plan, the Trail and Trailhead Park will be constructed just outside of the vegetated edge of the Boeckman Creek corridor connecting to the existing trail to the south in Morgan Farm. Between the Frog Pond Terrace and Overlook projects (both now owned by Venture Properties), .37 miles of new multi-modal trail will be constructed with these projects.

Due to the small size of the residential development, the City was not in a position to be able to require the improvements as a condition of development without financial contribution by the City. Requiring the regional Trail and Trailhead Park improvements as a condition without City financial contribution would be disproportionate to the impact generated by the development application. In simple terms, the dedication of land and cost of the public regional Trail and Trailhead Park improvements is too great and beyond the ability of the City to require of the developer for such a small residential project, and thus requires the City to instead fund the improvements in partnership with our private development partner.

Staff obtained cost estimates for the public regional Trail and Trailhead Park improvements from the original developer that entitled Frog Pond Terrace, West Hills Land Development, and its civil design team at OTAK, Inc. The cost of acquisition of the .34-acre land for the Trailhead Park is $170,000 ("Acquisition Costs"), and is discussed in further detail below. The estimated cost for the improvements to the Trailhead Park and Trail public park improvements estimated to be $592,166 ("Improvement Costs"). Thus, the total estimated cost for the Trailhead Park and Trail is $762,166 ("Park Costs").

The .34 acre Trailhead Park is part of the net developable portion of the Frog Pond Terrace site, and the requirement to include a Trailhead Park removed three lots from the developer's preferred site plan. The regional Trail and Trailhead Park are clearly shown in the Frog Pond West Master Plan as community amenities. In this case, the City would pay the developer cost for the .34 acre trailhead park site at $170,000 (.34 X $500,000[1]). It is because of the loss of buildable lots to accommodate the Trailhead Park, and the small size of the development (19 lots with an estimated public improvement package of $762,166) that has resulted in the City having to pay for the park site. The projects are included in the Master Plan and due to the fact that they are regional facilities, are the City's to fund with Parks System Development Charge (SDC) fees. The

[1] This amount was obtained from the original developer that owned the subdivision when the City considered it for development approval.

Significant Resource Overlay Zone (SROZ) area at 5.2 acres would be dedicated to the public at no cost consistent with long-standing policy.

The Trailhead Park and Trail project is eligible for Parks SDC credits on a per lot basis. 19 lots multiplied by the Parks SDC on January 1, 2024 ($14,000 per home) is $266,000. This would be the credit amount if all of the home permits are issued between January 1, 2024 and July 1, 2024. The SDCs will likely increase again on July 1, 2024 in an amount that is unknown at this time, but if permits are issued after July 1, 2024 it will increase the per lot credit amount reducing the refund. The total Park Costs will be reduced by the per lot SDC credited amount, for a total estimated additional City contribution of $496,166 ($762,166 - $266,000 = $496,166).

There are benefits to the City entering into a Development Agreement to provide amongst other things, the regional Trailhead Park and Trail amenities in the Frog Pond Terrace development. Those include:

- Park amenities are provided at the time the subdivision is constructed, not after homes are constructed
- Park amenities are designed, bid, funded and constructed by Venture Properties, which provides economies of scale
- City credits/refunds the cost of improvements
- No BOLI wages are paid for construction work resulting in significant savings
- Venture Properties manages design, construction, payment and oversight of improvements
- Continuation of a strong public-private partnership with Venture Properties

To ensure costs are appropriate, the proposed Development Agreement includes City consultation and review of park design and construction costs. As part of the Parks SDC credit and refund, the City will review invoices to reimburse Venture Properties for qualified public improvements consistent with this Development Agreement.

The City Council provided budget authority for this project as part of the Fiscal Year (FY) 2023-2024 budget process, allocating $444,700 to the project. Through the required consultation with City staff as the project design and construction planning progresses, if additional resources are needed, the City may address such needs once known.

**EXPECTED RESULTS:**
Construction of the necessary improvements is a public-private partnership through the use of SDC credits and refunds, resulting in a cost-effective method for encouraging build-out of needed public infrastructure in a thoughtful manner.

**TIMELINE:**
Subdivision construction, including the trail and trailhead park is anticipated to begin in Spring/Summer 2024.

**CURRENT YEAR BUDGET IMPACTS:**
The proposed reimbursement was included in the FY 2023-2024 City budget.

**COMMUNITY INVOLVEMENT PROCESS:**
The Frog Pond Terrace Subdivision went through a quasi-judicial land use process under Planning Files DB22-0003 – including a public hearing for an annexation and zone map amendment before the Council September 8 and September 19, 2022 and a public hearing before the Design Review Board (DRB) Panel B August 22, 2022. The DRB approved the project on a unanimous vote.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
SDC credit and/or refunds, as allowed by City Code, provides for a public-private partnership to help build out City infrastructure needs in conjunction with private development projects in a timely and cost-efficient manner.

**ALTERNATIVES:**
Alternatively, the Council can direct staff to issue all credits instead of a refund to Venture Properties, Inc.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**
1. Resolution No. 3107
    A. Development Agreement between City of Wilsonville and Venture Properties, Inc.

**RESOLUTION NO. 3107**

**A RESOLUTION OF THE CITY OF WILSONVILLE AUTHORIZING THE CITY MANAGER TO ENTER INTO A DEVELOPMENT AGREEMENT WITH VENTURE PROPERTIES, INC. REGARDING THE FUNDING AND CONSTRUCTION OF THE BOECKMAN CREEK REGIONAL TRAIL AND ASSOCIATED BOECKMAN CREEK TRAILHEAD PARK IN THE FROG POND TERRACE SUBDIVISION.**

WHEREAS, in August 2022, the City Development Review Board approved the development of a 19-lot subdivision in the Frog Pond West neighborhood referred to as "Frog Pond Terrace;" and

WHEREAS, the City's approval of the subdivision was conditioned on, among other conditions of approval, the developer's design and construction of the future Boeckman Creek Trailhead Park and Boeckman Creek Regional Trail (collectively, the "Boeckman Trail Project"); and

WHEREAS, due to the small size of the residential development, the City was not in a position to be able to require the Boeckman Trail Project improvements as a condition of development without financial contribution by the City; and

WHEREAS, the City intends to contribute to the Boeckman Trail Project in the manner described in the Development Agreement attached hereto and incorporated by reference herein as **Exhibit A**.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

Section 1. Findings. The City Council hereby adopts as its findings the above-recitals and the Staff Report accompanying the Resolution as if fully set forth herein.

Section 2. The City Council authorizes the City Manager to enter into a development agreement with Venture Properties, Inc. regarding the funding and construction of the Boeckman Creek Regional Trail and associated Boeckman Creek Trailhead Park in the Frog Pond Terrace subdivision, which development agreement must be substantially similar to **Exhibit A** attached hereto.

Section 3. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

JULIE FITZGERALD, MAYOR

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBIT:

A. Development Agreement

# EXHIBIT A

## DEVELOPMENT AND ANNEXATION AGREEMENT BETWEEN VENTURE PROPERTIES, INC. AND THE CITY OF WILSONVILLE, OREGON

This Development and Annexation Agreement ("Agreement") is entered into by and between the **City of Wilsonville**, an Oregon municipal corporation ("City"), and **Venture Properties, Inc.**, an Oregon corporation ("Developer"). The effective date of this Agreement is the _____ day of _____ 2024 ("Effective Date"). The City and Developer may be referred to herein individually as a "Party" or collectively as the "Parties."

## RECITALS

A. Developer proposes to construct residential housing within the area commonly referred to as Frog Pond West, which residential housing to be constructed by Developer is depicted on the map attached hereto and incorporated herein as **Exhibit A** ("Developer Property"). A map of the entire area of Frog Pond West is depicted on the map attached hereto and incorporated herein as **Exhibit B** ("Frog Pond West").

B. Developer presented to the City a proposed site plan for development of the Developer Property, as depicted in **Exhibit C** ("Proposed Development") attached hereto and incorporated herein. The Proposed Development includes, but is not limited to, the following improvements: Public roadway and street lighting, public utility (sanitary sewer, water, and storm), and private franchise utilities. The Developer will be constructing the Boeckman Creek Regional Trail through the project and the associated Trailhead Park. Developer accepts all responsibility of the Proposed Development as amended and approved by the City.

C. The Infrastructure Funding Plan ("Funding Plan"), a component of the Frog Pond West Master Plan ("Master Plan"), identifies four (4) off-site infrastructure projects: (1) Memorial Park pump station; (2) Boeckman Creek sanitary sewer trunk line; (3) west side water reservoir; and (4) Boeckman Bridge, which will be west of Frog Pond West over Boeckman Creek ("Boeckman Bridge"). These four (4) off-site infrastructure projects serve the broader City community, will be constructed by the City, and are funded through City system development charges ("SDC"), with possible contributions from other sources. In particular, Boeckman Bridge may be paid partially through a Boeckman Bridge transportation mitigation fee discussed herein in **Section IV** ("Boeckman Bridge Fee"). Developer will be responsible for paying the Boeckman Bridge Fee, to the extent required, at issuance of building permit.

D. The Funding Plan also identifies four (4) on-site infrastructure projects: (1) local streets and sidewalks; (2) sanitary sewer lines; (3) water lines; and (4) stormwater management ("Developer Improvements"). Unless expressly identified otherwise herein, the construction and cost of these four (4) Developer Improvements are the responsibility of developers within Frog Pond West.

E. The Funding Plan lists five (5) Master Plan infrastructure projects, which are the focus of the Funding Plan. These Master Plan infrastructure projects are: (1) the north side of SW Boeckman Road adjacent to Frog Pond West, including sanitary sewer ("Boeckman Road"); (2) the west side of SW Stafford Road adjacent to Frog Pond West, including sanitary sewer and water ("Stafford Road"); (3) the Neighborhood Park within Frog Pond West ("Neighborhood Park"); (4) the Trailhead Park in the western area of Frog Pond West ("Trailhead Park"); and (5) the Boeckman Creek Regional Trail along the west edge of Frog Pond West.

F. The Boeckman Creek Regional Trail is included in the Master Plan and the Parks and Recreation Master Plan. This regional trail facility and associated trailhead access will be paid for by the City and constructed by Developer.

G. Under current City policy, the cost and construction of the north part of Boeckman Road, west part of Stafford Road, and Neighborhood Park ("Unfunded Projects") are the responsibility of developers within Frog Pond West. Attached hereto and incorporated herein as **Exhibit D** is a depiction of the "local portion" of Boeckman Road (which similarly applies for Stafford Road) that is the responsibility of the adjacent developer to construct under current City policy.

H. Due to the size and expense of these three (3) Unfunded Projects and the multiple property ownerships with relatively small acreage within Frog Pond West, the City will take responsibility for constructing the Unfunded Projects and acquiring land as needed for the Neighborhood Park. Developer is responsible for paying system development charges (SDCs) and an additional infrastructure supplemental fee provided in **Section IV** ("Infrastructure Supplemental Fee") at issuance of building permit in exchange for the City taking responsibility for constructing the Unfunded Projects.

I. The City and Developer have agreed that this allocation for the work between the City and Developer is fair and equitable and is a proportional allocation between benefit to the public and benefit to Developer's project.

J. Developer will be solely responsible for all up-front costs associated with Developer's particular Developer Improvements as described in **Section III**, below.

## AGREEMENT

In consideration of the foregoing Recitals, and incorporating all of the above Recitals by reference in this Agreement as if fully set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, all of the above-named Parties agree as follows:

## I. NEW DEVELOPMENT

Developer intends to construct residential development and other ancillary amenities within Frog Pond West. Developer's Proposed Development has been approved by the City's Development Review Board, and Developer is currently refining construction plans to be submitted in the permitting processes required by the City for residential development. Developer will pay all fees

required by the City for such residential development, including the Infrastructure Supplemental Fee and the Boeckman Bridge Fee described herein (collectively referred to as "Frog Pond West Fees"), in order to obtain the appropriate permits to move forward with Developer's Proposed Development ("Development Approval").

## II. CITY'S IMPROVEMENTS (City Obligations)

In consideration for Developer paying certain additional fees described in **Section IV**, the City agrees to construct the Unfunded Projects and to acquire certain real property necessary for development of the Neighborhood Park. The City retains sole and absolute discretion regarding the means, manner, timing, materials, phasing, and all other aspects of acquisition and construction of the Unfunded Projects. Developer agrees to cooperate with the City with regard to the City's construction of the Unfunded Projects, including, but not limited to, providing access to project sites, allowing tie-in to existing and future infrastructure, and coordinating Developer Improvements with construction of the Unfunded Projects. The City may also elect, in its sole and absolute discretion, to assign its responsibility to construct any of the Unfunded Projects.

## III. DEVELOPER'S IMPROVEMENTS (Developer Obligations)

### Section 3.1 – Description of Developer Improvements

Developer agrees to perform the Developer Improvements, as provided in the Proposed Development (**Exhibit C**), which Developer Improvements are generally described as follows:

Developer is constructing Frog Pond Terrace, a 19-lot subdivision to the north of the Morgan Farm Phase 2 residential subdivision and to the south of Frog Pond Lane. Developer is also extending the existing local street identified as "SW Woodbury Loop" and widening the existing local street identified as "SW Brisband Street." Additionally, local streets are to be constructed as part of the Proposed Development. Developer will be constructing the Trailhead Park and a portion of the Boeckman Creek Regional Trail through the project. These improvements are shown in **Exhibit C.** Developer is responsible for constructing and installing all infrastructure, utilities, and other improvements as required under the City of Wilsonville City Code and conditions of approval for the Proposed Development.

### Section 3.2 – Developer Improvement Costs

The foregoing Developer Improvements shall be constructed by Developer at Developer's sole expense, except Developer may receive SDC credit relating to installation of a water line along Frog Pond Lane, as well as credit or refund relating to construction of the Trailhead Park and the Boeckman Creek Regional Trail, including some potential soft costs. Except as otherwise provided in Section 3.4, the foregoing Developer Improvements must be completed, inspected by the City, and deemed complete by the City before the City will issue any temporary occupancy permits to Developer for homes in the Proposed Development, assuming Development Approval.

**Section 3.3 – SDC Credit for Expenses – Water Improvements**

If Developer is entitled to Water SDC credit pursuant to **Section 3.2**, Developer must submit a request for SDC credit to the City within ninety (90) days of written acceptance of the improvements by the City. A cover page invoice with Developer's letterhead shall accompany the request for SDC credits. Developer must submit sufficient documentation for specific costs related to construction of such improvements and in a format acceptable by the City. Developer shall also submit a signed letter of completion certifying payment in full to all subcontractors and suppliers. If Developer fails to submit an acceptable request for SDC credit or reimbursement within ninety (90) days from the City's letter of acceptance issuance date, Developer forfeits its right to receive the SDC credit unless the Parties agree in writing.

The City will issue the SDC credits within thirty (30) days of receiving the approved final construction costs request documents for SDC credit, provided there is mutual agreement on any true-up charges. If there is a disagreement on any or all of the true-up charges, that true-up sum(s) may be withheld until such time as any such disagreement is resolved, with that sum(s) being paid within seven (7) days of resolution.

**Section 3.4 – Reimbursement of Expenses – Park Improvements**

Due to Developer's construction of the Trailhead Park and a portion of the Boeckman Creek Regional Trail, Developer will be entitled to SDC credit or refund, which Developer has estimated to currently equal SEVEN HUNDRED SIXTY-TWO THOUSAND ONE HUNDRED SIXTY-SIX DOLLARS ($762,166) ("Park Costs"). The Park Costs consist of $170,000 for land acquisition of approximately 0.34 acres for the Trailhead Park ("Acquisition Costs") and capital improvements estimated to be $592,166 ("Improvement Costs"). The Improvement Costs are currently an estimate only, and any changes to the Improvement Costs will be handled in accordance with the terms set forth in this Section 3.4.

3.4.1. Acquisition Costs. The City and Developer agree that the Parties will execute a Statutory Warranty Deed for the Trailhead Park to be placed in escrow pending plat recording and completion of the Trailhead Park improvements, which Deed must be in substantially similar form to **Exhibit E** attached hereto and incorporated herein. The City will pay Developer the Acquisition Costs no later than thirty (30) calendar days after the Effective Date of this Agreement or after Developer's execution of the Statutory Warranty Deed, whichever is later.

3.4.2. Parks System Development Charges. The City and Developer hereby agree that Developer will not pay any Parks System Development Charges (SDCs) for the Proposed Development in lieu of receiving Parks SDC credits. The total amount that Developer would have paid to the City in Parks SDCs that it is now not paying is TWO HUNDRED SIXTY-SIX THOUSAND DOLLARS ($266,000) at the Effective Date's rate ($14,000/lot), which is subject to future increases and which will increase the credited amount depending on when the building permits are issued for the homes ("SDC Credit"). The SDC Credit will be applied to the Improvement Costs. For avoidance of doubt, the payment the City will pay to Developer to

reimburse Developer the Improvement Costs will be reduced by the SDC Credit amount.

3.4.3. SDC Refund. Subject to the conditions stated herein, the Parties hereby agree that the City will issue a refund check of the remaining balance (Improvement Costs minus SDC Credit), so long as the following conditions are met: (1) except as allowed in subsection 3.4.4.10 herein, Developer completes construction of the Trailhead Park and the portion of the Boeckman Creek Regional Trail consistent with City approval of the relevant Park public improvement plans prior to recording the Plat for the subdivision; (2) Developer must submit a written request for SDC refund to the City within ninety (90) days of written acceptance of the improvements by the City; and (3) if the refund amount exceeds the estimated Improvement Costs, the City obtains approval from the City Manager or the City Council, whichever is applicable. A cover page invoice with Developer's letterhead and a detailed accounting of all applicable expenditures shall accompany the request for SDC refund. Developer must submit sufficient documentation for specific costs related to construction of such improvements and in a format acceptable by the City. Developer shall also submit a signed letter of completion certifying payment in full to all subcontractors and suppliers. If Developer fails to submit an acceptable request for SDC refund within ninety (90) days from the City's letter of acceptance issuance date, Developer forfeits its right to receive a SDC refund unless the Parties agree in writing. If Developer fails to complete the construction of the Trailhead Park and the Boeckman Creek Regional Trail according to the approved plans or within the required time frame, Developer forfeits its right to receive a SDC refund and must pay to the City the SDC Credit. Developer may submit documentation reflective of the requirements stated above to obtain a partial refund (Improvement Costs less Retainage) upon Substantial Completion. *See* Subsection 3.4.4.8 *infra*.

3.4.3.1. The City will pay the refund within thirty (30) days of receiving the approved final construction costs request documents for refund, provided there is mutual agreement on any true-up charges. If there is a disagreement on any or all of the true-up charges or regarding the public improvements, that true-up sum(s) may be withheld until such time as any such disagreement is resolved, with that sum(s) being paid within seven (7) days of resolution.

3.4.4. Park and Trail Design and Construction Review. To promote communication, reduce potential disputes, and manage costs, the Parties agree to the following processes regarding the design and construction of the Trailhead Park improvements and the Boeckman Creek Regional Trail.

3.4.4.1. Project Managers. The City's Project Manager with regard to this Section 3.4.4 is Amy Pepper, Development Engineering Manager.

Developer's Project Manager with regard to this Section 3.4.4 is Kelly Ritz, Venture Properties, Inc.

3.4.4.2. Design Review. Developer will include the Trailhead Park and Boeckman Creek Regional Trail improvements with the Public Works Permit application. Developer will include a cost estimate so the parties may proactively discuss any potential issues regarding cost.

3.4.4.3. Bid Review. The City's Project Manager will review and approve all construction bids prior to the commencement of construction. Developer will forward, in electronic form, all relevant bid documents, and the City's Project Manager will respond as soon as possible, but no later than three (3) business days beginning with the business day following the submission to the City of all relevant materials. Developer's Project Manager will respond to any City questions or concerns as soon as possible, but no later than three (3) business days beginning with the business day following the City's question or concern.

3.4.4.4. Design Changes. The City's Project Manager will review and approve or reject all proposed design changes prior to those changes being made. Developer will forward, in electronic form, all relevant design change documents, and the City's Project Manager will respond as soon as possible, but no later than three (3) business days beginning with the business day following the submission to the City of all relevant materials. Similarly, any other additional communications between the City and Developer concerning design changes shall be as timely as possible, but no later than three (3) business days.

3.4.4.5. Review Change Orders. Prior to the commencement of work on items requiring a change order, Developer's Project Manager will submit electronically the requested change order with the City's Project Manager. The City's Project Manager will review and approve or reject the proposal no later than three (3) business days beginning with the day after submission to the City to review and approve or deny the requested change orders.

3.4.4.6. Cost Overruns. The City and Developer will agree to design the work so as to keep the costs of the work equal to or less than the Improvement Costs. Developer will make all reasonable efforts to construct The Trailhead Park and the Boeckman Creek Regional Trail at the Improvement Costs amount or less. In the case of cost overruns, the City Manager may, in the City Manager's sole and absolute discretion, approve the City's refund to Developer of costs that exceed, by no greater than 15%, the Improvement Costs amount. City's Manager will respond as soon as possible, but no later than three (3) business days beginning with the business day following the submission to the City of all relevant materials. All costs in excess of 15% must be approved by City Council. If Developer incurs such costs without

prior approval of the City Manager or City Council, as applicable, Developer will forfeit Developer's right to recover such costs from the City.

3.4.4.7. Construction Timeline. The Trailhead Park and Boeckman Creek Regional Trail shall be constructed and must be complete prior to final acceptance of the public infrastructure, which may occur after issuance of building permits if Developer has entered into a compliance agreement with the City contemplated in subsections 3.4.4.9 and 3.4.4.10 herein.

3.4.4.8. Retainage. Upon Substantial Completion (defined below), Developer may submit documentation consistent with Subsection 3.4.3 *supra* to receive a refund check for its Improvement Costs, less $50,000. The City will retain $50,000 until final City approval of the Trailhead Park and Boeckman Creek Regional Trail improvements. In the event of non-performance, the City may use the retainage to hire contractors to complete work.

3.4.4.9. Substantial Completion. Substantial completion means construction is to the point of complete where all public infrastructure facilities are usable for their intended purpose: utilities (storm, sanitary, and water) are tested, approved, and connected to public lines, streets have been paved, roadway striping is complete, street lighting is approved and activated, and all fire, life and safety issues meet code. At the point of the project meeting Substantial Completion, the City will approve the final plat. Developer is allowed to enter into a compliance agreement as described in subsection 3.4.4.10 so that Developer can record the plat for the Development at substantial completion of the public infrastructure, which, upon recording, will allow Developer to apply to the City for building permits.

3.4.4.10. Final Completion. Except as otherwise allowed in this Subsection 3.4.4.10, the City shall not issue the building permit for the 10th house until all of the improvements have been complete and accepted by the City. The City may enter into a compliance agreement with Developer consistent with other compliance agreements Developer has executed with the City for its other developments in Frog Pond West for those punch list items remaining at Substantial Completion, which will allow the issuance of the remaining building permits. The City's election to enter into a compliance agreement will not be unreasonably withheld. Final payment of the SDC Refund will occur no later than thirty days (30) after completion of all punch list items as determined by final acceptance by the City.

**Section 3.5 – Developer Bonds**

Prior to commencement of construction of the infrastructure set forth in this Agreement, Developer must provide to the City performance and payment bonds, satisfactory to the City. Prior to commencement of construction, Developer shall also cause the City to be named as an additional insured on the applicable contractor's insurance policy for the construction of

the respective infrastructure provided for in this Agreement, in amounts and coverages reasonably satisfactory to the City.

**Section 3.6 – Developer Compliance with Frog Pond West Master Plan and City Code**

Developer agrees to adhere to the purpose, terms, conditions, guidance, regulations, and requirements contained in the Frog Pond West Master Plan and related Wilsonville Code. Developer is further obligated to act in good faith and pursuant to the City of Wilsonville Public Works Standards in providing access to infrastructure for other development within Frog Pond West. Developer will not prohibit, block, or otherwise impede another developer's ability to access and tie into infrastructure within Frog Pond West. If the City determines, in its sole and absolute discretion, that Developer is engaging in conduct or behavior to prevent, inhibit, or otherwise deter other development from accessing or tying into infrastructure within Frog Pond West, the City may withhold occupancy permits, building permits that are in process, future building permits, and SDC credits or reimbursements unless and until Developer allows other development to access the infrastructure within Frog Pond West.

## IV. ADDITIONAL FEES

**Section 4.1 – Infrastructure Supplemental Fee**

In addition to SDCs required to be paid, Developer will pay an Infrastructure Supplemental Fee of $31,471 per single-family home, as adjusted pursuant to City Resolution No. 2649, at issuance of each building permit. If Developer constructs duplexes, the Infrastructure Supplemental Fee is required for each of the two units within the duplex. Developer is not required to pay the Infrastructure Supplemental Fee for any accessory dwelling units, which are defined in Wilsonville Code 4.001.

**Section 4.2 – Boeckman Bridge Fee**

Developer will also pay the Boeckman Bridge Fee of $3,219 per single-family home, as adjusted pursuant to City Resolution No. 2649, for the construction of Boeckman Bridge. The Boeckman Bridge Fee must be paid at issuance of each building permit. If Developer constructs duplexes, the Boeckman Bridge Fee is required for each of the two units within the duplex. Developer is not required to pay the Boeckman Bridge Fee for any accessory dwelling units, which are defined in Wilsonville Code 4.001.

**Section 4.3 – Release of Restrictive Covenant Waiving Right of Remonstrance for Formation of Local Improvement District**

Upon payment of the Infrastructure Supplemental Fee and the Boeckman Bridge Fee (if applicable) for a specific parcel, Developer may request the City release the Restrictive Covenant Waiving Right of Remonstrance for Formation of Local Improvement District ("Waiver of Remonstrance") that has been recorded against the parcel. The City shall agree to the release of the Waiver of Remonstrance upon the City's determination that Developer has complied with the requirements of this section for release. Developer is responsible for

providing a legal description for the specific parcel and paying any and all costs and fees, including recording fees, incurred by the City to release the Waiver of Remonstrance.

## V. DISPUTE RESOLUTION

### Section 5.1 – Dispute of Frog Pond West Fees

**5.1.1** If Developer disputes the City's adjustment of either of the Frog Pond West Fees, Developer must submit a letter of appeal ("Appeal Letter"), no later than ten (10) calendar days after the date of issuance of each building permit, addressed to the City's Community Development Director and the City's Finance Director. Developer cannot appeal the base Frog Pond West Fees of $31,471 (Infrastructure Supplemental Fee) and $3,219 (Boeckman Bridge Fee) listed in **Sections 4.1 and 4.2** above because these fees have already been negotiated and agreed upon. The Appeal Letter contesting the adjusted amount must include the following information:

5.1.1.1 The name of the Developer;
5.1.1.2 The location of the parcel;
5.1.1.3 The amount of the adjustment that Developer disputes; and
5.1.1.4 Reasons why Developer disputes the adjustment.

If Developer fails to provide any of the above-listed information in the Appeal Letter within the allowed ten (10) day period, the Community Development Director will send a letter dismissing the appeal for failure to comply with this Section.

**5.1.2** Upon receipt of an Appeal Letter submitted in compliance with **Section 5.1.1**, the Community Development Director and Finance Director will review the Appeal Letter, will obtain and review any City information regarding the disputed adjustment, and may ask for additional information from the Developer. No later than thirty (30) calendar days after the date of the Appeal Letter, the Community Development Director and Finance Director will issue an opinion of the Community Development Director and Finance Director ("Directors' Opinion") regarding whether Developer is entitled to a refund of any portion of the adjusted amount.

**5.1.3** If Developer disputes the Directors' Opinion, then Developer may submit a notice of appeal ("Appeal Notice"), no later than fourteen (14) calendar days after the date of the Directors' Opinion, to the City Manager to have the matter reviewed by the City Council. The Appeal Notice must include the information listed in **Section 5.1.1.1 through 5.1.1.4** as well as the following information:

5.1.3.1 Reasons why Developer disputes the findings in the Directors' Opinion.

If Developer fails to provide any of the above-listed information in the Appeal Notice within the fourteen (14) day period, the City Manager will send a letter dismissing the appeal for failure to comply with this Section.

**5.1.4** Upon receipt of an Appeal Notice submitted in compliance with **Section 5.1.3**, the Community Development Director and Finance Director may supplement their Directors' Opinion with additional information ("Directors' Supplement") to be reviewed by the City Council, which Directors' Supplement must be submitted to the City Manager no later than fourteen (14) calendar days after the Appeal Notice. The City Council will review the entire record and may, in its sole discretion, request oral testimony. Such review must be held no later than thirty (30) calendar days after the Directors' Supplement or no later than forty- five (45) calendar days after the Appeal Notice if no Directors' Supplement is provided. City Council will issue a decision ("Council Decision") at the review meeting or at a later meeting if the City Council decides to continue the review to obtain additional information from the Developer and/or the City.

**5.1.5** If Developer disputes the Council Decision, Developer will have a statutory right to a writ of review to Clackamas County Circuit Court pursuant to Oregon Revised Statutes 34.010 through 34.100.

**Section 5.2 – All Other Disputes**

**5.2.1** **Mediation.** All disputes arising out of this Agreement, other than disputes subject to **Section 5.1** above, shall first be submitted to mediation. Any Party desiring mediation shall provide the other Party with a written notice (the "Request to Mediate"), which shall set forth the nature of the dispute. The Parties shall in good faith cooperate in the selection of a mediator and may adopt any procedural format that seems appropriate for the particular dispute. In the event a written settlement agreement is not executed by the Parties, in the Parties' sole discretion, within twenty (20) days from the date of the Request to Mediate, or such longer time frame as may be agreed upon in writing by the Parties, any Party may make demand for arbitration pursuant to the following paragraph.

**5.2.2** **Arbitration or Litigation.** Any dispute arising under **Section 5.2.1** of this Agreement which is not resolved through mediation, upon mutual agreement of the Parties may be submitted to arbitration, to be conducted in Wilsonville, Oregon before a single arbitrator selected by mutual agreement of the Parties. The arbitrator shall have substantial experience in commercial real estate and construction disputes. If the Parties are unable to mutually agree upon and select an arbitrator within twenty (20) days, then any Party may file an action in Clackamas County Circuit Court in lieu of arbitration and there will be no obligation to arbitrate unless otherwise required by Oregon law. If arbitrated, judgment upon the arbitrator's award may be entered in any court having jurisdiction of the matter.

**5.2.3** **Equitable Remedies.** Even if the parties undergo mediation or arbitration, the City may still request immediate equitable remedies of either specific performance or injunctive relief to occur while mediation or arbitration is pending or ongoing. The

parties will otherwise agree to abate the court case pending completion of the mediation or arbitration.

## VI. RECORDING

This Agreement runs with Developer's land that is subject to this Agreement, as identified in Exhibit A. Either this Agreement or a memorandum of this Agreement will be recorded by the City with the Clackamas County Recorder's Office for all real property subject to this Agreement.

## VII. MISCELLANEOUS PROVISIONS

### Section 7.1 – Further Assurances

Each Party will cooperate and perform such acts and things reasonably necessary in connection with the performance of its obligations hereunder, in good faith to carry out the intent of the Parties hereto. Developer understands and agrees that no occupancy permit will be granted for the Proposed Development until the Developer Improvements have been completed and approved by the City as meeting the requirements set forth herein.

### Section 7.2 – Modification or Amendment

No amendment, change, or modification of this Agreement will be valid unless in writing and signed by the Parties hereto.

### Section 7.3 – Relationship

Nothing herein may be construed to create an agency relationship or a partnership or joint venture between the Parties.

### Section 7.4 – Maintenance

Developer is responsible for maintenance of the Developer Improvements as provided in the 2017 City of Wilsonville Public Works Standards, Section 101.8.18 *Maintenance and Warranty*, and any amendments thereto. Developer remains responsible for submitting a maintenance bond, per Public Works Standards, to the City for all of its required Developer Improvements within the public right-of-way or public easements. If Developer fails to maintain the Developer Improvements during the applicable period, the City may do so and make a claim on the bond and directly against Developer. Any work required to be performed by the City will bear interest at a rate of twelve percent (12%) per annum.

### Section 7.5 – Burden and Benefit

The covenants and agreements contained herein shall be binding upon and inure to the benefit of the Parties and their successors and assigns.

### Section 7.6 – No Continuing Waiver

The waiver by any Party of any breach of this Agreement will not operate or be construed to be a waiver of any subsequent breach.

**Section 7.7 – Applicable Law**

This Agreement shall be governed by and construed under the laws of the State of Oregon. Jurisdiction is in Clackamas County, Oregon.

**Section 7.8 – Legal Fees**

If any Party commences legal proceedings, including arbitration or bankruptcy, for any relief against any other Party arising out of or related to this Agreement, or the breach thereof, the losing Party shall pay the prevailing Party's legal costs and expenses, including, but not limited to, arbitration costs, reasonable attorney fees, and expert witness fees, as determined by the court or the arbitrator at the trial level or on any appeal.

**Section 7.9 – Time of Essence**

Time is expressly declared to be of the essence of this Agreement.

**Section 7.10 – Notices**

All notices, demands, consents, approvals, and other communications which are required or desired to be given by any Party to each other hereunder shall be in writing and shall be faxed, hand delivered, or sent by overnight courier or United States Mail at its address set forth below, or at such other address as such Party shall have last designated by notice to the other. Notices, demands, consents, approvals, and other communications shall be deemed given when delivered, three (3) days after mailing by United States Mail, or upon receipt if sent by courier; provided, however, that if any such notice or other communication shall also be sent by telecopy or fax machine, such notice shall be deemed given at the time and on the date of machine transmittal.

| | |
|---|---|
| To City: | City of Wilsonville<br>Attn: Amanda Guile-Hinman, City Attorney<br>29799 SW Town Center Loop East<br>Wilsonville, OR 97070 |
| To Developer: | Venture Properties, Inc.<br>Attn: Kelly Ritz<br>4230 Galewood Street #100<br>Lake Oswego, OR 97035 |

**Section 7.11 – Rights Cumulative**

All rights, remedies, powers, and privileges conferred under this Agreement on the Parties shall be cumulative of and in addition to, but not restrictive of or in lieu of, those conferred by law.

**Section 7.12 – Counterparts**

This Agreement may be executed in several counterparts, each of which shall be deemed an original, and all of such counterparts together shall constitute one and the same instrument.

**Section 7.13 – No Third-Party Beneficiaries and No Assignment**

None of the duties and obligations of any Party under this Agreement shall in any way or in any manner be deemed to create any rights in any person or entity other than the Parties hereto or their respective heirs, successors, and assigns. Developer may not assign its rights under this Developer Agreement without the prior express written consent of the City.

**Section 7.14 – Representations and Warranties**

Each Party signing on behalf of Developer and the City hereby warrants actual authority to bind their respective Party. The Parties signing below also hereby warrant that entry into this Agreement and the enforcement of its terms will not violate any loan covenants or other agreements pertaining to any of the land or improvements impacted hereby.

**Section 7.15 – Legal Review**

All of the Parties to this Agreement hereby affirm that they have been represented in the negotiation hereof by their own independent legal counsel, who have reviewed this Agreement and advised their respective client concerning the same. Therefore, it shall be interpreted accordingly and shall not be construed against the drafter.

IN WITNESS WHEREOF, the Parties have hereunto set their hands as of the day and year first written above.

VENTURE PROPERTIES, INC,
an Oregon corporation

By:_____
Print Name:_____
As Its:_____

CITY OF WILSONVILLE,
a municipal corporation of Oregon

By:_____
Bryan Cosgrove
As Its: City Manager

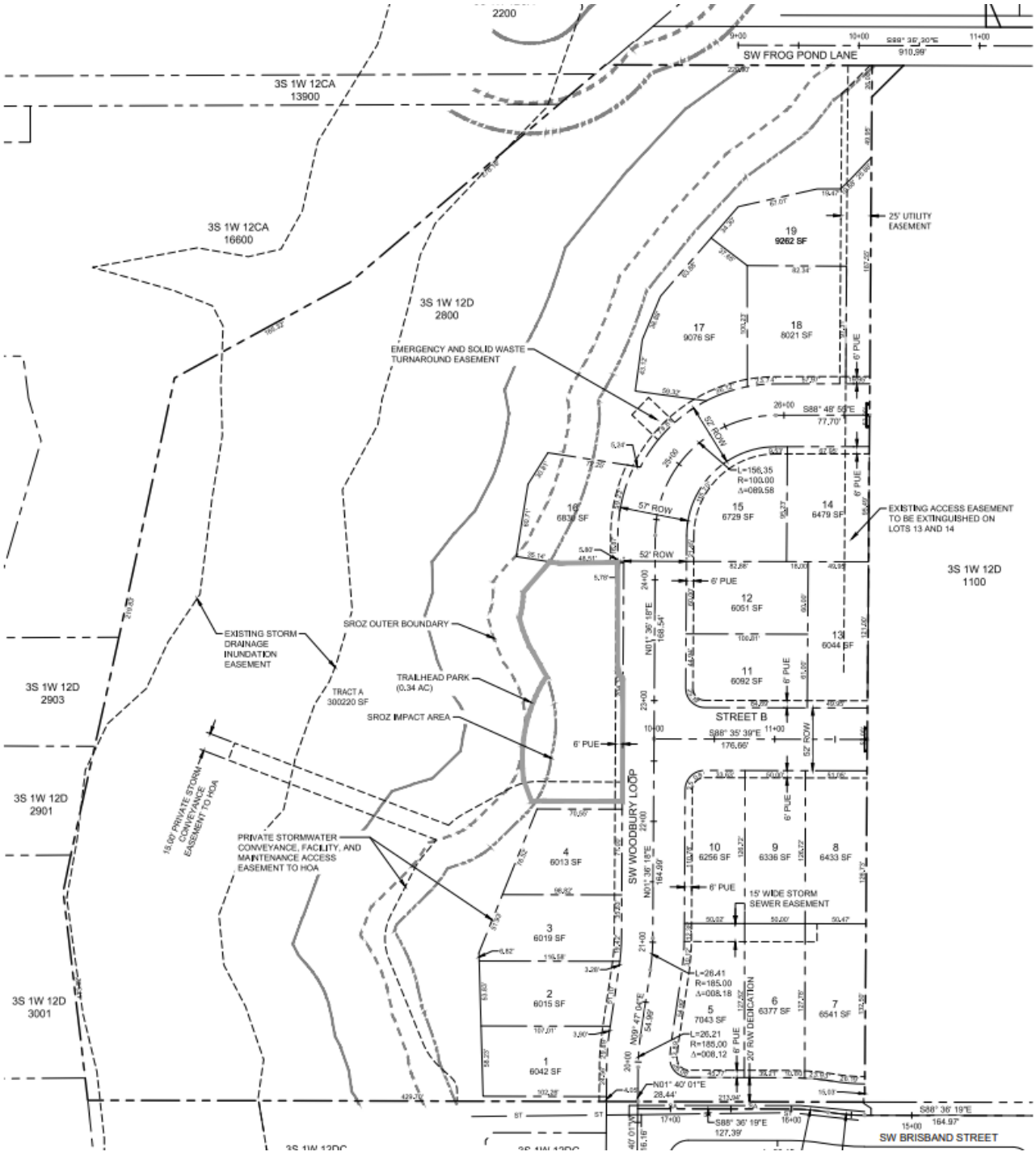
APPROVED AS TO FORM:

_____
Amanda Guile-Hinman, City Attorney

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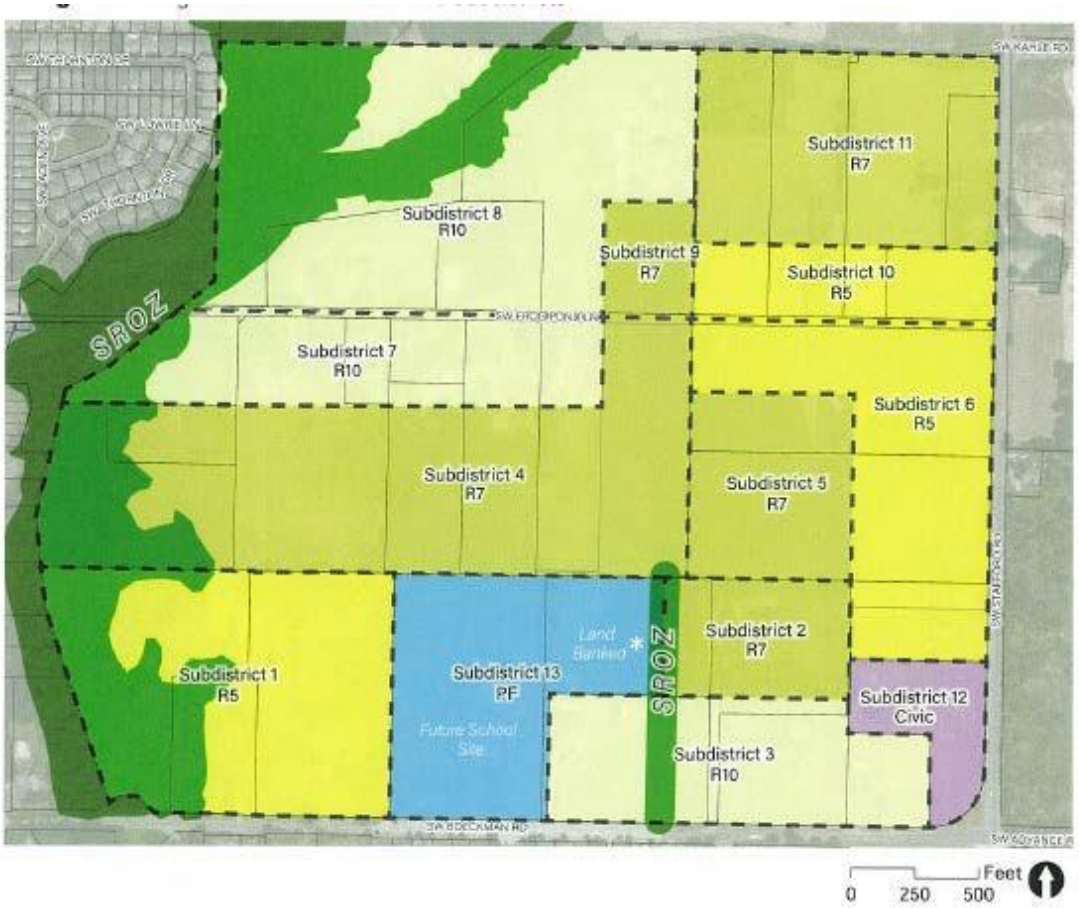
# EXHIBIT A

## Map of Developer Property



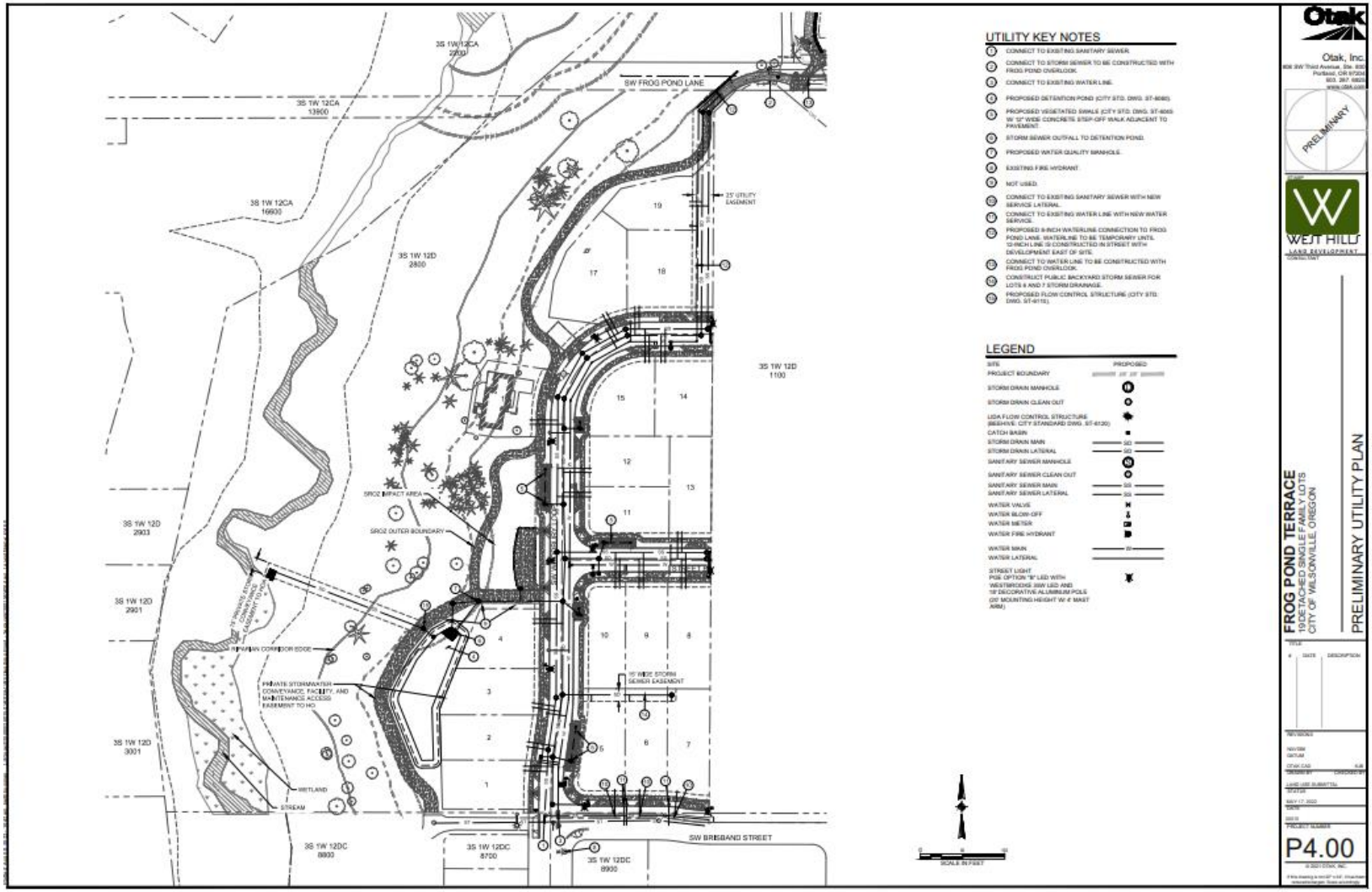
# EXHIBIT B

## Map of Frog Pond West



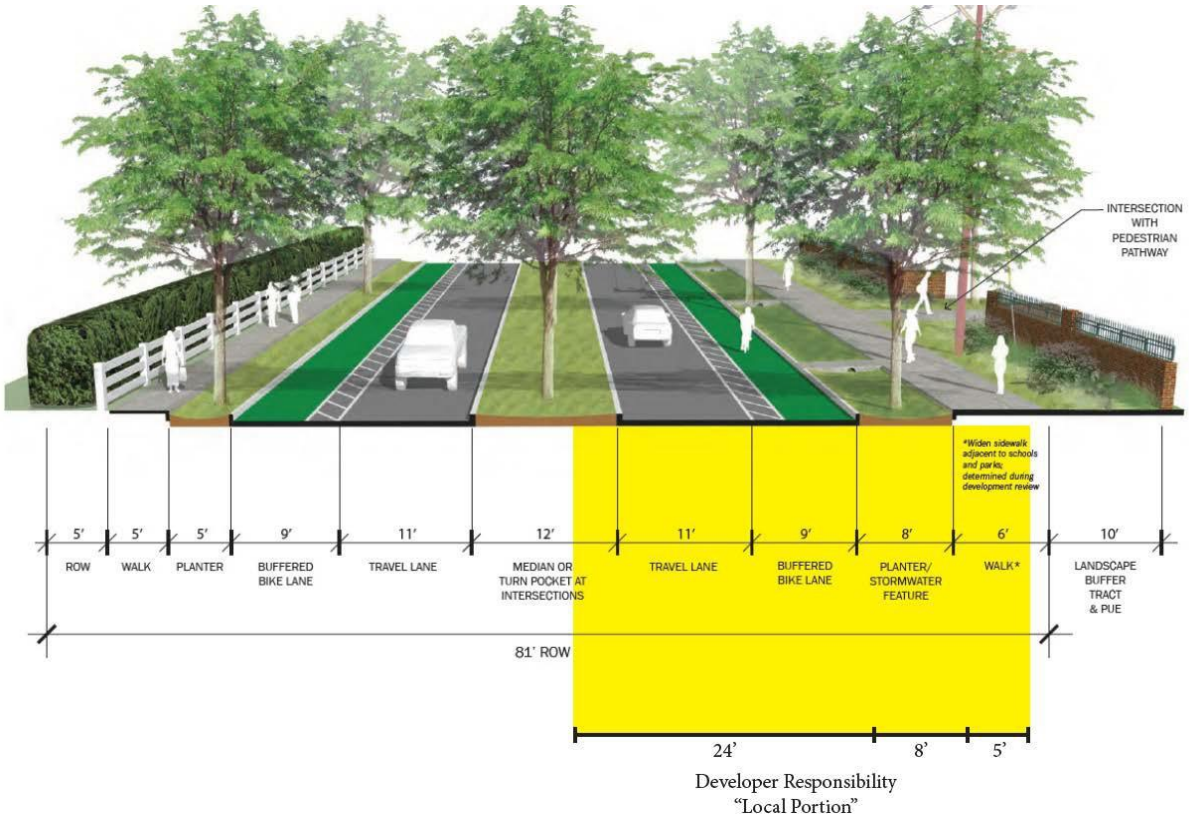
# EXHIBIT C

## Proposed Development



# EXHIBIT D

## Illustration of "Local Portion" of Boeckman Road (Applicable for Stafford Road)



# EXHIBIT E

## Form of Statutory Warranty Deed

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WILSONVILLE
OREGON

## CITY COUNCIL MEETING
## STAFF REPORT

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3108**<br>Authorize the City Manager to Enter Into and Execute the Intergovernmental Agreement with Washington County for Design of Public Utility Improvements on Basalt Creek Parkway.<br><br>**Staff Member:** Zach Weigel, PE, City Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☒ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Staff recommends Council adopt the Consent Agenda. | |
| **Recommended Language for Motion:** I move to adopt the Consent Agenda. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☐Council Goals/Priorities: | ☒Adopted Master Plan(s):<br>2012 Water System Master Plan – Project #362 | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**

A City of Wilsonville resolution approving an Intergovernmental Agreement (IGA) between the City of Wilsonville and Washington County for design of public utility improvements as part of the Basalt Creek Parkway Extension (BCPE) project.

**EXECUTIVE SUMMARY:**
Washington County is undertaking a major transportation enhancement project, extending Basalt Creek Parkway between Grahams Ferry Road and Boones Ferry Road, spanning over Tapman Creek with a new roadway bridge. The Basalt Creek Parkway Extension (BCPE) project is currently in the advance design phase but does not have construction funding. While the planned roadway alignment is currently within unincorporated Washington County, the Basalt Creek Parkway is designated as the northern boundary of the Wilsonville Basalt Creek Industrial Area and the future boundary between the City of Wilsonville and the City of Tualatin.

In December 2022, Washington County staff queried the City regarding the need for any City utilities to be incorporated within the BCPE project. Due to the new bridge over Tapman Creek, design and installation of utilities as part of the BCPE project is more efficient and less costly than attempting to retrofit the needed utilities at a later date, after the road and bridge are in place.

In review of the City's utility planning documents, the Wilsonville 2012 Water System Master Plan identifies the need for an 18-inch water line along the Basalt Creek Parkway alignment to serve the future Basalt Creek Industrial Area. Washington County has agreed to incorporate design of the City water line into the BCPE project construction documents for a compensation amount of $57,000. An intergovernmental agreement (IGA) is required between Washington County and the City of Wilsonville that documents each jurisdiction's responsibility for the City's water line to be incorporated into the Washington County roadway and bridge project.

At such time the County is ready to construct the BCPE project, another IGA between the Wilsonville and Washington County will be necessary to outline each jurisdiction's responsibilities and compensation amounts for the water line construction.

**EXPECTED RESULTS:**
Approval of the IGA will allow Washington County to incorporate design of the City's water line into the County's Basalt Creek Parkway Extension project construction documents and for the City to compensate Washington County for the waterline design work.

**TIMELINE:**
Upon approval of the IGA, the City shall make initial payment to Washington County in the amount of $25,800. Washington County will then begin design work on the City's waterline and incorporate the design into the County's BCPE project construction documents. Upon submission of 90% construction documents for City review, the City will make an additional payment to Washington County in the amount of $25,800. A timeframe for construction of the project has not yet been determined.

**CURRENT YEAR BUDGET IMPACTS:**
The adopted budget for fiscal year (FY) 2023-2024 includes funding for project design and development and early planning for future capital improvement projects (CIP) as summarized below.

| CIP No. | Project Name | Funding Source | Adopted FY 23/24 Budget | IGA Amount |
|---|---|---|---|---|
| 1995 | Early Planning for Future CIP Projects | Water Operations & SDC | $10,500 | $5,000 |
| 1999 | Project Design & Development | Water Operations & SDC | $63,500 | $52,000 |
| | | Total | $ 74,000 | $57,000 |

A separate CIP project number will be created for the Basalt Creek Parkway Waterline project to track project costs. While the IGA compensation amount is within the FY 2023-2024 budgeted amount, a fund transfer from these project development accounts to the project CIP account will be necessary as part of an upcoming supplemental budget adjustment.

**COMMUNITY INVOLVEMENT PROCESS:**
The 2012 Water System Master Plan included a public engagement program that resulted in the identification of water pipeline locations and sizes needed to serve areas identified for future development, including an 18-inch waterline along the planned Basalt Creek Parkway alignment. In addition, Washington County staff are implementing an extensive public engagement process for the design and construction of the Basalt Creek Parkway Extension project. The City staff will support Washington County and participate in the public engagement process as a partner to the project.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
Joint design and construction of the Washington County Basalt Creek Parkway Extension project and the City's waterline project will minimize construction costs between the two projects while decreasing the length of construction time and impacts to the community. Construction of the waterline project after completion of the BCPE project would present significant design challenges and excess costs to retrofit the water pipeline across the planned bridge.

**ALTERNATIVES:**
Reject the intergovernmental agreement with Washington County and design and construct the two projects independently. This option is not recommended, as it will significantly increase the cost of the City's waterline project and add unnecessary complications to retrofit the waterline across the Tapman Creek Bridge.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**
1. Resolution No. 3108

A. Intergovernmental Agreement Between the City of Wilsonville and Washington County for Design of Public Utility Improvements on Basalt Creek Parkway

**RESOLUTION NO. 3108**

**A RESOLUTION OF THE CITY OF WILSONVILLE AUTHORIZING THE CITY MANAGER TO ENTER INTO AND EXECUTE AN INTERGOVERNMENTAL AGREEMENT WITH WASHINGTON COUNTY FOR DESIGN OF PUBLIC UTILITY IMPROVEMENTS ON BASALT CREEK PARKWAY.**

WHEREAS, ORS 190.03 – 190.010 authorizes agencies to enter into intergovernmental agreements for the performance of any or all activities and functions that a Party to the agreement has the authority to perform; and

WHEREAS, Washington County (COUNTY) is completing an extension of Basalt Creek Parkway between SW Grahams Ferry Road and SW Boones Ferry Road referred to as the Basalt Creek Parkway Extension (BCPE) project; and

WHEREAS, COUNTY has jurisdiction over the planned Basalt Creek Parkway and the BCPE is located within unincorporated Washington County; and

WHEREAS, the City of Wilsonville's (WILSONVILLE) 2012 Water System Master Plan, adopted by the Wilsonville City Council, identifies an 18-inch water line along the BCPE project alignment, referred to as (WATERLINE PROJECT), which is necessary to serve future Basalt Creek Industrial Area development; and

WHEREAS, WILSONVILLE desires to complete design and incorporate the WATERLINE PROJECT into the design of the COUNTY BCPE project; and

WHEREAS, WILSONVILLE and COUNTY desire to cooperate in the design of the WATERLINE PROJECT; and

WHEREAS, it is the mutual understanding of the Parties that incorporation of the design of the WATERLINE PROJECT into the design of the COUNTY BCPE project is mutually beneficial to WILSONVILLE and COUNTY, and WILSONVILLE agrees to pay for the WATERLINE PROJECT design work; and

WHEREAS, an Intergovernmental Agreement (IGA) is required for COUNTY and WILSONVILLE to allocate responsibilities and cooperate in design of the WATERLINE PROJECT.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

Section 1. The City Council authorizes the City Manager to enter into and execute, on behalf of the City of Wilsonville, the IGA between the City of Wilsonville and Washington County for design of public utility improvements on Basalt Creek Parkway, substantially in the form attached as **EXHIBIT A**.

Section 2. The City Manager is authorized to sign the Intergovernmental Agreement in substantially the form attached hereto but, with latitude to make minor revisions, as determined by the City Engineer, to reflect needed variances and clarifications.

Section 3. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

JULIE FITZGERALD, MAYOR

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBIT:

A. Intergovernmental Agreement Between the City of Wilsonville and Washington County for Design of Public Utility Improvements on Basalt Creek Parkway

# INTERGOVERNMENTAL AGREEMENT BETWEEN WASHINGTON COUNTY AND THE CITY OF WILSONVILLE

## FOR DESIGN OF PUBLIC UTILITY IMPROVEMENTS ON BASALT CREEK PARKWAY

THIS INTERGOVERNMENTAL AGREEMENT is entered into between Washington County, a political subdivision of the State of Oregon, acting by and through its elected officials, hereinafter referred to as "COUNTY"; and the City of Wilsonville, a municipal corporation, acting by and through its City Council, hereinafter referred to as "CITY."

## RECITALS

1. WHEREAS, ORS 190.010 authorizes agencies to enter into intergovernmental agreements for the performance of any or all functions and activities that a party to the agreement has the authority to perform; and

2. WHEREAS, the COUNTY is completing an extension of Basalt Creek Parkway, a County arterial Road between SW Grahams Ferry Road and SW Boones Ferry Road, referred to as the Basalt Creek Parkway Extension (hereinafter "COUNTY PROJECT"), currently in unincorporated Washington County; and

3. WHEREAS, as, the CITY desires to complete design of a new waterline along the Basalt Creek Parkway alignment between SW Grahams Ferry Road and SW Boones Ferry Road and within the scope of the COUNTY PROJECT; and

4. WHEREAS, the CITY desires the COUNTY incorporate the design of CITY waterline into the design of the COUNTY PROJECT and to pay of the same; and

5. WHEREAS, the CITY and COUNTY desire to cooperate in the design of the CITY's waterline; and

6. WHEREAS, under such authority, it is the mutual desire of the COUNTY and CITY to enter into this Intergovernmental Agreement to cooperate in design of the CITY'S waterline, and to allocate responsibilities as detailed below.

## AGREEMENT

NOW THEREFORE, the premises being in general as stated in the foregoing recitals, and in consideration of the terms, conditions and covenants as set forth below, the parties hereto agree as follows:

## 1. PROJECT DESCRIPTION

1.1 The COUNTY PROJECT will include the design of the road extension between SW Grahams Ferry Road and SW Boones Ferry Road with curbs, sidewalks, bike lanes, street lighting, drainage, landscaping, traffic control, water quality needs, and all necessary permitting.

1.2 The CITY's waterline project, to be completed in conjunction with the COUNTY PROJECT, will include the design of a new waterline between SW Grahams Ferry Road and SW Boones Ferry Road. The waterline will include the installation of fire hydrants, blow-offs, valve lids, and other water infrastructure work required for a new waterline. All of the CITY's proposed improvements are located along Basalt Creek Parkway, hereinafter referred to as "WATERLINE PROJECT".

## 2. COUNTY OBLIGATIONS

2.1 COUNTY hereby designates Renus Kelfkens as COUNTY Project Manager for the COUNTY PROJECT and the COUNTY representative responsible for coordination of the WATERLINE PROJECT with CITY pursuant to this Agreement.

2.2 COUNTY shall perform, or cause to be performed, all actions necessary for the design of the COUNTY PROJECT, including project management, design, property acquisition, including right-of-way as necessary, utility relocation as necessary, regulatory and land use permits and approvals, public information related to the roadway design.

2.3 Subject to CITY obligations set forth in Article 3, Terms 3.1 – 3.5, COUNTY shall perform, or cause to be performed, all actions necessary for the design of the WATERLINE PROJECT in conjunction with design of the COUNTY PROJECT.

2.4 COUNTY shall prepare design plans, technical specifications, standard details, and engineer's opinion of probable constructions for the WATERLINE PROJECT and make available to CITY for review and comment at key project milestones (60%, 90%, and final design). COUNTY will incorporate CITY WATERLINE PROJECT comments that do not unreasonably impact COUNTY PROJECT, including, but not limited to, cost, scope, schedule, or configuration.

2.5 COUNTY shall perform all actions regarding compensation as set forth in Article 4 – Compensation.

2.6 COUNTY shall not acquire any right-of-way or easements for WATERLINE PROJECT.

## 3. CITY OBLIGATIONS

3.1 CITY hereby designates City Engineer or designee as CITY Project Manager for the WATERLINE PROJECT and the CITY representative responsible for coordination of the WATERLINE PROJECT with COUNTY pursuant to this Agreement.

3.2 CITY shall review all design plans, technical specifications, standard details and engineer opinions for the WATERLINE PROJECT, and provide comments in writing, if any to COUNTY within four (4) weeks of COUNTY providing same to CITY.

3.3 CITY shall perform all actions regarding compensation as set forth in Article 4-Compensation.

## 4. JOINT OBLIGATIONS

4.1 To minimize delays or cost increases to the COUNTY PROJECT and WATERLINE PROJECT, the CITY and COUNTY agree to work together diligently to identify and jointly resolve any design or constructability issues with the COUNTY PROJECT and WATERLINE PROJECT at the earliest possible stage of the design process. When such issues arise, the Parties agree to work together to find mutually acceptable solutions in advancement of the design work commencing.

## 5. COMPENSATION

5.1 COUNTY PROJECT

5.1.1 COUNTY shall be responsible for all costs to design the COUNTY PROJECT as described in Section 2.2.

5.2 CITY PROJECT

5.2.1 Except as provided in Subsection 5.2.3, the CITY shall pay an estimated total of $57,000 for the cost of the design of the WATERLINE PROJECT, as described in Section 1.2. Specific WATERLINE PROJECT costs are shown in Exhibit A and are estimated as follows:

| | |
|---|---|
| i. Waterline Design Costs | $57,000 |
| **TOTAL** | **$57,000** |

5.2.2 CITY and COUNTY understand that the costs outlined herein are an estimate and used to determine project budget and estimated payment

amount used within this Agreement. Final cost will be based on the actual amount realized. In the event CITY requests changes that increase the cost of the design work for the WATERLINE PROJECT, COUNTY will advise CITY of the estimated cost increase and will require that CITY agree, in writing, to pay the additional costs before the changes are agreed to.

5.2.3 If during design, the CITY and COUNTY agree to changes that will eliminate or reduce the scope and extent of the WATERLINE PROJECT, the CITY will pay for COUNTY's actual cost for required re-design up to, but not to exceed $10,000. The cost to remove the WATERLINE PROJECT from the COUNTY PROJECT includes but not limited to updating up to 15 plan sheets, revising estimate quantities, updating project specifications and Quality Control of the changes.

5.2.4 As provided in section 2.4, if the CITY requests changes to the design of the WATERLINE PROJECT that do not unreasonably affect the COUNTY PROJECT, but require redesign of a portion of the COUNTY PROJECT, COUNTY shall make the CITY aware of costs for the redesign of the COUNTY PROJECT. COUNTY will either work with the CITY to come to a solution where no redesign is required to address CITY comments, or CITY will agree in writing to pay for the redesign costs before COUNTY incorporates the CITY comments.

5.2.5 CITY shall pay to the COUNTY the sum of $57,000, for the estimated cost of the design, in the following installments

5.2.5.1 Within sixty (60) days of execution of this IGA, CITY shall pay to the COUNTY the sum of $25,800.
5.2.5.2 Within sixty (60) days of submitting the 90% plans, CITY shall pay to COUNTY the sum of $25,800.
5.2.5.3 Additional design costs, if any, within sixty (60) days of invoice of the COUNTY.

5.2.6 If actual costs for design of the WATERLINE PROJECT are anticipated to exceed the sum of $57,000, COUNTY will notify CITY as soon as practicable. Prior to incurring any additional cost for the WATERLINE PROJECT not already agreed to by the CITY, CITY and COUNTY must agree to the additional cost in writing, which agreement will not be unreasonably withheld; provided, however, that if design costs exceed 15% of the amount stated in Subsection 5.2.1, the City may elect, in its sole and absolute discretion, to eliminate or reduce the scope of the design of the WATERLINE PROJECT. CITY shall pay for actual costs up to, but not to exceed $10,000 to remove WATERLINE PROJECT from COUNTY PROJECT. The cost to remove the WATERLINE PROJECT from the COUNTY PROJECT includes but not limited to updated 10 to 15

plan sheets, revising estimate quantities, updating project specifications and Quality Control of the changes.

## 6. GENERAL PROVISIONS

### 6.1 LAWS OF OREGON

The parties shall comply with all applicable laws and regulations regarding the handling and expenditure of public funds. This Agreement shall be construed and enforced in accordance with the laws of the State of Oregon.

### 6.2 COMPLIANCE WITH APPLICABLE LAW

The Parties shall comply with all federal, state and local laws and ordinances applicable to the work performed under the contract including, but not limited to the following, as applicable: Title VI of the Civil Rights Act of 1964, Section V of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 (Pub L No. 101-336), ORS 659A.142 and all regulations and administrative rules established pursuant to those law, and all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.

### 6.3 DEFAULT

Time is of essence in the performance of the Agreement. Either party shall be deemed to be in default if it fails to comply with any provisions of this Agreement. The non-defaulting party shall provide the other party with written notice of default and allow thirty (30) days within which to cure the defect.

### 6.4 INDEMNIFICATION

This Agreement is for the benefit of the parties only. Each party agrees to indemnify and hold harmless the other party, and its officers, employees, and agents, from and against all claims, demands and causes of actions and suits of any kind or nature for personal injury, death or damage to property on account of or arising out of services performed, the omissions of services or in any way resulting from the negligent or wrongful acts or omissions of the indemnifying party and its officers, employees and agents. To the extent applicable, the above indemnification is subject to and shall not exceed the limits of liability of the Oregon Tort Claims Act (ORS 30.260 through 30.300). In addition, each party shall be solely responsible for any contract claims, delay damages or similar items arising from or caused by the action or inaction of the party under this Agreement.

6.5 MODIFICATION OF AGREEMENT

No waiver, consent, modification or change of terms of this Agreement shall be binding unless in writing and signed by both parties.

6.6 DISPUTE RESOLUTION

The parties shall attempt to informally resolve any dispute concerning any party's performance or decisions under this Agreement, or regarding the terms, conditions or meaning of this Agreement. A neutral third party may be used if the parties agree to facilitate these negotiations. In the event of an impasse in the resolution of any dispute, the issue shall be submitted to the governing bodies of both parties for a recommendation or resolution.

6.7 REMEDIES

Subject to the provisions in paragraph 5.5, any party may institute legal action to cure, correct or remedy any default, to enforce any covenant or agreement herein, or to enjoin any threatened or attempted violation of this Agreement. All legal actions shall be initiated in Washington County Circuit Court. The parties, by signature of their authorized representatives below, consent to the personal jurisdiction of that court.

6.8 EXCUSED PERFORMANCE

In addition to the specific provisions of this Agreement, performance by any party shall not be in default where delays or default is due to war, insurrection, strikes, walkouts, riots, floods, drought, earthquakes, fires, casualties, acts of God, governmental restrictions imposed or mandated by governmental entities other than the parties, enactment of conflicting state or federal laws or regulations, new or supplementary environmental regulation, litigation or similar bases for excused performance that are not within the reasonable control to the party to be excused.

6.9 SEVERABILITY

If any one or more of the provisions contained in this Agreement is invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions of the Agreement will not be affected or impaired in any way.

6.10 INTEGRATION

This Agreement is the entire agreement of the parties on its subject and supersedes any prior discussions or agreements regarding the same subject.

## 7. TERMS OF AGREEMENT

7.1 The term of this Agreement shall be from the date of execution until the completion of the COUNTY PROJECT, but not to exceed five (5) years.

7.2 This Agreement may be amended or extended for periods of up to one (1) year by mutual consent of the parties. It may be canceled or terminated for any reason by either party. Termination or cancellation shall be effective thirty (30) days after written notice to the other party, or at such time as the parties may otherwise agree. The parties shall, in good faith, agree to such reasonable provisions for winding up the COUNTY PROJECT and CITY PROJECT and paying for any additional costs as necessary.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have set their hands as of the day and year hereinafter written.

**WASHINGTON COUNTY, OREGON**

_____
DEPUTY COUNTY ADMINISTRATOR

DATE: _____

_____
RECORDING SECRETARY

**CITY OF WILSONVILLE, OREGON**

_____
CITY MANAGER

DATE: _____

ATTEST:

_____
CITY RECORDER

# Exhibit A

Estimated Cost $57,000 breakdown.

City of Wilsonville Waterline Project

| | |
|---|---|
| • Design, plans, Quality Control | $28,000 |
| • Design connecting waterline to bridge | $16,000 |
| • Coordination, estimating, comment resolution | $13,000 |
| | $57,000 |

Note: Costs to remove City of Wilsonville Waterline Project are not included in the breakdown and would be in addition to design costs.

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3109**<br>Authorizing Acquisition of the Fifth Group of Properties and Property Interests Related to Construction of the Boeckman Road Corridor Project (CIP#s 2102, 4205, 4206, and 4212)<br><br>**Staff Member:** Andrew Barrett, P.E. Capital Projects Manager and Nancy Kraushaar, P.E., Project Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☒ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Staff recommends Council adopt the Consent Agenda. | |
| **Recommended Language for Motion:** I move to adopt the Consent Agenda. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☐Council Goals/Priorities: | ☒Adopted Master Plan(s): Transportation System Plan Project UU-01 | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
A City of Wilsonville resolution authorizing acquisition of portions of two properties of the fifth group (Group 5) of properties and property interests associated with the Boeckman Road Corridor Project (BRCP).

**EXECUTIVE SUMMARY:**

The Boeckman Road Corridor Project (BRCP) consists of five adjacent and interconnected, high priority Capital Improvement Projects (CIP) from adopted master plans along Boeckman Road between Canyon Creek Road and Stafford Road. The BRCP is not related to the Boeckman Sewer Line Upgrade and Boeckman Creek Regional Trail project. The BRCP will benefit the public by improving City infrastructure and safety deficiencies. The five BRCP projects include:




- Boeckman Road Sanitary Sewer – CIP #2102 – extends sanitary sewer service to the Frog Pond development areas.
- Boeckman Road Street Improvements – CIP #4205 – completes urban street design standards that will serve all transportation modes and connect neighborhoods and local schools.
- Canyon Creek/Boeckman Intersection – CIP #4206 – addresses intersection capacity needs at Canyon Creek Road.
- Boeckman Dip Bridge – CIP #4212 – improves city-wide transportation connectivity and safety concerns associated with the Boeckman "Dip" and will re-establish fish and wildlife passage through culvert removal and creek channel restoration.
- Meridian Creek Culvert Replacement – CIP #7067 – replaces undersized culverts at Meridian Creek. *Note: This project was recently completed.*

In addition:

- A temporary traffic signal has been installed at the Stafford Road/65th Avenue intersection to provide for better and safer traffic flow in this area when Boeckman Road construction detours are necessary.

Construction of the Boeckman Road Corridor Project requires wider right-of-way and various easement types in certain locations along the corridor to achieve design standards and project goals. The design team carefully reviewed up to 33 property interests that may be required. Some of these have been eliminated through design refinements. The City Council authorized the first group of needed property acquisitions (Group 1) with Resolution No. 3036, Group 2 acquisitions with Resolution No. 3037, Group 3 through Resolution 3067, and Group 4 through Resolution No. 3066. This Resolution No. 3109 contemplates two remaining property acquisitions (Group 5). The project team anticipates this is the fifth of five resolutions the City Council will consider for the purpose of acquisition activities in accordance with ORS Chapter 35.

Portions of the subject two properties are needed to complete the new bridge that will cross Boeckman Creek. These are both slope easements as detailed in **Table 1** (below). The detailed legal descriptions of the properties to be acquired along with a Location Map are included as Exhibit A to Resolution No. 3109 The legal descriptions reflect the least amount of property necessary for the bridge construction.

**Table 1 – Group 5 BRCP Property Acquisitions**

| Parcel # | Owner | Tax Map and Lot | Sub-Parcel # | Acquisition Type | Approx. Area, sf |
|---|---|---|---|---|---|
| 32 | Blayne and Holly Paulsen | 3 1 W 13AB 15505 | 32-1 | Slope Easement | 379 |
| 33 | Wise Howard Edward Trustee | 3 1 W 13AB 15504 | 33-1 | Slope Easement | 192 |

The legal descriptions in Exhibit A include the best estimate of area to be acquired based on the most current design plans. It is considered to be reasonably accurate at this time, although modifications may need to occur depending on final design details and site conditions, to be approved and verified by the City Engineer.

**EXPECTED RESULTS:**
Resolution No. 3109 provides the authority needed for the design team to move forward with acquisition activities in accordance with ORS Chapter 35 and will allow the BRCP to remain on schedule and be completed by mid-2025.

**TIMELINE:**
City staff and consultants will undertake the property acquisition process following Resolution No. 3109 adoption. Staff has notified the property owners about the needed slope easements and will continue to communicate with them throughout the acquisition process. Construction of the BRCP associated with the Group 5 properties is expected to begin in the first half of 2024 and be completed by mid-2025.

**CURRENT YEAR BUDGET IMPACTS:**
The amended budget for Fiscal Year (FY) 2023-2024 includes funding for owner's representative services, engineering design, right-of-way acquisition, partial construction, contract administration, and overhead for the BRCP as summarized below.

| CIP No. | Project Name | Funding Source | Amended FY 23/24 Total Budget |
|---|---|---|---|
| 2102 | Boeckman Rd Sanitary Improvements | Sewer SDC/ Frog Pond Fee | $1,013,195 |
| 4205 | Boeckman Rd Street Improvements | Street SDC/ Frog Pond Fee | $5,166,336 |
| 4206 | Canyon Creek/Boeckman Traffic Signal | Street SDC | $2,630,696 |
| 4212 | Boeckman Dip Bridge | Year 2000 URA/ Road CIP | $17,272,690 |
| | | TOTAL | $26,082,917 |

**COMMUNITY INVOLVEMENT PROCESS:**
After public vetting and adoption into master plans, the Frog Pond Master Plan, and the Urban Renewal Year 2000 Plan amendment, the BRCP design began in early 2022. BRCP public outreach activities kicked off and now include frequent project updates to the community and opportunities to provide feedback on project priorities and concerns. The project team has sponsored several public events, including the 2022 and 2023 Block Parties, Popsicles in the Park, two open houses at Meridian Creek Middle School, and a project survey on Let's Talk, Wilsonville!

A ceremonial groundbreaking event was held in August which garnered earned media coverage from the *Wilsonville Spokesman* furthering the reach of the city's message about the project, progress, and construction impacts. Most recently, the project team organized an October 17 remote meeting with the Morgan Farms Homeowners Association to share information and respond to questions about project status, design, and what to expect during construction.

Ongoing outreach and public participation (particularly information about traffic delays and the detour) occurs through the project website, the project e-newsletters, text message and email alerts about travel conditions related to the project, and Boones Ferry Messenger articles. The project team also continues to directly communicate with individual stakeholders using mailings, phone calls, and meetings.

Link to project news and updates:
https://www.ci.wilsonville.or.us/engineering/page/boeckman-road-corridor-news-and-updates

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
The BRCP includes roadway improvements necessary to provide safe and accessible transportation infrastructure, improving the City's local transportation network and benefitting the community. The recently completed upsizing and realignment of the existing Meridian Creek culverts will alleviate potential flooding risks and property damage. Also recently completed, the temporary traffic signal at the Stafford Road/65th Street intersection will improve safety and level of service during detour conditions when the "dip" is closed during bridge construction. The future roundabout at the Canyon Creek/Boeckman intersection will offer a safer, more efficient transportation connection along an important school access route and transition between office/industrial on the north and west to residential neighborhoods on the south and east. The sanitary sewer extension is necessary to serve the Frog Pond neighborhoods. The future bridge will flatten the "dip", provide safer travel conditions for all users, and allow for upcoming fish passage and stream and wildlife habitat improvement for the watershed.

**ALTERNATIVES:**
Resolution No. 3109 is necessary to acquire slope easements that are necessary to construct the BRCP. The only alternative is to not acquire the property necessary to construct the project as designed which will result in substandard design and safety standards, an undesirable gap between the new east bridge abutment and existing retaining walls on the south side of Boeckman Road, and the goals of the BRCP unfulfilled.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**

1. Resolution No. 3109
    A. Boeckman Road Corridor Project (BRCP) Property Acquisition Legal Descriptions – Group 5

**RESOLUTION NO. 3109**

**A RESOLUTION OF THE CITY OF WILSONVILLE AUTHORIZING ACQUISITION OF THE FIFTH GROUP OF PROPERTY AND PROPERTY INTERESTS RELATED TO CONSTRUCTION OF THE BOECKMAN ROAD CORRIDOR PROJECT.**

WHEREAS, under and by virtue of the laws of the State of Oregon, the City of Wilsonville is duly authorized and lawfully empowered to construct certain planned public improvement projects, and to acquire real property as may be deemed necessary and proper for such planned public improvements; and

WHEREAS, the Boeckman Road Corridor Project (the "Project") consists of five adjacent and interconnected, high priority Capital Improvement Projects (CIP) along Boeckman Road between Canyon Creek Road and Stafford Road:

- Boeckman Road Sanitary Sewer – CIP #2012 – extends sanitary sewer service to the Frog Pond development areas
- Boeckman Road Street Improvements – CIP #4205 – completes urban street design standards that will serve all transportation modes and connect neighborhoods and local schools
- Canyon Creek/Boeckman Intersection – CIP #4206 – addresses intersection capacity needs at Canyon Creek Road
- Boeckman Dip Bridge – CIP #4212 – improves city-wide transportation connectivity and safety concerns associated with the Boeckman "Dip" and will re-establish fish and wildlife passage through culvert removal and creek channel restoration
- Meridian Creek Culvert Replacement – CIP #7067 – replaces undersized culverts at Meridian Creek

WHEREAS, these five projects are identified in the FY 2023/2024 Capital Improvement Project Budget; and

WHEREAS, the amended Fiscal Year (FY) 2023/2024 budget for the remaining four Project sub-projects, including design, land acquisition, construction and project management, is $26,082,917; and

WHEREAS, the remaining four sub-projects of the Project will receive funding through the following funding sources: Water Ops, Sanitary Sewer SDCs, Street SDCs, Storm Ops and SDCs, Road CIP and Year 2000 Urban Renewal Plan; and

WHEREAS, the Guaranteed Maximum Price 3 for construction of the Project was awarded by Council on December 4, 2023 (Resolution No. 3022); and

WHEREAS, in order to construct the Project, the City needs to acquire up to 33 properties presented in five groups (Groups 1 through 5) for Council acquisition authority by resolution; and

WHEREAS, the Group 5 properties include 2 sub-parcels with approximately 571 SF of Slope Easements; and

WHEREAS, the Group 5 property interests to be acquired for the Project include, but may not be limited, to those legally described in **EXHIBIT A**, attached hereto and incorporated herein; and

WHEREAS, although the attached legal descriptions and estimated areas of taking are considered to be reasonably accurate at this time, modifications may need to occur depending on final design details and site conditions, to be approved and verified by the City Engineer; and

WHEREAS, the acquisition of the properties described in **EXHIBIT A** is necessary and will benefit the general public and will be used for public purposes; and

WHEREAS, the City acquires real property in accordance with guidelines set forth by law; and

WHEREAS, the City is authorized to acquire property by any legal means, including eminent domain, to achieve the objectives of the City's Capital Improvement Program and shall conform to all statutory requirements to ensure that property owners' rights are fully respected; and

WHEREAS, ORS Chapter 35 empowers cities and agencies to acquire by condemnation real property whenever in the judgment of the City there is a public necessity for the proposed use of the property, the property is necessary for such proposed use and the proposed use planned is located in a manner which will be most compatible with the greatest public good and the least private injury; and

WHEREAS, the acquisitions presented herein are estimated to reflect the least amount of property interest to be acquired to ensure safe, efficient and adequate public improvements; and

WHEREAS, title to the acquired property interest shall be acquired using both City and Urban Renewal funds, but title to the acquired land will vest in the name of the City of Wilsonville to provide for necessary care, maintenance and public safety authority; and

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

Section 1. The Wilsonville City Council finds that:

a) There is a public necessity for the construction of the aforementioned street improvements;

b) The legal descriptions for the land set forth in **EXHIBIT A** are necessary for the construction of said public improvements but may be modified as set forth in Section 3 below, as design is refined; and

c) The proposed street and utility improvements are planned and located in a manner most compatible with the greatest public good and the least private injury.

Section 2. The City's project consultant, Universal Field Services, Inc., City staff and the City Attorney are authorized and directed to:

a) Negotiate with the owners of the real property herein described as to the compensation to be paid for the acquisition of the property.

b) In the event agreement cannot be reached, to commence and prosecute to final determination such proceedings as may be necessary, including condemnation of the property, to acquire the real property and interest therein, and that upon the filing of such proceeding may seek immediate possession of any of the real properties described in **EXHIBIT A** in order to meet the right-of-way certification deadline necessary to begin construction in early 2024 or after and complete Project construction in a timely and efficient manner.

Section 3. In the event that there are required modifications to the legal descriptions as the Project moves forward, the City Engineer is authorized to modify the attached legal descriptions, as necessary, to conform to final engineering design for the Project.

Section 4. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

JULIE FITZGERALD, MAYOR

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBIT:

A. Boeckman Road Corridor Project Property Acquisition Legal Descriptions – Group 5 Properties

**Resolution No. 3109 - Exhibit A**

**Boeckman Road Corridor Project Property Acquisition - Legal Descriptions - Group 5**

# Resolution No. 3109

## Group 5 BRCP Property Acquisition Summary

| Parcel # | Owner | Tax Map and Lot | Sub-Parcel # | Acquisition Type | Approx. Area, sf |
|---|---|---|---|---|---|
| 32 | Blayne and Holly Paulsen | 3 1 W 13AB 15505 | 32-1 | Slope Easement | 379 |
| 33 | Wise Howard Edward Trustee | 3 1 W 13AB 15504 | 33-1 | Slope Easement | 192 |

# CITY OF WILSONVILLE
# BOECKMAN ROAD CORRIDOR PROJECT
## ROW / EASEMENT REQUEST

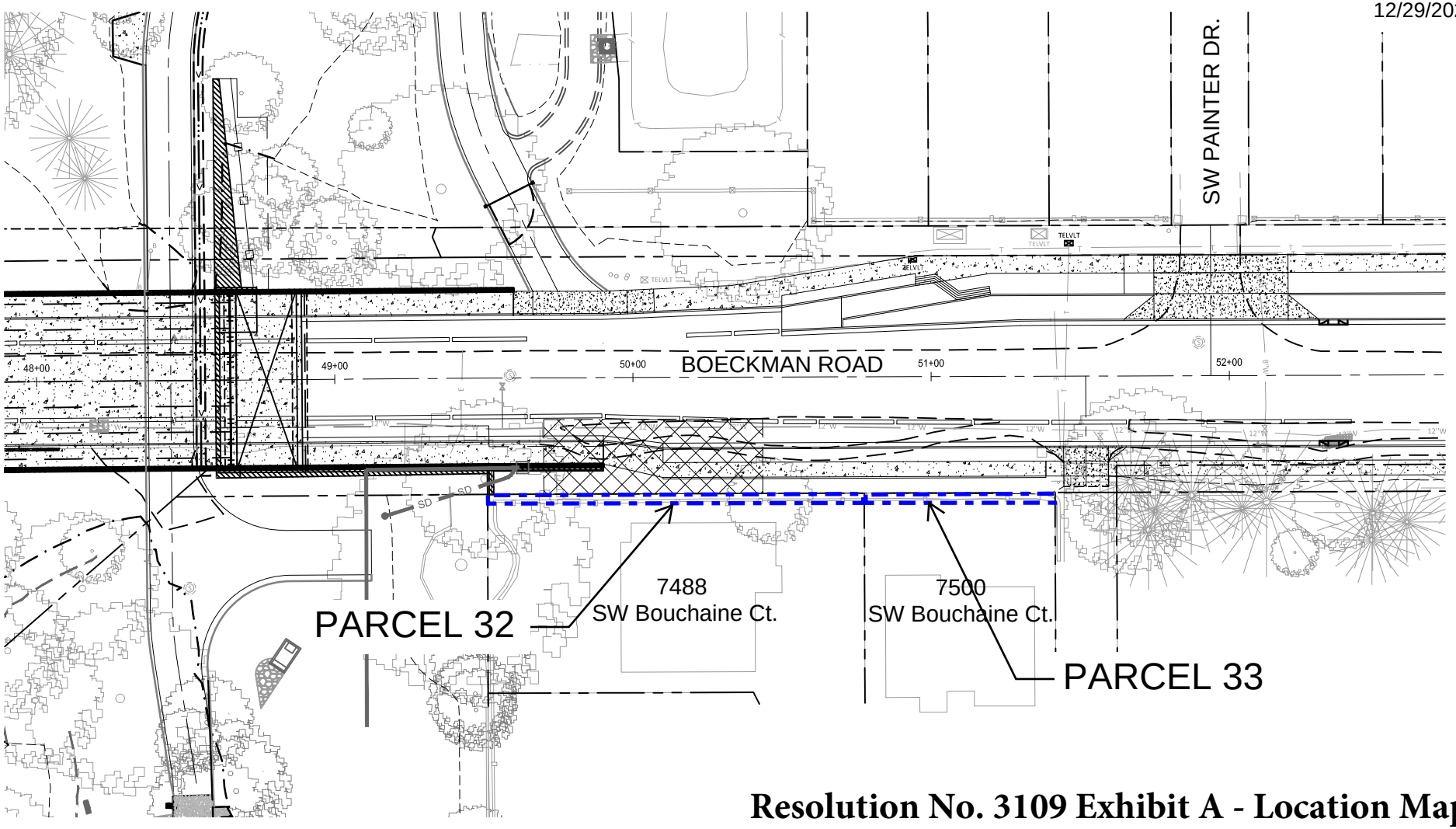
WILSONVILLE OREGON

consor TAPANI | SUNDT IN ASSOCIATION WITH KPFF

kpff
111 SW Fifth Ave., Suite 2600
Portland, OR 97204
O: 503.542.3860
F: 503.274.4681
www.kpff.com



12/29/2023




**Resolution No. 3109 Exhibit A - Location Map**

SCALE

50 0 50 100

1 INCH = 50 FEET

SHEET NO.
131

EXH-1

**EXHIBIT "A"**

BOECKMAN ROAD (CR 80) TAXMAP: 31W13AB
PROJECT NO. 2200028 TAXLOT: 15505
4 JANUARY 2024

A PARCEL OF LAND, BEING A PORTION OF THAT TRACT OF LAND DESCRIBED IN STATUTORY WARRANTY DEED TO HOLLY PAULSEN AND BLAYNE PAULSEN, AS TENANTS BY THE ENTIRETY, RECORDED AS DOCUMENT NUMBER 2019-026876 CLACKAMAS COUNTY DEED RECORDS, LOCATED IN THE NORTHEAST ONE-QUARTER OF SECTION 13, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON, THE SAID PARCEL BEING THAT PORTION OF SAID PAULSEN TRACT, LYING NORTHERLY OF A LINE DESCRIBED BELOW BY STATION & OFFSET, FROM A CENTERLINE ALIGNMENT OF BOECKMAN ROAD DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON SAID BOECKMAN ROAD CENTERLINE, SAID POINT IS A 3-1/4 INCH BRONZE DISK MARKING THE CORNER COMMON WITH SECTIONS 11, 12, 13 AND 14, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, BEING ENGINEER'S CENTERLINE STATION 23+05.17; THENCE ALONG THE CENTERLINE OF SAID BOECKMAN ROAD NORTH 89°31'41" EAST, 2645.85 FEET TO A 3-1/4 INCH BRONZE DISK MARKING THE ONE-QUARTER CORNER COMMON WITH SAID SECTIONS 12 AND 13, BEING ENGINEER'S CENTERLINE STATION 49+51.03; THENCE NORTH 89°48'44" EAST, 2649.58 FEET TO A 3-1/4 INCH BRONZE DISK MARKING THE CORNER COMMON WITH SAID SECTIONS 12 AND 13 AND SECTIONS 7 AND 18, TOWNSHIP 3 SOUTH, RANGE 1 EAST, WILLAMETTE MERIDIAN, BEING ENGINEER'S CENTERLINE STATION 76+00.61; THENCE SOUTH 89°38'21" EAST, 499.39 FEET TO ENGINEER'S CENTERLINE STATION 81+00.00, BEING THE TERMINUS POINT OF SAID CENTERLINE DESCRIPTION, SAID POINT BEARS NORTH 89°38'21" WEST, 2268.65 FEET FROM A 3-1/4 INCH BRONZE DISK MARKING THE ONE-QUARTER CORNER COMMON WITH SAID SECTIONS 7 AND 18.

**PARCEL 1 – SLOPE EASEMENT**
A PARCEL OF LAND, BEING A PORTION OF SAID PAULSEN TRACT LYING NORTHERLY OF A LINE DESCRIBED BELOW BY STATION & OFFSET, FROM A CENTERLINE ALIGNMENT OF BOECKMAN ROAD DEFINED ABOVE.

THE STATION/OFFSET IN FEET OF SAID LINE IS AS FOLLOWS:

| STATION | TO | STATION | WIDTH ON SOUTHERLY SIDE OF CENTERLINE |
|---|---|---|---|
| 49+46.49 | | 50+82.00 | 42.00 |

**EXCEPTING THEREFROM** THAT PORTION LYING WITHIN THE EXISTING RIGHT-OF-WAY OF BOECKMAN ROAD (CR 80).

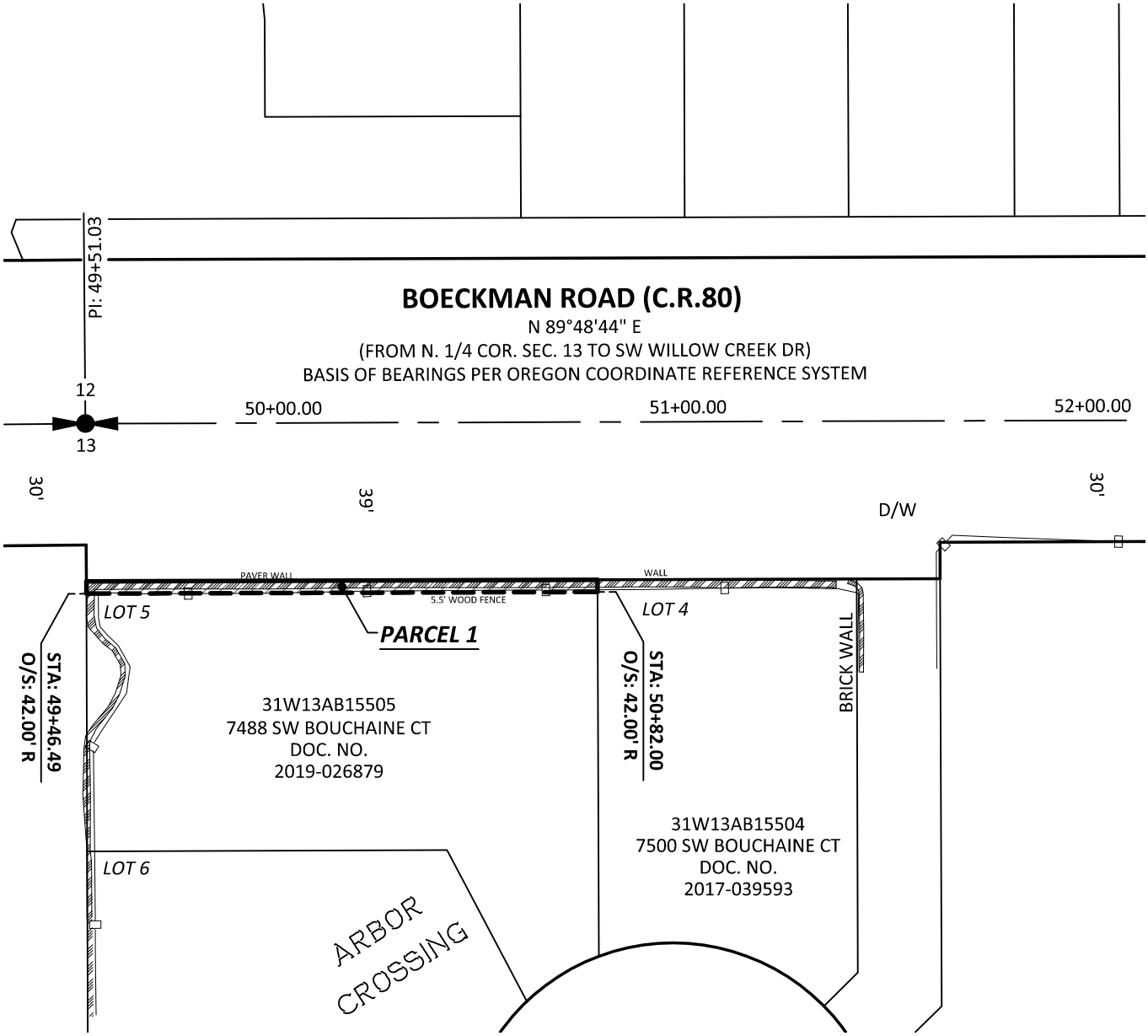
CONTAINING 379 SQUARE FEET (0.009 ACRES), MORE OR LESS.

THE BASIS OF BEARINGS IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), PORTLAND ZONE. THE RESULTANT BEARING OF THE CENTERLINE OF BOECKMAN ROAD IS NORTH 89°48’44” EAST.

THE PARCELS OF LAND ARE SHOWN ON THE ATTACHED EXHIBIT ‘B’ AND BY THIS REFERENCE MADE A PART THEREOF.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
MAY 13, 2014
JOHN ROBERT DAVIS
88694
RENEWAL 12/31/2025




REGISTERED
PROFESSIONAL
LAND SURVEYOR

PARCEL 1 - SLOPE EASEMENT
379 SQ. FT. +/-

OREGON
MAY 13, 2014
JOHN ROBERT DAVIS
88694
RENEWAL 12/31/2025

NORTH

SCALE: 1" = 40'

kpff
111 SW Fifth Ave., Suite 2400
Portland, OR 97204
O: 503.227.3251
F: 503.274.4681
www.kpff.com

# EXHIBIT 'B'
SLOPE EASEMENT

NE 1/4 SECTION 13 / TOWNSHIP 3 SOUTH / RANGE 1 WEST / W.M.
CITY OF WILSONVILLE / CLACKAMAS COUNTY / OREGON

| | |
|---|---|
| DATE: | 4 JANUARY 2024 |
| DRAWN BY: | CMR |
| CHECKED BY: | JRD |
| PROJECT NO. | 2200028 |
| SHEET: | 3 |

# Sub-Parcel 33-1

**EXHIBIT "A"**

BOECKMAN ROAD (CR 80) TAXMAP: 31W13AB
PROJECT NO. 2200028 TAXLOT: 15504
4 JANUARY 2014

A PARCEL OF LAND, BEING A PORTION OF THAT TRACT OF LAND DESCRIBED IN STATUTORY WARRANTY DEED TO HOWARD EDWARD WISE AND CHERRY PRUDENCE WISE, TRUSTEES OF THE WISE LIVING TRUST, DATED OCTOBER 6, 2000, RECORDED AS DOCUMENT NUMBER 2017-039593, CLACKAMAS COUNTY DEED RECORDS, LOCATED IN THE NORTHEAST ONE-QUARTER OF SECTION 13, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON, THE SAID PARCEL BEING THAT PORTION OF SAID WISE TRACT, LYING NORTHERLY OF A LINE DESCRIBED BELOW BY STATION & OFFSET, FROM A CENTERLINE ALIGNMENT OF BOECKMAN ROAD DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON SAID BOECKMAN ROAD CENTERLINE, SAID POINT IS A 3-1/4 INCH BRONZE DISK MARKING THE CORNER COMMON WITH SECTIONS 11, 12, 13 AND 14, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, BEING ENGINEER'S CENTERLINE STATION 23+05.17; THENCE ALONG THE CENTERLINE OF SAID BOECKMAN ROAD NORTH 89°31'41" EAST, 2645.85 FEET TO A 3-1/4 INCH BRONZE DISK MARKING THE ONE-QUARTER CORNER COMMON WITH SAID SECTIONS 12 AND 13, BEING ENGINEER'S CENTERLINE STATION 49+51.03; THENCE NORTH 89°48'44" EAST, 2649.58 FEET TO A 3-1/4 INCH BRONZE DISK MARKING THE CORNER COMMON WITH SAID SECTIONS 12 AND 13 AND SECTIONS 7 AND 18, TOWNSHIP 3 SOUTH, RANGE 1 EAST, WILLAMETTE MERIDIAN, BEING ENGINEER'S CENTERLINE STATION 76+00.61; THENCE SOUTH 89°38'21" EAST, 499.39 FEET TO ENGINEER'S CENTERLINE STATION 81+00.00, BEING THE TERMINUS POINT OF SAID CENTERLINE DESCRIPTION, SAID POINT BEARS NORTH 89°38'21" WEST, 2268.65 FEET FROM A 3-1/4 INCH BRONZE DISK MARKING THE ONE-QUARTER CORNER COMMON WITH SAID SECTIONS 7 AND 18.

**PARCEL 1 – SLOPE EASEMENT**
A PARCEL OF LAND, BEING A PORTION OF SAID WISE TRACT LYING NORTHERLY OF A LINE DESCRIBED BELOW BY STATION & OFFSET, FROM A CENTERLINE ALIGNMENT OF BOECKMAN ROAD DEFINED ABOVE.

THE STATION/OFFSET IN FEET OF SAID LINE IS AS FOLLOWS:

| STATION | TO | STATION | WIDTH ON SOUTHERLY SIDE OF CENTERLINE |
|---|---|---|---|
| 50+73.00 | | 51+46.00 | 42.00 |

**EXCEPTING THEREFROM** THAT PORTION LYING WITHIN THE EXISTING RIGHT-OF-WAY OF BOECKMAN ROAD (CR 80).

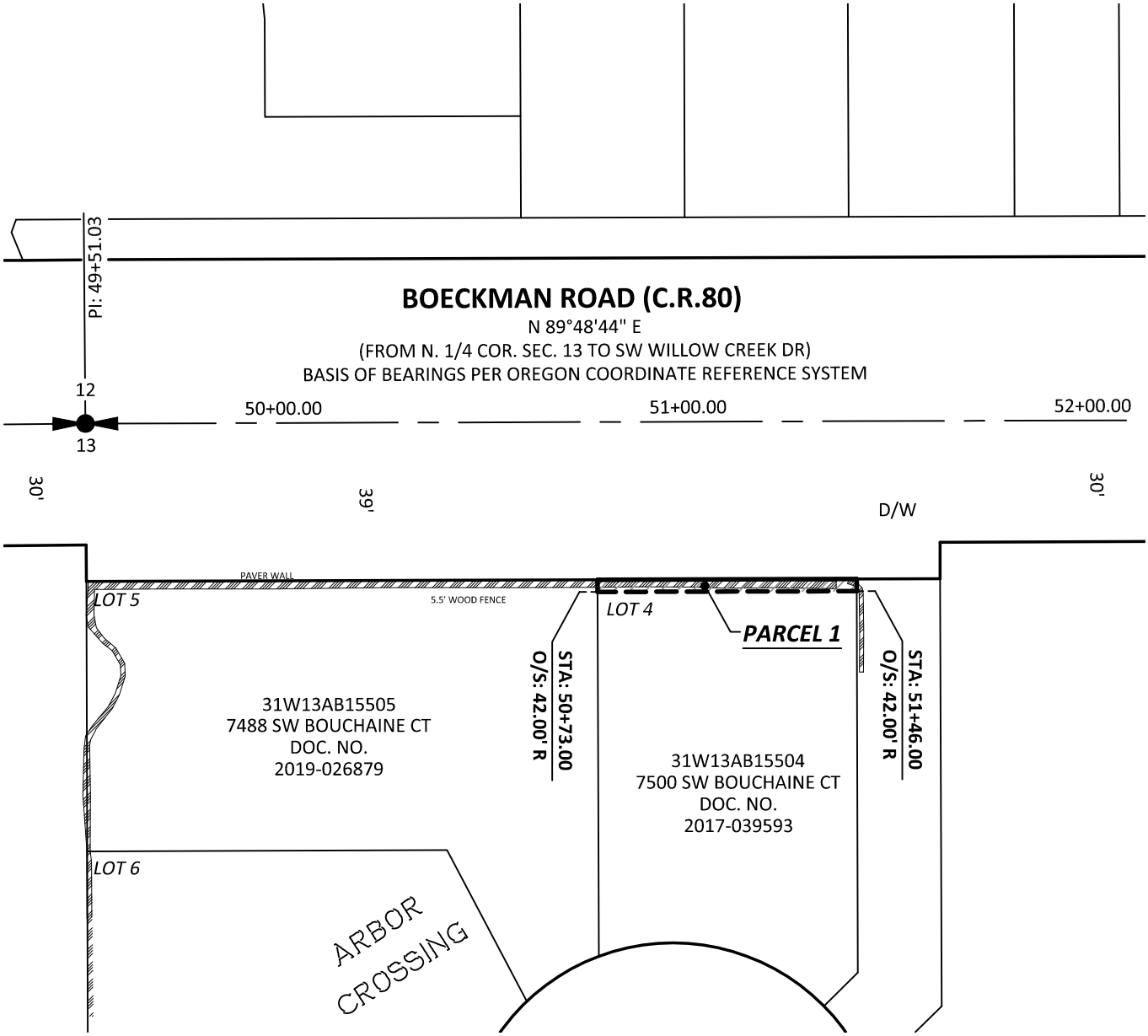
CONTAINING 192 SQUARE FEET (0.004 ACRES), MORE OR LESS.

THE BASIS OF BEARINGS IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), PORTLAND ZONE. THE RESULTANT BEARING OF THE CENTERLINE OF BOECKMAN ROAD IS NORTH 89°48’44” EAST.

THE PARCELS OF LAND ARE SHOWN ON THE ATTACHED EXHIBIT ‘B’ AND BY THIS REFERENCE MADE A PART THEREOF.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
MAY 13, 2014
JOHN ROBERT DAVIS
88694
RENEWAL 12/31/2025




REGISTERED
PROFESSIONAL
LAND SURVEYOR

PARCEL 1 - SLOPE EASEMENT
192 SQ. FT. +/-

OREGON
MAY 13, 2014
JOHN ROBERT DAVIS
88694
RENEWAL 12/31/2025

NORTH

SCALE: 1" = 40'

kpff
111 SW Fifth Ave., Suite 2400
Portland, OR 97204
O: 503.227.3251
F: 503.274.4681
www.kpff.com

# EXHIBIT 'B'
SLOPE EASEMENT

NE 1/4 SECTION 13 / TOWNSHIP 3 SOUTH / RANGE 1 WEST / W.M.
CITY OF WILSONVILLE / CLACKAMAS COUNTY / OREGON

| | |
|---|---|
| DATE: | 4 JANUARY 2024 |
| DRAWN BY: | CMR |
| CHECKED BY: | JRD |
| PROJECT NO. | 2200028 |
| SHEET: | 3 |

# CITY COUNCIL MINUTES

**January 04, 2024 at 7:00 PM**

**Wilsonville City Hall & Remote Video Conferencing**

**CALL TO ORDER**

1. Roll Call

2. Pledge of Allegiance

A regular meeting of the Wilsonville City Council was held at the Wilsonville City Hall beginning at 7:00 p.m. on Thursday, January 4, 2024. Council President Akervall called the meeting to order at 7:00 p.m., followed by roll call and the Pledge of Allegiance.

PRESENT
Mayor Fitzgerald - Excused
Council President Akervall
Councilor Linville
Councilor Berry
Councilor Dunwell

STAFF PRESENT
Amanda Guile-Hinman, City Attorney
Brian Stevenson, Program Manager
Bryan Cosgrove, City Manager
Bill Evans, Communications & Marketing Manager
Chris Neamtzu, Community Development Director
Georgia McAlister, Associate Planner
Jeanna Troha, Assistant City Manager
Kimberly Veliz, City Recorder
Kris Ammerman, Parks and Recreation Director
Mike Nacrelli, Civil Engineer
Zach Weigel, City Engineer
Zoe Mombert, Assistant to the City Manager

3. Motion to approve the following order of the agenda.

**Motion:** Moved to approve the following order of agenda.

Motion made by Councilor Linville, Seconded by Councilor Dunwell.

**Voting Yea:**
Councilor Akervall, Councilor Linville, Councilor Berry, Councilor Dunwell

**Vote:** Motion carried 4-0.

**MAYOR'S BUSINESS**

4. Wilsonville Wildcats Week Proclamation

Council President Akervall read a proclamation declaring January 1-5, 2024 as Wilsonville Wildcats Week in Wilsonville. Head Coach Adam Guenther, along with Team Captains Kallen Gutridge, Mason Seal, Mark Wiepert, and Nick Crowley were invited to the podium to say a few words.

Council took photos with the team.

The entire team then chanted a thank you to the Councilors.

Lastly, the City Manager and Assistant City Manager passed out proclamations to the team.

5. Upcoming Meetings

Council President Akervall informed the audience of a few upcoming events.

Book Notes Concert

- On Saturday, January 13, 2024 from 2:00 p.m. to 3:00 p.m., the Wilsonville Public Library was to present a free musical performance by Peter "Spud" Siegel.
- The performance would feature mandolins and more with a variety of musical genres, including Bluegrass, Latin, Celtic, and a crowd-pleasing melange Spud likes to call Beachgrass.

Developmental/Hearing Screenings for Children

- On Friday, January 19, 2024 from 10:30 a.m. to 12:00 p.m., Clackamas Education Service District's Community and Referral Assistant would be providing free developmental and hearing screenings for children age's birth through 5 years at the Wilsonville Public Library.
- The free screenings provided by Clackamas Education Service District were doctor-recommended to assess the physical, social, emotional and development of children, birth to 5 years.

Representative Neron Coffee Hour

- Wilsonville State Representative Courtney Neron was scheduled to hold a Coffee Hour event on Saturday, January 20, 2024 starting at 11:30 a.m. at the Wilsonville Public Library.
- Representative Neron wanted to hear from constituents about issues of concern, and planned to give a preview of the 2024 short legislative session to start on February 5, 2024.

City Council Meeting

- The next City Council meeting was scheduled for Thursday, January 18, 2024.

**COMMUNICATIONS**

6. Certificate of Appreciation to Greg Caldwell, Honorary Counsel for Republic of Korea

Brian Stevenson, Program Manager recognized and appreciated Greg Caldwell's decade of work with the City and various Korean-American and Korean Veterans organizations. Greg Caldwell, whom was the Honorary Counsel for Republic of Korea in Portland, had retired.

John and Clara Meyer shared a few words of appreciation for Greg Caldwell and presented him with a card and flowers.

Council President Akervall then on behalf of Council thanked Greg Caldewell for his service and read aloud the certificate of appreciation.

The certificate of appreciation was then awarded to Greg Caldwell and photos with the Council were taken.

7. Mediterranean Oak Borer Update

Chris Neamtzu, Community Development Director, and Georgia McAlister, Associate Planner provided Council with an update on the invasive Mediterranean Oak Borer (MOB) pest. The PowerPoint had been added to the record.

Council questions followed the presentation.

**CITIZEN INPUT AND COMMUNITY ANNOUNCEMENTS**

This is an opportunity for visitors to address the City Council on any matter concerning City's Business or any matter over which the Council has control. It is also the time to address items not on the agenda. It is also the time to address items that are on the agenda but not scheduled for a public hearing. Staff and the City Council will make every effort to respond to questions raised during citizen input before tonight's meeting ends or as quickly as possible thereafter. Please limit your comments to three minutes.

There was none.

**COUNCILOR COMMENTS, LIAISON REPORTS AND MEETING ANNOUNCEMENTS**

8. Council President Akervall

Councilor Akervall provided her report during the Mayor's Business portion of the agenda.

9. Councilor Linville

Councilor Linville recalled a meeting she and the Mayor attended with Oregon Department of Aviation leadership. The Councilor then informed that TLM Holdings, which owns property at the Aurora Airport, resubmitted on December 19, 2023 another application for Marion County Planning Commission's review.

Councilor Linville announced the following upcoming meetings:

- Opioid Settlement Prevention, Treatment and Recovery Board (OSPTR) meeting on January 11, 2024
- Fentanyl Awareness Settlement Fund meeting on January 11, 2024
- Civics Academy on January 11, 2024
- City Council meeting on January 18, 2024.

10. Councilor Berry

Councilor Berry announced the below events:

- Council's presentation to Civics Academy on January 11, 2024
- Martin Luther King Jr. Day on January 15, 2024
- Clackamas County Coordinating Committee (C4) Subcommittee meeting

11. Councilor Dunwell

Due to the holiday season had no updates since the last City Council meeting.

**CONSENT AGENDA**

The City Attorney read the titles of the Consent Agenda items into the record.

12. **Resolution No. 3087**
    A Resolution to Allocate Community Cultural Events and Programs Grant Funds for Fiscal Year 2023/2024.

13. Minutes of the December 18, 2023 City Council Meeting.

**Motion:** Moved to approve the Consent Agenda.

Motion made by Councilor Linville, Seconded by Councilor Berry.

**Voting Yea:**
Councilor Akervall, Councilor Linville, Councilor Berry, Councilor Dunwell

**Vote:** Motion carried 4-0.



DRAFT

**NEW BUSINESS**

There was none.

**CONTINUING BUSINESS**

The City Attorney read the title of Ordinance Nos. 884 and 885 into the record on second reading.

Council President Akervall read the second reading script.

No Councilor declared a conflict of interest, bias, or conclusion from information gained outside the hearing. No member of the audience challenged any of the Councilor's participation.

There was no further input from staff.

Council President Akervall requested a motion on Ordinance No. 884 on second reading.

14. **Ordinance No. 884** - 2nd *Reading (Quasi-Judicial Land Use)*
    An Ordinance Of The City Of Wilsonville Annexing Approximately 2.02 Acres Of Property Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision.

**Motion:** Moved to adopt Ordinance No. 884 on second reading.

Motion made by Councilor Linville, Seconded by Councilor Dunwell.

**Voting Yea:**
Councilor Akervall, Councilor Linville, Councilor Berry, Councilor Dunwell

**Vote:** Motion carried 4-0.

Council President Akervall requested a motion on Ordinance No. 885 on second reading.

15. **Ordinance No. 885** - *2nd Reading (Quasi-Judicial Land Use)*
    An Ordinance Of The City Of Wilsonville Approving A Zone Map Amendment From The Clackamas County Rural Residential Farm Forest 5-Acre (RRFF-5) Zone To The Residential Neighborhood (RN) Zone On Approximately 2.02 Acres Located At The Northwest Corner Of SW Frog Pond Lane And SW Stafford Road For Development Of An 11-Lot Residential Subdivision.

**Motion:** Moved to adopt Ordinance No. 885 on second reading.

Motion made by Councilor Linville, Seconded by Councilor Dunwell.

**Voting Yea:**
Councilor Akervall, Councilor Linville, Councilor Berry, Councilor Dunwell

**Vote:** Motion carried 4-0.

Council President Akervall read the appeal rights statement for Ordinance Nos. 884 and 885. The audience was informed if they desired to appeal this decision to the Oregon Land Use Board of Appeals; they must file a notice of intent to appeal, stating the grounds of the appeal, in the form and within the time prescribed by State law.

**PUBLIC HEARING**

*16.* **Ordinance No. 888** - *1st Reading (Legislative Land Use)*
An Ordinance Of The City Of Wilsonville To Adopt The 2023 Wastewater Treatment Plant Master Plan As A Sub-Element To The City Of Wilsonville Comprehensive Plan And The Wastewater Treatment Plant Capital Improvement Project List.

The City Attorney read the title of Ordinance No. 888 into the record on first reading.

The Council President provided the public hearing format and opened the public hearing at 8:26 p.m.

Mike Nacrelli, Civil Engineer along with Consultant Dave Price of Carollo provided the staff report and PowerPoint, which had been made a part of the record.

Council asked clarifying questions of staff.

Council President Akervall invited public testimony, seeing none the Council President closed the public hearing on Ordinance No. 888 at 8:52 p.m.

Council President Akervall then requested a motion on Ordinance No. 888 on first reading.

**Motion:** Moved to adopt Ordinance No. 888 on first reading.

Motion made by Councilor Berry, Seconded by Councilor Linville.

Councilor Linville commented about Council's responsibilities in their role to make decisions that affect the community's future. Councilor Linville acknowledged the importance of water and wastewater quality for the community. Moreover, she supported the Master Plan, which had undergone a lengthy process with multiple opportunities for industrial users and citizens to provide feedback. Councilor Linville believed that the Planning Commission, staff, and consultants had done their due diligence in recommending approval of the Master Plan.

**Voting Yea:**
Councilor Akervall, Councilor Linville, Councilor Berry, Councilor Dunwell

**Vote:** Motion carried 4-0.

**CITY MANAGER'S BUSINESS**

The City Manager mentioned staff was aware of the email Council had received from SSI Shredding Systems, Inc. regarding concerns with the Willamette Water Supply" (Big Pipe) project on 95th. The City Manager shared the project had not met its timelines. The City Engineer would prepare and update for Council to be provided in January or February 2024.

Council was reminded the City of Wilsonville Employee Winter Fest was scheduled for Friday, January 12, 2024.

Lastly, the City Manager wished the Council a happy New Year.

**LEGAL BUSINESS**

There was none.

**ADJOURN**

Council President Akervall adjourned the meeting at 8:59 p.m.

Respectfully submitted,

_____
Kimberly Veliz, City Recorder

ATTEST:

_____
Julie Fitzgerald, Mayor

DRAFT

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Resolution No. 3099**<br>Town Center Urban Renewal Advisory Vote<br>**Staff Member:** Matt Lorenzen, Economic Development Manager<br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☒ Approval<br>☐ Denial<br>☐ None Forwarded<br>☐ Not Applicable<br>**Comments:** At their final meeting on November 30, 2023, the Urban Renewal Task Force recommended support for the Urban Renewal Feasibility Study and recommended that the City Council pursue an advisory vote on the creation of an Urban Renewal District in Town Center. |
| **Staff Recommendation:** Staff recommends Council adopt Resolution No. 3099. | |
| **Recommended Language for Motion:** I move to adopt Resolution No. 3099. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☒Council Goals/Priorities:<br>8. Prioritize and implement recommendations of the Urban Renewal Strategic Plan | ☒Adopted Master Plan(s):<br>• Town Center Plan (2019)<br>• Town Center Infrastructure Funding Plan (2022)<br>• Urban Renewal Strategic Plan (2022) | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
Does the Council support the findings of the Town Center Urban Renewal Feasibility Study and adoption of Resolution No. 3099, including final ballot language, referring the question of Town Center Urban Renewal for an advisory vote on May 21, 2024?

**EXECUTIVE SUMMARY:**

Urban Renewal (also known as Tax Increment Finance or "TIF") is a public finance tool used by cities and counties to cure "blight" by supporting new development and redevelopment through the investment of tax increment within a defined geographic area. When a new urban renewal area is established, a boundary is defined and the tax revenue derived from the assessed value of properties within that boundary is frozen in time. Taxing districts receive the same annual tax revenue from the properties within the boundary for the duration of the urban renewal plan that governs the urban renewal area—often 20-30+ years. As assessed value typically increases year to year, and as new development and redevelopment create new assessed value within the urban renewal area, the associated tax dollars (tax increment) are divided from the frozen base and set aside for Urban Renewal. The tax increment funds are used to pay for public projects and other programs that spur new development and the overall revitalization of the urban renewal area.

Resolution No. 3099 adopts the findings of the Town Center Urban Renewal Feasibility Study and refers the question of forming a Town Center Urban Renewal district for an advisory vote on May 21, 2024. The language that will appear on the ballot and in the voters' pamphlet is attached as an exhibit to Resolution No. 3099 (Exhibit B).

Town Center Urban Renewal Feasibility Study ("Feasibility Study")

Background

The Urban Renewal Task Force (URTF) has acted as the technical advisory committee for this project. Staff and consultants have held five (5) meetings with the URTF and they have completed their role for this project. Staff and consultants have briefed the Council several times throughout the summer and fall with project updates—most recently, December 18, 2023.

At their final meeting on November 30, 2023, the URTF voted to recommend the Council adopt the findings of the attached Feasibility Study and pursue an advisory vote on the question of Town Center Urban Renewal (as outlined in the Feasibility Study) on the May 21, 2024 ballot. Those present voted unanimously in favor, with one abstention by the staff representative from Tualatin Valley Fire & Rescue (TVF&R). Abstention by TVF&R staff is common practice for their organization because they leave any real or perceived agency endorsement of policy matters to their governing board.

Feasibility Study

While lengthy, the Feasibility Study is well-organized by component in the table of contents. For those wishing to take a deeper dive into technical financial forecasting methodology, the first appendix may be of interest.

Staff has briefed the Council on each of the components of the Feasibility Study, during five previous briefings over the course of the summer and fall of 2023.

The final Feasibility Study document is attached as **Exhibit A** to Resolution No. 3099. The study outlines the proposed parameters for a potential Town Center Urban Renewal District, including

but not limited to the proposed district boundary, financial capacity, and a list of projects that could be completed over the approximate 30-year life of the district. If Council adopts Resolution No. 3099, the findings of the document become part of the City's record. The Council and voters should consider the Feasibility Study to be the City's due diligence and the framework for a new Town Center Urban Renewal Plan, if Council proceeds with the formation of an urban renewal district after the May 2024 advisory vote.

## Ballot Title

Staff has developed ballot language with input from our consultants, select community development staff, the Urban Renewal Task Force, the City Attorney's office, and City Council. The language is attached as **Exhibit B** to Resolution No. 3099.

If Council adopts Resolution No. 3099, staff will submit the Ballot Title to Clackamas County Elections together with applicable fees, before the deadline to do so on March 21, 2024, and the language will appear on the May 2024 ballot and in the voter's pamphlet.

## Next Steps

If Council adopts Resolution No. 3099, referring the question of Town Center urban renewal as an advisory vote on the May 2024 ballot, the steps below will need to be completed.

1. Determine whether to hire a consultant to assist in the urban renewal plan preparation and adoption process.
2. Prepare an Urban Renewal Plan (Plan) pursuant to ORS 457.085 including goals and objectives and projects to pursue.
3. Complete the Report that Accompanies the Plan (Report). The Report must comply with ORS 457.087, both identifying existing conditions and establishing financial feasibility. There is generally a large amount of city staff input in this document, as existing conditions must be identified and projects must be defined.
4. Consider the voters' input on the ballot measure.
5. If the vote is positive and City Council so directs, present the draft Plan and Report to the Urban Renewal Task Force for their input and review.
6. Present the draft Plan and Report to the Agency.
7. Complete a legal description of the urban renewal area that is typically done outside of the urban renewal plan consultant's contract. This legal description must be complete by the final action in front of City Council.
8. Agency, if desired, to pass a motion to start the public review process.
9. Transmit the Plan and Report to all impacted taxing districts.
10. Present the Plan and Report to the Wilsonville Planning Commission for their finding of conformance of the Wilsonville Urban Renewal Plan with the Wilsonville Comprehensive Plan.
11. Present the Plan and Report to the Clackamas County Commission. No action on their behalf is required.

12. Conduct a public hearing in front of Wilsonville City Council, advertised to a specific group as identified in 457.120. Review a non-emergency ordinance.
13. Publish notice if the ordinance for the Plan is adopted.

Note, steps 1-3 will need to occur before the outcome of the May 2024 election is known.

Steps 5-14, delineated above, would take place during the months of June, July, and August of 2024, if Council so directs.

**EXPECTED RESULTS:**
The Feasibility Study provides Council, staff, and voters with the information needed in order to make an informed decision regarding the creation and scope of a new urban renewal district in Town Center.

In the coming months, before the May election, economic and community development staff will be working closely with city communications staff to execute a multi-faceted public information campaign, to raise awareness about the vote and the main points of the proposed urban renewal district in Town Center, including financial capacity, boundary, and projects, as well as impacts to both the community and taxing districts. All communications must comply with Oregon Elections Law.

If a new urban renewal plan is adopted for Town Center before October 2024, the Urban Renewal Agency (URA) will collect its first deposit of tax increment in 2026, based on a January 2024 tax roll.

**CURRENT YEAR BUDGET IMPACTS:**
Staff has inquired with Clackamas County Elections and learned there will be no cost to the City for placing a ballot measure on the May 21, 2024 ballot.

**COMMUNITY INVOLVEMENT PROCESS:**
An advisory vote is the ultimate opportunity for community involvement and input. Through direct democracy voters are able to indicate their support or disapproval of the City's Town Center urban renewal proposal.

This feasibility study has been guided by the Urban Renewal Task Force, an ad hoc task force of the City, convened on an as-needed basis to act as the technical advisory committee for all matters pertinent to the use of urban renewal in the City.

The URTF is chaired by Council President Kristin Akervall and is comprised of roughly 15 members that represent several interest groups including residents, affected taxing districts, planning commission, real estate development experts, land/property owners, and business owners within Town Center.

The URTF provided detailed feedback and helped shape the proposed ballot language. The URTF also plays a critical role in defining the boundary to be studied, identifying projects and programs to be funded by urban renewal, and ensuring the study is aligned with the values and priorities

of the community and affected stakeholders, especially taxing districts.

If the May advisory vote is a "yes," and Council proceeds with a formal urban renewal plan for adoption, all impacted taxing districts will have an additional opportunity to comment on the plan during a statutorily-required "consult and confer" period, before the plan is adopted by ordinance.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
If the Council and Urban Renewal Agency adopt an urban renewal plan in Town Center, the community benefits are many—a walkable, vibrant cultural and commercial district, hundreds of new residences, greater connectivity and safety for cyclists and pedestrians at Wilsonville Road and across I-5 (proposed bike/ped bridge), and a stronger, more efficient tax base that increases tax revenues per acre by making new use of underutilized land already within the City.

Our working forecasts demonstrate the assessed value within Town Center can be increased from roughly $200 million to nearly $2 BILLION over the course of the life of a Town Center urban renewal plan: 25-30 years.

**ALTERNATIVES:**
Beginning in 1990 when the City considered the adoption of its first urban renewal plan, an advisory vote has been the practice (but not required by City charter) in Wilsonville when the City has considered the use of urban renewal.

Theoretically, the Council could move forward with the next steps to form a new urban renewal district without an advisory vote, but this would run contrary to precedent in the City of Wilsonville. The Council may adopt Resolution No. 3099 referring the question of creating a new urban renewal area in Town Center to the electorate for an advisory vote on the May 21, 2024 ballot, or not.

If the City does not establish an urban renewal area in Town Center, there are few if any feasible options to fund the construction of infrastructure necessary to achieve the community's vision for Town Center, as found in the 2019 Town Center Plan.

**CITY MANAGER COMMENT:**

N/A

**ATTACHMENTS:**

1. Resolution No. 3099
    A. Wilsonville Town Center Urban Renewal Feasibility Study
    B. Ballot Title

**RESOLUTION NO. 3099**

**A RESOLUTION OF THE CITY OF WILSONVILLE REFERRING THE QUESTION OF FORMING A TOWN CENTER URBAN RENEWAL DISTRICT FOR AN ADVISORY VOTE OF THE WILSONVILLE ELECTORATE.**

WHEREAS, the City Council adopted the Town Center Plan (the "Plan") in 2019 after several years of thoughtful planning and robust, award-winning community outreach; and

WHEREAS, the Wilsonville community is the heart of the Town Center Plan. Thousands of community members contributed their ideas and feedback about the future of Town Center. The Plan reflects the community's priorities, preferences and values; and

WHEREAS, the Plan sets forth the Wilsonville community's vision for a new Town Center as a dynamic, thriving community hub with walkable and engaging public spaces, great parks and destinations, places and spaces that connect people to one another and the environment, and year-around activities; and

WHEREAS, several adopted plans of the City of Wilsonville, including the Town Center Plan, recognize the need for public investment within the Town Center planning area in order to realize the vision of the Plan; and

WHEREAS, the 2022 Town Center Infrastructure Funding Plan explored multiple funding mechanisms and scenarios in order to construct the infrastructure projects outlined in the Plan and recommended further exploration of urban renewal (tax increment finance) as a critical funding source; and

WHEREAS, the City of Wilsonville engaged the Urban Renewal Task Force, an ad hoc committee of the City comprised of a diverse group of stakeholders, subject matter experts, and residents, in order to guide an in-depth urban renewal feasibility study; and

WHEREAS, the Urban Renewal Feasibility Study is attached hereto as Exhibit A and makes findings, among others, that demonstrate the financial capacity, proposed boundary, and potential projects of a potential Town Center urban renewal area and plan; and

WHEREAS, the primary projects for the proposed urban renewal area and plan include:

- Construction of a new Main Street to establish a city center
- Bicycle and pedestrian improvements, including a bridge over I-5.

- Parks, green spaces and public gathering spaces
- Wilsonville Road intersection pedestrian safety improvements
- Construction of local streets in partnership with private developers for greater connectivity, safety, and the infrastructure necessary to promote development
- Relocating underground utilities; and

WHEREAS, the aforementioned projects needed to redevelop this area, including inflationary and financing costs, are estimated at $190 million (stated in 2023 dollars). The urban renewal contribution, or needed maximum indebtedness, is $101 million (stated in 2023 dollars). Other funding sources may include developer contributions, system development charges, operational funds, and grants. Only projects within the specific boundaries of an urban renewal district can be funded through urban renewal tax increment financing; and

WHEREAS, the urban renewal contribution to these projects is projected to result in private investment that will increase the assessed value of the area from roughly $200 million to nearly $2 **billion** over the approximate 30-year life of the district; and

WHEREAS, once the Town Center area is developed according to the vision and policies contained in the Town Center Plan, it will increase Wilsonville's tax base and benefit the budgets of all taxing districts within the District after the debt is paid off and the District is retired; and

WHEREAS, the anticipated urban renewal district boundary measures approximately 171 acres and generally includes the area inside and adjacent to Town Center Loop; and

WHEREAS, the City Council finds the voters should be referred a ballot measure as to whether a Town Center Urban Renewal District should be formed and has directed City staff to prepare a ballot title for the measure for the Council to refer to the voters.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

Section 1. Based on the above recitals, incorporated by reference herein, the City Council refers the question of forming a Town Center Urban Renewal District to City of Wilsonville voters at the May 2024 election. A copy of the prepared ballot title for the measure to be referred is marked Exhibit B, attached hereto and incorporated by reference as if fully set forth herein.

Section 2. The aforementioned ballot measure and vote shall be an advisory vote.

Section 3. This Resolution is effective upon adoption and the ballot title shall be filed with the County elections officer forthwith.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 18th day of January, 2024, and filed with the Wilsonville City Recorder this date.

_____

JULIE FITZGERALD, MAYOR

ATTEST:

_____

Kimberly Veliz, City Recorder

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBITS:

A. Town Center Urban Renewal Feasibility Study
B. Ballot Title

Exhibit A

# Wilsonville Town Center Urban Renewal Feasibility Study

ELAINE HOWARD CONSULTING, LLC

TIBERIUS SOLUTIONS

ELAINE HOWARD CONSULTING, LLC

Chris Neamtzu, Community Development Director

Matt Lorenzen, Economic Development Manager

City of Wilsonville

29799 SW Town Center Loop E

Wilsonville, Oregon 97070

Dear Chris and Matt:

The Wilsonville Town Center Urban Renewal Feasibility Study is attached. The study was completed by Elaine Howard Consulting, LLC and Tiberius Solutions LLC. It shows that a new urban renewal area could be adopted and comply with both the statutory acreage and assessed value limitations. It identifies blighting conditions that will allow for formation of an urban renewal area. It identifies the potential amount of tax increment revenues that could be received and the resulting dollars available for projects in the urban renewal area over an approximate 30-year duration.

Thank you to your staff who helped to provide the information for this study and to the Wilsonville Urban Renewal Task Force members who guided this study. The teamwork by these participants is a true example of proving valuable information and gaining meaningful input.

The next steps to consider, should the city council decide to proceed, are identified in the study.

Sincerely,



Elaine Howard, Principal
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# ACKNOWLEDGEMENTS


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# SUMMARY

## Background

The City of Wilsonville (City) adopted the Wilsonville Town Center Plan (Town Center Plan) in 2019 after a robust, two-year public engagement process. The Town Center Plan, both a visionary document and an actionable development master plan, calls for the transformation of a roughly 150-acre commercial district, with shopping, restaurants, services, educational institutions, parks, civic uses, and multifamily housing, into a vibrant mixed-use district with a decidedly urban flavor.

To support this redevelopment plan, significant infrastructure investments are required. In 2022, the City adopted the Town Center Infrastructure Funding Plan (Infrastructure Funding Plan), which uses the land use assumptions and redevelopment scenarios from the Town Center Plan to identify and assess costs and funding options for critical transportation and infrastructure projects identified in the Town Center Plan.

The Town Center Plan, Infrastructure Funding Plan, and the 2022 Urban Renewal Strategic Plan recommend the City explore and assess the feasibility of urban renewal as a public finance tool to help fund the transportation and infrastructure projects in the Town Center Plan, in addition to other programs to support businesses and property owners through the transition and transformation of the area.

The City of Wilsonville conducted a Town Center Urban Renewal Feasibility Study (Feasibility Study) to determine whether urban renewal is a tool that could effectively be used to help implement the Town Center Plan. Through the Town Center Plan engagement process, community members created a strong vision for the Town Center. They expressed their desire for a dynamic, thriving community hub with walkable and engaging public spaces, great parks and destinations, places and spaces that connect people to one another and the environment, and year-round activities.

The Feasibility Study Scope of Work was to:

- Assess existing conditions and blight
- Identify projects and programs
- Determine the study area boundary and that it meets the limitations imposed under ORS 457 on citywide acreage and assessed value within an urban renewal area
- Conduct a financial analysis of the feasibility of urban renewal in the study area
- Evaluate impacts to overlapping taxing districts
- Address the political feasibility and other considerations

The Feasibility Study was guided by the Wilsonville Urban Renewal Task Force (Task Force), comprised of taxing districts, business representatives, and community members, and chaired by Council President Kristin Akervall. The Task Force met five times to review the Town Center Plan, proposed Feasibility Study boundary, financial capacity analysis, blight findings, proposed projects, project costs, allocations/sharing of those costs, forecasted impacts on

taxing districts, communications and draft ballot language for an advisory vote on the May 2024 ballot, and potential next steps. Their robust input considered the pros and cons of all aspects of the Feasibility Study.

The Feasibility Study provides the City of Wilsonville with baseline data to understand the financial capacity of a new urban renewal area to help fund improvements to implement the Town Center Plan. The analysis assumes all debt would be paid off over an approximate 30-year time period. These assumptions were informed by conversations with City staff and input from the Task Force.

Wilsonville staff worked closely with the consultant team to identify development potential within the proposed Town Center Area (Area) boundary based on land use type, product types, and anticipated density, detailed in Appendix A. The Area is estimated to generate $211.4 million of cumulative net tax increment finance revenue, which could support a maximum indebtedness of $181.0 million, equivalent to $101.1 million in capacity for projects, adjusted for inflation and presented in constant 2023 dollars. Exhibit 13 shows the capacity analysis over five-year increments.

## Implications and Next Steps

The results of the feasibility study have the following key implications:

- Tax Increment Financing established as a financing tool through the use of urban renewal could generate significant financial capacity for the City to use in the Town Center Area.
- Tax Increment Financing should be paired with other funding sources to lessen the burden on the taxing jurisdictions.

If the City decides to move forward with an urban renewal plan, it would lead to the following next steps:

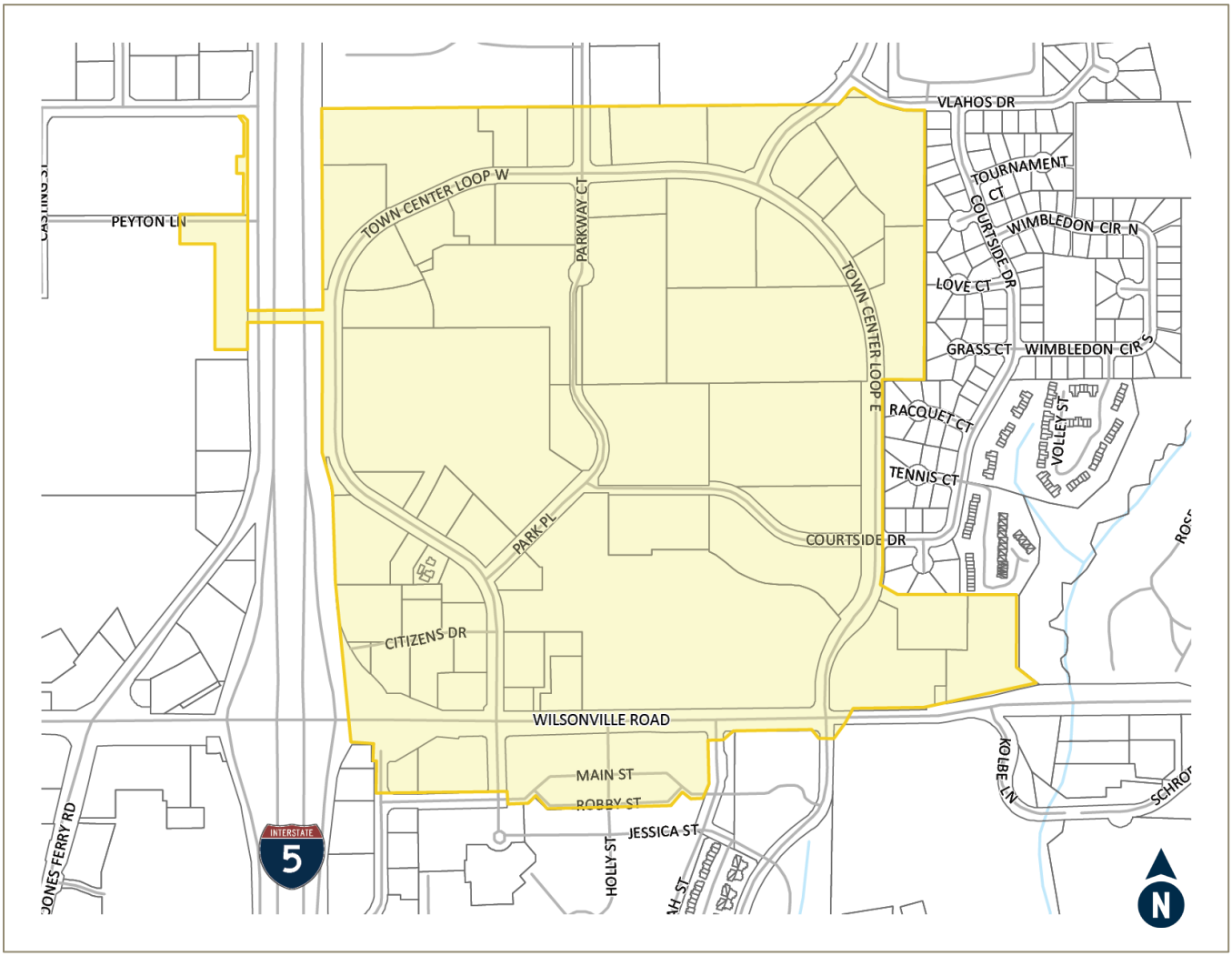
- Determine whether to put the question to the voters in the May 2024 election.
- Prepare the required Urban Renewal Plan and Report
- If approved by the voters:
    - Present the draft Urban Renewal Plan to the Task Force
    - Present the draft Urban Renewal plan to the Agency
    - If approved by the Agency, conduct outreach to affected taxing districts
    - Keep the public informed of the status of the Plan
    - Conduct the formal public review process of urban renewal plans including review by the planning commission, consult and confer with the impacted taxing districts and a public hearing and vote by the City Council

Appendix B provides a summary of how tax increment financing works.

## AREA BOUNDARY

The City of Wilsonville defined the feasibility study area boundary, shown in Exhibit 1. It covers the area defined in the Wilsonville Town Center Plan, plus properties to the south of Wilsonville Road to allow for a new intersection and improvements to three existing intersections on Wilsonville Road, plus portions of properties to the west of I-5 to allow for the landing of the I-5 pedestrian and bicycle overpass. It encompasses 171 acres including 146.45 acres in tax lots and includes a projected $194,239,498 in assessed value for fiscal year end (FYE) 2024 using FYE 2023 data from the Clackamas County Assessor.

**Exhibit 1. Town Center Urban Renewal Feasibility Study Boundary**




Source: City of Wilsonville

ORS 457 limits the total amount of assessed value and acreage that can be included in urban renewal districts. In a city the size of Wilsonville, this limit is 25% of the City's acreage and 25% of the City's assessed value. This potential Area and the existing Wilsonville urban renewal areas do not exceed the assessed value and acreage statutory authority for urban renewal in Wilsonville, as shown in

Exhibit 2.

**Exhibit 2. Statutory Limitation on Assessed Value and Acreage**

| | **Acres** |
|---|---|
| A. City of Wilsonville | 4,956 |
| B. Existing URAs | |
| West Side (set to close in FYE 2025) | 411 |
| Coffee Creek | 258 |
| Twist Bioscience WIN Zone | 4.4 |
| Total | 673 |
| C. Proposed Town Center Area | 171.5 |
| **Percent of City AV = (B+C)/A** | **17.04%** |
| *Remaining Capacity* | *394.5* |

| | **Assessed Value** |
|---|---|
| A. City of Wilsonville | $4,166,774,082 |
| B. Excess Value, Existing URAs | $908,866,116 |
| C. Frozen Base, Existing URAs | |
| West Side | $18,017,272 |
| Coffee Creek | $83,801,230 |
| Twist Bioscience WIN Zone | $3,661,005 |
| Total | $105,479,507 |
| D. Proposed Town Center Area | $194,239,498 |
| **Percent of City AV = (C+D)/(A-B)** | **9.20%** |

Sources:
URA Acreage and Assessed Value: Tiberius Solutions using data from Clackamas County Assessor, FYE 2023
City Acreage and Assessed Value: City of Wilsonville and Clackamas County Assessor SAL 4a, FYE 2023

# EXISTING CONDITIONS ASSESSMENT OF BLIGHT

## Statutory Blight Findings

ORS 457.010 defines blight and states that “a blighted area is characterized by the existence of one or more of the following conditions”. The blight conditions that exist in the Area include: the existence of structures that exhibit obsolescence, deterioration, dilapidation, and a prevalence of depreciated values, and impaired investments. There are 10.84 acres of undeveloped properties and an additional 15 acres of properties where the value of the improvement is less than the value of the land, shown in Exhibit 11. In addition, there is a prevalence of surface parking that, if developed, would increase the livability of the Area and would significantly increase the assessed value in the Area.

These conditions constitute blight as defined by ORS 457.010. The official blight findings would be made in a future ordinance that adopts the urban renewal plan. However, these blight findings are sufficient to allow for development of an urban renewal plan.

Blight is specifically defined in ORS 457.010 and the blighting conditions are outlined below according to the specific definitions in the statute.

### ORS 457.010 Definitions.

**ORS 457.010(1)(a)** includes five subcategories (A-E) for evaluation if a building is “unfit” or “unsafe” to occupy or for living, commercial, industrial or other purposes.

### ORS 457.010(1)(a)(A-E)

The statute describes buildings that are “unfit” or “unsafe to occupy” for a variety of reasons.

This definition of blight will not be used in the determination of blight in the Town Center.

**ORS 457.010(1)(b)**: An economic dislocation, deterioration or disuse of property resulting from faulty planning.

*As stated in the Town Center Plan,*

> *“Much of Town Center’s current road infrastructure, urban form, parks, and land uses originated in that (the 1973 Town Center Master Plan) plan. The original plan made way for many of the valuable community assets in Town Center, such as Town Center Park. However, the plan also allowed for an auto-oriented urban form and land uses. Large parking lots and disconnected streets, sidewalks, and bicycle facilities are barriers to Town Center becoming the vibrant community desired by residents and businesses.”*

The planning resulting from the 2019 Town Center Plan will transform the area into a vibrant central meeting place for Wilsonville residents and will include alternative forms of transportation, more dense development, mixed use development and more public open spaces. The recent planning for the Area will help address economic dislocation, deterioration or disuse of property.

**ORS 457.010(1)(c)**: The division or subdivision and sale of property or lots of irregular form and shape and inadequate size or dimensions for property usefulness and development.

There are properties within the Area that are too large for the development that is planned in the Town Center. To be able to properly develop these areas, there needs to be infrastructure improvements to provide utilities to the parcels, to provide better access to parcels, better delineation of parcels in a grid layout and improved development opportunities. Exhibit 3 shows the abundance of surface parking within the Area, which is of no taxable value.

**ORS 457.010(1)(d)**: The laying out of property or lots in disregard of contours, drainage and other physical characteristics of the terrain and surrounding conditions

This blight definition will not be used in the determination of blight in the Town Center.

**ORS 457.010(1)(e)**: The existence of inadequate streets and other rights of way, open spaces and utilities.

The Town Center Plan adopted in October of 2019 identified significant instances of inadequate streets, other rights of way, open spaces and utilities. This is the major blight finding for the Area. The instances identified in the Town Center Plan will be specifically identified in the final feasibility study and if the city desires to move forward with an urban renewal plan for the Area, in the Report Accompanying any future urban renewal plan.

**ORS 457.010(1)(f)**: The existence of property or lots or other areas that are subject to inundation by water.

This blight definition will not be used in the determination of blight in the Town Center.

**ORS 457.010(1)(g)**: A prevalence of depreciated values, impaired investments and social and economic maladjustments to such an extent that the capacity to pay taxes is reduced and tax receipts are inadequate for the cost of public services rendered.

An investment to land ratio was compiled for each tax lot within the Area. Fifty percent of the tax lots have an investment to land ratio of under 2:1. Land use plans for the area call for new development of four-and five-story buildings, which would be expected to have an I:L ratio of

4.0 or more. Only 6 of the 67 tax lots in the Area, representing 11% of the acreage, had I:L ratios of 4.0 or more in FYE 2023. In summary, the Area is underdeveloped.

---

**ORS 457.010(1)(h)**: A growing or total lack of proper utilization of areas, resulting in a stagnant and unproductive condition of land potentially useful and valuable for contributing to the public health, safety and welfare.

There are properties within the Area that are vacant, stagnant and unproductive and could potentially be useful and valuable for contributing to the public health, safety and welfare.

---

**ORS 457.010(1)(i)**: A loss of population and reduction of proper utilization of the area, resulting in its further deterioration and added costs to the taxpayer for the creation of new public facilities and services elsewhere.

This blight definition will not be used in the determination of blight in the Town Center.

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## Land Use

The land uses in the Area are primarily commercial uses. There is one garden-style apartment complex, two senior living complexes, one church and one improved industrial property in the Area.

## Zoning

The zoning designation in the Area is primarily Town Center, except for the properties south of Wilsonville Road (Planned Development Commercial) and the landing spot on the west side of I-5 for the overcrossing (Planned Development Industrial).

## Comprehensive Plan

The Comprehensive Plan designation in the Area is primarily Town Center, except for the properties south of Wilsonville Road (Commercial) and the landing spot on the west side of I-5 for the overcrossing (Industrial.)

## Infrastructure Needs

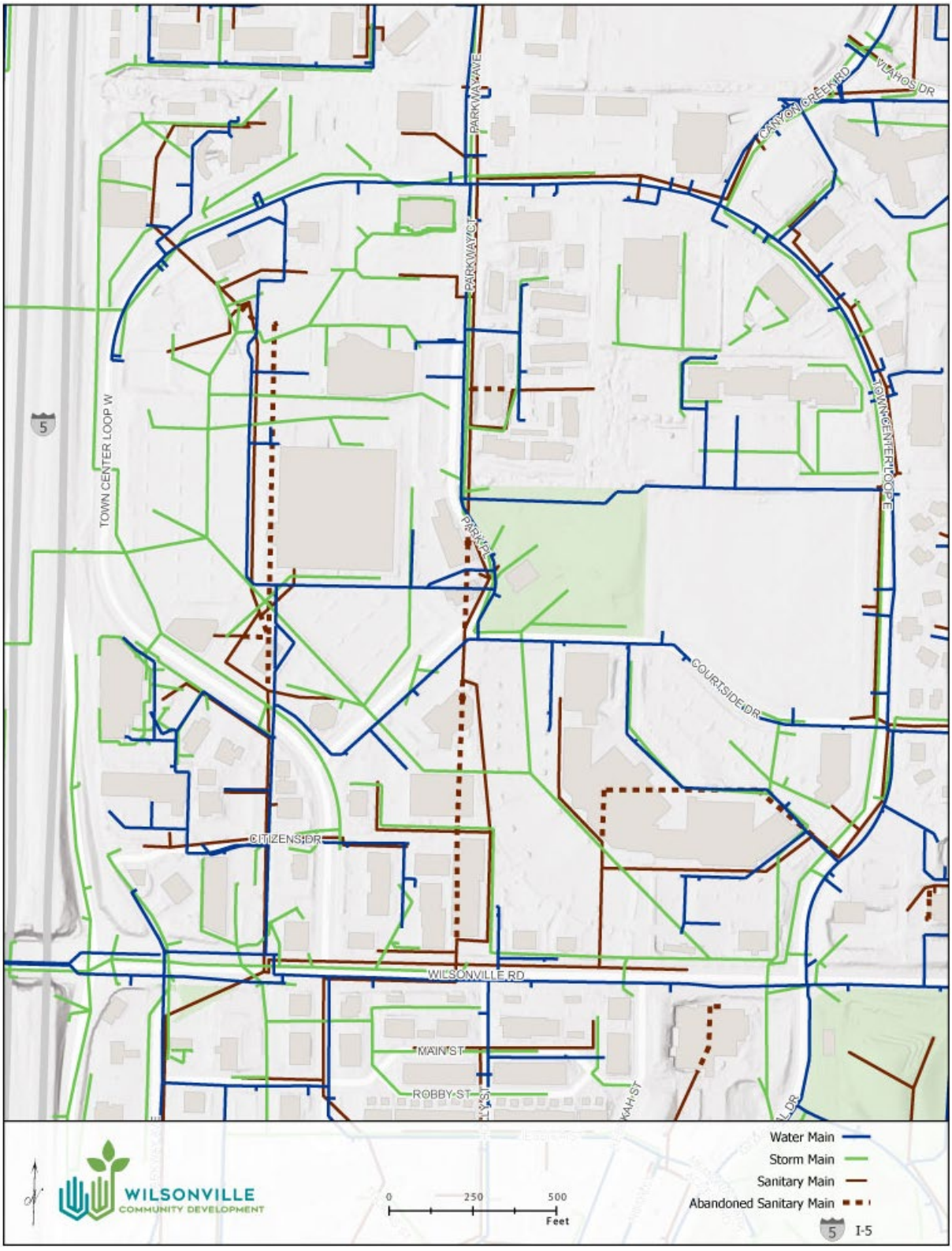
The existing infrastructure system is shown in Exhibit 4. There are many segments of the infrastructure network that are not in existing rights-of-way and do not connect to other segments of the infrastructure, described in greater detail for each utility below. Infrastructure descriptions are from the Town Center Plan, Chapter 04, and are noted in italics with the page numbers cited. The anticipated infrastructure project locations are shown in Exhibit 5.

## Exhibit 3. Existing Conditions Showing Surface Parking



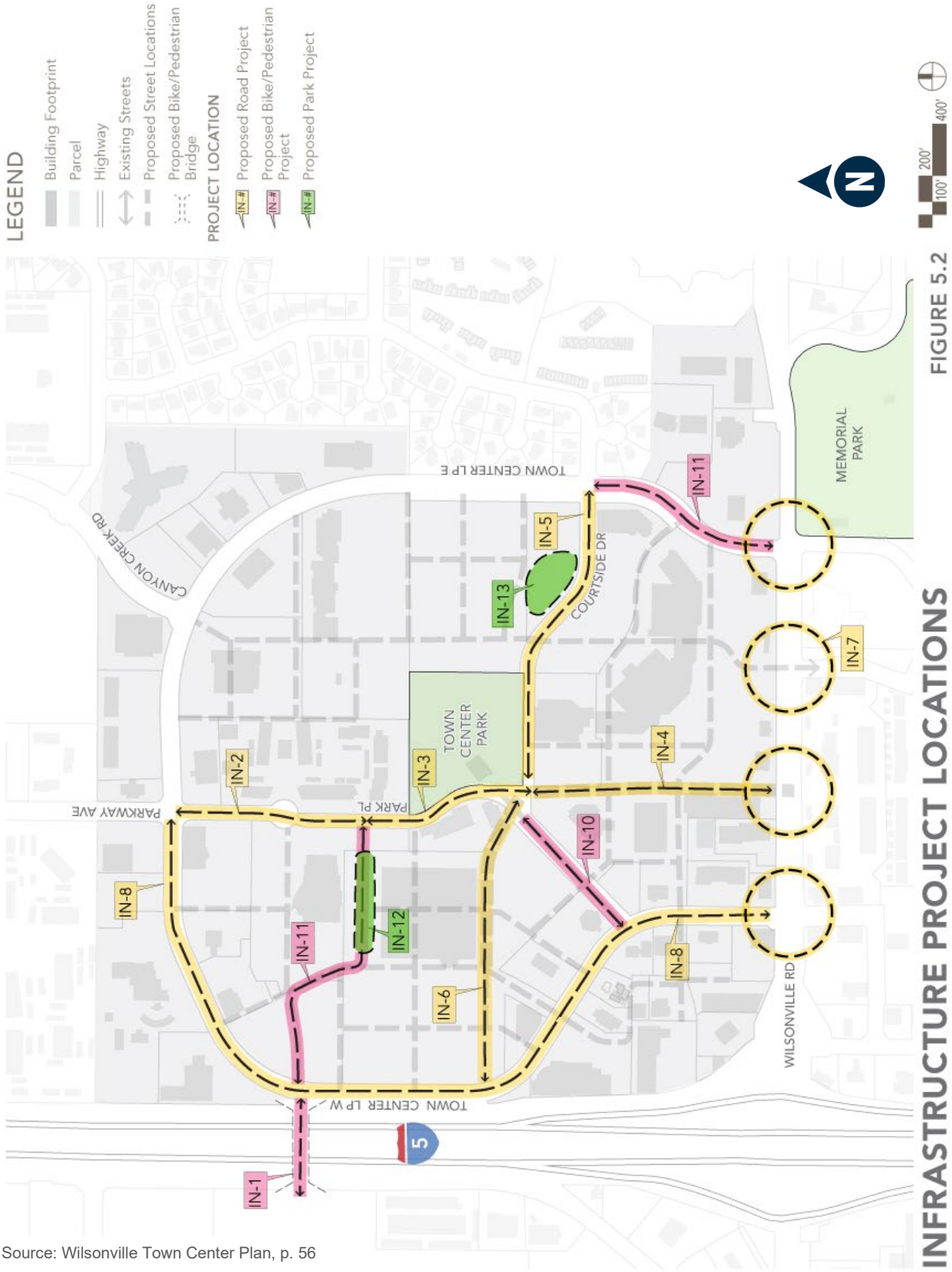

Source: City of Wilsonville

## Exhibit 4. Existing Conditions of Infrastructure




Source: City of Wilsonville, GIS

## Exhibit 5. Infrastructure Project Locations




Source: Wilsonville Town Center Plan, p. 56

## Stormwater Infrastructure

*The existing stormwater system in Town Center drains to three watersheds, including Coffee Lake Creek Basin in the northwest; the Willamette River in the southwest (via a piped outfall); and the Boeckman Creek Basin. The Boeckman Creek sub-basin flows through a regional flow control facility in Memorial Park south of Wilsonville Road. This system is adequate to meet the needs of Town Center today, although the City has identified drainage issues along portions of the western Town Center boundary near I-5 during heavy rainfall events.*

*The City of Wilsonville's 2015 Storm Water and Surface Water Design and Construction Standards require on-site Low Impact Development (LID) to the Maximum Extent Practicable (MEP). In new and/or improved right-of-way, flow control and water quality will be managed in the right-of-way with roadside planters/ bioretention facilities located in the planter strip, at intersection bulb-outs, and through the use of porous pavements. Measures to manage flow control and water quality on private development sites will be required to be installed on site and may consist of the same best management practices (BMPs) used to mitigate the right-of-way. These on-site measures for redeveloped parcels include porous pavement and stormwater planters that mimic the pre-development stormwater runoff conditions.*

*Per Wilsonville's 2012 Stormwater Master Plan, the existing storm drain system for the majority of Town Center has adequate capacity. The existing development within Town Center is mostly impervious with no on-site water quality or flow control management. Future redevelopment is envisioned to reduce the amount of impervious surface by implementing BMPs such as road diets, porous pavement, green roofs, landscaping, and bioretention facilities. Because of the proposed improvements and reduction in impervious surface, the existing storm drain capacity will be adequate to accommodate future development.*

(Town Center Plan pg. 42, 44)

Exhibit 6 (next page) illustrates the recommended stormwater infrastructure system for Town Center. The goal of the stormwater system recommendations is to reduce the amount of stormwater detained and treated at the regional treatment facility in Memorial Park and to avoid any additional expansions of that facility. By managing stormwater on-site and reducing the amount of impervious surface in Town Center, more costly expansions to the Memorial Park Pond can be avoided. As development occurs in Town Center, localized flooding at the 18-inch pipe crossing I-5 (identified as problem area P8 per the City's 2012 Stormwater Master Plan) may also be mitigated as a result of additional on-site infiltration facilities being constructed. These facilities could be developed within existing or new right-of-way and adjacent development, which will reduce stormwater flows through the pipe. In the meantime, temporary flooding control measures such as infiltration facilities could be deployed.

## Exhibit 6. Stormwater Infrastructure




Source: Wilsonville Town Center Plan, p. 45

## Sewer Infrastructure

*The majority of Town Center is within the Canyon Creek/Town Center Basin although a portion of Town Center (north and west of Town Center Loop) is within the Coffee Creek Basin. Both basins drain to the Wilsonville Wastewater Treatment Plant. The sanitary and stormwater systems are separate systems. The wastewater pipes within Town Center are generally between 25-50 years old, and while the system functions well, the City's 2014 Waste Water Collection Master Plan identifies several pipes that should be replaced due to age, root intrusion, and/or grade issues. There are no capacity-related projects in Town Center identified in the current capital improvement plan through 2025, although the Town Center Pump Station that serves a portion of Town Center has a higher rate of pump failure than other City-owned pump stations and has been identified for replacement. Peak flow projections for the Canyon Creek/Town Center are expected to increase from a current flow of 1.26(millions of gallons per day (MGD) to 1.85 MGD within the Urban Growth Boundary (UGB) by 2045 per the City's 2014 Waste Water Collection Master Plan. The total peak flow projections for the UGB and Urban Reserve Area, if it is added to the UGB and develops, are expected to increase to 3.14 MGD per the City's 2014 Waste Water Collection Master Plan.*

*Future development envisioned in the Town Center Plan will have little increase in wastewater compared to what is already projected for Town Center in the future, with sewer flows likely to increase by 0.69 MGD, for a total flow of 3.83 MGD at buildout with the urban reserve area. Additional capacity is not required for Town Center-related growth. System-wide modeling showed that the existing system can accommodate future growth. While there may be a possibility of surcharging downstream at Memorial Drive, crossing I-5 to the wastewater treatment plant, potential surcharge is within acceptable limits and overflow risk is minimal. Town Center is a very small portion of the basin and the additional projected growth is not a significant increase to the total projected flows of the basin. Additional growth from Town Center would not likely have an impact on the existing 220 gallons per minute (gpm) capacity of the existing Town Center waste water pump, but as stated, Town Center is only a small portion of the basin and the pump should be evaluated as part of the larger Canyon Creek/Town Center service area* (Town Center Plan pg. 44, 45, 46).

Exhibit 7 illustrates the recommended sewer infrastructure system for Town Center. Much of the existing system has already been developed, although the anticipated development pattern and street grid will require a portion of the system to be relocated into public right-of-way.

Aside from projects already identified in the City's 2014 Wastewater Collection Master Plan, Town Center Plan implementation should include the following:

- Locate sewer trunk lines within existing or future rights-of-way to allow for development on vacant land. While most trunk lines are already in existing right-of-way, there are some pipes located within existing parking lots. If not relocated, existing utilities may conflict with building foundations and make it difficult to maintain underground infrastructure.

- Upgrade the wastewater system when constructing new roads, or when significant upgrades occur to existing roads, to reduce the need for future capacity upgrades that would require reconstructing the road.

(Town Center Plan p. 47).

**Exhibit 7. Sewer Infrastructure**



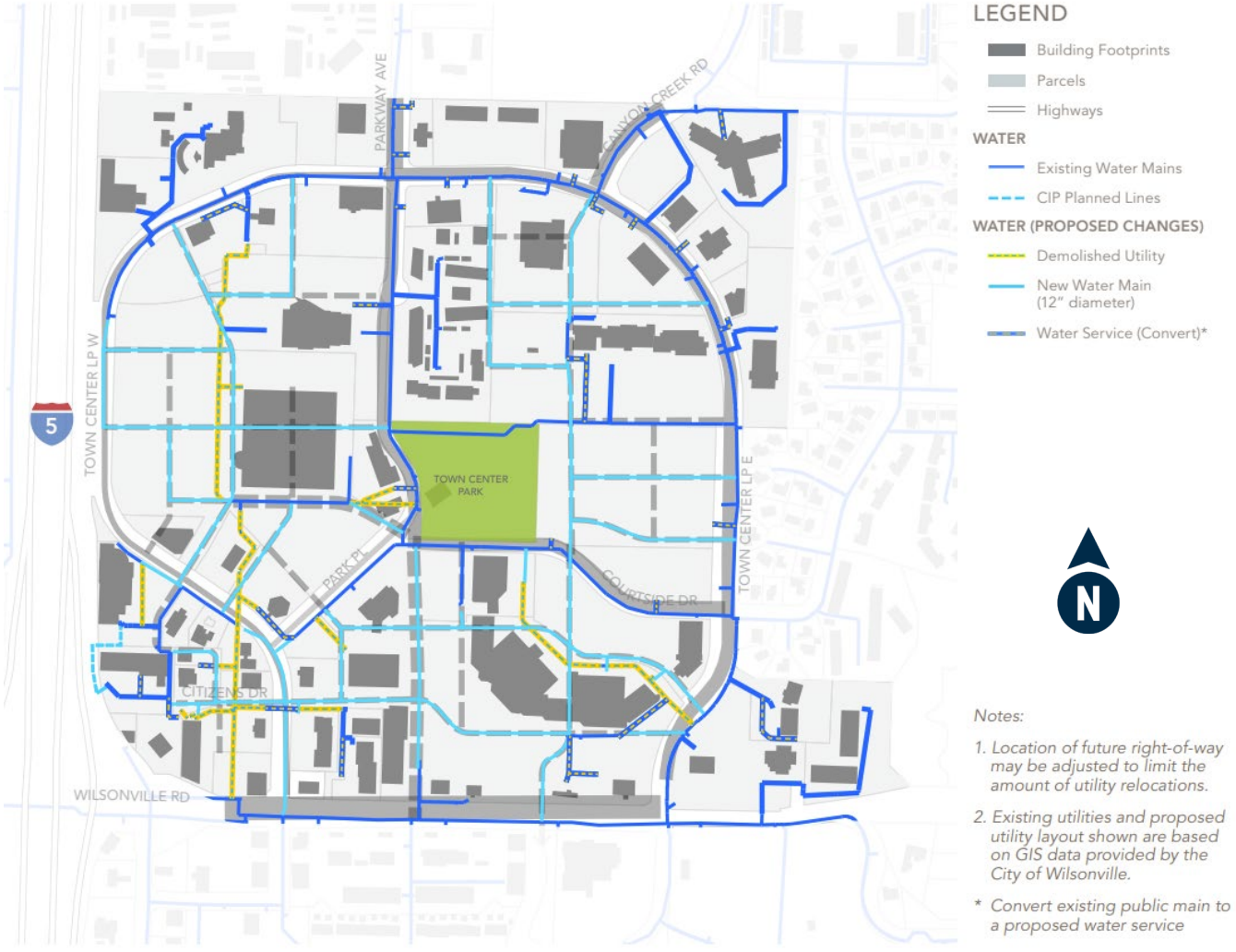

Source: Wilsonville Town Center Plan, p. 47

## Water Infrastructure

*The Willamette River Water Treatment Plant supplies potable water to the project area. The City has not identified any fire flow deficiencies within the project area. The majority of distribution mains within the project area are constructed of 12-inch ductile iron pipe. The 2012 Water Distribution Master Plan only identifies one capital improvement project within the project area, consisting of an 8-inch line extension along Park Place and SW Citizens Drive. No changes are recommended to this project. The existing 12-inch water main infrastructure is capable of accommodating future growth within the Town Center, although some water mains would need to be relocated into new right-of-way to accommodate future development. The proposed water main system is shown in (Town* Center Plan p. 48, 49).

Exhibit 8. *All new or relocated water mains would be 12-inch water lines, reflecting the 12-inch water system that exists today* (Town Center Plan p. 48, 49).

**Exhibit 8. Water Infrastructure**




Source: Wilsonville Town Center Plan, p 49

## Transportation

The Town Center Plan calls for vast improvements to the transportation infrastructure within the Area to make lots developable and to create a multi-modal transportation network. "*The foundation of the Town Center Plan is the community's desire for a walkable and engaging pedestrian experience. The Plan's multimodal network applies a variety of streetscape designs for new and proposed streets in Town Center, ranging from festival streets with curbless sidewalks near Town Center Park, local streets with wide sidewalks, and a main street with on-street parking and active storefronts.*

*The expanded transportation network addresses several existing issues as well as managing future traffic needs, as it:*

- *Increases the number of route options that also distribute traffic more effectively than today's system; and*
- *Provides safer pedestrian crossings and connections throughout Town Center with the new street grid, bicycle and pedestrian path system, and improvements for pedestrians and cyclists at busy intersections on Wilsonville Road. Safe, inviting pedestrian-oriented streetscapes for all ages and abilities, multi-use paths and on-street bikeways are essential to get to, through, and around Town Center without needing a car* (Town Center Plan, p. 28)."

The DKS memorandum documenting Multimodal Transportation Conditions and Analysis (April 28, 2017) documented the following existing conditions of the transportation system in the Town Center. Excerpted text is shown below in italics. The full analysis is available at *https://www.ci.wilsonville.or.us/planning/page/town-center-plan*

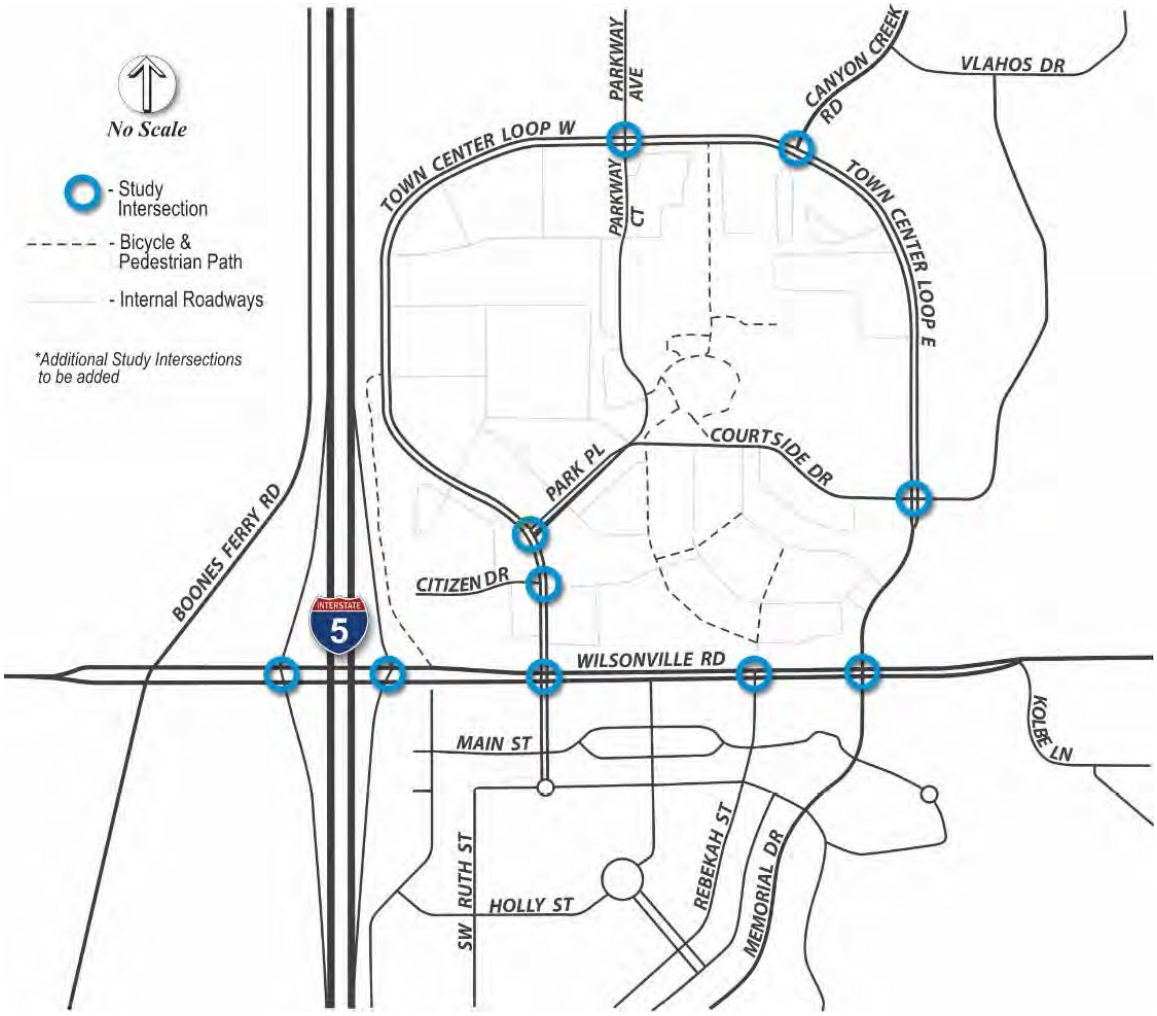
***Multimodal facilities exist and there are opportunities for additional improvements***

- ***Some pleasant pedestrian and bicycle facilities exist in Town Center.*** *Town Center Loop East includes buffered bike lanes and a separated path, while Wilsonville Road under I-5 includes a comfortable elevated pathway with art. Additional public and private pathways provide some linkage within Town Center land uses.*
- ***Poor sidewalk and pathway conditions also exist in Town Center.*** *Field observations identified cracked sidewalks, narrow sidewalks and pathways, debris on sidewalks, pathways that are difficult to find, gaps within the system, and a lack of curb ramps that comply with the most current version of the Americans with Disabilities (ADA) Act standards.*
- ***Town Center Loop West is difficult to cross****. With four travel lanes and a posted speed of 35 MPH, Town Center Loop West is difficult for pedestrians and bicycles to cross. At stop-controlled intersections, pedestrians must cross five travel lanes due to the existing left-turn pockets.*
- ***Walking and biking along most of Town Center's roadways is uncomfortable.*** *With the exception of Town Center Loop East, a section of Park Place, and a section of Courtside Drive, the analysis indicated that most adults would not feel comfortable walking or biking in Town Center. Factors include traffic speeds, number of travel lanes,*

*turning vehicles at intersections, lack of motor vehicle buffers, presence and width of bike lanes, and roadway lighting. In addition, people may be deterred from walking and biking to Town Center because of high traffic volumes and speeds on Wilsonville Road that make crossing at the intersections difficult. Lower speed limits, wider sidewalks, buffered bike lanes, and landscaped buffers improve conditions for walking and biking on streets in Town Center where they exist.*

- ***Some private businesses are auto oriented.*** *Many of the existing private developments are auto oriented and do not provide safe and convenient connections between buildings for biking and walking.*
- ***Transit service in Town Center connects to key regional transit destinations.*** *Two South Metro Area Regional Transit (SMART) transit routes serve the study area, Route 2x-Barbur and Route 4-Wilsonville Road, and provide service to the Tualatin Park and Ride and Barber Transit Center to connect to TriMet's regional transit system.*

## Exhibit 9. Existing Roadway Characteristics




Source: DKS Memorandum April, 2017 p. 4

*The perimeter of Town Center is bounded by three major arterial streets – Wilsonville Road, Town Center Loop West and Town Center Loop East – that provide access to the district. Several minor arterials and collectors provide access into the district and are complemented by three local service streets that provide additional connections to destinations in the district.*

*Town Center Loop West is more auto-centric with four vehicle travel lanes and lack of bike lanes. Town Center Loop East is a more multi-modal street with a three-lane cross-section, sidewalks, multi-use path, and buffered bike lanes, which makes walking and cycling attractive and comfortable. Wilsonville Road is a major east-west bike connection with striped bike lanes that connects neighborhoods beyond Town Center to the district. Although the posted speed adjacent to Town Center near the Town Center Loop West intersection is 25 mph, it increases to 35 mph east of Holly Street, which may deter all but the most confident cyclists from accessing the Town Center by bike.*

### *Multimodal Facilities Inventory and Analysis*

*In order to create a vibrant pedestrian and transit-supportive Town Center district, facilities that promote walking, biking, and transit are essential. Understanding the conditions of existing infrastructure that support active transportation modes, as shown in Figure 4, as well as the benefits of future planned projects, is an important step to developing a plan for future investment in Town Center.*

#### *Bicycle Facilities*

*Bicycle lanes exist along Wilsonville Road, Park Place (from Town Center Loop West to Courtside Drive), Courtside Drive (for approximately 800 feet at its eastern end), Memorial Drive, and Town Center Loop East (from Canyon Creek Road to Wilsonville Road). The bicycle lanes on Town Center Loop East have a five foot wide striped buffer separating the bicycles from the vehicles.*

*Overall, the bicycle facilities along the roads in the study area were in good condition with little to no debris and adequate widths for bicycle lanes as per ODOT's guidelines.10 However, along Town Center Loop West there are no bicycle lanes and the higher speeds of 35 mph decrease the safety for bicyclists using this facility. Additionally, the lack of facilities along Town Center Loop West disconnects the west side of Wilsonville Town Center from the rest of the area.*

#### *Pedestrian Facilities*

*Sidewalks exist along all of the public roadways in the Town Center with the exception of approximately 400 feet of Town Center Loop West from the north edge of NW Rugs and Furniture property to the multi-use path and the north side of Park Place from Town Center Loop West to Courtside Drive. The existing sidewalks are in fair to good condition (minor to no cracking, patching, raveling, or faulting and the surface are generally smooth) and the majority of the crossing locations have sidewalk ramps, but do not meet current ADA standards. The sidewalk conditions along Citizen Drive, a private street, are in poor condition (sidewalks cracking, debris, narrow, and lack of ADA ramps) and end abruptly. There is a pedestrian*

*activated beacon at the Town Center Loop East/Courtside Drive intersection. Additionally, many of the internal roadways (including both site access and major drive aisles) have existing sidewalks and provide connectivity from the loop system to internal land uses.*

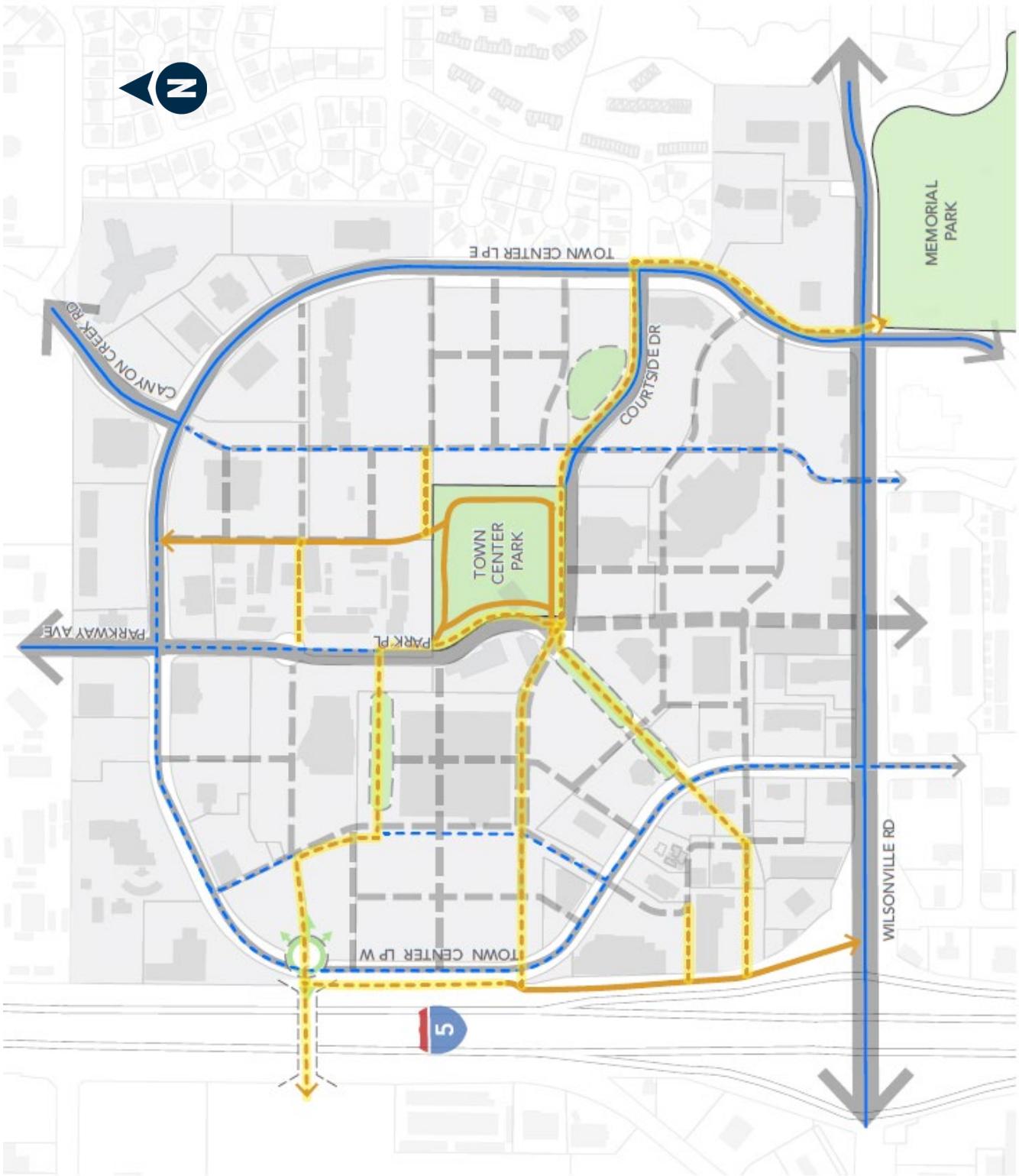
*Other crossing facilities include midblock crossings (one north of Wilsonville Road along Town Center Loop East and two along Courtside Drive near Town center Loop E), striped crossings on all legs of each signalized intersection (except the west leg at the Wilsonville Road/Town Center Loop West intersection): and two striped crossings at both the Park Place/Courtside Drive intersection and the Town Center Loop West/Citizen Drive intersection, which also includes advanced warning signs that alert drivers of the crossing location.*

*The main shopping center north of Wilsonville Road is bounded by Town Center Loop East and West and has a well-connected internal pedestrian system that includes a wide-arc pedestrian pathway and an east/west pathway that connects the arc pathway to the Safeway development. Furthermore, sidewalks connect pedestrians from the shopping center to Town Center Loop West and East, Park Place, Courtside Drive, and Wilsonville Road. However, there are no sidewalks on the west side of Rebekah Street north of Wilsonville Road leading into the shopping center so eastbound pedestrians are required to cross Rebekah Street to enter the shopping center.*

### *Transit Facilities*

*Two South Metro Area Regional Transit (SMART) routes serve the study area, Route 2x-Barbur and Route 4-Wilsonville Road. Both routes operate with headways around 30 minutes to an hour. Route 2x-Barbur travels along Wilsonville Road to Town Center Loop E, then to Courtside Drive, Park Place, and continues north along Parkway Avenue. This route begins at the SMART Central at Wilsonville Station and connects to key destinations in Wilsonville such as City Hall, the Civic Center, Parkway Woods Business Park, and Argyle Square, as well as to key regional destinations such as the Tualatin Park and Ride and the Barber Transit Center. Route 4-Wilsonville Road travels along Wilsonville Road to Town Center Loop W, Park Place, Town Center Loop E, and continues east along Wilsonville Road. This route begins at the SMART Central at Wilsonville Station, traveling to key destinations in Wilsonville including Inza Wood Middle School/Boones Ferry Primary school, Graham Oaks Nature Park (limited service), Town Center Park, the Civic Center, and Wilsonville High School/Boeckman Primary School.*

## Exhibit 10. Town Center Plan Multi-modal Network




Source: Town Center Plan, pg. 26

## Improvement to Land Ratio:

Exhibit 11 shows the improvement to land value ratios (I:L) for properties in the Area. In the Area, seventeen tax lots, representing 18% of the Area's acreage, have I:L ratios less than 1.0. This means that the improvements on these properties are worth less than the land they sit on. Land use plans for the area call for new development of four-and five-story buildings, which would be expected to have an I:L ratio of 4.0 or more. Only 6 of the 67 tax lots in the Area, representing 11% of the acreage, had I:L ratios of 4.0 or more in FYE 2023. In summary, the Area is underdeveloped.

### Exhibit 11 -Improvement to Land Ratios in the Area

| Improvement to Land Value Ratio | Parcels | Acres | Percent of Acres |
|---|---|---|---|
| No Improvement Value | 11 | 10.84 | 7.40% |
| 0.01-0.50 | 3 | 6.57 | 4.49% |
| 0.51-1.00 | 3 | 8.61 | 5.88% |
| 1.01-1.50 | 10 | 19.12 | 13.06% |
| 1.51-2.00 | 12 | 29.73 | 20.30% |
| 2.01-2.50 | 10 | 38.98 | 26.62% |
| 2.51-3.00 | 5 | 3.55 | 2.43% |
| 3.01-4.00 | 7 | 12.85 | 8.78% |
| > 4.00 | 6 | 16.17 | 11.04% |
| **Total** | **67** | **146.45** | **100.00%** |

Source: Compiled by Elaine Howard Consulting with data from the Clackamas County Department of Assessment and Taxation (FYE 2023)

## Social Conditions

There are currently three residential uses in the Area.

There is one development associated with a senior living use, the 82-unit Creekside Woods Senior Apartments, where eligibility is based on annual income and is for seniors age 62 and over. Another development, Brookdale Wilsonville, is an independent and assisted living community for seniors age 55 and over, with 32 licensed beds.

There is one planned mixed-use project on the former Shari's site at 29690 Town Center Loop W that will add 114 units of housing and approximately 3,700 square feet of ground floor commercial. This project is expected to begin construction in early 2024.

The Town Center Park Apartments has 111 units in three story structures with one and two bedroom units.

The Wilsonville Town Center Plan "*focuses on attracting and retaining local businesses, employment opportunities, housing choices, and cultural and educational institutions. The Plan puts people first with walkable streetscapes and places to gather, shop, work, eat and recreate"* (p.4). This vision for the Town Center intends to dramatically change Town Center's focus by making it more people-centric and creating an inviting, vibrant hub for the rest of the community.

## COMPREHENSIVE PLAN CONFORMANCE

An urban renewal plan must be found to be in conformance with the comprehensive plan. The following sections of the Comprehensive Plan, along with the Planning Commission findings for the adoption of the Town Center Plan, were reviewed for conformance of a proposed Town Center Urban Renewal Plan to the Comprehensive Plan. The proposed activities in the Area are in conformance with the Wilsonville Comprehensive Plan and the Town Center Plan from which the projects are specifically taken. The Planning Commission's full finding of consistency between the Town Center Plan and the Comprehensive Plan is attached in Appendix C.

Goal 1, Citizen Involvement

Goal 2, Land Use Planning

Goal 5, Natural Resources, Scenic and Historic Areas, and Open Spaces.

Goal 6, Air, Water, and Land Resources Quality

Goal 7, Areas Subject to Natural Hazards

Goal 8, Recreational Needs

Goal 9, Economic Development

Goal 10, Housing

Goal 11, Public Facilities and Services

Goal 12, Transportation

Goal 13, Energy Conservation

Goal 14, Urbanization

# FINANCING RECOMMENDATIONS OF THE WILSONVILLE TOWN CENTER PLAN, TOWN CENTER INFRASTRUCTURE FUNDING PLAN AND URBAN RENEWAL STRATEGIC PLAN

The Wilsonville Town Center Plan, the Town Center Infrastructure Funding Plan, and the Urban Renewal Strategic Plan all recommended the study of the feasibility of urban renewal to allow for an additional funding source to implement the Town Center Plan. Below are selected excerpts from each plan, shown in *italics*.

## Wilsonville Town Center Plan

Tax Increment Financing is identified as a funding tool in Chapter 05 Implementing the Town Center Plan, p. 89 recommending the preparation of an Urban Renewal Feasibility Study and Plan and Table 5.1 Implementation Matrix, p. 99 of the Wilsonville Town Center Plan. The full plan is available at https://www.ci.wilsonville.or.us/planning/page/town-center-plan.

## Wilsonville Town Center Infrastructure Funding Plan

The implementation chapter of the Town Center Plan calls for a study of how to fund the infrastructure projects identified in the Town Center Plan, which funding tools are most appropriate to support development, and an assessment of the feasibility of urban renewal (also known as tax increment financing) as a tool to provide some of this funding. In early 2022, the City contracted with FCS Group, a firm with experience in developing funding strategies for targeted areas like Town Center, to lead development of the Town Center Infrastructure Funding Plan.

*The Town Center Infrastructure Funding Plan includes a summary of the work undertaken to develop a strategy for the funding of the Town Center Plan's infrastructure projects. Based on an assessment of project costs, development scenarios, and existing funding tools, significant funding gaps are expected for transportation, sanitary sewer and stormwater facilities. These funding gaps would be particularly acute during the first 25 years as new development begins to occur within Town Center. Some form of advance financing is likely required because public facility investments would be needed in the short term, before System Development Charge (SDC) fund balances accumulate.*

*To address this, the project team reviewed a variety of funding tools to determine which are best suited to close these gaps. As part of this review, the project team completed a preliminary and hypothetical forecast of tax increment revenue to determine the suitability of urban renewal as a tool to fund infrastructure improvements in Town Center. The review considered factors such as the amount of potential funds raised, flexibility of the funding source, ease of implementation, administration cost, market acceptance, and impact on housing costs.*

(partial excerpt)

### Urban Renewal

*The City can create an Urban Renewal District (URD) within the Town Center area that generates Tax Increment Financing (TIF) revenue derived from net new assessed property value that occurs over time. TIF revenue can be utilized for public facility capital improvements identified as Projects in an adopted Urban Renewal Plan. Based on the preliminary revenue forecast, it appears this tool could fill the majority of the anticipated funding gaps. It is important to note that adoption of this tool requires additional work, including a more detailed Feasibility Analysis, the subsequent development of an Urban Renewal Plan and Report coordinated with affected taxing districts, and adoption of the Plan and Report through a public hearing process. Creation of a new Urban Renewal District cannot occur until two existing districts (Year 2000 and West Side) are closed out, which is anticipated to occur over the next two fiscal years. Construction of the planned Town Center infrastructure projects without adoption of an Urban Renewal District is unlikely. The flexibility and power of tax increment financing is unmatched by other options. The tool can efficiently generate more funding to support necessary infrastructure improvements than anything else. It is the primary funding mechanism recommended in the Funding Plan. (Staff Report to Resolution No. 3013)*

#### *Funding Evaluation Summary*

*A total score was computed for each funding technique based on the sum of the score in each criterion. The cumulative total score was then used to rank each funding option.*

Of all funding techniques and tools studied, Urban Renewal scored highest, as the most powerful, substantive and flexible source of funding.

#### *Urban Renewal District*

*The City can create an URD within the Town Center area that generates Tax Increment Financing (TIF) revenue derived from net new assessed property value that occurs over time. TIF revenue can be utilized for public facility capital improvements identified in an adopted Urban Renewal Plan (pg. 11).*

The full plan is available at https://www.ci.wilsonville.or.us/planning/page/town-center-plan.

## Wilsonville Urban Renewal Strategic Plan

The Urban Renewal Strategic Plan was adopted in November of 2022. The Plan contains the following recommendations for the Town Center area.

#### *Is urban renewal an appropriate tool in Town Center to achieve the vision of the community? Task Force Recommendation:*

*The Task Force supports the City's ongoing work to develop a Town Center Infrastructure Funding Plan and recommends the City pursue a full urban renewal feasibility study for the Town Center area to include timing, duration, eligible projects, anticipated private development, private contribution, and impact on taxing districts for future Task Force consideration. Upon review of the draft Town Center Infrastructure Funding Plan, the City Council also recommends a parking structure be studied and considered as a potential project*

*if warranted and feasible, funded in whole or in part by urban renewal, as a potential project under a new urban renewal plan in Town Center.*

*The Task Force especially supports infrastructure projects that support private development, but further recommends the exploration of additional tools in a potential Urban Renewal Plan to include programs that support legacy businesses facing displacement pressures, such as tenant improvement grants or loans. The Task Force prefers to limit eligibility for such incentives to those businesses that are not part of a national chain or franchise model, and wishes to ensure eligibility for local legacy businesses and childcare service providers that will support the employers, employees, and residents of the Town Center area, and Wilsonville more broadly.*

*Rationale: The City of Wilsonville has used tax increment financing as an important part of paying for needed infrastructure in helping to facilitate growth in the city. This tool can be useful in paying for a portion of the infrastructure, which will be required to complete the Town Center vision and support desired uses within the area.*

*Should this question be presented to the community for an advisory vote?*

*Task Force Recommendation: Yes, once a feasibility study has been completed and if the Task Force recommends pursuing urban renewal/TIF at that time.*

The full plan is available at https://www.ci.wilsonville.or.us/renewal/page/urban-renewal-strategic-plan

## PRELIMINARY PROJECTS AND PROGRAMS

The projects and programs that were identified and vetted with the Task Force were previously outlined in the Town Center Plan and further analyzed in the Town Center Infrastructure Funding Plan. The projects shown in Exhibit 12 are listed by the order as they are found in the Town Center Plan.

What Exhibit 12 is:

- *A good faith demonstration* that between 3 main funding sources— 1) City system development charges funds 2) private development exactions and dedications, and 3) urban renewal/tax increment—the projects identified in the Town Center Plan can be completed, provided all forecasting assumptions become future reality.

Because it is a near certainty that all forecasting assumptions will not become reality, Exhibit 12 is NOT a hard and fast commitment to:

- precise project costs
- exact cost-sharing allocations; other funding sources and alternative allocations may be pursued and utilized (e.g. grants)
- the completion of the entire slate of projects throughout the duration of any Town Center urban renewal plan

## Exhibit 12. Town Center Projects

WILSONVILLE TOWN CENTER PLAN

| | | City Contributions | | | Private Contributions | | Urban Renewal | | |
|---|---|---|---|---|---|---|---|---|---|
| | Current 2023 Estimate | | Transp. SDC | Parks SDC | | Developer | | URA (Gap Funding) | |
| **Infrastructure Projects** | $ | % | $ | $ | % | $ | % | $ | **Note** |
| I-5 Bike/Pedestrian Bridge & Gateway Plaza | $24,000,000 | 50% | $10,000,000 | $2,000,000 | 0% | $0 | 50% | $12,000,000 | A* |
| "Main Street" | | | | | | | | | * |
| "Main Street" North | $7,200,000 | 14% | $1,000,000 | $0 | 25% | $1,800,000 | 61% | $4,400,000 | |
| "Main Street" Central | $4,400,000 | 23% | $1,000,000 | $0 | 15% | $660,000 | 62% | $2,740,000 | B* |
| "Main Street" South | $8,700,000 | 23% | $2,000,000 | $0 | 50% | $4,350,000 | 27% | $2,350,000 | * |
| Courtside Drive | | | | | | | | | * |
| Courstside Drive, East | $6,000,000 | 25% | $1,500,000 | $0 | 25% | $1,500,000 | 50% | $3,000,000 | |
| Courstside Drive, West | $7,100,000 | 0% | $0 | $0 | 50% | $3,550,000 | 50% | $3,550,000 | * |
| Wilsonville Road Intersection Improvements | $3,600,000 | 28% | $1,000,000 | $0 | 0% | $0 | 72% | $2,600,000 | B* |
| Town Center Loop W Modifications | $3,300,000 | 30% | $1,000,000 | $0 | 0% | $0 | 70% | $2,300,000 | C |
| Local Street Network | $36,000,000 | 0% | $0 | $0 | 75% | $27,000,000 | 25% | $9,000,000 | |
| Bicycle and Pedestrian Infrastructure | $7,900,000 | 34% | $1,500,000 | $1,200,000 | 15% | $1,200,000 | 51% | $4,000,000 | |
| Underground Utility Relocation | $42,000,000 | 0% | $0 | $0 | 50% | $21,050,000 | 50% | $20,950,000 | |
| Parking "Solution(s)" - City Built or Developer Incentives | $12,000,000 | 0% | $0 | $0 | 50% | $6,000,000 | 50% | $6,000,000 | |
| **Infrastructure Subtotal** | **$162,200,000** | 14% | **$19,000,000** | **$3,200,000** | 41% | **$67,110,000** | 45% | **$72,890,000** | |
| **Economic Development Programs & Projects** | | | | | | | | | |
| Real Estate activities | $19,000,000 | | | | | | 100% | $19,000,000 | D |
| Site Preparation | $2,080,000 | | | | | | 100% | $2,080,000 | E |
| Development & Tenanting Incentives - grants/loans | $2,080,000 | | | | | | 100% | $2,080,000 | |
| **Ec Dev Subtotal** | **$23,160,000** | | | | | | | **$23,160,000** | |
| **Administration** | | | | | | | | | |
| Administration | **$5,050,000** | | | | | | | **$5,050,000** | F |
| **Grand Total** | **$190,410,000** | 12% | **$19,000,000** | **$3,200,000** | 35% | **$67,110,000** | 53% | **$101,100,000** | |

**Notes**

| | |
|---|---|
| A | Design Complete, Construction Ready; Other grant sources will be pursued, where applicable |
| B | Required with "Main Street" South |
| C | Occur after "Main Street" South |
| D | Includes property acquisition & disposition, purchase options, and associated costs, e.g. brokerage fees, closing costs, legal services |
| E | E.g. Demolition, grading, land-use applications, professional services (RFP prep, etc.) |
| F | 5% of Maximum Indebtedness |
| * | indicates "Framework" project, as identified in Town Center Plan |

WILSONVILLE OREGON

The narrative descriptions of these projects are shown below. These narratives are from the Town Center Plan. They are listed in the order identified in Exhibit 12.

## I-5 Bike/Pedestrian Bridge & Gateway Plaza

### IN.1 I-5 Bike/Pedestrian Bridge Gateway (Framework Project)

*The City has designed and permitted the construction of a bike/pedestrian bridge over I-5 that will connect the northwest corner of Town Center to the existing transit center and development on the west side of I-5. The eastside bridgehead in Town Center will provide an opportunity to establish a highly visible gateway to Town Center. A well-designed bridge and bridge landing includes architectural elements that reflect Town Center as well as seating, landscaping and wayfinding/directional signage, providing direct connections for people to destinations in Town Center, such as Town Center Park using a two-way cycle track, and to the local and regional bicycle and pedestrian network.*

## "Main Street"

### "Main Street" North

### IN.2 Park Place Redesign (Town Center Loop to Northern Edge of Town Center Park)

*This section of existing roadway, currently known as Parkway, is one of the original connections from Town Center Loop adjacent to the theater and apartments. The recommended future design for this section of Park Place includes two travel lanes, buffered bike lanes, and wide sidewalks. Buffered one-way bike lanes are recommended in this section of roadway to provide connections to existing bicycle lanes north of Town Center Loop.*

### "Main Street" Central

### IN.3 Park Place Redesign (Town Center Park to Courtside Drive, Framework Project)

*This section of Park Place becomes an extension of Town Center Park. Constructed as a curbless street that can be closed during events in Town Center Park, a farmers market, or other civic use. This section of roadway is a critical transition between the northern and southern portions of the main street and a core component of the Town Center vision. This section of Park Place includes two travel lanes, on street parking, and a protected two-way cycle track, providing an important multimodal connection between the I-5 bike/pedestrian bridge, Promenade, and the two-way cycle track proposed on the north side of Courtside Drive to Memorial Park (see IN.5 for a project description).*

### "Main Street South"

### IN.4 Park Place Extension (Courtside Drive to Wilsonville Road, Framework Project)

*Creating a modern main street in Town Center is a signature element of the Plan. Extending Park Place provides opportunities to create a walking retail corridor, gathering spaces, and placemaking programs for Town Center. It will offer more opportunities and better visibility for small, independent businesses, keeping local dollars in Wilsonville. This extension of Park*

*Place is a future roadway located within an existing parking lot. The extension would create a new signalized intersection at Wilsonville Road. The recommended design for this new segment of Park Place includes two travel lanes, on-street parking, and wide sidewalks to create a strong pedestrian-oriented landscape. The street would be marked as a shared facility, where bicycles and automobiles share the same travel lane. Shared lanes, as opposed to dedicated bicycle lanes, are recommended for this section because of the expected slow vehicle speeds, proposed dedicated bicycle lanes on adjacent roads, and the limited amount of right-of-way available to construct the new connection. With the proposed design, no business displacements are anticipated with the construction of this segment, but during construction, it will be important to coordinate with existing businesses to minimize impacts to their operations.*

## Courtside Drive

### Courtside Drive, East

**IN.5 Courtside Drive**

*Improvements (Park Place to Town Center Loop E)*

*Courtside Drive is the primary east/west connection between Town Center Loop E and Park Place and serves as an important connection between established neighborhoods and central Town Center. This project recommends maintaining the key functions of this roadway and incorporating a two-way cycle track that connects from Town Center Park to Town Center Loop E, which will provide a further connection to Memorial Park. Improvements to this section of roadway are primarily for the cycle track and for on street parking on the south side of Courtside Drive.*

### Courtside Drive, West

**IN.6 Courtside Drive Extension (Park Place East to Town Center Loop W, Framework Project)**

*This project would extend Courtside Drive to the west to Town Center Loop W, providing increased connectivity to the western portion of Town Center, an area envisioned to redevelop with a more diverse mix of uses. The recommended roadway design includes two travel lanes, on street parking, bicycle lanes and wide sidewalks to create a strong pedestrian-oriented landscape.*

## Wilsonville Road Intersection Improvements

**IN.7 Wilsonville Road Intersection Modifications**

*Wilsonville Road is the most important arterial connection to Town Center and also provides access to one of two I-5 interchanges in Wilsonville. Wilsonville Road experiences congestion at peak hours due to existing capacity issues on I-5 at Boone Bridge, affecting the Wilsonville Road/ Town Center Loop W intersection where traffic can back up on both roadways.*

*Recommended improvements along Wilsonville Road are designed to improve traffic distribution through Town Center and better accommodate anticipated traffic growth. The*

*Wilsonville Road improvements allow for and implementation of the desired multimodal form as recommended in this plan changes to Wilsonville Road include:*

- *Wilsonville Road/Town Center Loop W Modify the existing traffic signal to eliminate eastbound and westbound left turns, add a landscaped median to the west leg, and improve pedestrian and bicycle safety by adding a crosswalk to the west side of the intersection and a median refuge to cross Wilsonville Road. Providing protected pedestrian refuges and signalization for bicycle and pedestrian crossings is essential for improving safety and increasing walking in the area.*
- *Wilsonville Road/Park Place Construct a new intersection that connects the extension of Parkway Avenue to Wilsonville Road. At this intersection, install a traffic signal that allows all turning movements and moves eastbound left turn traffic further from the I-5 interchange.*
- *Wilsonville Road/Rebekah Street Remove the existing traffic signal and restrict the minor street turning movements to be right-in, right-out only by continuing the landscaped median or using space for a pedestrian and bicycle median. Include bicycle and pedestrian activated flashers for crossings.*
- *Wilsonville Road/Town Center Loop E Modify the existing traffic signal to include dual eastbound lefts and modify the north leg to have dual northbound receiving lanes. Remove eastbound and southbound dedicated right-turn lanes to accommodate added lanes.*

## Town Center Loop W Modifications

### *IN.8 Town Center Loop W Modifications*

*Town Center Loop W is a wide street with five lanes in many locations and without bicycle lanes or complete sidewalks. The focus of this project is to make Town Center Loop W more pedestrian and bicycle friendly, help redistribute through traffic, and reduce congestion at the Wilsonville Road/Town Center Loop W intersection. As development occurs adjacent to Town Center Loop W, the roadway could transition to a local road that provides access to businesses as well as multimodal access from the bike/pedestrian bridge and western portions of Town Center. In the event a parallel road is constructed and can accommodate the traffic, Town Center Loop W could also be vacated and the right-of-way used for development. If it remains in place, Town Center Loop W would be reduced from five to three lanes (two travel lanes with left turn pockets) in conjunction with intersection improvements for Town Center Loop E to accommodate the anticipated shift in traffic patterns. Surplus right-of-way will be used for on-site stormwater treatment, addressing an ongoing stormwater issue in the vicinity of I-5. This is assumed to occur with adjacent development that would pay for the street improvements. In the interim, improvements could include reducing the number of lanes through temporary placement of traffic controls using concrete planters or bollards to reduce road width, and restriping for bicycle lanes in the outside travel lane.*

*Full buildout is expected to be in conjunction with private development.*

## Local Street Network

### IN.9 Local Road Network

*Creating a more walkable and accessible Town Center will also require constructing new local roads. These connections would be constructed as part of a development in which the private developer assumes the cost of these local roads. Exhibit 9 identifies the proposed local road network in Town Center, which uses the existing road network as the foundation of the multimodal system. The location of these local connections is approximate and based on the desired block lengths of 400 feet. Precise locations will be determined during site planning and review. These extensions would require new right-of-way and would generally include two travel lanes, parallel parking on both sides of the street, sidewalks, and street trees, although some connections may use a "woonerf" style design, or pedestrian-only connections. Some streets would also include fiber conduit, new sewer and water infrastructure while all streets would have stormwater pipes that are assumed to be constructed by private development.*

*Local roads and associated communications, sewer, water and stormwater infrastructure identified as part of the Plan are assumed to be constructed by private development.*

## Bicycle and Pedestrian Infrastructure

### IN.10 Park Place Promenade Redesign

*The Park Place Promenade redesigns Park Place between Town Center Loop W and Courtside Drive to eliminate it as a vehicular route and create a linear park feature that provides bicycle and pedestrian access and a location for future temporary events such as festivals or a farmers market. The final design of this area will be determined as part of the design of future adjacent development expected to front the promenade. Essential components should include provisions for temporary events, public gathering spaces with shade and/or weather covering, bicycle and pedestrian connectivity and transit vehicle access. The design would be similar to the woonerf-style local street cross section that is designed to be closable to through traffic. Depending on the final design, vehicle charging, car share and bus stops could also be incorporated into the design.*

### IN.11 Cycle Tracks

*There are several sections of two-way cycle tracks identified in the Plan. These provide essential connectivity elements both within Town Center and to the surrounding bicycle and trail network. There are four primary cycle tracks proposed in Town Center that together create a continuous cycle track between the I-5 bike/pedestrian bridge and Memorial Park. The type of bicycle facility to be located within the Park Place Promenade will be determined as part of the Park Place Promenade design process (see Project IN.10). Prior to development of the project, or as portions are constructed, the City could place placards, signage or other information to describe the entire project and how it will function when completed.*

CYCLE TRACK VERSUS BUFFERED BICYCLE LANES

A CYCLE TRACK is an exclusive bike facility that is separated from motor vehicle traffic, parking lanes and sidewalks through the use of bollards, medians, or raised curbs. Cycle tracks can be designed in a variety of ways, but all are intended to be primarily used for bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks. In situations where on-street parking is allowed, cycle tracks are located to the curb-side of the parking (in contrast to bike lanes). BUFFERED BIKE LANES are conventional bicycle lanes paired with a designated buffer space (usually painted) separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes can be used anywhere a traditional bike lane is proposed and provides more space for bikes without making the bike lane appear so wide that it might be mistaken for a travel or parking lane.

***Segment 1**: Bike/Pedestrian Bridge to Town Center Park. This segment would be constructed from the future bike/ pedestrian bridge to approximately the north side of Town Center Park. While the final bridgehead location is still to be determined, the proposed connection would be located generally at the northern end of the Fry's parking lot and connecting to Park Place along/as part of the Promenade (see Project IN.12), where it would cross Park Place and then run on the east side of the roadway adjacent to Town Center Park. This segment would likely require purchasing right-of-way, or could be combined with future redevelopment of the Fry's site.*

***Segment 2**: Town Center Park to Courtside Drive. This segment would be constructed as part of the Park Place Redesign (Project IN.3) because it will require reconfiguring the corner of Town Center Park and potentially the western parking area for Town Center Park to accommodate the future main street extension south to Wilsonville Road. A quick win project could be to restripe the existing roadway as a two-way buffered bike lane, similar to what was completed during the Town Center Main Street Popup event at the 2018 Wilsonville Community Block Party during the planning process for the Plan. The two-way buffered bike lane would then be replaced with a permanent two-way cycle track.*

***Segment 3**: Town Center Park to Town Center Loop E (Courtside Drive Segment). This segment is implemented primarily through restriping the existing roadway on the north side of Courtside Drive between Park Place and Town Center Loop E and could be implemented at the same time as the quick win described for Segment 2. Access to the Town Center Park parking area along Courtside Drive may need to be modified to accommodate this project. No additional right- of-way is assumed to be required because the existing right-of-way is available to accommodate the proposed improvements.*

***Segment 4**: Town Center Loop E to Wilsonville Road. This segment would be located on the east side of Town Center Loop E This section of cycle track would connect the central portion of Town Center to Memorial Park south of Wilsonville Road. This project would not likely be implemented until the modifications to the Wilsonville Road/Town Center Loop E intersection are completed as there are already buffered bicycle lanes on Town Center Loop E The cycle*

*track improvements would increase safety by crossing to the east side on Town Center Loop E at Courtside Avenue, not at Wilsonville Road, to remove the potential conflicts with the additional left turn movements from Wilsonville Road to Town Center Loop E The two-way cycle track and vehicular lanes, as proposed, will fit within existing right-of-way.*

**IN.12 Promenade (Framework Project)**

*The Promenade is a linear park located north of the existing Fry's building. This project provides an important multimodal connection between the I-5 bike/pedestrian bridge landing and the two-way cycle track on Park Place. The bike/ pedestrian landing is expected to connect to the Promenade, either directly or through another connection, depending on the final bridge location. This project would likely be constructed if redevelopment on all or a portion of the Fry's and/or Regal Theater parcel occurred. The Promenade provides plaza and open space for area residents and employees and helps create a very active area near the I-5 bike/pedestrian bridge landing that draws users from the bridge into Town Center. The promenade also envisions an integrated stormwater feature, wide sidewalks and seating areas in addition to a portion of Segment 1 of the proposed cycle track (see Project IN.11).*

*The Promenade is assumed to be constructed, in whole or in part, by private development. The City may pursue funding for this project in advance of adjacent development as part of the bike/pedestrian bridge landing or following the bridge project to ensure the cycle track and emerald chain connections are constructed in a timely fashion.*

## Underground Utility Relocation

***IN.14a, b and c Water, Sewer and Stormwater System Upgrades***

*As new development occurs, additional infrastructure facilities will be required. As new roads are constructed, water, sewer, and stormwater system upgrades will be constructed as part of the road project to minimize costs. For systems within local roads, those facilities would be paid for and constructed by private development. Depending on the timing of adjacent development, the City or a private developer may construct the improvements. Adjacent development would be responsible for connecting to the system.*

## Parking Solution(s) – City Built or Developer Incentives

**PARKING STRATEGIES**

*There are many ways to encourage pedestrian-oriented development within Town Center while still providing parking options for those accessing Town Center by car. Parking is a part of Town Center and should be placed in convenient, accessible locations but screened from view by either buildings or landscaping. Pedestrians should not have to walk through parking lots to access adjacent businesses or residences.*

*The parking analysis completed for the Plan showed that parking usage varies considerably by location, time of day, weekdays and weekends in Town Center. Future development will require parking, likely a combination of surface and structured facilities. As Town Center*

*develops over time, a variety of parking management techniques and incentives could be implemented to achieve the goals for parking in the Town Center.*

*Structured parking can be provided by public or private organizations, or a combination of both. Although the current market makes it challenging to construct a fully privately funded garage (given that each parking stall can cost between five and ten times as much as one built on a surface lot), in the future, structured parking might be possible. For development over five acres in size, structured parking, even if phased, should be incorporated into the development plan. Rents and lease rates will likely increase over time, making structured parking, either stand-alone or as part of a larger development, possible. Ideally, structured parking would be developed as part of a larger development project that includes the types of land uses the Wilsonville community desires.*

## FINANCIAL ANALYSIS

Tiberius Solutions calculated the projected amount of tax increment revenue for the Feasibility Study Area over an approximate 30-year time frame. The financial projections assume 3% growth in assessed value from appreciation of real property accounts and no change in assessed value for existing personal property and utility accounts. The analysis of assessed value growth also included a set of detailed assumptions for future development in the Area. The future development assumptions were developed in coordination with Wilsonville staff, and are detailed in Appendix A.

Tax increment revenues would begin in FYE 2026, assuming the Area is adopted by the Wilsonville City Council before October 1, 2024.[1] If the Area is approved after October 1, 2024, the frozen base value would increase, because a new tax roll would be certified. If the Area is adopted after December 31, 2024, the first year of tax increment would be delayed.

Exhibit 13 summarizes the financial capacity of the Area. Total net tax increment finance (TIF) revenues is the cumulative amount of TIF revenue that would be received by the Area over its duration. Maximum indebtedness (a term defined in Oregon Statutes related to TIF) is the total principal amount of indebtedness that could be incurred by the Area. Maximum indebtedness is stated in nominal (i.e., "year of expenditure") dollars. The capacity in 2023 dollars shows the maximum indebtedness figure adjusted for inflation and presented in "real" dollars. This is the most useful measure of financial capacity. The capacity in 2023 dollars is also shown in five-year periods to provide a sense of when funding would become available over time.

The URA is forecast to generate $211.4 million of cumulative net TIF revenue, which could support a maximum indebtedness of $181.0 million, equivalent to $101.1 million in capacity for projects, adjusted for inflation and presented in constant 2023 dollars.

### Exhibit 13. Financial Capacity Over Time

| | |
|---|---|
| **Net TIF (30 years)** | **$211,400,000** |
| **Maximum Indebtedness** | **$181,000,000** |
| **Capacity (2023$)** | **$101,100,000** |
| Years 1-5 | $3,600,000 |
| Years 6-10 | $9,800,000 |
| Years 11-15 | $19,300,000 |
| Years 16-20 | $24,700,000 |
| Years 21-25 | $25,700,000 |
| Years 26-30 | $17,900,000 |

Source: Tiberius Solutions
Note: Total TIF and Maximum Indebtedness are stated in year-of-expenditure (i.e., "nominal") dollars. Capacity has been adjusted for inflation and shown in constant 2023 dollars.

[1] An urban renewal area is adopted through a non-emergency ordinance which does not go into effect for thirty days after adoption.

## IMPACTS ON TAXING DISTRICTS

Tax increment financing through adopting an urban renewal plan is not a new tax. These tax revenues are generated from the existing property tax rates of other taxing districts that overlap the Area. The Area would impact these affected taxing districts by redirecting a portion of these property tax revenues to the Area. The impact to other taxing districts is measured in terms of "foregone revenue". Exhibit 15 and Exhibit 16 summarize the amount of foregone revenue that would be caused by the proposed Area.

The foregone revenue for the West Linn-Wilsonville School District and Clackamas Education Service District does not have a direct impact on school funding, as funding is equalized at the State level. Local school districts are funded on a per-pupil basis and that per-pupil amount is not directly impacted by urban renewal.

The amount of foregone revenues is equal to the amount of TIF needed to pay debt service on the maximum indebtedness.

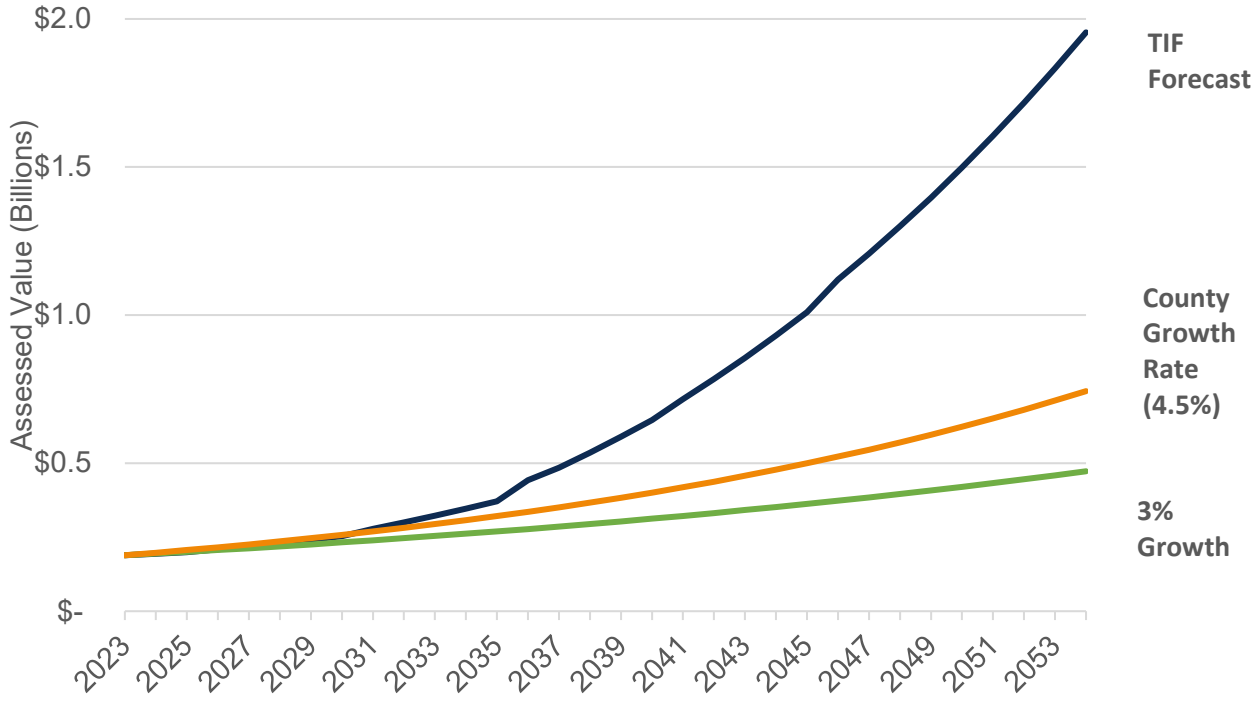
In general, these impacts start off very small, and grow over time as the assessed value of the urban renewal area grows. For example, in Exhibit 15, the City of Wilsonville is estimated to experience a total impact of $36,390 in FY 2025/26 (the first year in which tax increment would be collected), and an impact of $3,056,006 in FY 2052/53 (the 29th year TIF would be collected).[2]

To the extent that urban renewal investment is successful in stimulating new taxable development, not all of the foregone revenues should truly be categorized as impacts to taxing districts. Successful urban renewal areas cause new development to occur, above and beyond the level that would have occurred without urban renewal. In these situations, the property taxes would not have existed but for the urban renewal area's targeted investments. So, even though these tax revenues show up as TIF, and as foregone revenues, they may not be negative impacts to taxing districts.

Exhibit 14 shows the difference in tax revenues for the Area based on: (1) a 3% assessed value growth rate, the rate allowed by Oregon property tax law, (2) a 4.5% assessed value growth rate, the average growth rate in the county in the last 10 years, and (3) the projected assessed value growth rate in this Feasibility Study. The growth projected as a result of the infrastructure investments from the establishment of an urban renewal area significantly increase the amount of tax revenue that would be generated over the next 30 years in the Area.

[2] See Exhibit 15, "City of Wilsonville" column

## Exhibit 14. Projected Tax Increment Revenues Over Time




Source: Tiberius Solutions

## Exhibit 15. Impacts to Taxing Districts, General Government

| FYE | City of Wilsonville | Clackamas County City | County Extension & 4H | County Library | County Soil Conservation | TVF&R | Port of Portland | Metro | Vector Control | Subtotal |
|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | (36,390) | (34,710) | (722) | (5,737) | (722) | (22,020) | (1,012) | (1,395) | (94) | (102,802) |
| 2027 | (61,454) | (58,616) | (1,219) | (9,689) | (1,219) | (37,185) | (1,709) | (2,355) | (158) | (173,605) |
| 2028 | (87,391) | (83,355) | (1,734) | (13,778) | (1,734) | (52,880) | (2,430) | (3,349) | (225) | (246,877) |
| 2029 | (114,437) | (109,152) | (2,270) | (18,042) | (2,270) | (69,245) | (3,183) | (4,386) | (295) | (323,280) |
| 2030 | (142,634) | (136,048) | (2,829) | (22,488) | (2,829) | (86,307) | (3,967) | (5,466) | (368) | (402,937) |
| 2031 | (204,188) | (194,759) | (4,050) | (32,192) | (4,050) | (123,553) | (5,679) | (7,825) | (527) | (576,823) |
| 2032 | (256,380) | (244,541) | (5,086) | (40,421) | (5,086) | (155,134) | (7,130) | (9,826) | (661) | (724,265) |
| 2033 | (310,933) | (296,574) | (6,168) | (49,022) | (6,168) | (188,144) | (8,647) | (11,916) | (802) | (878,374) |
| 2034 | (368,136) | (351,135) | (7,303) | (58,041) | (7,303) | (222,757) | (10,238) | (14,109) | (949) | (1,039,970) |
| 2035 | (428,098) | (408,329) | (8,492) | (67,494) | (8,492) | (259,040) | (11,906) | (16,407) | (1,104) | (1,209,362) |
| 2036 | (600,721) | (572,980) | (11,916) | (94,710) | (11,916) | (363,493) | (16,707) | (23,022) | (1,549) | (1,697,014) |
| 2037 | (704,106) | (671,591) | (13,967) | (111,010) | (13,967) | (426,050) | (19,582) | (26,984) | (1,816) | (1,989,074) |
| 2038 | (828,117) | (789,875) | (16,427) | (130,562) | (16,427) | (501,089) | (23,031) | (31,737) | (2,136) | (2,339,400) |
| 2039 | (958,792) | (914,515) | (19,019) | (151,164) | (19,019) | (580,159) | (26,665) | (36,745) | (2,472) | (2,708,550) |
| 2040 | (1,096,169) | (1,045,548) | (21,744) | (172,823) | (21,744) | (663,285) | (30,485) | (42,010) | (2,827) | (3,096,635) |
| 2041 | (1,264,075) | (1,205,701) | (25,075) | (199,295) | (25,075) | (764,884) | (35,155) | (48,445) | (3,260) | (3,570,964) |
| 2042 | (1,430,294) | (1,364,244) | (28,372) | (225,501) | (28,372) | (865,462) | (39,778) | (54,815) | (3,688) | (4,040,526) |
| 2043 | (1,604,795) | (1,530,686) | (31,834) | (253,013) | (31,834) | (971,052) | (44,631) | (61,502) | (4,138) | (4,533,484) |
| 2044 | (1,788,086) | (1,705,513) | (35,469) | (281,911) | (35,469) | (1,081,960) | (49,728) | (68,527) | (4,611) | (5,051,275) |
| 2045 | (1,980,538) | (1,889,078) | (39,287) | (312,253) | (39,287) | (1,198,412) | (55,080) | (75,903) | (5,107) | (5,594,945) |
| 2046 | (2,245,560) | (2,141,861) | (44,544) | (354,037) | (44,544) | (1,358,775) | (62,451) | (86,059) | (5,791) | (6,343,622) |
| 2047 | (2,460,339) | (2,346,721) | (48,805) | (387,899) | (48,805) | (1,488,736) | (68,424) | (94,291) | (6,345) | (6,950,364) |
| 2048 | (2,684,617) | (2,560,643) | (53,254) | (423,259) | (53,254) | (1,624,446) | (74,661) | (102,886) | (6,923) | (7,583,942) |
| 2049 | (2,919,745) | (2,784,913) | (57,918) | (460,330) | (57,918) | (1,766,720) | (81,201) | (111,897) | (7,529) | (8,248,170) |
| 2050 | (3,166,173) | (3,019,961) | (62,806) | (499,182) | (62,806) | (1,915,832) | (88,054) | (121,341) | (8,165) | (8,944,319) |
| 2051 | (3,424,366) | (3,266,231) | (67,928) | (539,889) | (67,928) | (2,072,063) | (95,234) | (131,236) | (8,831) | (9,673,705) |
| 2052 | (3,483,131) | (3,322,281) | (69,093) | (549,153) | (69,093) | (2,107,622) | (96,869) | (133,488) | (8,982) | (9,839,713) |
| 2053 | (3,553,631) | (3,389,526) | (70,492) | (560,269) | (70,492) | (2,150,281) | (98,829) | (136,190) | (9,164) | (10,038,874) |
| 2054 | (3,056,005) | (2,914,880) | (60,621) | (481,812) | (60,621) | (1,849,170) | (84,990) | (117,119) | (7,881) | (8,633,099) |
| **TOTAL:** | **(41,259,301)** | **(39,353,967)** | **(818,440)** | **(6,504,976)** | **(818,444)** | **(24,965,756)** | **(1,147,456)** | **(1,581,231)** | **(106,398)** | **(116,555,970)** |

Source: Tiberius Solutions

## Exhibit 16. Impacts to Taxing Districts, Education

| FYE | Clackamas Community College | Clackamas ESD | West Linn-Wilsonville School District | Subtotal | Total |
|---|---|---|---|---|---|
| 2026 | (8,059) | (5,323) | (70,286) | (83,668) | (186,470) |
| 2027 | (13,609) | (8,989) | (118,695) | (141,293) | (314,899) |
| 2028 | (19,353) | (12,783) | (168,791) | (200,928) | (447,804) |
| 2029 | (25,343) | (16,739) | (221,029) | (263,111) | (586,391) |
| 2030 | (31,587) | (20,864) | (275,491) | (327,942) | (730,879) |
| 2031 | (45,218) | (29,868) | (394,378) | (469,464) | (1,046,287) |
| 2032 | (56,777) | (37,502) | (495,185) | (589,463) | (1,313,728) |
| 2033 | (68,858) | (45,482) | (600,550) | (714,889) | (1,593,263) |
| 2034 | (81,526) | (53,849) | (711,034) | (846,408) | (1,886,378) |
| 2035 | (94,805) | (62,620) | (826,848) | (984,273) | (2,193,635) |
| 2036 | (133,033) | (87,870) | (1,160,260) | (1,381,163) | (3,078,177) |
| 2037 | (155,928) | (102,993) | (1,359,942) | (1,618,863) | (3,607,937) |
| 2038 | (183,391) | (121,133) | (1,599,463) | (1,903,987) | (4,243,387) |
| 2039 | (212,329) | (140,247) | (1,851,853) | (2,204,430) | (4,912,980) |
| 2040 | (242,752) | (160,342) | (2,117,190) | (2,520,284) | (5,616,919) |
| 2041 | (279,936) | (184,902) | (2,441,491) | (2,906,330) | (6,477,294) |
| 2042 | (316,746) | (209,216) | (2,762,534) | (3,288,495) | (7,329,022) |
| 2043 | (355,390) | (234,741) | (3,099,572) | (3,689,703) | (8,223,188) |
| 2044 | (395,981) | (261,552) | (3,453,589) | (4,111,122) | (9,162,397) |
| 2045 | (438,600) | (289,703) | (3,825,300) | (4,553,603) | (10,148,548) |
| 2046 | (497,291) | (328,469) | (4,337,175) | (5,162,935) | (11,506,557) |
| 2047 | (544,855) | (359,885) | (4,752,009) | (5,656,749) | (12,607,113) |
| 2048 | (594,522) | (392,692) | (5,185,190) | (6,172,404) | (13,756,345) |
| 2049 | (646,593) | (427,085) | (5,639,327) | (6,713,005) | (14,961,175) |
| 2050 | (701,165) | (463,131) | (6,115,288) | (7,279,585) | (16,223,904) |
| 2051 | (758,344) | (500,898) | (6,613,974) | (7,873,216) | (17,546,921) |
| 2052 | (771,357) | (509,494) | (6,727,475) | (8,008,326) | (17,848,039) |
| 2053 | (786,970) | (519,806) | (6,863,643) | (8,170,419) | (18,209,294) |
| 2054 | (676,768) | (447,016) | (5,902,505) | (7,026,290) | (15,659,389) |
| **TOTAL:** | **(9,137,086)** | **(6,035,194)** | **(79,690,067)** | **(94,862,348)** | **(211,418,320)** |

Source: Tiberius Solutions

# POLITICAL FEASIBLITY & OTHER CONSIDERATIONS

## Residents

The Town Center Plan was vetted thoroughly with the residents of Wilsonville. There has been tremendous support throughout the planning and adoption process. An excerpt from the Planning Commission findings for the adoption of the Town Center Plan identifying public input is shown below:

> *The Town Center Plan, which established the land use, transportation, park and open space, and infrastructure frameworks, began in Fall 2016. The community engagement was divided into three phases. The first phase of the project established the community's vision and goals for the future of Town Center and identified existing issues and priority improvements. During the second phase of the project, community members and stakeholders defined how they want the "building blocks" of Town Center to look and function in the future. These building blocks include land use, open spaces and parks, and the multimodal transportation network. Based on community and stakeholder ideas and feedback, the project team drafted and then refined the building blocks. This process resulted in a Draft Community Design Concept that was supported by the community and will be implemented through the Town Center Plan. Public input continued through the end of the project.*
>
> *Multiple work sessions were held with the Planning Commission and City Council, including three joint Planning Commission and City Council meetings. Public comment opportunities were available at every meeting. The Planning Commission had extensive and productive informal discussions with the participating public, technical partners and the project taskforce. Community design workshops, open houses, and surveys were held throughout the project. Other citizen involvement included individual and small group stakeholder meetings, a public kickoff event, two community design workshops, a citywide barbeque, an interactive pop-up event, neighborhood "idea centers", neighborhood pop-ups, targeted engagement activities, and an ongoing map-based and visual preference online surveys.*
>
> *In addition to the major engagement activities listed above, the City went to a variety of established community events, referred to as Community Out-and-Abouts, and neighborhood meetings, which provided community members with convenient opportunities to participate in the Town Center Plan. The input received at these events is incorporated in the Question of the Month results and Community Design Survey feedback summary (see Attachment C of the staff report). Community members were provided with ongoing project updates and opportunities for input.*

The adoption of an urban renewal plan is one of the significant implementation tools for the Town Center Plan. We anticipate residents' support of the financing tool that will provide the transformation of downtown Wilsonville.

## Taxing Districts

As noted previously, the impact of urban renewal is on the overlapping taxing districts. The City has taken recent actions to reduce that impact on the taxing districts. The City closed down the Year 2000 Urban Renewal Plan prior to FY 2023/24 and intends to close down the West Side Urban Renewal Plan prior to FY 2024/25. Combined, these plans were previously collecting $9 million of TIF revenue each year. Thus, the termination of these plans results in a $9 million per year increase in tax revenue to the overlapping taxing districts. The projected impacts on the taxing districts from the proposed Town Center Plan are shown in Exhibit 15 and Exhibit 16. The annual impact of the proposed Town Center Plan is not forecast to equal or exceed $9 million (the amount of tax revenue previously foregone from the two closing URAs) until FY 2043/44.[3]

Tualatin Valley Fire and Rescue (TVF&R) was a member of the Task Force and made the following recommendations for consideration in the future review of the urban renewal area.

- A time certain end date of the urban renewal area
- Performance metrics and expectations
- Encourages the city to pursue grants or other funding opportunities that may be pursued in order to minimize the public sector financial burden of the proposed projects.

### Year 2000 Plan Assessed Value Background

When the Year 2000 Urban Renewal Area was established in 1992, it had an assessed value (frozen tax base) of $44 million. The City voluntarily established a $4 million dollar limit of the tax increment revenues in FY 2018/19. Prior to this, the City had been returning tax revenue to overlapping taxing districts by removing property from the Year 2000 Urban Renewal Area. When the Plan terminated taking division of tax revenues in FY 2023/24, it had an incremental assessed value (assessed value above the frozen base) of $517,924,458. The termination of the Year 2000 Urban Renewal Area permanently added the approximate $518 million in assessed value back to the tax rolls on which taxes are distributed to all overlapping taxing districts. Appendix D provides a summary of the overall impact of the Year 2000 Plan.

### West Side Plan Assessed Value Background

The West Side Plan was created in 2003. The City voluntarily established a $5 million dollar limit of the tax increment revenues[4] in FY 2018/19. The City intends to terminate taking division of tax revenues for the West Side Urban Renewal Plan after FY 2023/24. Overlapping

[3] This is projected using the incremental assessed values of the Y2000 and West Side Plans after the voluntary underlevy and comparing the total assessed value to the projections for the proposed Town Center Plan.

[4] Taking division of taxes is the distribution of tax increment revenue from the increased assessed value in an urban renewal area to the urban renewal agency instead of to the overlapping taxing districts.

taxing districts will receive those increased tax revenues in FY 2024/25. The City projects an additional $1,136,640,917 of assessed value to be placed back on the tax rolls as a result of the closure of the West Side Urban Renewal Area.

### Exhibit 17. Summary of Impacts on Closing and New Urban Renewal Plans

| | Year 2000 | West Side | Town Center (Projected) |
|---|---|---|---|
| Amount of Assessed Value returned to be Tax rolls | $561,924,458 (FY 2023/24) | $1,136,640,917 (FY 2023/24) | |
| Original Frozen Base | $44,000,000 | $16,500,000 | $194,239,498 |
| Incremental Value in FY 2023/24 | Not applicable | $1,136,640,917 | Not applicable |
| Termination | End of FY 2022/23 (terminated) | End of FY 2023/24 (projected) | (projected in 2053/54) |
| Projected future assessed Value | | | $1,954,732,089 |

Source: Data from Clackamas County Assessor's SAL reports, FY 2023/24 and FY 2022/23

## NEXT STEPS

The Town Center Urban Renewal Feasibility Study will be presented to the Wilsonville City Council. If they direct staff to pursue the development of an urban renewal plan, the following steps must be completed:

1. City Council to decide whether to place the question of forming an urban renewal area to help fund infrastructure improvements for the Wilsonville Town Center on the ballot.
2. City Council to adopt a ballot title for the formation of an urban renewal area for the Wilsonville Town Center.
3. Determine whether to hire a consultant to assist in the urban renewal plan preparation and adoption process.
4. Prepare an Urban Renewal Plan (Plan) pursuant to ORS 457.085 including goals and objectives and projects to pursue.
5. Complete the Report that Accompanies the Plan (Report). The Report must comply with ORS 457.087, both identifying existing conditions and establishing financial feasibility. There is generally a large amount of city staff input in this document, as existing conditions must be identified and projects must be defined.
6. Consider the voters' input on a ballot measure.
7. If the vote is positive and City Council so directs, present the draft Plan and Report to the Urban Renewal Task Force for their input and review.
8. Present the draft Plan and Report to the Agency.
9. Complete a legal description of the urban renewal area that is typically done outside of the urban renewal plan consultant's contract. This legal description must be complete by the final action in front of City Council.
10. Agency, if desired, to pass a motion to start the public review process.
11. Transmit the Plan and Report to all impacted taxing districts.
12. Present the Plan and Report to the Wilsonville Planning Commission for their finding of conformance of the Wilsonville Urban Renewal Plan with the Wilsonville Comprehensive Plan.
13. Present the Plan and Report to the Clackamas County Commission. No action on their behalf is required.
14. Conduct a public hearing in front of Wilsonville City Council, advertised to a specific group as identified in 457.120. Review a non-emergency ordinance.
15. Publish notice if the ordinance for the Plan is adopted.

The process of formally adopting an urban renewal plan typically takes three to four months once the Plan is prepared.

## TASK FORCE OVERVIEW

The Wilsonville Urban Renewal Task Force (Task Force) is comprised of a broad group of stakeholders and provides recommendations to the Wilsonville City Council on the use of urban renewal, also called tax increment financing (TIF). The Task Force was originally convened in September 2013 and has convened as needed over the past decade to review decisions and provide advice regarding existing urban renewal areas and potential new urban renewal areas. The Task Force has provided input on numerous topics, including but not limited to: amendments to the existing Year 2000 and West Side plans, the preparation and adoption of the Coffee Creek Plan, the expiration of the "TIF Zones" program, and the establishment of the reengineered Wilsonville Investment Now (WIN) program.

### Meeting 1

Wilsonville staff and the consultant team provided the basic context for the Town Center Urban Renewal Feasibility Study. The review covered urban renewal basics, the Town Center Plan, the Town Center Infrastructure Funding Plan, and the Urban Renewal Strategic Plan. The purpose of the Feasibility Study was described, including the components of establishing a boundary, providing financial analysis of that boundary, establishing blight, and reviewing potential projects.

Main Question:

There was a question about the I-5 bike pedestrian bridge and how it would entice developers to invest in the Area.

Responses:

- The project is about connecting and completing the bike-pedestrian infrastructure loop in the City. The bridge connects the Transit Center, west-side businesses, and residents with Town Center and provides the possibility for cyclists and pedestrians to access Town Center from the west side without having to use the Wilsonville Road access.
- Developers would want to know there was a safe connection between the Transit Center and Town Center for future employees.
- Transit Oriented development will soon be constructed at the Transit Center which includes over 100 apartments. A bridge crossing will enable greater connectivity between those residents and Town Center.
- The bridge crossing will bolster market feasibility for development as it connects customers to Town Center who would be otherwise cut off.

Other questions related to establishing the boundary. A suggested boundary was approved, which incorporated the boundary in the Town Center Plan plus properties on the west side of I-5 for the pedestrian/bike bridge landing and south of Wilsonville Road to incorporate all of Wilsonville Road for the future intersection improvements.

## Meeting 2

The consultant team presented the preliminary financial analysis of the boundary chosen in meeting one. The analysis covered two time frames (25 and 30 years) and low, medium, and high growth scenarios to provide bookends for reviewing financial feasibility. The capacity of the potential amount of funds for projects ranged from $18,450,000 to $79,050,000, depending on the time frame and the projected assessed value growth in the Area.

Main Questions:

With the real estate market in its present condition, what is it that will attract developers?

Responses:

- This area has a lot of things going for it, including proximity to I-5 and the fact that much of the Area is planned for multifamily construction, which is in demand. Office construction is slower right now. There is retail space already in the area.
- This area is ready to be redeveloped and the product type needs to be improved from big box/ neighborhood shopping center feel to an area that is more of the heart of the town. To do that, we need to increase the density, remove excess parking, discourage big box, and focus on redevelopment. Would like something in line with what Lake Oswego and Bridgeport did, with a healthier mix. Having the freeway helps, but when you draw demographic circles to assess development feasibility, the highway is a barrier to customers, so a connection like the proposed bridge is needed. To attract new development in line with the Town Center Plan, the City's involvement is needed. It will not happen on its own. The traffic pattern needs to be more Main Street instead of circular, tying things in a more connected way, connected parks, and more pedestrian and bike friendly. The City needs to partner with some development to make it happen. Without the urban renewal area, this won't happen, you will just have a nice plan. The freeway is helpful, but it also divides the town into two parts. The parts need to be connected.
- It is hard to get retail without the demographics to support it. Make it a place of energy where people want to live.
- The Town Center Plan is a community development exercise and also an economic development exercise. The tax revenue potential under the Town Center Plan is so much greater that what now exists.

Main Comments:

Structured parking: This may need to be moved up in the priority list, and may need to happen when Fry's develops because if you want to eliminate all of that parking, you will need structured parking. These costs, plus the utility systems relocation costs, may kill redevelopment of this site in the way that is envisioned in the Town Center Plan.

I-5 Pedestrian Bridge: The TVF&R point of view would be that the I-5 pedestrian bridge should not be the number one project. Streets, infrastructure, parking structure would be more important. TIF funds should be spent where they spur development that would not otherwise

occur. Have you considered asking the voters to approve a bond for the pedestrian bridge project?

- The I-5 pedestrian bridge will impact the traffic studies of businesses that want to develop. The bridge will be important for the feasibility.
- The bridge is critical to the implementation of the Town Center Plan in getting private investment by getting people between Villebois and the Transit Center into Town Center.
- If the feel is to have a lively walk and play area, but we don't have the ability to get people there, how do we sell this vision? What are the methods to bring people to the Town Center? Nobody wants to walk through large parking lots. At some point we need to make the switch to make the area walkable.
- We have a need for our employees to get from the transit center to their buildings, including businesses like Mentor Graphics (now Siemens EDA). It makes sense for the employers. Many multifamily residents want the option to not have a car and use transit instead. The I-5 ped/bike bridge makes that possible.

## Meeting 3

The consultant team presented an updated financial analysis that included significant input from City staff on the development potential in the Area. The consultant team also presented the preliminary blight findings for the Area with the conclusion that the Area meets the statutory definition of blight.

## Meeting 4

Staff presented the proposed project list and the sources and uses of potential funding mechanisms including tax increment financing, system development charges, and developer contributions. The proposed projects are identified earlier in this Feasibility Study.

Comment:

TVF& R requested the following to be incorporated into any future Town Center Urban Renewal Plan:

- A time certain end date of the urban renewal area
- Performance metrics and expectations
- Encourages the city to pursue grants or other funding opportunities that may be pursued in order to minimize the public sector financial burden of the proposed projects.

Response:

The City values the partnership with TVF&R and will consider their requests.

## Meeting 5

Staff presented the draft ballot measure Caption, Question and Summary.

Caption: There was a consensus recommendation to use the terminology “urban renewal” instead of “tax increment financing”. Urban renewal has been very successful in Wilsonville and the electorate is familiar with this term. The word “tax” makes people think it is a new tax and, therefore, can be confusing.

Summary: It was recommended that paragraph 2 of the summary be rewritten in clearer language. Elaine offered to provide alternate language for consideration. Recommended that the statement that the development in the Town Center would not happen but for the ability to fund projects with urban renewal. It was also recommended to move the project list to earlier in the summary and to make sure to state that the projects are not limited to this list.

Explanatory Statement: The Task Force did not have a lot of time to review the Explanatory Statement. They provided the following input:

- Make sure that the language about private development was clear that the city would not be subsidizing developers.
- The $190 million in funding was available over a period of time, not at the beginning of the urban renewal area.
- The information talks about the life of the district - be more clear about what that is.

Staff presented the Communication Plan for the ballot measure. They provided the following input:

- Will the information on social media be interactive: will someone be responding to posts?
- Make sure everything you say has been cleared by the Secretary of State.
- The timeline for Secretary of State review is fairly lengthy, so make sure to give yourselves enough time.

Consultant team presented the Feasibility Study. There were no questions nor comments. The Taks Force voted a consensus vote in favor of the body of work found in the Feasibility Study and attachments and to send it on to the City Council with one abstention (TVF&R) and the remainder affirmative votes.

**Appendix A. Tiberius Solutions Financial Feasibility Memorandum**
**Appendix B. How Tax Increment Financing Works, Tiberius Solutions**
**Appendix C. Comprehensive Plan Findings for Adoption of the Town Center Plan**
**Appendix D. Year 2000 Urban Renewal Fact Sheet**

TIBERIUS SOLUTIONS

# Appendix B: Tiberius Solutions Financial Feasibility Memorandum

DATE: November 3, 2023
TO: Elaine Howard, Elaine Howard Consulting
FROM: Nick Popenuk and Ali Danko
SUBJECT: FEASIBILITY STUDY RESULTS: WILSONVILLE TOWN CENTER AREA

For the City of Wilsonville (City), Tiberius Solutions, in collaboration with Elaine Howard Consulting, conducted a feasibility study for the Wilsonville Town Center Area (Area). One element of the feasibility study is estimating the financial capacity of the potential new Area. This memorandum summarizes the results of the financial analysis.

This memorandum is organized according to the steps in the technical analysis:

- Determining the applicable consolidated tax rate
- Forecasting future growth in assessed value
- Calculating tax increment financing revenues
- Estimating financial capacity

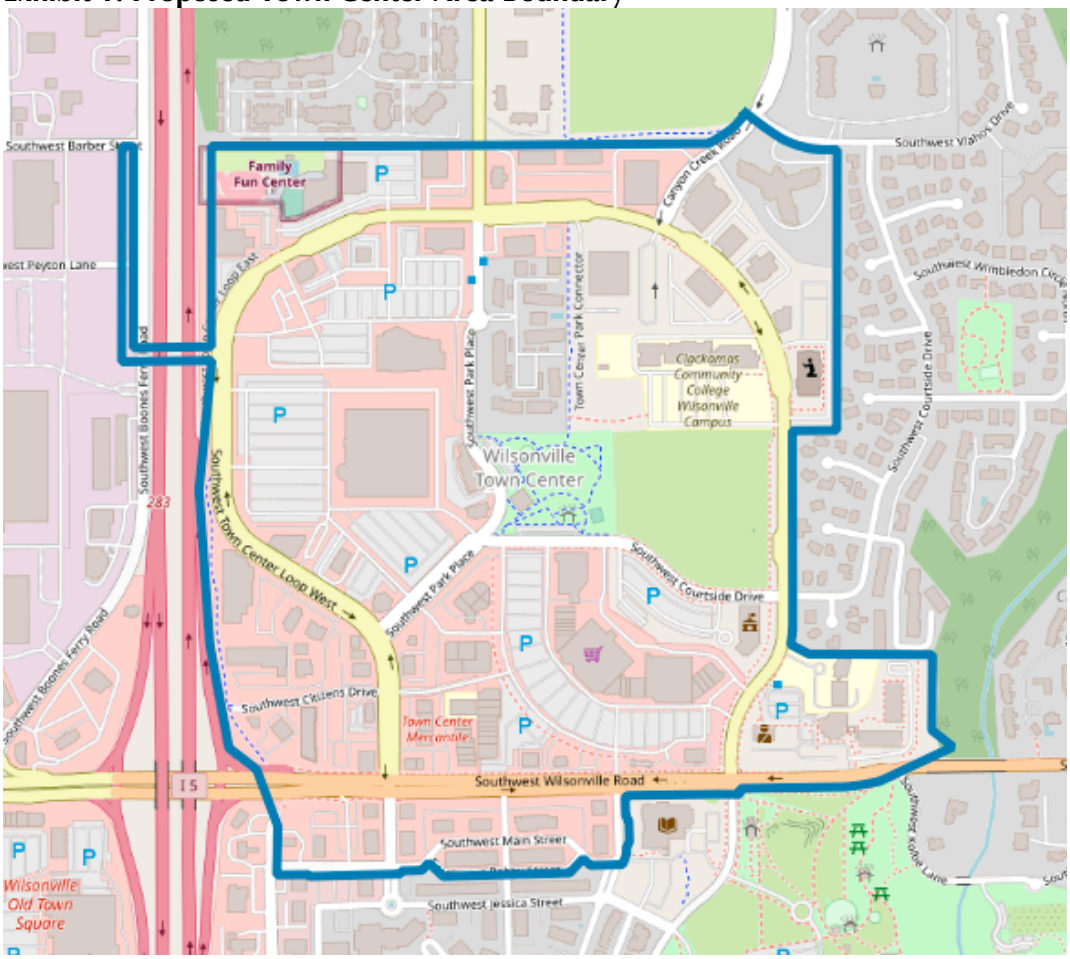
This technical analysis relies on assumptions about future economic and financial conditions. These assumptions were developed in collaboration with City staff and members of the Wilsonville Urban Renewal Task Force.

This memorandum includes two attachments:

- Attachment A: Detailed Assumptions for New Construction
- Attachment B: How Tax Increment Financing Works

Exhibit 1 shows the proposed Area boundary that was analyzed in this feasibility study.

**Exhibit 1. Proposed Town Center Area Boundary**




Source: Tiberius Solutions with boundary provided by the City of Wilsonville

## Consolidated Tax Rate

All new urban renewal plans are "permanent rate" plans, as defined by Oregon Revised Statutes (ORS) 457.010. The consolidated tax rate is equal to the sum of all permanent tax levy rates. Local option levies and general obligation bond levies are not impacted by new urban renewal plans. The Area would be located in four tax code areas (TCAs) of Clackamas County, TCA 003-027, TCA 003-023, TCA 003-042, and TCA 03-053. Exhibit 2 shows the consolidated tax rate for these TCAs in fiscal year ending (FYE) 2023. All TCAs overlap the same taxing districts and have the same consolidated tax rate.

**Exhibit 2. Consolidated Tax Rate**

| Taxing District | Tax Code Area 003-027, 003-023, 003-042, 003-053 |
|---|---|
| **General Government** | |
| City of Wilsonville | $ 2.5206 |
| Clackamas County City | $ 2.4042 |
| County Extension & 4H | $ 0.0500 |
| County Library | $ 0.3974 |
| County Soil Conservation | $ 0.0500 |
| TVF&R | $ 1.5252 |
| Port of Portland | $ 0.0701 |
| Road District 15 Wilsonville | $ - |
| Metro | $ 0.0966 |
| Vector Control | $ 0.0065 |
| *Subtotal* | *$ 7.1206* |
| **Education** | |
| Clackamas Community College | $ 0.5582 |
| Clackamas ESD | $ 0.3687 |
| West Linn-Wilsonville School District | $ 4.8684 |
| *Subtotal* | *$ 5.7953* |
| **Total** | **$ 12.9159** |

Source: Clackamas County Assessor, SAL Table 4a and Rate Book, FYE 2023

## Assessed Value Growth

The forecast of assessed value within the Area includes increases from appreciation of existing real property value (limited by the Oregon Constitution to a maximum of 3% annually)[1], and from new construction (not subject to the 3% limit). City staff and members of the Wilsonville Urban Renewal Task Force provided input on key assumptions for the type, value, timing and amount of development expected to occur in the Area. Based on these assumptions, we forecast future increases in assessed value from new construction, as shown in Exhibit 3. New development in the area through FYE 2054 is forecast to total $602 million in constant 2023 dollars, or $1.1 billion in nominal dollars. The underlying assumptions are detailed in Attachment A. The amount and timing of new construction forecast to occur in the Area is predicated on the assumption that the City will actively be funding infrastructure and economic development projects in the Area through urban renewal. Without these public investments, it is expected that new construction activity would be significantly lower than forecast.

[1] This forecast conservatively assumes existing personal property and utility accounts experience a 0% growth rate.

**Exhibit 3. Assessed Value from New Construction**

| | Assessed Value | |
|---|---|---|
| FYE | 2023 $ | Nominal $ |
| 2023 | $ - | $ - |
| 2024 | $ - | $ - |
| 2025 | $ - | $ - |
| 2026 | $ 3,911,174 | $ 4,273,846 |
| 2027 | $ 3,911,174 | $ 4,402,061 |
| 2028 | $ 3,911,174 | $ 4,534,123 |
| 2029 | $ 3,911,174 | $ 4,670,146 |
| 2030 | $ 3,911,174 | $ 4,810,251 |
| 2031 | $ 14,513,038 | $ 18,384,682 |
| 2032 | $ 10,347,127 | $ 13,500,654 |
| 2033 | $ 10,347,127 | $ 13,905,674 |
| 2034 | $ 10,347,127 | $ 14,322,844 |
| 2035 | $ 10,347,127 | $ 14,752,529 |
| 2036 | $ 41,567,275 | $ 61,042,945 |
| 2037 | $ 19,351,941 | $ 29,271,547 |
| 2038 | $ 23,791,597 | $ 37,066,533 |
| 2039 | $ 23,791,597 | $ 38,178,529 |
| 2040 | $ 23,791,597 | $ 39,323,885 |
| 2041 | $ 29,566,496 | $ 50,334,980 |
| 2042 | $ 27,009,574 | $ 47,361,451 |
| 2043 | $ 27,009,574 | $ 48,782,294 |
| 2044 | $ 27,009,574 | $ 50,245,763 |
| 2045 | $ 27,009,574 | $ 51,753,136 |
| 2046 | $ 40,345,596 | $ 79,625,524 |
| 2047 | $ 27,009,574 | $ 54,904,902 |
| 2048 | $ 27,009,574 | $ 56,552,049 |
| 2049 | $ 27,009,574 | $ 58,248,610 |
| 2050 | $ 27,009,574 | $ 59,996,069 |
| 2051 | $ 27,009,574 | $ 61,795,951 |
| 2052 | $ 27,009,574 | $ 63,649,829 |
| 2053 | $ 27,009,574 | $ 65,559,324 |
| 2054 | $ 27,009,574 | $ 67,526,104 |
| **Total** | **$ 601,778,398** | **$ 1,118,776,235** |

Source: Tiberius Solutions with input from City of Wilsonville and the Wilsonville Urban Renewal Task Force

Exhibit 4 combines the forecast growth in assessed value from new construction with anticipated growth from appreciation to show the total forecast growth in assessed value in the Area. Total assessed value in the area is expected to grow from $194 million in FYE 2024 when the frozen base is established to $1.95 billion in FYE 2054 when the Area closes down. This represents a 1,000% increase in assessed value over the 30-year period.

**Exhibit 4. Assessed Value Growth**

| | Assessed Value | | | |
|---|---|---|---|---|
| FYE | Prior Year | Plus: Increase from Appreciation | Plus: Increase from New Construction | Total |
| 2023 | $ - | | $ - | $ 189,015,329 |
| 2024 | $ 189,015,329 | $ 5,224,168 | $ - | $ 194,239,497 |
| 2025 | $ 194,239,497 | $ 5,380,893 | $ - | $ 199,620,391 |
| 2026 | $ 199,620,391 | $ 5,542,320 | $ 4,273,846 | $ 209,436,557 |
| 2027 | $ 209,436,557 | $ 5,836,805 | $ 4,402,061 | $ 219,675,423 |
| 2028 | $ 219,675,423 | $ 6,143,971 | $ 4,534,123 | $ 230,353,517 |
| 2029 | $ 230,353,517 | $ 6,464,314 | $ 4,670,146 | $ 241,487,977 |
| 2030 | $ 241,487,977 | $ 6,798,348 | $ 4,810,251 | $ 253,096,576 |
| 2031 | $ 253,096,576 | $ 7,146,606 | $ 18,384,682 | $ 278,627,864 |
| 2032 | $ 278,627,864 | $ 7,912,544 | $ 13,500,654 | $ 300,041,062 |
| 2033 | $ 300,041,062 | $ 8,554,940 | $ 13,905,674 | $ 322,501,677 |
| 2034 | $ 322,501,677 | $ 9,228,759 | $ 14,322,844 | $ 346,053,279 |
| 2035 | $ 346,053,279 | $ 9,935,307 | $ 14,752,529 | $ 370,741,115 |
| 2036 | $ 370,741,115 | $ 10,675,942 | $ 61,042,945 | $ 442,460,002 |
| 2037 | $ 442,460,002 | $ 12,827,509 | $ 29,271,547 | $ 484,559,058 |
| 2038 | $ 484,559,058 | $ 14,090,480 | $ 37,066,533 | $ 535,716,071 |
| 2039 | $ 535,716,071 | $ 15,625,191 | $ 38,178,529 | $ 589,519,791 |
| 2040 | $ 589,519,791 | $ 17,239,302 | $ 39,323,885 | $ 646,082,978 |
| 2041 | $ 646,082,978 | $ 18,936,198 | $ 50,334,980 | $ 715,354,156 |
| 2042 | $ 715,354,156 | $ 21,014,333 | $ 47,361,451 | $ 783,729,940 |
| 2043 | $ 783,729,940 | $ 23,065,607 | $ 48,782,294 | $ 855,577,840 |
| 2044 | $ 855,577,840 | $ 25,221,044 | $ 50,245,763 | $ 931,044,647 |
| 2045 | $ 931,044,647 | $ 27,485,048 | $ 51,753,136 | $ 1,010,282,831 |
| 2046 | $ 1,010,282,831 | $ 29,862,193 | $ 79,625,524 | $ 1,119,770,548 |
| 2047 | $ 1,119,770,548 | $ 33,146,825 | $ 54,904,902 | $ 1,207,822,275 |
| 2048 | $ 1,207,822,275 | $ 35,788,377 | $ 56,552,049 | $ 1,300,162,701 |
| 2049 | $ 1,300,162,701 | $ 38,558,590 | $ 58,248,610 | $ 1,396,969,901 |
| 2050 | $ 1,396,969,901 | $ 41,462,805 | $ 59,996,069 | $ 1,498,428,775 |
| 2051 | $ 1,498,428,775 | $ 44,506,572 | $ 61,795,951 | $ 1,604,731,298 |
| 2052 | $ 1,604,731,298 | $ 47,695,647 | $ 63,649,829 | $ 1,716,076,774 |
| 2053 | $ 1,716,076,774 | $ 51,036,012 | $ 65,559,324 | $ 1,832,672,110 |
| 2054 | $ 1,832,672,110 | $ 54,533,872 | $ 67,526,104 | $ 1,954,732,086 |

Source: Tiberius Solutions
Note: Dollar values in this summary exhibit differs from values reported in Exhibit 5 due to rounding

## Tax Increment Financing Revenue

Exhibit 5 and Exhibit 6 show the forecast of tax increment financing (TIF) revenues for the Area. The analysis assumes the effective date of the proposed Area would be between January 1, 2024 and October 1, 2024. Therefore, the frozen base would be calculated using the FYE 2024 tax roll, and the first year that the Area would collect TIF would be FYE 2026.

The frozen base of the proposed Area is estimated to be $194 million. ORS 457.190 establishes upper limits on the maximum indebtedness of a Area based upon its frozen base value. Thus, based upon the estimated frozen base of the proposed Area, it cannot exceed a maximum indebtedness of $181 million. Exhibit 5 shows projected annual TIF revenue through FYE 2054, which we estimate to be the final year the Area would need to collect TIF revenues to repay the $181 million maximum indebtedness. Total TIF

over this 29-year period is estimated to be $211.4 million. The forecast anticipates the Area would not collect the full amount of TIF revenue in its final year, as it is not needed to reach its maximum indebtedness. Total TIF revenue is forecast to exceed the amount of maximum indebtedness, due to the estimated cost of interest on debt incurred by the Area.

ORS 457.470 requires urban renewal areas to "share" a portion of the increment value with overlapping taxing districts once annual TIF revenues exceed certain thresholds. For the proposed Area, revenue sharing would first occur when annual TIF revenue exceeds ten percent of the maximum indebtedness of the plan ($18.1 million per year). At this threshold, the Area receives TIF equal to ten percent of the maximum indebtedness plus 25 percent of the remaining tax revenue generated by the increment value of the Area. We forecast the Area would reach the threshold required to initiate revenue sharing in FYE 2051, and revenue sharing would begin the following year, in FYE 2052.

## Exhibit 5. TIF Revenue Forecast

| | Assessed Value | | | | | TIF Revenue | | |
|---|---|---|---|---|---|---|---|---|
| FYE | Total | Frozen Base | Increment (Used) | Increment (Not Used) | Tax Rate | Gross | Adjustments | Net |
| 2023 | $ 189,015,329 | $ - | $ - | $ - | $ 12.9159 | $ - | $ - | $ - |
| 2024 | $ 194,239,498 | $ 194,239,498 | $ - | $ - | $ 12.9159 | $ - | $ - | $ - |
| 2025 | $ 199,620,391 | $ 194,239,498 | $ - | $ 5,380,893 | $ 12.9159 | $ - | $ - | $ - |
| 2026 | $ 209,436,557 | $ 194,239,498 | $ 15,197,059 | $ - | $ 12.9159 | $ 196,284 | $ (9,814) | $ 186,470 |
| 2027 | $ 219,675,423 | $ 194,239,498 | $ 25,435,925 | $ - | $ 12.9159 | $ 328,528 | $ (13,629) | $ 314,899 |
| 2028 | $ 230,353,518 | $ 194,239,498 | $ 36,114,020 | $ - | $ 12.9159 | $ 466,445 | $ (18,641) | $ 447,804 |
| 2029 | $ 241,487,978 | $ 194,239,498 | $ 47,248,480 | $ - | $ 12.9159 | $ 610,257 | $ (23,866) | $ 586,391 |
| 2030 | $ 253,096,577 | $ 194,239,498 | $ 58,857,079 | $ - | $ 12.9159 | $ 760,192 | $ (29,313) | $ 730,879 |
| 2031 | $ 278,627,865 | $ 194,239,498 | $ 84,388,367 | $ - | $ 12.9159 | $ 1,089,952 | $ (43,665) | $ 1,046,287 |
| 2032 | $ 300,041,063 | $ 194,239,498 | $ 105,801,565 | $ - | $ 12.9159 | $ 1,366,522 | $ (52,794) | $ 1,313,728 |
| 2033 | $ 322,501,678 | $ 194,239,498 | $ 128,262,180 | $ - | $ 12.9159 | $ 1,656,621 | $ (63,358) | $ 1,593,263 |
| 2034 | $ 346,053,280 | $ 194,239,498 | $ 151,813,782 | $ - | $ 12.9159 | $ 1,960,812 | $ (74,434) | $ 1,886,378 |
| 2035 | $ 370,741,116 | $ 194,239,498 | $ 176,501,618 | $ - | $ 12.9159 | $ 2,279,677 | $ (86,042) | $ 2,193,635 |
| 2036 | $ 442,460,003 | $ 194,239,498 | $ 248,220,505 | $ - | $ 12.9159 | $ 3,205,991 | $ (127,814) | $ 3,078,177 |
| 2037 | $ 484,559,058 | $ 194,239,498 | $ 290,319,560 | $ - | $ 12.9159 | $ 3,749,738 | $ (141,802) | $ 3,607,937 |
| 2038 | $ 535,716,071 | $ 194,239,498 | $ 341,476,573 | $ - | $ 12.9159 | $ 4,410,477 | $ (167,090) | $ 4,243,387 |
| 2039 | $ 589,519,791 | $ 194,239,498 | $ 395,280,293 | $ - | $ 12.9159 | $ 5,105,401 | $ (192,421) | $ 4,912,980 |
| 2040 | $ 646,082,979 | $ 194,239,498 | $ 451,843,481 | $ - | $ 12.9159 | $ 5,835,965 | $ (219,046) | $ 5,616,919 |
| 2041 | $ 715,354,157 | $ 194,239,498 | $ 521,114,659 | $ - | $ 12.9159 | $ 6,730,665 | $ (253,371) | $ 6,477,294 |
| 2042 | $ 783,729,941 | $ 194,239,498 | $ 589,490,443 | $ - | $ 12.9159 | $ 7,613,800 | $ (284,778) | $ 7,329,022 |
| 2043 | $ 855,577,842 | $ 194,239,498 | $ 661,338,344 | $ - | $ 12.9159 | $ 8,541,780 | $ (318,592) | $ 8,223,188 |
| 2044 | $ 931,044,649 | $ 194,239,498 | $ 736,805,151 | $ - | $ 12.9159 | $ 9,516,502 | $ (354,105) | $ 9,162,397 |
| 2045 | $ 1,010,282,833 | $ 194,239,498 | $ 816,043,335 | $ - | $ 12.9159 | $ 10,539,934 | $ (391,387) | $ 10,148,548 |
| 2046 | $ 1,119,770,551 | $ 194,239,498 | $ 925,531,053 | $ - | $ 12.9159 | $ 11,954,067 | $ (447,509) | $ 11,506,557 |
| 2047 | $ 1,207,822,278 | $ 194,239,498 | $ 1,013,582,780 | $ - | $ 12.9159 | $ 13,091,334 | $ (484,221) | $ 12,607,113 |
| 2048 | $ 1,300,162,704 | $ 194,239,498 | $ 1,105,923,206 | $ - | $ 12.9159 | $ 14,283,994 | $ (527,648) | $ 13,756,345 |
| 2049 | $ 1,396,969,903 | $ 194,239,498 | $ 1,202,730,405 | $ - | $ 12.9159 | $ 15,534,346 | $ (573,170) | $ 14,961,175 |
| 2050 | $ 1,498,428,778 | $ 194,239,498 | $ 1,304,189,280 | $ - | $ 12.9159 | $ 16,844,778 | $ (620,874) | $ 16,223,904 |
| 2051 | $ 1,604,731,301 | $ 194,239,498 | $ 1,410,491,803 | $ - | $ 12.9159 | $ 18,217,771 | $ (670,850) | $ 17,546,921 |
| 2052 | $ 1,716,076,777 | $ 194,239,498 | $ 1,433,438,058 | $ 88,399,221 | $ 12.9159 | $ 18,514,143 | $ (666,104) | $ 17,848,039 |
| 2053 | $ 1,832,672,113 | $ 194,239,498 | $ 1,462,535,753 | $ 175,896,862 | $ 12.9159 | $ 18,889,966 | $ (680,672) | $ 18,209,294 |
| 2054 | $ 1,954,732,089 | $ 194,239,498 | $ 1,254,284,856 | $ 506,207,735 | $ 12.9159 | $ 16,200,218 | $ (540,829) | $ 15,659,389 |
| **Total** | | | | | | **$ 219,496,158** | **$ (8,077,841)** | **$ 211,418,317** |

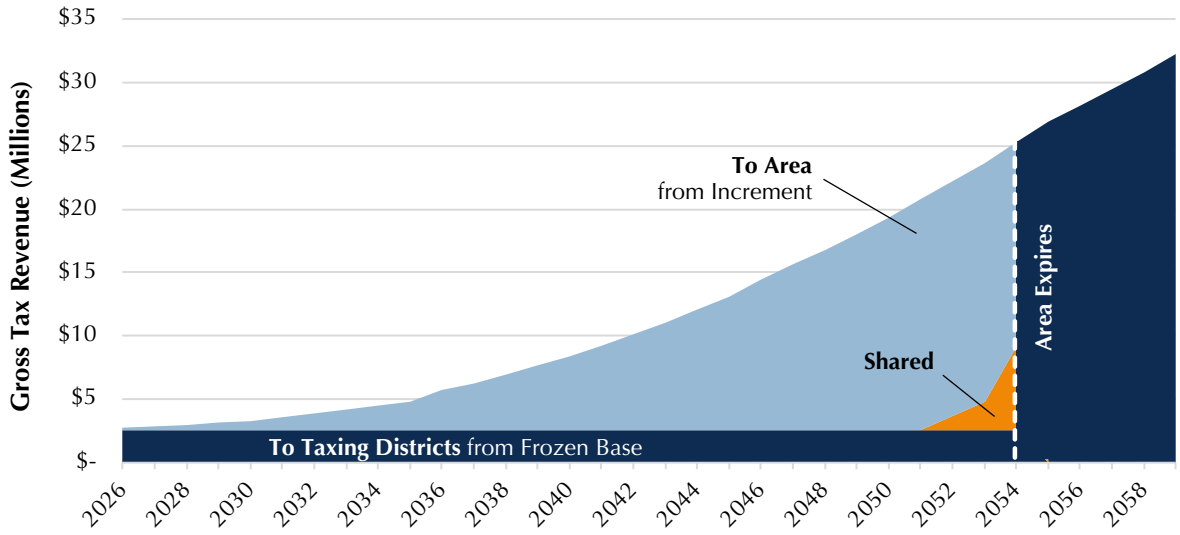
Source: Tiberius Solutions

Notes:

Adjustments include prior year taxes and losses from delinquent taxes, discounts from early payment, compression, and truncation

All increment is not used in FYE 2025, as the Area could not begin collecting TIF until FYE 2026

**Exhibit 6. Net TIF Revenue Forecast**




Source: Tiberius Solutions

## Financial Capacity

Net TIF revenue gives a general idea of the financial capacity of the Area each year but is insufficient to understand the total funding available for projects over the life of the Area. Most urban renewal areas will typically use financing (incurring debt through bonds, loans, or other financial instruments) to accelerate the timing of available funding at the expense of future interest payments. To estimate borrowing capacity, we created a hypothetical finance plan, showing how much funding could become available for projects over time, based on generic assumptions for debt. For this analysis, we assumed a series of loans would be incurred over the 29-year life of the Area with 9- to 20-year amortization periods, a 5% interest rate, and a 1.5 minimum debt service coverage ratio.

Exhibit 7 summarizes the financial capacity of the Area. Total net TIF is the cumulative amount of TIF revenue that would be received by the Area over its duration. Maximum indebtedness is the total principal amount of indebtedness that could be incurred by the Area. Maximum indebtedness is stated in nominal (i.e., "year of expenditure") dollars. The capacity in 2023 dollars shows the maximum indebtedness figure adjusted for inflation and presented in "real" dollars. This is the most useful measure of financial capacity. The capacity in 2023 dollars is also shown in five-year periods to provide a sense of when funding would become available over time.

The Area is forecast to generate $211.4 million of cumulative net TIF revenue, which could support a maximum indebtedness of $181.0 million, equivalent to $101.1 million in capacity for projects, adjusted for inflation and presented in constant 2023 dollars.

**Exhibit 7. Financial Capacity**

| | |
|---|---|
| **Net TIF** | **$ 211,400,000** |
| **Maximum Indebtedness** | **$ 181,000,000** |
| **Capacity (2023$)** | **$ 101,100,000** |
| Years 1-5 | $ 3,600,000 |
| Years 6-10 | $ 9,800,000 |
| Years 11-15 | $ 19,300,000 |
| Years 16-20 | $ 24,700,000 |
| Years 21-25 | $ 25,700,000 |
| Years 26-30 | $ 17,900,000 |

Source: Tiberius Solutions

# Attachment A: Detailed Assumptions for New Development[2]

**Exhibit A 1. Summary of Land Use (Acres)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Rights of Way | 5.65 | 8.52 | 4.42 | 2.03 | 0.00 | 20.61 |
| Parks/Open Space | 5.41 | 0.75 | 2.21 | 0.00 | 0.00 | 8.37 |
| Retain Existing Uses | 9.60 | 14.31 | 7.33 | 14.30 | 6.18 | 51.72 |
| Redevelopment | 16.94 | 25.55 | 13.26 | 6.08 | 2.11 | 63.94 |
| **Total** | **37.61** | **49.13** | **27.22** | **22.40** | **8.29** | **144.65** |

**Exhibit A 2. Summary of Land Use (Percent)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Rights of Way | 4% | 6% | 3% | 1% | 0% | 14% |
| Parks/Open Space | 4% | 1% | 2% | 0% | 0% | 6% |
| Retain Existing Uses | 7% | 10% | 5% | 10% | 4% | 36% |
| Redevelopment | 12% | 18% | 9% | 4% | 1% | 44% |
| **Total** | **26%** | **34%** | **19%** | **15%** | **6%** | **100%** |

**Exhibit A 3. Development Assumptions (Acres)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | 1.62 | 9.18 | | 0.81 | | 11.61 |
| Condos | 0.13 | 0.74 | | | | 0.88 |
| Townhomes | | | | 1.71 | | 1.71 |
| Mixed Use | 13.84 | 8.79 | 6.50 | | | 29.13 |
| Employment | 1.36 | 6.85 | 6.76 | 1.13 | 2.11 | 18.20 |
| Exempt | | | | 2.44 | | 2.44 |
| **Total** | **16.95** | **25.56** | **13.26** | **6.08** | **2.11** | **63.96** |

[2] All tables were prepared jointly by Tiberius Solutions and the City of Wilsonville, with input from the Wilsonville Urban Renewal Task Force.

**Exhibit A 4. Floor Area Ratio**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | 2.00 | 1.75 | 1.75 | 1.50 | | 7.00 |
| Condos | 2.00 | 1.75 | 1.75 | 1.50 | | 7.00 |
| Townhomes | 1.50 | 1.50 | 1.50 | 1.50 | | 6.00 |
| Mixed Use | 2.50 | 2.25 | 2.25 | 2.00 | | 9.00 |
| Employment | 2.00 | 1.50 | 2.00 | 0.50 | 1.00 | 7.00 |
| Exempt | 1.50 | 1.50 | 2.00 | 1.00 | | 6.00 |
| **Total** | **11.50** | **10.25** | **11.25** | **8.00** | **1.00** | **42.00** |

**Exhibit A 5. Mixed Use Proportional Split (Residential/Commercial)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road |
|---|---|---|---|---|---|
| Percent Residential | 90% | 90% | 90% | 90% | 0% |
| Percent Commercial | 10% | 10% | 10% | 10% | 100% |

**Exhibit A 6. Summary of Square feet of New Construction**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | 141,428 | 699,663 | 0 | 52,925 | 0 | 894,017 |
| Condos | 11,467 | 56,729 | 0 | 0 | 0 | 68,197 |
| Townhomes | 0 | 0 | 0 | 111,731 | 0 | 111,731 |
| Mixed Use - Res | 1,356,213 | 775,357 | 573,579 | 0 | 0 | 2,705,150 |
| Mixed Use - Com | 150,690 | 86,151 | 63,731 | 0 | 0 | 300,572 |
| Employment | 118,265 | 447,416 | 588,713 | 24,503 | 91,912 | 1,270,809 |
| Exempt | 0 | 0 | 0 | 106,178 | 0 | 106,178 |
| **Total** | **1,778,065** | **2,065,316** | **1,226,023** | **295,337** | **91,912** | **5,456,652** |

**Exhibit A 7. Residential Unit Size Assumptions**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road |
|---|---|---|---|---|---|
| Apartments | 900 | 900 | 900 | 900 | 900 |
| Condos | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Townhomes | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Mixed Use | 900 | 900 | 900 | 900 | 900 |

**Exhibit A 8. Summary of Units of New Residential Construction**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | 157.00 | 777.00 | - | 59.00 | - | 993.00 |
| Condos | 11.00 | 57.00 | - | - | - | 68.00 |
| Townhomes | - | - | - | 112.00 | - | 112.00 |
| Mixed Use | 1,507.00 | 862.00 | 637.00 | - | - | 3,006.00 |
| **Total** | **1,675.00** | **1,696.00** | **637.00** | **171.00** | **-** | **4,179.00** |

**Exhibit A 9. Absorption Schedule**

| | Residential | | | | | Employment | | |
|---|---|---|---|---|---|---|---|---|
| | Apartments | Condos | Townhomes | Mixed Use | Total | Employment | Mixed Use | Total |
| 2024 | 33 | | | 100 | 133 | | 10,000 | 10,000 |
| 2025 | 33 | | | 100 | 133 | | 10,000 | 10,000 |
| 2026 | 33 | | | 100 | 133 | | 10,000 | 10,000 |
| 2027 | 33 | | | 100 | 133 | | 10,000 | 10,000 |
| 2028 | 33 | | | 100 | 133 | | 10,000 | 10,000 |
| 2029 | 33 | | 28 | 100 | 161 | 30,000 | 10,000 | 40,000 |
| 2030 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2031 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2032 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2033 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2034 | 33 | 34 | 28 | 100 | 195 | 40,000 | 10,000 | 50,000 |
| 2035 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2036 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2037 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2038 | 33 | | | 100 | 133 | 40,000 | 10,000 | 50,000 |
| 2039 | 33 | | 28 | 100 | 161 | 40,000 | 10,000 | 50,000 |
| 2040 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2041 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2042 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2043 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2044 | 33 | 34 | 28 | 100 | 195 | 60,000 | 10,000 | 70,000 |
| 2045 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2046 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2047 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2048 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2049 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2050 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2051 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2052 | 33 | | | 100 | 133 | 60,000 | 10,000 | 70,000 |
| 2053 | 36 | | | 106 | 142 | 60,809 | 10,572 | 71,381 |
| **Total** | **993** | **68** | **112** | **3,006** | **4,179** | **1,270,809** | **300,572** | **1,571,381** |

**Exhibit A 10. Vertical Housing Tax Zone Assumptions**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road |
|---|---|---|---|---|---|
| Percent of Projects Qualifying for VHDZ | 100% | 50% | 100% | 0% | 0% |
| Exempt Value as Percent of Total | 80% | 80% | 80% | 0% | 0% |

**Exhibit A 11. Real Market Value Assumptions**

| | Improvement RMV per Unit | Improvement RMV per SF | RMV per Unit | RMV per SF |
|---|---|---|---|---|
| Apartments | $ 350,677 | $ 390 | $ 360,000 | $ 400 |
| Condos | $ 439,736 | $ 440 | $ 450,000 | $ 450 |
| Townhomes | $ 412,826 | $ 413 | $ 425,000 | $ 425 |
| Employment | N/A | $ 289 | N/A | $ 300 |
| Mixed Use - Apartments | $ 353,045 | $ 392 | $ 360,000 | $ 400 |
| Mixed Use - Employment | N/A | $ 292 | N/A | $ 300 |

**Exhibit A 12. Land RMV Total**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | $ 1,294,398 | $ 7,318,325 | $ - | $ 645,853 | $ - | $ 9,258,576 |
| Condos | $ 104,951 | $ 593,378 | $ - | $ - | $ - | $ 698,329 |
| Townhomes | $ - | $ - | $ - | $ 1,363,468 | $ - | $ 1,363,468 |
| Mixed Use | $ 11,033,326 | $ 7,008,704 | $ 5,184,766 | $ - | $ - | $ 23,226,797 |
| Employment | $ 1,082,402 | $ 5,459,852 | $ 5,388,091 | $ 897,018 | $ 1,682,408 | $ 14,509,771 |
| Exempt | $ - | $ - | $ - | $ 1,943,540 | $ - | $ 1,943,540 |
| **Total** | **$ 13,515,077** | **$ 20,380,258** | **$ 10,572,857** | **$ 4,849,880** | **$ 1,682,408** | **$ 51,000,480** |

**Exhibit A 13. Land RMV per Unit/SF**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Average |
|---|---|---|---|---|---|---|
| Apartments - Unit | $ 8,245 | $ 9,419 | | $ 10,947 | | $ 9,323 |
| Condos - Unit | $ 9,541 | $ 10,410 | | | | $ 10,264 |
| Townhomes - Unit | | | | $ 12,174 | | $ 12,174 |
| Mixed Use - SF | $ 7 | $ 8 | $ 8 | | | $ 8 |
| Employment - SF | $ 9 | $ 12 | $ 9 | $ 37 | $ 18 | $ 11 |
| Exempt | | | | | | |
| **Mixed Use - Per Unit** | **$ 6,590** | **$ 7,322** | **$ 7,322** | | | **$ 6,955** |

**Exhibit A 14. Improvement AV Total (Proportional Share)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Total |
|---|---|---|---|---|---|---|
| Apartments | $ 1,290,660 | $ 7,297,192 | $ - | $ 643,988 | $ - | $ 9,231,840 |
| Condos | $ 104,648 | $ 591,664 | $ - | $ - | $ - | $ 696,312 |
| Townhomes | $ - | $ - | $ - | $ 1,359,531 | $ - | $ 1,359,531 |
| Mixed Use | $ 11,001,466 | $ 6,988,465 | $ 5,169,795 | $ - | $ - | $ 23,159,725 |
| Employment | $ 1,079,277 | $ 5,444,086 | $ 5,372,532 | $ 894,428 | $ 1,677,550 | $ 14,467,872 |
| Exempt | $ - | $ - | $ - | $ 1,937,928 | $ - | $ 1,937,928 |
| **Total** | **$ 13,476,050** | **$ 20,321,407** | **$ 10,542,326** | **$ 4,835,875** | **$ 1,677,550** | **$ 50,853,208** |

**Exhibit A 15. Improvement AV Per Unit (Proportional Share)**

| | MSD | MU | C-MU | N-MU | South of Wilsonville Road | Average |
|---|---|---|---|---|---|---|
| Apartments - Unit | $ 8,221 | $ 9,391 | | $ 10,915 | | $ 9,296 |
| Condos - Unit | $ 9,513 | $ 10,380 | | | | $ 10,234 |
| Townhomes - Unit | | | | $ 12,139 | | $ 12,139 |
| Mixed Use - SF | $ 7 | $ 8 | $ 8 | | | $ 8 |
| Employment - SF | $ 9 | $ 12 | $ 9 | $ 37 | $ 18 | $ 11 |
| Exempt | | | | | | |
| **Mixed Use - Per Unit** | **$ 6,571** | **$ 7,301** | **$ 7,301** | | | **$ 6,935** |

**Exhibit A 16. Area Value Figures**

| | |
|---|---|
| Total Acres | 146.45 |
| Total Land RMV | $ 116,768,765 |
| Total Improvement RMV | $ 235,595,067 |
| Total RMV | $ 352,363,832 |
| Total AV - Real | $ 174,138,945 |
| Proportional Land AV | $ 57,707,369 |
| Proportional Improvement AV | $ 116,431,576 |
| Per Acre | |
| Proportional Land AV | $ 394,052 |
| Proportional Improvement AV | $ 795,047 |
| Land RMV Per Acre | $ 797,350 |

# Appendix B: How Tax Increment Financing Works

Urban renewal/Tax Increment Financing (TIF) is an economic and redevelopment financing tool permitted by Oregon Revised Statute (ORS) chapter 457. Urban Renewal allows municipalities (cities and counties) across Oregon to collect the incremental property tax revenues in an Urban Renewal Area (URA) and spend that revenue on infrastructure and economic development projects and programs within the URA.

## Overview

### Urban Renewal Plans

To establish a URA, a municipality must adopt an Urban Renewal Plan. ORS 457 defines the specific requirements of Urban Renewal Plans. Key elements of Urban Renewal Plans include:

- Boundary of the URA, including a map and legal description
- Goals and objectives for the URA
- Eligible projects to be funded in the URA
- Findings of "Blight" within the URA as defined in ORS 457.010
- The dollar limit on the cumulative amount of indebtedness that the URA may incur, known as "Maximum Indebtedness"

### Tax Increment Financing

Urban renewal allows municipalities to use TIF revenue to fund projects and programs within a URA. When a URA is established, the existing assessed value in the URA is certified as the "Frozen Base" value. As assessed value in the URA increases over time, the difference between the total assessed value and the frozen base is considered "Increment" assessed value. Each year, property tax revenue generated by the frozen base of the URA is distributed normally to all overlapping taxing districts, and the URA receives all the property tax revenue generated from the increment, called TIF revenue.

### Maximum Indebtedness

Once a URA has incurred the full amount of maximum indebtedness, it cannot incur additional debt, and once a URA has collected sufficient TIF revenue to fully repay the maximum indebtedness, the URA loses its ability to collect TIF revenue, effectively resulting in the termination of the URA.

### Consolidated Tax Rate

Oregon statutes governing TIF have been amended over time, resulting in different types of Urban Renewal Plans. A key difference is the determination of which tax rates are included in the calculation of TIF revenue. All new Urban Renewal Plans are "permanent rate" plans. The consolidated tax rate is equal to the sum of all permanent tax rates. Local option levies and general obligation bond levies are not impacted by new Urban Renewal Plans.

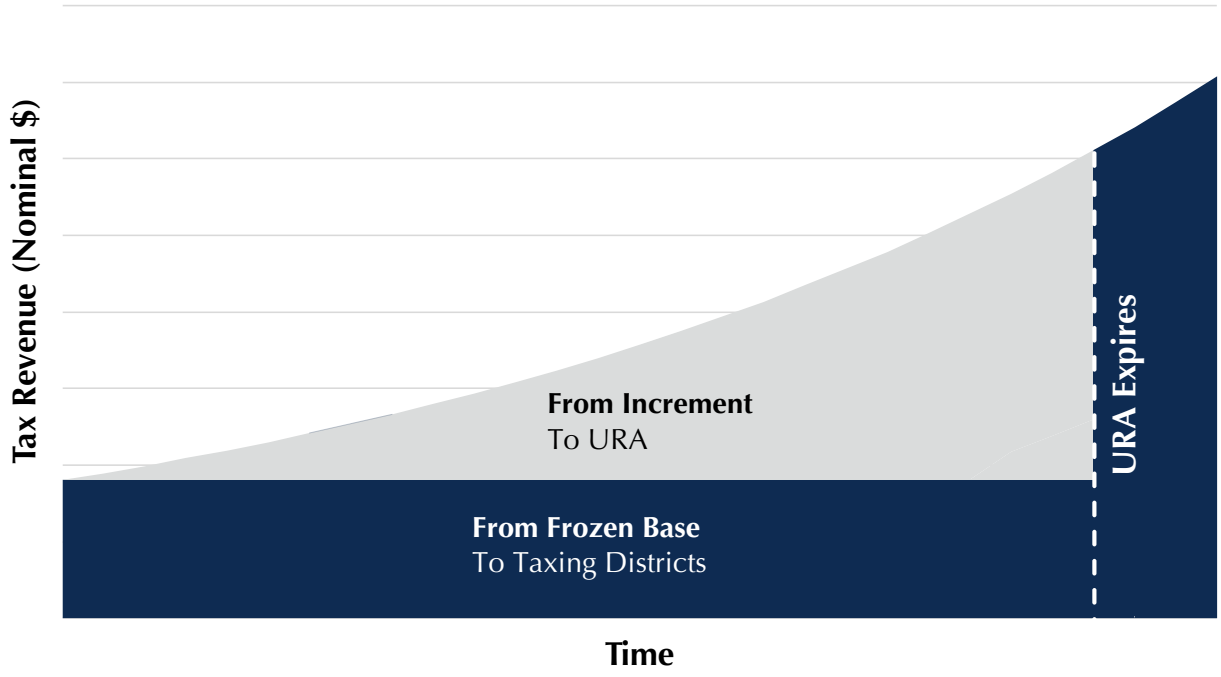
## Tax Increment Financing

When a URA is established, the assessed value of all property within the URA boundary establishes the frozen base value. When assessed value in the URA grows over time, the difference between the total assessed value and the frozen base is considered increment assessed value. Each year, property tax

revenue from the frozen base in the URA is distributed normally to all overlapping taxing districts, and the URA receives all the property tax revenue generated from the increment, called TIF revenue.

TIF revenue can only be spent to repay indebtedness incurred on behalf of the URA, and the proceeds from that indebtedness can only be spent on capital projects located within the URA that are identified in the corresponding Urban Renewal Plan. Once all indebtedness for a URA has been repaid, the Urban Renewal Plan may be terminated, which results in all future tax revenue being returned to the overlapping taxing districts. Exhibit B-1 illustrates the general tax revenue distribution within a URA boundary over the life of the URA.

**Exhibit B-1. Example Tax Revenue Distribution in a URA**




Source: Tiberius Solutions

The local county assessor calculates total TIF Revenue to be generated by a URA by multiplying the increment assessed value of a URA by the applicable consolidated tax rate. Although the amount of tax revenue to be raised is calculated based on the assessed value of properties within a URA, that tax is actually imposed upon all properties citywide. The local county assessor divides the total tax revenue to be raised for a URA by the aggregate assessed value of all property citywide, which results in an URA tax rate. This rate is then extended to all properties citywide. All other component property tax rates that were included in the consolidated tax rate are reduced proportionally, so that the imposition of the URA tax rate does not result in any net increase to the total tax rate. In short, URA tax revenues are calculated based on property values within the URA, but are paid by all properties citywide.

## Maximum Indebtedness

Urban Renewal Plans are required to include a maximum indebtedness limit. As stated earlier, URAs are only allowed to spend TIF revenue on debt service. Thus, the maximum indebtedness functions as a limit on the cumulative amount of TIF revenue that can be spent on projects in a URA. Note that maximum indebtedness does not function as a revolving credit limit. In other words, paying off previous debt for a URA does not free up maximum indebtedness capacity to be used on future indebtedness. Once a URA incurs the full amount of maximum indebtedness, it cannot incur additional debt to fund additional projects.

### Consolidated Tax Rate

Oregon statutes governing TIF have been amended over time, resulting in different types of Urban Renewal Plans that are subject to different provisions. Oregon statutes establish three major classifications of Urban Renewal Plans: permanent rate plans, reduced rate plans, and standard rate plans. The determination of each of these plan types is primarily dependent upon the effective date of the plan, or the effective dates of certain subsequent substantial amendments to a plan. A fundamental difference among these types of Urban Renewal Plans is the method for determining the consolidated tax rate as described below.

- "Permanent Rate Plans" have a consolidated tax rate equal to the total of all permanent property tax rates for overlapping taxing districts.
- "Reduced Rate Plans" have a consolidated tax rate equal to the total of all tax rates for overlapping taxing districts except for the following:
  - URA special levies
  - Local option levies approved by voters on or after October 6, 2001
  - General obligation bond levies approved by voters on or after October 6, 2001
- "Standard Rate Plans" have a consolidated tax rate equal to the total of all tax rates for overlapping taxing districts except for the following:
  - URA special levies
  - Local option levies approved by voters on or after January 1, 2013

### Revenue Sharing

Plans initially approved or substantially amended to increase maximum indebtedness on or after January 1, 2010 are subject to additional provisions in ORS regarding revenue sharing. For such plans, revenue sharing occurs when a plan achieves certain thresholds of annual TIF revenue, relative to the maximum indebtedness of the plan.[3]

## Overview of Oregon's Property Tax System

### Property Tax Ballot Measures

Oregon's property tax system is largely defined by two property-tax-related ballot measures that were approved by voters in the 1990s: Measure 5 passed in 1990 and Measure 50 passed in 1997.

Prior to the passage of Measures 5 and 50, Oregon had a levy-based property tax system. This meant that each taxing district would decide the dollar amount to levy each year based on budget requirements, and that levy amount would be converted into a levy by dividing the total levy amount by the total value of property district-wide. This system resulted in annual variations in the effective tax rates for individual properties each year.

Measure 5 limited the property taxes paid by individual property owners to $10 per $1,000 of real market value for general government taxes and $5 per $1,000 of real market value for education taxes. Levies passed by voters to repay general obligation bonds were excluded from these limits.

[3]Formulas for calculating required Revenue Sharing are defined in ORS 457.470. For most Urban Renewal Plans in Oregon, the formulas refer to the initial Maximum Indebtedness of a Plan.

Measure 50, passed in 1997, was a further overhaul of Oregon's property tax system, including the following key elements:

- Switching from a levy-based system to a rate-based system, including the establishment of permanent tax rates for each taxing district instead of variable levies. Note that in addition to permanent tax rates, taxing districts may also impose local option levies and levies for general obligation bonds, both of which are temporary in nature and are subject to voter approval.
- Reducing assessed value. Assessed value is no longer equal to real market value. In fiscal year 1997-98, a maximum assessed value for each property was established, which was equal to 90% of its assessed value from two years prior (fiscal year 1995-96).
- Limiting assessed value growth. Growth in maximum assessed value was limited to three percent annually. The actual assessed value used to calculate a property's tax bill is equal to the lesser of the property's maximum assessed value and real market value.

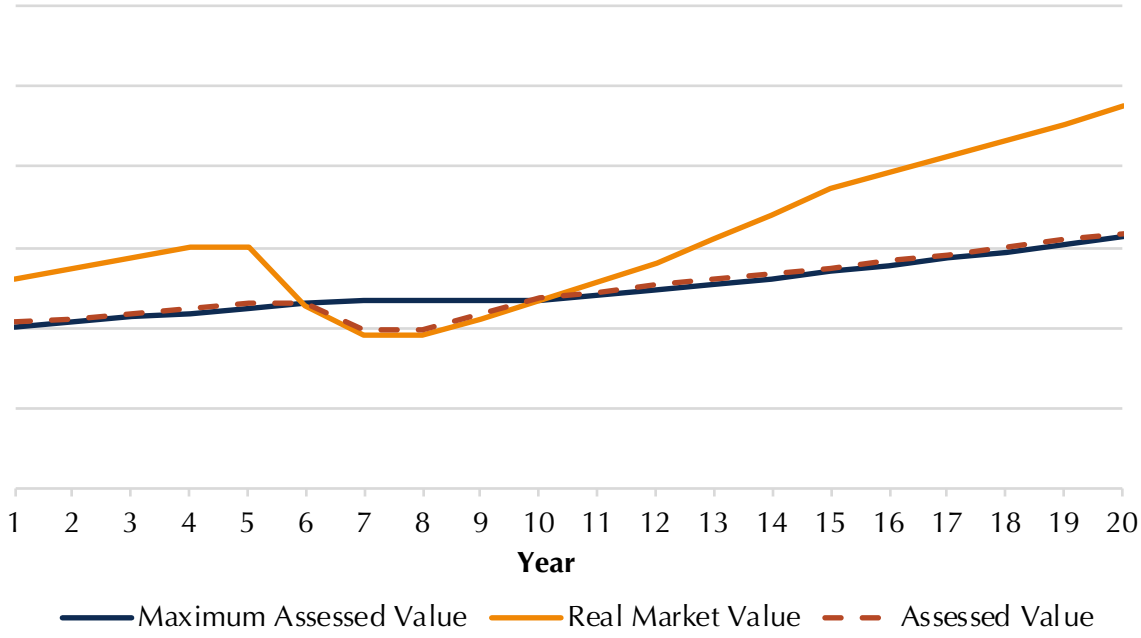
There are some exceptions to the three percent limit in maximum assessed value growth. The most common exceptions are new construction and significant improvements that did not exist in 1995-96 when the maximum assessed value was established. To determine the exception value in these situations a changed property ratio is used to establish the initial maximum assessed value. The changed property ratio is calculated annually as the ratio between aggregate assessed value and aggregate real market value for each property class (residential, multifamily, commercial/industrial, etc.) in each county. The changed property ratio is applied to the real market value of all new development to determine initial maximum assessed value, after which time, it grows at three percent per year like all other existing property.[4]

## Illustration of Assessed Value Calculation

Exhibit B-2 shows the relationship between maximum assessed value, real market value, and assessed value for a hypothetical property. Real market value fluctuates based on market conditions. For all years where real market value is greater than maximum assessed value, maximum assessed value grows at three percent. From year one through year six, the property's real market value is greater than the property's maximum assessed value. The property's assessed value must be the lower of the two, and is therefore equal to the maximum assessed value. In years six through ten, the property's real market value dips below the property's maximum assessed value. In these years, the assessed value is equal to the real market value and maximum assessed value remains constant. When real market value grows past maximum assessed value beginning in year ten, assessed value is once again equal to maximum assessed value, and the maximum assessed value resumes annual growth of three percent per year.

[4] Other exceptions include: partitioning or subdividing a property, rezoning a property and change of use consistent with that zone, and the disqualification or termination of property tax exemptions (e.g., property transferring from public to private ownership).

**Exhibit B-2. Maximum Assessed Value, Real Market Value, and Assessed Value for a Hypothetical Property**

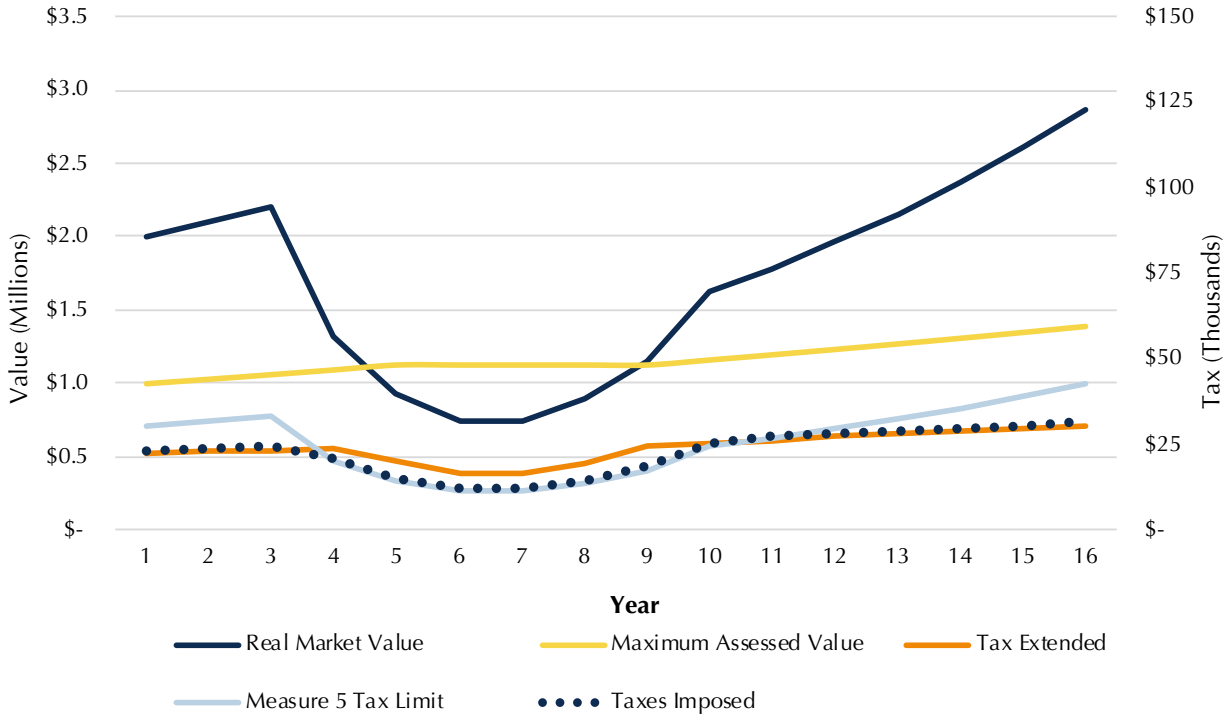



## Measure 5 Compression

As stated earlier, Measure 5 limits the property taxes paid by individual property owners to $10 per $1,000 of real market value for general government taxes and $5 per $1,000 of real market value for education taxes. If either of these limits are exceeded by the taxes extended on an individual property, the taxes imposed are reduced proportionally until the Measure 5 limits are met. Local option levies are reduced first. If local option levies are reduced to zero and a property is still exceeding its Measure 5 limits, then permanent rate levies are reduced proportionally until the limits are no longer exceeded. General obligation bonds are never reduced, as they are not subject to Measure 5 limits.

Exhibit B-3 shows the effect of Measure 5 compression on a hypothetical property. In years one through three, the Measure 5 tax limits for the property are higher than the taxes extended to the property. Therefore, the property pays the total tax extended. Beginning in year four, declining real market value results in a corresponding decrease in the maximum allowable tax bill, and the property finds itself in "compression" due to Measure 5. Therefore, the taxes extended are proportionally reduced until they conform to Measure 5 limits. The compression loss is the difference between tax extended and tax imposed. By year 12, real market value has grown enough so that the taxes extended are once again below the Measure 5 limits, and the property no longer experiences compression.

**Exhibit B-3. Compression of Hypothetical Property**




## Property Types

The State of Oregon classifies all taxable property into one of four types: real, personal, manufactured, and utility. Below, we describe these property types and highlight considerations for forecasting future changes in assessed value.

- **Real** property includes land, buildings, structures, and improvements. Real property typically makes up the majority of property value in an area. Real property is typically the most reliable property type to forecast. Changes in real market value of real property are tied to broader market trends. At this time, most real property accounts in Oregon have a significant gap between real market value and maximum assessed value, which means that the assessed value is equal to maximum assessed value, which experiences three percent growth each year from appreciation. Factors that can cause a real property account to experience a change in maximum assessed value other than three percent appreciation include: construction of new property, demolition of an existing structure, establishment or expiration of tax exemptions (such as a transfer of ownership from public to private use, or vice versa), and rezoning with a corresponding change in use.
- **Personal** property includes all property that "enhances or promotes" a business.[5] This includes machinery, equipment, and décor/office furniture. Personal property for personal use (e.g., home furniture and appliances) are exempt. The Department of Revenue maintains multiple schedules for depreciation of value, based on the specific type of personal property. Personal property tends to depreciate relatively rapidly, but these losses in value are generally offset by further reinvestment in new personal property accounts.

[5] Oregon Department of Revenue, Methods for Valuing Personal Property, 2020

- **Manufactured** property includes all manufactured structures (i.e., mobile homes). Unlike other types of housing, the real market value of mobile homes depreciate over time. In the early years after construction, a manufactured property account may experience modest growth in assessed value based on the maximum allowed three percent growth in maximum assessed value. However, over time the real market value of the property will likely drop below the maximum assessed value, leading to a sustained decrease in assessed value from manufactured property in future years.
- **Utility** property include the value of any privately-owned utility provider, including: communication, electric, gas, water, pipelines, air transportation, private railcars, railroads, heating, toll bridges, and small electrics.[6] The Oregon Department of Revenue assesses the value of these properties annually, based on reports submitted by the owners. The value is not explicitly based on geography, but the State apportions assessed value to each tax code area each year based on factors, including the physical location of utility assets. Because utility value is calculated by the State each year, based on reports of value provided by the utilities themselves, the assessed value of utility accounts can be volatile, and difficult to forecast.

[6] Oregon Department of Revenue, Centrally Assessed Companies

WILSONVILLE TOWN CENTER PLAN

# Wilsonville Town Center Plan Findings of Consistency:

# Statewide Planning Goals, Metro's Urban Growth Management Functional Plan, Comprehensive Plan Amendment Criteria, and Zone Text Amendments Criteria

## INTRODUCTION

This Findings Report provides findings supporting the City of Wilsonville's adoption of amendments related to the Town Center Plan – Case File LP19-0003 (the proposal). The proposal includes the following:

a. Amendments to the Wilsonville Comprehensive Plan Text;
b. Amendment to the Wilsonville Comprehensive Plan Map;
c. Adoption of the Town Center Plan as a supporting document of the Comprehensive Plan that is as part of the Comprehensive Plan;
d. Amendments to the Wilsonville Development Code Text; and
e. Amendment to the Wilsonville Zoning Map.

## COMPLIANCE WITH STATEWIDE PLANNING GOALS

ORS 197.175(2)(a) requires that cities and counties amend and revise comprehensive plans in compliance with the goals approved by the Commission. The following findings address the proposal's compliance with the applicable statewide planning goals. The City Council finds that the following Statewide Planning Goals are not applicable because the proposal is entirely within the Urban Growth Boundary or outside of the boundaries of the referenced goal (e.g. Willamette River Greenway):

- Goal 3: Agricultural Lands;
- Goal 4: Forest Lands;
- Goal 15: Willamette River Greenway;
- Goals 16-18: coastal goals.

### GOAL 1, CITIZEN INVOLVEMENT

***To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.***

**FINDINGS:** The proposal meets Goal 1 because the City followed its Citizen Involvement Program, adopted as Section A of the Wilsonville Comprehensive Plan. The Comprehensive Plan states that the City will use the following methods to involve citizens in land use decisions:

- Providing opportunity for citizens to see draft materials

- Conduct regular, open, public meetings of the Planning Commission
- Use task forces as needed for special projects
- Publicize opportunities to engage in land use decisions
- Coordinate with other agencies involved with Wilsonville's planning programs and policies

The public engagement plan (see Appendix I) aligned with the Citizen Involvement policies of the Comprehensive Plan, and the approach identified the following goals:

1. Build relationships in Wilsonville. Create opportunities for stakeholders and the public to meet and engage with others interested in the future of Town Center.
2. Create opportunities for inclusive participation. Provide multiple and varied opportunities for a wide range of community members and stakeholders to provide meaningful input.
3. Balance the diverse interests of the community. Work with community members across Wilsonville, including employees, patrons, residents, and business and property owners, to meet current and future needs and facilitate future uses. Participants' demographics and areas of interest will be tracked throughout the process to ensure that a diversity of community members are being heard.
4. Generate excitement and community ownership. Tell a story that captures Town Center as a geographic, economic, and cultural hub in Wilsonville and that carries forward the city's unique history, character, and role in the region. The Town Center Plan will support Wilsonville's evolving identity and sense of place.

The Town Center Plan, which established the land use, transportation, park and open space, and infrastructure frameworks, began in Fall 2016. The community engagement was divided into three phases. The first phase of the project established the community's vision and goals for the future of Town Center and identified existing issues and priority improvements. During the second phase of the project, community members and stakeholders defined how they want the "building blocks" of Town Center to look and function in the future. These building blocks include land use, open spaces and parks, and the multimodal transportation network. Based on community and stakeholder ideas and feedback, the project team drafted and then refined the building blocks. This process resulted in a Draft Community Design Concept that was supported by the community and will be implemented through the Town Center Plan. Public input continued through the end of the project.

Multiple work sessions were held with the Planning Commission and City Council, including three joint Planning Commission and City Council meetings. Public comment opportunities were available at every meeting. The Planning Commission had extensive and productive informal discussions with the participating public, technical partners and the project taskforce. Community design workshops, open houses, and surveys were held throughout the project. Other citizen involvement included individual and small group stakeholder meetings, a public kickoff event, two community design workshops, a citywide barbeque, an interactive pop-up event, neighborhood "idea centers", neighborhood pop-ups, targeted engagement activities, and an ongoing map-based and visual preference online surveys.

In addition to the major engagement activities listed above, the City went to a variety of established community events, referred to as Community Out-and-Abouts, and neighborhood meetings, which provided community members with convenient opportunities to participate in the Town Center Plan. The input received at these events is incorporated in the Question of the Month results and Community Design Survey feedback summary (see Attachment C of the staff report). Community members were provided with ongoing project updates and opportunities for input.

The outreach and engagement activities summarized here solicited input and ideas from a broad range of community members and stakeholders, including but not limited to:

- City elected officials
- Wilsonville residents
- Youth and seniors
- Spanish-speakers
- Service providers in Town Center
- Town Center employees
- Town Center residents
- Town Center business and property owners
- City staff

Based on the forgoing, the City Council finds that the proposal satisfies Goal 1 with respect to citizen involvement.

## GOAL 2, LAND USE PLANNING

***To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.***

**FINDINGS:** The proposal satisfies Goal 2 because it is supported by an adequate factual base and its development was coordinated with all affected governmental units.

### *Adequate Factual Base*

The City has established a record that includes technical memoranda, studies, and analyses supporting each element of the Town Center Plan. The key documents that were relied upon and that form the adequate factual base for our findings are listed below:

- City of Wilsonville Comprehensive Plan, 2000, updated 2013
- Planning and Land Development Ordinance (Development Code), Chapter 4, 2015
- Wilsonville Road Interchange Area Management Plan, 2017
- The City Center Plan, 1979
- Town Center Study, 1984
- Wilsonville Water System Master Plan, 2012

- Wilsonville Storm Water Master Plan, 2012
- Wilsonville Public Works Stormwater Standards, 2015
- Wilsonville Wastewater Collection System Master Plan, 2014
- Wilsonville ADA Transition Plan, 2015
- Wilsonville TSP Amendment, 2016
- Wilsonville Public Works Standards, 2015
- Town Center Planning Commission Workshop to propose special area of concern, 1989

### *Coordination with the Plans of Affected Governmental Units*

During the Town Center planning process, the following affected governmental units participated or had the opportunity to participate via notices and project information provided to them:

- Metro
- ODOT
- TVF&R
- Clackamas County
- West Linn-Wilsonville School District
- SMART

Based on the above, the City Council finds that the proposal satisfies Goal 2 with respect to having an adequate factual base and being coordinated with all affected governmental units.

## GOAL 5, NATURAL RESOURCES, SCENIC AND HISTORIC AREAS, AND OPEN SPACES

***To protect natural resources and conserve scenic and historic areas and open spaces.***

**FINDINGS:** The proposal satisfies Goal 5 through the first goal in the plan: Integrating nature into the design and function of infrastructure and development in Town Center to protect Wilsonville's natural resources. The Plan's goals for Environmental Stewardship involved the following measures of success:

- Identify appropriate landscaping that provides visual interest, minimizes City maintenance requirements, and is appropriate for walkable, mixed-use areas.
- Design and implement stormwater management and treatment facilities to provide both functional and aesthetic value.
- Incorporate natural features such as rain gardens, eco-roofs, and community gardening areas into Town Center.

No significant natural resources exist within the plan area. The plan proposes new park and open spaces, and links to existing parks and open spaces to enhance the urban environment and honor the area's natural resource and agricultural legacy. Wayfinding elements are proposed to identify and connect significant open spaces and other destinations within the Town Center.

The plan includes stormwater management recommendations intended to minimize impacts to the environment. The existing storm water system in Town Center drains to three watersheds, including Coffee Lake Creek Basin in the northwest; the Willamette River in the southwest (via a piped outfall); and the Boeckman Creek Basin. The stormwater management recommendations include:

- Minimization of the amount of impervious surfaces; the proposed plan has less area devoted to surface parking.
- Implementation that will design and construct all new (or significantly modified) streets as green streets with stormwater planters or other on-site detention and treatment components.
- Encouragement, through development review, of innovative on-site stormwater detention and treatment for buildings to meet on-site stormwater detention/treatment requirements. This includes encouraging green roofs or water reuse (e.g. graywater systems) as part of initial building design.
- Using pervious paving wherever possible.
- Location of stormwater pipes in new right-of-way when constructing new streets. Stormwater pipes have been included in planning level cost estimates for major capital projects described in Chapter 5 of the Master Plan.
- Utilizing stormwater features in the proposed Promenade to help meet the City's stormwater management requirements for treatment of road facilities.
- An assumption that all road construction projects will include stormwater management and green street amenities, such as stormwater swales and landscaping treatments to reduce environmental impacts of construction and use of the facility.

Based on the above, the City finds that the proposed amendments satisfy Goal 5.

## GOAL 6, AIR, WATER, AND LAND RESOURCES QUALITY

***To maintain and improve the quality of the air, water and land resources of the state.***

**FINDINGS:** The proposal satisfies Goal 6 because it will maintain and improve the quality of the air, water, and land resources of the state.

The proposal maintains and improves **air quality** by:

- Increasing transit availability and frequency to reduce single-occupancy vehicle traffic congestion
- Prioritizing bicycle and pedestrian travel through on-street improvements for bicycles and pedestrians, and connections to off-street trails.

The proposal maintains and improves **water quality** by:

- Encouraging the use of "low impact" stormwater treatment, such as bioswales, within street rights-of-way.
- Providing options for water treatment and flow control for developers of all sites, to reduce expanding the existing sanitary and stormwater infrastructure.

The proposal maintains and improves **land resources** by:

- Encouraging higher density housing in the city center, rather than expanding the urban growth boundary (UGB).
- Encouraging mixed uses to interconnect land uses and reduce the need for additional roadways and sprawl.
- Encouraging the retention of existing trees in site planning.

Based on the above, the City finds that the proposal satisfies Goal 6.

## GOAL 7, AREAS SUBJECT TO NATURAL HAZARDS

***To protect people and property from natural hazards.***

**FINDINGS:** The proposal satisfies Goal 7 because the City has considered the risks of natural hazards during the planning process. There are no identified floodplains within the planning area, and on-site systems are proposed to reduce any localized flooding at Memorial Park Pond or other stormwater facilities. Given its proposed protection, people and property will be additionally protected from natural hazards.

Based on the above, the City finds that the proposal satisfies Goal 7.

## GOAL 8, RECREATIONAL NEEDS

***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.***

**FINDINGS:** The proposal satisfies Goal 8 because the Town Center neighborhood will provide ample public spaces, parks, and destinations to connect with one another and the environment to meet recreational needs. The community prioritized parks, green spaces, and public gathering spaces as important elements of the future Town Center. The existing Town Center Park is valued by many community members and is a regional destination during the summer. Additionally, Memorial Park is an important open space and recreational destination directly adjacent to Town Center. These two parks are cornerstones of the existing Town Center's open space network.

Open space improvements in the Town Center Plan include enhancements to the existing parks and the connections the community has to these spaces. These include:

- Create an "Emerald Chain" of parks, small plazas, green streets, and trails that connect the future I-5 bike/pedestrian bridge to the Town Center Park, Memorial Park and Murase Plaza.
- A Promenade project, providing multi-modal connections between the I-5 bike/pedestrian bridge landing and the cycle track on Park Place. The Promenade will provide plaza and open space for area residents and employees and help create active space.
- Four primary cycle tracks throughout the area to provide safe connectivity to recreational facilities like parks and trails both within Town Center and throughout the surrounding area, including the Ice Age Tonquin Trail.
- A proposed skatepark to be located east of Town Center Park.

The Plan also includes implementation measures for placemaking, some of which will augment the planned open space network to meeting recreational needs, including:

- A parklet competition between local businesses within parking spaces that are temporarily or permanently repurposed to provide small seating in front of businesses.
- Developing a programming plan for year-round events and activities in the Town Center.

Based on the above, the City finds that the proposal satisfies Goal 8.

## 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.***

**FINDINGS:** The proposal satisfies Goal 9 because economic development and prosperity was identified within the goals for the project. Goal 6 of the Town Center Plan is to "create opportunities to support and grow existing businesses and attract new businesses that provide a diverse range of local and regional retail, entertainment, and commercial activities." The following measures of success support this goal:

- Creating programs and policies that support the development of a variety of small, medium, and large businesses that provide local and regional needs and increase tourism.
- Identifying ways to organize and support businesses in Town Center to retain existing businesses, attract additional business and retail diversity, and increase economic development opportunities.
- Attracting development that supports the use of existing transit and non- motorized travel options.
- Identifying strategies to fund public improvements through a combination of public and private sources.

Implementation strategies in the Plan related to economic development include:

- Supporting a community organization for Town Center businesses.
- Creating a business improvement district or economic improvement district, where businesses and/or property owners are assessed a fee in order to generate revenue to support marketing, maintenance, security, beautification, and non-capital initiatives in the special district.
- Studying the feasibility for the Oregon Main Street Program to develop comprehensive redevelopment strategies based on a community's unique character.
- Providing business retention and location assistance for prospective tenants or re-location support to find new spaces due to redevelopment. The City may also look to implement a program that focuses on building social capital and furthering equity initiatives, similar to Prosper Portland's Affordable Commercial Tenanting Program, which provides affordable commercial spaces in the Lents Town Center.
- Creating a development opportunity study to assist property owners in evaluating redevelopment potential on their existing properties by providing technical assistance to evaluate development options.
- Entering into public-private partnerships (PPPs) with prominent property owners open to redevelopment in the Town Center to catalyze private investment and development.
- Conducting a feasibility study to determine whether and how Urban Renewal can be implemented in the Town Center.
- Creating a Local Improvement District (LID) to pay for infrastructure improvements, including streetscape improvements, new street construction, lighting, parks and open space improvements, and other capital projects.
- Conducting an Infrastructure Finance Study to determine how public projects—such as infrastructure investments—would be funded and what tools or incentives could or should be implemented.
- Offering a financial incentive to stimulate targeted construction of vertical mixed-use buildings in the Wilsonville Town Center by offering property tax exemptions to developers.
- Creating Opportunity Zones to reinvest capital gains into qualified low-income census tracts through Opportunity Funds, in exchange for a graduated series of incentives tied to long-term holdings.

Based on the above, the City finds that the proposal satisfies Goal 9.

## GOAL 10, HOUSING

***To provide for the housing needs of citizens of the state.***

**FINDINGS:** The proposal satisfies Goal 10 because it provides needed housing for the City of Wilsonville consistent with the adopted Residential Land Study.

As part of the Town Center Plan development process, a market conditions and development feasibility analysis were conducted. These analyses identified the types of development that have market demand for locating in Town Center and that might be financially feasible. For some desired development types that are not currently feasible, the analysis identified incentives that could be used to generate a return on investment that might interest a landowner or developer in considering developing property in Town Center.

The new Town Center Zone will allow housing, except in areas directly adjacent to the freeway. This zone will allow between two- to five-story buildings, with a mixture of residential, retail, office and civic uses. This zone comprises the following sub-districts:

- Main Street District - Mixed use buildings with active ground floor uses, generally 3 to 4 stories
- Commercial - Mixed Use - Will be a mix of office, entertainment, hospitality, civic uses; generally 3 to 5 stories, with residential allowed if not adjacent to freeway
- Mixed Use - Will be a mix of residential, retail, office, services; generally 2 to 4 stories
- Neighborhood - Mixed Use will be a mix of townhomes, small-scale commercial businesses; generally 2 to 3 stories

The Plan estimates the new zones have a capacity for an estimated 1,680 dwelling units at full buildout. This is significantly more than would occur under the existing Planned Development Commercial-Town Center zoning designation. Additionally, the zoned potential for new housing in the Town Center is supported by the array of urban amenities intended to support a vital, pedestrian-oriented place.

In addition to allowing for housing in all of the new zones, implementation measures recommending adoption of vertical housing development zones (VHDZ) will offer a financial incentive to stimulate targeted construction of vertical mixed-use buildings in the Wilsonville Town Center by offering property tax exemptions to developers.

Based on the above, the City finds that the proposal satisfies Goal 10.

## GOAL 11, PUBLIC FACILITIES AND SERVICES

***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.***

**FINDINGS:** The proposal satisfies Goal 11 because it includes framework plans and implementation measures to develop a timely, orderly, and efficient arrangement of public facilities and services to serve future urban development. These plans are consistent with the City of Wilsonville Public Facilities Plan, Transportation System Plan, Transit Master Plan, Stormwater Master Plan, Sewer and Water Infrastructure Master Plans and the Parks and Recreation Master Plan. The Town Center Plan includes infrastructure planning for transportation, sanitary sewer, water, stormwater, and “green infrastructure.” Parks were also addressed. The Town Center Plan also includes estimated costs and funding options for these projects.

- **Transportation.** The Town Center Plan identifies existing and proposed street networks and multimodal networks. The plan identifies improvements to the pedestrian and bicycle infrastructure. Cross-sections for each street type were also provided. Improved transit connections and increased service and accessibility were also identified as a key priority for future actions.
- **Sanitary Sewer.** The Area Plan identified improvements required by the increased development in the Town Center area. As much of the area already has existing sewer infrastructure, future development envisioned in the Town Center Plan will have little increase in wastewater compared to what is already projected for Town Center in the future. Many of the projects identified are for relocation of the infrastructure into the new or existing public right-of-way. Cost estimates are provided.
- **Stormwater.** Sustainable stormwater management is a key component of the Plan. The stormwater management approach is anticipated to consist largely of a toolbox of approaches to treat, detain, and infiltrate runoff on-site. The City's Stormwater Master Plan and Public Works Standards include a variety of Low Impact Development (LID) options for stormwater management.
- **Parks.** The Master Plan provides connections between Town Center Park and Memorial Park, as well as potential programs for parklets and a skatepark.
- **Implementation and Financing.** The Town Center Plan contains a list of potential funding sources and suggests creating more studies to develop a clear financing plan.

Based on the forgoing, the City finds that the proposal satisfies Goal 11.

## GOAL 12, TRANSPORTATION

***To provide and encourage a safe, convenient and economic transportation system.***

**FINDINGS:** The proposal satisfies Goal 12 because the foundation of the Town Center Plan is the community's desire for a walkable and engaging pedestrian experience. Wilsonville residents want options to move around safely, whether they are parking and walking to a store, riding a bike, or walking to the bus. The Plan outlines a multimodal network designed for all ages and abilities and where cars are only one of the many transportation choices. The proposed street network and connections for non-motorized modes will meet Town Center's current and projected transportation needs. The Plan's multimodal network applies a variety of streetscape designs for new and proposed streets in Town Center, ranging from festival streets with curbless sidewalks near Town Center Park, local streets with wide sidewalks, and a main street with on-street parking and active storefronts.

Transportation is a key feature of the Town Center Plan. The goal for the plan is to provide a safe and connected area that fosters multimodal access between buildings and land uses, is connected to surrounding neighborhoods, and provides local and regional accessibility. The plan is to do this by:

- Creating multimodal connections in and through Town Center that provide multiple, safe routes for residents, businesses and visitors.
- Identifying priority locations to connect to adjacent neighborhoods and land uses.
- Integrating the multimodal transportation system with urban design and development standards developed for Town Center.
- Incorporating wayfinding elements into Town Center's multimodal transportation system.

The plan was developed with an understanding of the convergence between land use and transportation. To do this, mixed uses were allowed in every zone within the area, and streetscape designs were identified to create a highly walkable area.

For additional evidence of compliance with Goal 12, please see the findings within this attachment for the Transportation Planning Rule, which are incorporated herein by reference.

Based on the above, the City finds that the proposal satisfies Goal 12.

## GOAL 13, ENERGY CONSERVATION

***To conserve energy.***

**FINDINGS:** The proposal satisfies Goal 13 because it has been designed to maximize the conservation of energy through the creation of a highly walkable environment. The proposal achieves this because it provides for connectivity between the Town Center area and the rest of Wilsonville for pedestrians, bicyclists, and transit users. The highly-connected street grid of Town Center is designed to help residents and employees reach nearby commercial areas and recreational uses without needing to rely on automobile travel. The street-sections and design concepts within the Plan work together create a pleasant walking environment. The many tree lined streets will create shade for buildings in the warm summer months also assisting to reduce energy consumption.

Based on the above, the City finds that the proposal satisfies Goal 13.

## GOAL 14, URBANIZATION

***To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.***

**FINDINGS:** The proposal satisfies Goal 14 through making efficient use of an existing center in Wilsonville, and planning for a highly livable Town Center. Goal 14 is met.

# COMPLIANCE WITH METRO TITLE 6: CENTERS, CORRIDORS, STATION COMMUNITIES AND MAIN STREETS

## INTRODUCTION

Findings of compliance with Metro Code 3.07.610-650, Centers, Corridors, Main Streets, and Station Communities are listed below.

## COMPLIANCE WITH METRO CODE 3.07.1120 PLANNING FOR AREAS

***3.07.620 Actions and Investments in Centers, Corridors, Station Communities and Main Streets***

*(a) In order to be eligible for a regional investment in a Center, Corridor, Station Community or Main Street, or a portion thereof, a city or county shall take the following actions:*

*(1) Establish a boundary for the Center, Corridor, Station Community or Main Street, or portion thereof, pursuant to subsection (b);*

*(2) Perform an assessment of the Center, Corridor, Station Community or Main Street, or portion thereof, pursuant to subsection (c); and*

*(3) Adopt a plan of actions and investments to enhance the Center, Corridor, Station Community or Main Street, or portion thereof, pursuant to sub(d).*

**Response:** The Town Center boundaries have been established and recognized by Metro's Urban Growth Management Functional Plan Title 6 Map of Centers, Corridors, Station Communities and Main Streets, Adopted Boundaries. The Wilsonville Town Center Plan ("Plan") is consistent with Title 6's purpose because: (a) it is intended to revitalize Wilsonville's Town Center as "the heart of Wilsonville" as stated in the vision statement; and (b) Metro invested regional planning resources through a Community Planning and Development grant to fund the Plan. The following findings are in support of the Plan, which included an assessment of the center and a plan of actions and investments in response to opportunities and needs found within Town Center.

*(b) The boundary of a Center, Corridor, Station Community or Main Street, or portion thereof, shall:*

*(1) Be consistent with the general location shown in the RFP except, for a proposed new Station Community, be consistent with Metro's land use final order for a light rail transit project;*

*(2) For a Corridor with existing high-capacity transit service, include at least those segments of the Corridor that pass through a Regional Center or Town Center;*

*(3) For a Corridor designated for future high-capacity transit in the RTP, include the area identified during the system expansion planning process in the RTP; and*

*(4) Be adopted and may be revised by the city council or county board following notice of the proposed boundary action to the Oregon Department of Transportation and to Metro in the manner set forth in subsection (a) of section 3.07.820 of this chapter.*

**Response:** The boundaries of the Town Center were adopted by the Wilsonville City Council in Ordinance No. 55. They are consistent with, and shown on, the 2040 Growth Concept Map of Metro's Regional Framework Plan. Metro defines a Town Center as a focal area for growth that provides services to tens of thousands within a two- to three-mile radius and typically includes one- to three-story buildings for employment and housing. Wilsonville's Town Center will be focal area of a mix of uses, community destinations, and urban amenities serving Wilsonville's entire population of approximately 25,000 residents. Metro also identifies the Wilsonville Town Center as a Regional Pedestrian District and Bicycle District in the 2014 Regional Active Transportation Plan. The Plan includes map and code recommendations intended to support active transportation, including a future pedestrian bridge across I-5, the project already included in the City of Wilsonville's Transportation System Plan.

*(c) An assessment of a Center, Corridor, Station Community or Main Street, or portion thereof, shall analyze the following:*

*(1) Physical and market conditions in the area;*

*(2) Physical and regulatory barriers to mixed-use, pedestrian-friendly and transit-supportive development in the area;*

*(3) The city or county development code that applies to the area to determine how the code might be revised to encourage mixed-use, pedestrian-friendly and transit-supportive development;*

*(4) Existing and potential incentives to encourage mixed-use pedestrian friendly and transit-supportive development in the area; and*

*(5) For Corridors and Station Communities in areas shown as Industrial Area or Regionally Significant Industrial Area under Title 4 of this chapter, barriers to a mix and intensity of uses sufficient to support public transportation at the level prescribed in the RTP.*

**Response:** An assessment of the Center has been completed, including an Existing Conditions Report for the Town Center, which summarized the key considerations impacting existing and future development in the Town Center.

The Existing Conditions Report analyzed opportunities and constraints in the following sections:

- Land Use and Regulatory Conditions, including relevant sections of the Development Code and Comprehensive Plan;
- Infrastructure, including stormwater, sewer and water infrastructure;
- Natural Resources and Systems, including slope or grade, tree canopy density, wetland areas, and streams, rivers and waterways systems;

- Multimodal Transportation Conditions, including transit, bicycle, and pedestrian network in Wilsonville Town Center; and
- Market Conditions, including population growth, commute patterns, existing and potential market demand for retail, office and residential markets.

In addition to the Existing Conditions Report, a Development Feasibility Analysis was prepared by Leland Consulting Group, which assessed development options for economic feasibility and tested various development prototypes and effectiveness of different building forms, zoning codes, financial incentives, and other tools. As part of the plan, new development code and design guidelines were also completed to implement the Town Center vision as a walkable, mixed-use hub and heart of the community.

*(d) A plan of actions and investments to enhance the Center, Corridor, Station Community or Main Street shall consider the assessment completed under subsection (c) and include at least the following elements:*

*(1) Actions to eliminate, overcome or reduce regulatory and other barriers to mixed-use, pedestrian-friendly and transit-supportive development;*

**Response:** As stated above, the Existing Conditions Report identified applicable regulatory conditions, including barriers to mixed-use, pedestrian-friendly and transit-supportive development, in Wilsonville Town Center. The Plan has an implementation plan, which includes regulatory actions and amendments to reduce and overcome regulatory barriers within the Comprehensive Plan and Development Code. Regulatory actions include a new Comprehensive Plan designation, new mixed use development code and design guidelines, new implementation and placemaking programs, and revisions to other city plans or regulations to support strategies necessary to implement the Master Plan, such as infrastructure investments, parking strategies, placemaking strategies, economic development strategies, and transit investments.

*(2) Revisions to its comprehensive plan and land use regulations, if necessary, to allow:*

*(A) In Regional Centers, Town Centers, Station Communities and Main Streets, the mix and intensity of uses specified in section 3.07.640; and*

*(B) In Corridors and those Station Communities in areas shown as Industrial Area or Regionally Significant Industrial Area in Title 4 of this chapter, a mix and intensity of uses sufficient to support public transportation at the level prescribed in the RTP;*

**Response:** The Implementation Strategies section of the Plan includes amendments to the Wilsonville Comprehensive Plan to change the designation for parcels within the Plan boundary currently designated commercial, residential, and public lands to a new Comprehensive Plan designation of Town Center. The recommended designation includes a purpose statement and policies and is necessary to

implement the vision developed through this planning effort. There is currently no town center designation within the existing Comprehensive Plan.

The Plan also includes amendment to the Wilsonville Development Code to include a new Town Center (TC) zoning district and new site and building design standards. This will include changing the existing Planned Development Commercial Town Center (PDC-TC) and Planned Development Residential (PDR) zoning designations within the Town Center boundary to Town Center (TC), a new zoning district with four sub-districts – Main Street, Neighborhood-Mixed Use, Mixed Use, and Commercial Mixed Use. The new site and building design standards in the new TC zone will provide specific design requirements for each of these sub-districts related to building location, height and design, and parking provisions (surface and structured) in order to set the stage for development consistent with the community's vision for Town Center.

*(3) Public investments and incentives to support mixed-use pedestrian friendly and transit-supportive development; and*

**Response:** The implementation strategy for the Plan identifies investments in infrastructure, including roads, sewer, water, stormwater, and parks. The parks and roads investments will aim to increase the multi-modal use of the Town Center. Infrastructure projects identified in the Plan include:

- I-5 Bike/Pedestrian Bridge Gateway: The City is in the process of designing a bike/pedestrian bridge over I-5 that will connect the northwest corner of Town Center to the existing transit center and development on the west side of I-5.
- Park Place Redesign (Town Center Loop to northern edge of Town Center Park): The recommended future design for this section of Park Place includes two travel lanes, buffered bike lanes, and wide sidewalks.
- Park Place Redesign (Town Center Park to Courtside Drive): This section of Park Place becomes an extension of Town Center Park. Constructed as a curbless street that can be closed during events in Town Center Park, a farmers market, or other civic use.
- Park Place Extension (Courtside Drive to Wilsonville Road): Extending Park Place provides opportunities to create a walking retail corridor, gathering spaces, and placemaking programs for Town Center.
- Courtside Drive Improvements (Park Place to Town Center Loop E.): Improvements to this section of roadway are primarily striping for the cycle track and for on street parking on the south side of Courtside Drive.
- Courtside Drive Extension (Park Place East to Town Center Loop W.): This project would extend Courtside Drive to the west to Town Center Loop W., providing increased connectivity to the western portion of town center, an area envisioned to redevelop with a more diverse mix of uses.

- Wilsonville Road Intersection Modifications: Recommended improvements along Wilsonville Road are designed to address, to the greatest degree practicable, existing capacity issues and implementation of the desired multi-modal form as recommended in this plan.
- Town Center Loop W. Modifications: The focus of this project is to make Town Center Loop W. more pedestrian and bicycle friendly, help redistribute through traffic, and reduce congestion at the Wilsonville Road/Town Center Loop W. intersection.
- Local Road Network: As part of private development, additional local connections will be added to create a more walkable and accessible Town Center neighborhood.
- Park Place Promenade Redesign: The Park Place Promenade redesigns Park Place between Town Center Loop W. and Courtside Drive to eliminate it as a vehicular route and create a linear park feature that provides bicycle and pedestrian access and a location for future temporary events such as festivals or a farmers market.
- Cycle tracks: Several sections of two-way cycle tracks are identified in the Master Plan, including the Bike/Pedestrian Bridge to Town Center Park, Town Center Park to Courtside Drive, Town Center Park to Town Center Loop E. (Courtside Drive Segment), and Town Center Loop E to Wilsonville Road.
- Promenade: The Promenade is a linear park located north of the existing Fry's building, providing a multi-modal connection between the I-5 bike/pedestrian bridge landing and the two-way cycle track on Park Place.

In addition to the public infrastructure improvements for increased multimodal use, the Plan identified transit investments and strategies specifically to increase the use of mass transit.

- Develop a Transit Shelter Adoption Program to improve the aesthetics of the transit shelters.
- Develop a land use code in the Town Center Development Code Amendments that is focused on pedestrian and transit-oriented development.
- Improve Transit Connections: Supporting bike infrastructure near transit stops; position bus stops at popular destinations to reduce last mile travel; potentially allow buses to use the future I-5 bike/pedestrian bridge, and work with private alternative transportation companies when public transit is not an option.
- Work to develop vehicles and infrastructure for transit that has unique identifiers for the Town Center.
- Increase transit service and accessibility over time.

*(4) A plan to achieve the non-SOV mode share targets, adopted by the city or county pursuant to subsections 3.08.230(a) and (b) of the RTFP, that includes:*

*(A) The transportation system designs for streets, transit, bicycles and pedestrians consistent with Title 1 of the RTFP;*

*(B) A transportation system or demand management plan consistent with section 3.08.160 of the RTFP; and*

*(C) A parking management program for the Center, Corridor, Station Community or Main Street, or portion thereof, consistent with section 3.08.410 of the RTFP.*

**Response:** The Plan addresses single-occupancy vehicle mode share by working to increase the availability, safety, and experience of other modes of transportation, as well as discouraging the attractiveness of accessing the town center by car. Parking strategies will aim to locate parking away from the pedestrian areas and ensure off-street parking is not the driving factor in how land is used within the town center. The transportation system design includes transit investments and strategies to improve transit connections, including supporting bike infrastructure, repositioning bus stops at popular destinations, and considering allowing bus access over the I-5 bike/pedestrian bridge. Unique transit infrastructure for the Town Center and increased transit service and accessibility were also identified in the implementation plan. The Town Center Plan does not include a transportation demand management (TDM) program per se, although the Plan recommends developing a parking management plan, which could include TDM strategies. The Plan also recommends parking reductions for some types of projects described in implementation measure PA.2, including the development of a transportation management association to coordinate district-wide efforts in in reducing parking demand. However, the plan and vision are intended to create much stronger identity and cohesion for the Town Center than is present today. This will help set the stage for the future, should an effort be launched to discuss TDM strategies for the Town Center.

*(e) A city or county that has completed all or some of the requirements of subsections (b), (c), and (d) may seek recognition of that compliance from Metro by written request to the COO.*

**Response:** As identified in the responses above, the City of Wilsonville has completed all of the requirements of subsections (b), (c) and (d). The City is not seeking recognition of that compliance by Metro.

*(f) Compliance with the requirements of this section is not a prerequisite to:*

*(1) Investments in Centers, Corridors, Station Communities or Main Streets that are not regional investments; or*

*(2) Investments in areas other than Centers, Corridors, Station Communities and Main Streets.*

**Response:** The City's intent is for the Plan to guide and direct investments in Town Center through local public funding, private development, and public/private partnerships to construct the desired

infrastructure investments. The City will also use the recommendations and implementation strategies identified in the Plan to pursue regional, state and federal funding for infrastructure investments. The City's investments in other areas of Wilsonville are guided by other planning documents, all under the umbrella of the Comprehensive Plan.

***3.07.630 Eligibility Actions for Lower Mobility Standards and Trip Generation Rates***

*(a) A city or county is eligible to use the higher volume-to-capacity standards in Table 7 of the 1999 Oregon Highway Plan when considering an amendment to its comprehensive plan or land use regulations in a Center, Corridor, Station Community or Main Street, or portion thereof, if it has taken the following actions:*

*(1) Established a boundary pursuant to subsection (b) of section 3.07.620; and*

*(2) Adopted land use regulations to allow the mix and intensity of uses specified in section 3.07.640.*

**Response:** The city has evaluated transportation impacts for the Town Center Plan using the mobility standards and trip generation rates that are consistent with the adopted Wilsonville Transportation System Plan. No changes for different standards are proposed This section is not applicable.

*(b) A city or county is eligible for an automatic reduction of 30 percent below the vehicular trip generation rates reported by the Institute of Traffic Engineers when analyzing the traffic impacts, pursuant to OAR 660-012-0060, of a plan amendment in a Center, Corridor, Main Street or Station Community, or portion thereof, if it has taken the following actions:*

*(1) Established a boundary pursuant to subsection (b) of section 3.07.620;*

*(2) Revised its comprehensive plan and land use regulations, if necessary, to allow the mix and intensity of uses specified in section 3.07.640 and to prohibit new auto-dependent uses that rely principally on auto trips, such as gas stations, car washes and auto sales lots; and*

*(3) Adopted a plan to achieve the non-SOV mode share targets adopted by the city or county pursuant to subsections 3.08.230 (a) and (b)of the RTFP, that includes:*

*(A) Transportation system designs for streets, transit, bicycles and pedestrians consistent with Title 1 of the RTFP;*

*(B) A transportation system or demand management plan consistent with section 3.08.160 of the RTFP; and*

**Response:** This section is not applicable.

*(c) A parking management program for the Center, Corridor, Station Community or Main Street, or portion thereof, consistent with section 3.08.410 of the RTFP.*

**Response:** The implementation section of the Plan includes a list of parking strategies to be utilized with future development in the Town Center. The Plan includes a parking analysis and direction to develop a Town Center Parking Management Plan in the future.

***3.07.640 Activity Levels for Centers, Corridors, Station Communities and Main Streets***

*(a) A Centers, Corridors, Station Communities and Main Streets need a critical number of residents and workers to be vibrant and successful. The following average number of residents and workers per acre is recommended for each:*

*(1) Central City - 250 persons*

*(2) Regional Centers - 60 persons*

*(3) Station Communities - 45 persons*

*(4) Corridors - 45 persons*

*(5) Town Centers - 40 persons*

*(6) Main Streets - 39 persons*

**Response:** The Wilsonville Town Center will have a high density of residents and workers with the new land use. Wilsonville Town Center is about 100 acres in size. As shown in the Table 1, the new persons per acre will be approximately 84.51 (8,451 people in 100 acres) at full project buildout (40-year planning horizon).

**Table 1. Potential Future Development by Land Use Type in Town Center[1]**

| | Commercial | Retail | Office | Residential | Total |
|---|---|---|---|---|---|
| Projected People | 1,000 | 740 | 2,880 | 1,680 units (3,831 people)[2] | 8,451 people |

*(b) Centers, Corridors, Station Communities and Main Streets need a mix of uses to be vibrant and walkable. The following mix of uses is recommended for each:*

*(1) The amenities identified in the most current version of the State of the Centers: Investing in Our Communities, such as grocery stores and restaurants;*

[1] From Table 3.1 in Wilsonville Town Center Plan

[2] Assumes 2.28 people per household, based on 2010 US Census data for Wilsonville.

*(2) Institutional uses, including schools, colleges, universities, hospitals, medical offices and facilities;*

*(3) Civic uses, including government offices open to and serving the general public, libraries, city halls and public spaces.*

**Response:** The Plan creates new land use districts that establish urban form and land uses to implement the Town Center vision. Within each district, a different combination of land uses and building scales are allowed. Uses for the Main Street sub-district will include mixed-use buildings, apartments and local retail and restaurants. The commercial-mixed use district, located closest to I-5, will include a mix of office, entertainment, hospitality, civic and residential uses. The Mixed Use sub-district will have residential, retail, office and service uses. The Neighborhood-Mixed Use sub-district, along the easternmost edge of the Town Center, will be a mix of townhomes and small-scale commercial businesses. The State of our Centers identifies a number of private and public amenities for the Wilsonville Town Center. Each of these will be allowed in at least one of the districts within the Town Center zone.

*(c) Centers, Corridors, Station Communities and Main Streets need a mix of housing types to be vibrant and successful. The following mix of housing types is recommended for each:*

*(1) The types of housing listed in the "needed housing" statute, ORS 197.303(1);*

*(2) The types of housing identified in the city's or county's housing need analysis done pursuant to ORS 197.296 or statewide planning Goal 10 (Housing); and*

*(3) Accessory dwellings pursuant to section 3.07.120 of this chapter.*

**Response:** Housing, especially medium and high-density housing, will be allowed within all the districts within the new Town Center zone. The Neighborhood-Mixed Use sub-district on the east side of the Town Center will provide a mix of housing types which will help transition to the single-family housing which exists just east of the Town Center. The potential future development for the Town center is estimated to be about 1,680 residential units within the next 40 years, with about 881 residential units provided in the next 20 years. Currently, 79 units exist within the Town Center. This will provide a strong response to the needed housing for the area, which was identified in the Existing Conditions Report.

### *3.07.650 Centers, Corridors, Station Communities and Main Streets Map*

*(a) The Centers, Corridors, Station Communities and Main Streets Map is incorporated in this title and is Metro's official depiction of their boundaries. The map shows the boundaries established pursuant to this title.*

**Response:** The Wilsonville Town Center boundaries are identified in the current Centers, Corridors, Station Communities and Main Streets Map.

*(b) A city or county may revise the boundary of a Center, Corridor, Station Community or Main Street so long as the boundary is consistent with the general location on the 2040 Growth Concept Map in the RFP. The city or county shall provide notice of its proposed revision as prescribed in subsection (b) of section 3.07.620.*

**Response:** The City is not requesting a revision of the boundary of the Wilsonville Town Center; therefore, this requirement does not apply.

*(c) The COO shall revise the Centers, Corridors, Station Communities and Main Streets Map by order to conform the map to establishment or revision of a boundary under this title.*

**Response:** This section is not applicable.

# COMPLIANCE WITH WILSONVILLE COMPREHENSIVE PLAN AMENDMENT STANDARDS

## INTRODUCTION

The Wilsonville Comprehensive Plan establishes how Plan amendments may be initiated and reviewed by the City. The guiding text is in the Introduction section, pages Intro 7-8. The standards for amendments are listed below in bold, italic type, followed by findings.

## PLAN POLICY REVIEW

**Standards for approval of Plan Amendments**

**In order to grant a Plan amendment, the City Council shall, after considering the recommendation of the Development Review Board (quasi-judicial) or Planning Commission (legislative), find that:**

**a. The proposed amendment is in conformance with those portions of the Plan that are not being considered for amendment.**

| Applicable Policies and Implementation Measures | Compliance Findings |
|---|---|
| **Citizen Involvement** | |
| **Policy 1.1.1** The City of Wilsonville shall provide opportunities for a wide range of public involvement in City planning programs and processes.<br>**Policy 1.2.1** The City of Wilsonville shall provide user-friendly information to assist the public in participating in City planning programs and processes.<br>**Policy 1.3** The City of Wilsonville shall coordinate with other agencies and organizations involved with Wilsonville's planning programs and policies. | Please see the public information tools and processes listed under Findings for Statewide Planning Goal 1, Citizen Involvement.<br><br>Two informational sessions and six work sessions were held with the Planning Commission. Six work sessions were held with the City Council. Two join work sessions were held with the Planning Commission and City Council. Public comment opportunities were available at every meeting. The Planning Commission had extensive and productive informal discussions with the participating public.<br><br>Through the work session, public notification, website and public hearing schedule, the City has encouraged the participation of a wide variety of individuals |

| | |
|---|---|
| | representing the groups listed above. Meeting notices were sent to 62 property owners in and within 250 feet of Town Center. Additional notice was posted in the Library, Community Center and City Hall and was published in the Wilsonville Spokesman. |
| **Urban Growth Management** | |
| **Policy 2.1.1.** The City of Wilsonville shall support the development of all land within the City, other than designated open space lands, consistent with the land use designations of the Comprehensive Plan.<br>**Policy 2.2.1.** The City of Wilsonville shall plan for the eventual urbanization of land within the local planning area, beginning with land within the Urban Growth Boundary. | The Town Center Plan is a key step toward fulfillment of these policies for the Town Center. |
| **Public Facilities and Services** | |
| **Policy 3.1.1** The City of Wilsonville shall provide public facilities to enhance the health, safety, educational, and recreational aspects of urban living.<br>**Policy 3.1.2** The City of Wilsonville shall provide, or coordinate the provision of, facilities and services concurrent with need (created by new development, redevelopment, or upgrades of aging infrastructure).<br>**Policy 3.1.3** The City of Wilsonville shall take steps to assure that the parties causing a need for expanded facilities and services, or those benefiting from such facilities and services, pay for them.<br>**Policy 3.1.4** The City of Wilsonville shall continue to operate and maintain the wastewater treatment plant and system in conformance with federal, state, and regional water quality standards.<br>**Policy 3.1.6** The City of Wilsonville shall continue a comprehensive water conservation program to make effective use of the water infrastructure, source water supply and treatment processes.<br>**Policy 3.1.7** The City of Wilsonville shall maintain an accurate user demand profile to account for actual and anticipated demand conditions in order to assure an adequately sized water system.<br>**Policy 3.1.8** The City of Wilsonville shall coordinate distribution system improvements with other CIP projects, such as roads, wastewater, and storm water, to save construction costs and minimize public impacts during construction. | Please see the public information tools and processes listed under Findings for Statewide Planning Goal 8, Recreational Needs and Goal 11, Public Facilities and Services. |

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| **Policy 3.1.7** The City of Wilsonville shall develop and maintain an adequate storm drainage system. However, where the need for new facilities is the result of new development, the financial burden for drainage system improvements shall remain primarily the responsibility of developers. The City will use systems development charges, user fees, and/or other funding sources to construct facilities to improve storm water quality and control the volume of runoff.<br><br>**Policy 3.1.8** The City of Wilsonville shall continue to coordinate planning for fire safety with the Tualatin Valley Fire and Rescue District.<br><br>**Policy 3.1.11** The City of Wilsonville shall conserve and create open space throughout the City for specified objectives including park lands. | |
| **Transportation** | |
| **Policy 3.2.1** To provide for safe and efficient vehicular, transit, pedestrian and bicycle access and circulation.<br><br>**Policy 3.2.2** To provide for a mix of planned transportation facilities and services that are sufficient to ensure economical, sustainable and environmentally sound mobility and accessibility for all residents and employees in the city.<br><br>**Policy 3.2.3** If adequate regional transportation services, including I-5 interchange modification or additions, and high capacity public transportation, cannot be provided, then the City shall reevaluate and reduce the level of development and/or timing of development anticipated by other elements of this Plan. Such reductions shall be consistent with the capacity of the transportation system at the time of re-evaluation.<br><br>**Policy 3.3.1** The City shall provide facilities that allow people to reduce reliance on single occupant automobile use, particularly during peak periods.<br><br>**Policy 3.3.2** The City shall work to improve accessibility for all citizens to all modes of transportation.<br><br>**Policy 3.4.2** The City will work with ODOT, Metro and neighboring communities to maintain the capacity of I-5 through a variety of techniques, including requirements for concurrency, continued development of a local street network within and connecting cities along I-5, access management, and completion of targeted improvements on I-5 such as auxiliary lanes, improvements at interchanges, etc.<br><br>**Policy 3.5.1** Develop and maintain a transportation system that balances land use and transportation needs in a manner that enhances the livability and economic vitality of the city. | The Transportation section of the Town Center Plan provides a highly-connected network of streets, pedestrian ways, and bicycle circulation.<br><br>SMART service is planned to expand and intensify in the Town Center area.<br><br>Street design and residential design standards will support active and comfortable walking routes in the Town Center, and reduced parking will be balanced by an increased multimodal network and transit options.<br><br>Together, these measures cited above are expected to reduce reliance on automobile use, promote livability, and balance land use and transportation needs.<br><br>The transportation analysis completed for the Plan (Appendix B of the Plan) showed that there would be no adverse impacts to I-5. See also findings for Statewide Planning Goal 12, Transportation within this document. |

| | |
|---|---|
| **Policy 3.5.2** Review all land use/development proposals with regards to consistency with the TSP transportation impacts.<br>**Policy 3.5.3** Provide for an adequate system of local roads and streets for access and circulation within I-5 Interchange Management Areas that minimize local traffic through the interchanges and on the interchange cross roads. | |
| **Land Use and Development** | |
| **Policy 4.1.1** The City of Wilsonville shall make land use and planning decisions to achieve Goal 4.1.<br>**Policy 4.1.4** The City of Wilsonville shall provide opportunities for a wide range of housing types, sizes, and densities at prices and rent levels to accommodate people who are employed in Wilsonville. | Please see Findings for Statewide Goal 10 Housing. The Town Center fulfills, in part, the denser housing component of the City's overall diversity of housing opportunities by adding up to 1,680 dwelling units at full buildout.<br>The Town Center Plan includes provisions for public and private open space. Design standards are included to protect the character and ensure cohesion within the area. |

## OTHER STANDARDS RELATED TO COMPREHENSIVE PLAN COMPLIANCE

**b. The granting of the amendment is in the public interest.**

**FINDINGS:** The Plan has been developed with extensive public outreach throughout the process. The process was guided by a Task Force that included representation from Wilsonville's residents, community advocates, small and large businesses, land owners, and neighborhood groups. The Planning Commission and City Council were also involved at key points throughout the planning process.

**c. The public interest is best served by granting the amendment at this time.**

**FINDINGS:** The public engagement process encouraged community members to identify their priorities for Town Center. Several prominent themes emerged during from the community kickoff, stakeholder meetings, and online outreach. Using these priorities as foundational elements, the Wilsonville community, Town Center Task Force, Planning Commission and City Council developed the Town Center Vision, Goals and Measures of Success to guide future development concepts for Town Center and the implementation strategies in the Plan. The strong consensus developed during the Town Center planning process is best served by adopted the proposed plan and moving forward to implementation.

**d. The following factors have been adequately addressed in the proposed amendment:**

- the suitability of the various areas for particular land uses and improvements;
- the land uses and improvements in the area;
- trends in land improvement;
- density of development;
- property values;
- the needs of economic enterprises in the future development of the area;
- transportation access;
- natural resources; and
- the public need for healthful, safe and aesthetic surroundings and conditions**.**

**FINDINGS:** The Plan was developed after a thorough identification of existing issues and needs were identified. The Existing Conditions Report (see Appendix F) identified land sues, regulatory conditions, transportation needs, economic development potential, and existing natural resources. The Development Feasibility Analysis (see Appendix C of the Plan) examined a number of different inputs to test the financial feasibility of various types of real estate development in the Town Center, including program (site size, number of units, etc.), timing, hard and soft costs, operating revenue and expenses, and return on investment. In addition, the analysis studies existing multifamily and mixed use projects in Wilsonville and nearby cities to understand the performance of the projects, including what assistance the jurisdictions gave to increase development feasibilit.

**e. Proposed changes or amendments to the Comprehensive Plan do not result in conflicts with applicable Metro requirements.**

**FINDINGS:** Please see findings regarding compliance with Metro Title 6.

## COMPLIANCE WITH ZONE TEXT AMENDMENT CRITERIA

Section 4.197 of the Wilsonville zoning code establishes the criteria for amendment of the zoning text. Those criteria are:

***1. That the application was submitted in compliance with the procedures set forth in Section 4.008; and***

***2. The amendment substantially complies with all applicable goals, policies and objectives set forth in the Comprehensive Plan; and***

***3. The amendment does not materially conflict with, nor endanger, other provisions of the text of the Code; and***

***4. If applicable, the amendment is in compliance with Statewide Land Use Planning Goals and related administrative rules; and***

***5. If applicable, the amendment is necessary to ensure that the City's Land Use and Development Ordinance complies with mandated requirements of State or Federal laws and/or statutes.***

**FINDINGS:** All procedures required by the code have been followed. The compliance with the Comprehensive Plan is documented in this Findings Report. A comprehensive review of the Wilsonville text has been conducted and there are no conflicts; minor codification amendments have been proposed to ensure consistency. The proposal's compliance with the Statewide Planning Goals is also documented in this Findings Report. Other than Oregon's land use statutes, no other State or Federal laws or statues have been identified as applicable.

The criteria for a zone text amendment are met.

# The Year 2000 Plan (Appendix D)

an Urban Renewal Plan & Program of the City of Wilsonville, Oregon

WILSONVILLE OREGON



Plan Duration

**1990-2023**

Creekside Woods Senior Housing



Fountain @ Murase Plaza

## Major Projects Completed

### Streets & Streetscapes

- ✓ Wilsonville Road Improvements including undergrounding utilities
- ✓ Boones Ferry Road
- ✓ Memorial Drive
- ✓ Canyon Creek Road North
- ✓ Courtside Drive
- ✓ 5th to Kinsman
- ✓ Boeckman Road Corridor Project
- ✓ Boeckman Bike/Ped Imprvmts.
- ✓ Misc. Streetscape, Signals

### Parks & Recreation

- ✓ Boozier/Murase Land Acquisition
- ✓ Stein-Boozier Barn Imprvmts.
- ✓ City Hall Site Acquisition
- ✓ Town Center Park
- ✓ Murase Plaza

### School Partnerships

- ✓ Wilsonville HS Gymnasium
- ✓ High School Public Facilities
- ✓ High School Girls' Field Imprvmts.
- ✓ I-5 Underpass Enhancements

### Facilities & Planning

- ✓ City Hall
- ✓ Creekside Woods Senior Housing
- ✓ Sewer Plant Upgrade
- ✓ Town Center Concept Planning

## Mission Accomplished

According to the Year 2000 Urban Renewal Plan document from 1990,

*"The most critical conditions of blight ... [were] related to long-term water supply, waste water treatment capacity, water delivery system, lack of a comprehensive storm drainage system, and the existence of an inadequate and substandard street and transportation system. [Such blight] inhibit[ed] and in some cases prohibit[ed] the timely development of tax-paying property by the private sector."*

Over 33 years, strategic investments made under the Plan addressed these blighted conditions, buoying property values and livability while supporting new industrial, commercial, and residential development.

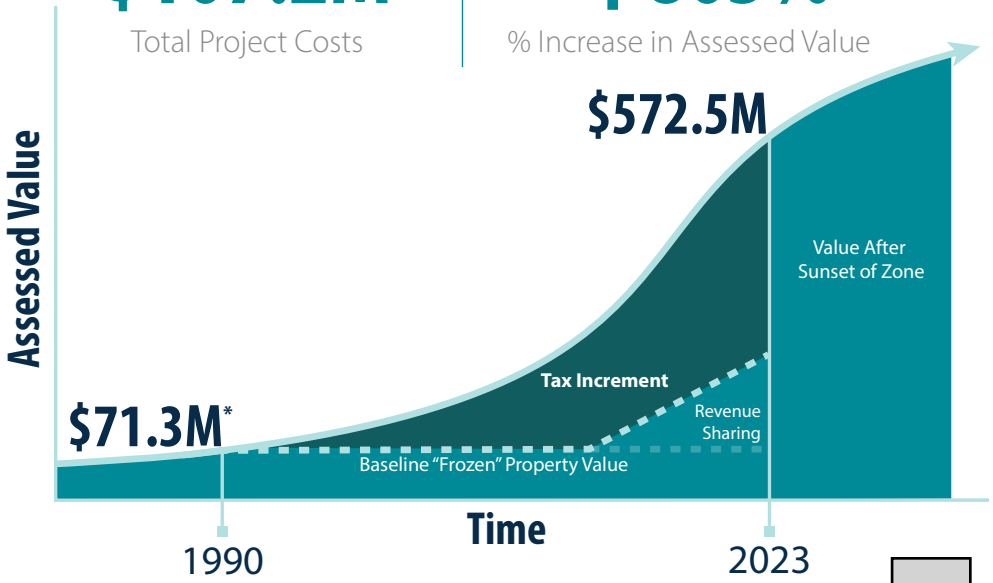
## By The Numbers

**$107.2M**

Total Project Costs

**↑ 803%**

% Increase in Assessed Value




* The "frozen" base of $71.3M is inflation-adjusted using CPI. The original "True Cash Value" basis for Oregon property taxation in 1989-90, for the plan Area was $30.3M.



















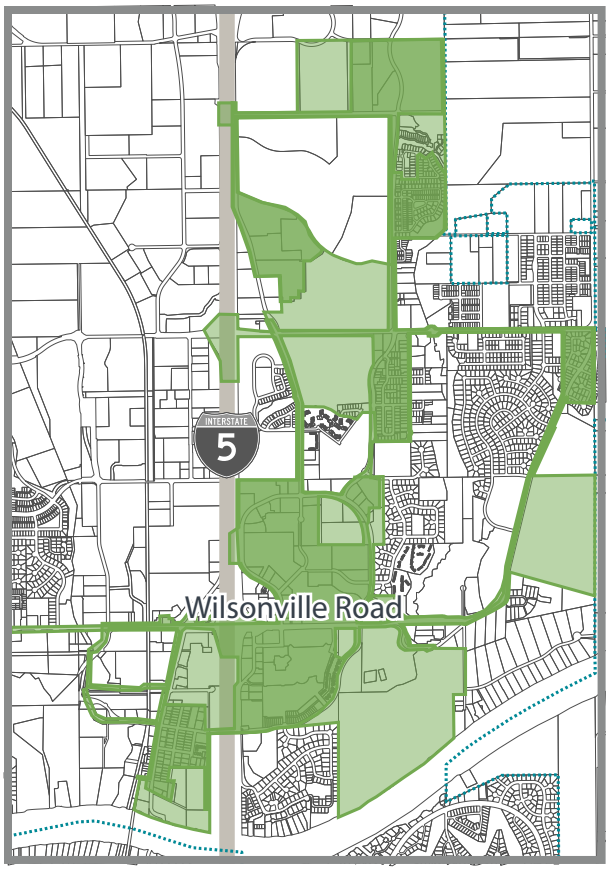









## Area Boundary*




## Tools for Success

### Revenue Sharing

Beginning in 2003 the City began removing parcels from the district in order to limit tax increment collections to approximately $4 million per year. After FY 2010 the law changed and allowed the City to certify less than 100% of the available taxes and has limited tax increment to $4 million ever since. This allows taxing districts to enjoy the benefits of urban renewal before the plan sunsets.

### Partnerships with Taxing Districts

The City adopted the practice of "consult and confer" before it was written into statute. Affected taxing districts are partners and collaborators. As noted on the project list, several projects were completed in partnership with the School District to enhance livability and support development and student population growth.

### Public Engagement

Wilsonville's use of urban renewal is guided by the Urban Renewal Task force, comprised of residents, affected taxing districts, land owners, developers, and area businesses.

Wilsonville has also adopted the practice of consulting the electorate through an advisory vote before the adoption of any new urban renewal plan in the City.

* The entire shaded area in the map represents the original area boundary. The lighter areas are those that were "released" over the life of the plan in order to share tax increment revenue with overlapping taxing districts.

**For Additional Information:**

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# Exhibit B

## CITY OF WILSONVILLE BALLOT MEASURE _____

**CAPTION (10-word maximum):**

Advisory vote on forming a Town Center urban renewal district.
(10 words)

**QUESTION (20-word maximum):**

Shall an urban renewal district be formed to fund infrastructure and facilitate new development in Town Center?
(17 words)

**SUMMARY (175-word maximum):**

An urban renewal district in Town Center would use tax increment financing (TIF) to stimulate walkable, private development as envisioned in the 2019 Town Center Plan.

TIF IS NOT A NEW TAX OR TAX INCREASE. TIF is a financing tool which uses taxes paid on increased property values within the district to facilitate community vitality and economic growth primarily through the construction of streets and other public infrastructure. TIF revenues are generated from new development, redevelopment and the annual property tax increases that happen with or without an urban renewal district.

The following types of projects may be included in the Town Center urban renewal plan. Other projects may be added over the 30-year life of the plan.

- Construction of a new Main Street to establish a city center
- Bicycle and pedestrian improvements, including a bridge over I-5.
- Parks, green spaces and public gathering spaces
- Wilsonville Road intersection pedestrian safety improvements
- Construction of local streets in partnership with private developers for greater connectivity, safety, and the infrastructure necessary to promote development
- Relocating underground utilities

(174 words)

# Exhibit B

**EXPLANATORY STATEMENT (500-word maximum):**

In 2019, the City Council adopted the Town Center Plan after a thorough and equitable two-year community outreach campaign that included over one hundred community events and three thousand participants in polls and surveys. The community expressed its desire for a dynamic, walkable, diverse, and engaging community and commercial hub. The Town Center Plan reflects those desires.

Today's large parking lots and disconnected streets, sidewalks, and bicycle facilities are barriers to the Town Center becoming the vibrant place desired by our community. Transforming Town Center requires public investment in infrastructure and placemaking projects to make future private development occur.

A 2022 city study indicated that forming an urban renewal (Tax Increment Financing or TIF) district would be the most viable and substantial funding source for needed infrastructure to make the Town Center Plan come to life.

Urban Renewal/TIF is NOT A NEW TAX OR TAX RATE INCREASE. All taxing districts continue receiving taxes based on the assessed values of properties at the time an urban renewal district is formed. Once a district is formed, the future taxes within the boundary from typical three-percent annual property tax increases, new development, and redevelopment will go to the urban renewal agency fund. The fund finances projects that provide the placemaking and infrastructure improvements that spur further private development.

The total cost for projects needed to implement the Town Center Plan is estimated at $190.4 million (in 2023 dollars). The funding and completion of these projects happens over the estimated 30-year life of the district. Creating an urban renewal district would generate about half of the funding needed. Other funding sources may include developer contributions, system development charges, operational funds, and grants.

Only projects located within the specific boundaries of an urban renewal district can be funded through this plan. The projects proposed for a Town Center Urban Renewal District are intended to provide greater pedestrian, bicycle and auto transportation safety and connectivity, plazas and green spaces, utility infrastructure, parking solutions, and projects to spur private development. These projects are forecasted to result in private investment that would increase the assessed value of property within the proposed urban renewal district from

# Exhibit B

approximately $200 million to nearly $2 billion over the life of the district, thereby increasing future property tax revenue for the City of Wilsonville and other taxing districts within the boundary after the district closes.

The preliminary project list includes the projects listed in the summary above.

The anticipated urban renewal district boundary includes the area adjacent to and within Town Center Loop. This boundary may be modified slightly if an urban renewal plan is created.

This ballot measure is an advisory vote to the City Council. If this measure passes, the City Council intends to finalize the final project list, define the district boundary, and determine the maximum spending limit for the urban renewal district. If the measure fails, the Council might forego the District's formation, delaying or precluding the realization of the community’s vision for Town Center.

(496 words)

## CITY COUNCIL MEETING
## STAFF REPORT

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Ordinance No. 888 – 2nd Reading**<br>Adopting the 2023 Wastewater Treatment Plant Master Plan as a Sub-Element of the City of Wilsonville Comprehensive Plan and a Wastewater Treatment Plant Capital Improvement Project List<br><br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☒ Public Hearing Date: January 4, 2024<br>☒ Ordinance 1st Reading Date: January 4, 2024<br>☒ Ordinance 2nd Reading Date: January 18, 2024<br>☐ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☒ Approval<br>☐ Denial<br>☐ None Forwarded<br>☐ Not Applicable<br><br>**Comments:** The Planning Commission conducted a public hearing on the proposed Plan at their regular meeting on December 13, 2023, forwarding a recommendation of approval to the Council. |
| **Staff Recommendation:** Staff recommends Council adopt Ordinance No. 888 on 2nd Reading. | |
| **Recommended Language for Motion:** I move to adopt Ordinance No. 888 on 2nd Reading. | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☒Council Goals/Priorities: Strategy 1. Develop an Infrastructure resilience plan and reprioritize / fund recommended projects. | ☐Adopted Master Plan(s): | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
A City of Wilsonville Ordinance adopting the 2023 Wastewater Treatment Plant (WWTP) Master Plan as a sub-element of the City of Wilsonville Comprehensive Plan and the WWTP Capital Improvement Project List.

**EXECUTIVE SUMMARY:**

The 2023 Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future Wilsonville flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

Originally built in 1971, the WWTP collects wastewater from Wilsonville residents and businesses and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The Plan **(Exhibit B** to Ordinance No. 888) identifies a capital improvement project list required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

This Plan identifies needed capital improvements within the planning period, taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the DEQ, and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

The Plan is a sub-element to the Wilsonville Comprehensive Plan and as such, requires a formal adoption process that first includes a public hearing before the Planning Commission where conclusionary findings are considered for consistency with Statewide Planning Goals followed by a recommendation for adoption to the City Council. The City Council then holds a public hearing and considers adoption of the Plan by Ordinance.

The Planning Commission public record, including Resolution LP22-0001 and the Conclusionary Findings demonstrating consistency with Statewide Planning Goals are included as **Exhibit A** to Ordinance No. 888. At the public hearing held on December 13, 2023, the Planning Commission recommended the City Council adopt the Plan without further amendments.

**EXPECTED RESULTS:**
Adoption by City Council will make the Plan part of the City's Comprehensive Plan, allowing identified capital and operational improvements to be planned and budgeted. The total estimated amount of capital investment over the 20-year planning period is approximately $122 million, of which $17 million is anticipated in the next 5 years. The recommended capital improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that are necessary to adequately fund the upgrades needed to meet the projected growth and operational needs.

**TIMELINE:**
A second reading before City Council for the Plan adoption is scheduled on January 18, 2024. The Plan would become effective 30-days following second reading and approval of the Ordinance.

**CURRENT YEAR BUDGET IMPACTS:**
The amended fiscal year 2023-2024 Budget for CIP #2104, Wastewater Treatment Plant Master Plan, includes $130,000 in sewer operations and system development charge funds. The remaining budget is sufficient to complete the remaining work to update and adopt the Plan.

**COMMUNITY INVOLVEMENT PROCESS:**
A virtual town hall meeting to present the findings of the Plan and solicit public input was held in September 2022 and posted on the City's online calendar and *Let's Talk Wilsonville* page, where a project overview and periodic updates to the Executive Summary have also been posted. In addition, draft versions of the Executive Summary have been sent to the ten largest industrial customers for review and comment. The forthcoming Sewer System Rate Study and SDC Update will also include a public engagement process with outreach to utility customers and the development community.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES:**
The project team considered and evaluated numerous technologies and alternatives to provide the needed wastewater treatment plant capacity to meet future demands and recommend a capital improvement program that implements the needed improvements in a way that is efficient and cost effective.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**
1. Ordinance No. 888
    A. Planning Commission Resolution LP22-0001, staff report, and public record
    B. 2023 Wastewater Treatment Plan Master Plan

**ORDINANCE NO. 888**

**AN ORDINANCE OF THE CITY OF WILSONVILLE TO ADOPT THE 2023 WASTEWATER TREATMENT PLANT MASTER PLAN AS A SUB-ELEMENT TO THE CITY OF WILSONVILLE COMPREHENSIVE PLAN AND THE WASTEWATER TREATMENT PLANT CAPITAL IMPROVEMENT PROJECT LIST.**

WHEREAS, ORS 197.175 requires cities to prepare, adopt, and implement Comprehensive Plans consistent with statewide planning goals adopted by the Land Conservation and Development Commission; and

WHEREAS, ORS 197.712(2)(d) requires cities to develop and adopt a public facilities plan for areas within the Urban Growth Boundary containing a population greater than 2,500 people, including rough cost estimates for projects needed to provide sewer, water, and transportation uses contemplated in the Comprehensive Plan and Land Use Regulations; and

WHEREAS, the 2023 Wastewater Treatment Plant Master Plan ("Plan") is needed to account for growth and plan for future development; and

WHEREAS, the Plan provides a detailed framework for expanding treatment process capacity to accommodate future development, comply with environmental regulations, meet seismic resiliency performance targets, and replace aging assets; and

WHEREAS, the Plan documents recommended capital improvement projects needed to ensure continued reliability of the treatment plant through the year 2045 and beyond; and

WHEREAS, the Plan identifies estimated costs and recommends schedules for the design and construction of the recommended capital improvement projects; and

WHEREAS, in preparing the Plan, the City has sought to carry out federal, state, and regional mandates, provide for alternative improvement solutions to minimize public and private expense, avoid the creation of nuisances, and maintain the public's health; and

WHEREAS, the concepts and information contained in the Plan were presented at a virtual public meeting on September 28, 2022 and feedback incorporated in the final Plan documents; and

WHEREAS, the City conducted work sessions with the Planning Commission and City Council to solicit citizen input addressing Statewide Planning Goal #1 – Citizen Involvement; and

WHEREAS, after providing due public notice as required by City Code and Oregon Law, the Wilsonville Planning Commission conducted a public hearing on December 13, 2023 and adopted Resolution LP22-0001 recommending approval of the Plan to the City Council; and

WHEREAS, after providing due public notice as required by City Code and Oregon Law, a public hearing was held before the City Council on January 4, 2023, at which time the City Council considered the recommendation of the Planning Commission, gathered additional evidence and afforded all interested parties an opportunity to present oral and written testimony concerning the Plan; and

WHEREAS, the City Council carefully considered the public record, including all recommendations and testimony.

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

Section 1. The above findings are adopted and incorporated herein, including the findings and conclusions of Planning Commission Resolution LP22-0001, its staff report, and public record attached hereto as **Exhibit A** and incorporated herein.

Section 2. The Wilsonville City Council finds and concludes that the Plan is necessary to protect the public health, safety, and welfare of the City of Wilsonville to help ensure adequate wastewater treatment capacity and quality for the City's wastewater system.

Section 3. The City Council hereby adopts the Plan, attached hereto as **Exhibit B** and incorporated herein

Section 4. Effective Date. This Ordinance shall be declared to be in full force and effect thirty (30) days from the date of final passage and approval.

SUBMITTED by the Wilsonville City Council at a regular meeting thereof this 4th day of January, 2024, and scheduled the second reading on January 18, 2024 commencing at the hour of 7:00 p.m. at the Wilsonville City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon.

_____

Kimberly Veliz, City Recorder

ENACTED by the City Council on the 18th day of January, 2024, by the following votes:

Yes: _____ No: _____

_____

Kimberly Veliz, City Recorder

DATED and signed by the Mayor this 18th day of January, 2024

_____

JULIE FITZGERALD MAYOR

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Linville

Councilor Berry

Councilor Dunwell

EXHIBITS:

A. Planning Commission Resolution LP22-0001, staff report, and public record
B. 2023 Wastewater Treatment Plant Master Plan

# EXHIBIT A
# LP22-0001
# Wastewater Treatment Plant Master Plan
# Planning Commission Public Hearing Record Index
# FINAL (December 13, 2023)

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**PLANNING COMMISSION AND CITY COUNCIL MEETINGS**

December 13, 2023 - Planning Commission Public Hearing
- Resolution LP22-0001
- Staff Report and Attachments
- Presentation
- Affidavit of Notice of Hearing

November 6, 2023 - City Council Work Session
- Staff Report and Attachments
- Presentation
- Action Minutes

October 11, 2023 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

October 12, 2022 - Planning Commission Public Hearing - Cancelled
- Cancellation Memo
- Minutes Excerpt

September 14, 2022 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

August 1, 2022 - City Council Work Session
- Staff Report and Attachments
- Presentation
- Action Minutes

July 13, 2022 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

**PUBLIC ENGAGEMENT**

Project Website: https://www.letstalkwilsonville.com/wastewater-treatment-plant-master-plan

Open House - September 28, 2022: https://www.ci.wilsonville.or.us/engineering/page/public-open-house-waste-water-treatment-plant-master-plan

# LP22-0001
# Wastewater Treatment Plant Master Plan
# Planning Commission Public Hearing Record Index
# FINAL (December 13, 2023)

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**COMMENTS/ARTICLES**

Boones Ferry Messenger – September

Spokesman Article for Original Public Hearing notification and cancellation

Emailed Comment 10/2/2022 – Thomas Hooker

# PLANNING COMMISSION

# WEDNESDAY, DECEMBER 13, 2023

**PUBLIC HEARING**

2. Wastewater Treatment Plant Master Plan (Nacrelli) (30 minutes)

**PLANNING COMMISSION**
**RESOLUTION NO. LP22-0001**

**A RESOLUTION OF THE CITY OF WILSONVILLE PLANNING COMMISSION RECOMMENDING THE WILSONVILLE CITY COUNCIL ADOPT AN UPDATE TO THE WASTEWATER TREATMENT PLANT MASTER PLAN.**

WHEREAS, the City of Wilsonville Wastewater Treatment Plant was last upgraded in 2014, pursuant to Resolution No. 2131; and

WHEREAS, the Capital Improvement Program identified the completion of a Wastewater Treatment Plant Master Plan ("Plan") for FY 2023-24; and

WHEREAS, the Plan provides a detailed framework for expanding treatment process capacity to accommodate future development, comply with environmental regulations, and replace aging assets; and

WHEREAS, the concepts and information contained in the proposed update to the Wastewater Treatment Plant Master Plan were presented at a virtual public meeting on September 28, 2022; and

WHEREAS, the Planning Commission of the City has the authority to review and make recommendations to the City Council regarding the Capital Improvement Program pursuant to Wilsonville Code Sections 2.322 and 4.032; and

WHEREAS, the Planning Commission conducted work sessions on the draft Plan at their regular meetings of July 13 and September 14, 2022 and October 11, 2023; and

WHEREAS, the Planning Commission, after Public Hearing Notices were mailed to property owners within the City limits and a list of interested citizens and agencies, and were posted in three locations throughout the City and on the City website, held a Public Hearing on December 13, 2023, to review the Plan and to gather additional testimony and evidence regarding the proposed Master Plan update in accordance with the public hearing and notice procedures that are set forth in Sections 4.008, 4.010, 4.011 and 4.012 of the Wilsonville Code (WC); and

WHEREAS, the Planning Commission has afforded all interested parties an opportunity to be heard on this subject and has entered all available evidence and testimony into the public record of their proceeding; and

WHEREAS, the Planning Commission has duly considered the subject, including the staff recommendations and all the exhibits and testimony introduced and offered by all interested parties.

NOW, THEREFORE, THE CITY OF WILSONVILLE PLANNING COMMISSION RESOLVES AS FOLLOWS:

Section 1. The Wilsonville Planning Commission does hereby adopt the Planning Staff Report (attached hereto as Exhibit A) and Attachments, as presented at the December 13, 2023, public hearing, including the conclusionary findings and recommendations contained therein.

Section 2. The Planning Commission does hereby recommend that the Wilsonville City Council adopt the proposed Wastewater Treatment Plant Master Plan, attached as Exhibit B.

Section 3. Effective Date. This Resolution is effective upon adoption.

ADOPTED by the Wilsonville Planning Commission at a regular meeting thereof this 13th day of December, 2023, and filed with the Planning Administrative Assistant on this date.

Wilsonville Planning Commission

ATTEST:

Mandi Simmons, Administrative Assistant III

SUMMARY OF VOTES:

| | |
|---|---|
| Ronald Heberlein, Chair | Yes |
| Jennifer Willard, Vice-Chair | Yes |
| Nicole Hendrix | Yes |
| Andrew Karr | Yes |
| Kamran Mesbah | Yes |
| Kathryn Neil | Yes |

EXHIBITS:

A. Staff Report and Attachments

## PLANNING COMMISSION
## STAFF REPORT

| | |
|---|---|
| **Meeting Date:** December 13, 2023 | **Subject:** Wastewater Treatment Plant Master Plan<br><br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☒ Public Hearing Date: 12/13/2023<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☒ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br><br>☐ None Forwarded<br>☒ Not Applicable<br>**Comments:** N/A |
| **Staff Recommendation:** A motion to approve a recommendation to the City Council adopting the Wastewater Treatment Plant Master Plan | |
| **Recommended Language for Motion:** I move to approve Resolution LP22-0001 recommending approval of the Wastewater Treatment Plant Master Plan | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☒Council Goals/Priorities: Strategy 1. Develop an Infrastructure resilience plan and reprioritize / fund recommended projects. | ☐Adopted Master Plan(s): | ☐Not Applicable |

**ISSUE BEFORE PLANNING COMMISSION:**
The City of Wilsonville is completing a Wastewater Treatment Plant Master Plan to accommodate anticipated development within the City, replace aging assets, and comply with regulatory requirements. The Plan requires a formal adoption process that includes a hearing

before the Planning Commission, a recommendation from the Planning Commission to the City Council, and adoption by the City Council.

**EXECUTIVE SUMMARY**:
This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future Wilsonville flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies needed capital improvements within the planning period, taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the DEQ, and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

***WWTP Condition Assessment***
Carollo reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement.

***Seismic Analysis***

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building
- Process Gallery
- Workshop
- Aeration Basins and Stabilization Basins
- Sludge Storage Basins and Biofilter

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for the Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. Recommended actions from NGI to mitigate the risk of soil piping are presented in the Plan.

***Wastewater Flow and Load Projections***
The Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand (BOD5), ammonia (NH3), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses.

***Capacity Analysis***
Summaries of plant process area capacity assessments and conclusions are presented in the Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations.

***Regulatory Considerations and Strategy***
Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance. The existing permit limits for the Wilsonville WWTP are effective September 1, 2020 through July 30, 2025.

***Alternative Development and Evaluation***
The Plan presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process.

| **Project Description** | **Timeframe** | **Cost*** |
|---|---|---|
| Dewatering Performance Optimization | 2025 | $150,000 |
| Fiber Optic Conduit Addition | 2025 | $60,000 |
| UV System Improvement | 2026 | $1,705,000 |
| Seismic Improvements | 2026 | $1,082,000 |
| Geotechnical Foundation Mitigation | 2026 | $2,000,000 |
| New Aeration Basin and Blower | 2025 – 2027 | $10,222,000 |
| Replace Secondary Clarifier Mechanisms | 2026 - 2027 | $1,775,000 |
| Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, electrical and hydraulic upgrades) | 2028 – 2031 | $69,727,000 |
| New Solids Dryer | 2031 – 2033 | $17,130,000 |
| Thickening and Dewatering Improvements | 2031 – 2033 | $3,701,000 |
| New Cooling Tower | 2035 – 2036 | $642,000 |
| MBR Phase 2 (includes new blower) | 2037 – 2039 | $2,330,000 |
| UV Equipment Replacement and Outfall Upsizing | 2039 – 2040 | $2,571,000 |
| UV Equipment Replacement and Outfall Upsizing | 2039 – 2040 | $1,244,000 |
| MBR Phase 3 (includes 2 new blowers) | 2042 – 2044 | $8,117,000 |
| **Total** | | **$122,456,000** |
| *Costs are shown in 2023 dollars and include 25% for engineering, legal, and administration. | | |

The most significant impact to the required level of capital investment is the need for membrane bioreactor (MBR) facilities. These are state-of-the-art, compact facilities that provide a high level of treatment. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the only feasible means of providing the necessary treatment to accommodate build out of the Wilsonville urban reserve areas.

**EXPECTED RESULTS**:
The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. The total estimated amount of capital investment over the planning period is approximately $122 million, of which $17 million is anticipated in the next 5 years. The recommended capital improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that are necessary to adequately fund the upgrades needed to meet the projected growth.

**TIMELINE:**
A public hearing before City Council for the Plan adoption is anticipated in January 4, 2024, with a second reading on January 18, 2024.

**CURRENT YEAR BUDGET IMPACTS**:
The amended FY24 Budget for CIP #2104, Wastewater Treatment Plant Master Plan, includes $130,000 in sewer operations and system development charge funds. The remaining budget is sufficient to complete the remaining work to update and adopt the Plan.

**COMMUNITY INVOLVEMENT PROCESS**:
A virtual town hall meeting to present the findings of the Plan and solicit public input was held in September 2022 and posted on the City's online calendar and Let's Talk Wilsonville page, where a project overview and periodic updates to the Executive Summary have also been posted. In addition, draft versions of the Executive Summary have been sent to the ten largest industrial customers for review and comment. The public hearings listed above will provide further opportunity for public input. The forthcoming Sewer System Rate Study and SDC Update will also include a public engagement process with outreach to utility customers and the development community.

**POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES**:
The project team considered and evaluated numerous technologies and alternatives to provide the needed wastewater treatment plant capacity to meet future demands and recommend a capital improvement program that implements the needed improvements in a way that is efficient and cost effective.

**ATTACHMENTS:**

1. Wastewater Treatment Plant Master Plan (dated December 2023)
2. Wastewater Treatment Plant Master Plan Appendices (dated December 2023)
3. Conclusionary Findings
4. Master Plan Record (electronic only)

WWTP Master Plan attached separately

The Wastewater Treatment Plant Master Plan (LP22-0001) Appendices can be found at this link:

https://www.ci.wilsonville.or.us/comm-dev/page/wastewater-treatment-plant-master-plan

## CONCLUSIONARY FINDINGS

The updated Wastewater Treatment Plant Master Plan has been found to be consistent with the applicable criteria as follows.

## COMPREHENSIVE PLAN COMPLIANCE

***Standards for Approval of Plan Amendments***

***In order to grant a Plan amendment, the City Council shall after considering the recommendation of the Development Review Board (quasi-judicial) or Planning Commission (legislative), find that:***

***a. Conformance with Other Portions of the Comprehensive Plan***

CP1. **Review Criteria:** "The proposed amendment is in conformance with those portions of the Plan that are not being considered for amendment."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The proposed updated Wastewater Treatment Plant Master Plan has been found to be in conformance with the Comprehensive Plan. See Findings CP2 through CP30 below.

***b. Amendment is in the Public Interest***

CP2. **Review Criterion:** "The granting of the amendment is in the public interest."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Development Code Subsection 4.198 (.01) A. implements this standard. It is in the public interest to periodically update the master plans for critical public facilities such as the wastewater treatment plant to ensure the system provides for adequate service for current and future residents and businesses to ensure proper treatment of wastewater.

***c. Public Interest and Timing of Amendment***

CP3. **Review Criterion:** "The public interest is best served by granting the amendment at this time."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Facility master plans such as the wastewater treatment plant must be updated periodically to provide updated current condition information and use updated data to forecast future needs. The last update to the Wastewater Treatment Plant Master Plan was in 2004, so the public interest is best served by updating the master plan as soon as possible making the current timing appropriate.

***d. Adequately Addressing Specific Factors***

CP4. **Review Criteria:** "The following factors have been adequately addressed in the proposed amendment: the suitability of the various areas for particular land uses and improvements; the land uses and improvements in the area; trends in land improvement; density of development; property values; the needs of economic enterprises in the future development of the area; transportation access; natural resources; and the public need for healthful, safe and aesthetic surroundings and conditions."
**Finding:** These criteria are satisfied.
**Explanation of Finding:**
*Suitability of the Various Areas for Particular Land Uses and Improvements:* The plan only considers serving areas otherwise acknowledged as future growth areas. The plan includes analysis of the current location and how to best expand within the limited footprint.

*Land Uses and Improvements in the Area:* The updated Wastewater Treatment Plant Master Plan considers the current land uses throughout the city as well as potential land uses in future growth areas.

*Trends in Land Improvement:* The amended Wastewater Treatment Plant Master Plan supports the trends identified in other master plans and studies.

*Density of Development:* The updated Wastewater Treatment Plant Master Plan considers planned densities throughout the City and growth areas over the planning horizon.

*Property Values:* Planning for an adequate wastewater treatment plant helps enable a functional system long term which supports sanitation. Lack of proper sanitation and ability to properly dispose of wastewater would negatively affect property values.

*The Needs of Economic Enterprises in the Future Development of the Area:* Planning for an adequate wastewater treatment plant helps support economic enterprise in areas planned for business growth by planning adequate capacity and service.

*Transportation Access:* No transportation access is impacted by the plan.

*Natural Resources:* The updated Wastewater Treatment Plant Master Plan doesn't specifically address how facility siting will affect natural resources. However, the improvements will be within a confined previously disturbed area and the City has regulations in place to look at conservation of resources during the design and final siting of future improvements.

*Public Need for Healthful, Safe and Aesthetic Surroundings and Conditions:* Functional and sanitary treatment of wastewater, which is the aim of the updated Wastewater Treatment Plant Master Plan, supports healthful, safe, and aesthetic surroundings by

preventing unsanitary or environmentally detrimental disposal or treatment of wastewater.

***e. Conflict with Metro Requirements***

CP5. **Review Criteria:** "Proposed changes or amendments to the Comprehensive Plan do not result in conflicts with applicable Metro requirements."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** No conflicts with Metro requirements have been identified.

***Citizen Involvement***

***Goal 1.1: To encourage and provide means for interested parties to be involved in land use planning processes, on individual cases and City-wide programs and policies.***

***Policy 1.1.1: Wide Range of Public Involvement***

CP6. **Review Criterion:** "The City of Wilsonville shall provide opportunities for a wide range of public involvement in City planning programs and processes."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** A number of different media and venues have been used to encourage public involvement. Wastewater treatment tends to be a subject in which the community does not express a lot of interest as long as the system is functioning well. While a reasonable effort has been made to notify and solicit community involvement, limited interest has been expressed. Information was published in the Boones Ferry Messenger, a community newsletter mailed to every address within Wilsonville's 97070 zip code, the Planning Commission held work sessions, and project staff made information about the project available on the City's website. Required public noticing for for the Planning Commission and upcoming City Council public hearings has occurred.

***Implementation Measure 1.1.1.a. Early Public Involvement***

CP7. **Review Criterion:** "Provide for early public involvement to address neighborhood or community concerns regarding Comprehensive Plan and Development Code changes. Whenever practical to do so, City staff will provide information for public review while it is still in "draft" form, thereby allowing for community involvement before decisions have been made."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City solicited feedback from the Planning Commission and public early in the planning process while the plan was still in draft form. Any feedback has been considered in preparation of the plan.

***Goal 1.2: For Wilsonville to have an interested, informed, and involved citizenry.***

***Policy 1.2.1: User Friendly Information***

CP8. **Review Criterion:** "The City of Wilsonville shall provide user-friendly information to assist the public in participating in the City planning programs and processes."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City has produced user-friendly notices for the project, as well as provided other information, and opportunities, both in person and online, to examine the materials related to the updated Wastewater Treatment Plant Master Plan.

***Implementation Measures 1.2.1.a.-c. Clarification, Publicity, and Procedures for Public Involvement***

CP9. **Review Criteria:** These measures address the City's responsibility to help clarify the public participation process, publicize ways to participate, and establish procedures to allow reasonable access to information.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The City has produced user-friendly notices for the project, as well as provided other information, and opportunities, both in person and online, to examine the materials related to the updated Wastewater Treatment Plant Master Plan.

***Policy 1.3.1. Implementation Measures 1.3.1.b. Clarification, Publicity, and Procedures for Public Involvement***

CP10. **Review Criteria:** "The City of Wilsonville shall coordinate with other agencies and organizations involved with Wilsonville's planning programs and policies." "Where appropriate, the City shall continue to coordinate its planning activities with affected public agencies and private utilities. Draft documents will be distributed to such agencies and utilities and their comments shall be considered and kept on file by the City."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The appropriate agencies have been notified through the DLCD notice and/or the Public Hearing Notice. Any comments will be entered into the public hearing record and be considered.

***Urban Growth Management***

***Goal 2.1: To allow for urban growth while maintaining community livability, consistent with the economics of development, City administration, and the provision of public facilities and services.***

***Implementation Measure 2.1.1.d. Establish and Maintain Revenue Sources for Public Services and Facilities***

CP11. **Review Criterion:** "Establish and maintain revenue sources to support the City's policies for urbanization and maintain needed public services and facilities."

**Finding:** This criterion is satisfied.
**Explanation of Finding:** While the scope of the Wastewater Treatment Plant Master Plan includes prioritizing short-term and long-term projects for the Capital Improvement Program and developing budget level cost estimates, the update does not evaluate funding tools. The City is examining and will continue to examine revenue sources to support the CIP.

***Implementation Measure 2.1.1.e. Concurrency of Facilities and New Development***

CP12. **Review Criterion:** "Allow new development to proceed concurrently with the availability of adequate public services and facilities as specified in Public Facilities and Services Section (Section C) of the Comprehensive Plan."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City's current policies supporting concurrency of public services and facilities with new development are not altered by the proposed update to the Wastewater Treatment Plant Master Plan.

***Policy 2.2.1. Plan for Urbanization***

CP13. **Review Criterion:** "The City of Wilsonville shall plan for the eventual urbanization of land within the local planning area, beginning with land within the Urban Growth Boundary."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** By updating the plan for wastewater treatment infrastructure, including ensuring adequate capacity and service to land within the Urban Growth Boundary and Urban Reserves around the City, the City is supporting the effort to plan for the eventual urbanization of these areas.

***Implementation Measure 2.2.1.b. Fair Share to Increase Development Capacity***

CP14. **Review Criterion:** "The City of Wilsonville, to the best of its ability based on infrastructure provided at the local, regional, and state levels, shall do its fair share to increase the development capacity of land within the Metro UGB."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** By updating the plan for wastewater treatment infrastructure, including ensuring adequate capacity and service for planned densities, the City is supporting the effort to provide for its fair share of development within the UGB.

***Implementation Measure 2.2.1.g. Urban Services to Not be Extended Outside City Limits***

CP15. **Review Criterion:** "Urban sanitary sewer and water service shall not be extended outside the City limits, with the following exceptions:
1. Where an immediate demonstrable threat to the public health exists, as a direct result of the lack of the service in question;
2. Where a Governmental agency is providing a vital service to the City; or

3. Where it is reasonable to assume that the subject area will be annexed to the City within a reasonable period of time."

**Finding:** This criterion is satisfied.

**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan does not allow for or encourage provision of City services outside City limits.

***Public Facilities and Services***

***Goal 3.1 To assure that good quality public facilities and services are available with adequate, but not excessive, capacity to meet community needs, while also assuring that growth does not exceed the community's commitment to provide adequate facilities and services.***

***Policy 3.1.1. The City to Provide Public Facilities***

CP16. **Review Criterion:** "The City of Wilsonville shall provide public facilities to enhance the health, safety, educational, and recreational aspects of urban living."

**Finding:** This criterion is satisfied.

**Explanation of Finding:** By updating the plan for wastewater treatment infrastructure, including ensuring adequate capacity for land within the Urban Growth Boundary and Urban Reserves around the City, the City is supporting the effort to continue to provide for all aspects of urban living affected by wastewater treatment.

***Implementation Measure 3.1.1.a. City to Prepare and Implement Facility/Services Master Plans***

CP17. **Review Criterion:** "The City will continue to prepare and implement master plans for facilities/services, as sub-elements of the City's Comprehensive Plan. Facilities/services will be designed and constructed to help implement the City's Comprehensive Plan."

**Finding:** This criterion is satisfied.

**Explanation of Finding:** The City is continuing the practice to prepare and implement facility/services master plans as sub-elements of the Comprehensive Plan by updating the 19-year-old Wastewater Treatment Plant Master Plan.

***Implementation Measure 3.1.1.d. City to Review Development Densities and Facilities/Services Capacity***

CP18. **Review Criterion:** "The City shall periodically review and, where necessary, update its development densities indicated in the land use element of the Plan, based on the capacity of existing or planned services and/or facilities."

**Finding:** This criterion is satisfied.

**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan incorporates the most up to date growth forecast information to plan enough capacity for the expected growth; it has not identified any areas where planned development densities need to be adjusted based on the capacity to serve with the waste water treatment plant.

***Policy 3.1.2. Concurrency***

CP19. **Review Criterion:** "The City of Wilsonville shall provide, or coordinate the provision of, facilities and services concurrent with need (created by new development, redevelopment, or upgrades of aging infrastructure)."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** By updating the Wastewater Treatment Plant Master Plan the City is coordinating its efforts over the planning horizon to provide wastewater treatment facilities and services concurrent with need, whether it involves new development, redevelopment, or upgrading aging infrastructure.

***Implementation Measure 3.1.2.a.Urban Development only in Serviceable Areas***

CP20. **Review Criterion:** "Urban development will be allowed only in areas where necessary facilities and services can be provided."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** In addition to analyzing the condition of existing infrastructure the updated Wastewater Treatment Plant Master Plan identifies deficiencies and needed improvements to serve areas expected to develop. The City will continue to follow concurrency policies for public facilities and development and thus allow development only in areas were wastewater treatment services can be provided.

***Policy 3.1.3. Payment for and Benefits from Facilities and Services***

CP21. **Review Criterion:** "The City of Wilsonville shall take steps to assure that the parties causing a need for expanded facilities and services or those benefiting from such facilities and services, pay for them."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City's current practices to require parties causing a need for expanded facilities pay for them are not changed by the scope of the updated Wastewater Treatment Plant Master Plan.

***Implementation Measure 3.1.3.a. Developers and SDC's***

CP22. **Review Criterion:** "Developers will continue to be required to pay for demands placed on public facilities/services that are directly related to their developments. The City may establish and collect systems development charges (SDCs) for any or all public facilities/services, as allowed by law. An individual exception to this standard may be justified, or SDC credits given, when a proposed development is found to result in public benefits that warrant public investment to support the development."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City's current SDC practices are not affected by the updated Wastewater Treatment Plant Master Plan.

***Implementation Measure 3.1.3.b. Capital Improvement Program***

CP23. **Review Criterion:** "The City will continue to prepare and implement a rolling five- year Capital Improvement Program, with annual funding decisions made as part of the municipal budget process."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan is part of the City's continuing effort to prepare and implement a rolling five-year Capital Improvement Program by prioritizing short-term and long-term wastewater treatment plant projects for the CIP.

***Implementation Measure 3.1.3.c. Pay-back Agreements***

CP24. **Review Criterion:** "The City shall continue to employ pay-back agreements, development agreements, and other creative solutions for facilities that are over-sized or extended from off-site at the expense of only some of the benefited properties."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City's policies towards and use of pay-back agreements, development agreements, and other creative infrastructure financing solutions are not affected by the updated Wastewater Treatment Plant Master Plan.

***Policy 3.1.4. City Operations of Sanitary System to Standards***

CP25. **Review Criterion:** "The City of Wilsonville shall continue to operate and maintain the wastewater treatment plant and system in conformance with federal, state, and regional water quality standards."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan will continue to allow the wastewater system to operate to applicable standards.

***Implementation Measure 3.1.4.a. City to Maintain Sewer Service Monitoring and Expansion Program***

CP26. **Review Criterion:** "The City shall continue to maintain a sewer service capacity monitoring and expansion program to assure that adequate treatment and trunk main capacity is available to serve continued development, consistent with the City's urban growth policies and the concurrency standards noted above."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** By updating the plan for wastewater treatment infrastructure, including ensuring adequate capacity and service to land within the Urban Growth Boundary and Urban Reserves around the City, the City is supporting this implementation measure.

***Implementation Measures 3.1.4.b. Sanitary Sewer Capacity***

CP27. **Review Criteria:** "The City shall continue to manage growth consistent with the capacity of sanitary sewer facilities."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** An updated Wastewater Treatment Plant Master Plan will enable the City to better manage growth consistent with the capacity of the wastewater treatment plant by identifying needed upgrades to current infrastructure as well as infrastructure needed for growth in different planned growth areas.

***Implementation Measure 3.1.4.e. All Urban Development Served by Sanitary Sewer***

CP28. **Review Criterion:** "The City shall continue to require all urban level development to be served by the City's sanitary sewer system."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** By updating the plan for wastewater treatment infrastructure, including ensuring adequate capacity for land within the Urban Growth Boundary and Urban Reserves around the City, the City is supporting the ability to provide sanitary sewer service to all urban level development. The updated Wastewater Treatment Plant Master Plan does not affect the City's policy of requiring sanitary sewer system service as part of urban level development approval.

***Implementation Measure 3.1.4.f. Cost of Individual Services and Line Extensions***

CP29. **Review Criterion:** "The cost of all line extensions and individual services shall be the responsibility of the developer and/or property owners(s) seeking service. When a major line is to be extended, the City may authorize and administer formation of a Local Improvement District (LID). All line extensions shall conform to the City Sanitary Sewer Collection System Master Plan, urbanization policies, and Public Works Standards."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The City's current practices regarding LID's and costs for services are not affected by the updated Wastewater Treatment Plant Master Plan.

***Parks/Recreation/Open Space, Environmental Resources and Community Design***

***Policies 3.1.11., 4.1.5. and Implementation Measures 3.1.11.a. ,4.1.5.d.-g.,aa. . Conservation of Natural, Scenic, and Historic Areas***

CP30. **Review Criteria:** These policies and implementation measures require and encourage conservation of natural resources, as well as scenic and historic areas.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan doesn't specifically address how facility siting will affect natural resources. However, the improvements will be within a confined previously disturbed area and the City has

regulations in place to look at conservation of resources during the design and final siting of future improvements.

## COMPLIANCE WITH PLANNING AND LAND DEVELOPMENT ORDINANCE

***Section 4.003 Consistency with Plans and Laws***

PL1. **Review Criterion:** "Actions initiated under this Code shall be consistent with the Comprehensive Plan and with applicable State and Federal laws and regulations as these plans, laws and regulations now or hereafter provide."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Consistency with the Comprehensive Plan and applicable state laws has been reviewed and summarized in this report.

***Section 4.008 General Application Procedures***

PL2. **Review Criterion:** "The general application procedures listed in Section 4.008 through 4.024 apply to all land use and development applications governed by Chapter 4 of the Wilsonville Code. These include applications for all of the following types of land use or development approvals:
H. Changes to the text of the Comprehensive Plan, including adoption of new Plan elements or sub-elements, pursuant to Section 4.198;"
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Adoption of the updated Wastewater Treatment Plant Master Plan is being reviewed pursuant to Section 4.198.

***Subsection 4.009 (.02) Who Can Initiate Application***

PL3. **Review Criterion:** "Applications involving large areas of the community or proposed amendments to the text of this Chapter or the Comprehensive Plan may be initiated by any property owner, business proprietor, or resident of the City, as well as the City Council, Planning Commission, or Development Review Board acting by motion."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The application has been initiated by the City as part of its responsibility to periodically update facility master plans.

***Subsection 4.032 (.01) B. Authority of Planning Commission***

PL4. **Review Criterion:** This Section states that the Planning Commission has authority to make recommendations to the City Council on "legislative changes to, or adoption of new elements or sub-elements of the Comprehensive Plan."
**Finding:** This criterion is satisfied.

**Explanation of Finding:** The proposed legislative change is being considered by the Planning Commission as a recommendation to the City Council. The issue before the Planning Commission is a legislative review of an amended sub-element of the Comprehensive Plan.

***Subsection 4.033 (.01) B. Authority of City Council***

PL5. **Review Criterion:** This Section states that the City Council has final decision-making authority on "applications for amendments to, or adoption of new elements or sub-elements to the maps or text of the Comprehensive Plan, as authorized in Section 4.198."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Final action will be taken by the City Council following a recommendation from the Planning Commission.

***Subsection 4.198 (.01) A. Comprehensive Plan Changes: Public Need***

PL6. **Review Criterion:** "That the proposed amendment meets a public need that has been identified;"
**Finding:** This criterion is satisfied.
**Explanation of Finding:** It is in the public interest to periodically update the master plans for critical public facilities such as the wastewater treatment plant to ensure the system provides for adequate service for current and future residents and businesses to ensure proper sanitation.

***Subsection 4.198 (.01) B. Comprehensive Plan Changes: Meets Public Needs As Well As Other Options***

PL7. **Review Criterion:** "That the proposed amendment meets the identified public need at least as well as any other amendment or change that could reasonably be made;"
**Finding:** This criterion is satisfied.
**Explanation of Finding:** As a sub-element of the Comprehensive Plan the Wastewater Treatment Plant Master Plan aims to provide for the public need of adequate wastewater treatment service. An updated Wastewater Treatment Plant Master Plan better meets the public need than the current plan by using updated information about the condition of existing infrastructure and growth projections.

***Subsection 4.198 (.01) C. Comprehensive Plan Changes: Statewide Planning Goals***

PL8. **Review Criterion:** "That the proposed amendment supports applicable Statewide Planning Goals or a Goal exception has been found to be appropriate; and;"
**Finding:** This criterion is satisfied.
**Explanation of Finding:** Please see compliance with Statewide Planning Goals section below.

***Subsection 4.198 (.01) D. Comprehensive Plan Changes: Conflict with Other Portions of the Comprehensive Plan***

PL9. **Review Criterion:** "That the proposed change will not result in conflicts with any portion of the Comprehensive Plan that is not being amended."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** No conflicts between the updated Wastewater Treatment Plant Master Plan and other portions of the Comprehensive Plan have been identified.

## COMPLIANCE WITH OREGON STATEWIDE PLANNING GOALS

***Statewide Planning Goals***

***Goal 1 Citizen Involvement***

OR1. **Review Criterion:** "To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The citizen involvement process defined in Wilsonville's Comprehensive Plan has been acknowledged to be in conformance with Goal 1. Findings CP6 through CP10 demonstrate compliance with the citizen involvement component of the Comprehensive Plan and thus Goal 1.

***Goal 2 Land Use Planning***

OR2. **Review Criterion:** "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:** This criterion is satisfied.
**Explanation of Finding:** The City is currently in compliance with Goal 2 because it has an acknowledged Comprehensive Plan and regulations implementing the plan. The Wastewater Treatment Plant Master Plan is a sub-element supporting this plan. A Wastewater Treatment Plant Master Plan will continue to be a sub-element of the Comprehensive Plan and the scope of the update will not change conformance with this goal, but rather provide updated information to better support land use planning in Wilsonville.

***Goal 5 Natural Resources, Scenic and Historic Areas, and Open Spaces***

OR3. **Review Criterion:** "To protect natural resources and conserve scenic and historic areas and open spaces."
**Finding:** This criterion is satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan doesn't specifically address how facility siting will affect natural resources. However, the

improvements will be within a confined previously disturbed area and the City has regulations in place to look at conservation of resources during the design and final siting of future improvements.

***Goal 6 Air, Water and Land Resource Quality***

OR4. **Review Criteria:** "To maintain and improve the quality of the air, water and land resources of the state."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The proposed updated Wastewater Treatment Plant Master Plan provides for sanitary disposal of wastewater to prevent the wastewater from polluting and degrading water and land resources. It supports the planning guideline of this rule to only designate residential use where approvable sewage disposal alternatives have been clearly identified.

***Goal 7 Areas Prone to Natural Disasters and Hazards***

OR5. **Review Criteria:** "To protect life and property from natural disasters and hazards."
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The wastewater Treatment Plant has been evaluated for risks associated with natural disasters and hazards; see Chapter 2.

***Goal 11 Public Facilities and Services***

OR6. **Review Criteria:** "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:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan is among the utility plans that are sub-elements of the City's Comprehensive Plan. Using updated information on the condition of existing infrastructure as well as updated growth forecasts will better enable the timely, orderly and efficient arrangement of wastewater treatment facilities and services.

***Oregon Administrative Rules***

***Division 660 Public Facilities Planning***

***OAR 660-11-0010 The Public Facility Plan***

OR7. **Review Criteria:** This OAR identifies what a Public Facility Plan, such as the updated Wastewater Collection System Master Plan, must contain.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan inventories and assesses Wilsonville's wastewater treatment plant in support of current

and planned land uses; and it includes a list of projects and prioritized projects for short-term and long-term improvements, budget-level cost estimates of projects. The master plan also identifies the City as the service provider in City limits and in areas expected to be annexed into the City in the future. A discussion of the City's funding mechanisms is included in the Comprehensive Plan, but is not affected by this update.

***OAR 660-11-0015 Responsibility for Public Facility Plan Preparation***

OR8. **Review Criteria:** This OAR identifies who is responsible for preparing public facility plans.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The City of Wilsonville has the responsibility to prepare facility plans for public facilities including the wastewater treatment plant. An existing facility plan, which is a sub-element of the City of Wilsonville's Comprehensive Plan, is being updated to ensure an up-to-date facility plan.

***OAR 660-11-0020 Public Facility Inventory and Determination of Future Facility Projects***

OR9. **Review Criteria:** This OAR identifies components of public facility inventories.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan includes an inventory of the City's wastewater treatment plant including all the required components listed in this OAR: information on capacity and size, assessment of conditions, identification of projects supportive of the City's Comprehensive Plan land use designations, and acknowledgment of future flexibility based on impact studies, facility design, and further master planning efforts.

***OAR 660-11-0025 Timing of Required Public Facilities***

OR10. **Review Criteria:** This OAR requires public facility plans include a general estimate of the timing for planned public facility projects.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan includes information on short-term and long-term projects. See Chapter 7.

***OAR 660-11-0030 Location of Public Facility Projects***

OR11. **Review Criteria:** This OAR requires public facility plans include a general location of projects
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The updated Wastewater Treatment Plant Master Plan includes information on project location.

***OAR 660-11-0035 Determination of Rough Cost Estimates***

OR12. **Review Criteria:** This OAR requires public facility plans include rough cost estimates for projects.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The scope of the updated Wastewater Treatment Plant Master Plan includes budget level cost estimates for identified projects.

***OAR 660-11-0045 Adoption and Amendment Procedures for Public Facility Plans***

OR13. **Review Criteria:** This OAR identifies public facility plans as supporting documents to the comprehensive plan and identifies related items to be in the comprehensive plan.
**Finding:** These criteria are satisfied.
**Explanation of Finding:** The Wastewater Treatment Plant Master Plan is a sub-element of the City of Wilsonville's Comprehensive Plan and includes a list of projects, a map of projects, and policies on urban growth and the provision public facilities. The updated Master Plan is being considered a land use decision with the appropriate noticing and hearing processes being followed.

# LP22-0001
# Wastewater Treatment Plant Master Plan
# Planning Commission Public Hearing Record Index
# DRAFT (December 13, 2023)

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## PLANNING COMMISSION AND CITY COUNCIL MEETINGS

December 13, 2023 - Planning Commission Public Hearing
- Resolution LP22-0001 *(included above, adoption pending)*
- Staff Report and Attachments *(included above, adoption pending)*
- Presentation *(not included at this time)*
- Affidavit of Notice of Hearing

November 6, 2023 - City Council Work Session
- Staff Report and Attachments
- Presentation
- Action Minutes

October 11, 2023 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

October 12, 2022 - Planning Commission Public Hearing - Cancelled
- Cancellation Memo
- Minutes Excerpt

September 14, 2022 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

August 1, 2022 - City Council Work Session
- Staff Report and Attachments
- Presentation
- Action Minutes

July 13, 2022 - Planning Commission Work Session
- Staff Report and Attachments
- Presentation
- Minutes Excerpt

## PUBLIC ENGAGEMENT

Project Website: https://www.letstalkwilsonville.com/wastewater-treatment-plant-master-plan

Open House - September 28, 2022: https://www.ci.wilsonville.or.us/engineering/page/public-open-house-waste-water-treatment-plant-master-plan

# LP22-0001
# Wastewater Treatment Plant Master Plan
# Planning Commission Public Hearing Record Index
# DRAFT (December 13, 2023)

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**COMMENTS/ARTICLES**

Boones Ferry Messenger – September

Spokesman Article for Original Public Hearing notification and cancellation

Emailed Comment 10/2/2022 – Thomas Hooker

The Wastewater Treatment Plant Master Plan (LP22-0001) Record can be found on the December 13, 2023 Planning Commission meeting page, in the "Agenda Packet" (https://www.ci.wilsonville.or.us/bc-pc/page/planning-commission-72)

# City of Wilsonville Wastewater Treatment Plant Master Plan

## Planning Commission

December 13, 2023

WILSONVILLE
OREGON

# Project Overview and Update

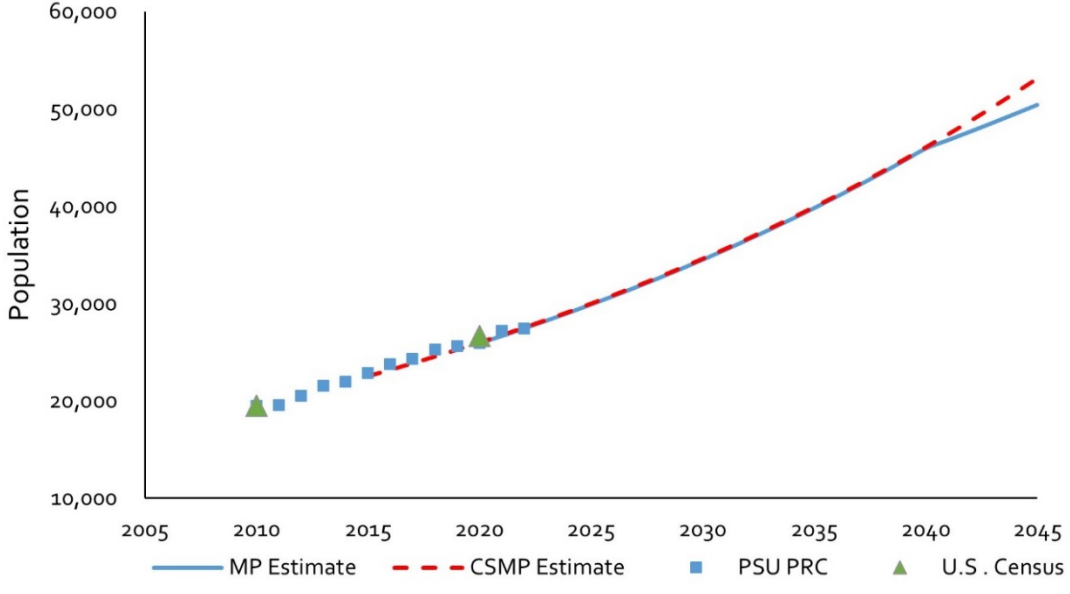
- Accommodating Expected Build-Out by 2045
  - Growth projections consistent with recent planning efforts
  - Increased industrial discharges to permitted limits
- Capacity Assessment Complete
  - Includes hydraulic modeling of WWTP
- Equipment Replacement and Seismic Retrofits
- Costs and Schedule for Updated CIP

# Capital Planning and Expected Growth - 20

- Buildout of Service Area through 2045
  - Adjusted population growth rate, consistent with recent planning efforts
  - Modified service area boundary, per Basalt Creek Concept Plan

*Buildout Population Projections (High 2.9%)*

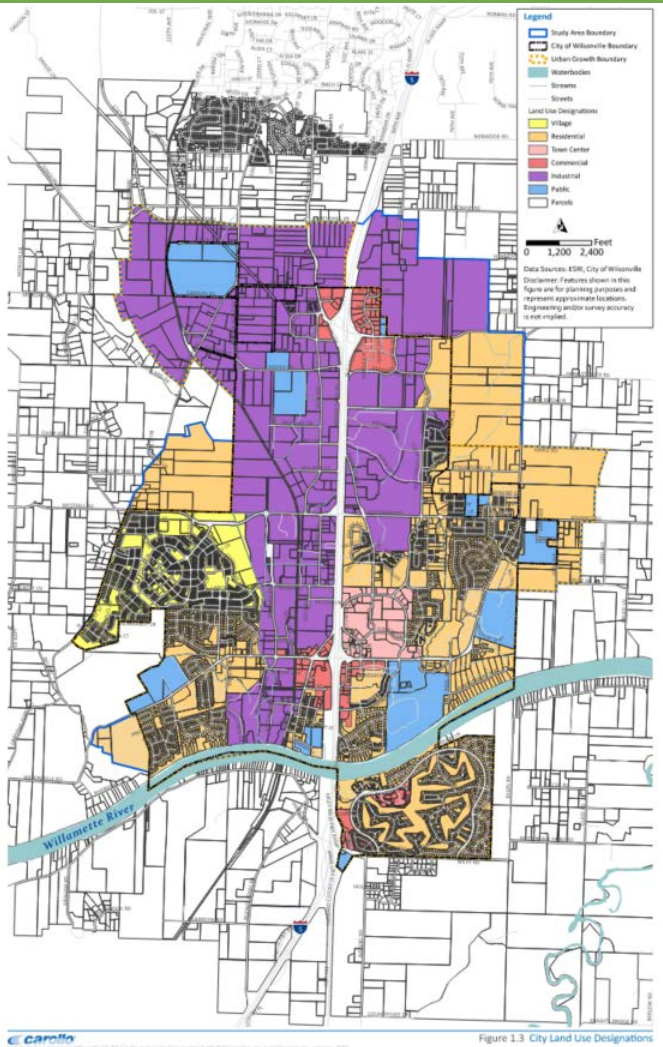
| 2020 | 2030 | 2040 | 2045 |
|---|---|---|---|
| 25,915 | 34,491 | 45,904 | 50,388 |



# Buildout Service Area - 2045



| Land Use | Acreage |
|---|---|
| Commercial | 224 |
| Industrial | 2,383.2 |
| Public | 482.9 |
| Residential | 2,278.3 |
| Town Center | 136.1 |
| Village | 367.4 |

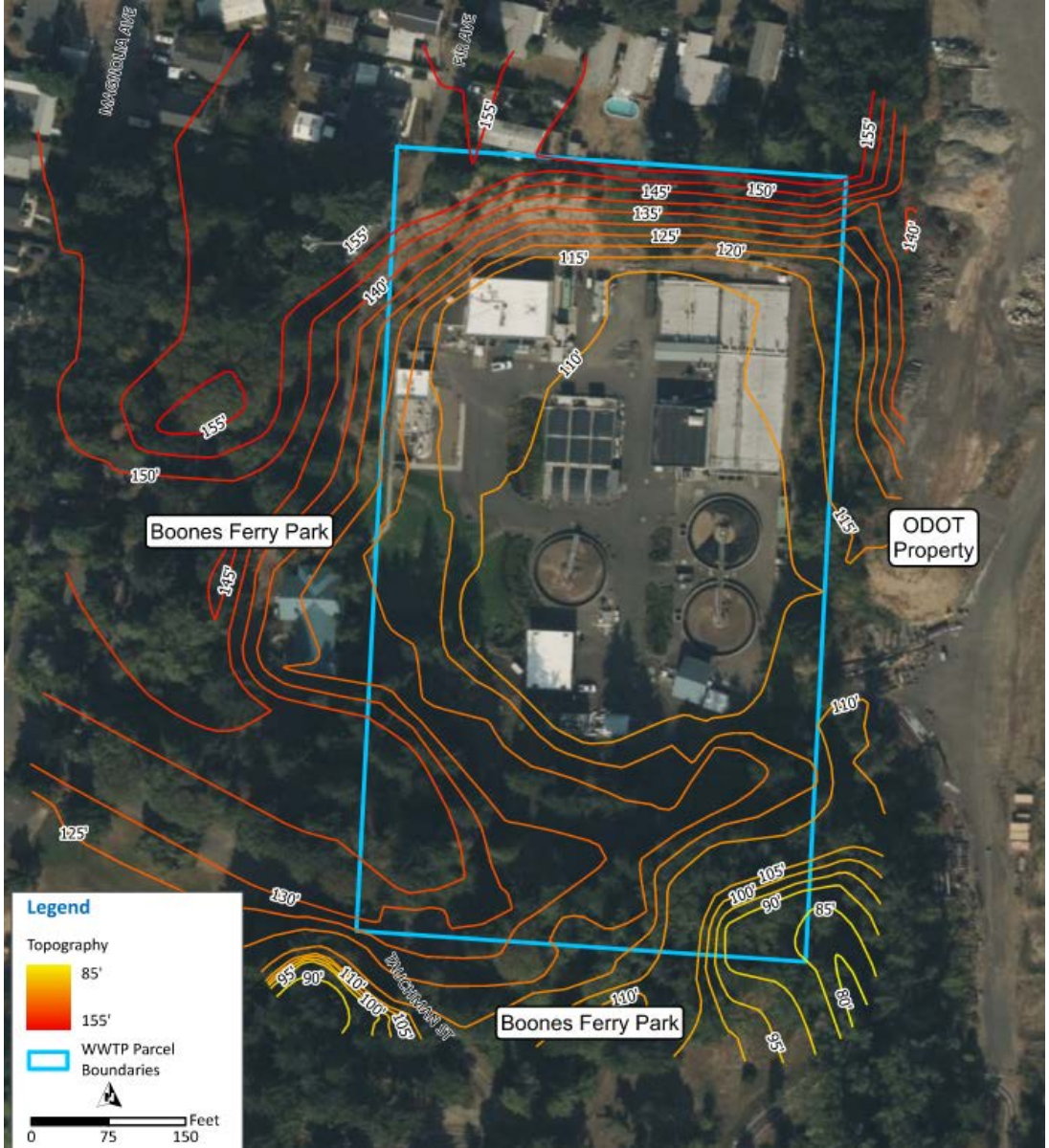


# Facility Capacity Assessment

- Flows & Loads Updated to reflect Buildout of Service Area
- Projected 2045 flows and loads exceed design criteria (~2X current)

| Item | 2022 | Rated Capacity | Projected 2045 |
|---|---|---|---|
| Average Dry Weather Flow, mgd | 2.06 | 4.00 | 4.17 |
| Average Annual Flow, mgd | 2.39 | 4.48 | 4.77 |
| Maximum Month Wet Weather Flow, mgd | 4.00 | 6.68 | 7.76 |
| Max Month $BOD_5$, ppd | 11,456 | 12,900 | 22,301 |
| Max Month TSS, ppd | 9,504 | 12,500 | 18,116 |

WILSONVILLE
OREGON




# Existing Vicinity Map

# Selection of MBR Process

| Alternative | Advantages | Challenges |
|---|---|---|
| **Membranes (Selected)** | • Space-efficient<br>• High-quality effluent<br>• Provides capacity for reliable full nitrification<br>• No need to expand tertiary filtration | • Expensive (>2x cost of 4th AB)<br>• Requires Fine Screening<br>• High O&M Costs (Power, Chemicals, etc.)<br>• Highest aeration rate<br>• Redundancy requirements |
| **BioMag®** | • Space-efficient<br>• High-quality effluent<br>• Potentially no need to expand tertiary filtration<br>• Utilizes secondary clarifier capacity (no stranded assets) | • Requires Magnetite Recovery Facility<br>• Increased maintenance requirement from the magnetite<br>• Reports of solids smoldering, may require inert gas system<br>• Will not provide sufficient capacity under projected 2045 F&L |
| **IFAS** | • Space-efficient<br>• Utilizes secondary clarifier capacity (no stranded assets) | • Will not provide sufficient capacity under projected 2045 F&L<br>• Significant basin modifications needed |

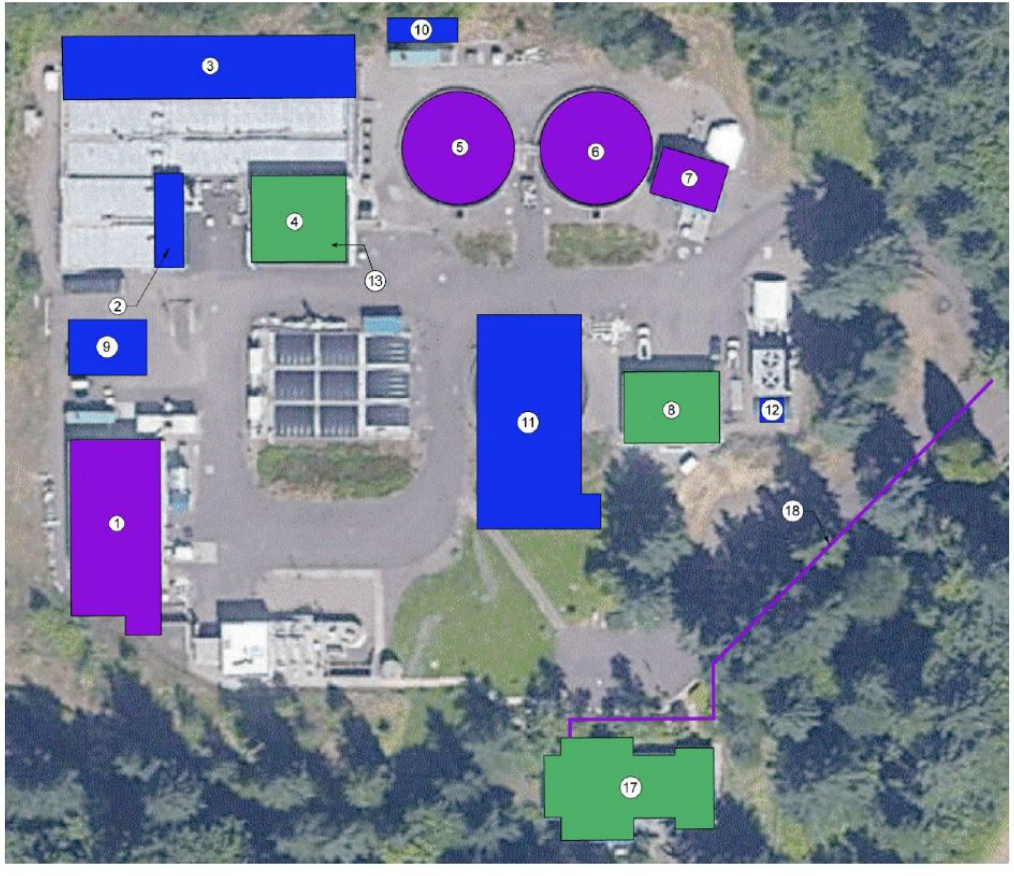
# Selected Capacity Upgrades

- Secondary Process
  - Add new aeration basin & additional blower
  - Phased implementation of MBR technology (includes hydraulic and electrical upgrades, new building, new fine screens, and additional blowers)
- Effluent Cooling
  - Add new cooling tower
- Outfall Piping
  - Increase hydraulic capacity for UV disinfection

# Asset Replacement and Seismic Resilience

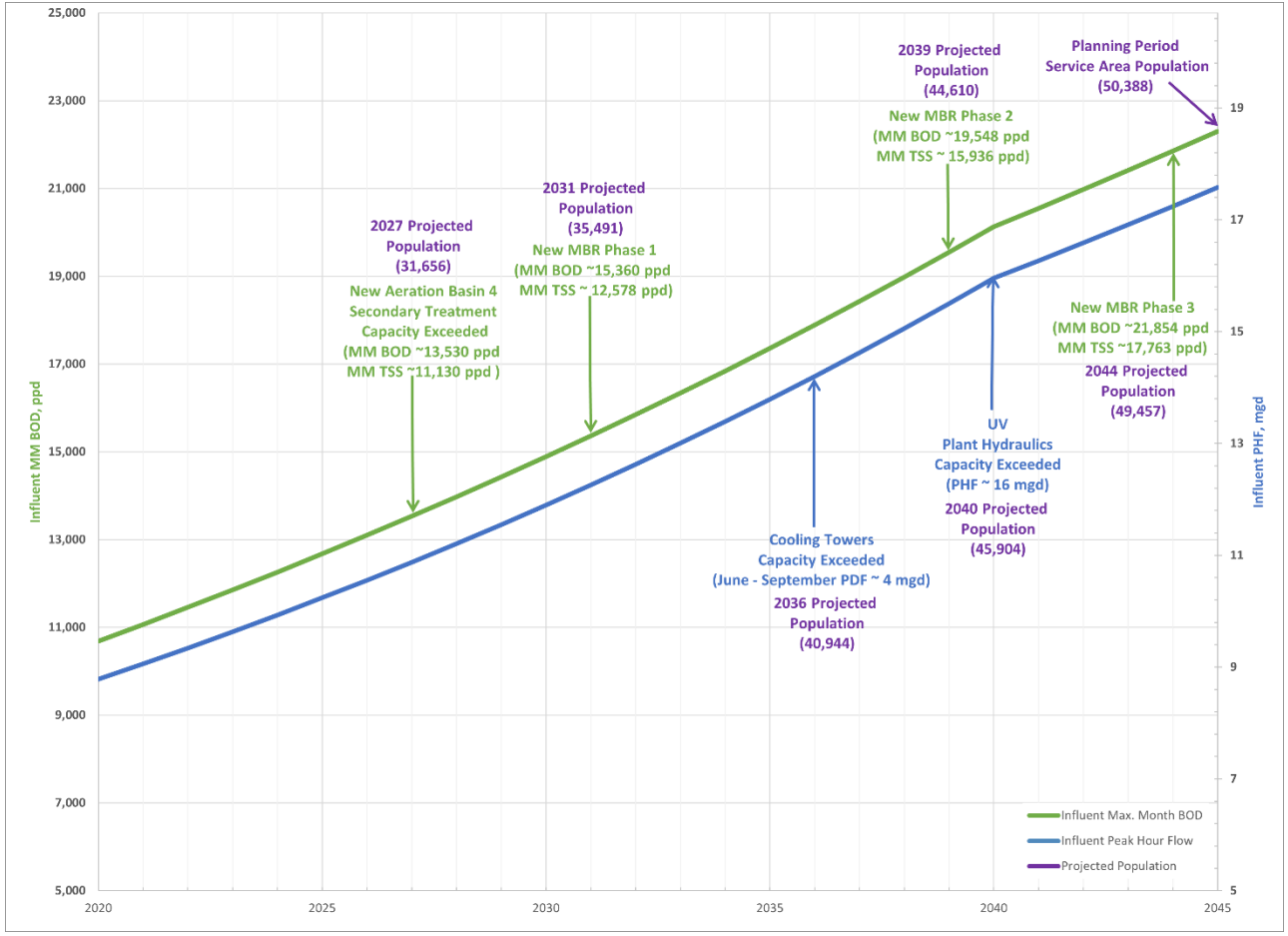
- Secondary Process
  - Replace secondary clarifier mechanisms
- Solids Thickening and Dewatering
  - Replace GBTs and centrifuge units
- UV System
  - Replace 1997 unit in the near term
  - Replace 2014 unit near the end of the planning period
- Solids Dryer
  - Add redundant unit (requires building expansion)
- Seismic Resilience
  - Structural retrofits to Administration Building, Process Gallery, and Maintenance Workshop

# Recommended Plan




- 3 New Aeration Basin
- 2 Additional Aeration Blowers
- 9 New Fine Screens
- 10 New Emergency Generator
- 11 New MBR Facility
- 12 New Cooling Tower
- 13 Replace Gravity Belt Thickeners
- 7 Replace backup UV system
- 1 Replace Solids Dryer & Centrifuges
- 5 6 Replace Clarifier 1 & 2 mechanisms
- 4 8 17 Seismic retrofits of buildings
- 18 New fiber optic connection
- Solids process study

# Capacity Trigger Plot

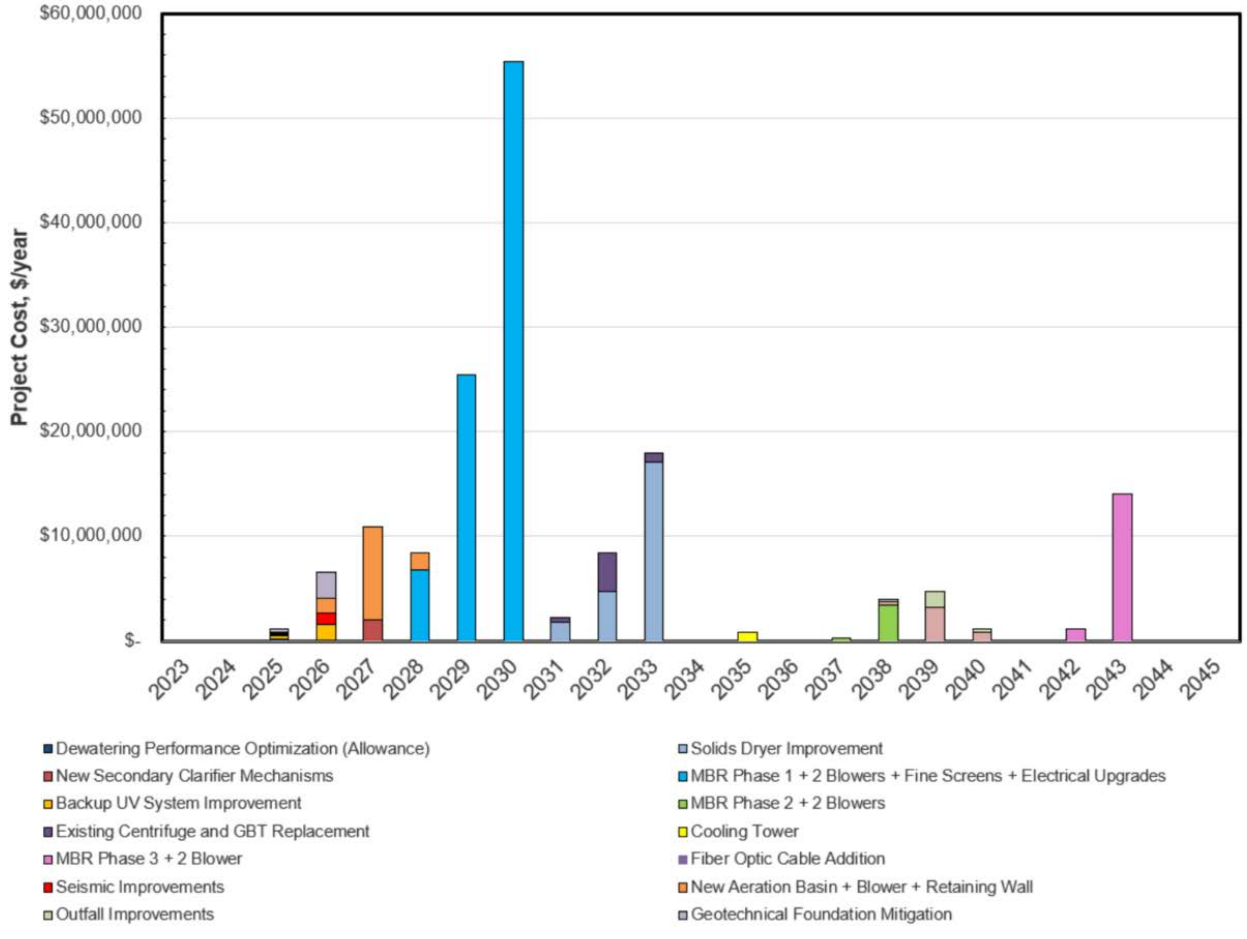


# Project Cost



| DESCRIPTION | ESTIMATED TIMEFRAME | AUGUST 2023 PROJECT COST |
|---|---|---|
| Dewatering Performance Optimization | 2025 | $150,000 |
| Fiber Optic Cable Addition | 2025 | $60,000 |
| Backup UV System Replacement | 2026 | $1,705,000 |
| Seismic Improvements | 2026 | $1,082,000 |
| Geotechnical Foundation Mitigation | 2026 | $2,000,000 |
| New Aeration Basin + Blower + Retaining Wall | 2025 – 2027 | $10,222,000 |
| Replace Secondary Clarifier Mechanisms | 2026 – 2027 | $1,775,000 |
| MBR Phase 1 + 2 Blowers + Fine Screens + Electrical Upgrades | 2028 – 2031 | $69,727,000 |
| Solids Dryer Addition | 2031 – 2033 | $17,130,000 |
| Existing Centrifuge and GBT Replacement | 2031 – 2033 | $3,701,000 |
| Additional Cooling Tower | 2035 – 2036 | $642,000 |
| MBR Phase 2 + 2 Blowers | 2037 – 2039 | $2,330,000 |
| UV Equipment Replacement | 2039 – 2040 | $2,571,000 |
| Outfall Improvements | 2039 – 2040 | $1,244,000 |
| MBR Phase 3 + 2 Blowers | 2042 – 2044 | $8,117,000 |
| **TOTAL** | | **$122,456,000** |

# Estimated Cash Flow



# Next Steps

- City Council Public Hearing 1st Reading 1/4/24
- City Council 2nd Reading 1/18/24
- Sewer System Rate Study and SDC Update 2024

# Questions?

# AFFIDAVIT OF MAILING AND POSTING NOTICE OF PUBLIC HEARING IN THE CITY OF WILSONVILLE

**STATE OF OREGON )**

**COUNTIES OF CLACKAMAS )**
**AND WASHINGTON )**

**CITY OF WILSONVILLE )**

**I, Mandi Simmons, do hereby certify that I am Administrative Assistant for the City of Wilsonville, Counties of Clackamas and Washington, State of Oregon, that the attached copy of Notice of Public Hearing is a true copy of the originals of the following that I did cause to be mailed/displayed copies of said public hearing in the exact form hereto attached:**

- Single-paged notice was emailed on November 22, 2023 to the attached list of affected agencies
- Single-paged notice was emailed on November 22, 2023 to the attached list of interested parties
- Single-paged notice was sent to the Wilsonville Spokesman for publication in the November 30, 2023 newspaper issue
- The content of the notice was posted on November 22, 2023 on the City's website
- Single-paged notice was posted at physical locations listed below on November 22, 2023
  - City Hall, 29799 SW Town Center Loop, East, Wilsonville OR 97070
  - Wilsonville Community Center, 7965 SW Wilsonville Road, Wilsonville, OR 97070
  - Library, 8200 SW Wilsonville Road, Wilsonville OR 97070

**Witness my hand this** 4th **day of December 2023**

**Mandi Simmons, Administrative Assistant**

**Acknowledged before me this** 4th **day of December 2023, in Clackamas County, Oregon**

**Signature of Oregon Notary**

Tamara E. Callaway

**Printed Notary Name**

OFFICIAL STAMP
TAMARA ELAINE CALLAWAY
NOTARY PUBLIC - OREGON
COMMISSION NO. 1013393
MY COMMISSION EXPIRES JUNE 07, 2025

**NOTARY PUBLIC**

**My Commission Expires** 6/7/25

# NOTICE OF LEGISLATIVE PUBLIC HEARING BEFORE THE PLANNING COMMISSION AND CITY COUNCIL
# WASTEWATER TREATMENT PLANT (WWTP) MASTER PLAN LP22-0001

**OREGON STATE LAW ORS 227.186**. The City has not determined how or if this particular proposal will reduce or otherwise impact either the value or use of properties within Wilsonville. Any changes to permitted land uses may reduce or increase property values, depending on various factors. A written notice has been mailed to potentially impacted property owners as required.

**PLANNING COMMISSION**

On **Wednesday, December 13, 2023, beginning at 6 pm,** the Planning Commission will hold a public hearing on **the Wastewater Treatment Plant Master Plan,** and will consider whether to recommend to City Council adoption of the Plan.

You will not receive another mailed notice unless you: submit a request in writing or by phone, or submit testimony or sign-in at the hearing.

**CITY COUNCIL**

On **Thursday, January 4, 2024 beginning at 7 pm,** the City Council will hold a public hearing regarding **the Wastewater Treatment Plant Master Plan** after which it may make the final decision.

The hearings will take place at **Wilsonville City Hall**, 29799 SW Town Center Loop East. A complete copy of the project record, including staff report, findings, and recommendations, will be available online and at City Hall for viewing 7 days prior to each public hearing.

**SUMMARY OF PROPOSAL**

The City of Wilsonville is updating its Wastewater Treatment Plant Master Plan. The improvements detailed in this Plan are designed to provide optimal value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development.

The City's Wastewater Treatment Plant, along I-5 between the river and Old Town, was originally built in 1971. A major 2014 upgrade expanded the capacity to accommodate population growth. This Plan, which satisfies requirements established by the State of Oregon Department of Environmental Quality (DEQ), considers:

- The age and condition of existing process equipment and structures
- Upgrades to accommodate population growth and new economic development over the planning period (through 2045). Projections are based on land use, historical data, and DEQ wet weather flow methodologies.
- Potential changes to water quality regulations established by the DEQ
- City of Wilsonville Wastewater Collection System Master Plan (2014), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7

For more details, visit **https://www.letstalkwilsonville.com/wastewater-treatment-plant-master-plan**

**HOW TO COMMENT:** Oral or written testimony may be presented at the public hearings. Written comment on the proposal is welcome prior to the public hearings. To have your written comments or testimony distributed to the Planning Commission before the meeting, it must be received by 2 pm on December 5, 2023. **Direct written comments to Mandi Simmons, Administrative Assistant** 29799 SW Town Center Loop East, Wilsonville, Oregon, 97070 | msimmons@ci.wilsonville.or.us | (503) 682-4960

***Note: Assistive Listening Devices (ALD) are available for persons with impaired hearing and can be scheduled for this meeting. The City will also endeavor to provide qualified sign language interpreters and/or bilingual interpreters, without cost, if requested at least 48 hours prior to the meeting. To obtain such services, please call Mandi Simmons, Administrative Assistant at (503) 682-4960.***

Pat McGough
West Linn/Wilsonville School District 3J
2755 SW Borland Road
Tualatin, OR 97062

Andy Back
Wash. County Long Range Planning
155 N. First Avenue
Hillsboro, OR 97124

Steve Koper
City of Tualatin
18880 SW Martinazzi Avenue
Tualatin, OR 97062

Attn: Development Review
ODOT Region 1
123 NW Flanders Street
Portland, OR 97209

Ben Baldwin
Tri-Met Project Planning Dept
4012 SE 17th Avenue
Portland, OR 97202

Bill Ferber, Region Manager
Oregon Water Resources Department
725 Summer Street, NE
Salem, OR 97301

Dr. Kathy Ludwig
West Linn/Wilsonville School District 3J
22210 SW Stafford Road
Tualatin, OR 97062

Tracy Wilder, Department of Corrections
Facilities Services
3601 State Street
Salem, Oregon 97301

Steve Hursh, Service & Design Supervisor
Portland General Electric
2213 SW 153rd Drive
Beaverton, OR 97006

Land Use Contact, Planning Department
Metro
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Portland, OR 97232

Nina Carlson
NW Natural Gas
250 SW Taylor St.
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Republic Services of Clackamas &
Washington Counties
10295 SW Ridder Road
Wilsonville, OR 97070

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Canby, OR 97013

Diane Taniguchi-Dennis
Clean Water Services
2550 SW Hillsboro Hwy.
Hillsboro, OR 97123

Department of Corrections
2575 Center Street NE
Salem, OR 97310

John Lilly
Department of State Lands
775 Summer Street, NE
Salem, OR 97301

Roseann Johnson, Assistant Director of
Government Affairs
Home Builders Associations
15555 SW Bangy Road, Suite 301
Lake Oswego, OR 97035

Sherwood School Dist Admin Office
23295 SW Main Street
Sherwood, OR 97140

Clackamas County Planning Director
150 Beavercreek Road
Oregon City, OR 97045

Oregon Dept of Environ Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Tualatin Valley Water District
1850 SW 170th Ave.
Beaverton, OR 97005

Planning Director
City of Sherwood
22560 SW Pine Street
Sherwood, OR 97140

James Clark
BPA, Realty Department
2715 Tepper Lane
Keizer, OR 97013

Tualatin Valley Fire and Rescue
29875 SW Kinsman Road
Wilsonville, OR 97070

Tualatin Valley Fire and Rescue
South Division
8445 SW Elligsen Road
Wilsonville, OR 97070

Elizabeth Kenney
12451 Orchard Hill Rd
Lake Oswego, OR 97035

Pamplin MediaGroup

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This is the proof of your ad, scheduled to run on the dates indicated below. Please proofread carefully, and if changes are needed, please contact Sarah Penn prior to deadline at  or spenn@pamplinmedia.com.

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|---|---|
| ***Date:*** 11/22/23 | ***Ad ID:*** 308944 |
| ***Account #:*** 108863 | ***Start:*** 11/29/23 |
| ***Reference #:*** LP22-0001 WWTP MASTER PLAN | ***Stop:*** 11/30/23 |
| ***Company Name:*** WILSONVILLE, CITY OF | ***Total Cost:*** $208.79 |
| ***Contact:*** | ***Ad Size:*** 12.069 |
| ***Address:*** 29799 SW TOWN CENTER LOOP E WILSONVILLE | ***Column Width:*** 1 |
| | ***Column Height:*** 12.069 |
| ***Telephone:*** (503) 570-1510 | ***Ad Class:*** 1202 |
| ***Fax:*** (503) 682-1015 | ***Phone #*** |
| | ***Email:*** spenn@pamplinmedia.com |

***Run Dates:***

Wilsonville Spokesman 11/30/23

**NOTICE OF LEGISLATIVE PUBLIC HEARING**
**BEFORE THE**
**PLANNING COMMISSION AND CITY COUNCIL:**

**WASTEWATER TREATMENT PLANT (WWTP)**
**MASTER PLAN LP22-0001**

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Publish November 30, 2023 WS308944

# CITY COUNCIL

# MONDAY, NOVEMBER 6, 2023

**WORK SESSION**

Wastewater Treatment Plant Master Plan (Nacrelli)

**CITY COUNCIL MEETING**
**STAFF REPORT**

| | |
|---|---|
| **Meeting Date:** November 6, 2023 | **Subject:** Wastewater Treatment Plant Master Plan Update<br><br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Review Wastewater Treatment Plant Master Plan updates and provide feedback on the recommended capital improvement plan. | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |

| | | |
|---|---|---|
| ☒Council Goals/Priorities: Strategy 1. Develop an Infrastructure resilience plan and reprioritize/ fund recommended projects. | ☐Adopted Master Plan(s): | ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
The project team will provide an update on the additional analysis included in the Wastewater Treatment Plant (WWTP) Master Plan and the proposed changes made since the previous Council discussion on August 1, 2022.

**EXECUTIVE SUMMARY:**

The City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the Comprehensive Plan and 2023-2025 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies needed capital improvements within the planning period, taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

**Plan Updates**

Since the previous Council Work Session on August 1, 2022 growth projections have been updated to an assumed 2.9% annual population increase, consistent with recent planning documents adopted by the City, including the Wastewater Collection System Master Plan (November 2014), the Willamette River Water Treatment Plan Master Plan Update (March 2018), and the Basalt Creek Concept Plan (August 2018). In addition, the wastewater flow and load projections for biochemical oxygen demand (BOD) and total suspended solids (TSS) have been

further updated to account for increases in industrial discharges, as allowed under existing permits. The project team also performed a more in depth seismic and resiliency analysis of the wastewater treatment plant facilities to address the City Council 2023-2025 goal to develop an infrastructure resilience plan and reprioritize/ fund recommended projects. These changes result in a higher level of capital investment over the planning period than previously reported, as reflected in the table below.

| **Project Description** | **Timeframe** | **Cost*** |
|---|---|---|
| Dewatering Performance Optimization | 2025 | $150,000 |
| Fiber Optic Conduit Addition | 2025 | $60,000 |
| UV System Improvement | 2026 | $1,705,000 |
| Seismic Improvements | 2026 | $1,082,000 |
| New Aeration Basin and Blower | 2025 – 2027 | $10,222,000 |
| Replace Secondary Clarifier Mechanisms | 2026 - 2027 | $1,775,000 |
| Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, electrical and hydraulic upgrades) | 2028 – 2030 | $69,727,000 |
| New Solids Dryer | 2031 – 2033 | $17,130,000 |
| Thickening and Dewatering Improvements | 2031 – 2033 | $3,701,000 |
| New Cooling Tower | 2037 – 2038 | $642,000 |
| MBR Phase 2 (includes new blower) | 2037 – 2038 | $2,330,000 |
| UV Equipment Replacement | 2039 – 2040 | $2,571,000 |
| Outfall Upsizing | 2039 – 2040 | $1,244,000 |
| MBR Phase 3 (includes 2 new blowers) | 2042 – 2043 | $8,117,000 |
| **Total** | | **$120,456,000** |
| *Costs are shown in 2023 dollars and include 25% for engineering, legal, and administration. | | |

The most significant impact to the required level of capital investment is the need for membrane bioreactor (MBR) facilities. These are state-of-the-art, compact facilities that provide a high level of treatment. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the most feasible means of providing the necessary treatment to accommodate build out of the Wilsonville urban reserve areas.

**EXPECTED RESULTS:**

The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. The total estimated amount of capital investment over the planning period is approximately $120 million, of which $15 million is anticipated in the next five (5) years. The recommended capital improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that are necessary to adequately fund the upgrades needed to meet the projected growth.

**TIMELINE:**

The project team will incorporate feedback received by both the Planning Commission (October 11, 2023 Work Session) and the City Council (November 6, 2023 Work Session) into the Plan.

Currently, a public hearing for the Plan adoption recommendation by the Planning Commission is scheduled for December 13, 2023. A public hearing before City Council for the Plan adoption is anticipated in January 2024.

**CURRENT YEAR BUDGET IMPACTS:**
The amended fiscal year 2023 -2024 Budget for capital improvement project (CIP) #2104, Wastewater Treatment Plant Master Plan, includes $130,000 in sewer operations and system development charge funds. The remaining budget is sufficient to complete the remaining work to update and adopt the Plan.

**COMMUNITY INVOLVEMENT PROCESS:**
A virtual town hall meeting to present the findings of the Plan and solicit public input was held in September 2022 and posted on the City's online calendar and Let's Talk Wilsonville page, where a project overview and periodic updates to the Executive Summary have also been posted. In addition, draft versions of the Executive Summary have been sent to the ten (10) largest industrial customers for review and comment. The public hearings listed above will provide further opportunity for public input. The forthcoming Sewer System Rate Study and SDC Update will also include a public engagement process with outreach to utility customers and the development community.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES:**
The project team considered and evaluated numerous technologies and alternatives to provide the needed wastewater treatment plant capacity to meet future demands and recommend a capital improvement program that implements the needed improvements in a way that is efficient and cost effective.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENT:**
1. Wastewater Treatment Plant Master Plan Draft Executive Summary (dated October 2023)

EXHIBIT A

# EXECUTIVE SUMMARY

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather projection methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in the early 1970's and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the WWTP, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by DEQ,
- City of Wilsonville Wastewater Collection System Master Plan (2014, MSA), and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

## ES.1 Planning Area Characteristics

Chapter 1 summarizes the City's wastewater service area characteristics relevant to assessing WWTP facility needs. The planning area considered by this Plan is consistent with the City's 2014 Collection System Master Plan and 2018 Comprehensive Plan including the urban growth boundary (UGB). The Basalt Creek Concept Plan, adopted in 2018, resulted in a modification of the future boundary between the cities of Tualatin and Wilsonville relative to the 2014 Wastewater Collection System Master Plan (CSMP). This decision is reflected in Figure ES.1, which shows the Study Area Boundary as analyzed in the 2014 CSMP, with the portion likely to annex to Tualatin now shown outside the current Study Area Boundary.

The northern portion of the City of Wilsonville is located within Washington County, and the majority of the City lies in the southwestern part of Clackamas County.

The City sits within the jurisdictional boundaries of Metro, the regional government for the Portland metropolitan area. By state law, Metro is responsible for establishing the Portland metropolitan area's UGB, which includes Wilsonville. Land uses and densities inside the UGB require urban services such as police and fire protection, roads, schools, and water and sewer systems. A figure of the City's existing land use is presented in Chapter 1. Also presented in

Chapter 1 are the City's physical characteristics, water resources, and population and employment information, which are all significant factors in planning for wastewater conveyance and treatment facilities.

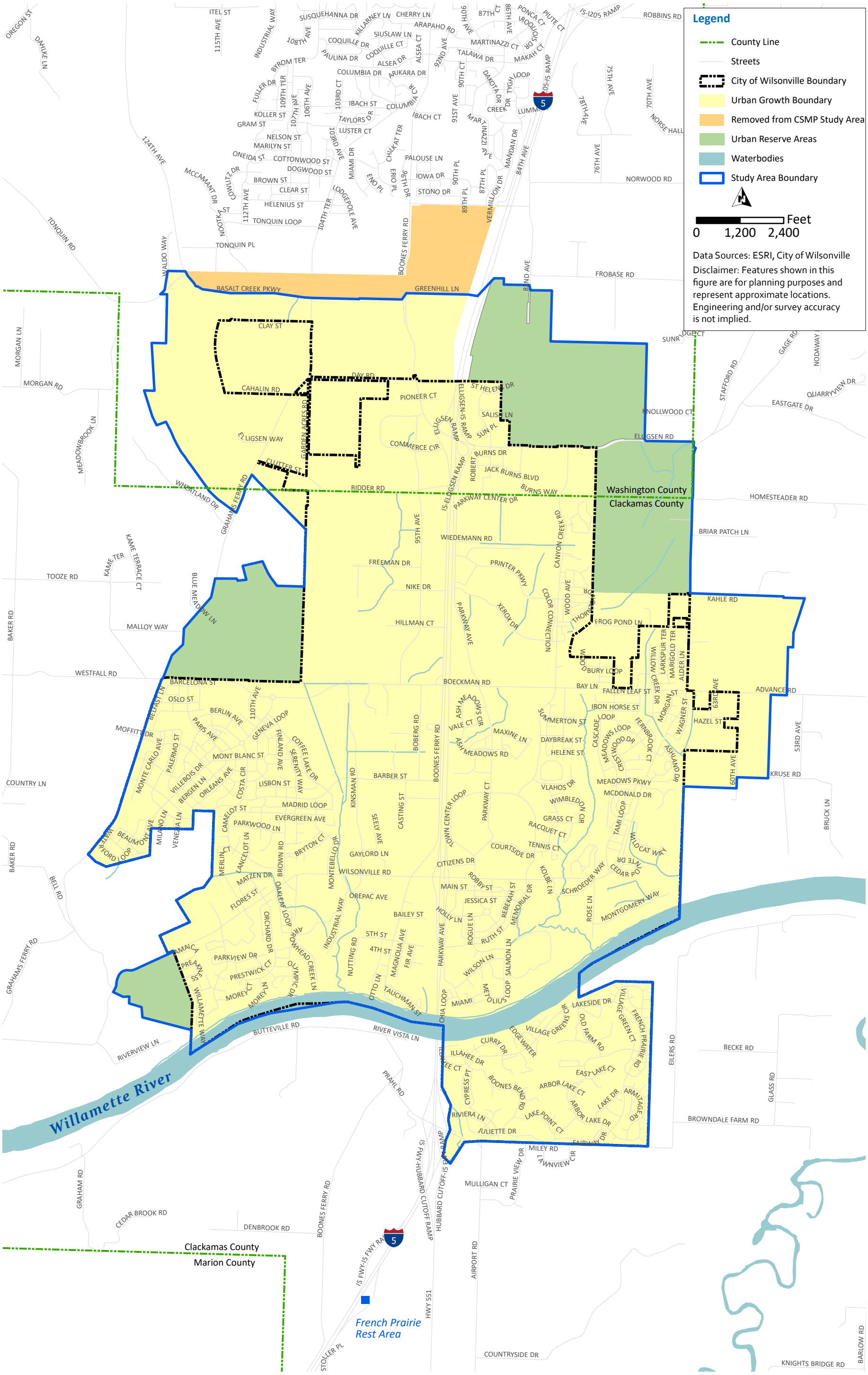



Figure ES.1 Planning Area

The Portland State University Population Research Center (PSU PRC) publishes annual estimates of populations for the previous year for cities in Oregon while Metro develops population projections for the future within the Portland metropolitan area, including Wilsonville. The PSU PRC estimated the City's population as 27,414 in 2022.

The historical per capita flow and loads presented in this master plan are based on the PSU PRC certified population estimates while future flow and load projections are based on the CSMP estimates to maintain consistency with prior water and sewer enterprise planning (with the slight modification to exclude the portion of the Basalt Creek Planning Area (BCPA) mentioned above). Figure ES.2 details the current population along with the historical population and growth expected for the City using the CSMP projections. As is shown in Figure ES.2, the WSMP (2003) assumption of a 2.9 percent growth rate lines up well with the PSU PRC and US census data for the years 2010 through 2022. Current and future population are described in greater detail in Chapter 3.

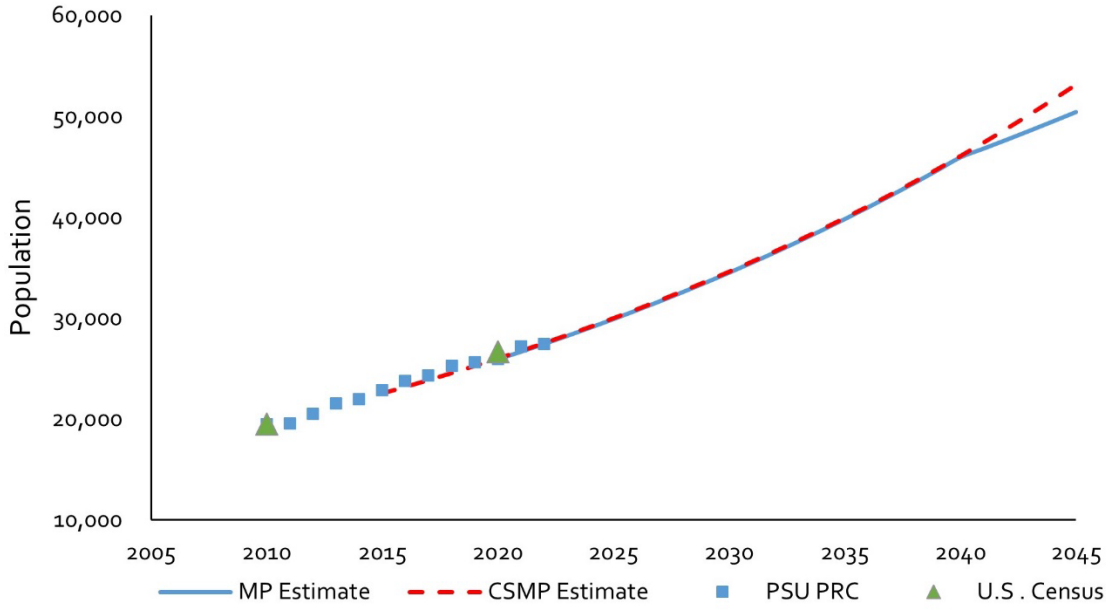



Figure ES.2 Historical Population and Expected Growth for the City of Wilsonville

## ES.2 WWTP Condition Assessment

Carollo Engineers, Inc. (Carollo) reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement. Chapter 2 presents a summary of critical assets that require short term rehabilitation or replacement, as well as a list of assets that are less critical to operations, or have minor condition issues, but may be included in a short-term improvements project or a task order for Jacobs operations personnel. Table ES.1 displays the condition driven rehabilitation or replacement projects from Chapter 2 that were included in the recommended Capital Improvement Plan (CIP) in Chapter 7. The City undertook an updated assessment of WWTP condition in the summer of 2023. The 2023 assessment did not identify additional issues requiring significant capital outlays compared to the 2019 assessments.

Table ES.1 CIP Condition Driven Replacement Projects

| Asset | Description |
|---|---|
| Trojan UV 4000 System | While only used as a backup to the Suez UV system, the Trojan system's HMI has errors that prevent it from showing the status of the lamps in module 3. Since it is used infrequently, the system's condition is largely unknown. After review of the 2019 condition assessment reports and discussion with the City and Jacobs staff, it was concluded that the UV 4000 unit must be replaced. |
| Secondary Clarifiers No. 1 and No. 2 | Ovivo completed a field review of the plant's secondary clarifiers No. 1 and No. 2 in April 2022. Although both units were operational, repairs were identified to improve the operation of the clarifiers. The recommended repairs include drive controls for both units, new skimmers for both units, squeegees for both tanks rake arms, EDI chains, one motor and reducer assembly, one skimmer arm assembly, and new secondary clarifier mechanisms. |

Notes:
Abbreviations: EDI - electronic data interchange; HMI - human-machine interface; No. - number; UV - ultraviolet.

## ES.3 Seismic Analysis

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building.
- Process Gallery.
- Workshop.
- Aeration Basins and Stabilization Basins.
- Sludge Storage Basins and Biofilter.

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for this Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. In spring 2023, NGI performed a visual crack survey and mapped existing cracks at accessible structure floor and foundation stem wall locations. In addition, NGI completed a 50-foot boring utilizing a sonic drilling technique to assist in determining grouting conditions, prior maximum excavation depths, and fill materials present in the vicinity of secondary clarifier 3.Recommended actions from NGI to mitigate the risk of soil piping and considerations for new structure foundations are presented in Chapter 2.

## ES.4 Wastewater Flow and Load Projections

Chapter 3 of the Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand ($BOD_5$), ammonia ($NH_3$), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses. Facility planning involves estimating rates of growth in wastewater generation within the service area which are unlikely to align precisely with the actual growth observed. During the planning period, City staff will need to assess service area growth at regular intervals and revisit the analysis presented in this Plan.

The City previously estimated population for build-out of their service area. These estimates were taken from the City's Collection System Master Plan (2014, MSA) and as assumed in that document, projected the UGB reaches build-out in 2045. Figure ES.2 details the historical population and growth expected for the City. In addition, the City service area boundary upon which 2045 UGB build-out projections were based on the 2014 CSMP, has been altered slightly to account for a portion of the Basalt Creek Planning Area (BCPA) which is now expected to annex to the City of Tualatin and therefore will not receive wastewater service from the City of Wilsonville. Figure ES.2 illustrates the 2014 UGB build-out population projections from the CSMP compared to those based on the modified service area boundary.

The flow and load projections presented in Chapter 3 are based on the Collection System Master Plan projections (with the slight modification to exclude the portion of the BCPA mentioned above).

A determination will need to be made whether projected flows and loads (which drive assessments of unit process capacity) are aligned with calendar projections presented in this plan and consider if conclusions presented regarding capacity and timing of recommended improvements remain valid. If not, adjustments to the plan will need to be undertaken to ensure sufficient capacity remains available to serve anticipated growth. As actual future wastewater generation rates may also be slightly different than the unit factors considered in this Plan, operations staff at the plant will need to be familiar with the flow and load triggers for planning and design of logical increments of treatment capacity presented in this plan. If growth rates are higher, the schedule for improvements in this plan will need to align with calendar dates presented herein. If growth occurs more slowly, the City will be able to phase WWTP improvements on a less aggressive schedule.

Analysis of flow projections were completed through two different methods: (1) analysis of historical plant records and (2) DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon, which is referred to as the DEQ methodology in this Plan. Since there is no DEQ methodology for load analysis, all projections were developed based on historical plant records. Figure ES.3 summarizes the measured and projected maximum month, peak day and peak hour flows. The projections for the remaining flow elements can be found in Chapter 3. As is shown in Figure ES.3, the peak hour flow is projected to exceed the peak hour flow of 16 mgd listed on the 2014 Improvements Drawings close to the year 2040.The projected 2045 peak hour flow is based on a 10-year (rather than a 5-year) design storm and does not account for storage or flow attenuation in the collection system. In 2023 the City undertook a hydraulic analysis of the WWTP concluding that certain elements will be deficient as the service area develops. This is discussed in greater detail in Chapter 4. This has important implications for facility improvement costs recommended in this Master Plan, which are based on estimates and projections of flows and loads which may not align with the timelines presented in this Master Plan. As such it is recommended the City perform additional evaluation of the WWTP and collection system, along with monitoring actual flows, to further evaluate whether future flow equalization can be achieved and whether recommended improvements at the WWTP will all be triggered within the planning period.

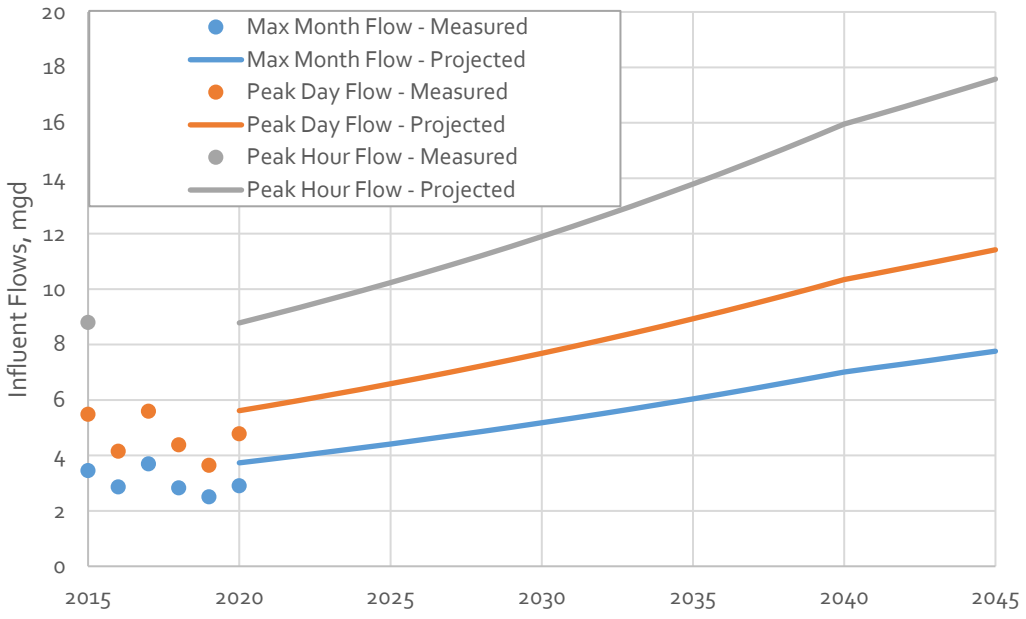



Figure ES.3 Flow Projection Summary

Load projections were calculated for influent TSS, $BOD_5$, $NH_3$, and TP. Figure ES.4 summarizes the measured and projected influent maximum month BOD and TSS loads. The projections for the remaining load elements can be found in Chapter 3.

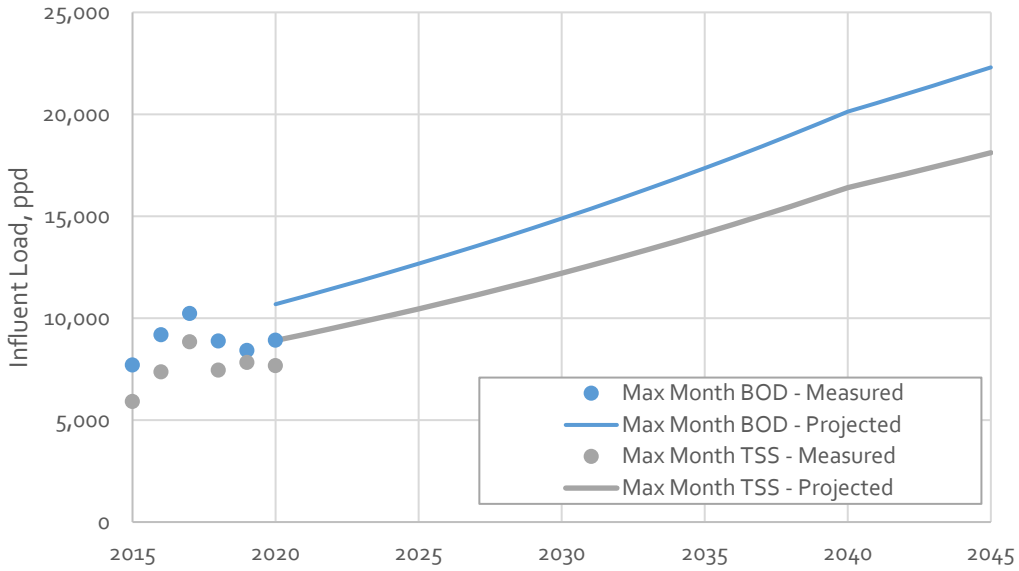



Figure ES.4 Load Projection Summary

The projected flows and loads developed in Chapter 3 were compared against the rated capacity for each of the WWTP's unit processes to determine whether expansion would be required within the planning period. The findings of this capacity analysis are discussed in the next section.

## ES.5 Capacity Analysis

Summaries of plant process area capacity assessments and conclusions are presented in this Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations. A site plan of the City's existing WWTP is presented in Figure ES.5.

Chapter 4 identifies existing capacity ratings and deficiencies for the liquid and solids stream treatment processes at the City's WWTP. Analyses are based on operational practices in place at the time and existing effluent limits established by the WWTP's NPDES permit. Biological process modeling was performed using BioWin version 6.2 to predict plant performance under current and future flow and loading conditions to assess when unit process capacities may be exceeded within the planning period (present through 2045).

A summary of the capacity assessment completed using growth projections described in Section ES.1 is detailed below in Table ES.2. Chapter 4 presents the methodology and findings in greater detail.




LEGEND:

1 - DEWATERING & DRYING BUILDING
2 - PROCESS GALLERY
3 - SECONDARY CLARIFIER NO. 1
4 - SECONDARY CLARIFIER NO. 2
5 - UV DISINFECTION SYSTEM
6 - WORKSHOP
7 - SECONDARY PROCESS FACILITY
8 - STABILIZATION BASIN
9 - SLUDGE STORAGE BASINS AND BIOFILTERS 12 - SECONDARY CLARIFIER NO. 3
10 - HEADWORKS
11 - DISK FILTERS
12 - COOLING TOWERS
13 - W3 REUSE PUMP STATION
14 - OPERATIONS BUILDING
15 - SITE ENTRANCE

0 30' 60' 120'
SCALE: 1" = 60'

**Figure ES.5**
**EXISTING WILSONVILLE WWTP**
CITY OF WILSONVILLE

Plot Date: 6/28/2022 9:15:35 AM
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Table ES.2 Unit Process Capacity Assessment

| Unit Process | Capacity Assessment |
|---|---|
| **Preliminary Treatment** | |
| Screening | There is sufficient hydraulic capacity with both mechanical screens operational to accommodate a PHF of 17.6 mgd. Hydraulic modeling conducted by Jacobs in 2023 indicates that hydraulically the influent screening can pass the projected PHF. |
| Grit Removal | The 2012 WWTP Improvement documents indicate a design capacity of 16 mgd for the vortex grit basin. However, Hydraulic modeling conducted by Jacobs in 2023 indicates that hydraulically, the grit removal system can pass a PHF of 17.6 mgd. At this flow rate the anticipated performance would be poor. |
| **Secondary Treatment** | |
| Secondary Treatment | Based on maximum week MLSS predicted from BioWin modeling at peak day flow with all clarifiers in service (and assuming a 5-day SRT), there is only sufficient capacity through 2027. Upsized process piping is expected to be necessary to convey flow from the headworks to the secondary process and to return activated sludge within the secondary process under future flow conditions |
| Aeration Blowers | The air demands of the secondary treatment process are projected to exceed the firm capacity of the aeration blowers under peak conditions by 2027. |
| **Tertiary Treatment and Disinfection** | |
| Disk Filters | The existing disk filter capacity is expected to be exceeded by 2032 with one unit out of service or in backwash mode based on effluent limitations included in the City's DBO Contract with Jacobs. At this time the City expects to relax these contract limitations rather than invest in additional capacity. |
| Secondary Effluent Cooling Towers | The projected peak day flow during the months of June through September is expected to exceed the capacity of the colling tower by the year 2036. |
| UV Disinfection | The existing UV channels do not have adequate capacity to disinfect the 2045 PHF with all units in service. However, the firm capacity of the UV system is sufficient to treat the PDDWF through the year 2045 with one channel out of service. The City currently has an older UV unit in place as an emergency backup to the primary system. That backup unit is aging and the City plans replacement during the planning period. By the year 2040, the UV channels are expected to exceed their hydraulic capacity. |
| Outfall | Even with the Willamette River at its 100-year flood elevation, it is expected that the outfall pipeline can accommodate approximately 19 mgd before the UV channel effluent weirs are at risk of submergence upstream. Since this flow is well above the hydraulic capacity of the rest of the plant, no expansion will be needed until after 2045.(1) Jacobs found that under projected 2045 PHF conditions certain process and effluent piping, including piping just upstream of the Willamette River outfall and diffuser system, may be hydraulically deficient. At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized outfall piping between MH-B and MH-D2 is expected to be necessary to convey flow from the headworks to the secondary process under these conditions |
| **Solids Handling** | |
| Gravity Belt Thickener | Assuming continuous operation, the capacity analysis results indicate adequate capacity for thickening the current and projected maximum week WAS loads with one unit out of service. These units are aging and the City plans replacement during the planning period. |
| TWAS Storage | The TWAS storage volume is sufficient to accommodate the expected maximum week solids loads for two days (assuming TWAS is thickened to 4 percent). |
| Dewatering Centrifuges | The rated capacity of the current centrifuges is sufficient to process the maximum week load with one unit out of service though 2042 assuming operating times of 24 hours per day for 7 days per week, per the criteria detailed in Chapter 4.(2) These units will reach the end of useful life during the planning period and the City plans replacement accordingly. |
| Biosolids Dryer and Solids Disposal | The capacity of the biosolids dryer is adequate for handling the current and projected max week solids loads (in year 2045) on the basis of its design evaporation rate, assuming dewatered cake is dried from 20 percent TS to 92 percent TS and the dryer is operated for 24 hour per day for 7 days per week.(3) This unit is aging, has had recent performance issues and the City plans replacement during the planning period. |

Notes:
(1) The existing outfall was recently modified and equipped with five parallel diffuser pipes equipped with duckbill check valves to improve the mixing zone characteristics in the Willamette River.
(2) The centrifuges have exhibited inconsistent performance. The City recently refurbished these units and expects they will provide sufficient capacity through 2045.
(3) The existing solids dryer has sufficient capacity through 2045 but has exhibited inconsistent performance.. See Alternative 2B, Chapter 6.
Abbreviations: DBO - Design-Build-Operate; gpd/sf - gallons per day per square foot; MLSS - mixed liquor suspended solids, SPA - State Point Analysis; SRT - solids residence time; TS - total solids; TWAS - thickened waste activated sludge.

Table ES.3 further summarizes the capacity assessment by listing each unit process, associated design parameters and year of possible capacity exceedance.

Table ES.3 Unit Process Capacity Year Summary

| Unit Process | Design Parameter | Redundancy Criteria | Year of Capacity Exceedance |
|---|---|---|---|
| Influent Screening | PHF | Bypass channel with manual bar rack in service and one mechanical screen out of service | >2045 |
| Grit Chamber | PHF | All units in service | >2045(1) |
| Secondary Treatment | MW MLSS Inventory at PDF | All units in service | 2027 |
| Secondary Effluent Cooling Towers | June 1 - Sept 30 PDF | All units in service | 2036 |
| Disk Filters | MWDWF | One unit in backwash | 2032(2) |
| UV Disinfection Channels | PHF | All units in service | 2040(1) |
| Outfall | PHF | - | >2045 |
| Gravity Belt Thickening | MW Load | One unit out of service | 2042 |
| Dewatering Centrifuges | MW Load | One unit out of service | >2045(3) |
| Biosolids Dryer | MW Load | All units in service | >2045(3) |

Notes:

(1) The plant hydraulic modeling done as a part of the 2012 WWTP Improvements Project only evaluated plant flows as high as 16 mgd. The projected peak hour flows presented in Chapter 3 exceed this flow by the year 2045. There are some unit processes including the grit removal system, secondary clarification and UV disinfection that have a peak hydraulic capacity of 16 mgd. The hydraulic analysis conducted by Jacobs in 2023 found that under projected 2045 PHF conditions certain process and effluent piping may be hydraulically deficient. At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized piping is expected to be necessary to convey flow from the headworks to the secondary process under these conditions .

(2) Existing Disk Filters are predicted to exceed reliable capacity (one unit out of service) in 2028 based on vendor provided design criteria. This conclusion assumes limitations for effluent total suspended solids contained in the WWTP DBO contract, which are far more stringent than the City's NPDES permit. At this time the City expects to relax these contract limitations rather than invest in additional capacity. Following startup of secondary treatment membrane bioreactors in 2030, the tertiary filters will be required less to meet the effluent requirements of the NPDES permit. It is anticipated the City will maintain these facilities to allow flexibility in operation to account for servicing and membrane facility downtime.

(3) As noted previously, the existing centrifuges and biosolids dryer appear to have sufficient capacity through the planning year 2045, however condition and age are likely to require replacement during the planning period. It is recommended the City reassess available replacement technologies prior to replacement and consider loading appropriate to the planning horizon of any new units selected.

Abbreviations: MW - maximum week

## ES.6 Regulatory Considerations and Strategy

It is the responsibility of the Oregon DEQ to establish and enforce water quality standards that ensure the Willamette River's beneficial uses are preserved. Discharges from wastewater treatment plants are regulated through the (NPDES. All discharges of treated wastewater to a receiving stream must comply with the conditions of an NPDES permit. The Wilsonville WWTP discharges to the Willamette River at River Mile 38.5 just upstream of the Interstate 5 bridge. The existing permit limits for the Wilsonville WWTP are shown in Table ES.4. This permit became effective on September 1, 2020 and expires July 30, 2025.

Table ES.4 Current Effluent Permit Limits

| Parameter | Average Effluent Concentrations | | Monthly Average, (ppd) | Weekly Average, (ppd) | Daily Maximum, (lbs) |
|---|---|---|---|---|---|
| | Monthly | Weekly | | | |
| **May 1 - October 31** | | | | | |
| $CBOD_5$ | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| TSS | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| **November 1 - April 30** | | | | | |
| $BOD_5$ | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| TSS | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| **Other Parameters Limitations** | | | | | |
| E. coli Bacteria | • Shall not exceed 126 organisms per 100 ml monthly geometric mean.<br>• No single sample shall exceed 406 organisms per 100 ml. | | | | |
| pH | • Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0 | | | | |
| $BOD_5$ Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| TSS Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| ETL June 1 through September 30 | • Option A: 39 million kcal/day 7-day rolling average<br>• Option B: Calculate the daily ETL limit | | | | |

Notes:
Abbreviations: $CBOD_5$ - five-day carbonaceous biochemical oxygen demand; ETL - excess thermal load; kcal/day - kilocalories per day; lbs - pounds, mg/L - milligrams per liter; ml - milliliter.

The WWTP has been compliant with NPDES permit limits, generally. However due to construction issues that required that aeration basins be offline, equipment failure and issues with solids processing, the WWTP did violate their NPDES permit over eight months between 2015 and 2020 (December 2015, February 2017, April 2017, January 2018, August 2018, May 2020, June 2020 and July 2020). Most of these violations were due to the daily effluent TSS load exceeding the maximum daily load limit in the NPDES permit. It is anticipated that once the issues with solids processing are addressed, the City's current treatment process will be able to meet permit limits.

Chapter 5 details potential regulatory issues the City will need to take into consideration in coming years. Several possible regulatory actions by the Oregon DEQ could drive investments in

future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance.

Future treatment upgrades may be required when DEQ establishes total maximum daily loads (TMDL) for the lower Willamette River. Dissolved oxygen and nutrient limits, such as phosphorus limitations, are possible. The dissolved oxygen in the lower part of the river does not always meet water quality standards, and indications of excessive nutrients, such as chlorophyll-a, aquatic weeds, and harmful algal blooms, are present in the lower Willamette River. DEQ has begun its triennial review of Oregon's water quality criteria. The review could result in more stringent or new discharge requirements, but this process will take several years. For planning purposes, providing plant footprint to accommodate future treatment to remover phosphorus and address dry weather seasonal limits on dissolved oxygen should be anticipated. In addition, the City should continue to engage with DEQ regarding any proposed receiving water temperature regulatory actions.

## ES.7 Alternative Development and Evaluation

Chapter 6 presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process. Process modifications associated with each alternative were modeled in BioWin to evaluate the overall impact on plant operations.

As identified in Chapter 4, the secondary treatment process is expected to require additional capacity during the planning horizon (2045). Chapter 6 details two alternatives to address these capacity limitations. The two alternatives considered to increase secondary capacity are:

1. Expansion of the existing conventional activated sludge process; and
2. Intensification of the existing treatment process using membrane bioreactor (MBR) technology.

Due to the higher capital and operating costs of intensification, construction of a new conventional aeration basin is recommended as the first phase to increase secondary capacity. As flows and loads increase, or regulatory requirements become more stringent, it is expected to become necessary to intensify treatment. It is recommended the City revisit this evaluation as the need for 1) additional capacity to accommodate growth nears or 2) more stringent effluent limitations are considered. This offers the opportunity to take advantage of potential advances in technology as well as confirming the predicted time frame of capacity exceedance. A new aeration basin project is included in the Capital Improvement Plan in Chapter 7. As loads continue to increase, this plan includes the gradual conversion of the existing conventional activated sludge process to a membrane bioreactor process.

The existing aeration blower system firm capacity is expected to be deficient by 2027. An additional aeration blower (with approximately double the capacity of the current blowers) would provide for the first phase of capacity expansion. As loads continue to increase, the plan includes the gradual upsizing of the existing blowers.

The projected peak day flow between June through September is expected to exceed the capacity of the existing cooling tower. Since the existing cooling tower system was designed to be expanded with the addition of one more tower, the plan assumes the expansion of the existing cooling tower process by the year 2036 to meet the projected summer peak day flows.

Additional tertiary filtration capacity is predicted to be needed by 2032 to provide full treatment of the MWDWF with one disc filter out of service or in backwash mode. As the City has selected an intensification technology utilizing membranes, this is likely to eliminate tertiary filtration capacity concerns as the membranes replace the filtration process for TSS removal in plant effluent.

While the capacity assessment findings presented in Chapter 4 determined existing gravity belt thickeners and dewatering centrifuges have sufficient capacity assuming continuous operation, the remaining equipment service life may require replacement within the planning horizon. The centrifuges, installed in 2014, were recently refurbished, but by 2045, will have been in service for over 30 years. In addition, the gravity belt thickeners (GBT) which thicken the sludge prior to delivery to the centrifuges for dewatering, have been in service even longer. The City should plan for their replacement within the planning horizon and consider whether a capacity increase is needed at the time of replacement based on projections of solids production and processing needs. Additionally, the secondary process was modified in 2020 and has experienced extended periods where mixed liquor concentrations have been elevated above typical ranges for conventional activated sludge or extended aeration processes. Due to the complications with secondary process operation and performance issues with the centrifuges, it is recommended the City study the secondary treatment and dewatering processes to confirm that the assumptions and conclusions regarding centrifuge capacity in Chapter 4 may be relied upon. A dewatering performance optimization study is recommended so the City can collect and analyze secondary treatment and solids processing performance data. For budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is presented in Chapter 7. Timing of that equipment replacement will depend on performance of the existing units, future loading assumptions, and observed condition.

The existing solids dryer has experienced operational issues in recent years, including a fire that caused extensive damage to the equipment in April 2019 and a leaking rotary joint and damaged seal in 2021. As of February 25, 2022, the dryer has been repaired and is operating. Because of the City's commitment to solids drying as the preferred process to achieve Class A biosolids, the alternatives evaluation presented in this Plan for future dryer replacement was conducted with a focus on thermal drying options only.

Chapter 6 details an analysis of the following alternatives to improve the drying system:

1. Alternative 1 - Continue operating the existing biochemical reactor (BCR) paddle dryer and defer replacement.
2. Alternative 2 - Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.
3. Alternative 3 - Construct a new dryer building with a different solids dryer technology.

While it is anticipated the existing dryer has useful life through at least 2026 (current DBO contract expiration), by 2031 the dryer will have been in operation for over 15 years. It is recommended the planning and design of upgrades to provide reliable dryer capacity begin in 2031, or sooner if further operational concerns arise. The City has indicated a preference for a

variation of Alternative 2 which involves expanding the existing Dewatering and Drying Building to accommodate a second solids paddle dryer. This alternative provides backup capacity to allow the City to continue delivering Class A solids during periods of downtime if a mechanical failure occurs or to accommodate regular maintenance of one dryer train. As mentioned previously, this Plan recommends the City complete a study of the secondary sludge quality, performance of that process, chemical addition types and locations, and solids handling process performance overall prior to making a final selection of the preferred dryer alternative from the alternatives detailed in Chapter 6. For purposes of capital planning, this Plan assumes the City will implement Alternative 2b (modification of Dewatering and Drying Building to accommodate a second paddle dryer) with a study and confirmation of this selection beginning in 2031.

Lastly, the City wants to establish a direct connection between the City's fiber optics network and the WWTP. This addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the site entrance, where the conduits will be tied into the City's fiber optics network. Chapter 6 details one potential routing from the Operations Building to the site entrance that would minimize impact to existing yard utilities. The fiber optic cable addition is included in Chapter 7 and the City's 5-year CIP.

Table ES.5 below summarizes the alternatives evaluated in Chapter 6 including recommendations for future WWTP improvements.

Table ES.5 Summary of Alternatives

| Unit Process | Alternatives Considered | Selected Alternative |
|---|---|---|
| Secondary Treatment | • Expansion of the existing conventional activated sludge process.<br>• Intensification of the existing treatment process. | • Expansion of the existing conventional activated sludge process through the addition of another aeration basin. Further phased expansion of capacity through addition of membrane bioreactor (MBR) and fine screening facilities. |
| Solids Dryer | • Continue operating the existing BCR paddle dryer and defer replacements.<br>• Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.<br>• Construct a new dryer building with a different solids dryer technology. | • Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer by expanding the Dewatering and Drying Building to accommodate a second solids paddle dryer. |

## ES.8 Recommended Alternative

Figure ES.6 presents a WWTP site plan identifying locations of recommended improvements resulting from condition and capacity assessments, including evaluation of alternatives, as described.

Summaries of opinions of probable costs and anticipated phasing for the improvements recommended for inclusion in the City's WWTP CIP are provided in Table ES.6.

The expected cash flow for the planning period was determined for the recommended improvements summarized in Table ES.6. The cash flow through 2045 includes an escalation rate of three percent, and the estimated peak expenditure for any fiscal year is

approximately $55,434,000 in fiscal year 2030. The projected CIP expenditures are presented in Figure ES.7. Capital costs estimated in the Plan will be considered as the City assesses the need to adjust sewer enterprise rates and charges in coming months. It will be important to distinguish capacity and condition (repair and replacement) driven improvements in assigning costs to existing rate payers and future users.

Table ES.6 WWTP CIP - Recommended Alternative Opinion of Probable Cost and Phasing

| Plant Area | Project[1] | Opinion of Probable Cost[2] | Approximate Year Online |
|---|---|---|---|
| Solids Handling | Dewatering Performance Optimization | $150,000 | 2025 |
| Communications/IT | Fiber Optic Cable Addition | $60,000 | 2025 |
| UV System | Backup UV System Improvement | $1,705,000 | 2026 |
| Support Buildings | Seismic Improvements | $1,082,000 | 2026 |
| Secondary Treatment | New Conventional Aeration Basin and Blower | $10,222,000 | 2027[3] |
| Secondary Treatment | New Secondary Clarifier Mechanisms | $1,775,000 | 2027 |
| Secondary Treatment | New MBR, Blowers and Fine Screens (Phase 1) | $69,727,000 | 2031 |
| Solids Handling | Solids Dryer Improvement | $17,130,000 [7] | 2033 |
| Solids Handling | Existing Centrifuge and GBT Replacement | $3,701,000 [4,6] | 2033[5] |
| Cooling Towers | New Effluent Cooling Tower | $642,000 | 2036 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 2) | $2,330,000 | 2039 |
| UV System | UV Equipment Replacement | $2,571,000 | 2040 |
| Outfall | Outfall Improvements | $1,244,000 | 2040 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 3) | $8,117,000 | 2044 |
| **TOTAL** | | **$120,456,000** | |

Notes:

White rows indicate projects that are in the City's 5-year CIP and blue rows indicate projects that are outside the 5-year CIP window.

(1) Details of each project can be found in Chapter 2 or Chapter 6 of this Master Plan.

(2) The estimated opinion of probable costs include the construction costs plus ELA (or soft costs). Details on the estimated project costs can be found in Chapter 2 or Chapter 6 of the plan, with the exception of costs for the backup UV system and centrifuges which are presented earlier in Chapter 7. All costs presented are based on an August 2023 ENR index of 13473.

(3) As identified in Chapter 4, the secondary treatment process at the Wilsonville WWTP is expected to require additional capacity by the year 2027. Since design and construction of a new aeration basin may take longer than the year 2027, the City will likely need to operate at SRTs lower than 5 days during the maximum week condition if growth occurs as predicted in Chapter 3.

(4) For budgeting purposes, the Option B centrifuge cost from Table H-2 in Appendix H is used for the project cost summary and the CIP.

(5) Replacement timing dependent upon satisfactory equipment performance.

(6) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2042. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.

(7) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.

The years in which key processes are projected to exceed capacity are presented in Figure ES.8. The green line illustrates projected MM BOD triggers for existing and proposed new secondary treatment facilities. Projected PHF is shown in blue indicating capacity exceedance of the cooling tower and certain elements of plant hydraulics. Prior to the year of projected exceedance, planning, design, and construction activities will be required to allow upgrades to be commissioned to prevent capacity exceedances. It is important to note that the timing of improvements should be driven by the rate of growth in influent flow and load. Dates indicated in Figure ES.8 and elsewhere in this document should be considered best, conservative estimates based on projections presented herein and professional judgment.

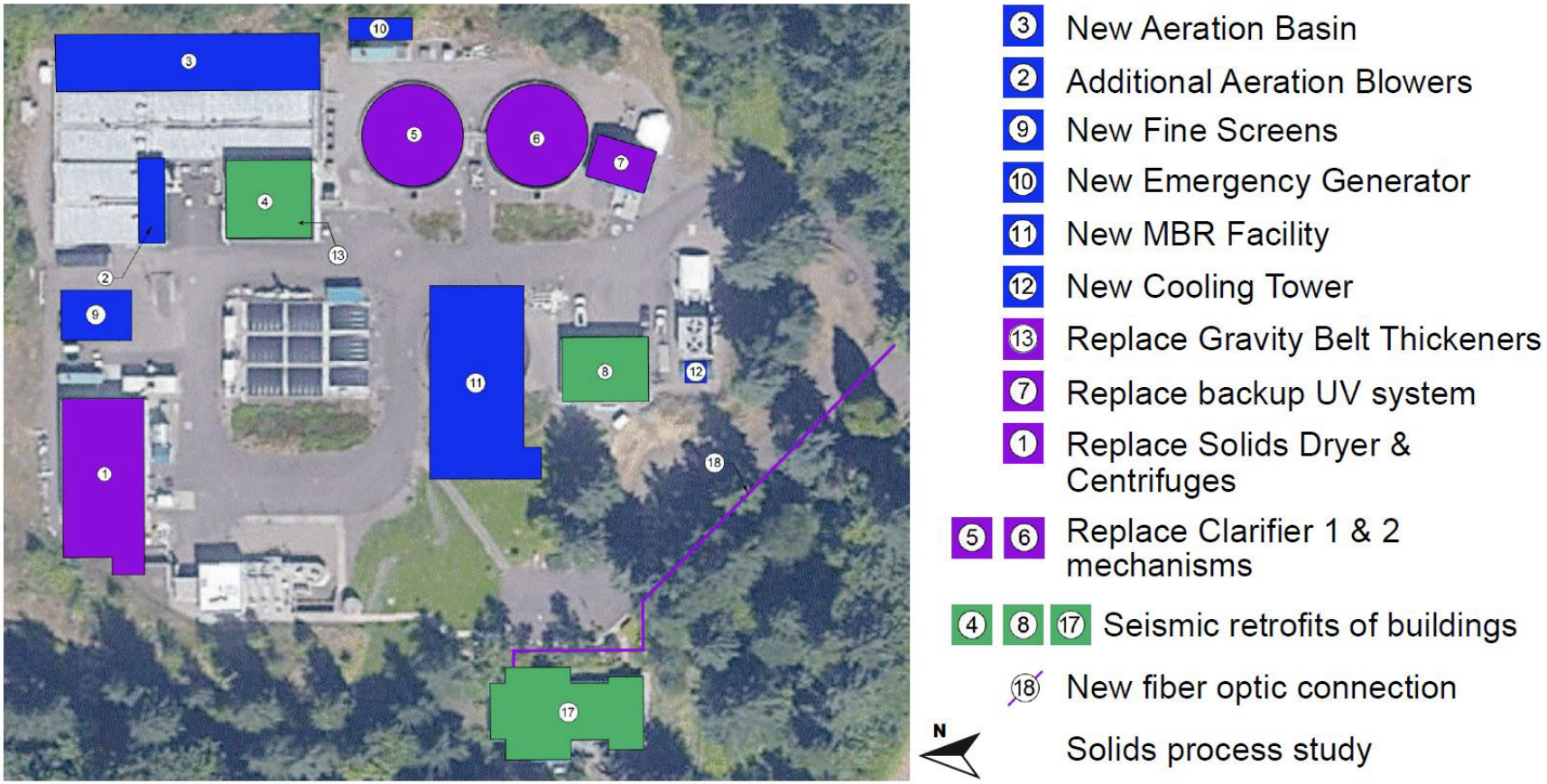



Figure ES.6 Proposed WWTP Improvements Site Plan

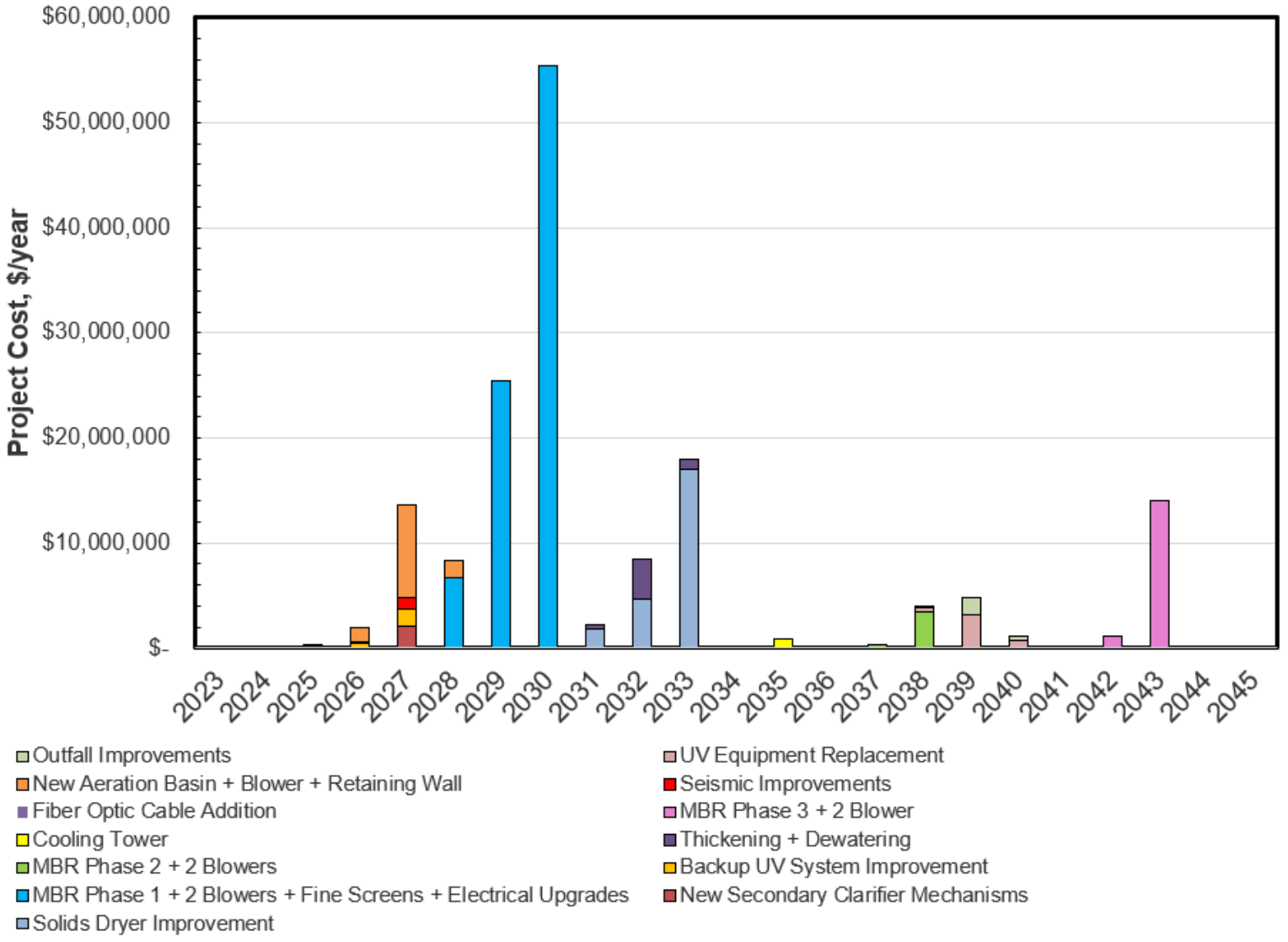



Figure ES.7 Projected 20-Year CIP Expenditures

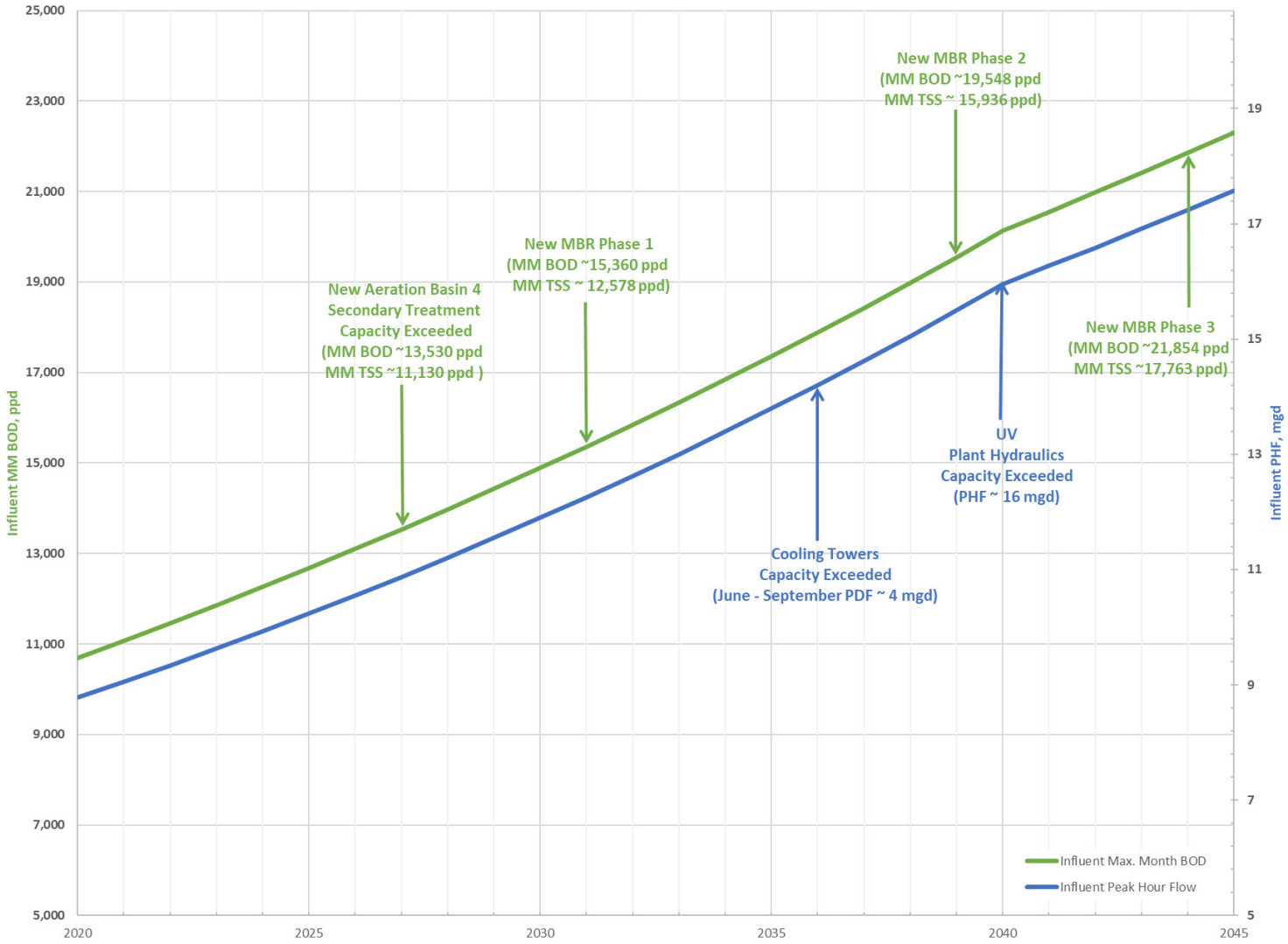



Figure ES.8 Capacity Trigger Graph

# City of Wilsonville Wastewater Treatment Plant Master Plan

City Council Work Session

November 6, 2023

WILSONVILLE
OREGON

# Project Overview and Update

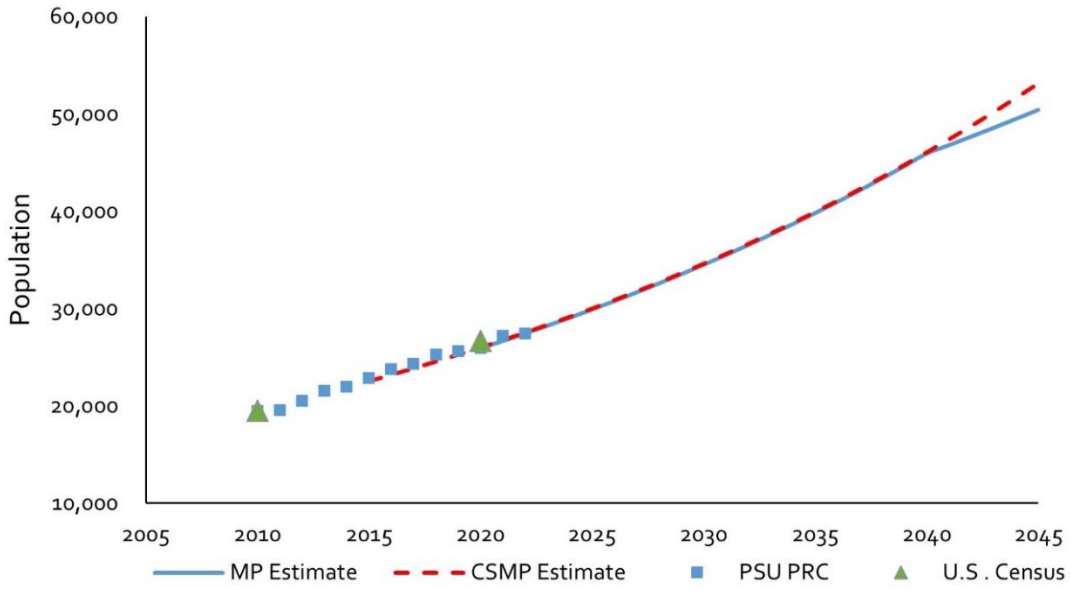
- Work Completed Since Last Work Session
  - Updated population growth projections and service area boundary
  - Increased existing industrial discharges to maximum allowed by permit limits
  - Expanded seismic resilience analysis
  - Hydraulic modeling of WWTP
  - Updated capital project list and schedule

# Capital Planning and Expected Growth - 2045

- Buildout of Service Area through 2045
  - Adjusted population growth rate, consistent with recent planning efforts
  - Modified service area boundary, per Basalt Creek Concept Plan

*Buildout Population Projections (High 2.9%)*

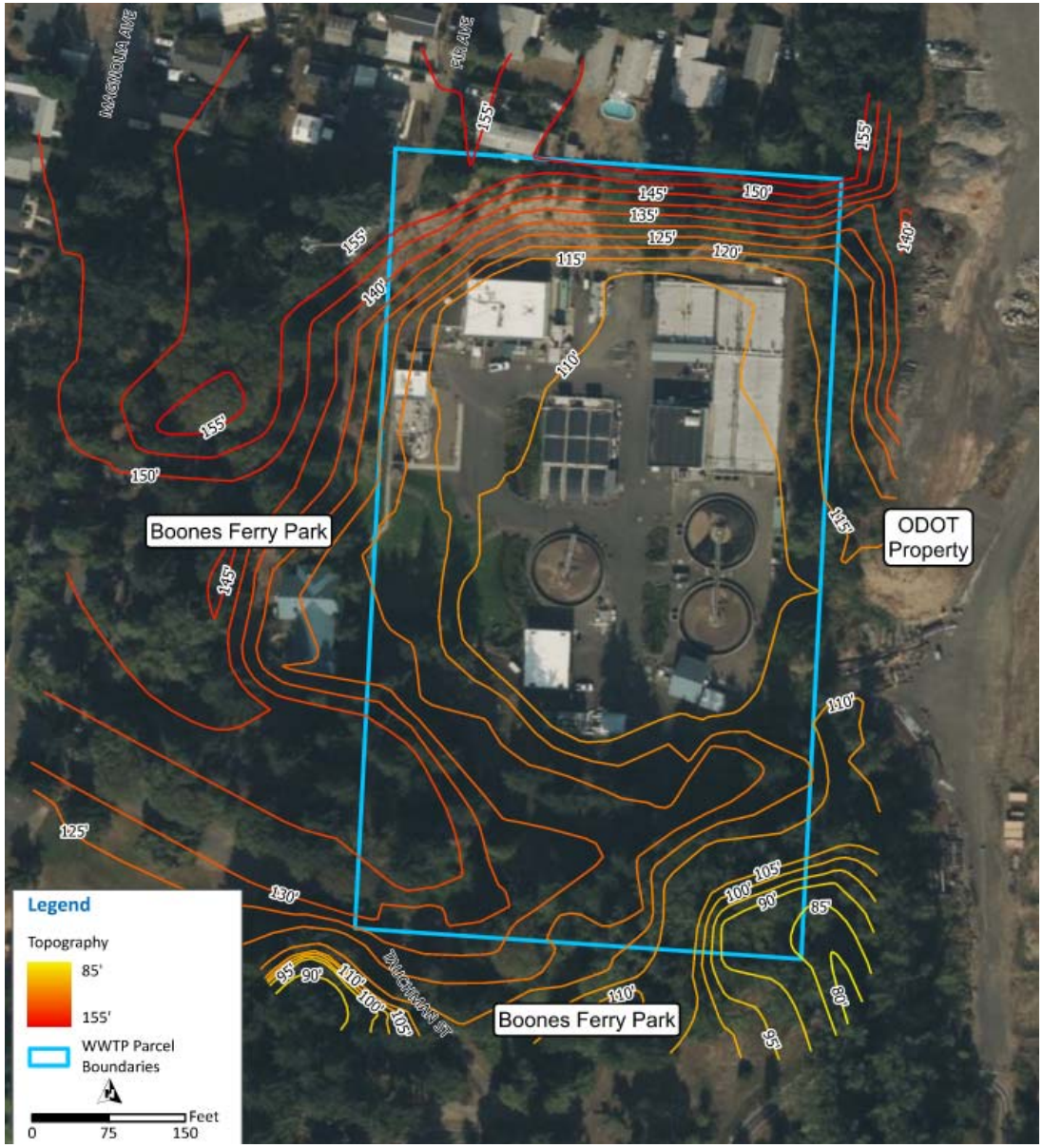
| 2020 | 2030 | 2045 | 2050 |
|---|---|---|---|
| 25,915 | 35,163 | 46,798 | 50,388 |



# Facility Capacity Assessment

- Flows & Loads Updated to reflect Buildout of Service Area
- Projected 2045 flows and loads exceed design criteria (~2X current)

| Item | 2022 | Rated Capacity | Projected 2045 |
|---|---|---|---|
| Average Dry Weather Flow, mgd | 2.06 | 4.00 | 4.17 |
| Average Annual Flow, mgd | 2.39 | 4.48 | 4.77 |
| Maximum Month Wet Weather Flow, mgd | 4.00 | 6.68 | 7.76 |
| Max Month $BOD_5$, ppd | 11,456 | 12,900 | 22,301 |
| Max Month TSS, ppd | 9,504 | 12,500 | 18,116 |

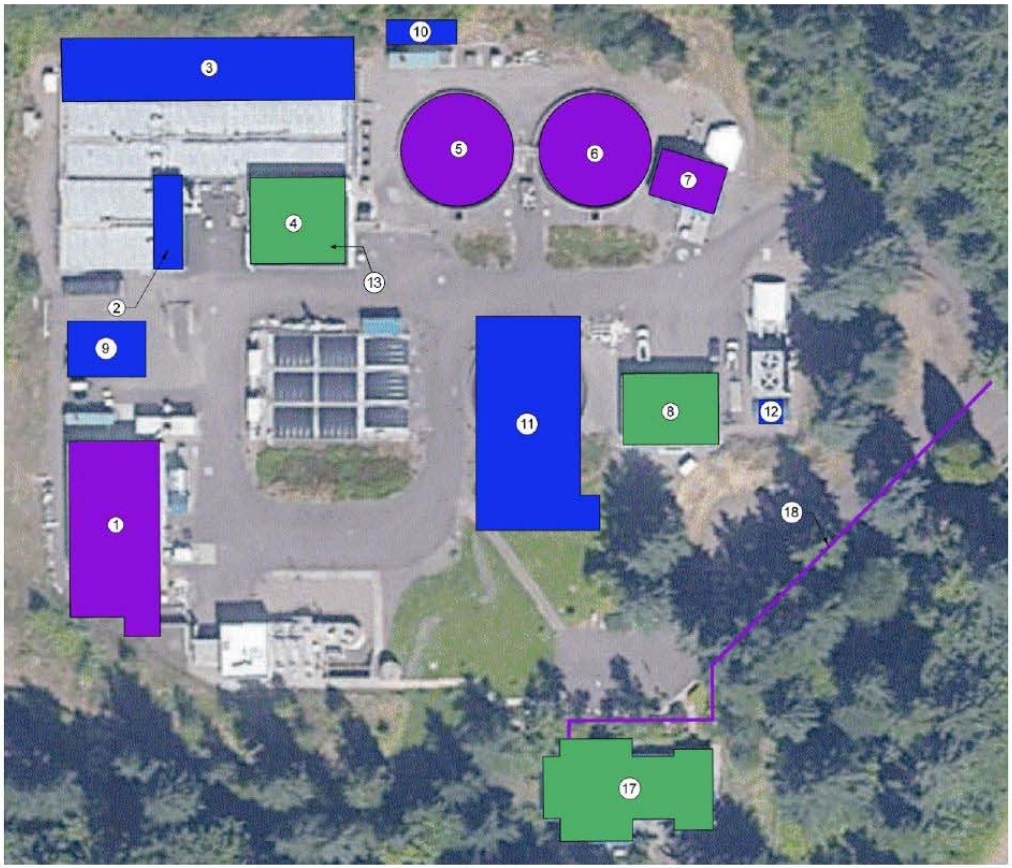



# Existing Vicinity Map

# Selection of MBR Process

| Alternative | Advantages | Challenges |
|---|---|---|
| **Membranes (Selected)** | • Space-efficient<br>• High-quality effluent<br>• Provides capacity for reliable full nitrification<br>• No need to expand tertiary filtration | • Expensive (>2x cost of 4th AB)<br>• Requires Fine Screening<br>• High O&M Costs (Power, Chemicals, etc.)<br>• Highest aeration rate<br>• Redundancy requirements |
| **BioMag®** | • Space-efficient<br>• High-quality effluent<br>• Potentially no need to expand tertiary filtration<br>• Utilizes secondary clarifier capacity (no stranded assets) | • Requires Magnetite Recovery Facility<br>• Increased maintenance requirement from the magnetite<br>• Reports of solids smoldering, may require inert gas system<br>• Will not provide sufficient capacity under projected 2045 F&L |
| **IFAS** | • Space-efficient<br>• Utilizes secondary clarifier capacity (no stranded assets) | • Will not provide sufficient capacity under projected 2045 F&L<br>• Significant basin modifications needed |

# Recommended Plan

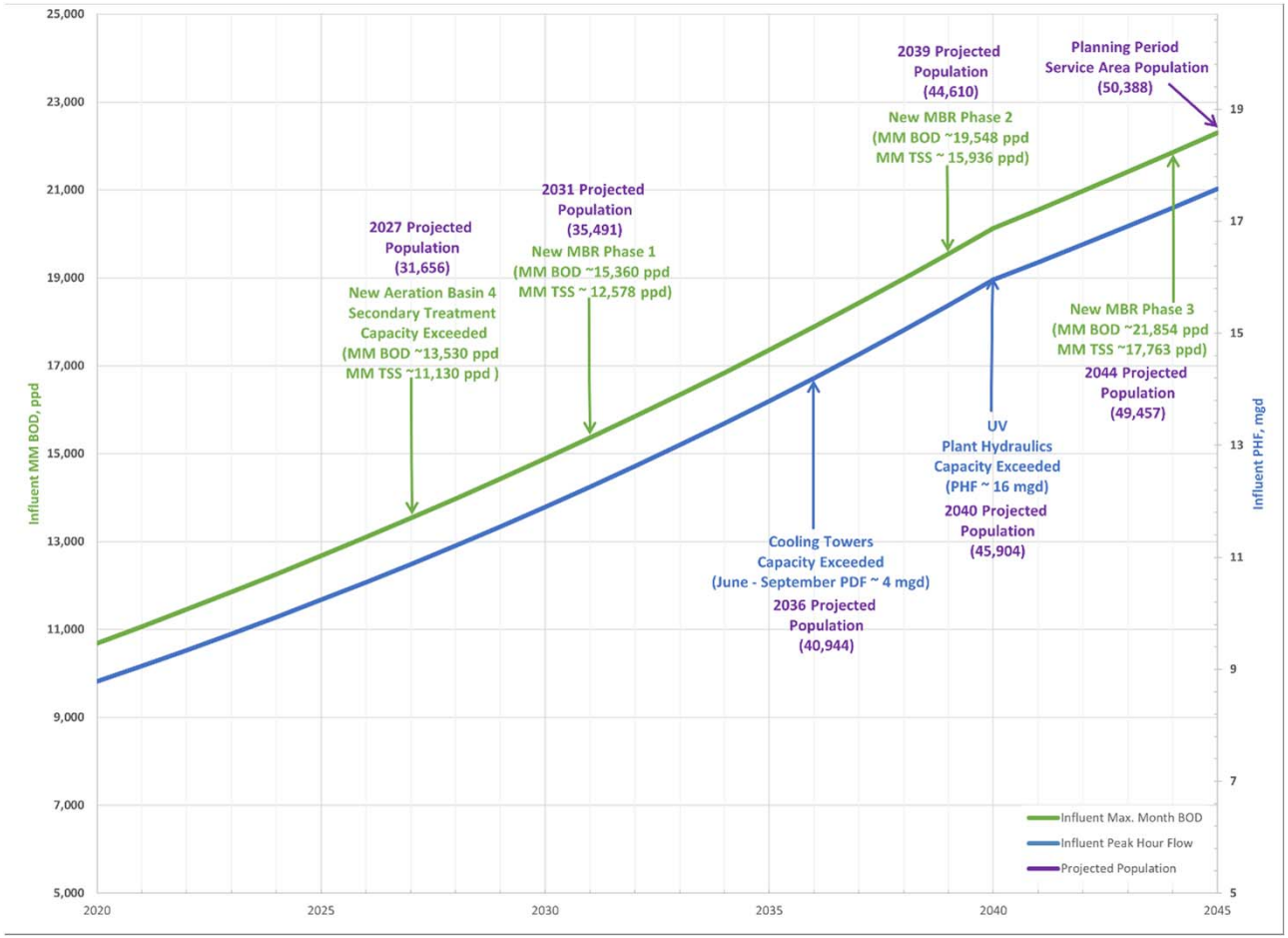



- 3 New Aeration Basin
- 2 Additional Aeration Blowers
- 9 New Fine Screens
- 10 New Emergency Generator
- 11 New MBR Facility
- 12 New Cooling Tower
- 13 Replace Gravity Belt Thickeners
- 7 Replace backup UV system
- 1 Replace Solids Dryer & Centrifuges
- 5 6 Replace Clarifier 1 & 2 mechanisms
- 4 8 17 Seismic retrofits of buildings
- 18 New fiber optic connection
- Solids process study

# Project Cost

| DESCRIPTION | ESTIMATED TIMEFRAME | AUGUST 2023 PROJECT COST |
|---|---|---|
| Dewatering Performance Optimization | 2025 | $150,000 |
| Fiber Optic Cable Addition | 2025 | $60,000 |
| Backup UV System Replacement | 2026 | $1,705,000 |
| Seismic Improvements | 2026 | $1,082,000 |
| New Aeration Basin + Blower + Retaining Wall | 2025 – 2027 | $10,222,000 |
| Replace Secondary Clarifier Mechanisms | 2026 – 2027 | $1,775,000 |
| MBR Phase 1 + 2 Blowers + Fine Screens + Electrical Upgrades | 2028 – 2030 | $69,727,000 |
| Solids Dryer Addition | 2031 – 2033 | $17,130,000 |
| Thickening + Dewatering | 2031 – 2033 | $3,701,000 |
| Additional Cooling Tower | 2034 – 2035 | $642,000 |
| MBR Phase 2 + 2 Blowers | 2037 – 2038 | $2,330,000 |
| UV Equipment Replacement | 2039 – 2040 | $2,571,000 |
| Outfall Improvements | 2039 – 2040 | $1,244,000 |
| MBR Phase 3 + 2 Blowers | 2042 – 2043 | $8,117,000 |
| **TOTAL** | | **$120,456,000** |

# Capacity Trigger Plot



# Next Steps

- Planning Commission Public Hearing 12/13/23
- City Council Public Hearing 1st Reading 1/4/24
- City Council 2nd Reading 1/18/24
- Sewer System Rate Study and SDC Update 2024

# Questions?

# City Council Meeting Action Minutes
November 6, 2023

**COUNCILORS PRESENT**
Mayor Fitzgerald
Council President Akervall – Arrived 7:00 p.m.
Councilor Linville
Councilor Berry
Councilor Dunwell – Arrived 5:07 p.m.

**STAFF PRESENT**
Bryan Cosgrove, City Manager
Amanda Guile-Hinman, City Attorney
Dan Pauly, Planning Manager
Delora Kerber, Public Works Director
Dustin Schull, Parks Supervisor
Erika Valentine, Arts & Culture Program Coordinator
Jeanna Troha, Assistant City Manager
Kerry Rappold, Natural Resources Manager
Kimberly Veliz, City Recorder
Kris Ammerman, Parks and Recreation Director
Mark Ottenad, Public/Government Affairs Director
Mike Nacrelli, Civil Engineer
Stephanie Davidson, Assistant City Attorney
Zach Weigel, City Engineer
Zack Morse, Parks Maintenance Specialist
Zoe Mombert, Assistant to the City Manager

| AGENDA ITEM | ACTIONS |
|---|---|
| **WORK SESSION** | **START:** 5:06 p.m. |
| A. Wastewater Treatment Plant Master Plan Update | Staff shared analysis that informs an updated draft of the Wastewater Treatment Plant Master Plan. |
| B. Stormwater Master Plan Update – Executive Summary and Capital Improvement Project | Staff presented an executive summary of the draft Stormwater Master Plan, a 20-year plan detailing the City's work plan and identifying capital needs to effectively maintain, restore and enhance local watersheds and to meet engineering, environmental and land use needs. |
| C. Frog Pond East and South Development Code | Staff sought the Council's feedback to inform development code amendments drafted for the Frog Pond East and South Master Plan. |
| D. Boones Ferry Park Projects Update | Staff provided a combined presentation on Resolution Nos. 3088 and 3089, both of which provide upgrades to Boones Ferry Park. |
| **REGULAR MEETING** | |
| <u>Mayor's Business</u><br>A. Upcoming Meetings | Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City. |

| | |
|---|---|
| B. Proclamation | The Mayor read a proclamation declaring November 2023 as National American Indian Heritage month. |
| Communications<br>A. None. | |
| Consent Agenda<br>A. **Resolution No. 3088**<br>A Resolution Of The City Of Wilsonville Approving A Construction Contract With Romtec, Inc. For The Boones Ferry Restroom Construction Project.<br><br>B. **Resolution No. 3089**<br>A Resolution Of The City Of Wilsonville Approving A Construction Contract With Buell Recreation LLC For The Boones Ferry Playground Project.<br><br>C. **Resolution No. 3090**<br>A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Master Services Agreement With OpenGov, Inc. For Asset Management Software Services.<br><br>D. **Resolution No. 3092**<br>A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute A Professional Services Agreement With Century West Engineering For Engineering Consulting Services For The 2024 Street Maintenance Project (Capital Improvement Project No. 4014, 4118, 4725).<br><br>E. **Resolution No. 3093**<br>A Resolution Of The City Of Wilsonville Accepting The Jurisdictional Surrender For A Portion Of SW Stafford Road And SW Frog Pond Lane By Clackamas County Pursuant To Oregon Revised Statute 373.270.<br><br>F. Minutes of the October 16, 2023 City Council Meeting. | The Consent Agenda was adopted 5-0. |
| New Business<br>A. **Resolution No. 3081**<br>A Resolution Of The City Of Wilsonville Approving The City Of Wilsonville Public Art Policy And Guidelines. | Resolution No. 3081 was adopted 5-0. |

| | |
|---|---|
| B. **Resolution No. 3083**<br>A Resolution Of The City Of Wilsonville Adopting The Arts, Culture, And Heritage Commission (ACHC) FY 2023/24 Five-Year Action Plan And Annual One-Year Implementation Plan. | Resolution No. 3083 was adopted 5-0. |
| C. **Resolution No. 3091**<br>A Resolution Of The City Of Wilsonville Adopting The Findings And Recommendations Of The "Solid Waste Collection Rate Report, October 2023" And Modifying The Current Republic Services Rate Schedule For Collection And Disposal Of Solid Waste, Recyclables, Organic Materials And Other Materials, Effective January 1, 2024. | Resolution No. 3091 was tabled until the December 4, 2023 City Council meeting. |
| Continuing Business<br>A. None. | |
| Public Hearing<br>A. **Ordinance No. 883**<br>An Ordinance Of The City Of Wilsonville Adopting A Franchise Agreement For Solid Waste Management And Collection Within The City And Repealing Ordinance No. 814. | After a public hearing was conducted, Ordinance No. 883 was adopted on first and second reading by a vote of 5-0. |
| City Manager's Business | The City Manager shared staff would arrange a training for Council to prepare them for their trip to Kitakata, Japan. |
| Legal Business | The City Attorney, who is also a running coach at the Coffee Creek Correctional Facility, shared some feedback from adults in custody who participate in the running program. |
| **ADJOURN** | 10:10 p.m. |

# PLANNING COMMISSION

# WEDNESDAY, OCTOBER 11, 2023

**WORK SESSION**

4. Wastewater Treatment Plant Master Plan (Nacrelli) (15 minutes)

# PLANNING COMMISSION WORK SESSION
# STAFF REPORT

| | |
|---|---|
| **Meeting Date:** October 11, 2023 | **Subject:** Wastewater Treatment Plant Master Plan<br><br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Provide requested input regarding recommended capital improvement plan. | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |
| ☒Council Goals/Priorities: Align Infrastructure Plans with Sustainable Financing Sources | ☐Adopted Master Plan(s): |
| ☐Not Applicable | |

**ISSUE BEFORE PLANNING COMMISSION:**
Provide feedback and input on components of the Wastewater Treatment Plant (WWTP) Master Plan.

**EXECUTIVE SUMMARY**:
This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:
- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6, & 7.

***Updated Growth Projection and Capital Improvement Plan***
At the previous work session (9/14/2022), the team presented the capital improvement plan based on an assumed 2.9% annual population increase, consistent with recent planning documents adopted by the City, including the Wastewater Collection System Master Plan (CSMP, November 2014) and the Willamette River Water Treatment Plan Master Plan Update

(March 2018). The flow and load projections have been further updated to account for increases in industrial discharges, as allowed under existing permits. This change results in a higher level of capital investment over the planning period, mainly due to hydraulic upgrades, as reflected in the table below.

| Project Description | Timeframe | Cost* |
|---|---|---|
| Dewatering Performance Optimization | 2025 | $150,000 |
| Fiber Optic Conduit Addition | 2025 | $60,000 |
| UV System Improvement | 2026 | $1,705,000 |
| Seismic Improvements | 2026 | $1,082,000 |
| New Aeration Basin and Blower | 2025 – 2027 | $10,179,000 |
| Replace Secondary Clarifier Mechanisms | 2026 - 2027 | $1,775,000 |
| Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, electrical and hydraulic upgrades) | 2028 – 2030 | $69,637,000 |
| New Solids Dryer | 2031 – 2033 | $17,130,000 |
| Thickening and Dewatering Improvements | 2031 – 2033 | $3,701,000 |
| New Cooling Tower | 2037 – 2038 | $642,000 |
| MBR Phase 2 (includes new blower) | 2037 – 2038 | $2,242,000 |
| UV Equipment Replacement and Outfall Upsizing | 2039 – 2040 | $2,571,000 |
| UV Equipment Replacement and Outfall Upsizing | 2039 – 2040 | $1,244,000 |
| MBR Phase 3 (includes 2 new blowers) | 2042 – 2043 | $8,030,000 |
| **Total** | | **$120,148,000** |
| *Costs are shown in 2023 dollars and include 25% for engineering, legal, and administration. | | |

As shown in the table above, the most significant impact to the required level of capital investment is the need for membrane bioreactor (MBR) facilities. These are state-of-the-art, compact facilities that provide a high level of treatment. The adjusted growth projection results in an approximate doubling of the City population over the planning period. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the only feasible means of providing the necessary treatment to accommodate such a substantial rate of growth.

Question for the Planning Commission:

What input does the Planning Commission have on the updated capital improvements list for the Wastewater Treatment Plant Master Plan?

**EXPECTED RESULTS**:
The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. These improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that will be necessary to provide adequate funding to implement to required upgrades.

**TIMELINE:**
This is the third in a series of presentations to the Planning Commission and City Council. Completed and planned meetings are as follows:

- Planning Commission Work Session 7/13/22 (completed)

- City Council Work Session 8/1/22 (completed)
- Planning Commission Work Session 9/14/22 (completed)
- Planning Commission Work Session 10/11/23 (current)
- City Council Work Session 11/6/23
- Planning Commission Public Hearing 12/13/23
- City Council Public Hearing 1st Reading 1/4/24
- City Council 2nd Reading 1/18/24

**CURRENT YEAR BUDGET IMPACTS**:
The remaining contract balance for finalizing the Plan will be expended this fiscal year. An additional $92,450 has been budgeted in FY 23/24 for the Sewer System Rate Study and SDC Update, using a combination of Sewer Operating funds and SDCs.

**COMMUNITY INVOLVEMENT PROCESS**:
The public hearings listed above will provide opportunity for public input. In addition, the Sewer System Rate Study and SDC Update will include a robust public engagement process.

**POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES**:
The Plan is based on a projected population growth rate that is somewhat aggressive but is consistent with other recently adopted planning documents and with historical growth data. The capital project schedule can be adjusted as appropriate if actual growth rates differ significantly from the projected growth included in the Plan. In addition, some of the recommended hydraulic upgrades might avoided, depending on the results of more detailed analysis of storage and attenuation in the wastewater collection system, when the next CSMP update is completed.

**ATTACHMENTS:**
N/A

# City of Wilsonville Wastewater Treatment Plant Master Plan

Planning Commission Work Session

October 11, 2023

WILSONVILLE
OREGON

# Introduction

Presenters:

Mike Nacrelli, PE, Senior Civil Engineer

Dave Price, PE, Carollo Engineers

# Status Update

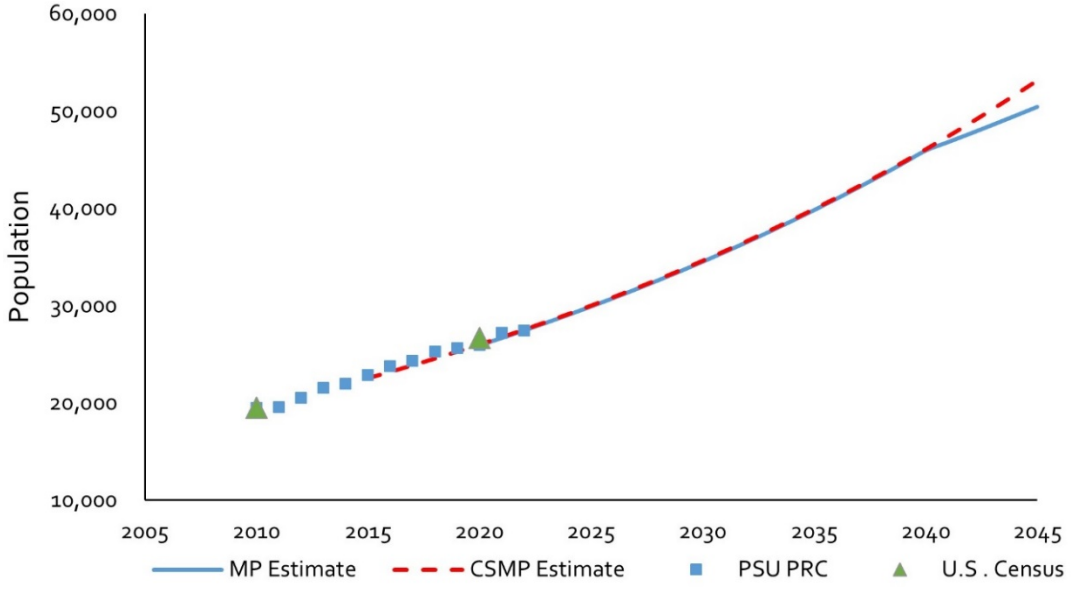
- Accommodating Expected Build-Out by 2045
  - Increased industrial discharges to permitted limits
- Capacity Assessment Complete
  - Includes hydraulic modeling of WWTP
- Costs and Schedule for Updated CIP
- Update of Master Plan

# Capital Planning and Expected Growth - 204

- Current Service Area needs – 20+ years through 2045
  - Population and associated economic development

*Buildout Population Projections (High 2.9%)*

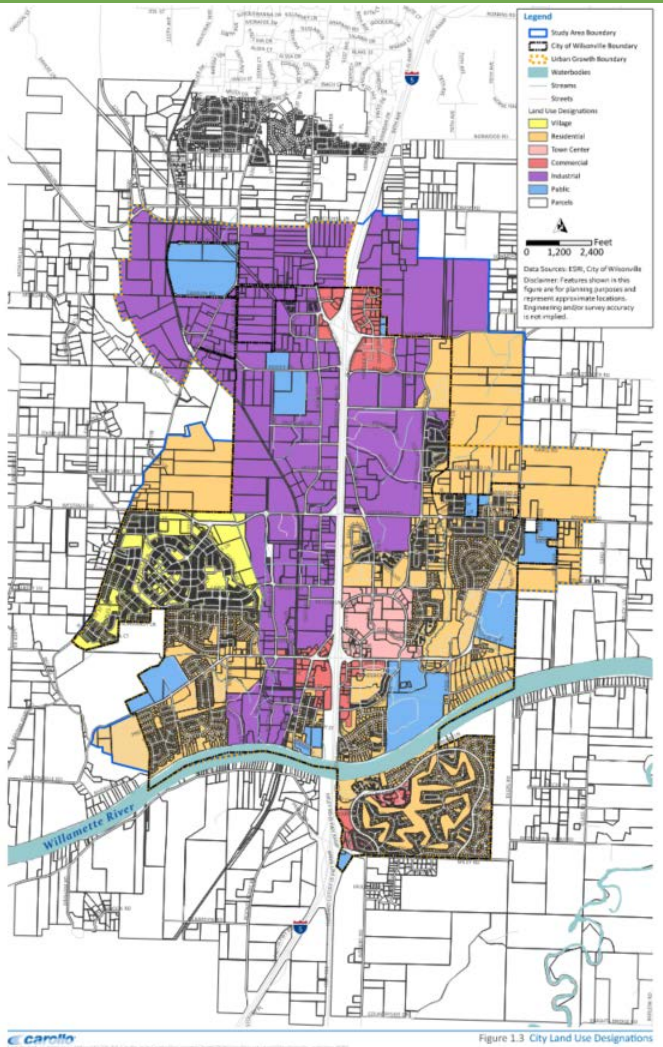
| 2020 | 2030 | 2045 | 2050 |
|---|---|---|---|
| 25,915 | 35,163 | 46,798 | 50,388 |



# Buildout Service Area - 2045



| Land Use | Acreage |
|---|---|
| Commercial | 224 |
| Industrial | 2,383.2 |
| Public | 482.9 |
| Residential | 2,278.3 |
| Town Center | 136.1 |
| Village | 367.4 |



# Facility Capacity Assessment

- Flows & Loads Updated to reflect Buildout of Service Area
- Projected 2045 flows and loads exceed design criteria (~2X current)

| Item | 2022 | Rated Capacity | Projected 2045 |
|---|---|---|---|
| Average Dry Weather Flow, mgd | 2.06 | 4.00 | 4.17 |
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# Unit Process Capacity Summary

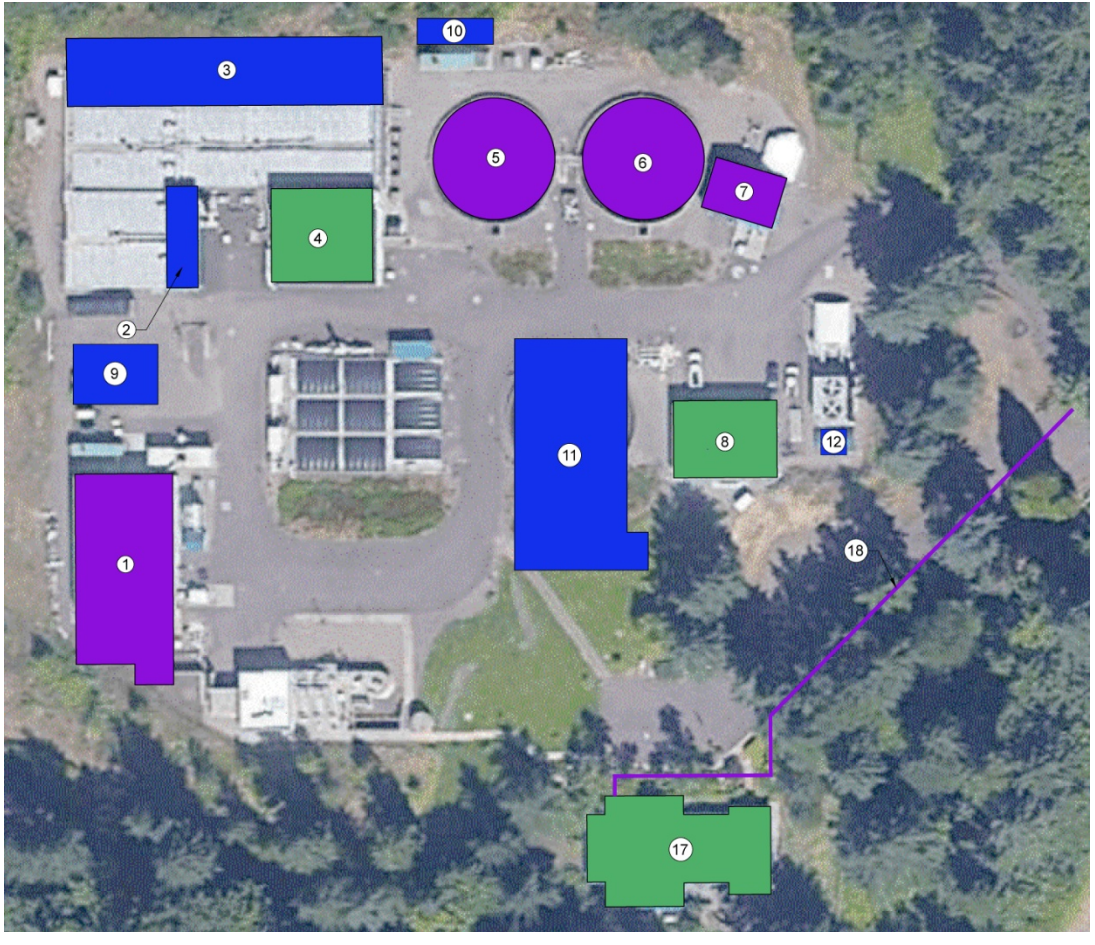


| Unit Process | Capacity Limit | Redundancy Criteria | Possible Year of Capacity Exceedance | Identified Alternatives |
|---|---|---|---|---|
| **Secondary Treatment** | MW MLSS inventory @ PDF | All units in service | **2027** | • New Aeration Basin |
| **Additional Secondary Treatment** | MM MLSS inventory @ PDF | One train out of service | **2031, 2039, 2044** | • Membrane Bioreactor |
| **Effluent Cooling Towers** | 6 MGD (May 1 – October 31) | All units in service | **2039** | • Additional Cooling Tower |
| **UV Effluent/Outfall** | 16 MGD | All units in service | **2041** | • Upsizing outfall piping of MH-B to future MH-E |

# Alternatives Evaluation

- Consider alternatives for process units identified as capacity deficient
- Secondary Process
  - Add new Aeration Basin & additional blower
  - Phase MBR technology (includes hydraulic upgrades)
- Solids Thickening and Dewatering
  - Replace GBTs and Centrifuge units during the planning period – expected useful life
- UV System and Outfall Piping
  - Replace aging equipment and upgrade hydraulic capacity
- Prior conclusions – plan to replace based on condition/age during planning period:
  - Backup UV system
  - Solids dryer
  - Dewatering Centrifuges
  - Thickening GBTs

# Recommended Plan




- 3 New Aeration Basin
- 2 Additional Aeration Blowers
- 9 New Fine Screens
- 10 New Emergency Generator
- 11 New MBR Facility
- 12 New Cooling Tower
- 7 Replace backup UV system
- 1 Plan to replace Solids Dryer & Centrifuges
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Solids process study

# Proposed Project Phasing Schedule

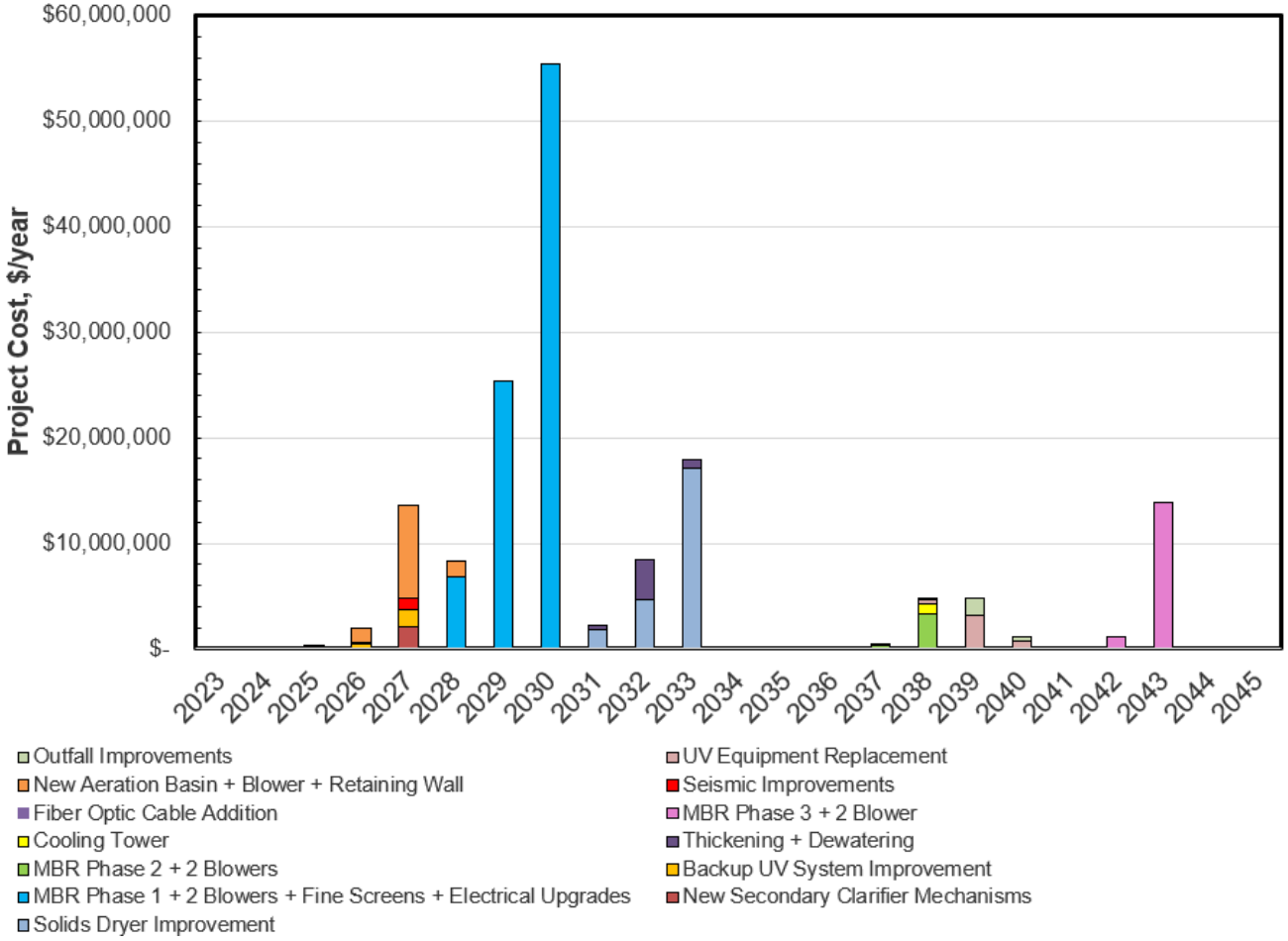


# Project Cost



| DESCRIPTION | ESTIMATED TIMEFRAME | AUGUST 2023 PROJECT COST |
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| **TOTAL** | | **$120,148,000** |

# Estimated Cash Flow



# Next Steps

- City Council Work Session 11/6/23
- Planning Commission Public Hearing 12/13/23
- City Council Public Hearing 1st Reading 1/4/24
- City Council 2nd Reading 1/18/24
- Sewer System Rate Study and SDC Update 2024

# Questions?

- Ms. Weiland added that LID and vegetated stormwater facilities provided truly good pollutant removal in accordance with effectiveness information that was well documented. Different processes were used, and vegetation enhances uptake. Through these facilities, retention and infiltration of stormwater was encouraged, which was another means to remove pollutants before they discharged via overland flow or pipe flow into receiving water, so the types of facilities proposed were intentionally in alignment with the City's design standards and MS4 permit requirements.

4. Wastewater Treatment Plant Master Plan (Nacrelli)

Mike Nacrelli, Senior Civil Engineer, and Dave Price, Senior Civil Engineer, Carollo Engineers, presented on the update Wastewater Treatment Plant Master Plan via PowerPoint, reviewing key components of the Master Plan which would accommodate expected demand for build out by 2045. Highlights included details regarding the completed facility capacity assessment, costs and a schedule for the updated Capital Improvements Program (CIP), an alternatives evaluation and a breakdown of costs by project, estimated cash flow, and the next steps for advancing the Master Plan for adoption.

and the additional changes since the last work session with the Commission.

Discussion and feedback from the Planning Commission was as follows with responses by Staff to Commissioner questions as noted:

- In September 2022, the estimate was $75 million which moved to $120 million in the span of a year with the increased industrial discharges.
  - Mr. Nacrelli noted an oversight in the presentation, stating the $75 million had not included the engineering portion, it was only construction. The actual cost should have been in the $90,000s.
- If the project were not space constrained, what would the project cost and overall plan look like? Would clarifiers be added instead of adding a membrane bioreactor (MBR)? Considering the huge sum of money involved, maybe it would be cheaper overall to acquire some additional land south of the existing facility to add more equipment, rather than this huge increase for the MBR. The river was south of the facility, but there were a lot of trees that could be cut down.
    - Mr. Nacrelli responded Staff could cost out what a conventional expansion would take and how much land would be required; however, the direction provided was that there was no room to grow.
    - Ms. Guile-Hinman understand the facility was all surrounded by Boones Ferry Park, and there were deed restrictions that did not allow the City to use it for anything other than a recreational use.
    - Mr. Nacrelli clarified the land on the east side had a large grade adjacent to where the new aeration basin would go in the northeast corner.
    - Mr. Price added a significant retaining wall would have to be built there in order to put in the additional aeration basin, so the area was already tight due to the slopes.
  - At a high level, it would be good to double check that there is no physical space to put in a conventional facility, because this was a huge sum of money, especially with the $60 million outlay in 2030. It would be good to make sure the City was looking at all the options out there.

    - Mr. Nacrelli stated they could run the numbers and understand how much space would be needed, but he was pretty satisfied with the property footprint; perhaps he could come up with a map that extended beyond the area.
  - If deed restrictions prevented the City for adding land, no additional analysis was needed, but if there was space or an opportunity to be creative, then be creative about a more conventional plant. If not, then just let the Commission know.
    - Mr. Price added access was also required on the site for trucks with trailers, so there was limitations with travel ways and the plan did not show the slopes on three sides of the site. Based on the team's analysis, there were not too many square feet on the site that were not already being used. When the facility was upgraded in 2011/2012, one notion was that beyond the three existing aeration basins and clarifiers that the next step was to put some [inaudible] but he believed that project predated the collection system at the time, so it did not evaluate the full indications of what that might be. He wanted to make sure the Commission considered the conventional options as well as the expectations coming out of the Master Plan update and whether things could be [inaudible] or reduced. A scenario that would reduce the cost of Phase 1, but would be at least $10 million to eliminate the need for some of those future projects, which would be something to think about, because in that scenario the City would be running kind of a combined conventional/membrane plant. The two distinct clarifiers would not go away until Phase 3. The project team was trying to preserve the City's conventional facility for as long as possible, but it would cost to maintain the existing facilities and give you less energy for chemicals to operate that facility than a more complicated, high intensity system line an MBR.
    - Mr. Nacrelli suggested they could add property lines and contours to the site plan. (Slide 9)
- Regarding an increase in industrial discharge, what was the current industrial discharge versus what was in the plan versus what is the maximum? And where was the City in that window, right at the maximum of what was theoretically possible from the permits in this plan, or some amount lower than that? That information would be helpful to have for the next go around.
  - Mr. Nacrelli believed they could provide those numbers, which would be in the Master Plan attached to the Staff report. He confirmed the assumption was that all the City's permanent industries would be discharging the maximum amount, which they were not currently doing, so that was a pretty significant impact, especially since they were higher dischargers. The lows were just as important to evaluate capacity. Those numbers would be incorporated into the slides.
- Incorporating the risks of not implementing the recommended plan in the master plan was suggested. Communities along the Willamette were having wastewater failures and having boil orders for water. Articulate the consequences of not doing this to our river environment would be great.
  - Mr. Nacrelli responded a chapter in the regulatory constraints essentially stated that once you start exceeding your limits, you get financial [inaudible], and the City could get to a point where a moratorium would have to be issued until the issues were fixed.
  - Mr. Price added that typically with improvement at this scale, community outreach would be incorporated into the more detailed planning and design steps to help educate people about rates and charges and to make sure the message got out there about why these improvements were needed.

- With only two funding sources noted, rates and SDCs, at the current rates and expected SDCs, what was the City's shortfall and how would that shortfall be made up?
  - Mr. Nacrelli responded [inaudible] not part of the Master Plan's scope, noting the rate study would delve into those details.
  - Mr. Price added also need to consider the condition-related verses capacity-related improvements.
- Mr. Nacrelli confirmed the rate study would be completed after City Council adopted the Master Plan.
  - A comment was made that the City was creating the Master Plan without knowing how to pay for it, which was not how budgeting worked in real life.
- Zach Weigel, City Engineer, added further context on how the master planning worked. The City was going to grow to a certain population, and these projects were needed for the treatment plant to meet the population demand. When master planning, the needs were identified, then a rate study determined the impact on fees and development costs.
- Mr. Weigel confirmed a certain portion of development fees went toward wastewater, and each CIP project would be split on base with a portion that serves new development and serves existing customers, and that portion of new growth gets figured into the SDC cost.
- SDCs affect affordability.
- The Commission discussed growth rates when the housing report came out, and the City's actual growth numbers were outpacing Metro's projections. Which numbers were used in the Master Plan engineering?
  - Mr. Weigel stated the project team used the same numbers from the collection system master plan, which was an aggressive growth rate that was trending with what the City has been seeing over the last 10 years on average. It was hard to know what was going to happen. Was it going to slow down? Was Metro going to put limits on the City to meet certain housing projections? Staff believed the aggressive growth rate was the right measure to use for this Master Plan.
  - Mr. Nacrelli noted the Master Plan numbers were compared with Metro's Transportation Analysis projections, and they were very close.
  - Mr. Weigel confirmed there was really no way to avoid MBR. There were ways to avoid additional chambers of MBR that Staff would be tracking over time, but that was typical with a master plan; the needs were identified, population growth, flow, and needs were tracked over time, and the projects were implemented when they were needed. And then, every 10 years or so, the Master Plan is updated when a deeper dive is taken into the data to make sure the City was following those projections and then updating the Master Plan as needed.

Chair Heberlein called for a brief recess and reconvened the meeting at 8:45 pm.

**INFORMATIONAL**

5. 2023 Transportation Performance Monitoring Report (Pepper)

Amy Pepper, Development Engineering Manager, presented a report card on the City's performance of the City's Transportation System Plan (TSP), its policies, programs, and projects, and how the City's projects had measured up to Goals 1 through 7 of the TSP, along with recommended actions to lead to desired outcomes. A full update of the report was included in the packet.

# PLANNING COMMISSION

# WEDNESDAY, OCTOBER 12, 2022

**PUBLIC HEARING**

2. Wastewater Treatment Plant Master Plan (Nacrelli) *(No staff presentation)* - CANCELLED

WILSONVILLE
OREGON

**MEMO**

**Engineering Division**

DATE: October 5, 2022

TO: Planning Commission

FROM: Mike Nacrelli, PE
Senior Civil Engineer

***RE:*** ***Cancellation of October 12, 2022 Public Hearing for the Wastewater Treatment Plant Master Plan***

---

The Wastewater Treatment Plant (WWTP) Master Plan has used a study area boundary consistent with recently completed master planning documents, including the 2012 Water System Master Plan, the 2014 Wastewater Collection System Master Plan, and the 2017 Water Treatment Plant Master Plan. However, the 2018 Basalt Creek Concept Plan has altered the future service area that will send flows to the WWTP, requiring further analysis of the projected wastewater flows and loads and the planned capital improvements to provide the needed treatment capacity. In order to allow adequate time to complete this additional analysis, I request that the public hearing for the WWTP Master Plan currently scheduled with the Planning Commission for October 12, 2022 be cancelled and rescheduled for February 8, 2023.

Respectfully,

Michael Nacrelli

Project Manager

Commissioner Mesbah asked if **Mr. Nacrelli** meant a certain quality of effluent since anything produces effluent; perhaps, "high quality effluent" should be used.

**Mr. Nacrelli** agreed something might be missing there, but without hearing the recording, the quality of effluent was the only thing that made sense.

**Amanda Guile-Hinman, City Attorney**, advised postponing the consideration of the minutes to allow time to check the audio recording.

Chair Heberlein stated consideration of the September 14, 2022 Planning Commission Minutes would be delayed to the next Planning Commission meeting to clarify the language on Page 9.

**LEGISLATIVE HEARING**

2. Wastewater Treatment Plant Master Plan (Nacrelli) (No staff presentation) - CANCELLED

Chair Heberlein noted tonight's public hearing had been cancelled and would be rescheduled to a later date.

**Miranda Bateschell, Planning Director**, asked that anyone present for the hearing add their contact information to the sign in sheet to receive notification about the new public hearing date. She also offered to provide the project manager's business card.

**WORK SESSION**

3. Transit Master Plan (Lewis)

**Kelsey Lewis, SMART Grants and Programs Manager**, introduced the City consultant who would present information about the public engagement conducted on the Master Plan over the summer.

**Brenda Martin, Consultant, EnviroIssues**, presented via PowerPoint a summary of the engagement conducted as part of the SMART Transit Master Plan Update. She highlighted the purpose of the Master Plan Update and described the outreach methods used to gather public input from various stakeholders and diverse groups of citizens, including underrepresented communities. She also reviewed the key findings from the data collected from surveys and the stakeholder's workshop which identified ridership patterns and included requests for transit time and frequency changes, as well as additions to SMART's service routes, which included connections to other destinations in the region.

Questions from the Commission were as follows with responses as noted:

- Why was there such a low turnout for the in-person stakeholder workshop where only 18 people attended after more than 100 invites were sent out?
  - **Ms. Martin** noted the project team made about 150 calls and sent emails, but she believed that ultimately, it was just the day and time, coupled with not being able to invite the right people to come from certain organizations due to changes in employment. The team did share the survey with most of those invitees, so the team did collect some feedback from those organizations. She believed having one time and place for attendance was difficult for some people.

# PLANNING COMMISSION

# WEDNESDAY, SEPTEMBER 14, 2022

**WORK SESSION**

3. Wastewater Treatment Plant Master Plan (Nacrelli) (30 minutes)

# PLANNING COMMISSION WORK SESSION
# STAFF REPORT

| | |
|---|---|
| **Meeting Date:** September 14, 2022 | **Subject:** Wastewater Treatment Plant Master Plan<br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br>**Comments:** N/A |
| **Staff Recommendation:** Provide requested input regarding recommended capital improvement plan. | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |
| ☒Council Goals/Priorities:<br>Align infrastructure plans with sustainable financing resources. | ☐Adopted Master Plan(s): ☐Not Applicable |

## ISSUE BEFORE PLANNING COMMISSION:

Provide feedback and input on components of the Wastewater Treatment Plant (WWTP) Master Plan.

## EXECUTIVE SUMMARY:

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7.

### *Updated Growth Projection and Capital Improvement Plan*

The previous (7/13/2022) work session included a capital improvement plan based on population growth projections over the planning period obtained from Metro. The growth projections have since been updated to an assumed 2.9% annual population increase, consistent with recent planning documents adopted by the City, including the Wastewater Collection System Master Plan (November 2014) and the Willamette River Water Treatment Plan Master Plan Update (March 2018). This change results in a considerably higher level of capital investment over the planning period, as reflected in the table below.

| Project Description | Timeframe | Cost* |
|---|---|---|
| Dewatering Performance Optimization | 2023 | $155,724 |
| UV System Improvement | 2023 | $1,370,369 |
| Fiber Optic Conduit Addition | 2023 | $45,679 |
| Seismic Improvements | 2024 | $841,323 |
| New Aeration Basin and Blower | 2025 | $6,928,208 |
| Replace Secondary Clarifier Mechanisms | 2026 | $1,382,827 |
| Membrane Bioreactor (MBR) Phase 1 (includes new blower, fine screens, and electrical upgrades) | 2028 – 2029 | $31,811,200 |
| New Solids Dryer | 2031 – 2032 | $13,371,479 |
| MBR Phase 2 (includes new blower) | 2033 – 2034 | $6,211,200 |
| Thickening and Dewatering Improvements | 2035 | $2,854,359 |
| New Cooling Tower | 2036 – 2037 | $452,138 |
| MRB Phase 3 (includes 2 new blowers) | 2038 | $4,742,400 |
| MBR Phase 4 (includes 2 new blowers) | 2040 – 2041 | $5,142,400 |
| **Total** | | **$75,309,306** |
| *Costs are shown in 2022 dollars and include 25% for engineering, legal, and administration. | | |

As shown in the table above, the most significant impact to the required level of capital investment is the need for membrane bioreactor (MBR) facilities. These are state-of-the-art, compact facilities that provide a high level of treatment. The adjusted growth projection results in an approximate doubling of the City population over the planning period. Due to the limited amount of space available at the existing WWTP site, MBR facilities are the only feasible means of providing the necessary treatment to accommodate such a substantial rate of growth.

## EXPECTED RESULTS:

The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. These improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that will be necessary to provide adequate funding to implement to required upgrades.

## TIMELINE:

This is the third in a series of presentations to the Planning Commission and City Council. Completed and planned meetings are as follows:

- Planning Commission Work Session 7/13 (completed)
- City Council Work Session 8/1 (completed)
- Planning Commission Work Session 9/14
- Planning Commission Public Hearing 10/12
- City Council Work Session 11/7
- City Council Public Hearing 1st Reading 11/21
- City Council 2nd Reading 12/5

## CURRENT YEAR BUDGET IMPACTS:

The remaining contract balance for finalizing the Plan will carry over into FY 22/23. An additional $92,450 has been budgeted in FY 22/23 for the Sewer System Rate Study and SDC Update, using a combination of Sewer Operating funds and SDCs.

**COMMUNITY INVOLVEMENT PROCESS**:
The public hearings listed above will provide opportunity for public input. In addition, the Sewer System Rate Study and SDC Update will include a robust public engagement process.

**POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES**:
The Plan is based on a projected population growth rate that is somewhat aggressive but is consistent with other recently adopted planning documents and with historical growth data. The capital project schedule can be adjusted as appropriate if actual growth rates differ significantly from the projected growth included in the Plan.

**ATTACHMENTS:**
N/A

# City of Wilsonville Wastewater Treatment Plant Master Plan

## Planning Commission Work Session

September 14, 2022

WILSONVILLE
OREGON

# Introduction

Presenters:

Mike Nacrelli, PE, Senior Civil Engineer

Dave Price, PE, Carollo Engineers

# Status Update

- July 13 Work Session Comments
- Accommodating Expected Build-out UGB Growth
- Capacity Assessment Complete
- Costs and Schedule for Updated CIP Drafted
- Update of Master Plan Chapters in Progress
- September 28 Open House

# Facility Capacity Assessment

- Flows & Loads - Updated to reflect Build-out of USB
- Existing WWTP design (2014 expansion) – ADWF – 4 mgd
- Projected 2045 flows and loads exceed design criteria (~2X current)

| Item | Existing | Projected 2045 |
|---|---|---|
| Average Dry Weather Flow, mgd | 1.93 | 4.16 |
| Average Annual Flow, mgd | 2.23 | 4.77 |
| Maximum Month Wet Weather Flow, mgd | 3.78 | 7.92 |
| Average Annual $BOD^5$, ppd | 7,534 | 16,333 |
| Average Annual TSS, ppd | 6,484 | 13,789 |

# Unit Process Capacity Summary



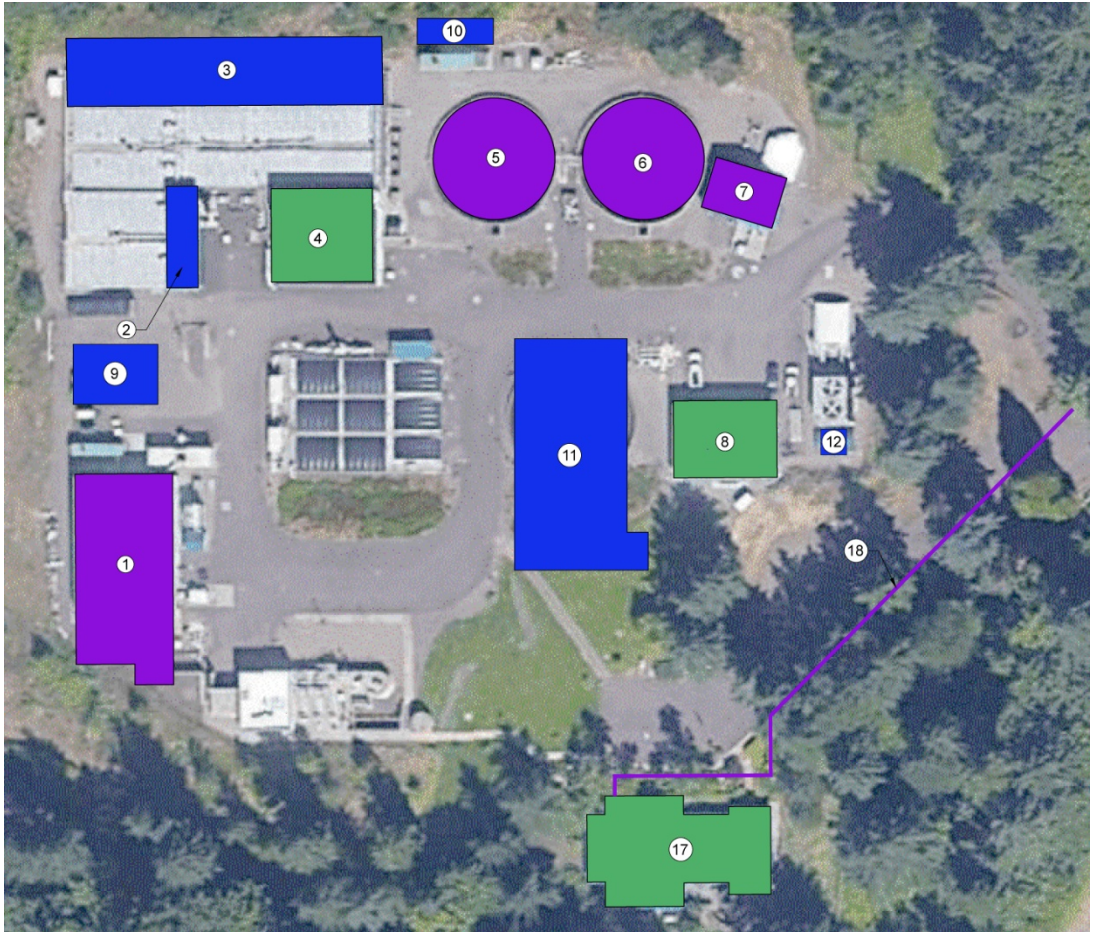
| Unit Process | Design Parameter | Redundancy Criteria | Possible Year of Capacity Exceedance | Identified Alternatives |
|---|---|---|---|---|
| **Secondary Treatment** | MM MLSS inventory @ PDF | All units in service | **2026** | • New Aeration Basin<br>• New Secondary Clarifier |
| **Aeration Blowers** | Peak BOD Load | Largest unit out of service | **2026** | • Additional Blower |
| **Additional Secondary Treatment** | MM MLSS inventory @ PDF | One train out of service | **2031, 2034, 2038, 2042** | • Membrane Bioreactor |
| **Effluent Cooling Towers** | 6 MGD (May 1 – October 31) | All units in service | **2037** | • Additional Cooling Tower |

# Alternatives Evaluation

- Consider alternatives for process units identified as capacity deficient
- Secondary Process
  - Add new Aeration Basin & additional blower 2026
  - Phase MBR technology starting later
- Solids Thickening and Dewatering
  - Replace GBTs and Centrifuge units during the planning period – expected useful life
- Prior conclusions – plan to replace based on condition/age during planning period:
  - Backup UV system
  - Solids dryer
  - Dewatering Centrifuges
  - Thickening GBTs

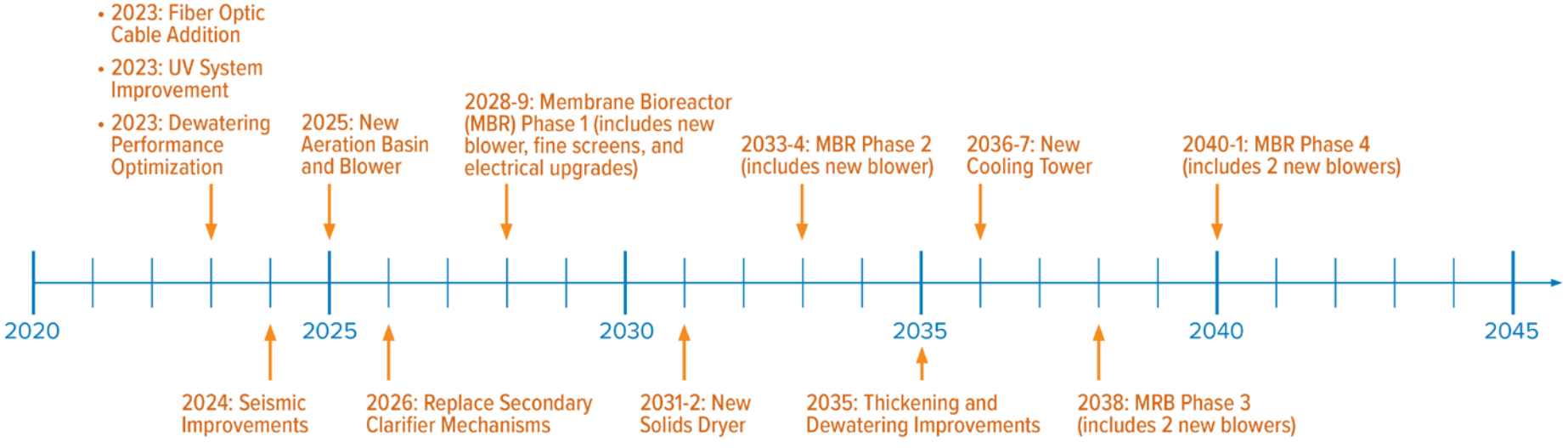
# Recommended Plan






- 3 New Aeration Basin
- 2 Additional Aeration Blowers
- 9 New Fine Screens
- 10 New Emergency Generator
- 11 New MBR Facility
- 12 New Cooling Tower
- 7 Replace backup UV system
- 1 Plan to replace Solids Dryer & Centrifuges
- 5 6 Replace Clarifier 1 & 2 mechanisms
- 4 8 17 Seismic retrofits of buildings
- 18 New fiber optic connection
- Solids process study

# Proposed Project Phasing Schedule

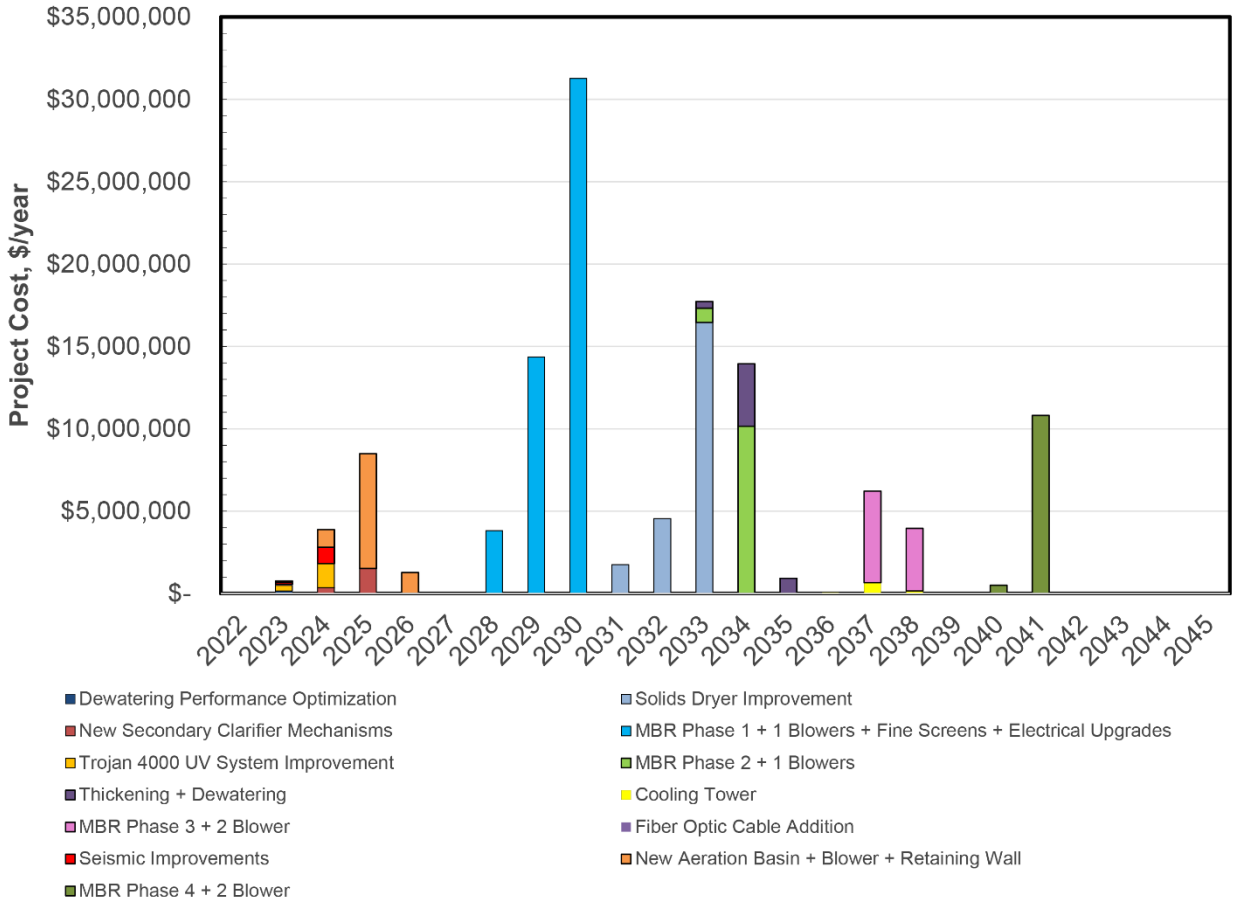


# Project Costs (2022 Dollars)



| DESCRIPTION | TIMEFRAME | ESTIMATED COST | TOTAL WITH 25% E, L, & A |
|---|---|---|---|
| Dewatering Performance Optimization | 2023 | $ 155,724 | $ 155,724 |
| Trojan 4000 UV System Improvement | 2023 | $ 1,370,369 | $ 1,712,961 |
| Fiber Optic Conduit Addition | 2023 | $ 45,679 | $ 57,099 |
| Seismic Improvements | 2024 | $ 841,323 | $ 1,051,654 |
| New Aeration Basin + Blower + Retaining Wall | 2025 | $ 6,928,208 | $ 8,660,260 |
| Replace Secondary Clarifier Mechanisms | 2025 – 2026 | $ 1,382,827 | $ 1,728,534 |
| MBR Phase 1 + 1 Blower + Fine Screens + Electrical Upgrades | 2028 – 2030 | $ 31,811,200 | $ 39,764,000 |
| New Solids Dryer | 2031 – 2033 | $ 13,371,479 | $ 16,714,349 |
| MBR Phase 2 + 1 Blower | 2033 – 2034 | $ 6,211,200 | $ 7,764,000 |
| Thickening + Dewatering | 2035 | $ 2,854,359 | $ 3,567,948 |
| New Cooling Tower | 2037 | $ 452,138 | $ 565,173 |
| MBR Phase 3 + 2 Blowers | 2037 – 2038 | $ 4,742,400 | $ 5,928,000 |
| MBR Phase 4 + 2 Blowers | 2040 – 2041 | $ 5,142,400 | $ 6,428,000 |
| **TOTAL** | | **$ 75,309,306** | **$ 94,09** |

# Draft Cash Flow



# Next Steps

- Virtual Public Open House (9/28)
- Planning Commission Public Hearing 10/12
- DEQ review and approval of Plan
- City Council Work Session 11/7
- City Council Public Hearing 1st Reading 11/21
- City Council 2nd Reading 12/5
- Sewer System Rate Study and SDC Update FY23

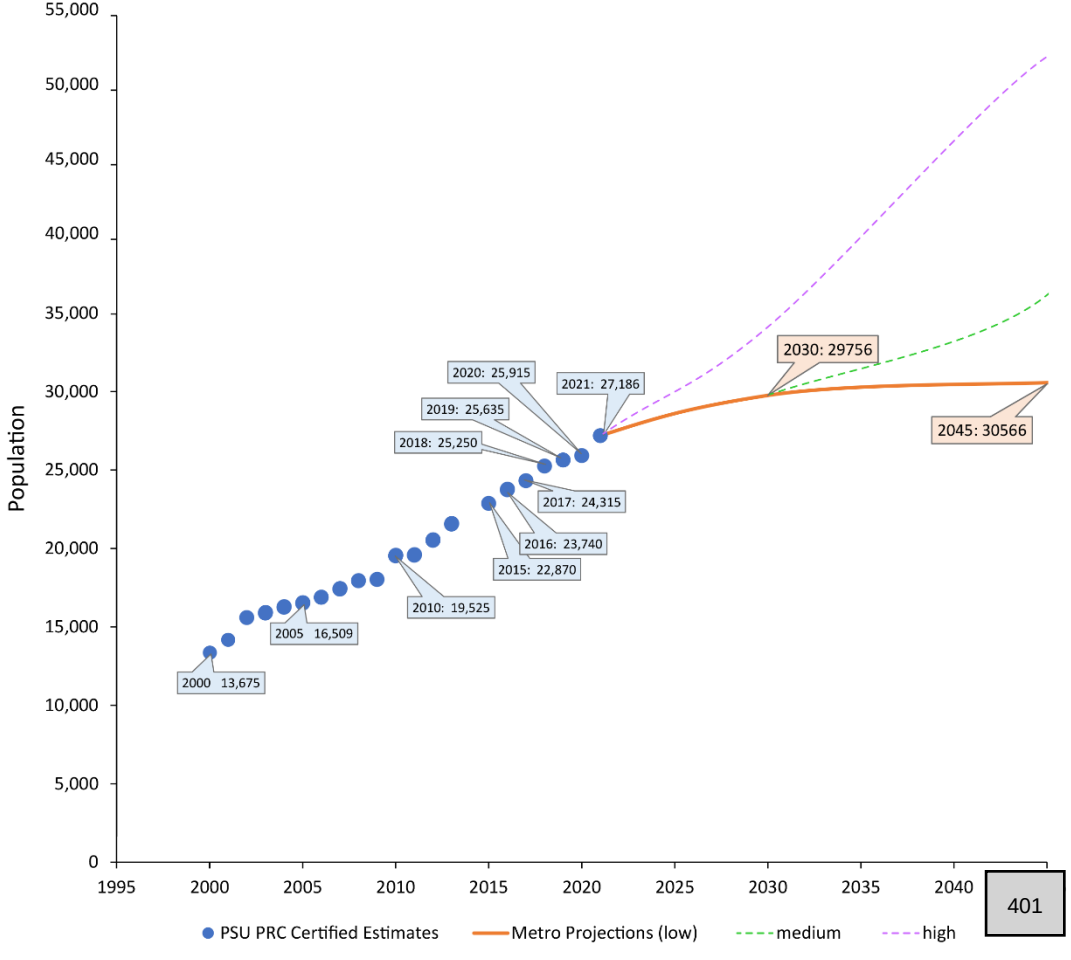
# Questions?

# Reference Slides

# Capital Planning and Expected Growth - 20

- Current Service Area needs – 20+ years through 2045
  - Population and associated economic development

| 2015 | 2020 | 2030 | 2045 |
|---|---|---|---|
| 22,870 | 25,915 | 29,756 | 30,566 |



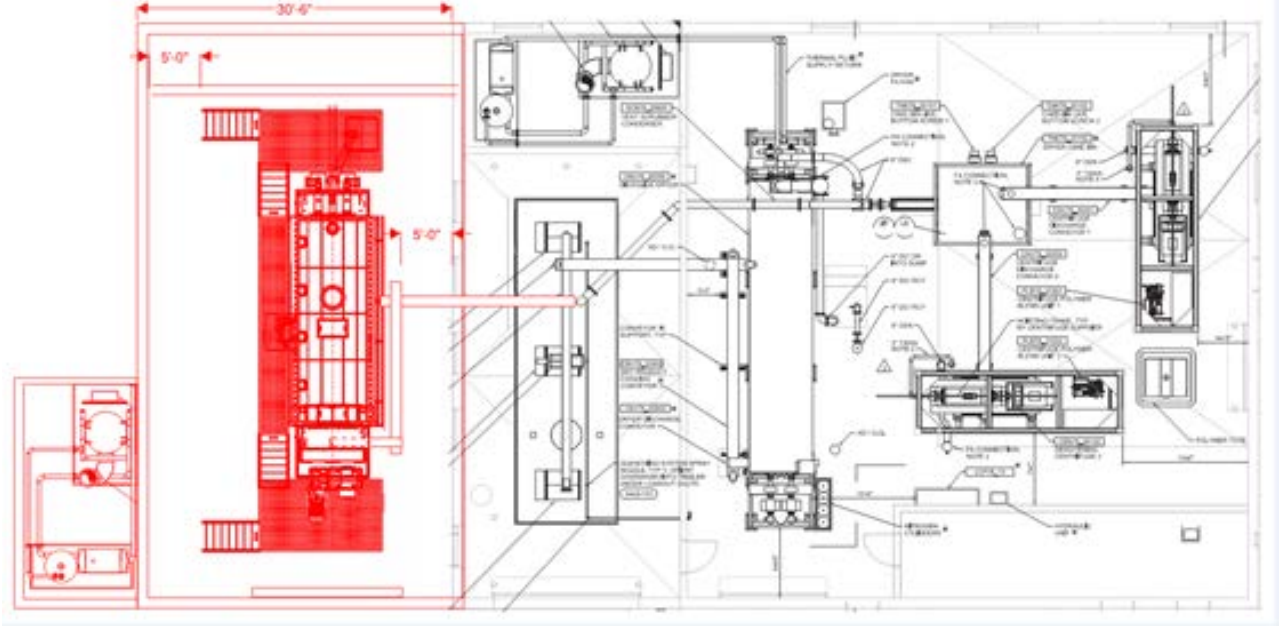
# Condition Assessment

- Prioritize 2019 findings of consultant assessments
  - Secondary clarifiers
  - UV system
- Geotechnical and seismic evaluations
  - Older buildings found to present moderate risk
  - Identified mitigations to address seismic concerns
    - Operations Building
    - Process Gallery
    - Workshop

# Alternatives Evaluation



- Solids Dryer – driven by performance, not capacity
  - Further study, placeholder to expand dewatering and drying building, add new paddle dryer, refurbish existing dryer (backup)
  - Largest potential investment in Master Plan



# Asset Condition Assessment

- Process Condition/Age Drivers
  - 2014 project facilities and equipment in service > 30 years by 2045
  - Solids facilities –
    - Performance issues
      - Solids Dryer fire (2019), component failures (2021), uneven performance
      - Solids Dewatering Centrifuges uneven performance (2020/21)
  - Secondary clarifiers – Pre-date 2014 upgrades, near term mechanism replacements, clarifiers no. 1 and 2
  - UV Disinfection – backup unit pre-dates 2014 upgrades, near term replacement

# Potential Regulatory Drivers

- DEQ - Total Maximum Daily Load (TMDL) Lower Willamette River
- Dissolved oxygen & nutrients
  - Nutrients can contribute to low oxygen conditions
  - Anticipate and accommodate future phosphorous, possibly nitrogen limits
- Pay attention to Willamette River temperature concerns

- **Mr. Green** replied some probability or possibility of growth happening was anticipated if there was an expansion of the airport area, resulting in the development area potentially expanding outward as well.
    - He clarified these were not necessarily trying to anticipate specific events happening that would lead to development in those areas. It was saying development in the area around the airport, such as an industrial development located one parcel away from the through the fence, might occur due to its proximity to the airport.

**Ms. Bateschell** clarified the project team had a work session with the City Council on Monday to review the draft policies and get Council's input. The collective input received would refine what came before the Commission in November.

3. Wastewater Treatment Plant Master Plan (Nacrelli)

**Mike Nacrelli, Senior Civil Engineer** updated on the progress of the Wastewater Treatment Master Plan (WWTP) process via PowerPoint noting the growth projections presented to the Commission in July were based on lower growth projections from Metro. Following discussions with the Planning Commission and internal with management, the project team [we] went back and looked at the higher growth curve, which was just under 3 percent annually, and reran the numbers for the modeling of the flows and loads at the plant, as well as the impact on plant capacity and the capital investment required to handle that level of growth, which resulted in substantial changes. (Slide 3) An updated project phasing schedule and cost estimates were created for the projects and all the other portions of the Master Plan document impacted by these changes were being updated as well. An online public open house would begin September 28th for any members of the general public who wanted to provide input.

**Dave Price, Carollo Engineers**, continued the PowerPoint presentation on the WWTP Master Plan process, reviewing the updates made to the Facility Capacity Assessment and Unit Process Capacity Summary, given the higher growth projections from Metro; the Alternatives Evaluation and Recommended Plan for the required improvement projects, including new capacity upgrades, as well as the now more accelerated Project Phasing Schedule. With the higher growth scenario, the Project Costs had increased to more than three times the approximately $31 million reported in July. The Draft Cash Flow chart provided a visual representation of the Project Costs along the timeline. (Slide 10)

Discussion and feedback from the Planning Commission was as follows with responses to Commissioner questions as noted:

- Looking at the Draft Cash Flow, the membrane bioreactor (MBR) was the biggest outlay of cash in years. Was the City doing any pro-planning of the funds that would be needed for that?
    - **Mr. Nacrelli** replied that upon completion of this plan and part of next steps, the City planned to do a rate and SDC study within this current budget year to look at the details of how to fund the improvements through a combination of rate adjustments and SDCs, and maybe other mechanisms available.
- Assuming some monies were already in reserve, at what point would the rate and SDC changes need to happen for the monies to be there for the 2028, 2029, 2030 MBR expenditures?

  - **Mr. Nacrelli** replied the timing was one ~~of the~~ question the study would have to be able to answer. He suspected rate and SDC increases would be phased in over time, but that would have to be fleshed out in that study, accommodating the growth expected and how those rates would have to be adjusted as growth occurs in order to provide the necessary funding. Once the study and public involvement process were completed, and the fee increases adopted, the new rates would probably have to start right away to make those adjustments.
- How would rate changes for future expansion be explained to existing customers?
  - **Mr. Nacrelli** stated that was ultimately a Council decision. He agreed the majority of the investment was driven by capacity needs; however, some components involved replacing old equipment, so it was not entirely growth driven. He anticipated the impact on SDCs would be far greater than the impact on rates.
- **Mr. Nacrelli** confirmed the improvements would be triggered by threshold population growth; as growth reached a certain place, a new unit gets triggered which provides some flexibility, so the project costs/schedule were not cast in concrete
- Regarding the cost of growth, this was an interesting exercise because in simulating a doubling of the size and the cost tripled, which slows growth because some of the growth occurs because it was competitive price wise. People come to Wilsonville because it was cheaper than Tualatin, for example, and the city has a growth spurt. Growth slows as costs catch up. The schedule was not cast in concrete, growth triggers the decisions for these units to come in.
  - **Mr. Nacrelli** displayed the Capital Planning and Expected Growth – 2045, explaining the numbers in the table on the left were for the orange curve, but the numbers presented in the PowerPoint were based on the purple curve, which was the same growth rate Mr. Price mentioned was used in the 2014 Collection System Master Plan, as well as the Water Treatment Plant Master Plan, and possibly several other planning documents. (Slide 14)
- **Commissioner Mesbah** noted in a previous life, he would be reviewing the Master Plan. A community's Comprehensive Plan was a wish that did not necessarily come true. A cost-effective analysis was needed of some of this projection, growth, and units, especially since by taking this population growth curve, the City had managed to say the only option was the MBR treatment, which was a more expensive treatment, which he understood was to meet higher water quality standards. It was taking away a lot of choices that the City may do well to consider. Maybe the City decides it does not want to double in size—ever—to avoid dealing with higher water quality impacts on city water. These were necessary to explain to rate payers in a comprehensive and understandable way why the City was planning what it was planning. Questions like, “Am I paying for someone else’s growth?” were divisive and not helpful to a sense of community. This was a community service, and it should be approached as a benefit for all and the environment that was receiving the City’s treated waste.
- In terms of the current analysis for flow rates and the details in some of the earlier slides, what baseline population numbers were used as the starting point, 2021 or 2015?
  - **Mr. Price** explained typically 5 to 6 years' worth of data were used, adding this could be considered a 2021 number. When looking at existing data, they often analyzed the flow meter and data being collected from operators at the plant, then they projected out using unit factors and numbers that were conservative to a certain extent, making sure it provided for some flexibility in terms of how the facility was being planned. If the numbers being used were too conservative, and growth did not occur as that particular projection envisioned, then the Plan needed to adjust to that.

- The projected flows made sense, but did the City really expect to be at that 2045 population level to drive all the necessary infrastructure requirements that had been defined. (Slide 14) In July, the projection seemed low and now, was it too high? Was there a middle ground that was a more realistic growth scenario or, if that were to come to pass, would the system's design be done differently from a planning perspective if 45,000 people were expected rather than 52,000.
  - **Mr. Price** responded not necessarily, given the space available at the existing treatment plant site. The City would likely wind up with the same recommendation.
  - **Mr. Nacrelli** noted it might push the timeline further into the future, but to serve the ultimate build out, whether that happened in 2045 or later, there was no more space to do something different.
  - **Mr. Price** agreed, adding they had looked at other options to provide capacity and other processes to intensify secondary treatment, and the conclusion was that the MBR was the direction the City should go no matter the timeline. This was a plan the team believed would provide a very robust facility that the City could feel confident would meet its requirements on the water quality side, while also being flexible to the degree to which it could be made flexible; some additional variations could be added should different criteria or scenarios apply over the next 23 years. At this time, the July and this current proposal bracketed the range of options.
  - **Mr. Nacrelli** stated the Rate and SDC Study would certainly look at how the funding would be impacted by changes in growth. If growth slowed way down for some reason and the projected flows were not achieved, then the City would likely push some of these projects out. To serve the ultimate population within the UGB around Wilsonville with the limited existing site, what would be built would not change, just possibly when things were built.
  - **Mr. Price** noted none of the scenarios accounted for any significant changes on the regulatory side. There were processes in place, underway, or pending to potentially look at other pollutants that might be regulated. This particular plan provided a very firm basis upon which to build, which was why the aeriation basin was proposed first as opposed to going right to the membranes. Having that additional volume and capacity in the plant would provide flexibility for the City in the future in being able to address potential future regulatory concerns.
    - He noted that when the membrane facility was in place, the filters and the two secondary clarifiers that are not demolished would effectively become redundant facilities because the MBR would produce **effluent that** would not be necessary to run through clarifiers and filters because of the process of the liquid separation that occurs with the membrane.
    - The membrane facility was chosen due to the site constraints at the treatment plant, but when the facilities are in place, some space would be freed up providing the City with some flexibility in the future should additional regulatory issues arise in addition to the growth.
- **Commissioner Mesbah** said he wanted to clarify his earlier comments. The proposed plan was based on population that was currently baked into the City's plans and would eventually happen, so the projects would be necessary. As long as this plan was based on need and the projects were pushed out if the population growth did not happen, it was a sound plan. The City still needed to explain it very clearly, so it did not create an impression that this was cost for newcomers versus cost for what was not done before, etc. He was unsure whether the fiscal impacts of growth were looked at ahead of planning. Since it was a separate process, it did not get considered when the City adopted new areas to grow into. He suggested doing this kind of thinking before adding areas would be helpful in the overall process.

- **Commissioner Karr** believed the original concern with following the orange line was the fact that the Commission knew of future developments that were going to exceed the orange line. If those developments come to fruition, the orange line was not usable, and that becomes the problem of, "It's an essential service and it has to be in place". Even though there was a timeline, it sounded like the project list would not change, only the timing of the project list and representative costs. He proposed amending the chart on Page 3 to state, "***potential*** timeframe based on expected growth" to provide a clearer picture. Since the expenditures for these projects depended upon seeing the anticipated growth, the timeframe should be a little more 'squishy'. (Slide 9)
  - **Mr. Nacrelli** confirmed that whether build out was reached around 2045 or 10 years later, the facilities would still be needed, but perhaps not as soon. (Slide 9)
  - **Chair Heberlein** suggested adding "estimated timeframe" as well as "estimated costs" to clarify there was no hard date.
  - **Mr. Nacrelli** stated that even with the orange population curve, the aeration basin would be done fairly soon.
  - He clarified the first few projects before the aeration basin were not substantial and that the funding for those first few was available, adding the projects were not necessarily even growth projects. (Slide 9)
- The new aeration basin was more growth driven that current population, replace secondary clarifier mechanisms was maintenance, but all the "new" projects were growth-driven. The majority of the estimated cost was growth related and if the timeline was not certain, it would be better to state an estimated timeframe instead of a timeframe which leads people to think a project was certain to happen at that point.
  - **Mr. Nacrelli** agreed that could be presented better and they would make it clear in the document.
- Rather than 'squishy' the project team was encouraged to use 'commensurate to population threshold numbers' and hopefully, the team could show at least a range population levels that would trigger an action, so that it gave some guidance to decision makers.
  - **Mr. Price** agreed including an assumed population column would be helpful.
  - **Mr. Nacrelli** reminded there was a significant element of industrial use in the projections, so population could be a guide, but it was not 100 percent.
- **Commissioner Gallagher** said she fully supported taking care of infrastructure, but she reacted to the projection of growth. Did the City really plan on doubling the population of Wilsonville? Is that what was wanted? Was that what this was all about or was that what the City was concerned about?
  - **Mr. Nacrelli** displayed the City Land use Designations Map, noting most of the service area was mostly already within the city limits. If the available land developed as planned, the projects in the Master Plan was what would be needed, unless there were Zoning or Comprehensive Plan changes.
- The Commissioners discussed where 50,000 people would come from, noting Frog Pond would be 6,000 people. If the study area was based on this Land Use Map boundary, then the population estimates should be based on that boundary as well. Either the boundary or the population estimate was off, as well as what the density would permit.
  - **Mr. Nacrelli** clarified these numbers were consistent with the planning done for the sewer system, as well as the water treatment plant currently under expansion. The numbers were not really a departure from other projections the City had been using to plan for infrastructure.

- As long as it was timebound, or population or use based, then it was okay. This was the plan for infrastructure when Wilsonville needed it, regardless of what the boundary said.
- If the team low balled it and blew the water quality standards because the City was now discharging raw **sewage** or polluted wastewater, it would penalize the City, and potentially put a total stop to any new growth, etc. until it was addressed. The City did not want to be in that position, which was why planning was done ahead of time.

The Planning Commission took a brief recess, reconvening at 7:48 pm

4. Frog Pond East and South Master Plan (Pauly)

**Dan Pauly, Planning Manager,** stated this was the Commission's eighth work session on the Frog Pond East and South Master Plan. He introduced the project team and began the PowerPoint presentation, noting tonight's discussion would be around infrastructure, continued discussion on Housing Variety Policy, next steps, and what the finish line looked like at this point.

- He explained the preliminary work done during the 2015 Frog Pond Area Plan provided a foundation for the list of needed infrastructure projects as well as the cost estimates to develop a program for funding them.
- A sensitivity test for a hypothetical higher residential unit count was included in the water and sewer memorandum, and not in the current draft of the transportation memo. During the State administrative rule making for implementation of House Bill 2001, a variety of options was provided that jurisdictions could take, one of which was to plan for 20 units per net acre. How much more expensive would infrastructure be if 20 units per acre were planned versus what the City anticipated would be built during the initial buildout.

**Jenna Bogert, Transportation Engineer Consultant, DKS Associates**, continued the PowerPoint, highlighting the transportation analysis process and the housing unit and job counts used in the traffic model to identify failing intersections and needed improvements, including for bike and pedestrian facilities. She noted the traffic operations, identified deficiencies, and proposed improvements within the subject area, and described four main intersection improvements, which included roundabouts. (Slide 7) She reviewed the pros and cons of single lane roundabouts, as well as proposed pedestrian and bicycle treatments to address gaps and deficiencies, and the proposed street cross sections on Stafford and Advance Rds.

- **Mr. Pauly** noted the Stafford Rd/65th Avenue intersection was a high-priority project for the County to fix. The team's scenario assumed that those improvements were built within the 2040 baseline being considered. (Slide 6)
- **Ms. Bogert** added City Staff had been informing the County of the changes and plans for the Frog Pond Area throughout the master planning process.

Commissioner comments regarding the transportation infrastructure was as follows with responses to questions by the project team as noted:

- With the Advance Road and 60th roundabout so close to the school and park, what advanced safety precautions beyond the crosswalks would be taken because school children would be crossing there?
    - **Mr. Pauly** replied the project team talked directly with the School District this week on how to plan it. The District likes the roundabout for bus and traffic circulation, having buses go out that

# CITY COUNCIL

# MONDAY, AUGUST 1, 2022

**WORK SESSION**

Wastewater Treatment Plant Master Plan (Nacrelli)

WILSONVILLE
OREGON

## CITY COUNCIL MEETING
## STAFF REPORT

| | |
|---|---|
| **Meeting Date: August 1, 2022** | **Subject:** Wastewater Treatment Plant Master Plan<br><br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br><br>**Comments:** N/A |
| **Staff Recommendation:** Provide input on components of the Wastewater Treatment Plant (WWTP) Master Plan. | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |
| ☒Council Goals/Priorities: Align infrastructure plans with sustainable financing resources. | ☐Adopted Master Plan(s): ☐Not Applicable |

**ISSUE BEFORE COUNCIL:**
Provide feedback and input on components of the Wastewater Treatment Plant (WWTP) Master Plan.

**EXECUTIVE SUMMARY:**

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7.

***WWTP Condition Assessment***

Carollo reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement.

***Seismic Analysis***

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building
- Process Gallery
- Workshop
- Aeration Basins and Stabilization Basins
- Sludge Storage Basins and Biofilter

The five potentially vulnerable structures were for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for the Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. Recommended actions from NGI to mitigate the risk of soil piping are presented in the Plan.

***Wastewater Flow and Load Projections***
The Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand (BOD5), ammonia (NH3), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses.

***Capacity Analysis***
Summaries of plant process area capacity assessments and conclusions are presented in the Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations.

***Regulatory Considerations and Strategy***
Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance. The existing permit limits for the Wilsonville WWTP are effective September 1, 2020 through July 30, 2025.

***Alternative Development and Evaluation***
The Plan presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process.

**EXPECTED RESULTS:**
The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. The total estimated amount of capital investment over the planning period is approximately $31 million, of which $4.5 million is anticipated in the next 5 years. The recommended capital improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that will be necessary to ensure adequate funding to implement to required upgrades.

**TIMELINE:**
This is the second in a series of presentations to the Planning Commission and City Council. Completed and subsequent planned meetings are as follows:

- Planning Commission Work Session - July 13 (completed)
- City Council Work Session - August 1 (current)
- Planning Commission Public Hearing - September 14
- City Council Public Hearing 1st Reading - October 3
- City Council 2nd Reading - October 17

**CURRENT YEAR BUDGET IMPACTS:**
The remaining contract balance for finalizing the Plan will carry over into FY 22/23. An additional $92,450 has been budgeted in FY 22/23 for the Sewer System Rate Study and System Development Charge (SDC) Update, using a combination of Sewer Operating funds and SDCs.

**COMMUNITY INVOLVEMENT PROCESS:**
A virtual town hall meeting to present the findings of the Plan and solicit public input will be scheduled in August and posted on the City's online calendar. The public hearings listed above will provide additional opportunity for public input. The forthcoming Sewer System Rate Study and SDC Update will also include a robust public engagement process.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

**ALTERNATIVES:**
The Plan includes alternatives for several of the recommended improvements. The selected alternatives were determined to be the most economically viable. Some of the more capital intensive alternatives can be revisited if necessary due to changing regulatory requirements.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENT:**
1. Draft Wastewater Treatment Plant Executive Summary (dated July 2022)



City of Wilsonville
Wastewater Treatment Plant Master Plan

# EXECUTIVE SUMMARY

DRAFT | July 2022

City of Wilsonville
Wastewater Treatment Plant Master Plan

# EXECUTIVE SUMMARY

DRAFT | July 2022

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# Abbreviations

| | |
|---|---|
| AA | average annual |
| AAF | average annual flow |
| ABF | average base flow |
| ADWF | average dry-weather flow |
| AWWF | average wet weather flow |
| BCR | biochemical reactor |
| $BOD_5$ | biochemical oxygen demand |
| Carollo | Carollo Engineers, Inc. |
| CIP | Capital Improvement Plan |
| City | the City of Wilsonville |
| $CBOD_5$ | five-day carbonaceous biochemical oxygen demand |
| CSZ | Cascadia Seismic Zone |
| DBO | Design-Build-Operate |
| DEQ | Department of Environmental Quality |
| DMR | Discharge Monitoring Reports |
| ETL | excess thermal load |
| gpd/sf | gallons per day per square foot |
| HMI | human-machine interface |
| Jacobs | Jacobs Engineering Group Inc. |
| kcal/day | kilocalories per day |
| lbs | pounds |
| MBR | membrane bioreactor |
| mg/L | milligrams per liter |
| mgd | million gallons per day |
| MGI | Northwest Geotech, Inc. |
| ml | milliliter |
| MLSS | mixed liquor suspended solids |
| MM | maximum month |
| MMDWF | maximum month dry weather flow |
| MMWWF | maximum month wet weather flow |
| MW | maximum week |
| MWDWF | maximum month dry weather flow |
| MWWWF | maximum week wet weather flow |
| $NH_3$ | ammonia |
| No. | number |
| NPDES | National Pollutant Discharge Elimination System |
| OSSC | Oregon Structural Specialty Code |

| | |
|---|---|
| PD | peak day |
| PDDWF | peak day dry weather flow |
| PDWWF | peak day wet weather flow |
| PHF | peak hour flow |
| ppd | pounds per day |
| PSU PRC | Portland State University Population Research Center |
| R/C | residential/commercial |
| SPA | State Point Analysis |
| SRT | solids residence time |
| the Plan | Master Plan |
| TMDL | total maximum daily loads |
| TP | total phosphorous |
| TS | total solids |
| TSS | total suspended solids |
| TWAS | thickened waste activated sludge |
| UGB | urban growth boundary |
| UV | ultraviolet |
| WWTP | wastewater treatment plant |

# EXECUTIVE SUMMARY

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

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This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ),
- City of Wilsonville Wastewater Collection System Master Plan (2014, MSA), and

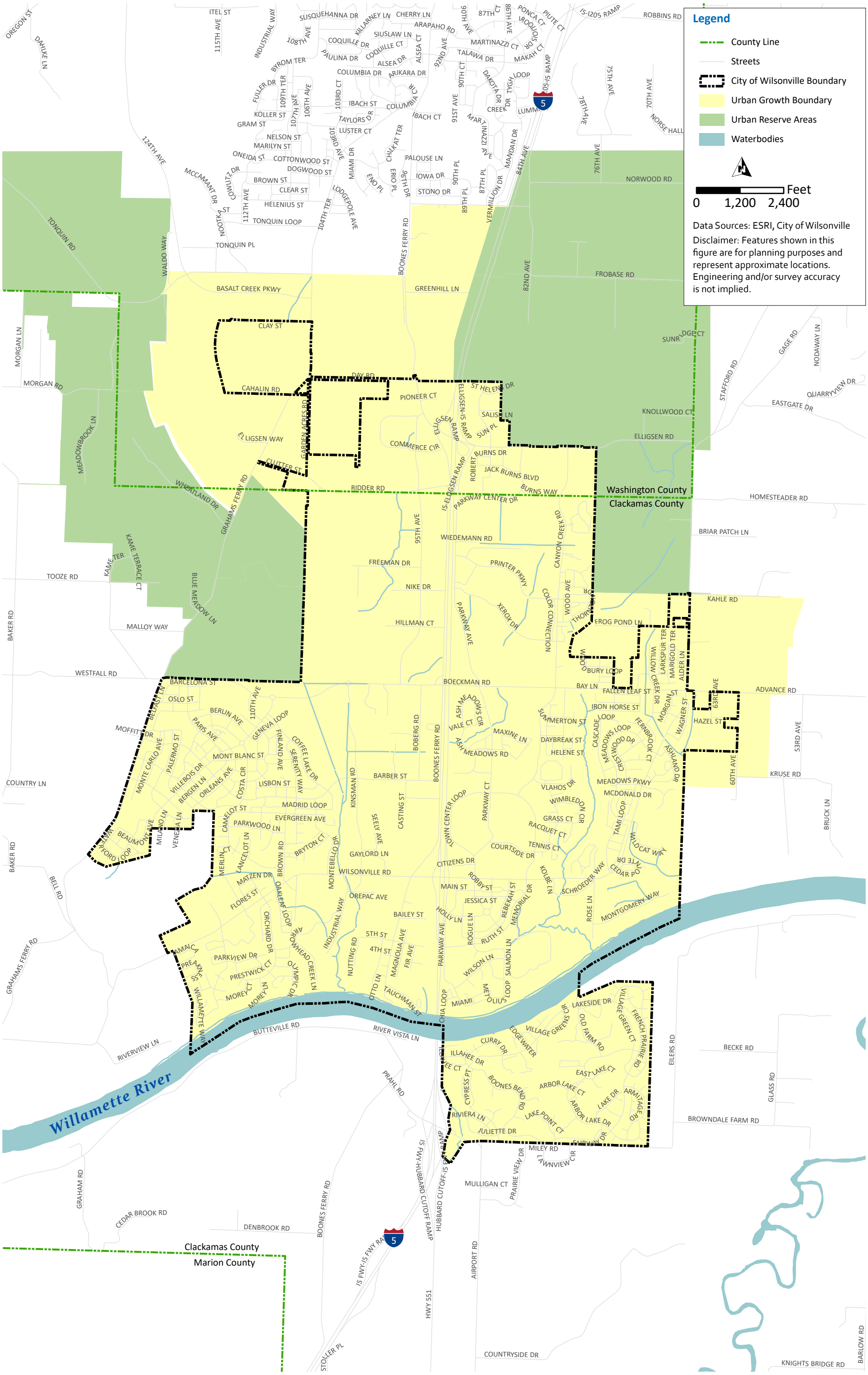
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7:
  - Goal 5: Align infrastructure plans with sustainable financing sources.
  - Goal 6: Engage the community to support emergency preparedness and resiliency.
  - Goal 7: Protect Wilsonville's environment and increase access to sustainable lifestyle choices.

## ES.1 Planning Area Characteristics

Chapter 1 summarizes the City's wastewater service area characteristics relevant to assessing WWTP facility needs. The planning area considered by this Plan is consistent with the City's 2014 Collection System Master Plan and 2018 Comprehensive Plan including the urban growth boundary (UGB), which is currently the limit of City sewer service as shown in Figure ES 1.

The northern portion of the City of Wilsonville is located within Washington County, and the majority of the City lies in the southwestern part of Clackamas County.

The City sits within the jurisdictional boundaries of Metro, the regional government for the Portland metropolitan area. By state law, Metro is responsible for establishing the Portland metropolitan area's UGB, which includes Wilsonville. Land uses and densities inside the UGB require urban services such as police and fire protection, roads, schools, and water and sewer systems. A figure of the City's existing land use is presented in Chapter 1. Also presented in Chapter 1 are the City's physical characteristics, water resources, and population and employment information, which are all significant factors in planning for wastewater conveyance and treatment facilities.




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Figure ES.1 Planning Area

The Portland State University Population Research Center (PSU PRC) publishes annual estimates of populations for the previous year for cities in Oregon while Metro develops population projections for the future within the Portland metropolitan area, including Wilsonville. The PSU PRC estimated the City's population as 27,186 in 2021. Metro estimates the City's population to reach 30,566 people by 2045.

For establishing a per capita basis for flow and load projections for the Plan, certified PSU PRC historical population estimates were used for 2015 through 2019. Metro's future population forecasts were used for 2020 through 2045. Figure ES.2 shows the historical population and future growth predicted for the City. Figure ES.2 also identifies growth projections developed to allow the City to assess capital requirements possibly resulting from more aggressive growth than projected by Metro. Analysis of possible growth scenarios is described in greater detail in Chapter 4.

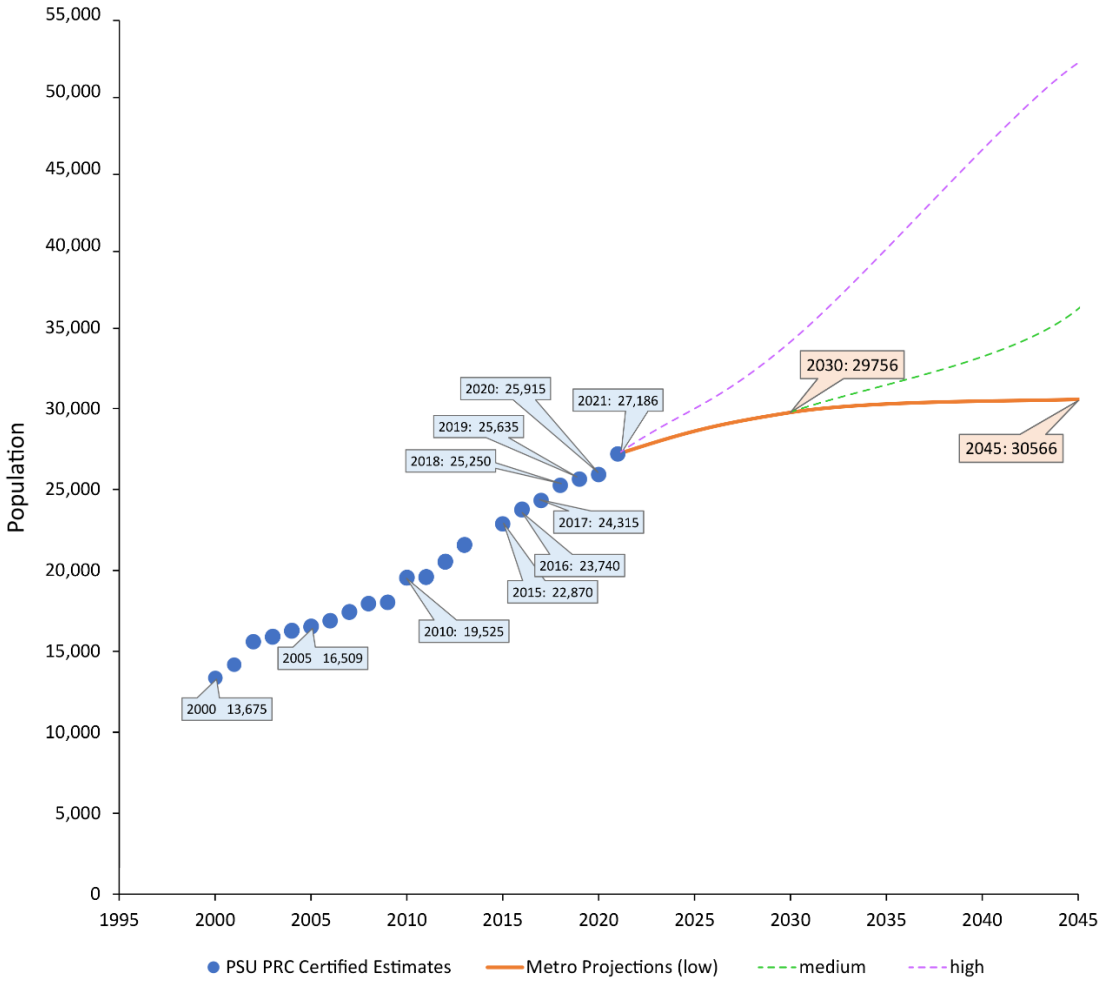



Figure ES.2 Historical Population and Expected Growth for the City of Wilsonville

## ES.2 WWTP Condition Assessment

Carollo Engineers, Inc. (Carollo) reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement. Chapter 2 presents a summary of critical assets that require short term rehabilitation or replacement, as well as a list of assets that are less critical to operations, or have minor condition issues, but may be included in a short-term improvements project or a task order for Jacobs operations personnel. Table ES.1 displays the condition driven rehabilitation or replacement projects from Chapter 2 that were included in the recommended Capital Improvement Plan (CIP) in Chapter 7.

Table ES.1 CIP Condition Driven Replacement Projects

| Asset | Description |
|---|---|
| Trojan UV 4000 System | While only used as a backup to the Ozonia UV system, the Trojan system's HMI has errors that prevent it from showing the status of the lamps in module 3. Since it is used infrequently, the system's condition is largely unknown. After review of the 2019 condition assessment reports and discussion with the City and Jacobs staff, it was concluded that the UV 4000 unit must be replaced. |
| Secondary Clarifiers No. 1 and No. 2 | Ovivo completed a field review of the plant's secondary clarifiers No. 1 and No. 2 in April 2022. Although both units were operational, repairs were identified to improve the operation of the clarifiers. The recommended repairs include drive controls for both units, new skimmers for both units, squeegees for both tanks rake arms, EDI chains, one motor and reducer assembly, one skimmer arm assembly, and new secondary clarifier mechanisms.(1) |

Notes:
(1) The detailed Ovivo Field Service Report is included in Appendix X.
Abbreviations: HMI - human-machine interface; No. - number; UV - ultraviolet.

## ES.3 Seismic Analysis

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic

evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building.
- Process Gallery.
- Workshop.
- Aeration Basins and Stabilization Basins.
- Sludge Storage Basins and Biofilter.

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for this Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. Recommended actions from NGI to mitigate the risk of soil piping are presented in Chapter 2.

## ES.4 Wastewater Flow and Load Projections

Chapter 3 of the Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand ($BOD_5$), ammonia ($NH_3$), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses. Facility planning involves estimating rates of growth in wastewater generation within the service area which are unlikely to align precisely with the actual growth observed. During the planning period, City staff will need to assess service area growth at regular intervals and revisit the analysis presented in this Plan. A determination will need to be made whether projected flows and loads (which drive assessments of unit process capacity) are aligned with calendar projections presented in this plan and consider if conclusions presented regarding capacity and timing of recommended improvements remain valid. If not, adjustments to the plan will need to be undertaken to ensure sufficient capacity remains available to serve anticipated growth.

Analysis of flow projections were completed through two different methods: (1) analysis of historical plant records and (2) DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon, which is referred to as the DEQ methodology in this Plan. Since there is no DEQ methodology for load analysis, all projections were developed based on historical plant records. Figure ES.3 summarizes the measured and projected maximum month, peak day and peak hour flows. The projections for the remaining flow elements can be found in Chapter 3.

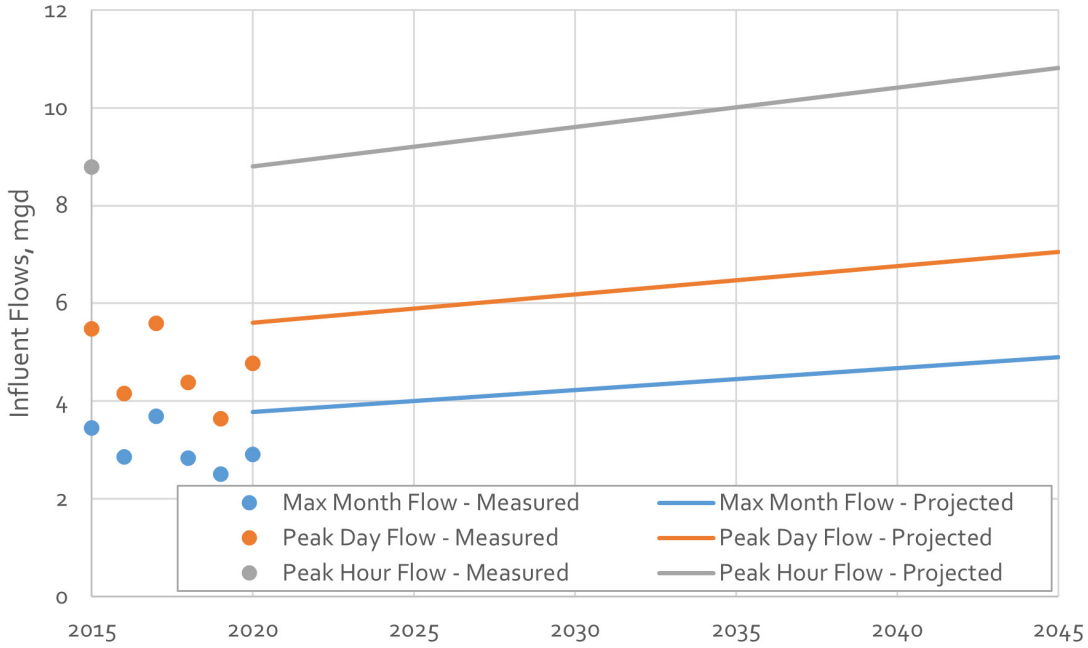



Figure ES.3 Flow Projection Summary

Load projections were calculated for influent TSS, $BOD_5$, $NH_3$, and TP. Figure ES.4 summarizes the measured and projected influent maximum month BOD and TSS loads. The projections for the remaining load elements can be found in Chapter 3.

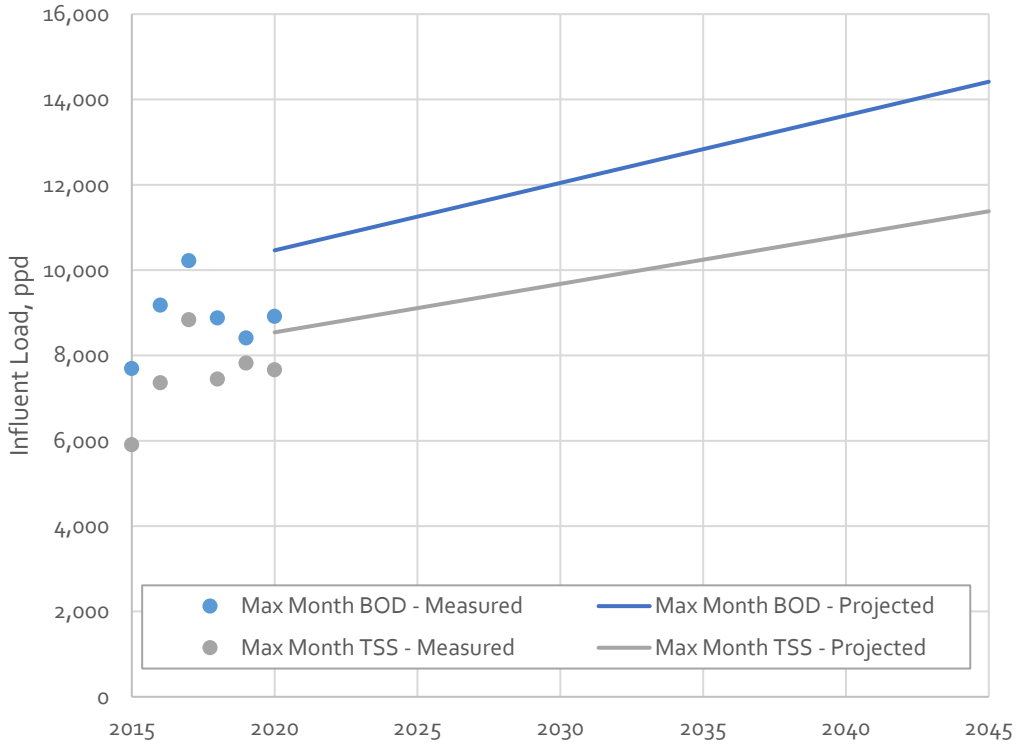



Figure ES.4 Load Projection Summary

The projected flows and loads developed in Chapter 3 were compared against the rated capacity for each of the WWTP's unit processes to determine whether expansion would be required within the planning period. The findings of this capacity analysis are discussed in the next section.

## ES.5 Capacity Analysis

Summaries of plant process area capacity assessments and conclusions are presented in this Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations. A site plan of the City's existing WWTP is presented in Figure ES.5.

Chapter 4 identifies existing capacity ratings and deficiencies for the liquid and solids stream treatment processes at the City's WWTP. Analyses are based on operational practices in place at the time and existing effluent limits established by the WWTP's National Pollutant Discharge Elimination System (NPDES) permit. Biological process modeling was performed using BioWin version 6.2 to predict plant performance under current and future flow and loading conditions to assess when unit process capacities may be exceeded within the planning period (present through 2045).

A summary of the capacity assessment completed and presented in Chapter 4 is detailed below in Table ES.2.




LEGEND:

1 - DEWATERING & DRYING BUILDING
2 - PROCESS GALLERY
3 - SECONDARY CLARIFIER NO. 1
4 - SECONDARY CLARIFIER NO. 2
5 - UV DISINFECTION SYSTEM
6 - WORKSHOP
7 - SECONDARY PROCESS FACILITY
8 - STABILIZATION BASIN
9 - SLUDGE STORAGE BASINS AND BIOFILTERS 12 - SECONDARY CLARIFIER NO. 3
10 - HEADWORKS
11 - DISK FILTERS
12 - COOLING TOWERS
13 - W3 REUSE PUMP STATION
14 - OPERATIONS BUILDING
15 - SITE ENTRANCE

0 30' 60' 120'
SCALE: 1" = 60'

**Figure ES.5**
**EXISTING WILSONVILLE WWTP**
CITY OF WILSONVILLE

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Table ES.2 Unit Process Capacity Assessment

| Unit Process | Capacity Assessment |
|---|---|
| **Preliminary Treatment** | |
| Screening | There is sufficient hydraulic capacity for both mechanical screens to accommodate the projected 2045 PHF. |
| Grit Removal | Capacity is adequate for providing full treatment of the projected 2045 PHF. |
| **Secondary Treatment** | |
| Secondary Treatment | Based on maximum week MLSS predicted from BioWin modeling at peak day flow with all clarifiers in service (and assuming a 5-day SRT), there is only sufficient capacity through 2038. |
| Secondary Clarifiers | The secondary clarifiers are expected to stay under the maximum hydraulic loading criteria for the entirety of the planning period. |
| Aeration Blowers | The air demands of the secondary treatment process are projected to exceed the firm capacity of the aeration blowers under peak conditions by 2035. |
| **Tertiary Treatment and Disinfection** | |
| Disk Filters | The existing disk filter capacity is expected to be exceeded by 2037 with one unit out of service or in backwash mode based on effluent limitations included in the City's DBO Contract with Jacobs. At this time the City expects to relax these contract limitations rather than invest in additional capacity. |
| Secondary Effluent Cooling Towers | It is not expected that the total hydraulic capacity of the cooling towers will be exceeded by 2045. |
| UV Disinfection | The existing UV channels are adequately sized to fully disinfect the 2045 PHF with all units in service, as well as the PDDWF with one channel out of service. The City currently has an older UV unit in place as an emergency backup to the primary system. That backup unit is aging and the City plans replacement during the planning period. |
| Outfall | Even with the Willamette River at its 100-year flood elevation, it is expected that the outfall pipeline can accommodate approximately 19 mgd before the UV channel effluent weirs are at risk of submergence upstream. Since this flow is well above the hydraulic capacity of the rest of the plant, no expansion will be needed until after 2045.(1) |
| **Solids Handling** | |
| Gravity Belt Thickener | The capacity analysis resultsindicate adequate for thickening the current and projected maximum week WAS loads with one unit out of service. |
| TWAS Storage | The TWAS storage volume is sufficient to accommodate the expected maximum week solids loads for three days (assuming TWAS is thickened to 4 percent). |
| Dewatering Centrifuges | The rated capacity of the current centrifuges is sufficient to process the maximum week load with one unit out of service though 2045 assuming operating times of 24 hours per day for 5 days per week, per the criteria detailed in Chapter 4.(2) |
| Biosolids Dryer and Solids Disposal | The capacity of the biosolids dryer is adequate for handling the current and projected max week solids loads (in year 2045) on the basis of its design evaporation rate, assuming dewatered cake is dried from 20 percent TS to 92 percent TS and the dryer is operated for 24 hour per day for 5 days per week.(3) |

Notes:
(1) The existing outfall was recently modified and equipped with five parallel diffuser pipes equipped with duckbill check valves to improve the mixing zone characteristics in the Willamette River.
(2) The centrifuges have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2045.
(3) The existing solids dryer has sufficient capacity through 2045 but has exhibited inconsistent performance.. See Alternative 2B, Chapter 6.
Abbreviations: DBO - Design-Build-Operate; gpd/sf - gallons per day per square foot; MLSS - mixed liquor suspended solids, SPA - State Point Analysis; SRT - solids residence time; TS - total solids; TWAS - thickened waste activated sludge.

Table ES.3 further summarizes the capacity assessment by listing each unit process, associated design parameters and year of possible capacity exceedance.

Table ES.3 Unit Process Capacity Year Summary

| Unit Process | Design Parameter | Redundancy Criteria[3] | Year of Capacity Exceedance |
|---|---|---|---|
| Influent Screening | PHF | One mechanical screen out of service | >2045 |
| Grit Chamber | PHF | All units in service | >2045 |
| **Secondary Treatment** | **MW MLSS inventory at PDF** | **All units in service** | **2038** |
| **Aeration Blowers** | **Peak BOD Load** | **Largest unit out of service** | **2035** |
| Secondary Effluent Cooling Towers | June 1 - Sept 30 PDF | All units in service | >2045 |
| **Disk Filters** | **MWDWF** | **One unit in backwash** | **2037[1]** |
| UV Disinfection Channels | PHF | All units in service | >2045 |
| Outfall | PHF | - | >2045 |
| Gravity Belt Thickening | MW Load | One unit out of service | >2045 |
| TWAS Storage | MW Load | All units in service | >2045 |
| Dewatering Centrifuges | MW Load | One unit out of service | >2045[2] |
| Biosolids Dryer | MW Load | All units in service | >2045[2] |

Notes:
Unit processes in white are projected to run out of capacity before year 2045.
(1) Existing Disk Filters are predicted to exceed reliable capacity (one unit out of service) in 2037 based on vendor provided design criteria. This conclusion assumes limitations for effluent total suspended solids contained in the WWTP DBO contract, which are far more stringent than the City's NPDES permit.
(2) As noted previously, the existing centrifuges and biosolids dryer appear to have sufficient capacity through the planning year 2045, however condition and age are likely to require replacement during the planning period. It is recommended the City reassess available replacement technologies prior to replacement and consider loading appropriate to the planning horizon of any new units selected.
(3) Reference Appendix D - Reliability requirements, Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities, OR DEQ, 2018, Revised July 2019

## ES.6 Regulatory Considerations and Strategy

It is the responsibility of the Oregon Department of Environmental Quality (DEQ) to establish and enforce water quality standards that ensure the Willamette River's beneficial uses are preserved. Discharges from wastewater treatment plants are regulated through the National Pollutant Discharge Elimination System (NPDES). All discharges of treated wastewater to a receiving stream must comply with the conditions of an NPDES permit. The Wilsonville WWTP discharges to the Willamette River at River Mile 38.5 just upstream of the Interstate 5 bridge. The existing permit limits for the Wilsonville WWTP are shown in Table ES.4. This permit became effective on September 1, 2020 and expires July 30, 2025.

Table ES.4 Current Effluent Permit Limits

| Parameter | Average Effluent Concentrations | | Monthly Average, (ppd) | Weekly Average, (ppd) | Daily Maximum, (lbs) |
|---|---|---|---|---|---|
| | Monthly | Weekly | | | |
| **May 1 - October 31** | | | | | |
| $CBOD_5$ | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| TSS | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| **November 1 - April 30** | | | | | |
| $BOD_5$ | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| TSS | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| **Other Parameters Limitations** | | | | | |
| E. coli Bacteria | • Shall not exceed 126 organisms per 100 ml monthly geometric mean.<br>• No single sample shall exceed 406 organisms per 100 ml. | | | | |
| pH | • Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0 | | | | |
| $BOD_5$ Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| TSS Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| ETL June 1 through September 30 | • Option A: 39 million kcal/day 7-day rolling average<br>• Option B: Calculate the daily ETL limit | | | | |

Notes:
Abbreviations: $CBOD_5$ - five-day carbonaceous biochemical oxygen demand; ETL - excess thermal load; kcal/day - kilocalories per day; lbs - pounds, mg/L - milligrams per liter; ml - milliliter.

The WWTP has been compliant with NPDES permit limits, generally. However due to construction issues that required that aeration basins be offline, equipment failure and issues with solids processing, the WWTP did violate their NPDES permit over eight months between 2015 and 2020 (December 2015, February 2017, April 2017, January 2018, August 2018, May 2020, June 2020 and July 2020). Most of these violations were due to the daily effluent TSS load exceeding the maximum daily load limit in the NPDES permit. It is anticipated that once the issues with solids processing are addressed, the City's current treatment process will be able to meet permit limits.

Chapter 5 details potential regulatory issues the City will need to take into consideration in coming years. Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance.

Future treatment upgrades may be required when DEQ establishes total maximum daily loads (TMDL) for the lower Willamette River. Dissolved oxygen and nutrient limits, such as phosphorus limitations, are possible. The dissolved oxygen in the lower part of the river does not always meet water quality standards, and indications of excessive nutrients, such as chlorophyll-a, aquatic weeds, and harmful algal blooms, are present in the lower Willamette River. DEQ has

begun its triennial review of Oregon's water quality criteria. The review could result in more stringent or new discharge requirements, but this process will take several years. For planning purposes, providing plant footprint to accommodate future treatment to remover phosphorus and address dry weather seasonal limits on dissolved oxygen should be anticipated. In addition, the City should continue to engage with DEQ regarding any proposed receiving water temperature regulatory actions.

## ES.7 Alternative Development and Evaluation

Chapter 6 presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process. Process modifications associated with each alternative were modeled in BioWin using a calibrated model to evaluate the overall impact on plant operations.

As identified in Chapter 4, the secondary treatment process is expected to require additional capacity during the planning horizon (2045). Chapter 6 details two alternatives to address these capacity limitations. The two alternatives considered to increase secondary capacity are:

1. Expansion of the existing conventional activated sludge process; and
2. Intensification of the existing treatment process using membrane bioreactor (MBR) technology.

Due to the higher capital and operating costs of intensification, construction of a new conventional aeration basin is recommended to increase secondary capacity. As flows and loads increase, or regulatory requirements become more stringent, it may be necessary to intensify treatment. It is recommended the City revisit this evaluation as the need for 1) additional capacity to accommodate growth nears or 2) more stringent effluent limitations are considered. This offers the opportunity to take advantage of potential advances in technology as well as confirming the predicted time frame of capacity exceedance. A new aeration basin project is included in the Capital Improvement Plan in Chapter 7.

The existing aeration blower system firm capacity is expected to be deficient by 2035. An additional aeration blower (same size and design air flow rate as the existing high-speed turbo blowers) would ensure there is sufficient blower capacity through the end of the planning period to meet current permit requirements. There is adequate space to add a fourth turbo blower to the same discharge header pipe as the existing turbo blowers. Additionally, intensification of the secondary treatment process would further increase the aeration demands because operating at a higher MLSS reduces oxygen transfer efficiency in the aeration basins. If intensification is reconsidered and selected for the planning period, or if nutrient limits are imposed within the planning period that requires intensification or operation at a higher MLSS, the blower air demands should be revisited.

Additional tertiary filtration capacity is predicted to be needed before 2045 to provide full treatment of the MWDWF with one disc filter out of service or in backwash mode. After discussions with the City, two alternatives were identified to increase capacity:

1. Increase filtration capacity, and
2. Modify the requirement in the WWTP DBO contract to relax effluent limitations which are currently more stringent than those contained in the City's NPDES permit.

The City's WWTP NPDES permit currently requires effluent to contain less than 10 mg/L TSS during the dry season (see Table ES.8). However, the DBO firm's contract with the City requires an effluent TSS of less than five mg/L, or half of the WWTP's permitted effluent quality. At this time, the City has decided to study the performance of the existing tertiary filters over time and expects to relax effluent TSS requirements in the DBO contract unless actual water quality impacts (exceedances of permit limitations) are realized. The City will also consider the option of new technologies for filtration, noting that if the City selected an intensification technology utilizing membranes, this may potentially eliminate tertiary filtration capacity concerns.

While the capacity assessment findings presented in Chapter 4 determined existing solids dewatering centrifuges have sufficient capacity, the remaining equipment service life may require replacement within the planning horizon. The centrifuges, installed in 2014, were recently refurbished, but by 2045, will have been in service for over 30 years. The City should plan for their replacement within the planning horizon and consider whether a capacity increase is needed at the time of replacement based on projections of solids production and processing needs. Additionally, the secondary process was modified in 2020 and has experienced extended periods where mixed liquor concentrations have been elevated above typical ranges for conventional activated sludge or extended aeration processes. Due to the complications with secondary process operation and performance issues with the centrifuges, it is recommended the City study the secondary treatment and dewatering processes to confirm that the assumptions and conclusions regarding centrifuge capacity in Chapter 4 may be relied upon. A dewatering performance optimization study is recommended so the City can collect and analyze secondary treatment and solids processing performance data. For budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is provided in Chapter 7. Timing of that equipment replacement will depend on performance of the existing units, future loading assumptions, and observed condition.

The existing solids dryer has experienced operational issues in recent years, including a fire that caused extensive damage to the equipment in April 2019 and a leaking rotary joint and damaged seal in 2021. As of February 25, 2022, the dryer has been repaired and is operating. Because of the City's commitment to solids drying as the preferred process to achieve Class A biosolids, the alternatives evaluation presented in this Plan for future dryer replacement was conducted with a focus on thermal drying options only.

Chapter 6 details an analysis of the following alternatives to improve the drying system:

1. Alternative 1 - Continue operating the existing biochemical reactor (BCR) paddle dryer and defer replacement.
2. Alternative 2 - Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.
3. Alternative 3 - Construct a new dryer building with a different solids dryer technology.

While it is anticipated the existing dryer has useful life through at least 2026 (current DBO contract expiration), by 2031 the dryer will have been in operation for over 15 years. It is recommended the planning and design of upgrades to provide reliable dryer capacity begin in 2029, or sooner if further operational concerns arise. The City has indicated a preference for a variation of Alternative 2 which involves expanding the existing Dewatering and Drying Building to accommodate a second solids paddle dryer. This alternative provides backup capacity to allow the City to continue delivering Class A solids during periods of downtime if a mechanical failure occurs or to accommodate regular maintenance of one dryer train. As mentioned previously, this Plan recommends the City complete a study of the secondary sludge quality, performance of that process, chemical addition types and locations, and solids handling process performance overall prior to making a final selection of the preferred dryer alternative from the alternatives detailed in Chapter 6. For purposes of capital planning, this Plan assumes the City will implement Alternative 2b (modification of Dewatering and Drying Building to accommodate a second paddle dryer) with a study and confirmation of this selection beginning in 2029.

Lastly, the City wants to establish a direct connection between the City's fiber optics network and the WWTP. This addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the site entrance, where the conduits will be tied into the City's fiber optics network. Chapter 6 details one potential routing from the Operations Building to the site entrance that would minimize impact to existing yard utilities. The fiber optic cable addition is included in Chapter 7 and the City's 5-year CIP.

Table ES.5 below summarizes the alternatives evaluated in Chapter 6 including recommendations for future WWTP improvements.

Table ES.5 Summary of Alternatives

| Unit Process | Alternatives Considered | Selected Alternative |
|---|---|---|
| Secondary Treatment | • Expansion of the existing conventional activated sludge process.<br>• Intensification of the existing treatment process. | • Expansion of the existing conventional activated sludge process through the addition of another aeration basin. |
| Tertiary Treatment | • Increase filtration capacity.<br>• Eliminate the requirement on the DBO firm to meet effluent limits more stringent than the NPDES permit. | • Eliminate the requirement on the DBO firm to meet effluent limits more stringent than the NPDES permit. |
| Solids Dryer | • Continue operating the existing BCR paddle dryer and defer replacements.<br>• Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.<br>• Construct a new dryer building with a different solids dryer technology. | • Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer by expanding the Dewatering and Drying Building to accommodate a second solids paddle dryer. |

## ES.8 Recommended Alternative

Figure ES.6 presents a WWTP site plan identifying locations of recommended improvements resulting from condition and capacity assessments, including evaluation of alternatives, as described.

Summaries of opinions of probable costs and anticipated phasing for the improvements recommended for inclusion in the City's WWTP CIP are provided in Table ES.6.

The expected cash flow for the planning period was determined for the recommended improvements summarized in Table ES.6. The cash flow through 2045 includes an escalation rate of three percent, and the estimated peak expenditure for any fiscal year is approximately $13,906,000 in fiscal year 2031. The projected CIP expenditures are presented in Figure ES.7.

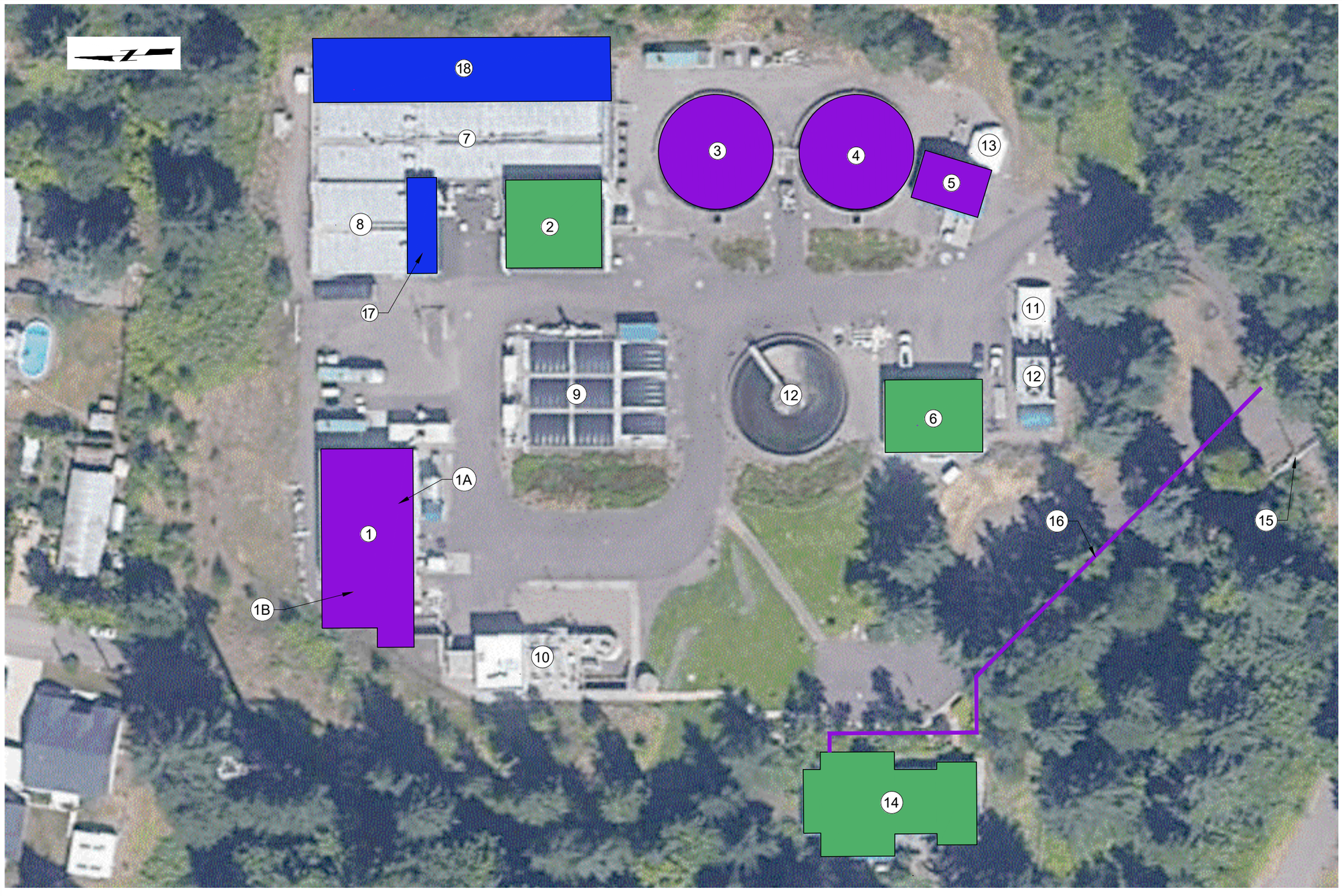
Table ES.6 WWTP CIP - Recommended Alternative Opinion of Probable Cost and Phasing

| Plant Area | Project[1] | Opinion of Probable Cost | Approximate Year Online |
|---|---|---|---|
| Solids Handling | Dewatering Performance Optimization | $150,000 | 2023 |
| Communications/IT | Fiber Optic Cable Addition | $55,000 | 2023 |
| UV System | Trojan 4000 UV System Improvement | $1,650,000 | 2024 |
| Support Buildings | Seismic Improvements | $1,015,000 | 2024 |
| Secondary Treatment | New Secondary Clarifier Mechanisms | $1,665,000 | 2026 |
| Solids Handling | Solids Dryer Improvement | $16,100,000[6] | 2031 |
| Solids Handling | Existing Centrifuge Replacement | $2,200,000[3,5] | 2033[4] |
| Secondary Treatment | New Aeration Blower | $394,000 | 2035 |
| Secondary Treatment | New Conventional Aeration Basin | $7,895,000 | 2038 |
| | **TOTAL** | **$31,124,000** | |

Notes:
White rows indicate projects that are in the City's 5-year CIP and blue rows indicate projects that are outside the 5-year CIP window.

(1) Details of each project can be found in Chapter 2 or Chapter 6 of this Master Plan.
(2) The estimated opinion of probable costs include the construction costs plus Engineering, legal and administration fees (ELA, or soft costs). Details on the estimated project costs can be found in Chapter 2 or Chapter 6 of the plan, with the exception of costs for the backup UV system and centrifuges which are presented earlier in Chapter 7.
(3) For budgeting purposes, the Option B centrifuge cost from Table 7.4 is used for the project cost summary and the CIP
(4) Replacement timing dependent upon satisfactory equipment performance
(5) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2045. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.
(6) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.

Capital costs estimated in the Plan will be considered as the City assesses the need to adjust sewer enterprise rates and charges in coming months. It will be important to distinguish capacity and condition (repair and replacement) driven improvements in assigning costs to existing rate payers and future users.




LEGEND:

**CONDITION OR ADDITION PROJECTS**

1 - DEWATERING & DRYING BUILDING

1A - EXISTING CENTRIFUGE REPLACEMENT

1B - SOLIDS DRYER IMPROVEMENT

3 - SECONDARY CLARIFIER NO. 1 - REPLACE MECHANISMS

4 - SECONDARY CLARIFIER NO. 2 - REPLACE MECHANISMS

5 - STANDBY UV SYSTEM REPLACEMENT

16 - FIBER OPTIC CABLE ADDITION

**CAPACITY PROJECTS**

17 - NEW AERATION BLOWER

18 - NEW AERATION BASIN NO. 3, ACCESS IMPROVEMENTS & GRADING

**SEISMIC RETROFIT PROJECTS**

2 - PROCESS GALLERY

6 - WORKSHOP

14 - OPERATIONS BUILDING

**OTHER FACILITIES**

7 - SECONDARY PROCESS FACILITY

8 - STABILIZATION BASIN

9 - SLUDGE STORAGE BASINS AND BIOFILTERS 12 - SECONDARY CLARIFIER NO. 3

10 - HEADWORKS

11 - DISK FILTERS

12 - COOLING TOWERS

13 - W3 REUSE PUMP STATION

15 - SITE ENTRANCE

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**Figure ES.6**

**PROPOSED WILSONVILLE WWTP IMPROVEMENTS**

CITY OF WILSONVILLE

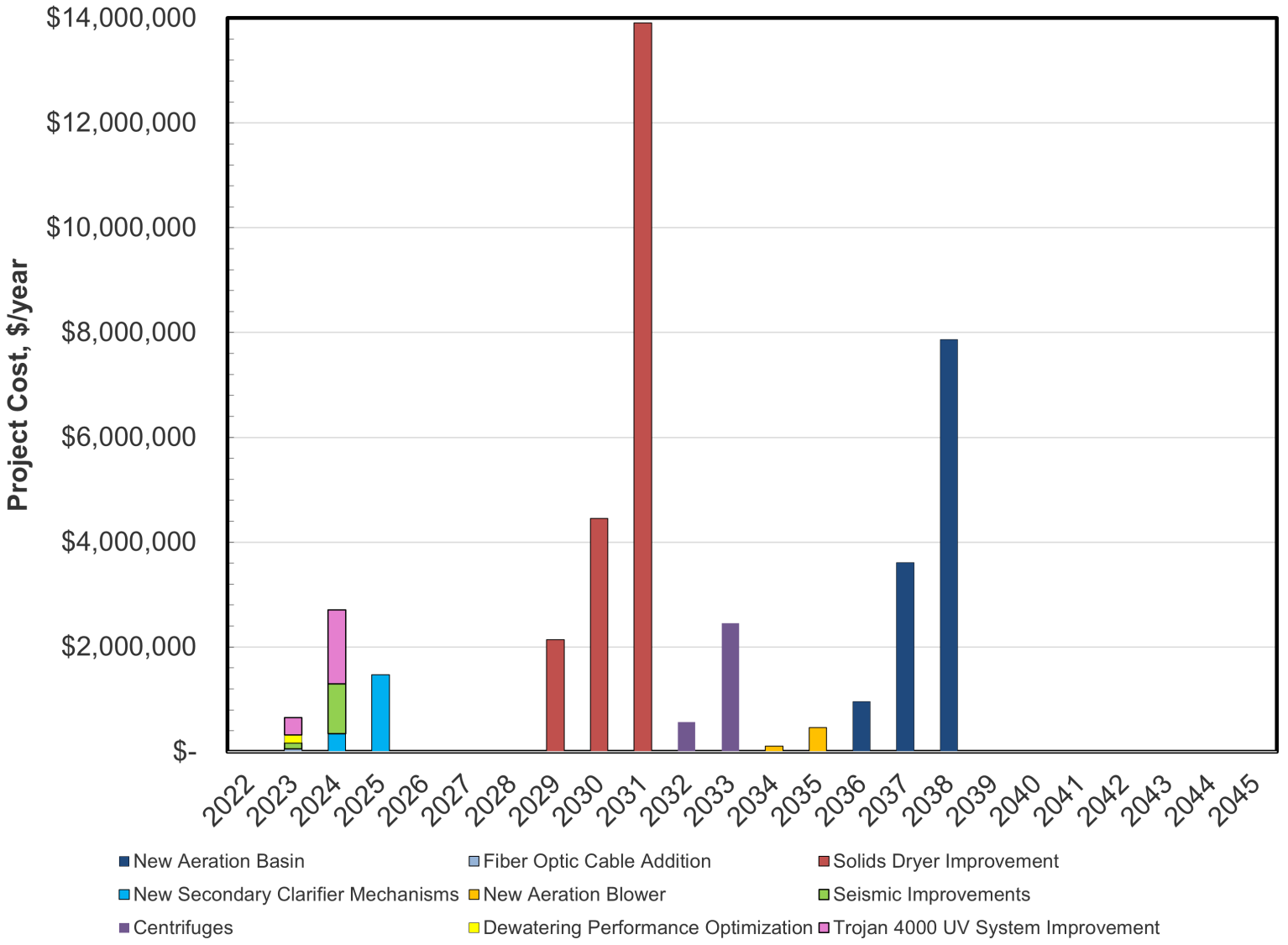



Figure ES.7 Projected 20-Year CIP Expenditures

# City of Wilsonville Wastewater Treatment Plant Master Plan

City Council Work Session

August 1, 2022

WILSONVILLE
OREGON

# Introduction

Presenters:

Mike Nacrelli, PE, Senior Civil Engineer

Dave Price, PE, Carollo Engineers

# Master Plan Drivers

- City Capital Planning
- Accommodating Expected Growth
- Addressing Asset Condition and Replacement needs
- Assessing Potential Regulatory Drivers

# Facility Capacity Assessment

- Flows & Loads - Drive core process needs
- Existing WWTP design (2014 expansion) – ADWF – 4 mgd

| Item | Existing | Projected 2045 |
|---|---|---|
| Average Dry Weather Flow, mgd | 1.94 | 2.68 (~38% > existing) |
| Average Annual Flow, mgd | 2.24 | 3.03 (~35% > existing) |
| Maximum Month Wet Weather Flow, mgd | 3.78 | 4.90 (~30% > existing) |
| Average Annual $BOD^5$, ppd | 7,470 | 10,613 (~40% > existing) |
| Average Annual TSS, ppd | 6,427 | 8,714 (~35% > existing) |

# Asset Condition Assessment

- Process Condition/Age Drivers
  - 2014 project facilities and equipment in service > 30 years by 2045
  - Solids facilities –
    - Performance issues
      - Solids Dryer fire (2019), component failures (2021), uneven performance
      - Solids Dewatering Centrifuges uneven performance (2020/21)
  - Secondary clarifiers – Pre-date 2014 upgrades, near term mechanism replacements, clarifiers no. 1 and 2
  - UV Disinfection – backup unit pre-dates 2014 upgrades, near term replacement

# Potential Regulatory Drivers

- DEQ - Total Maximum Daily Load (TMDL) Lower Willamette River
- Dissolved oxygen & nutrients
  - Nutrients can contribute to low oxygen conditions
  - Anticipate and accommodate future phosphorous, possibly nitrogen limits
- Pay attention to Willamette River temperature concerns

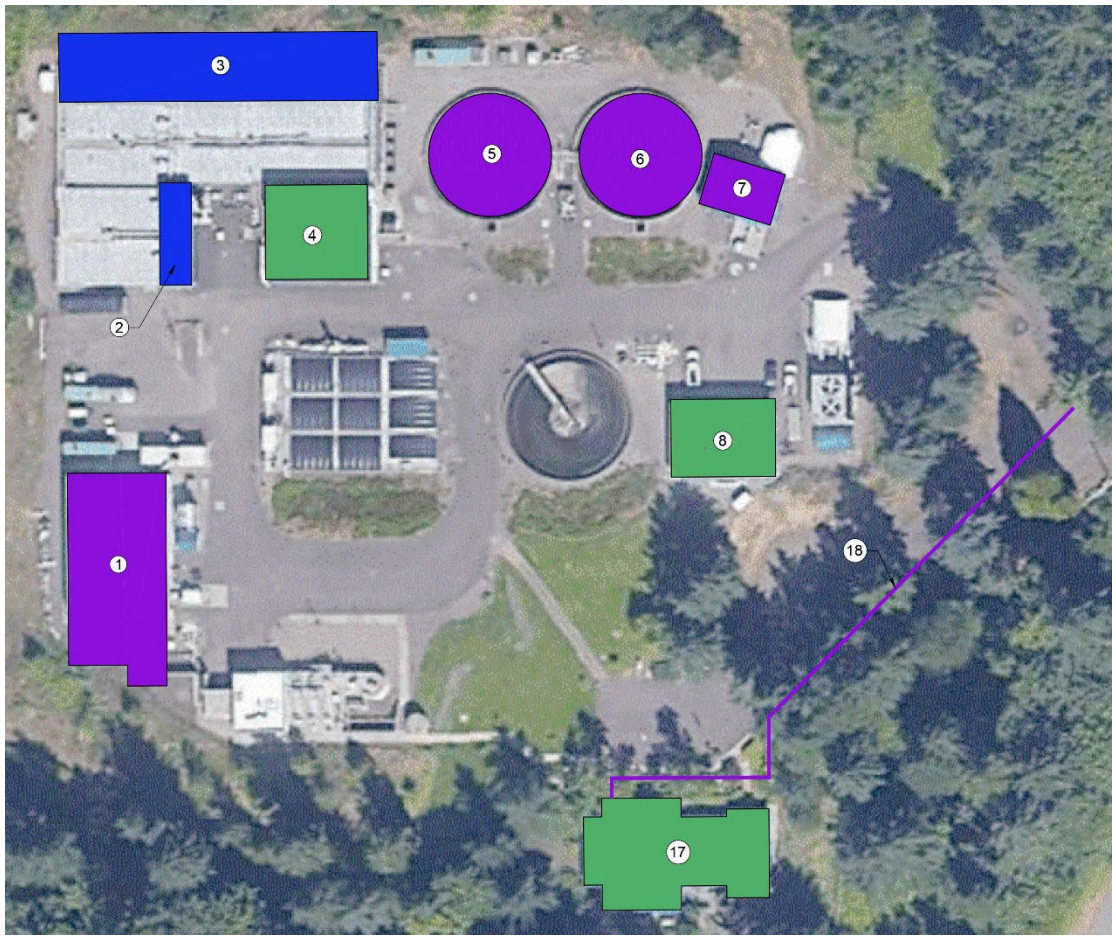
# Unit Process Capacity Summary

| Unit Process | Design Parameter | Redundancy Criteria | Possible Year of Capacity Exceedance | Identified Alternatives |
|---|---|---|---|---|
| **Secondary Treatment** | MW MLSS inventory @ PDF | All units in service | **2038** | • New Aeration Basin<br>• New Secondary Clarifier |
| **Aeration Blowers** | Peak BOD Load | Largest unit out of service | **2035** | • Additional Blower |
| **Disk Filters** | MWDWF | One unit in backwash | **2037** | • Third Disc Filter<br>• Relax DBO limits |
| **Biosolids Dryer** | MW Load | **All units in service** | >2045 | • Emergency Biosolids Management Plan<br>• Redundant Dryer, similar technology<br>• Different Dryer technology |

# Alternatives Evaluation

- Consider alternatives for process units identified as capacity deficient
- Secondary Process
  - Add new Aeration Basin
  - Add new blower
- Tertiary Disk Filters
  - Relax DBO effluent TSS limits
- Solids Dryer – driven by performance, not necessarily capacity
  - Further study, placeholder to expand dewatering and drying building, add new paddle dryer, refurbish existing dryer (backup)

# Recommended Plan

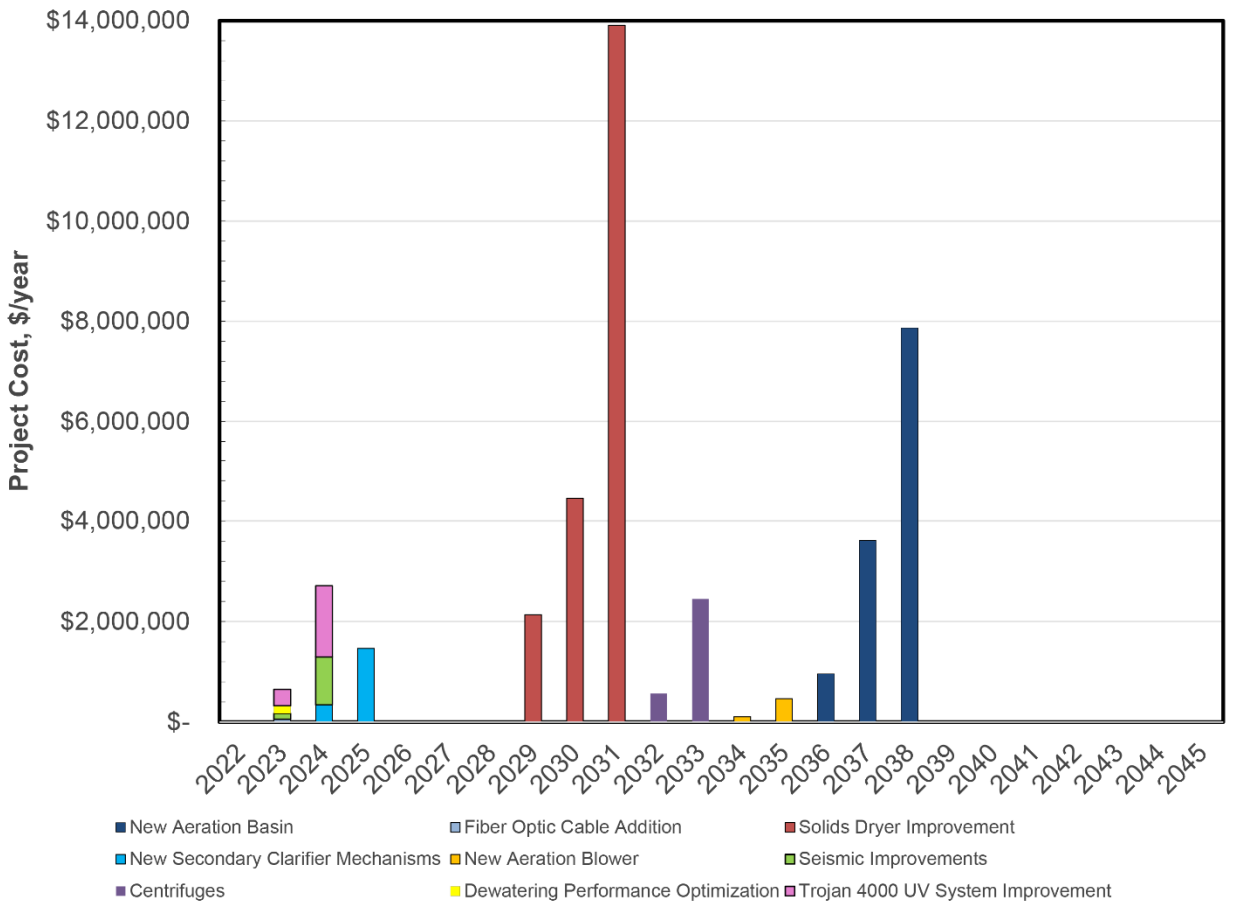



- 3 New Aeration Basin
- 2 Additional Aeration Blower
- 7 Replace backup UV system
- 1 Plan to replace Solids Dryer & Centrifuges
- 5 6 Replace Clarifier 1 & 2 mechanisms
- 4 8 17 Seismic retrofits of buildings
- 18 New fiber optic connection
- Solids process study

# Proposed Project Phasing Schedule



# Draft Cash Flow



# Next Steps

- DEQ review and approval of Plan
- Virtual Public Open House (8/24)
- Planning Commission Work Session 9/14
- Planning Commission Public Hearing 10/12
- City Council Public Hearing 1st Reading 11/7
- City Council 2nd Reading 11/21
- Sewer System Rate Study and SDC Update FY23

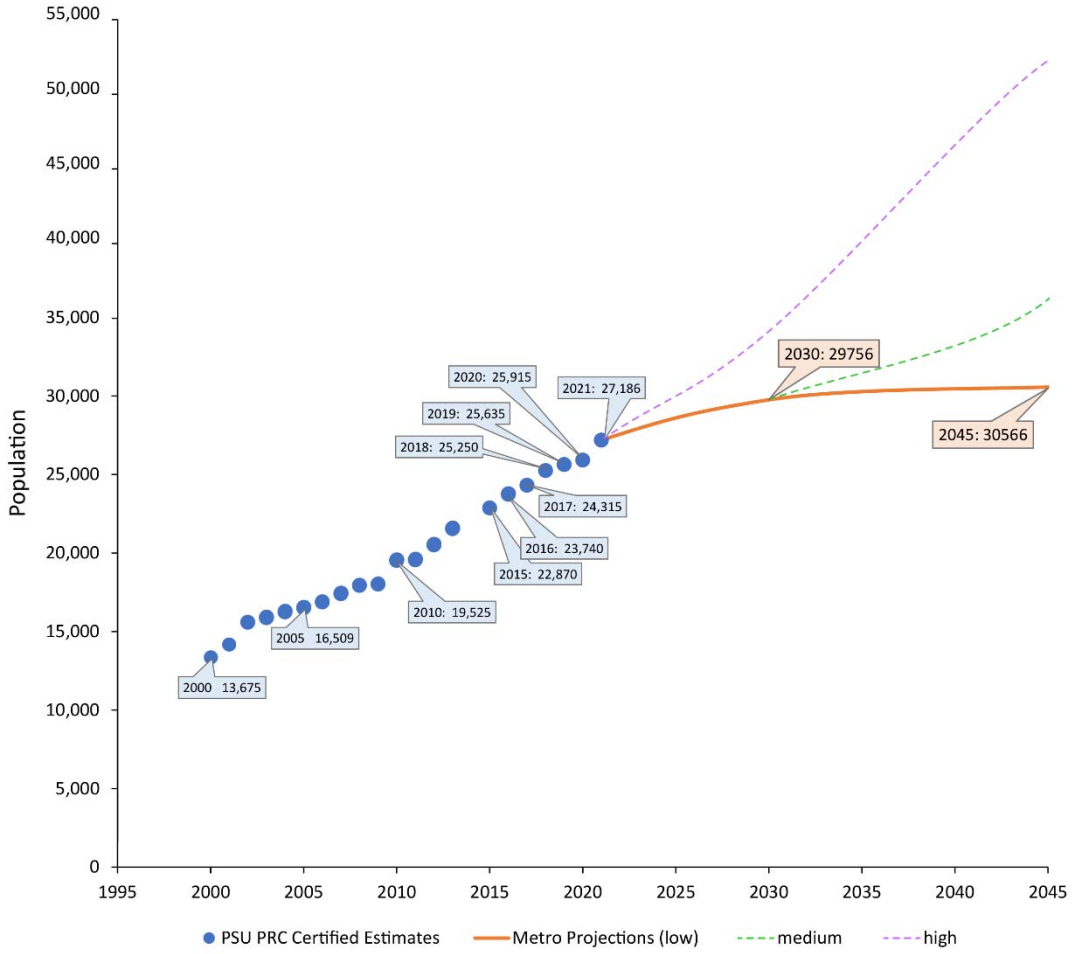
# Questions?

# Reference Slides

# Capital Planning and Expected Growth - 2045

- Current Service Area needs – 20+ years through 2045
  - Population and associated economic development

| 2015 | 2020 | 2030 | 2045 |
|---|---|---|---|
| 22,870 | 25,915 | 29,756 | 30,566 |

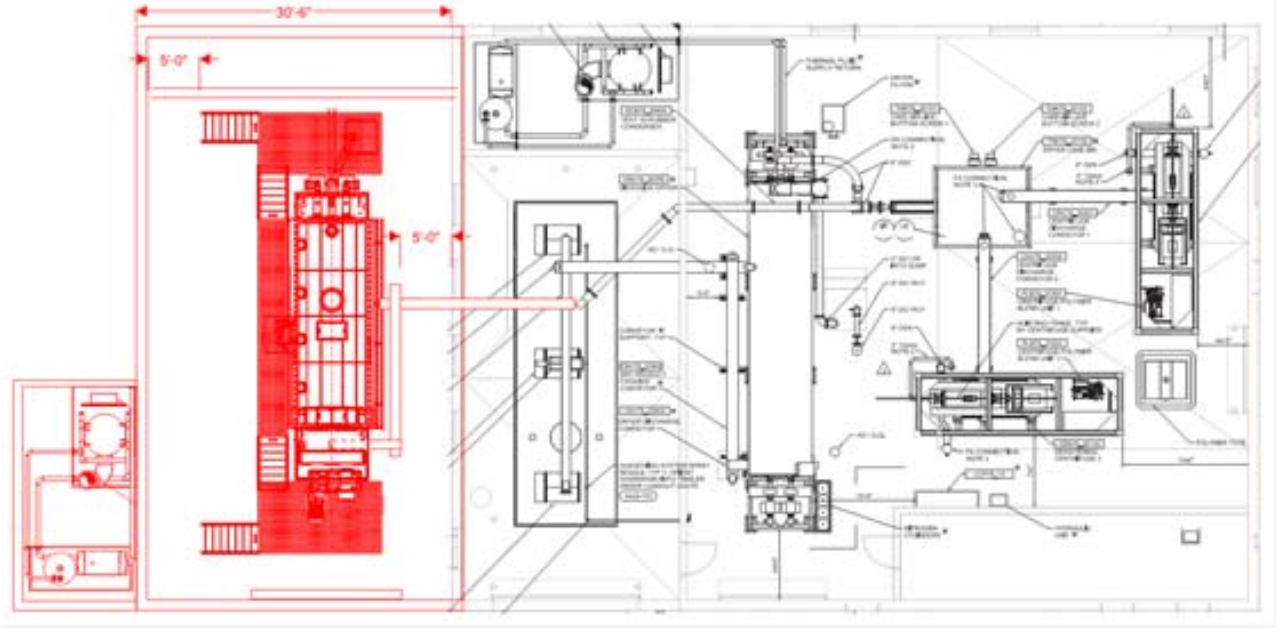


# Condition Assessment

- Prioritize 2019 findings of consultant assessments
  - Secondary clarifiers
  - UV system
- Geotechnical and seismic evaluations
  - Older buildings found to present moderate risk
  - Identified mitigations to address seismic concerns
    - Operations Building
    - Process Gallery
    - Workshop

# Alternatives Evaluation

- Solids Dryer – driven by performance, not capacity
  - Further study, placeholder to expand dewatering and drying building, add new paddle dryer, refurbish existing dryer (backup)
  - Largest potential investment in Master Plan



# City Council Meeting Action Minutes
August 1, 2022

**City Council members present included:**
Mayor Fitzgerald
Council President Akervall
Councilor Lehan
Councilor West
Councilor Linville

**Staff present included:**
Amanda Guile-Hinman, City Attorney
Kimberly Veliz, City Recorder
Jeanna Troha, Assistant City Manager
Delora Kerber, Public Works Director
Martin Montalvo, Public Works Ops. Manager
Mark Ottenad, Public/Government Affairs Director
Mike Nacrelli, Civil Engineer
Cindy Luxhoj, Associate Planner
Zach Weigel, City Engineer
Martin Montalvo, Public Works Ops. Manager
Zoe Mombert, Assistant to the City Manager
Ryan Adams, Assistant City Attorney

| AGENDA ITEM | ACTIONS |
|---|---|
| **WORK SESSION** | **START:** 5:05 p.m. |
| A. Public Works Complex Construction Contract | Council was informed of Resolution No. 2988, which authorizes the City Manager to execute a construction contract with Emerick Construction Company for construction of the Public Works Complex Project. |
| B. Waste Water Treatment Plant Master Plan | Staff shared tenets of a draft Wastewater Treatment Master Plan that accommodates the City's projected 20-year growth, addresses seismic resiliency and identifies assets to be upgraded and/or replaced. |
| C. 2023 League of Oregon Cities Legislative Priorities Ballot | The City's lobbyist sought the Council's direction to finalize the legislative priorities to be listed on the League of Oregon Cities' (LOC) legislative priority ballot. |
| **REGULAR MEETING** | |
| <u>Mayor's Business</u> | |
| A. July 30, 2022 Curtailment Event | Staff explained the water pump failure at the Willamette River Water Treatment Plant (WRWTP) and the subsequent Water Curtailment Notice for the cities of Wilsonville and Sherwood. |
| B. Upcoming Meetings | Upcoming meetings were announced by the Mayor as well as the regional meetings she attended on behalf of the City. |

| | |
|---|---|
| Communications<br>A. Tourism Promotion Committee Marketing | City Council heard highlights about the City's current promotional activities displayed on ExploreWilsonville.com, which are designed to attract visitors for overnight lodging. |
| Consent Agenda<br>A. **Resolution No. 2988**<br>Authorizing the City Manager to execute a construction contract with Emerick Construction Company for construction of the Public Works Complex Project (Capital Improvement Project #8113).<br><br>B. **Resolution No. 2991**<br>A Resolution Of The City Of Wilsonville Authorizing The City Manager To Execute The Second Amendment To Construction Contract With Moore Excavation, Inc. For The 5th Street / Kinsman Road Extension Project.<br><br>C. Minutes of the July 18, 2022 City Council Meeting. | The Consent Agenda was approved 5-0. |
| New Business<br>A. None. | |
| Continuing Business<br>A. None. | |
| Public Hearing<br>A. **Ordinance No. 865**<br>An Ordinance Of The City Of Wilsonville Approving A Zone Map Amendment From The Future Development Agricultural – Holding (FDA-H) Zone To The Planned Development Industrial (PDI) Zone On Approximately 0.55 Acre Located At 28505 SW Boones Ferry Road; The Land Is More Particularly Described As Tax Lot 800, Section 14A, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon. Davidsons Boones Ferry Industrial LLC, Owner/Applicant. | After a public hearing was conducted, Ordinance No. 865 was approved on first reading by a vote of 5-0. |
| City Manager's Business | No report. |
| Legal Business | No report. |

| | |
|---|---|
| **URBAN RENEWAL AGENCY** | |
| URA Consent Agenda<br>A. **URA Resolution No. 327**<br>A Resolution Of The City Of Wilsonville Urban Renewal Agency Authorizing The City Manager To Execute The Second Amendment To Construction Contract With Moore Excavation, Inc. For The 5th Street / Kinsman Road Extension Project.<br><br>B. Minutes of the June 20, 2022 Urban Renewal Agency Meeting. | The URA Consent Agenda was approved 5-0. |
| New Business<br>A. None. | |
| URA Public Hearing<br>A. None. | |
| **EXECUTIVE SESSION** | Pursuant to ORS 192.660(2)(h) Legal Counsel/Litigation |
| **ADJOURN** | 9:01 p.m. |

# PLANNING COMMISSION

# WEDNESDAY, JULY 13, 2022

**WORK SESSION**

2. Wastewater Treatment Plant Master Plan (Nacrelli) (45 minutes)

# PLANNING COMMISSION WORK SESSION
# STAFF REPORT

| | |
|---|---|
| **Meeting Date:** July 13, 2022 | **Subject:** Wastewater Treatment Plant Master Plan<br>**Staff Member:** Mike Nacrelli, Senior Civil Engineer<br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☐ Motion<br>☐ Public Hearing Date:<br>☐ Ordinance 1st Reading Date:<br>☐ Ordinance 2nd Reading Date:<br>☐ Resolution<br>☒ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br>☐ None Forwarded<br>☒ Not Applicable<br>**Comments:** N/A |
| **Staff Recommendation:** Provide requested input regarding recommended capital improvement plan. | |
| **Recommended Language for Motion:** N/A | |
| **Project / Issue Relates To:** | |
| ☒Council Goals/Priorities:<br>Align infrastructure plans with sustainable financing resources. | ☐Adopted Master Plan(s): ☐Not Applicable |

## ISSUE BEFORE PLANNING COMMISSION:

Provide feedback and input on components of the Wastewater Treatment Plant (WWTP) Master Plan.

## EXECUTIVE SUMMARY:

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in 1971 and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the wastewater treatment plant, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7.

### *WWTP Condition Assessment*

Carollo reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators,

instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement.

***Seismic Analysis***

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building
- Process Gallery
- Workshop
- Aeration Basins and Stabilization Basins
- Sludge Storage Basins and Biofilter

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for the Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. Recommended actions from NGI to mitigate the risk of soil piping are presented in the Plan.

***Wastewater Flow and Load Projections***

The Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand (BOD5), ammonia (NH3), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses.

***Capacity Analysis***
Summaries of plant process area capacity assessments and conclusions are presented in the Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations.

***Regulatory Considerations and Strategy***
Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance. The existing permit limits for the Wilsonville WWTP are effective September 1, 2020 through July 30, 2025.

***Alternative Development and Evaluation***
The Plan presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process.

## EXPECTED RESULTS:
The Plan includes a list of recommended capital improvements, along with an anticipated schedule for completion and preliminary cost estimates. These improvements will provide the basis for an analysis of sewer rates and system development charges (SDCs) that will be necessary to adequate funding to implement to required upgrades.

## TIMELINE:
This is the first in a series of presentations to the Planning Commission and City Council. Subsequent planned meetings are as follows:

- City Council Work Session 8/1
- Planning Commission Public Hearing 9/14
- City Council Public Hearing 1st Reading 10/3
- City Council 2nd Reading 10/17

## CURRENT YEAR BUDGET IMPACTS:
The remaining contract balance for finalizing the Plan will carry over into FY 22/23. An additional $92,450 has been budgeted in FY 22/23 for the Sewer System Rate Study and SDC Update, using a combination of Sewer Operating funds and SDCs.

## COMMUNITY INVOLVEMENT PROCESS:
The public hearings listed above will provide opportunity for public input. In addition, the Sewer System Rate Study and SDC Update will include a robust public engagement process.

## POTENTIAL IMPACTS or BENEFIT TO THE COMMUNITY:

A technically and financially sound plan for providing reliable wastewater treatment, capacity to accommodate future development, and compliance with environmental regulations.

## ALTERNATIVES:

The Plan includes alternatives for several of the recommended improvements. The selected alternatives were determined to be the most economically viable. Some of the more capital intensive alternatives can be revisited if necessary due to changing regulatory requirements.

## ATTACHMENTS:

Attachment 1 Draft Wastewater Treatment Plant Executive Summary (dated June 2022)



WILSONVILLE
OREGON

# City of Wilsonville
# Wastewater Treatment Plant Master Plan

## EXECUTIVE SUMMARY

DRAFT | June 2022

carollo




# City of Wilsonville
# Wastewater Treatment Plant Master Plan

## EXECUTIVE SUMMARY

DRAFT | June 2022

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# Abbreviations

| | |
|---|---|
| AA | average annual |
| AAF | average annual flow |
| ABF | Average base flow |
| ADWF | average dry-weather flow |
| AWWF | average wet weather flow |
| BCR | biochemical reactor |
| $BOD_5$ | biochemical oxygen demand |
| CIP | Capital Improvement Plan |
| City | the City of Wilsonville |
| $CBOD_5$ | five-day carbonaceous biochemical oxygen demand |
| CSZ | Cascadia Seismic Zone |
| DBO | Design-Build-Operate |
| DEQ | Department of Environmental Quality |
| DMR | Discharge Monitoring Reports |
| ETL | excess thermal load |
| gpd/sf | gallons per day per square foot |
| HMI | human-machine interface |
| Jacobs | Jacobs Engineering Group Inc. |
| kcal/day | kilocalories per day |
| lbs | pounds |
| MBR | membrane bioreactor |
| mg/L | milligrams per liter |
| mgd | million gallons per day |
| MGI | Northwest Geotech, Inc. |
| ml | milliliter |
| MLSS | mixed liquor suspended solids |
| MM | maximum month |
| MMDWF | maximum month dry weather flow |
| MMWWF | maximum month wet weather flow |
| MW | maximum week |
| MWDWF | maximum month dry weather flow |
| MWWWF | maximum week wet weather flow |
| $NH_3$ | ammonia |
| No. | number |
| NPDES | National Pollutant Discharge Elimination System |
| OSSC | Oregon Structural Specialty Code |
| PD | peak day |

| | |
|---|---|
| PDDWF | peak day dry weather flow |
| PDWWF | peak day wet weather flow |
| PHF | peak hour flow |
| ppd | pounds per day |
| PSU PRC | Portland State University Population Research Center |
| R/C | residential/commercial |
| SPA | State Point Analysis |
| SRT | solids residence time |
| the Plan | Master Plan |
| TMDL | total maximum daily loads |
| TP | total phosphorous |
| TS | total solids |
| TSS | total suspended solids |
| TWAS | thickened waste activated sludge |
| UGB | urban growth boundary |
| UV | ultraviolet |
| WWTP | wastewater treatment plant |

# EXECUTIVE SUMMARY

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather project methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

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This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by the Oregon Department of Environmental Quality (DEQ), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7.

## ES.1 Planning Area Characteristics

Chapter 1 summarizes the City's wastewater service area characteristics relevant to assessing WWTP facility needs. The planning area considered by this Plan is consistent with the City's 2014 Collection System Master Plan and 2018 Comprehensive Plan including the urban growth boundary (UGB), which is currently the limit of City sewer service as shown in Figure ES 1.

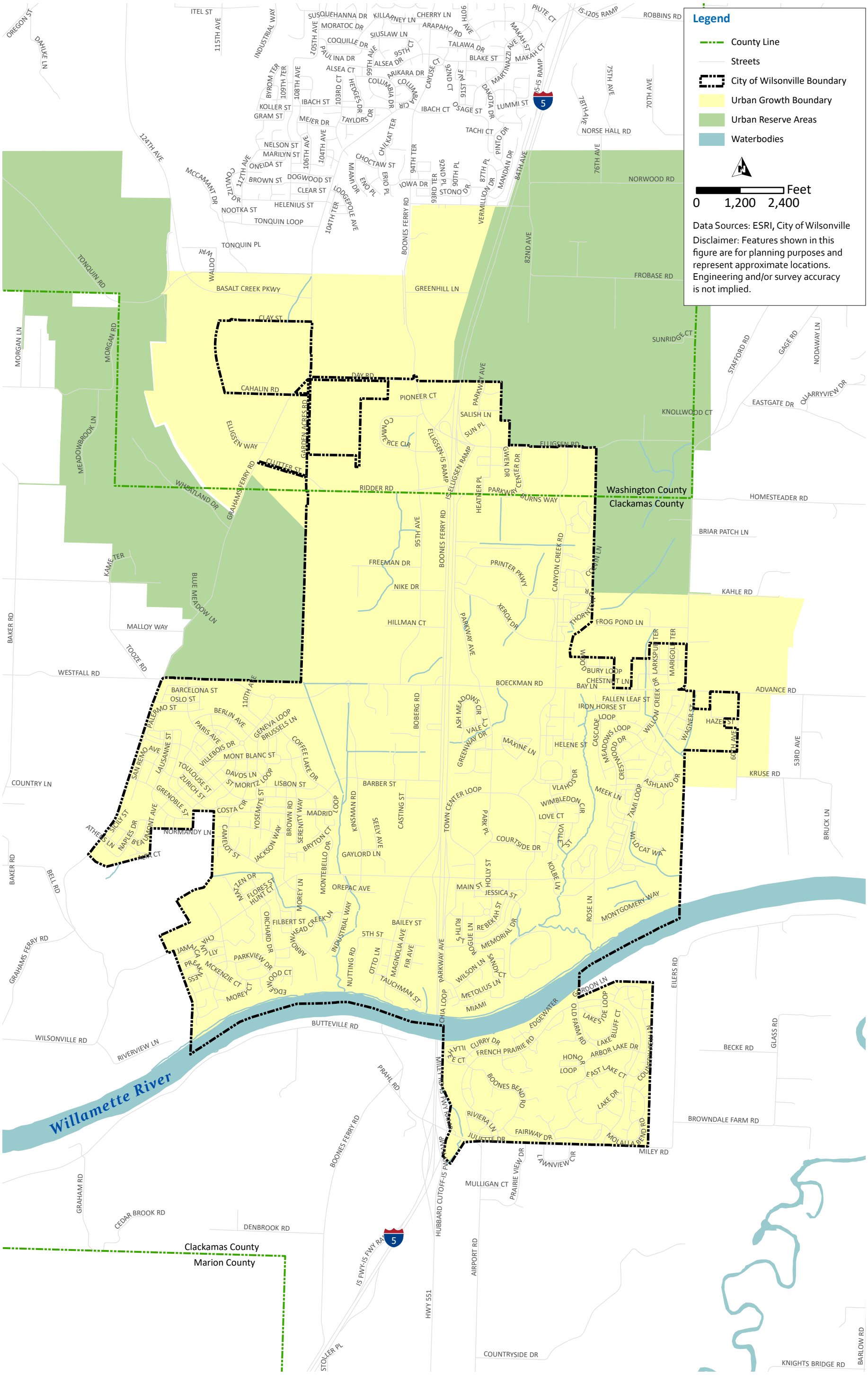



Figure ES.1 Planning Area

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The northern portion of the City of Wilsonville is located within Washington County, and the majority of the City lies in the southwestern part of Clackamas County.

The City sits within the jurisdictional boundaries of Metro, the regional government for the Portland metropolitan area. By state law, Metro is responsible for establishing the Portland metropolitan area's UGB, which includes Wilsonville. Land uses and densities inside the UGB require urban services such as police and fire protection, roads, schools, and water and sewer systems. A figure of the City's existing land use is presented in Chapter 1. Also presented in Chapter 1 are the City's physical characteristics, water resources, and population and employment information, which are all significant factors in planning for wastewater conveyance and treatment facilities.

The Portland State University Population Research Center (PSU PRC) publishes annual estimates of populations for the previous year for cities in Oregon while Metro develops population projections for the future within the Portland metropolitan area, including Wilsonville. The PSU PRC estimated the City's population as 25,625 in 2019. Metro estimates the City's population to reach 30,566 people by 2045.

For establishing a per capita basis for flow and load projections for the Plan, certified PSU PRC historical population estimates were used for 2015 through 2019. Metro's future population forecasts were used for 2020 through 2045. Figure ES.2 shows the historical population and future growth predicted for the City.

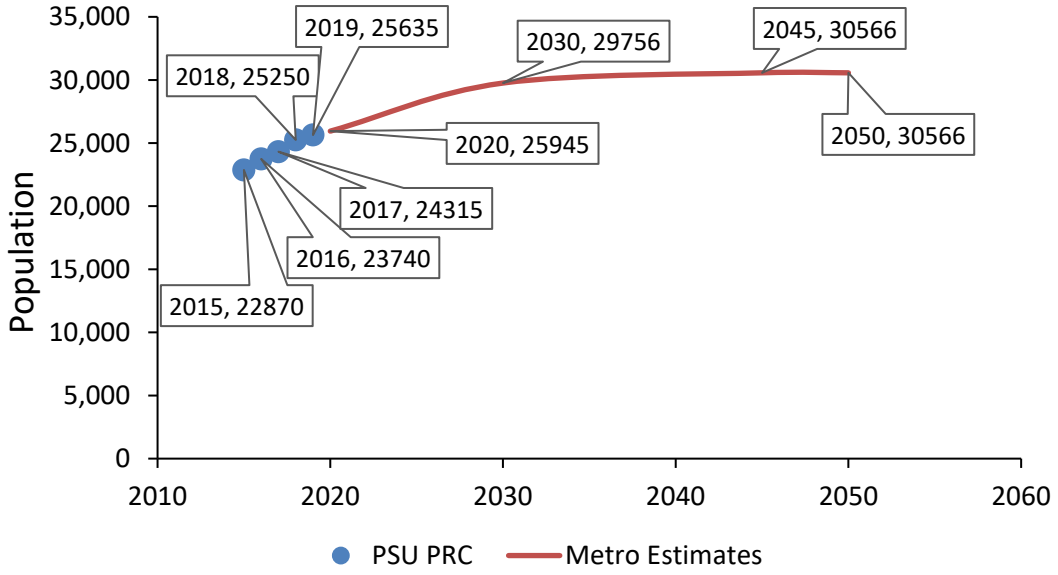



Figure ES.2 Historical Population and Expected Growth for the City of Wilsonville

## ES.2 WWTP Condition Assessment

Carollo reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement. Chapter 2 presents a summary of critical assets that require short term rehabilitation or replacement, as well as a list of assets that are less critical to operations, or have minor condition issues, but may be included in a short-term improvements project or a task order for Jacobs operations personnel. Table ES.1 displays the condition driven rehabilitation or replacement projects from Chapter 2 that were included in the recommended Capital Improvement Plan (CIP) in Chapter 7.

Table ES.1 CIP Condition Driven Replacement Projects

| Asset | Description |
|---|---|
| Trojan UV 4000 System | While only used as a backup to the Ozonia UV system, the Trojan system's HMI has errors that prevent it from showing the status of the lamps in module 3. Since it is used infrequently, the system's condition is largely unknown. After review of the 2019 condition assessment reports and discussion with the City and Jacobs staff, it was concluded that the UV 4000 unit must be replaced. |
| Secondary Clarifiers No. 1 and No. 2 | Ovivo completed a field review of the plant's secondary clarifiers No. 1 and No. 2 in April 2022. Although both units were operational, repairs were identified to improve the operation of the clarifiers. The recommended repairs include drive controls for both units, new skimmers for both units, squeegees for both tanks rake arms, EDI chains, one motor and reducer assembly, one skimmer arm assembly, and new secondary clarifier mechanisms.(1) |

Notes:
(1) The detailed Ovivo Field Service Report is included in Appendix X.
Abbreviations: HMI - human-machine interface; No. - number; UV - ultraviolet.

## ES.3 Seismic Analysis

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic

evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building.
- Process Gallery.
- Workshop.
- Aeration Basins and Stabilization Basins.
- Sludge Storage Basins and Biofilter.

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for this Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. Recommended actions from NGI to mitigate the risk of soil piping are presented in Chapter 2.

## ES.4 Wastewater Flow and Load Projections

Chapter 3 of the Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand ($BOD_5$), ammonia ($NH_3$), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses.

Analysis of flow projections were completed through two different methods: (1) analysis of historical plant records and (2) DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon, which is referred to as the DEQ methodology in this Plan. Since there is no DEQ methodology for load analysis, all projections were developed based on historical plant records. Tables ES.2 and ES.3 below detail the existing and year 2045 flows that serve as the basis for the flow projections.

Table ES.2 Existing (2020) Flow Summary

| Item | Selected Flow (mgd) | Industrial Flow (mgd) | R/C Flow (mgd) | R/C Peaking Factor |
|---|---|---|---|---|
| ABF | 1.88 | 0.17 | 1.71 | 1.00 |
| AAF | 2.24 | 0.17 | 2.07 | 1.21 |
| ADWF | 1.94 | 0.17 | 1.77 | 1.03 |
| AWWF | 2.54 | 0.17 | 2.37 | 1.38 |
| MMDWF | 2.52 | 0.19 | 2.33 | 1.36 |
| MMWWF | 3.78 | 0.19 | 3.59 | 2.09 |
| MWDWF | 2.94 | 0.19 | 2.75 | 1.61 |
| MWWWF | 4.54 | 0.19 | 4.35 | 2.54 |
| PDDWF | 3.63 | 0.19 | 3.44 | 2.01 |
| PDWWF | 5.59 | 0.19 | 5.41 | 3.16 |
| PHF | 8.80 | 0.19 | 8.61 | 5.02 |

Notes:
Abbreviations: AAF - average annual flow; ABF - average base flow; ADWF - average dry-weather flow; AWWF - average wet weather flow; MMDWF - maximum month dry weather flow; MMDWF - maximum month dry weather flow MMWWF - maximum month wet weather flow; MWWWF - maximum week wet weather flow; PDDWF - peak day dry weather flow; PDWWF - peak day wet weather flow; PHF - peak hour flow; R/C - residential/commercial.

Table ES.3 2045 Flow Projections

| Item | Existing R/C Flow (mgd) | R/C Peaking Factor | 2045 R/C Flow | 2045 Industrial Flow (mgd) | Projected 2045 WWTP Flow (mgd) |
|---|---|---|---|---|---|
| ABF | 1.71 | 1.00 | 2.02 | 0.6 | 2.62 |
| AAF | 2.07 | 1.21 | 2.43 | 0.6 | 3.03 |
| ADWF | 1.77 | 1.03 | 2.08 | 0.6 | 2.68 |
| AWWF | 2.37 | 1.38 | 2.79 | 0.6 | 3.39 |
| MMDWF | 2.33 | 1.36 | 2.75 | 0.7 | 3.42 |
| MMWWF | 3.59 | 2.09 | 4.23 | 0.7 | 4.90 |
| MWDWF | 2.75 | 1.61 | 3.24 | 0.7 | 3.92 |
| MWWWF | 4.35 | 2.54 | 5.12 | 0.7 | 5.80 |
| PDDWF | 3.44 | 2.01 | 4.05 | 0.7 | 4.72 |
| PDWWF | 5.41 | 3.16 | 6.38 | 0.7 | 7.05 |
| PHF | 8.61 | 5.02 | 10.15 | 0.7 | 10.82 |

Load projections were calculated for influent TSS, $BOD_5$, $NH_3$, and TP as detailed below in Table ES.4.

Table ES.4 Load Projections

| Load Parameters | 2045 R/C (ppd) | 2045 Industrial (ppd) | 2045 WWTP (ppd) |
|---|---|---|---|
| **$BOD_5$** | | | |
| AA $BOD_5$ | 8,000 | 2,613 | 10,613 |
| MM $BOD_5$ | 11,437 | 2,978 | 14,415 |
| MW $BOD_5$ | 14,307 | 2,978 | 17,285 |
| PD $BOD_5$ | 21,656 | 2,978 | 24,634 |
| **TSS** | | | |
| AA TSS | 7,097 | 1,617 | 8,714 |
| MM TSS | 9,535 | 1,844 | 11,379 |
| MW TSS | 12,478 | 1,844 | 14,322 |
| PD TSS | 16,295 | 1,844 | 18,139 |
| **$NH_3$** | | | |
| AA $NH_3$ | 695 | 171 | 866 |
| MM $NH_3$ | 800 | 171 | 971 |
| MW $NH_3$ | 1,035 | 171 | 1,205 |
| PD $NH_3$ | 1,443 | 171 | 1,614 |
| **Total Phosphorus (TP)** | | | |
| AA TP | 222 | 73 | 295 |
| MM TP | 318 | 83 | 400 |
| MW TP | 397 | 83 | 480 |
| PD TP | 601 | 83 | 684 |

Notes:
Abbreviations: AA - average annual; MM - maximum month; MW - maximum week; PD - peak day; ppd - pounds per day.

## ES.5 Capacity Analysis

Summaries of plant process area capacity assessments and conclusions are presented in this Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations. A site plan of the City's existing WWTP is presented in Figure ES.3.

Chapter 4 identifies existing capacity ratings and deficiencies for the liquid and solids stream treatment processes at the City's WWTP. Analyses are based on operational practices in place at the time and existing effluent limits established by the WWTP's National Pollutant Discharge Elimination System (NPDES) permit. Biological process modeling was performed using BioWin version 6.2 to predict plant performance under current and future flow and loading conditions to assess when unit process capacities may be exceeded within the planning period (present through 2045).

A summary of the capacity assessment completed and presented in Chapter 4 is detailed below in Table ES.5.

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LEGEND:

1 - DEWATERING & DRYING BUILDING
4 - PROCESS GALLERY
5 - SECONDARY CLARIFIER NO. 1
6 - SECONDARY CLARIFIER NO. 2
7 - UV DISINFECTION SYSTEM
8 - WORKSHOP
9 - SECONDARY PROCESS FACILITY
10 - STABILIZATION BASIN
11 - SLUDGE STORAGE BASINS AND BIOFILTERS
12 - SECONDARY CLARIFIER NO. 3
13 - HEADWORKS
14 - DISK FILTERS
15 - COOLING TOWERS
16 - W3 REUSE PUMP STATION
17 - OPERATIONS BUILDING
19 - SITE ENTRANCE

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**Figure ES.3**
**EXISTING WILSONVILLE WWTP**
CITY OF WILSONVILLE

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Table ES.5 Unit Process Capacity Assessment

| Unit Process | Capacity Assessment |
|---|---|
| **Preliminary Treatment** | |
| Screening | There is sufficient hydraulic capacity for both mechanical screens to accommodate the projected 2045 PHF. However, if one screen is out of service, the manual bar rack must be used to make up the loss in screening capacity. |
| Grit Removal | Capacity is adequate for providing full treatment of the projected 2045 PHF. |
| **Secondary Treatment** | |
| Secondary Treatment | Based on maximum week MLSS predicted from BioWin modeling at peak day flow with all clarifiers in service (and assuming a 5-day SRT), a SPA predicts that there is only sufficient capacity through 2038. SPA also indicates that there is sufficient capacity using the predicted average annual MLSS concentrations and the peak day dry weather flows with a clarifier out of service for the duration of the planning period. |
| Secondary Clarifiers | The secondary clarifiers are expected to stay under the maximum hydraulic loading criteria of 920 gpd/sf on peak day flow events with all units in service, as well as on max month dry weather flows with one unit out of service, for the entirety of the planning period. |
| Aeration Blowers | The air demands of the secondary treatment process are projected to exceed the firm capacity of the aeration blowers under peak conditions by 2035. |
| **Tertiary Treatment and Disinfection** | |
| Disk Filters | The existing disk filter capacity is expected to be exceeded by 2037 with one unit out of service or in backwash mode based on effluent limitations included in the City's DBO Contract with Jacobs. At this time the City expects to relax these contract limitations rather than invest in additional capacity. There is sufficient time for the City to reconsider this approach prior to 2037 and evaluate options for adding capacity to the filtration process. |
| Secondary Effluent Cooling Towers | It is not expected that the total hydraulic capacity of the cooling towers will be exceeded by 2045. |
| UV Disinfection | The existing UV channels are adequately sized to fully disinfect the 2045 PHF with all units in service, as well as the PDDWF with one channel out of service. The City currently has an older UV unit in place as an emergency backup to the primary system. That backup unit is aging and the City plans replacement during the planning period. |
| Outfall | Even with the Willamette River at its 100-year flood elevation, it is expected that the outfall pipeline can accommodate approximately 19 mgd before the UV channel effluent weirs are at risk of submergence upstream. Since this flow is well above the hydraulic capacity of the rest of the plant, no expansion will be needed until after 2045.(1) |
| **Solids Handling** | |
| Gravity Belt Thickener | The capacity analysis results show that the assumed operating times of 24 hours per day, 5 days per week are adequate for thickening the current and projected maximum week WAS loads with one unit out of service. |
| TWAS Storage | The TWAS storage volume is sufficient to accommodate the expected maximum week solids loads for three days (assuming TWAS is thickened to 4 percent). However, if one of the two storage tanks is taken out of service, there is insufficient storage volume for three days of storage under average annual solids loading conditions. |
| Dewatering Centrifuges | The rated capacity of the current centrifuges is sufficient to process the maximum week load with one unit out of service though 2045 assuming operating times of 24 hours per day for 5 days per week, per the criteria detailed in Chapter 4.(2) |
| Biosolids Dryer and Solids Disposal | The capacity of the biosolids dryer is adequate for handling the current and projected max week solids loads (in year 2045) on the basis of its design evaporation rate, assuming dewatered cake is dried from 20 percent TS to 92 percent TS and the dryer is operated for 24 hour per day for 5 days per week.(3) |

Notes:
(1) The existing outfall was recently modified and equipped with five parallel diffuser pipes equipped with duckbill check valves to improve the mixing zone characteristics in the Willamette River.
(2) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2045. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.
(3) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.
Abbreviations: DBO - Design-Build-Operate; gpd/sf - gallons per day per square foot; MLSS - mixed liquor suspended solids, SPA - State Point Analysis; SRT - solids residence time; TS - total solids; TWAS - thickened waste activated sludge.

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Table ES.6 further summarizes the capacity assessment by listing each unit process, associated design parameters and year of possible capacity exceedance.

Table ES.6 Unit Process Capacity Year Summary

| Unit Process | Design Parameter | Redundancy Criteria[3] | Year of Capacity Exceedance |
|---|---|---|---|
| Influent Screening | PHF | One mechanical screen out of service | >2045 |
| Grit Chamber | PHF | All units in service | >2045 |
| **Secondary Treatment** | **MW MLSS inventory at PDF** | **All units in service** | **2038** |
| **Aeration Blowers** | **Peak BOD Load** | **Largest unit out of service** | **2035** |
| Secondary Effluent Cooling Towers | June 1 - Sept 30 PDF | All units in service | >2045 |
| **Disk Filters** | **MWDWF** | **One unit in backwash** | **2037[1]** |
| UV Disinfection Channels | PHF | All units in service | >2045 |
| Outfall | PHF | - | >2045 |
| Gravity Belt Thickening | MW Load | One unit out of service | >2045 |
| TWAS Storage | MW Load | All units in service | >2045 |
| Dewatering Centrifuges | MW Load | One unit out of service | >2045[2] |
| Biosolids Dryer | MW Load | All units in service | >2045[2] |

Notes:
Unit processes in white are projected to run out of capacity before year 2045.
(1) Existing Disk Filters are predicted to exceed reliable capacity (one unit out of service) in 2037 based on vendor provided design criteria. This conclusion assumes limitations for effluent total suspended solids contained in the WWTP DBO contract, which are far more stringent than the City's NPDES permit.
(2) As noted previously, the existing centrifuges and biosolids dryer appear to have sufficient capacity through the planning year 2045, however condition and age are likely to require replacement during the planning period. It is recommended the City reassess available replacement technologies prior to replacement and consider loading appropriate to the planning horizon of any new units selected.
(3) Reference Appendix D - Reliability requirements, Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities, OR DEQ, 2018, Revised July 2019

## ES.6 Regulatory Considerations and Strategy

Chapter 5 details potential regulatory issues the City will need to take into consideration in coming years. Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance. The existing permit limits for the Wilsonville WWTP are effective September 1, 2020 through July 30, 2025, and summarized below in Table ES.7

Table ES.7 Current Effluent Permit Limits

| Parameter | Average Effluent Concentrations | | Monthly Average, (ppd) | Weekly Average, (ppd) | Daily Maximum, (lbs) |
|---|---|---|---|---|---|
| | Monthly | Weekly | | | |
| **May 1 - October 31** | | | | | |
| $CBOD_5$ | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| TSS | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| **November 1 - April 30** | | | | | |
| $BOD_5$ | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| TSS | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| **Other Parameters Limitations** | | | | | |
| E. coli Bacteria | • Shall not exceed 126 organisms per 100 ml monthly geometric mean.<br>• No single sample shall exceed 406 organisms per 100 ml. | | | | |
| pH | • Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0 | | | | |
| $BOD_5$ Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| TSS Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| ETL June 1 through September 30 | • Option A: 39 million kcal/day 7-day rolling average<br>• Option B: Calculate the daily ETL limit | | | | |

Notes:
Abbreviations: $CBOD_5$ - five-day carbonaceous biochemical oxygen demand; ETL - excess thermal load; kcal/day - kilocalories per day; lbs - pounds, mg/L - milligrams per liter; ml - milliliter.

Future treatment upgrades may be required when DEQ establishes total maximum daily loads (TMDL) for the lower Willamette River. Dissolved oxygen and nutrient limits, such as phosphorus limitations, are possible. The dissolved oxygen in the lower part of the river does not always meet water quality standards, and indications of excessive nutrients, such as chlorophyll-a, aquatic weeds, and harmful algal blooms, are present in the lower Willamette River. DEQ has begun its triennial review of Oregon's water quality criteria. The review could result in more stringent or new discharge requirements, but this process will take several years. For planning purposes, providing plant footprint to accommodate future treatment to remover phosphorus and address dry weather seasonal limits on dissolved oxygen should be anticipated. In addition, the City should continue to engage with DEQ regarding any proposed receiving water temperature regulatory actions.

## ES.7 Alternative Development and Evaluation

Chapter 6 presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process. Process modifications associated with each alternative were modeled in BioWin using a calibrated model to evaluate the overall impact on plant operations.

As identified in Chapter 4, the secondary treatment process is expected to require additional capacity during the planning horizon (2045). Chapter 6 details two alternatives to address these capacity limitations. The two alternatives considered to increase secondary capacity are:

1. Expansion of the existing conventional activated sludge process; and
2. Intensification of the existing treatment process using membrane bioreactor (MBR) technology.

Due to the higher capital and operating costs of intensification, construction of a new conventional aeration basin is recommended to increase secondary capacity. As flows and loads increase, or regulatory requirements become more stringent, it may be necessary to intensify treatment. It is recommended the City revisit this evaluation as the need for 1) additional capacity to accommodate growth nears or 2) more stringent effluent limitations are considered. This offers the opportunity to take advantage of potential advances in technology as well as confirming the predicted time frame of capacity exceedance. Table ES.8 below illustrates the differences in cost between the two alternatives. A new aeration basin project is included in the Capital Improvement Plan in Chapter 7.

Table ES.8 Secondary Alternatives Opinion of Probable Cost Comparison

| Description | New Aeration Basin | MBR |
|---|---|---|
| Site Work | $1,273,000 | $62,000 |
| Fine Screens | -- | $1,268,000 |
| Aeration Basin | $1,739,000 | |
| MBR Tank | -- | $3,564,000 |
| Electrical, Instrumentation, and Control | $522,000 | $1,469,000 |
| **Total Direct Cost** | **$3,534,000** | **$6,363,000** |
| **Total Estimated Construction Cost(1)** | **$5,812,000** | **$10,465,000** |
| **Total Estimated Project Cost(2)** | **$7,265,000** | **$13,081,000** |

Notes:
(1) Assumes 30% Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 12683 (February 2022).

The existing aeration blower system firm capacity is expected to be deficient by 2035. An additional aeration blower (same size and design air flow rate as the existing high-speed turbo blowers) would ensure there is sufficient blower capacity through the end of the planning period to meet current permit requirements. There is adequate space to add a fourth turbo blower to the same discharge header pipe as the existing turbo blowers. Additionally, intensification of the secondary treatment process would further increase the aeration demands because operating at a higher MLSS reduces oxygen transfer efficiency in the aeration basins. If intensification is reconsidered and selected for the planning period, or if nutrient limits are imposed within the planning period that requires intensification or operation at a higher MLSS, the blower air demands should be revisited.

Additional tertiary filtration capacity is predicted to be needed before 2045 to provide full treatment of the MWDWF with one disc filter out of service or in backwash mode. After discussions with the City, two alternatives were identified to increase capacity:

1. Increase filtration capacity, and
2. Modify the requirement in the WWTP DBO contract to relax effluent limitations which are currently more stringent than those contained in the City's NPDES permit.

The City's WWTP NPDES permit currently requires effluent to contain less than 10 mg/L TSS during the dry season (see Table ES.8). However, the DBO firm's contract with the City requires an effluent TSS of less than five mg/L, or half of the WWTP's permitted effluent quality. At this time, the City has decided to study the performance of the existing tertiary filters over time and expects to relax effluent TSS requirements in the DBO contract unless actual water quality impacts (exceedances of permit limitations) are realized. The City will also consider the option of new technologies for filtration, noting that if the City selected an intensification technology utilizing membranes, this may potentially eliminate tertiary filtration capacity concerns.

While the capacity assessment findings presented in Chapter 4 determined existing solids dewatering centrifuges have sufficient capacity, the remaining equipment service life may require replacement within the planning horizon. The centrifuges, installed in 2014, were recently refurbished, but by 2045, will have been in service for over 30 years. The City should plan for their replacement within the planning horizon and consider whether a capacity increase is needed at the time of replacement based on projections of solids production and processing needs. Additionally, the secondary process was modified in 2020 and has experienced extended periods where mixed liquor concentrations have been elevated above typical ranges for conventional activated sludge or extended aeration processes. Due to the complications with secondary process operation and performance issues with the centrifuges, it is recommended the City study the secondary treatment and dewatering processes to confirm that the assumptions and conclusions regarding centrifuge capacity in Chapter 4 may be relied upon. A dewatering performance optimization study is recommended so the City can collect and analyze secondary treatment and solids processing performance data. For budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is provided in Chapter 7. Timing of that equipment replacement will depend on performance of the existing units, future loading assumptions, and observed condition.

The existing solids dryer has experienced operational issues in recent years, including a fire that caused extensive damage to the equipment in April 2019 and a leaking rotary joint and damaged seal in 2021. As of February 25, 2022, the dryer has been repaired and is operating. Because of the City's commitment to solids drying as the preferred process to achieve Class A biosolids, the alternatives evaluation presented in this Plan for future dryer replacement was conducted with a focus on thermal drying options only.

Chapter 6 details an analysis of the following alternatives to improve the drying system:

1. Alternative 1 - Continue operating the existing biochemical reactor (BCR) paddle dryer and defer replacement.
2. Alternative 2 - Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.
3. Alternative 3 - Construct a new dryer building with a different solids dryer technology.

While it is anticipated the existing dryer has useful life through at least 2026 (current DBO contract expiration), by 2031 the dryer will have been in operation for over 15 years. It is recommended the planning and design of upgrades to provide reliable dryer capacity begin in 2029, or sooner if further operational concerns arise. The City has indicated a preference for a variation of Alternative 2 which involves expanding the existing Dewatering and Drying Building to accommodate a second solids paddle dryer. This alternative provides backup capacity to allow the City to continue delivering Class A solids during periods of downtime if a mechanical failure occurs or to accommodate regular maintenance of one dryer train. As mentioned previously, this Plan recommends the City complete a study of the secondary sludge quality, performance of that process, chemical addition types and locations, and solids handling process performance overall prior to making a final selection of the preferred dryer alternative from the alternatives detailed in Chapter 6. For purposes of capital planning, this Plan assumes the City will implement Alternative 2b (modification of Dewatering and Drying Building to accommodate a second paddle dryer) with a study and confirmation of this selection beginning in 2029.

Lastly, the City wants to establish a direct connection between the City's fiber optics network and the WWTP. This addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the site entrance, where the conduits will be tied into the City's fiber optics network. Chapter 6 details one potential routing from the Operations Building to the site entrance that would minimize impact to existing yard utilities. The fiber optic cable addition is included in Chapter 7 and the City's 5-year CIP.

Table ES.9 below summarizes the alternatives evaluated in Chapter 6 including recommendations for future WWTP improvements.

Table ES.9 Summary of Alternatives

| Unit Process | Alternatives Considered | Selected Alternative |
|---|---|---|
| Secondary Treatment | • Expansion of the existing conventional activated sludge process.<br>• Intensification of the existing treatment process. | • Expansion of the existing conventional activated sludge process through the addition of another aeration basin. |
| Tertiary Treatment | • Increase filtration capacity.<br>• Eliminate the requirement on the DBO firm to meet effluent limits more stringent than the NPDES permit. | • Eliminate the requirement on the DBO firm to meet effluent limits more stringent than the NPDES permit. |
| Solids Dryer | • Continue operating the existing BCR paddle dryer and defer replacements.<br>• Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.<br>• Construct a new dryer building with a different solids dryer technology. | • Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer by expanding the Dewatering and Drying Building to accommodate a second solids paddle dryer. |

## ES.8 Recommended Alternative

Figure ES.4 presents a WWTP site plan identifying locations of recommended improvements resulting from condition and capacity assessments, including evaluation of alternatives, as described.

Summaries of opinions of probable costs and anticipated phasing for the improvements recommended for inclusion in the City's WWTP CIP are provided in Table ES.10.

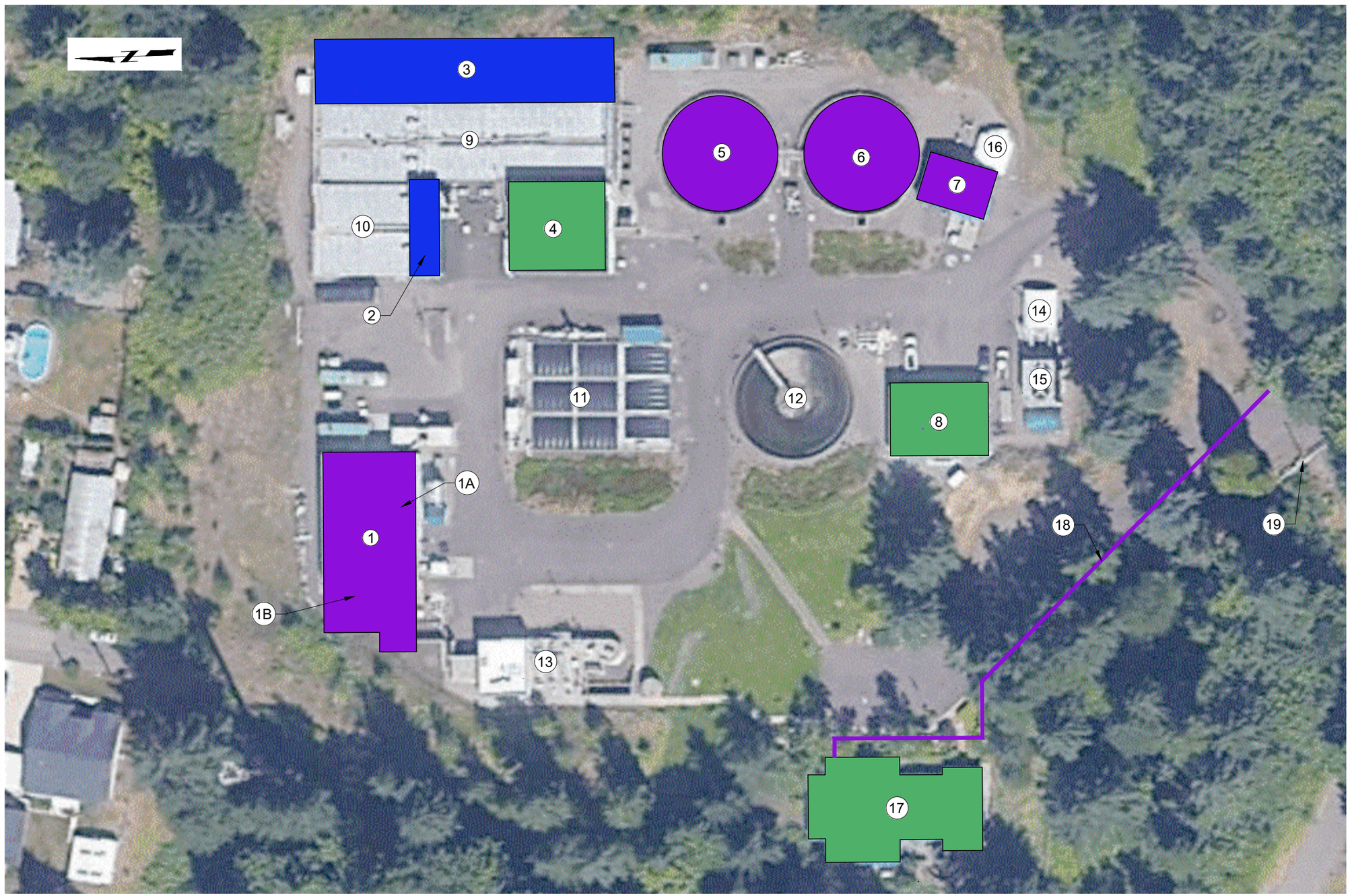
The expected cash flow for the planning period was determined for the recommended improvements summarized in Table ES.10. The cash flow through 2045 includes an escalation rate of three percent, and the peak expenditure is approximately $13,906,000 in fiscal year 2031. The projected CIP expenditures are presented in Figure ES.5.

Table ES.10 WWTP Recommended Alternative Opinion of Probable Cost and Phasing

| Plant Area | Project[1] | Opinion of Probable Cost | Approximate Year Online |
|---|---|---|---|
| Solids Handling | Dewatering Performance Optimization | $150,000 | 2023 |
| Communications/IT | Fiber Optic Cable Addition | $55,000 | 2023 |
| UV System | Trojan 4000 UV System Improvement | $1,650,000 | 2024 |
| Support Buildings | Seismic Improvements | $1,015,000 | 2024 |
| Secondary Treatment | New Secondary Clarifier Mechanisms | $1,665,000 | 2026 |
| Solids Handling | Solids Dryer Improvement | $16,100,000[6] | 2031 |
| Solids Handling | Existing Centrifuge Replacement | $2,200,000[3,5] | 2033[4] |
| Secondary Treatment | New Aeration Blower | $394,000 | 2035 |
| Secondary Treatment | New Conventional Aeration Basin | $7,895,000 | 2038 |
| | **TOTAL** | **$31,124,000** | |

Notes:
White rows indicate projects that are in the City's 5-year CIP and blue rows indicate projects that are outside the 5-year CIP window.

(1) Details of each project can be found in Chapter 2 or Chapter 6 of this Master Plan.
(2) The estimated opinion of probable costs include the construction costs plus Engineering, legal and administration fees (ELA, or soft costs). Details on the estimated project costs can be found in Chapter 2 or Chapter 6 of the plan, with the exception of costs for the backup UV system and centrifuges which are presented earlier in Chapter 7.
(3) For budgeting purposes, the Option B centrifuge cost from Table 7.4 is used for the project cost summary and the CIP
(4) Replacement timing dependent upon satisfactory equipment performance
(5) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2045. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.
(6) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.




LEGEND:

**CONDITION OR ADDITION PROJECTS**
1 - DEWATERING & DRYING BUILDING
1A - EXISTING CENTRIFUGE REPLACEMENT
1B - SOLIDS DRYER IMPROVEMENT
5 - SECONDARY CLARIFIER NO. 1 - REPLACE MECHANISMS
6 - SECONDARY CLARIFIER NO. 2 - REPLACE MECHANISMS
7 - STANDBY UV SYSTEM REPLACEMENT
18 - FIBER OPTIC CABLE ADDITION

**CAPACITY PROJECTS**
2 - NEW AERATION BLOWER
3 - NEW AERATION BASIN NO. 3, ACCESS IMPROVEMENTS & GRADING

**SEISMIC RETROFIT PROJECTS**
4 - PROCESS GALLERY
8 - WORKSHOP
17 - OPERATIONS BUILDING

**OTHER FACILITIES**
9 - SECONDARY PROCESS FACILITY
10 - STABILIZATION BASIN
11 - SLUDGE STORAGE BASINS AND BIOFILTERS
12 - SECONDARY CLARIFIER NO. 3
13 - HEADWORKS
14 - DISK FILTERS
15 - COOLING TOWERS
16 - W3 REUSE PUMP STATION
19 - SITE ENTRANCE

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**Figure ES.4**
**PROPOSED WILSONVILLE WWTP IMPROVEMENTS**
CITY OF WILSONVILLE

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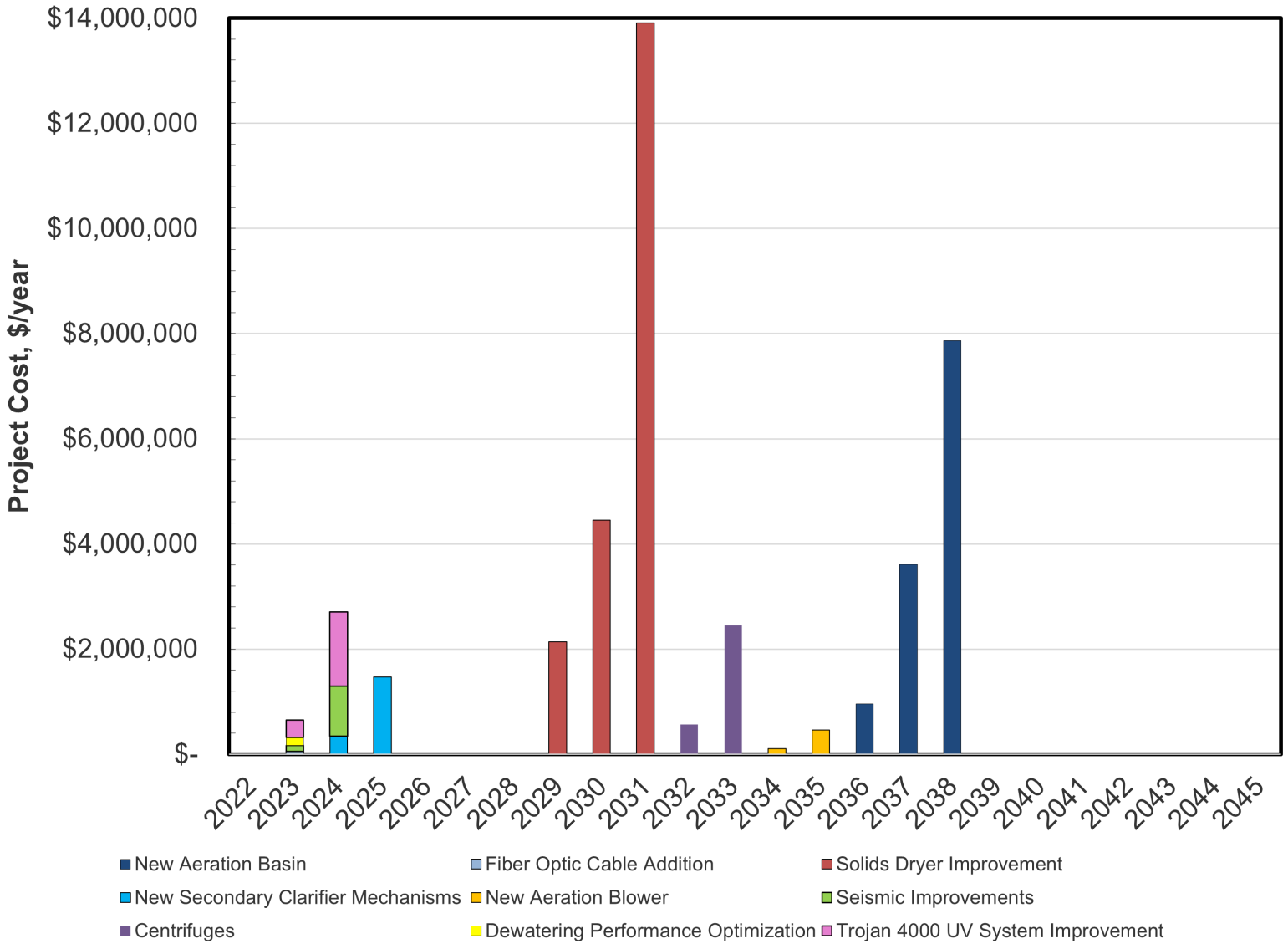



Figure ES.5 Projected 20-Year CIP Expenditures

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# City of Wilsonville Wastewater Treatment Plant Master Plan

## Planning Commission

July 13, 2022

WILSONVILLE
OREGON

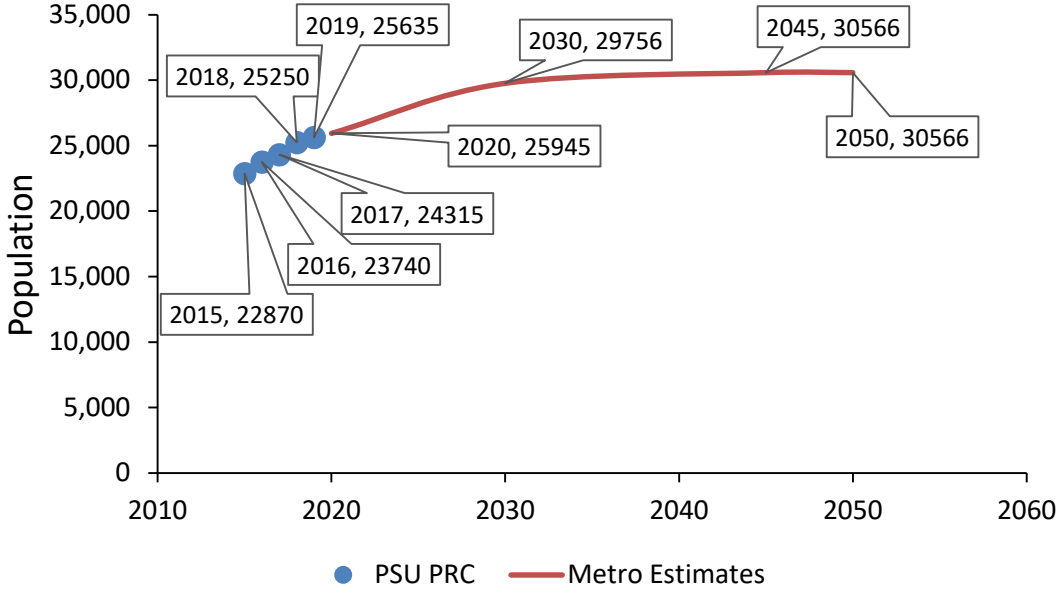
# Master Plan Drivers

- City Capital Planning
- Accommodating Expected Growth
- Addressing Asset Condition and Replacement needs
- Assessing Potential Regulatory Drivers

# Capital Planning and Expected Growth - 20

- Current Service Area needs – 20+ years through 2045
  - Population and associated economic development

| 2015 | 2020 | 2030 | 2045 |
|---|---|---|---|
| 22,870 | 25,945 | 29,756 | 30,566 |



# Facility Capacity Assessment

- Flows & Loads - Drive core process needs
- Existing WWTP design (2014 expansion) – ADWF – 4 mgd

| Item | Existing | Projected 2045 |
|---|---|---|
| Average Dry Weather Flow, mgd | 1.94 | 2.68 (~38% > existing) |
| Average Annual Flow, mgd | 2.24 | 3.03 (~35% > existing) |
| Maximum Month Wet Weather Flow, mgd | 3.78 | 4.90 (~30% > existing) |
| Average Annual $BOD^5$, ppd | 7,470 | 10,613 (~40% > existing) |
| Average Annual TSS, ppd | 6,427 | 8,714 (~35% > existing) |

# Asset Condition Assessment

- Process Condition/Age Drivers
  - 2014 project facilities and equipment in service > 30 years by 2045
  - Solids facilities –
    - Performance issues
      - Solids Dryer fire (2019), component failures (2021), uneven performance
      - Solids Dewatering Centrifuges uneven performance (2020/21)
  - Secondary clarifiers – Pre-date 2014 upgrades, near term mechanism replacements, clarifiers no. 1 and 2
  - UV Disinfection – backup unit pre-dates 2014 upgrades, near term replacement

# Potential Regulatory Drivers

- DEQ - Total Maximum Daily Load (TMDL) Lower Willamette River
- Dissolved oxygen & nutrients
  - Nutrients can contribute to low oxygen conditions
  - Anticipate and accommodate future phosphorous, possibly nitrogen limits
- Pay attention to Willamette River temperature concerns

# Condition and Capacity Assessments

# Condition Assessment

- Prioritize 2019 findings of consultant assessments
  - Secondary clarifiers
  - UV system
- Geotechnical and seismic evaluations
  - Older buildings found to present moderate risk
  - Identified mitigations to address seismic concerns
    - Operations Building
    - Process Gallery
    - Workshop

# Unit Process Capacity Summary



| Unit Process | Design Parameter | Redundancy Criteria | Possible Year of Capacity Exceedance | Identified Alternatives |
|---|---|---|---|---|
| **Secondary Treatment** | MW MLSS inventory @ PDF | All units in service | **2038** | • New Aeration Basin<br>• New Secondary Clarifier |
| **Aeration Blowers** | Peak BOD Load | Largest unit out of service | **2035** | • Additional Blower |
| **Disk Filters** | MWDWF | One unit in backwash | **2037** | • Third Disc Filter<br>• Relax DBO limits |
| **Biosolids Dryer** | MW Load | **All units in service** | >2045 | • Emergency Biosolids Management Plan<br>• Redundant Dryer, similar technology<br>• Different Dryer technology |

# ALTERNATIVES EVALUATION

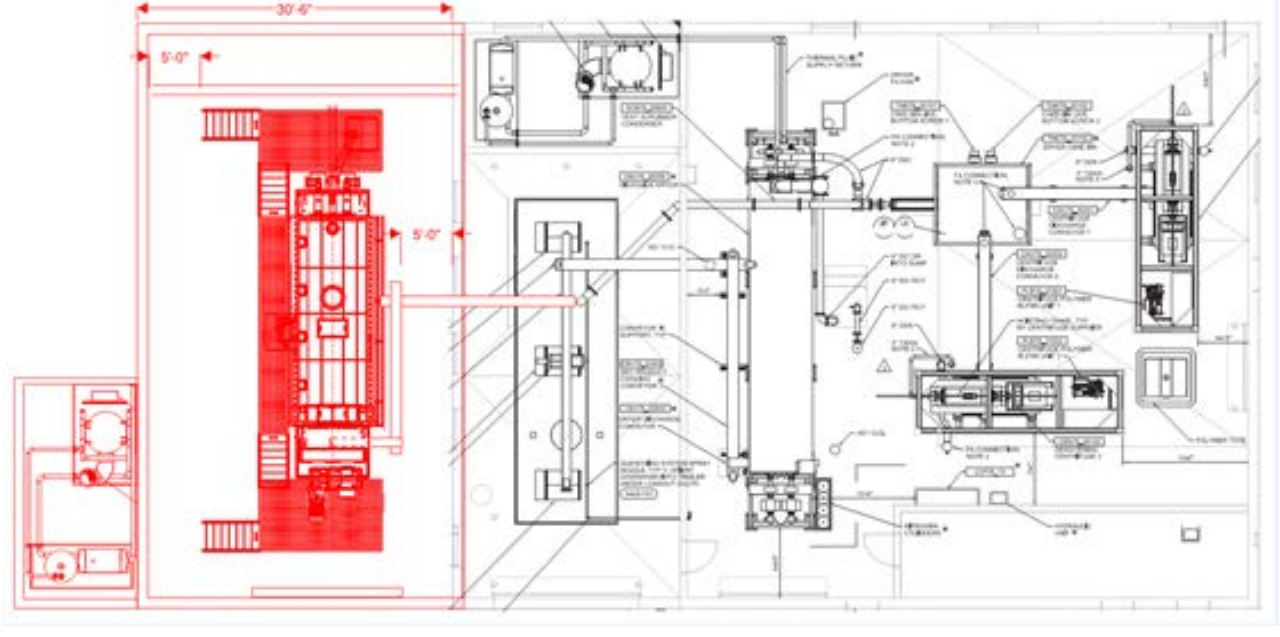
# Alternatives Evaluation

- Consider alternatives for process units identified as capacity deficient
- Secondary Process
  - Add new Aeration Basin
  - Add new blower
- Tertiary Disk Filters
  - Relax DBO effluent TSS limits
- Solids Dryer – driven by performance, not necessarily capacity
- Process Gallery
  - Further study, placeholder to expand dewatering and drying building, add new paddle dryer, refurbish existing dryer (backup)

# Alternatives Evaluation



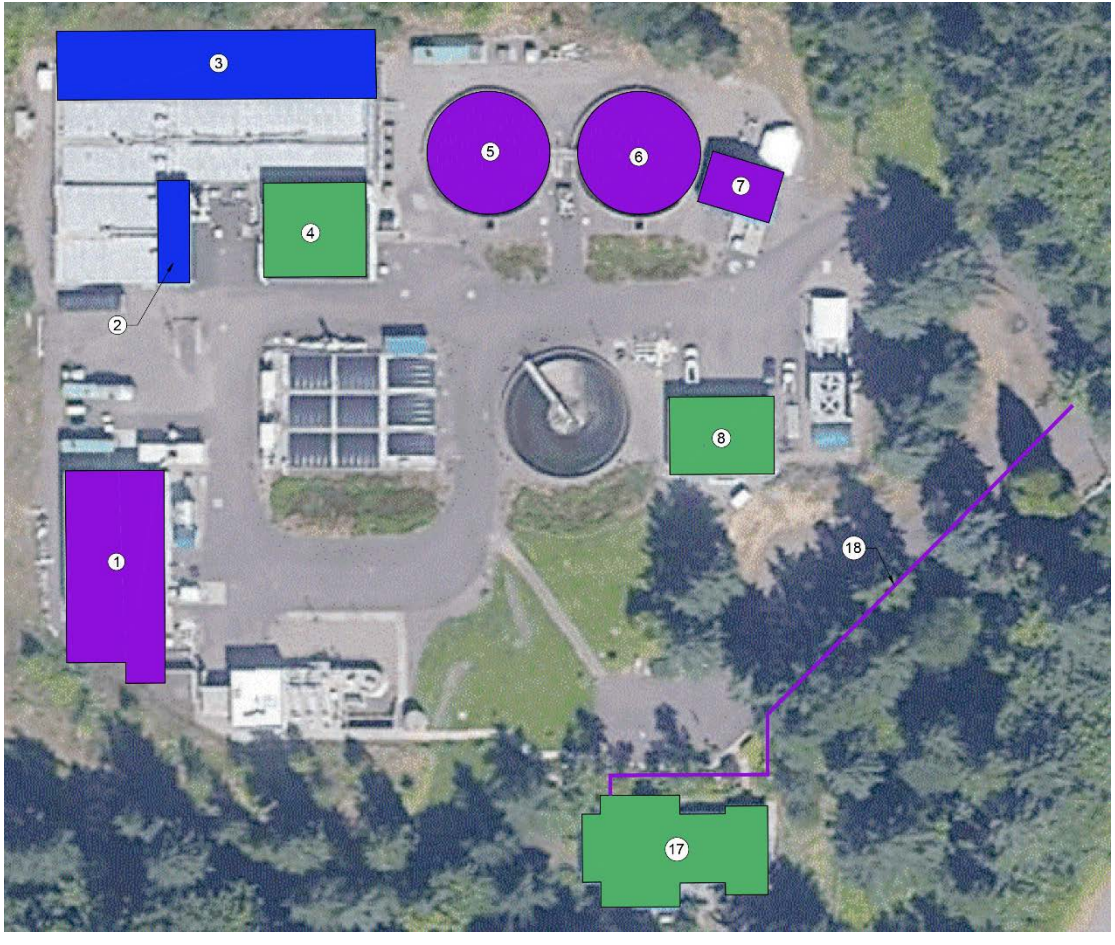
- Solids Dryer – driven by performance, not capacity
  - Further study, placeholder to expand dewatering and drying building, add new paddle dryer, refurbish existing dryer (backup)
  - Largest potential investment in Master Plan



# Recommended Plan

# Recommended Plan





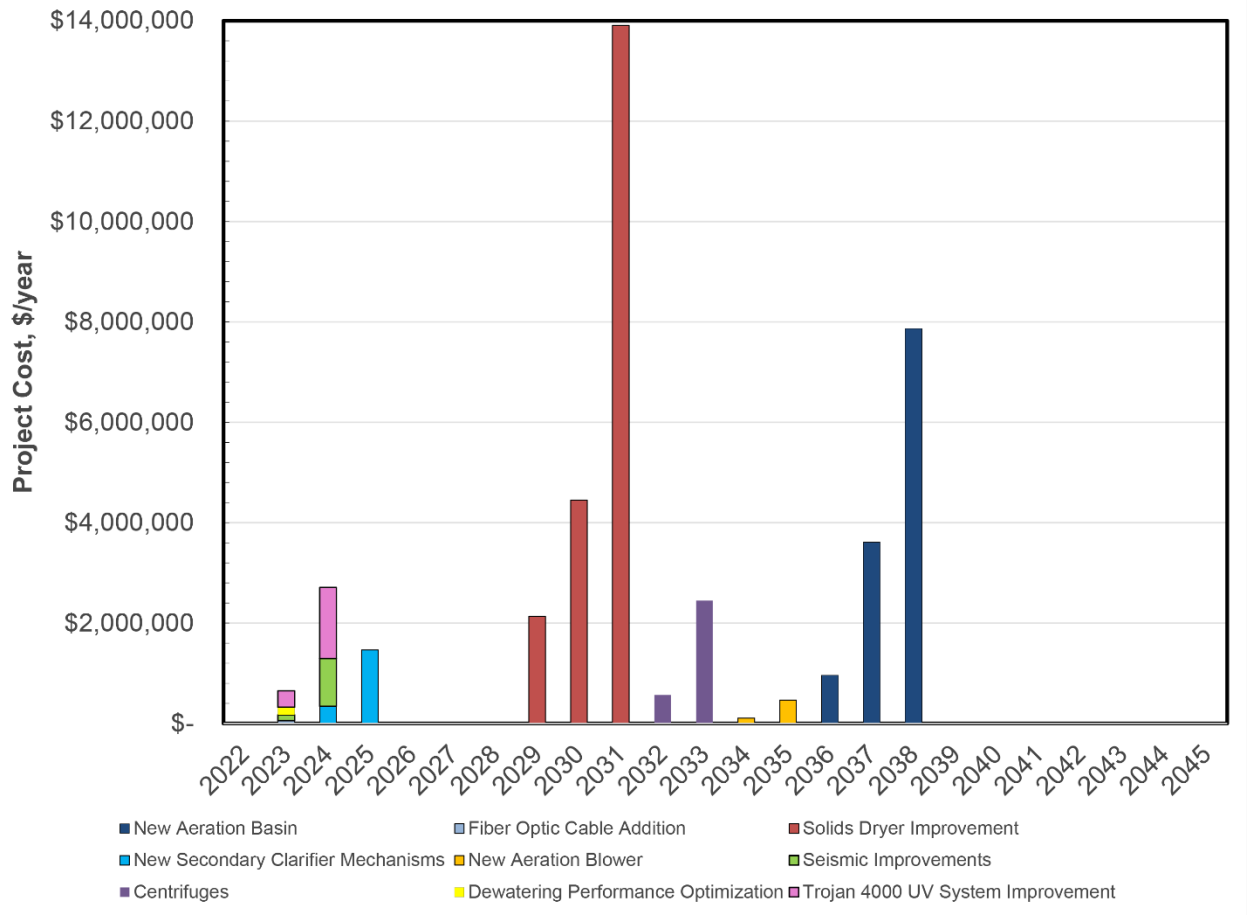

- 3 New Aeration Basin
- 2 Additional Aeration Blower
- 7 Replace backup UV system
- 1 Plan to replace Solids Dryer & Centrifuges
- 5 6 Replace Clarifier 1 & 2 mechanisms
- 4 8 17 Seismic retrofits of buildings
- 18 New fiber optic connection

Solids process study

# Proposed Project Phasing Schedule



# Draft Cash Flow



# Next Steps

- DEQ review and approval of Plan
- City Council Work Session 8/1
- Planning Commission Public Hearing 9/14
- City Council Public Hearing 1st Reading 10/3
- City Council 2nd Reading 10/17

*Draft PC Minutes were reviewed and approved as corrected at the September 14, 2022 PC Meeting. Corrections are bold and underlined. Commissioner Gallagher moved to approve the July 13, 2022 minutes as corrected. Commissioner Karr seconded the motion, which passed unanimously.*

**PLANNING COMMISSION**
**MEETING MINUTES**
**July 13, 2022 at 6:00 PM**
**City Hall Council Chambers & Remote Video Conferencing**

**CALL TO ORDER - ROLL CALL**

A regular meeting of the Wilsonville Planning Commission was held at City Hall beginning at 6:00 p.m. on Wednesday, July 13, 2022. Chair Heberlein called the meeting to order at 6:01 p.m., followed by roll call. Those present:

| | |
|---|---|
| Planning Commission: | Ron Heberlein, Jennifer Willard, Aaron Woods, Andrew Karr, and Kamran Mesbah. Olive Gallagher arrived after roll call. Breanne Tusinski was absent. |
| City Staff: | Daniel Pauly, Ryan Adams, Mike Nacrelli, and Mandi Simmons. |

**PLEDGE OF ALLEGIANCE**

The Pledge of Allegiance was recited.

**CITIZEN'S INPUT**

This is an opportunity for visitors to address the Planning Commission on items not on the agenda.
There was none.

**ADMINISTRATIVE MATTERS**

1. Consideration of the June 8, 2022 Planning Commission Minutes

The June 8, 2022 Planning Commission Minutes were accepted as presented.

**WORK SESSION**

2. Wastewater Treatment Plant Master Plan (Nacrelli)

Mike Nacrelli, Senior Civil Engineer, noted the Wastewater Treatment Plant Master Plan was the first since the last major upgrade to the Master Plan in 2012 and would look at the plant capacity, condition of the equipment, the regulatory landscape, and any issues that needed to be incorporated into a capital plan.

Dave Price, Project Manager & Vice President, Carollo Engineers, briefly highlighted his professional background. He presented the Wastewater Treatment Plant (WWTP) Master Plan via PowerPoint, noting Carollo based its planning around the City's Comprehensive Plan and the growth expected in the community through 2045 to ensure the treatment plant had capacity to treat in compliance with the NPDS permit to discharge to the Willamette River. Also reviewed were potential regulatory drivers, the WWTP condition and process capacity assessments, alternatives evaluation for addressing capacity deficiencies, as well as the recommended plan for new projects and infrastructure to provide additional capacity, the proposed phasing schedule, projected yearly cashflow, and next steps, which included the Master Plan's adoption anticipated in mid-October.

Discussion and feedback from the Planning Commission was as follows with responses to Commissioner questions as noted:

- Had the upcoming projects in 2023 and 2024 been estimated in the City's budget to provide the needed funding? (Slides 15 and 16)
    - Mr. Nacrelli replied the larger dollar amount projects, the UV System Improvement and Secondary Clarifier Mechanisms, were both in the Five-Year Plan of the recently adopted budget. The Seismic Improvements project could be accommodated in the City's Wastewater Capital Budget, and Staff would look into adding it to the Five-Year Plan in the next budget cycle. The Fiber Optic Cable Addition, at less than $60,000, was a relatively small project. The Dewatering Performance Optimization project did **not** yet have a dollar amount and Staff would work with Jacobs Engineering Group Inc., the City's contract operator, to get that figure. The City might provide some funding through that operations contract, but the project would not have a major impact on the City's cash flow.
        - He confirmed a good amount of the near term proposed projects were in the Five-Year Plan, though a few things still needed to be addressed.
- What was the financing plan for 2031? Would funds come from CIP and is there adequate annual Capital Improvement Project (CIP) funding for the 2031 projects? (Slide 16)
    - Mr. Nacrelli noted the 2031 Solids Dryer Improvements project was the next big project. As mentioned in the Staff report, the current fiscal year budget identified a wastewater rate study and SDC analysis would be done in. The final Master Plan document would be used to see what the numbers and schedule meant for the monthly rates and the system development charges (SDCs) and how they might need to be adjusted. After the public hearings, over the next year, figuring out the finance plan would be the next step in implementation.
- Mr. Price clarified that grouting any soil voids around the existing piping was not part of the Seismic Improvements project but recommended in the geotechnical report and Northwest Geotech's study. When Northwest Geotech did its site work, no active erosion or piping was occurring; however, the City would need to pay attention to those requirements when doing the new improvements for the aeration basin, or if something was identified that appeared could be an issue, such as a hole showing up suddenly after some rain events. He did not know of anything to be worried about regarding the soils currently.
- Were there many complaints over odor and should the City do any projects to address odor?
    - Mr. Nacrelli responded he had not heard much about odor complaints from the operators at the site or from Delora Kerber, Public Works Director, who manages the contract.
    - Mr. Price added odor-control facilities were tied to the dryer and the solids building. He was not a solids processing expert, but there were risks when the process was interrupted and solids were not making it through the dewatering process to the dryer on a continual basis, which would occur because something broke or something else interrupted the normal flow. Under normal operations, the assumption was that the existing units were functioning as they were intended to control odor.
    - Mr. Nacrelli added he had not noticed any odor during his many times visiting the site.
- Mr. Nacrelli clarified the process for solids did not include a digester with gas harvesting, noting the digesters were eliminated with the last upgrade.
    - Mr. Price added there was no digestion, dewatered raw solids went from the centrifuge units right into the dryer unit, and that process was intended to function on a continual basis.
- Regarding plans for generating gas in the future, which was typical when dealing with solids, Mr. Nacrelli noted producing heat and electricity from harvested methane had been a big part of his previous job at

the City of Gresham, but it would be prohibitive for the City of Wilsonville to ~~try and~~ go back to using anaerobic digestion after eliminating the digesters.

- Mr. Price clarified that the percentage increases on Slide 4 were 2045 projections for an increase in the potential need for capacity based upon Staff's analysis using Metro numbers.
  - On how the percentage projections compared to the population increase percentage, Mr. Price replied the projected population of 30,000 in 2045 (Slide 3) was less than those represented in the table. (Slide 4) Often, conservative numbers were used when evaluating specific elements, like the loads or flows, for future growth and what would be produced. To ensure, Carollo was being conservative for planning purposes, the best-case scenario was not used. Every home built would not necessarily have the number of residents assumed by the Comprehensive Plan.
- The project assumed the same per capita load and flow generation seen today for 2045. The population increase would be around 18 percent, but the analysis showed increases of more than twice that in all categories. What infiltration inflow analysis information was available?
  - Mr. Price replied evaluations for treatment facilities looked at the actual flows received at the plant. Depending on the circumstance, the client's desires, and the needs of the community, the analysis might look at the collection system model to see the maximum amount of flow it could deliver. Typically, the flow numbers were generated based upon an evaluation using rolling averages, often a maximum month flow based upon a rolling 30-day average was used; not what the average was in one month compared to some time period, often it was the previous five years. The analysis did not necessarily utilize the same kinds of assumptions used in a collection system plan in part because with a treatment plant, no matter how tight the site was, the assumption was that more capacity could be built, expanded, or intensified. However, once pipe was put in the ground, it was difficult to make it any larger so often the collection system plan made very conservative assumptions, especially for peak flows it needed to convey to the plant to prevent wastewater protrusion from manholes.
- Did the City have a handle on clear water intrusion in the system?
  - Mr. Nacrelli replied the Wastewater Collection System Master Plan would have definitely looked at water intrusion and the Master Plan had a CIP to replace a lot of older pipes. He had been involved in several projects in Charbonneau, an older area where the age of the infrastructure had been a particular issue. The City was definitely addressing intrusion and the best way to do it was to either line or replace old pipes.
  - Commissioner Mesbah responded he had hoped to hear the City had a handle on any potential large inflow areas; not old pipes, but broken lines, especially in low areas with shallow ground water and he assumed some gravity lines were located where such water intrusion could occur, letting in water that was not efficient to treat. Was a conservation plan to reduce the loads in the future part of the WWTP Master Plan, assuming people would **not** be as wasteful as they were today?
    - Mr. Nacrelli noted the increases in BOD and TSS were a bit higher than the flows, which probably reflected that the influent was often trending stronger because less clean water, or rainwater, was coming into the system. The City was treating the same amount of solids, but the hydraulic impact was not as severe as it would have been in past years. (Slide 4) He agreed more efficient pipe materials, fixtures, and plumbing contributed to less water being treated.
      - A program to encourage more conservation would be more to do with the water distribution and plumbing side of things and was not part of this project's scope. However, the City was interested in conservation and pursuing it.
    - Mr. Price added one thing that came up with many of the planning studies he had done over the last 18 to 20 years was the idea that flows were very important, and they are however, as Mr.

Nacrelli had indicated, wastewater management tried to control the flow as well as ensure a process that could handle and treat the organic loads coming in, all of which included contaminants. In his experience, water conservation efforts did not always benefit wastewater treatment plants. For example, efforts in northern California, where constituents were regulated to a much lower level than DEQ, had resulted in the unintended consequence of water coming into the plants with a much higher concentration of pollutants. Water conservation was important, but it needed to be looked at carefully and watched at the wastewater plant, which was why the loads were looked at closely in the analysis which was often more important in some ways.

- Mr. Nacrelli noted the flows and loads increase was greater than the population increase and asked if that was because non-residential sources were also included.
  - Mr. Price confirmed the numbers did reflect non-residential sources, which included the prison and other industrial/commercial users within the service area, which were not reflected in the population numbers. Following Commissioner Mesbah's comments, he did want to take a hard look at the flows and loads analysis along with evolving land uses to make sure everything was in line.
- Industrial uses, like a brewery with higher loads to the treatment plant might exist in the city that the Commission was unaware of. Was the growth projection lowballed or would the City experience higher growth?
  - Mr. Nacrelli replied Metro's numbers were definitely on the low end, which was why they looked more closely at the medium projections indicated by the green line. (Slide 3, Green line)
- Historically, Metro numbers had been low, but the other aspect was that the City did have some say in how fast it grew. Some of the costs shown in the Draft Cash Flow chart were the costs of growth. (Slide 16) Perhaps those things should be thought about in addition to the expansion of load systems, etc. There were costs associated with choosing to grow which the City needed to be strategic about. The plan was conservative and seemed to have room to cover more than Metro's projections. Layering conservatism in the planning process should be avoided. Conservatism in facilities planning sometimes resulted in over-building unnecessarily that went unused long term.
  - Mr. Price replied that was a concern of his as well. Process engineers were conservative because no one wanted to under plan. The community should pay close attention to who was responsible for paying for which element of the need. Unfortunately, some elements might not be driven by capacity, but performance. There was an element of capacity embedded even in that large dryer unit that somebody would benefit from other than the existing users.
  - Mr. Nacrelli added because the City did not appear to have a capacity issue in the near-term, it could track what growth actually looks like over the next five years and then adjust accordingly, as the Master Plan would be adaptive. The City had not updated the Plan in 10 years, but he expected the City would not go longer than five years before assessing growth and making adjustments to the Master Plan as necessary.
- It would be helpful for the report to include a full built-out analysis. As the City built out areas it was adding, would it have adequate capacity, or would capacity go unused by the time the equipment needed to be replaced because it was not useful anymore; without having really used it? That would be a waste of taxpayer or ratepayer money. A full build-out analysis with timelines would provide some idea of whether the growth of the facility was being tracked in lockstep with the expected built-out of the areas added to the urban area.
  - Mr. Price noted the flows and loads had been projected out to the projection curves. Early in the analysis of the plant, Carollo Engineering, in conjunction with City Staff, decided not to necessarily

plan around the built-out numbers for the reasons pointed out. Including the build-out numbers would result in a more intense treatment plant site at the facility to account for the population nearly doubling, as shown by the projection on the higher rate curve. (Slide 3)

- Mr. Nacrelli clarified build-out was unrelated to the rate of growth. The current city boundaries and reserve areas would max out and fill up at some point according to how the areas were zoned. There was a number associated with build-out, though ~~not~~ it was not necessarily tied to a time frame but to land use.

- Build-out could be tied to a time frame because the Planning Department had some idea of how fast the neighborhoods would develop. For example, 1680 units were planned for Town Center, 1750 units were planned in Frog Pond East and South. At 2.5 people per unit, 8500 residents would be living in developments the City knew were likely to be built between 2022 and 2035. Coffee Creek and Basalt Creek would likely be built out within a 20-year time period. While those were industrial uses, the City knew it would happen during the subject growth period.
- The expected growth chart should reflect the planning the City knew was already in progress. The city's population would increase from 27,000 to 37,000 just with the known development in Frog Pond East and South and Town Center, and that did not include Frog Pond West. The standard curve should include known development and another curve should address potential additional growth.
  - Additionally, the City should be explicit in its conservatism. Right now, the plan showed a 12 percent population growth from 2021 to 2045, but a 30 percent increase in load. The discrepancy between those two numbers should be explicit, especially as it the Master Plan progressed toward Council. The plan needed to be explicit in why the load increase was twice as much as the population growth, which was a big deal.
  - Mr. Nacrelli clarified Jacobs Engineering had taken over CH2MHill, the company that had the design/build/operate contract for the treatment plant, so Jacobs was now the City's contract operator for the treatment plant.
- As different population projections were done, Staff and the consultants were asked to use the same time frame for gathering historical data and for the future projection. For example, show 30 years' worth of previous data and then project 30 years into the future. A projection using 5 years of data to project 25 years in the future was not statistically defensible. The prior five years of growth could have been a growth spurt that was being extended 30 years into the future, which was not accurate. Growth, especially in a small city like Wilsonville, was choppy, so it should be averaged out to determine the long-term trends.

3. Frog Pond East and South Master Plan (Pauly)

Dan Pauly, Planning Manager, noted this was the Commission's sixth work session on the Frog Pond East and South Master Plan. He presented the Master Plan, including updates in response to the Commission's feedback via PowerPoint, reviewing the housing related design concepts and describing the similarities and differences between the three housing design types, displaying examples of each type using photographs from Villebois and Frog Pond West. He noted three housing design types were not set in stone, but the presentation addressed questions from Council and would be helpful for the Commission. Understanding the three housing types would be important in developing policy.

Joe Dills, MIG|APG continued the PowerPoint presentation, summarizing the feedback and preferences discussed by the Planning Commission last month, noting the aspiration to create and connect special destinations within the neighborhoods was still part of the physical planning. (Slide 29) He described the

The Boones Ferry Messenger
Monthly newsletter of the City of Wilsonville September 2022

## Open House Scheduled for Public Review of Waste Water Treatment Master Plan

The City of Wilsonville is conducting a virtual public open house to present the draft Wastewater Treatment Plant Master Plan, and to respond to questions and comments from community stakeholders.

The improvements detailed in this draft Plan are designed to provide optimal value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

**Waste Water Treatment Plant Master Plan Open House**
***Wed, Sept. 28, 7 pm***
Zoom Virtual Meeting

The plan accounts for the age and condition of existing process equipment and structures as well as projected residential and commercial growth and potential regulatory changes.

To learn more about this project, review the draft Plan or attend the open house, visit **letstalkwilsonville.com/wastewater-treatment-plant-master-plan** or contact Mike Nacrelli, Senior Civil Engineer, at mnacrelli@ci.wilsonville.or.us.

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***Reference #:*** LP22-0001 Wastewater Treatment Plant Master Plan
***Company Name:*** WILSONVILLE, CITY OF
***Contact:***
***Address:*** 29799 SW TOWN CENTER LOOP E
WILSONVILLE

***Telephone:*** (503) 570-1510
***Fax:*** (503) 682-1015

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Wilsonville Spokesman 09/29/22

**NOTICE OF LEGISLATIVE PUBLIC HEARING BEFORE THE CITY OF WILSONVILLE PLANNING COMMISSION AND CITY COUNCIL:**

**WASTEWATER TREATMENT PLANT (WWTP) MASTER PLAN LP22-0001**

**OREGON STATE LAW ORS 227.186.** The City has not determined how or if this particular proposal will reduce or otherwise impact either the value or use of properties within Wilsonville. Any changes to permitted land uses may reduce or increase property values, depending on various factors. A written notice has been mailed to potentially impacted property owners as required.

**PLANNING COMMISSION:**

On **Wednesday, Oct. 12, 2022, beginning at 6 pm**, the Planning Commission will hold a public hearing on the **Wastewater Treatment Plant Master Plan**, and will consider whether to recommend to City Council adoption of the Plan.

You will not receive another mailed notice unless you: submit a request in writing or by phone, or submit testimony or sign-in at the hearing.

**CITY COUNCIL:**

**On Monday, Nov. 21, 2022 beginning at 7 pm**, the City Council will hold a public hearing regarding the Wastewater Treatment Plant Master Plan after which it may make the final decision.

The hearings will take place at Wilsonville City Hall, 29799 SW Town Center Loop East. A complete copy of the project record, including staff report, findings, and recommendations, will be available online and at City Hall for viewing 7 days prior to each public hearing.

**SUMMARY OF PROPOSAL:**

The City of Wilsonville is updating its Wastewater Treatment Plant Master Plan. The improvements detailed in this Plan are designed to provide optimal value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development.

The City's Wastewater Treatment Plant, along I-5 between the river and Old Town, was originally built in 1971. A major 2014 upgrade expanded the capacity to accommodate population growth.

This Plan, which satisfies requirements established by the State of Oregon Department of Environmental Quality (DEQ), considers:

- The age and condition of existing process equipment and structures
- Growth to accommodate population growth and new economic development over the planning period (through 2045). Projections are based on projections, historical data and DEQ wet weather project methodologies.
- Potential changes to water quality regulations established by the DEQ
- City of Wilsonville Wastewater Collection System Master Plan (2014), and
- Consistency with the 2018 Comprehensive Plan and City Council 2021-2023 Goals 5, 6 and 7

For more details, visit **https://www.letstalkwilsonville.com/wastewater-treatment-plant-master-plan**

**HOW TO COMMENT:**

Oral or written testimony may be presented at the public hearings. Written comment on the proposal is welcome prior to the public hearings. To have your written comments or testimony distributed to the Planning Commission before the meeting, it must be received by 2 pm on Oct. 4, 2022. Direct written comments to Mandi Simmons, Administrative Assistant 29799 SW Town Center Loop East, Wilsonville, Oregon, 97070 | msimmons@ci.wilsonville.or.us | (503) 682-4960

***Note: Assistive Listening Devices (ALD) are available for persons with impaired hearing and can be scheduled for this meeting. The City will also endeavor to provide qualified sign language interpreters and/or bilingual interpreters, without cost, if requested at least 48 hours prior to the meeting. To obtain such services, please call Mandi Simmons, Administrative Assistant at (503) 682-4960.***

Publish September 29, 2022 WS258403

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***Telephone:*** (503) 570-1510
***Fax:*** (503) 682-1015

***Ad ID:*** 260775
***Start:*** 10/12/22
***Stop:*** 10/13/22

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Wilsonville Spokesman 10/13/22

**NOTICE OF CANCELLATION OF THE LEGISLATIVE PUBLIC HEARING BEFORE THE CITY OF WILSONVILLE PLANNING COMMISSION AND CITY COUNCIL:**

The public hearing before the Planning Commission for the **Wastewater Treatment Plant Master Plan (LP22-0001)** scheduled for Wednesday, Oct. 12, 2022 at 6pm has been cancelled. We are sorry for the short notification.

The public hearing before the City Council for the Wastewater Treatment Plant Master Plan scheduled for Monday, Nov. 21, 2022 at 7pm has also been cancelled.

Publish October 12, 2022 WS258403

## Simmons, Mandi

**From:** Thomas Hooker <thomas.hooker@gmail.com>
**Sent:** Sunday, October 2, 2022 4:57 PM
**To:** Simmons, Mandi
**Subject:** Wastewater Treatment Plant Master Plan Comment / Request

**Follow Up Flag:** Follow up
**Flag Status:** Completed

**[This email originated outside of the City of Wilsonville]**

---

Mandi,

Thanks you for allowing me to comment on the proposed WWTP. I am a resident of Wilsonville, having live here for 30+ years. I am generally in agreement with the plan and its goals. Owning and RV and watching our community grow over the years, I have often thought a city of our size should have a waste dump for residents with RV's. Our process now is go to Tigard or other areas to dump our RV's, adding addition travel time in high traffic areas. I would like to request that an RV Dump be added to the WWTP Master Plan to support our residents with RV's.

Using Tigard as an example, it could be a highly functional perk for our residents as well as generating money to support the cost through Automated Dump Fees (TYP. $5.00 per Dump or $250.00 annual fee).

Tigard Link:

https://cleanwaterservices.org/community-home/resources/dispose/rv-waste/

Thank you for your time.

Thomas Hooker
Park at Merryfield
Roland Ct.
thomas.hooker@gmail.com



City of Wilsonville

# WASTEWATER TREATMENT PLANT MASTER PLAN

FINAL | December 2023

City of Wilsonville

# WASTEWATER TREATMENT PLANT MASTER PLAN

FINAL | December 2023

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# Abbreviations

| | |
|---|---|
| °C | degrees Celsius |
| °F | degrees Fahrenheit |
| AA | average annual |
| AACEI | Association for the Advancement of Cost Engineering's |
| AAF | average annual flow |
| ABF | average base flow |
| ACCU | air cooled condensing unit |
| ACI | American Concrete Institute |
| ACS | American Community Survey |
| ADW | average dry weather |
| ADWF | average dry-weather flow |
| ASCE | American Society of Civil Engineers |
| aSRT | aerobic solids retention time |
| AWWF | average wet weather flow |
| BCPA | Basalt Creek Planning Area |
| BCR | biochemical reactor |
| BFP | belt filter press |
| BOD | biochemical oxygen demand |
| BOD5 | biochemical oxygen demand |
| BSE | basic safety earthquakes |
| Carollo | Carollo Engineers, Inc. |
| CBOD | carbonaceous biochemical oxygen demand |
| CBOD5 | five-day carbonaceous biochemical oxygen demand |
| CCCF | Coffee Creek Correctional Facility |
| cfs | cubic feet per second |
| CIP | capital improvement plan |
| City | City of Wilsonville |
| CMU | concrete masonry |
| COD | chemical oxygen demand |
| CRB | Columbia River Basalts |
| CSMP | Collection System Master Plan |
| CSZ | Cascadia Seismic Zone |
| CWR | cold water refuge |
| cy | cubic yard(s) |
| DBO | Design-Build-Operate |
| DDT | dichlorodiphenyltrichloroethane |
| DEQ | Department of Environmental Quality |

| | |
|---|---|
| DMA | designated management agencies |
| DMR | Discharge Monitoring Reports |
| DOGAMI | Department of Geology and Mineral Industries |
| EDI | electronic data interchange |
| ELA | engineering, legal and administration fees |
| EPA | Environmental Protection Agency |
| ETL | excess thermal load |
| FEMA | Federal Emergency Management Agency |
| ft/hr | feet per hour |
| GBT | gravity belt thickener |
| Goal 11 | Land Use Goal 11 |
| gpad | gallon(s) per acre per day |
| gpcd | gallons(s) per capita per day |
| gpd | gallons per day |
| gpd/sf | gallons per day per square foot |
| gpm | gallons per minute |
| gpm | gallons per minute |
| Guide | Wastewater Facility Planning Guide |
| HMI | human-machine interface |
| hr | hour(s) |
| HSD | Historic Sites Database |
| I-5 | Interstate-5 |
| IFAS | integrated fixed film active sludge |
| IWRS | Integrated Water Resources Strategy |
| Jacobs | Jacobs Engineering Group Inc. |
| kcal/day | kilocalories per day |
| kg/year | kilogram(s) per year |
| L/g | liters per gram |
| lbs | pounds |
| M9.0 | magnitude 9.0 |
| MBR | membrane bioreactor |
| Metro | Oregon Metro |
| MFD | Missoula flood deposit |
| mg/L | milligrams per liter |
| mgd | million gallons per day |
| Middle Willamette | Coffee Lake Creek-Willamette River Watershed |
| ml | milliliter |
| mL/g | milliliters per gram |
| MLR | mixed liquor recycle |

| | |
|---|---|
| MLSS | mixed liquor suspended solids |
| MLVSS | mixed liquor volatile suspended solids |
| mm | millimeter |
| MM | maximum month |
| MMF | maximum month flows |
| MMWWF | maximum month wet weather flow |
| MW | maximum week |
| MWDWF | maximum week dry weather flow |
| MWWWF | maximum week wet weather flow |
| N/A | not applicable |
| NGI | Northwest Geotech, Inc. |
| NH3 | ammonia |
| NH3-N | Ammonia (as Nitrogen) |
| No. | number |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| O&M | operation and maintenance |
| OAR | Oregon Administrative Rule |
| ODFW | Oregon Department of Fish and Wildlife |
| ODOC | Oregon Department of Corrections |
| ODOT | Oregon Department of Transportation |
| OSSC | Oregon Structural Specialty Code |
| PD | peak day |
| PDDWF | peak day dry weather flow |
| PDF | peak day flow |
| PHF | peak hour flow |
| Plan | Wastewater Treatment Plant Master Plan |
| ppcd | pounds per capita day |
| ppd | pounds per day |
| psi | pound(s) per square inch |
| PSU PRC | Portland State University Population Research Center |
| R/C | residential/commercial |
| RAS | return activated sludge |
| RM | river mile |
| RMZ | regulatory mixing zone |
| RPA | Reasonable Potential Analysis |
| s/cm2 | square centimeter per second |
| scfm | standard cubic foot/feet per minute |

| | |
|---|---|
| SERP | State Environmental Review Process |
| sf | square feet |
| SIU | significant impact user |
| SNAP | Supplemental Nutrition Assistance Program |
| SOR | surface overflow rate |
| SPA | state point analysis |
| SRF | State Revolving Fund |
| SROZ | Significant Resource Overland Zone |
| SRT | solids residence time |
| SVI | sludge volume index |
| TAZ | Transportation Analysis Zone |
| TDH | total dynamic head |
| TKN | total kjeldahl nitrogen |
| TMDL | total maximum daily loads |
| TP | total phosphorous |
| TS | total solids |
| TSS | total suspended solids |
| TWAS | thickened waste activated sludge |
| UGB | urban growth boundary |
| URA | Urban reserve area |
| USGS | U.S. Geological Survey |
| UV | ultraviolet |
| UVT | ultraviolet transmissivity |
| VFA | volatile fatty acids |
| VFD | variable frequency drive |
| VSS | volatile suspended solids |
| WAS | waste activated sludge |
| WSMP | Water System Master Plan |
| WWTP | wastewater treatment plant |
| ZID | zone of initial dilution |

# EXECUTIVE SUMMARY

This new City of Wilsonville (City) Wastewater Treatment Plant (WWTP) Master Plan (the Plan) has been developed to satisfy requirements associated with the State of Oregon Department of Environmental Quality (DEQ) guidance document entitled "Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities." To accommodate future flows and loads, projections were developed based on population projections and referencing WWTP historical data and DEQ wet weather projection methodologies. Similarly, to accommodate future water quality regulations, the Plan is adaptive and considers potential future regulatory changes.

The City prepared the Plan with the goal of developing a capital plan that identifies improvements required through the planning period (today through 2045) to comply with requirements of the WWTP National Pollutant Discharge Elimination System (NPDES) permit and potential future regulatory requirements, while accommodating growth identified in the City of Wilsonville Comprehensive Plan (October 2018, updated June 2020 - the 2018 Comprehensive Plan). These improvements are designed to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and improving system operation while continuing to protect water quality and human health and supporting economic development, consistent with goals and policies contained in the 2018 Comprehensive Plan and 2021-2023 City Council Goals.

The City's WWTP was originally built in the early 1970's and discharges treated effluent to the Willamette River. The WWTP underwent major upgrades in 2014 to expand the average dry weather capacity to four million gallons per day (mgd) to accommodate the City's continued growth. The WWTP processes include headworks screening and grit removal facilities, aeration basins, stabilization basins, secondary clarifiers, biosolids processing, cloth filtration, and disinfection processes. Additionally, the City contracts with Jacobs for operation of the WWTP, located at 9275 Southwest Tauchman Road.

This Plan identifies improvements taking into consideration:

- The age and condition of existing process equipment and structures,
- Growth in demand for sewer service due to increased population and economic development over the planning period,
- Potential changes to water quality regulations impacting process needs in order to meet effluent limitations and discharge prohibitions imposed by DEQ,
- City of Wilsonville Wastewater Collection System Master Plan (2014, MSA), and
- Consistency with the 2018 Comprehensive Plan and City Council 2023-2025 Strategy 1.

## ES.1 Planning Area Characteristics

Chapter 1 summarizes the City's wastewater service area characteristics relevant to assessing WWTP facility needs. The planning area considered by this Plan is consistent with the City's 2014 Collection System Master Plan and 2018 Comprehensive Plan including the urban growth boundary (UGB). The Basalt Creek Concept Plan, adopted in 2018, resulted in a modification of the future boundary between the cities of Tualatin and Wilsonville relative to the 2014 Wastewater Collection System Master Plan (CSMP). This decision is reflected in Figure ES.1, which shows the Study Area Boundary as analyzed in the 2014 CSMP, with the portion likely to annex to Tualatin now shown outside the current Study Area Boundary.

The northern portion of the City of Wilsonville is located within Washington County, and the majority of the City lies in the southwestern part of Clackamas County.

The City sits within the jurisdictional boundaries of Metro, the regional government for the Portland metropolitan area. By state law, Metro is responsible for establishing the Portland metropolitan area's UGB, which includes Wilsonville. Land uses and densities inside the UGB require urban services such as police and fire protection, roads, schools, and water and sewer systems. A figure of the City's existing land use is presented in Chapter 1.

Also presented in Chapter 1 are the City's physical characteristics, water resources, and population and employment information, which are all significant factors in planning for wastewater conveyance and treatment facilities.

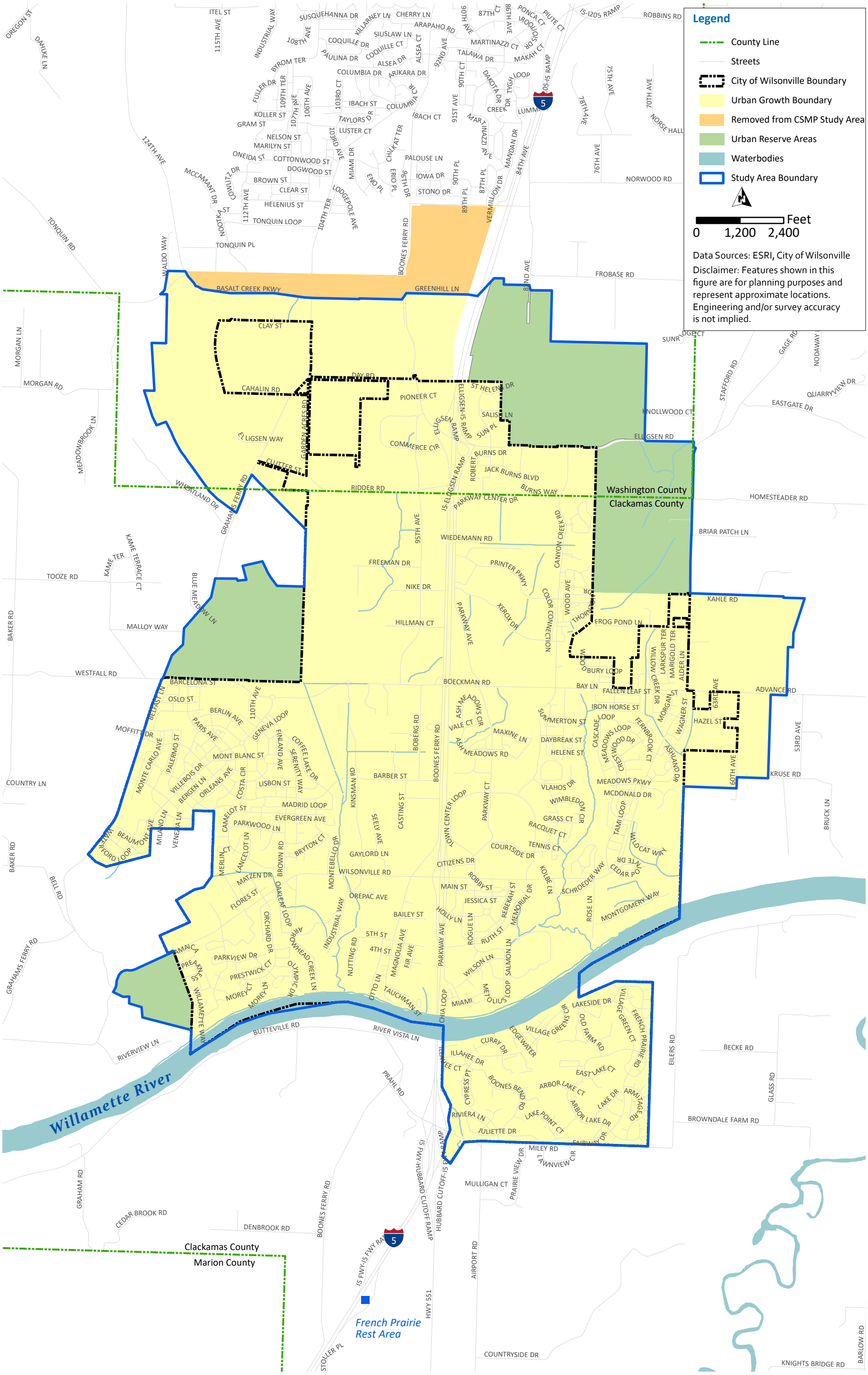



Figure ES.1 Planning Area

The Portland State University Population Research Center (PSU PRC) publishes annual estimates of populations for the previous year for cities in Oregon while Metro develops population projections for the future within the Portland metropolitan area, including Wilsonville. The PSU PRC estimated the City's population as 27,414 in 2022.

The historical per capita flow and loads presented in this master plan are based on the PSU PRC certified population estimates while future flow and load projections are based on the CSMP estimates to maintain consistency with prior water and sewer enterprise planning (with the slight modification to exclude the portion of the Basalt Creek Planning Area (BCPA) mentioned above). Figure ES.2 details the current population along with the historical population and growth expected for the City using the CSMP projections. As is shown in Figure ES.2, the WSMP (2003) assumption of a 2.9 percent growth rate lines up well with the PSU PRC and US census data for the years 2010 through 2022. Current and future population are described in greater detail in Chapter 3.

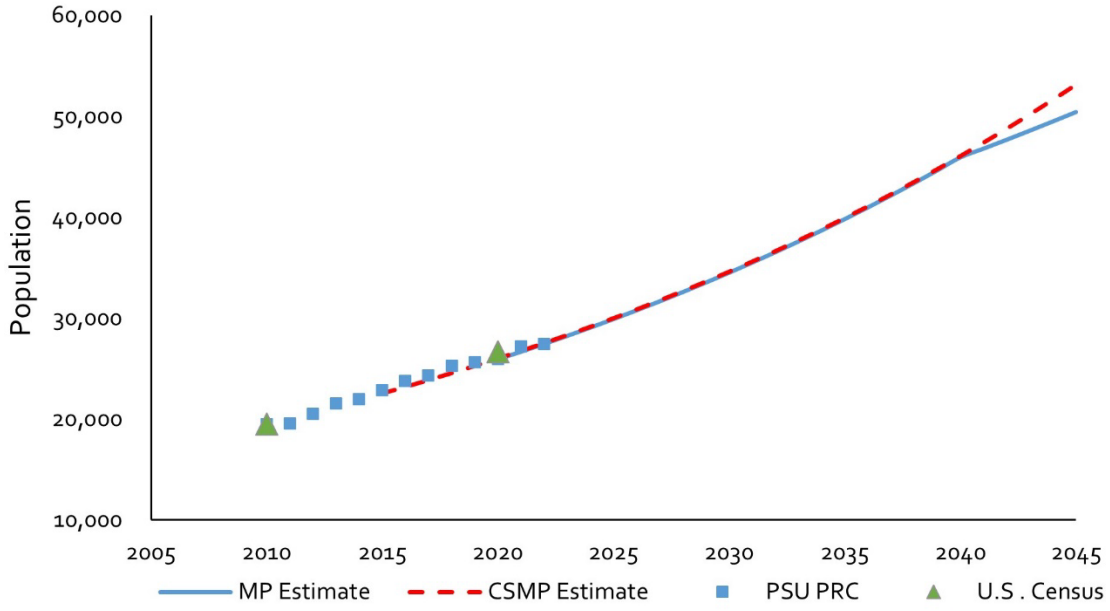



Figure ES.2 Historical Population and Expected Growth for the City of Wilsonville

## ES.2 WWTP Condition Assessment

Carollo Engineers, Inc. (Carollo) reviewed prior condition assessments performed by others, conducted geotechnical investigations and performed seismic assessments at the WWTP in the course of Plan development.

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown and Caldwell both completed condition assessments at the City's WWTP. A total of 322 major assets (per Jacobs' report), including process and mechanical equipment, motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may signify their need for maintenance or replacement. Chapter 2 presents a summary of critical assets that require short term rehabilitation or replacement, as well as a list of assets that are less critical to operations, or have minor condition issues, but may be included in a short-term improvements project or a task order for Jacobs operations personnel. Table ES.1 displays the condition driven rehabilitation or replacement projects from Chapter 2 that were included in the recommended Capital Improvement Plan (CIP) in Chapter 7. The City undertook an updated assessment of WWTP condition in the summer of 2023. The 2023 assessment did not identify additional issues requiring significant capital outlays compared to the 2019 assessments.

Table ES.1 CIP Condition Driven Replacement Projects

| Asset | Description |
|---|---|
| Trojan UV 4000 System | While only used as a backup to the Suez UV system, the Trojan system's HMI has errors that prevent it from showing the status of the lamps in module 3. Since it is used infrequently, the system's condition is largely unknown. After review of the 2019 condition assessment reports and discussion with the City and Jacobs staff, it was concluded that the UV 4000 unit must be replaced. |
| Secondary Clarifiers No. 1 and No. 2 | Ovivo completed a field review of the plant's secondary clarifiers No. 1 and No. 2 in April 2022. Although both units were operational, repairs were identified to improve the operation of the clarifiers. The recommended repairs include drive controls for both units, new skimmers for both units, squeegees for both tanks rake arms, EDI chains, one motor and reducer assembly, one skimmer arm assembly, and new secondary clarifier mechanisms. |

Notes:
Abbreviations: EDI - electronic data interchange; HMI - human-machine interface; No. - number; UV - ultraviolet.

## ES.3 Seismic Analysis

In 2021, Carollo performed a seismic evaluation and analysis of the City's WWTP as part of the overall plant condition assessment. Because the WWTP was substantially upgraded and expanded in 2014, most of its infrastructure is designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. During Tier 1 evaluations, Carollo identified potential deficiencies and areas for additional investigation. A Tier 1 seismic analysis is an initial evaluation performed to identify any potential deficiencies, whether structural or non-structural, in a building based on the performance of other similar buildings in past earthquakes. Subsequent to the Tier 1 analysis, a more detailed seismic evaluation of five older and potentially seismically vulnerable structures on the WWTP site was conducted. Those structures receiving a more detailed evaluation included the following:

- Operations Building.
- Process Gallery.
- Workshop.
- Aeration Basins and Stabilization Basins.
- Sludge Storage Basins and Biofilter.

The five potentially vulnerable structures were compared against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 Cascadia Seismic Zone (CSZ) earthquake. The M9.0 CSZ is reflective of a catastrophic natural disaster event that has an estimated 35 percent likelihood of occurring within the next 50 years. Following the Tier 1 evaluation, Carollo began Tier 2 evaluations for a select number of identified deficiencies. Although none of the structures showed significant irregularities, the team did identify seismic deficiencies. The recommended seismic retrofits are included in the CIP for this Plan.

Prior to the 2021 seismic evaluation, Carollo's subconsultant, Northwest Geotech, Inc. (NGI), completed a seismic response and geologic hazards assessment of the City's WWTP. Through past and present site investigations and engineering analyses, NGI determined that the native soils beneath the site's granular pit backfill have low risk of liquefaction and its slopes do not pose undue risk. NGI concluded that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping (development of subsurface air-filled voids), which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping usually develops in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is being collected, there may be areas where infiltration is occurring next to structures or below pipelines. In spring 2023, NGI performed a visual crack survey and mapped existing cracks at accessible structure floor and foundation stem wall locations. In addition, NGI completed a 50-foot boring utilizing a sonic drilling technique to assist in determining grouting conditions, prior maximum excavation depths, and fill materials present in the vicinity of secondary clarifier 3. Recommended actions from NGI to mitigate the risk of soil piping and considerations for new structure foundations are presented in Chapter 2. The City intends to evaluate the need and extent of ground improvement for WWTP structures during preliminary design of seismic upgrades. Accordingly, an allowance for future foundation mitigation measures of $2 million is included in the City's CIP.

## ES.4 Wastewater Flow and Load Projections

Chapter 3 of the Plan evaluates the historical and projected wastewater flows and loads generated in the City of Wilsonville's service area. The load projections include total suspended solids (TSS), biochemical oxygen demand ($BOD_5$), ammonia ($NH_3$), and total phosphorous (TP) loads.

Service area, residential population, industrial contribution, and rainfall records were all considered in the flow and load projection analyses. Facility planning involves estimating rates of growth in wastewater generation within the service area which are unlikely to align precisely with the actual growth observed. During the planning period, City staff will need to assess service area growth at regular intervals and revisit the analysis presented in this Plan.

The City previously estimated population for build-out of their service area. These estimates were taken from the City's Collection System Master Plan (2014, MSA) and as assumed in that document, projected the UGB reaches build-out in 2045. Figure ES.2 details the historical population and growth expected for the City. In addition, the City service area boundary upon which 2045 UGB build-out projections were based on the 2014 CSMP, has been altered slightly to account for a portion of the Basalt Creek Planning Area (BCPA) which is now expected to annex to the City of Tualatin and therefore will not receive wastewater service from the City of

Wilsonville. Figure ES.2 illustrates the 2014 UGB build-out population projections from the CSMP compared to those based on the modified service area boundary.

The flow and load projections presented in Chapter 3 are based on the Collection System Master Plan projections (with the slight modification to exclude the portion of the BCPA mentioned above).

A determination will need to be made whether projected flows and loads (which drive assessments of unit process capacity) are aligned with calendar projections presented in this plan and consider if conclusions presented regarding capacity and timing of recommended improvements remain valid. If not, adjustments to the plan will need to be undertaken to ensure sufficient capacity remains available to serve anticipated growth. As actual future wastewater generation rates may also be slightly different than the unit factors considered in this Plan, operations staff at the plant will need to be familiar with the flow and load triggers for planning and design of logical increments of treatment capacity presented in this plan. If growth rates are higher, the schedule for improvements in this plan will need to align with calendar dates presented herein. If growth occurs more slowly, the City will be able to phase WWTP improvements on a less aggressive schedule.

Analysis of flow projections were completed through two different methods: (1) analysis of historical plant records and (2) DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon, which is referred to as the DEQ methodology in this Plan. Since there is no DEQ methodology for load analysis, all projections were developed based on historical plant records. Figure ES.3 summarizes the measured and projected maximum month, peak day and peak hour flows. The projections for the remaining flow elements can be found in Chapter 3. As is shown in Figure ES.3, the peak hour flow is projected to exceed the peak hour flow of 16 mgd listed on the 2014 Improvements Drawings close to the year 2040.The projected 2045 peak hour flow is based on a 10-year (rather than a 5-year) design storm and does not account for storage or flow attenuation in the collection system. In 2023 the City undertook a hydraulic analysis of the WWTP concluding that certain elements will be deficient as the service area develops. This is discussed in greater detail in Chapter 4. This has important implications for facility improvement costs recommended in this Master Plan, which are based on estimates and projections of flows and loads which may not align with the timelines presented in this Master Plan. As such it is recommended the City perform additional evaluation of the WWTP and collection system, along with monitoring actual flows, to further evaluate whether future flow equalization can be achieved and whether recommended improvements at the WWTP will all be triggered within the planning period.

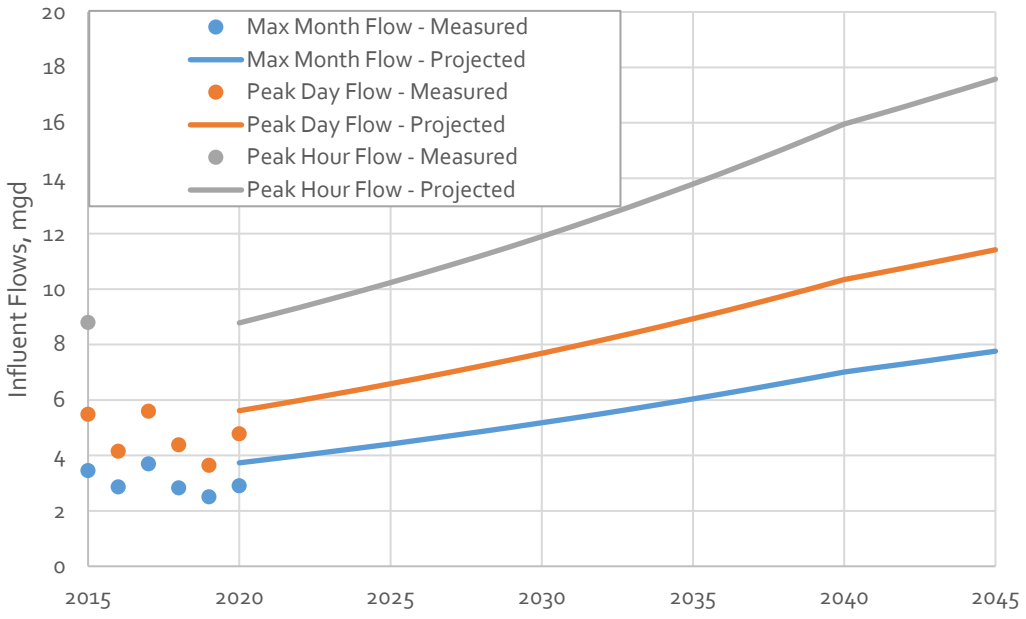



Figure ES.3 Flow Projection Summary

Load projections were calculated for influent TSS, $BOD_5$, $NH_3$, and TP. Figure ES.4 summarizes the measured and projected influent maximum month BOD and TSS loads. The projections for the remaining load elements can be found in Chapter 3.

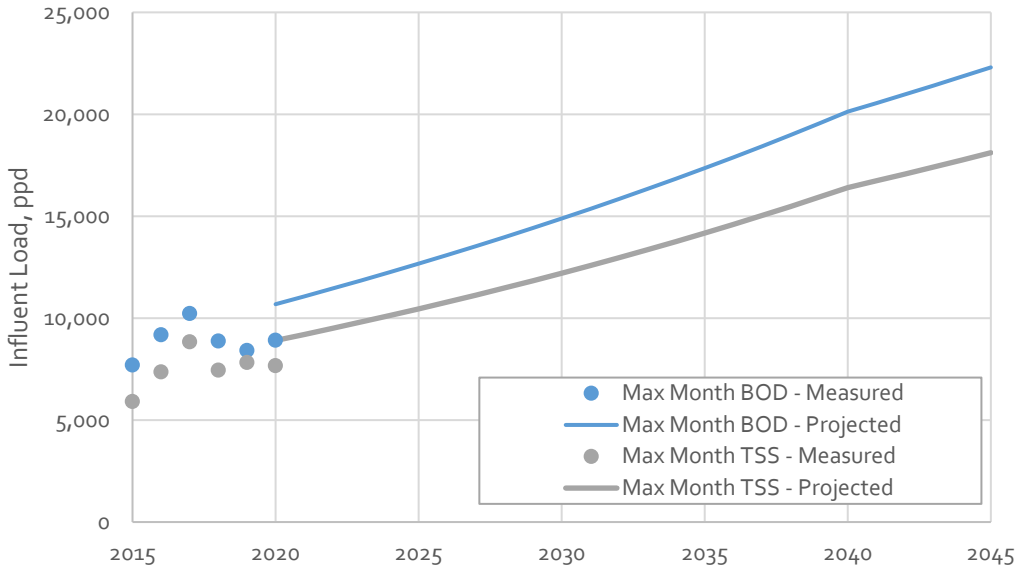



Figure ES.4 Load Projection Summary

The projected flows and loads developed in Chapter 3 were compared against the rated capacity for each of the WWTP's unit processes to determine whether expansion would be required within the planning period. The findings of this capacity analysis are discussed in the next section.

## ES.5 Capacity Analysis

Summaries of plant process area capacity assessments and conclusions are presented in this Plan. These assessments focus on the need for improvements or upgrades to existing facilities to address capacity deficiencies identified in the course of Master Plan evaluations. A site plan of the City's existing WWTP is presented in Figure ES.5.

Chapter 4 identifies existing capacity ratings and deficiencies for the liquid and solids stream treatment processes at the City's WWTP. Analyses are based on operational practices in place at the time and existing effluent limits established by the WWTP's NPDES permit. Biological process modeling was performed using BioWin version 6.2 to predict plant performance under current and future flow and loading conditions to assess when unit process capacities may be exceeded within the planning period (present through 2045).

A summary of the capacity assessment completed using growth projections described in Section ES.1 is detailed below in Table ES.2. Chapter 4 presents the methodology and findings in greater detail.




LEGEND:

1 - DEWATERING & DRYING BUILDING
2 - PROCESS GALLERY
3 - SECONDARY CLARIFIER NO. 1
4 - SECONDARY CLARIFIER NO. 2
5 - UV DISINFECTION SYSTEM
6 - WORKSHOP
7 - SECONDARY PROCESS FACILITY
8 - STABILIZATION BASIN
9 - SLUDGE STORAGE BASINS AND BIOFILTERS 12 - SECONDARY CLARIFIER NO. 3
10 - HEADWORKS
11 - DISK FILTERS
12 - COOLING TOWERS
13 - W3 REUSE PUMP STATION
14 - OPERATIONS BUILDING
15 - SITE ENTRANCE

0 30' 60' 120'
SCALE: 1" = 60'

**Figure ES.5**
**EXISTING WILSONVILLE WWTP**
CITY OF WILSONVILLE

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Table ES.2 Unit Process Capacity Assessment

| Unit Process | Capacity Assessment |
|---|---|
| **Preliminary Treatment** | |
| Screening | There is sufficient hydraulic capacity with both mechanical screens operational to accommodate a PHF of 17.6 mgd. Hydraulic modeling conducted by Jacobs in 2023 indicates that hydraulically the influent screening can pass the projected PHF. |
| Grit Removal | The 2012 WWTP Improvement documents indicate a design capacity of 16 mgd for the vortex grit basin. However, Hydraulic modeling conducted by Jacobs in 2023 indicates that hydraulically, the grit removal system can pass a PHF of 17.6 mgd. At this flow rate the anticipated performance would be poor. |
| **Secondary Treatment** | |
| Secondary Treatment | Based on maximum week MLSS predicted from BioWin modeling at peak day flow with all clarifiers in service (and assuming a 5-day SRT), there is only sufficient capacity through 2027. Upsized process piping is expected to be necessary to convey flow from the headworks to the secondary process and to return activated sludge within the secondary process under future flow conditions |
| Aeration Blowers | The air demands of the secondary treatment process are projected to exceed the firm capacity of the aeration blowers under peak conditions by 2027. |
| **Tertiary Treatment and Disinfection** | |
| Disk Filters | The existing disk filter capacity is expected to be exceeded by 2032 with one unit out of service or in backwash mode based on effluent limitations included in the City's DBO Contract with Jacobs. At this time the City expects to relax these contract limitations rather than invest in additional capacity. |
| Secondary Effluent Cooling Towers | The projected peak day flow during the months of June through September is expected to exceed the capacity of the colling tower by the year 2036. |
| UV Disinfection | The existing UV channels do not have adequate capacity to disinfect the 2045 PHF with all units in service. However, the firm capacity of the UV system is sufficient to treat the PDDWF through the year 2045 with one channel out of service. The City currently has an older UV unit in place as an emergency backup to the primary system. That backup unit is aging and the City plans replacement during the planning period. By the year 2040, the UV channels are expected to exceed their hydraulic capacity. |
| Outfall | Even with the Willamette River at its 100-year flood elevation, it is expected that the outfall pipeline can accommodate approximately 19 mgd before the UV channel effluent weirs are at risk of submergence upstream. Since this flow is well above the hydraulic capacity of the rest of the plant, no expansion will be needed until after 2045.(1) Jacobs found that under projected 2045 PHF conditions certain process and effluent piping, including piping just upstream of the Willamette River outfall and diffuser system, may be hydraulically deficient. At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized outfall piping between MH-B and MH-D2 is expected to be necessary to convey flow from the headworks to the secondary process under these conditions |
| **Solids Handling** | |
| Gravity Belt Thickener | Assuming continuous operation, the capacity analysis results indicate adequate capacity for thickening the current and projected maximum week WAS loads with one unit out of service. These units are aging and the City plans replacement during the planning period. |
| TWAS Storage | The TWAS storage volume is sufficient to accommodate the expected maximum week solids loads for two days (assuming TWAS is thickened to 4 percent). |
| Dewatering Centrifuges | The rated capacity of the current centrifuges is sufficient to process the maximum week load with one unit out of service though 2042 assuming operating times of 24 hours per day for 7 days per week, per the criteria detailed in Chapter 4.(2) These units will reach the end of useful life during the planning period and the City plans replacement accordingly. |
| Biosolids Dryer and Solids Disposal | The capacity of the biosolids dryer is adequate for handling the current and projected max week solids loads (in year 2045) on the basis of its design evaporation rate, assuming dewatered cake is dried from 20 percent TS to 92 percent TS and the dryer is operated for 24 hour per day for 7 days per week.(3) This unit is aging, has had recent performance issues and the City plans replacement during the planning period. |

Notes:
(1) The existing outfall was recently modified and equipped with five parallel diffuser pipes equipped with duckbill check valves to improve the mixing zone characteristics in the Willamette River.
(2) The centrifuges have exhibited inconsistent performance. The City recently refurbished these units and expects they will provide sufficient capacity through 2045.
(3) The existing solids dryer has sufficient capacity through 2045 but has exhibited inconsistent performance. See Alternative 2B, Chapter 6.
Abbreviations: DBO - Design-Build-Operate; gpd/sf - gallons per day per square foot; MLSS - mixed liquor suspended solids, SPA - State Point Analysis; SRT - solids residence time; TS - total solids; TWAS - thickened waste activated sludge.

Table ES.3 further summarizes the capacity assessment by listing each unit process, associated design parameters and year of possible capacity exceedance.

Table ES.3 Unit Process Capacity Year Summary

| Unit Process | Design Parameter | Redundancy Criteria | Year of Capacity Exceedance |
|---|---|---|---|
| Influent Screening | PHF | Bypass channel with manual bar rack in service and one mechanical screen out of service | >2045 |
| Grit Chamber | PHF | All units in service | 2045(1) |
| Secondary Treatment | MW MLSS Inventory at PDF | All units in service | 2027 |
| Secondary Effluent Cooling Towers | June 1 - Sept 30 PDF | All units in service | 2036 |
| Disk Filters | MWDWF | One unit in backwash | 2032(2) |
| UV Disinfection Channels | PHF | All units in service | 2040(1) |
| Outfall | PHF | - | >2045 |
| Gravity Belt Thickening | MW Load | One unit out of service | 2042 |
| Dewatering Centrifuges | MW Load | One unit out of service | >2045(3) |
| Biosolids Dryer | MW Load | All units in service | >2045(3) |

Notes:

(1) The plant hydraulic modeling done as a part of the 2012 WWTP Improvements Project only evaluated plant flows as high as 16 mgd. The projected peak hour flows presented in Chapter 3 exceed this flow by the year 2045. There are some unit processes including the grit removal system, secondary clarification and UV disinfection that have a peak hydraulic capacity of 16 mgd. The hydraulic analysis conducted by Jacobs in 2023 found that under projected 2045 PHF conditions certain process and effluent piping may be hydraulically deficient. At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized piping is expected to be necessary to convey flow from the headworks to the secondary process under these conditions .

(2) Existing Disk Filters are predicted to exceed reliable capacity (one unit out of service) in 2028 based on vendor provided design criteria. This conclusion assumes limitations for effluent total suspended solids contained in the WWTP DBO contract, which are far more stringent than the City's NPDES permit. At this time the City expects to relax these contract limitations rather than invest in additional capacity. Following startup of secondary treatment membrane bioreactors in 2030, the tertiary filters will be required less to meet the effluent requirements of the NPDES permit. It is anticipated the City will maintain these facilities to allow flexibility in operation to account for servicing and membrane facility downtime.

(3) As noted previously, the existing centrifuges and biosolids dryer appear to have sufficient capacity through the planning year 2045, however condition and age are likely to require replacement during the planning period. It is recommended the City reassess available replacement technologies prior to replacement and consider loading appropriate to the planning horizon of any new units selected.

Abbreviations: MW - maximum week

## ES.6 Regulatory Considerations and Strategy

It is the responsibility of the Oregon DEQ to establish and enforce water quality standards that ensure the Willamette River's beneficial uses are preserved. Discharges from wastewater treatment plants are regulated through the (NPDES. All discharges of treated wastewater to a receiving stream must comply with the conditions of an NPDES permit. The Wilsonville WWTP discharges to the Willamette River at River Mile 38.5 just upstream of the Interstate 5 bridge. The existing permit limits for the Wilsonville WWTP are shown in Table ES.4. This permit became effective on September 1, 2020 and expires July 30, 2025.

Table ES.4 Current Effluent Permit Limits

| Parameter | Average Effluent Concentrations | | Monthly Average, (ppd) | Weekly Average, (ppd) | Daily Maximum, (lbs) |
|---|---|---|---|---|---|
| | Monthly | Weekly | | | |
| **May 1 - October 31** | | | | | |
| $CBOD_5$ | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| TSS | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| **November 1 - April 30** | | | | | |
| $BOD_5$ | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| TSS | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| **Other Parameters Limitations** | | | | | |
| E. coli Bacteria | • Shall not exceed 126 organisms per 100 ml monthly geometric mean.<br>• No single sample shall exceed 406 organisms per 100 ml. | | | | |
| pH | • Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0 | | | | |
| $BOD_5$ Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| TSS Removal Efficiency | • Shall not be less than 85% monthly average | | | | |
| ETL June 1 through September 30 | • Option A: 39 million kcal/day 7-day rolling average<br>• Option B: Calculate the daily ETL limit | | | | |

Notes:
Abbreviations: $CBOD_5$ - five-day carbonaceous biochemical oxygen demand; ETL - excess thermal load; kcal/day - kilocalories per day; lbs - pounds, mg/L - milligrams per liter; ml - milliliter.

The WWTP has been compliant with NPDES permit limits, generally. However due to construction issues that required that aeration basins be offline, equipment failure and issues with solids processing, the WWTP did violate their NPDES permit over eight months between 2015 and 2020 (December 2015, February 2017, April 2017, January 2018, August 2018, May 2020, June 2020 and July 2020). Most of these violations were due to the daily effluent TSS load exceeding the maximum daily load limit in the NPDES permit. It is anticipated that once the issues with solids processing are addressed, the City's current treatment process will be able to meet permit limits.

Chapter 5 details potential regulatory issues the City will need to take into consideration in coming years. Several possible regulatory actions by the Oregon DEQ could drive investments in future improvements at the City's WWTP. The plant discharges to the Willamette River and existing and future effluent limitations contained in the NPDES permit dictate, in large part, the necessary treatment processes and configuration at the WWTP necessary to maintain compliance.

Future treatment upgrades may be required when DEQ establishes total maximum daily loads (TMDL) for the lower Willamette River. Dissolved oxygen and nutrient limits, such as phosphorus limitations, are possible. The dissolved oxygen in the lower part of the river does not always meet water quality standards, and indications of excessive nutrients, such as chlorophyll-a, aquatic weeds, and harmful algal blooms, are present in the lower Willamette River. DEQ has begun its triennial review of Oregon's water quality criteria. The review could result in more stringent or new discharge requirements, but this process will take several years. For planning purposes, providing plant footprint to accommodate future treatment to remove phosphorus and address dry weather seasonal limits on dissolved oxygen should be anticipated. In addition, the City should continue to engage with DEQ regarding any proposed receiving water temperature regulatory actions keeping in mind potential limitations on effluent cooling capability provided by current cooling tower technology in operation at the WWTP.

## ES.7 Alternative Development and Evaluation

Chapter 6 presents the methodology and findings of a process improvements alternatives evaluation. The plant's treatment process needs were defined by comparing the plant's existing condition, capacity and reliability, with the projected flows, loads, and regulatory constraints for the recommended alternatives. Where capacity deficiencies were predicted, at least two alternatives were analyzed for each corresponding unit process. Process modifications associated with each alternative were modeled in BioWin to evaluate the overall impact on plant operations.

As identified in Chapter 4, the secondary treatment process is expected to require additional capacity during the planning horizon (2045). Chapter 6 details two alternatives to address these capacity limitations. The two alternatives considered to increase secondary capacity are:

1. Expansion of the existing conventional activated sludge process; and
2. Intensification of the existing treatment process using membrane bioreactor (MBR) technology.

Due to the higher capital and operating costs of intensification, construction of a new conventional aeration basin is recommended as the first phase to increase secondary capacity. As flows and loads increase, or regulatory requirements become more stringent, it is expected to become necessary to intensify treatment. It is recommended the City revisit this evaluation as the need for 1) additional capacity to accommodate growth nears or 2) more stringent effluent limitations are considered. This offers the opportunity to take advantage of potential advances in technology as well as confirming the predicted time frame of capacity exceedance. A new aeration basin project is included in the Capital Improvement Plan in Chapter 7. As loads continue to increase, this plan includes the gradual conversion of the existing conventional activated sludge process to a membrane bioreactor process.

The existing aeration blower system firm capacity is expected to be deficient by 2027. An additional aeration blower (with approximately double the capacity of the current blowers) would provide for the first phase of capacity expansion. As loads continue to increase, the plan includes the gradual upsizing of the existing blowers.

The projected peak day flow between June through September is expected to exceed the capacity of the existing cooling tower. Since the existing cooling tower system was designed to be expanded with the addition of one more tower, the plan assumes the expansion of the existing cooling tower process by the year 2036 to meet the projected summer peak day flows.

Additional tertiary filtration capacity is predicted to be needed by 2032 to provide full treatment of the MWDWF with one disc filter out of service or in backwash mode. As the City has selected an intensification technology utilizing membranes, this is likely to eliminate tertiary filtration capacity concerns as the membranes replace the filtration process for TSS removal in plant effluent.

While the capacity assessment findings presented in Chapter 4 determined existing gravity belt thickeners and dewatering centrifuges have sufficient capacity assuming continuous operation, the remaining equipment service life may require replacement within the planning horizon. The centrifuges, installed in 2014, were recently refurbished, but by 2045, will have been in service for over 30 years. In addition, the gravity belt thickeners (GBT) which thicken the sludge prior to delivery to the centrifuges for dewatering, have been in service even longer. The City should plan for their replacement within the planning horizon and consider whether a capacity increase is needed at the time of replacement based on projections of solids production and processing needs. Additionally, the secondary process was modified in 2020 and has experienced extended periods where mixed liquor concentrations have been elevated above typical ranges for conventional activated sludge or extended aeration processes. Due to the complications with secondary process operation and performance issues with the centrifuges, it is recommended the City study the secondary treatment and dewatering processes to confirm that the assumptions and conclusions regarding centrifuge capacity in Chapter 4 may be relied upon. A dewatering performance optimization study is recommended so the City can collect and analyze secondary treatment and solids processing performance data. For budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is presented in Chapter 7. Timing of that equipment replacement will depend on performance of the existing units, future loading assumptions, and observed condition.

The existing solids dryer has experienced operational issues in recent years, including a fire that caused extensive damage to the equipment in April 2019 and a leaking rotary joint and damaged seal in 2021. As of February 25, 2022, the dryer has been repaired and is operating. Because of the City's commitment to solids drying as the preferred process to achieve Class A biosolids, the alternatives evaluation presented in this Plan for future dryer replacement was conducted with a focus on thermal drying options only.

Chapter 6 details an analysis of the following alternatives to improve the drying system:

1. Alternative 1 - Continue operating the existing biochemical reactor (BCR) paddle dryer and defer replacement.
2. Alternative 2 - Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.
3. Alternative 3 - Construct a new dryer building with a different solids dryer technology.

While it is anticipated the existing dryer has useful life through at least 2026 (current DBO contract expiration), by 2031 the dryer will have been in operation for over 15 years. It is recommended the planning and design of upgrades to provide reliable dryer capacity begin in 2031, or sooner if further operational concerns arise. The City has indicated a preference for a variation of Alternative 2 which involves expanding the existing Dewatering and Drying Building to accommodate a second solids paddle dryer. This alternative provides backup capacity to allow the City to continue delivering Class A solids during periods of downtime if a mechanical failure occurs or to accommodate regular maintenance of one dryer train. As mentioned previously, this Plan recommends the City complete a study of the secondary sludge quality, performance of that process, chemical addition types and locations, and solids handling process performance overall prior to making a final selection of the preferred dryer alternative from the alternatives detailed in Chapter 6. For purposes of capital planning, this Plan assumes the City will implement Alternative 2b (modification of Dewatering and Drying Building to accommodate a second paddle dryer) with a study and confirmation of this selection beginning in 2031.

Lastly, the City wants to establish a direct connection between the City's fiber optics network and the WWTP. This addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the site entrance, where the conduits will be tied into the City's fiber optics network. Chapter 6 details one potential routing from the Operations Building to the site entrance that would minimize impact to existing yard utilities. The fiber optic cable addition is included in Chapter 7 and the City's 5-year CIP.

Table ES.5 below summarizes the alternatives evaluated in Chapter 6 including recommendations for future WWTP improvements.

Table ES.5 Summary of Alternatives

| Unit Process | Alternatives Considered | Selected Alternative |
|---|---|---|
| Secondary Treatment | • Expansion of the existing conventional activated sludge process.<br>• Intensification of the existing treatment process. | • Expansion of the existing conventional activated sludge process through the addition of another aeration basin. Further phased expansion of capacity through addition of membrane bioreactor (MBR) and fine screening facilities. |
| Solids Dryer | • Continue operating the existing BCR paddle dryer and defer replacements.<br>• Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.<br>• Construct a new dryer building with a different solids dryer technology. | • Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer by expanding the Dewatering and Drying Building to accommodate a second solids paddle dryer. |

## ES.8 Recommended Alternative

Figure ES.6 presents a WWTP site plan identifying locations of recommended improvements resulting from condition and capacity assessments, including evaluation of alternatives, as described.

Summaries of opinions of probable costs and anticipated phasing for the improvements recommended for inclusion in the City's WWTP CIP are provided in Table ES.6.

The expected cash flow for the planning period was determined for the recommended improvements summarized in Table ES.6. The cash flow through 2045 includes an escalation rate of three percent, and the estimated peak expenditure for any fiscal year is approximately $55,434,000 in fiscal year 2030. The projected CIP expenditures are presented in Figure ES.7. Capital costs estimated in the Plan will be considered as the City assesses the need to adjust sewer enterprise rates and charges in coming months. It will be important to distinguish capacity and condition (repair and replacement) driven improvements in assigning costs to existing rate payers and future users.

Table ES.6 WWTP CIP - Recommended Alternative Opinion of Probable Cost and Phasing

| Plant Area | Project[1] | Opinion of Probable Cost[2] | Approximate Year Online |
|---|---|---|---|
| Solids Handling | Dewatering Performance Optimization | $150,000 | 2025 |
| Communications/IT | Fiber Optic Cable Addition | $60,000 | 2025 |
| UV System | Backup UV System Improvement | $1,705,000 | 2026 |
| Support Buildings | Seismic Improvements | $1,082,000 | 2026 |
| Support Buildings | Geotechnical Foundation Mitigation | $2,000,000 | 2026 |
| Secondary Treatment | New Conventional Aeration Basin and Blower | $10,222,000 | 2027[3] |
| Secondary Treatment | New Secondary Clarifier Mechanisms | $1,775,000 | 2027 |
| Secondary Treatment | New MBR, Blowers and Fine Screens (Phase 1) | $69,727,000 | 2031 |
| Solids Handling | Solids Dryer Improvement | $17,130,000 [7] | 2033 |
| Solids Handling | Existing Centrifuge and GBT Replacement | $3,701,000 [4,6] | 2033[5] |
| Cooling Towers | New Effluent Cooling Tower | $642,000 | 2036 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 2) | $2,330,000 | 2039 |
| UV System | UV Equipment Replacement | $2,571,000 | 2040 |
| Outfall | Outfall Improvements | $1,244,000 | 2040 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 3) | $8,117,000 | 2044 |
| **TOTAL** | | **$122,456,000** | |

Notes:
White rows indicate projects that are in the City's 5-year CIP and blue rows indicate projects that are outside the 5-year CIP window.
(1) Details of each project can be found in Chapter 2 or Chapter 6 of this Master Plan.
(2) The estimated opinion of probable costs include the construction costs plus ELA (or soft costs). Details on the estimated project costs can be found in Chapter 2 or Chapter 6 of the plan, with the exception of costs for the backup UV system and centrifuges which are presented earlier in Chapter 7. All costs presented are based on an August 2023 ENR index of 13473.
(3) As identified in Chapter 4, the secondary treatment process at the Wilsonville WWTP is expected to require additional capacity by the year 2027. Since design and construction of a new aeration basin may take longer than the year 2027, the City will likely need to operate at SRTs lower than 5 days during the maximum week condition if growth occurs as predicted in Chapter 3.
(4) For budgeting purposes, the Option B centrifuge cost from Table H-2 in Appendix K is used for the project cost summary and the CIP.
(5) Replacement timing dependent upon satisfactory equipment performance.
(6) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2042. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.
(7) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.

The years in which key processes are projected to exceed capacity are presented in Figure ES.8. The green line illustrates projected MM BOD triggers for existing and proposed new secondary treatment facilities. Projected PHF is shown in blue indicating capacity exceedance of the cooling tower and certain elements of plant hydraulics. Prior to the year of projected exceedance, planning, design, and construction activities will be required to allow upgrades to be commissioned to prevent capacity exceedances. It is important to note that the timing of improvements should be driven by the rate of growth in influent flow and load. Dates indicated in Figure ES.8 and elsewhere in this document should be considered best, conservative estimates based on projections presented herein and professional judgement.

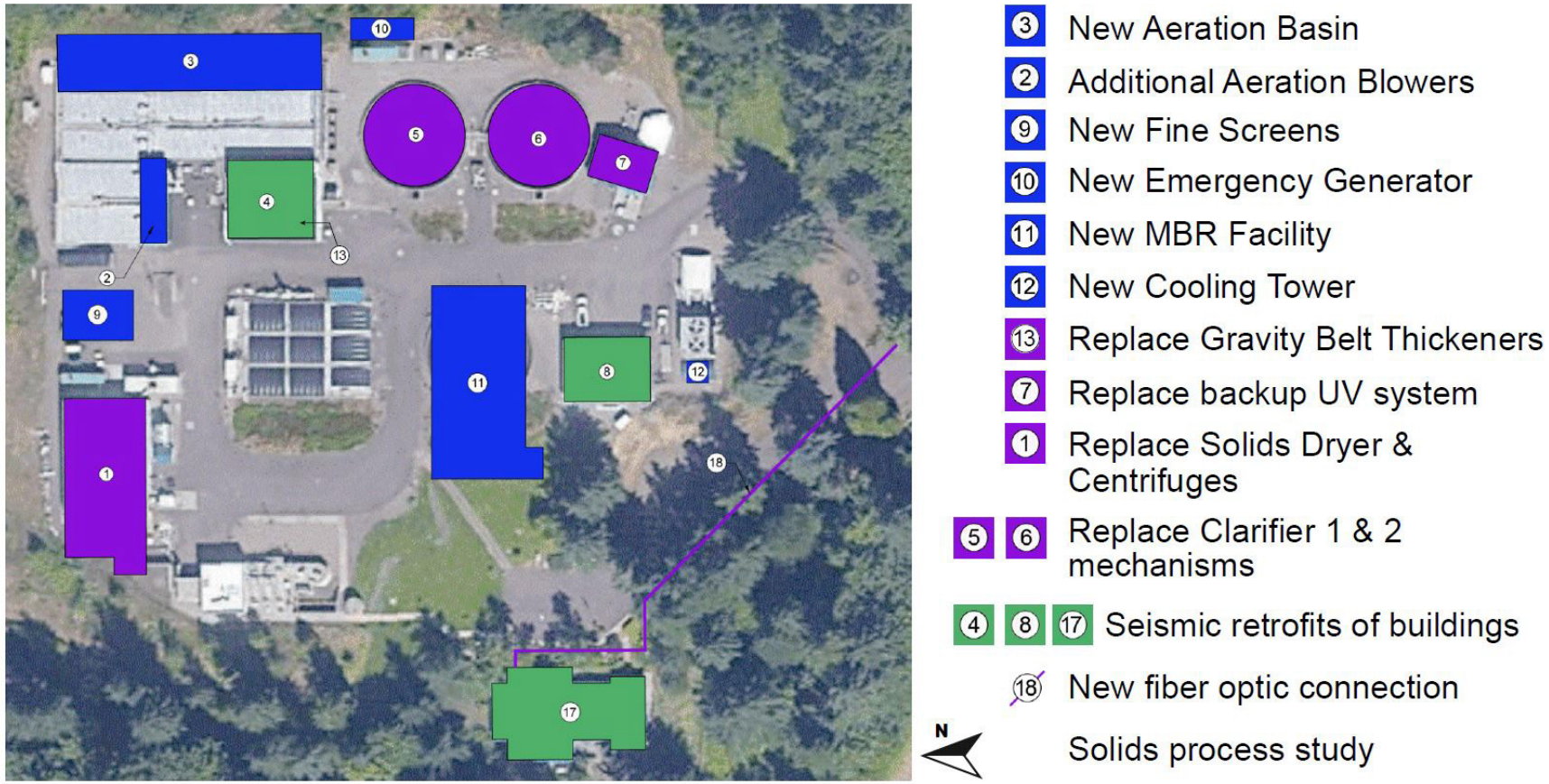



Figure ES.6 Proposed WWTP Improvements Site Plan

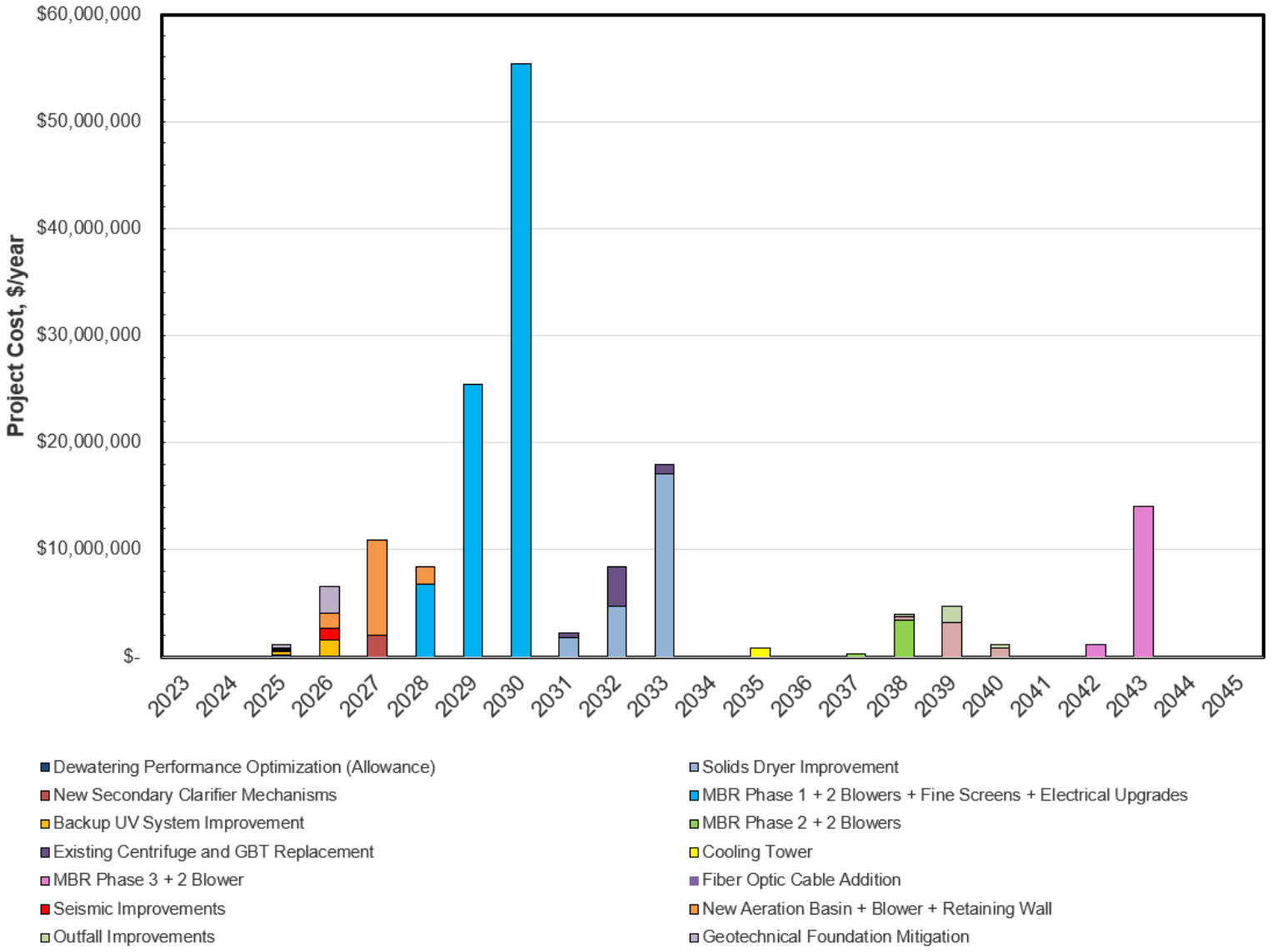



Figure ES.7 Projected 20-Year CIP Expenditures

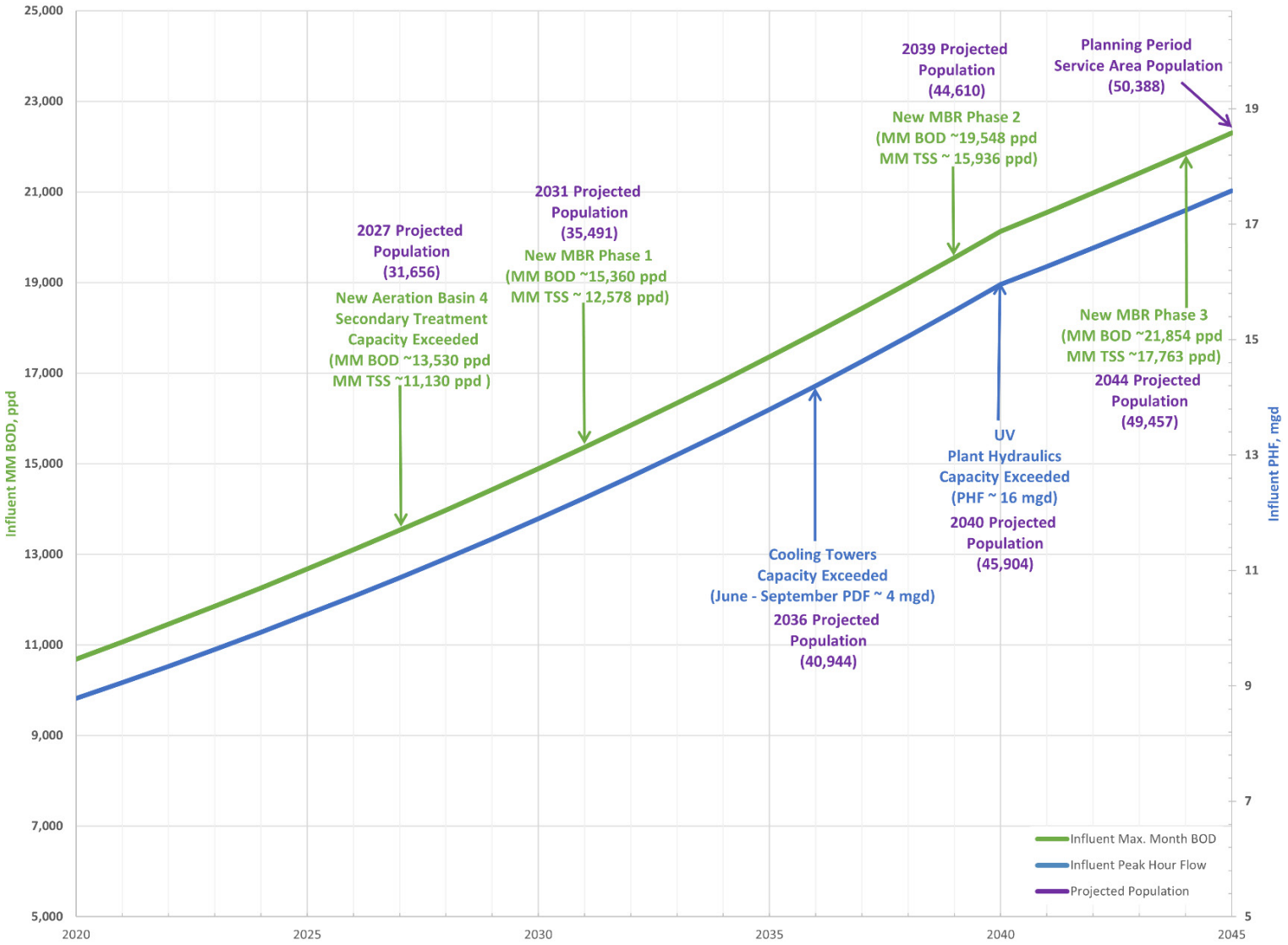



Figure ES.8 Capacity Trigger Graph

Chapter 1

# PLANNING AREA CHARACTERISTICS

## 1.1 Introduction

The City of Wilsonville (City) is preparing a master plan (Plan) for its Wastewater Treatment Plant (WWTP). The goal of this Plan is to develop a 20-year capital plan that identifies improvements to the City's WWTP. These recommended improvements were selected to provide the best value to the City's ratepayers by maximizing the use of existing infrastructure and optimizing system operation while protecting water quality and human health and supporting economic development.

This chapter documents City wastewater service area characteristics relevant to planning facility improvements. These characteristics are summarized in a manner consistent with the City's approach to planning and operating its conveyance and treatment facilities, and in accordance with requirements for wastewater planning documents set forth by the Oregon Department of Environmental Quality (DEQ) that support financing through the Clean Water State Revolving Fund (SRF). The chapter also demonstrates the City's compatibility with the local governmental comprehensive plan and Statewide Land Use Goal 11 (Goal 11) and describes how Oregon's Integrated Water Resources Strategy (IWRS) were considered as part of the overall planning strategy.

### 1.1.1 Background

The City's existing system collects wastewater from residences, businesses, industries, and public facilities and conveys the flow to the City's WWTP. The most recent master plan, Wastewater Collection System Master Plan (Murray, Smith & Associates, Inc., 2014) considered areas within the existing City Limits, the Oregon Metro (Metro) identified Urban Growth Boundary and the Urban Reserve Areas to develop wastewater flow projections. These flows inform the collection system capacity needed to effectively convey flow to the WWTP as well as capacity required at the plant to properly treat and discharge wastewater in accordance with permit limitations.

The City's existing WWTP was constructed in the early 1970s, with upgrades completed in the 80s and 90s. To accommodate growth and effluent water quality requirements, the City completed a major upgrade in 2014. The current WWTP includes a headworks unit with screening and grit removal, three aeration basins, two stabilization basins, three circular secondary clarifiers, two disk filters, two ultraviolet (UV) disinfection channels, two centrifuges, one dryer, and five sludge storage basins. Treated and disinfected effluent is discharged to the Willamette River. Waste sludge is conditioned with polymer and thickened with gravity belt thickeners. Thickened waste sludge is dewatered in centrifuge units and dried to a Class A product. An odor control biofilter and fans draw and treat odorous air from the treatment plant.

### 1.1.2 Scope

This Plan identifies a 20-year schedule of capital improvements to the City's WWTP expected to accommodate growth in the area, address changing regulatory requirements, maintain existing facilities, and mitigate life safety and seismic deficiencies. Specific objectives of the Plan are addressed by individual chapters and include the following:

- Chapter 1 - Planning Area Characteristics: Defines locally adopted comprehensive land use plans, urban growth boundaries, City boundary, and sewer service plans.
- Chapter 2 - Condition Assessment and Tier 1 Seismic Analysis Summary: Reviews and summarizes recently collected condition assessment data and performs a life safety/seismic evaluation.
- Chapter 3 - Wastewater Flow and Load Projections: Develops projected flows and loads to be treated at the WWTP.
- Chapter 4 - Capacity Analysis: Determines the capacity of the existing treatment plant under current NPDES conditions.
- Chapter 5 - Regulatory Considerations and Strategy: Assesses and documents regulatory considerations for the Plan and develops an overall regulatory strategy.
- Chapter 6 - Alternative Development and Evaluation: Identifies, develops, and evaluates alternatives by process area that will maximize the use of existing assets at the WWTP and provide flexibility to meet potential future regulatory requirements.
- Chapter 7 - Recommended Alternative: Finalizes the recommended alternatives to be adopted in the Plan.

### 1.1.3 Reference Studies and Sources

The following sources were used to develop this Chapter:

- Portland State University Population Research Center.
- US Census Bureau American Community Surveys, City of Wilsonville, 2010-2018.
- The Oregon Conservation Strategy, Oregon Department of Fish and Wildlife, 2016.
- Metro Land Use Documentation.
- Mero Population Projections.
- Oregon DEQ Wastewater Facility Planning Guide.
- Oregon's Integrated Water Resources Strategy.
- Statewide Land Use Goal 11, 2005 Update.
- Natural Resources Conservation Service (NRCS).
- Oregon State Historic Preservation Historic Sites Database (HSD).
- Oregon Department of Geology and Mineral Industries (DOGAMI).
- Federal Emergency Management Agency (FEMA).

The following City reports, and plans were also referenced:

- City of Wilsonville Wastewater Collection System Master Plan, November 2014, Murray, Smith & Associates, Inc.
- City of Wilsonville Comprehensive Plan, October 2018.

## 1.2 Plan Requirements

This Plan was prepared, in part, to meet the requirements of three Oregon planning guidance documents, which are briefly described in this section.

### 1.2.1 Oregon DEQ Wastewater Facility Planning Guide, July 2019

The Oregon DEQ developed a Wastewater Facility Planning Guide (Guide) to help communities develop and evaluate wastewater alternatives to meet their long-term needs. The Oregon DEQ administers the SRF, which provides below-market rate loans to public agencies for preparation of planning and environmental review documents, designing and constructing wastewater facilities, and completing other water quality improvement design and construction projects.

The Guidelines for Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities, last revised in July 2019, outline the required contents of a wastewater planning document.

### 1.2.2 Oregon's Integrated Water Resources Strategy, 2017 Update

The IWRS provides a blueprint for the state to better understand and meet its instream and out-of-stream water needs relative to water quantity, water quality, and ecosystem needs. The IWRS also recommends actions applicable to wastewater planning.

### 1.2.3 Statewide Land Use Goal 11, 2005 Update

In Oregon, the foundation for the statewide program for planning is a set of 19 statewide planning goals. The objective of Goal 11 is 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. This goal requires cities with more than 2,500 people to adopt public facility plans to guide development, specifically for sewer and water systems.

Associated planning documents must describe the boundary and show compliance with Goal 11 and consistency with the local comprehensive plan. Wastewater planning documents must also include an affirmative land use compatibility statement from the local government to demonstrate compatibility with the comprehensive plan.

## 1.3 Project Planning Area

This section describes the project planning area and summarizes the City's key wastewater conveyance and treatment infrastructure.

### 1.3.1 Service Area Definition

The planning area is consistent with the City's 2014 Collection System Master Plan and 2018 Comprehensive Plan and includes the UGB, as well as the area where the City currently provides wastewater collection service (largely defined by the City Limits) as shown in Figure 1.1.

The planning area extends to the City of Tualatin to the north and is bounded by the Willamette River to the south, apart from the Charbonneau District south of the Willamette River.

The planning area also includes portions of the urban reserve areas (URA), which have been identified by Metro and are also shown in Figure 1.1.

The City's current wastewater service area follows the City boundary, but also includes a small area just outside the City boundary at the Coffee Creek Correctional Facility. The City also provides wastewater service to the French Prairie Rest Area south of the City on I-5, as shown in Figure 1.1.

The Basalt Creek Concept Plan, adopted in 2018, resulted in a refinement of the City service area compared to assumptions applied at the time of the 2014 Wastewater Collection System Master Plan (CSMP). The Basalt Creek Concept Plan establishes the northern Wilsonville service area boundary as the future Basalt Creek Parkway roadway alignment. This decision is reflected in Figure 1.1, which shows the Study Area Boundary as analyzed in the 2014 CSMP, incorporating the Basalt Creek Concept Plan service area refinements described above. The resulting boundary shown in Figure 1.1 defines the service area for this WWTP Master Plan.

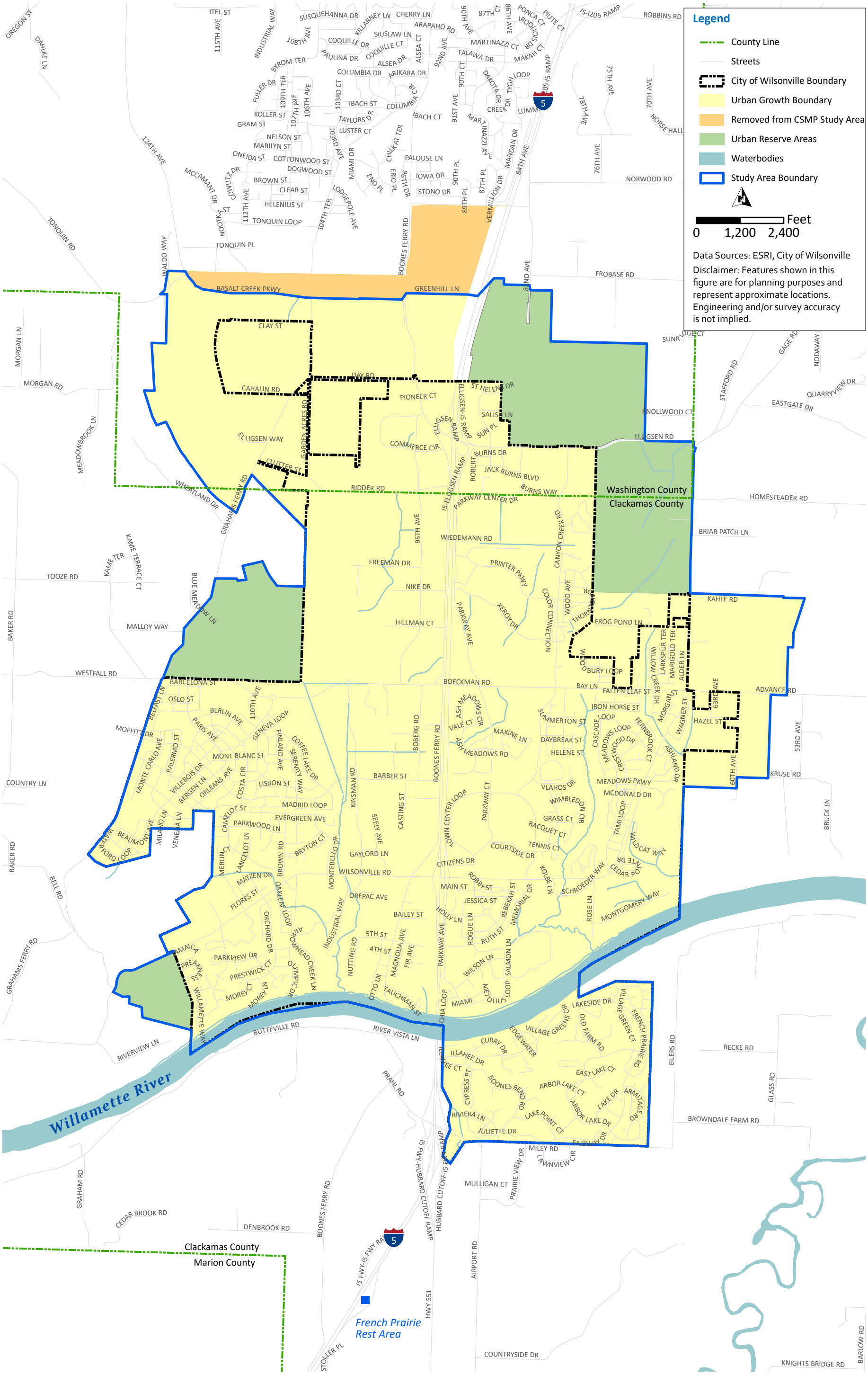
### 1.3.2 Existing Conveyance and Treatment Facilities

The City operates and maintains approximately 70 miles of sewer pipe, which consists of gravity pipes between 4.0- and 36 inches in diameter and 1,700 manholes. The collection system also includes nine pump stations, not including private pump stations that discharge into the City's system. The system conveys residential and non-residential wastewater to the WWTP, located at the southern end of the City adjacent to the Willamette River. The City's sanitary sewer system consists of seven primary basins that cover nearly 12 square miles in the service area. Figure 1.2 illustrates the City's existing sanitary sewer conveyance infrastructure and the location of the WWTP.

#### 1.3.2.1 Wastewater Treatment Plant

The City's WWTP was originally commissioned in 1972 and discharges treated effluent to the Willamette River. The WWTP was upgraded in 2014 to expand the average dry weather capacity to 4.0 million gallons per day (mgd) to accommodate growth. The WWTP processes include screening and grit removal facilities, aeration basins, contact stabilization basins, secondary clarifiers, tertiary filters, effluent cooling towers, UV disinfection channels, and biosolids thickening, dewatering, and drying processes. Recent improvements include changes to the odor control system, addition of cooling towers to meet temperature regulations, and changes to biosolids handling processes. During the initial stages of developing this Plan (summer/fall 2020) the WWTP secondary treatment process was modified to allow mixed liquor recycle pumping from the final aerated zone to the first zone in each basin.

The City contracts with Jacobs for operation of the WWTP under a Design-Build-Operate (DBO) agreement.




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Figure 1.1 Planning Area

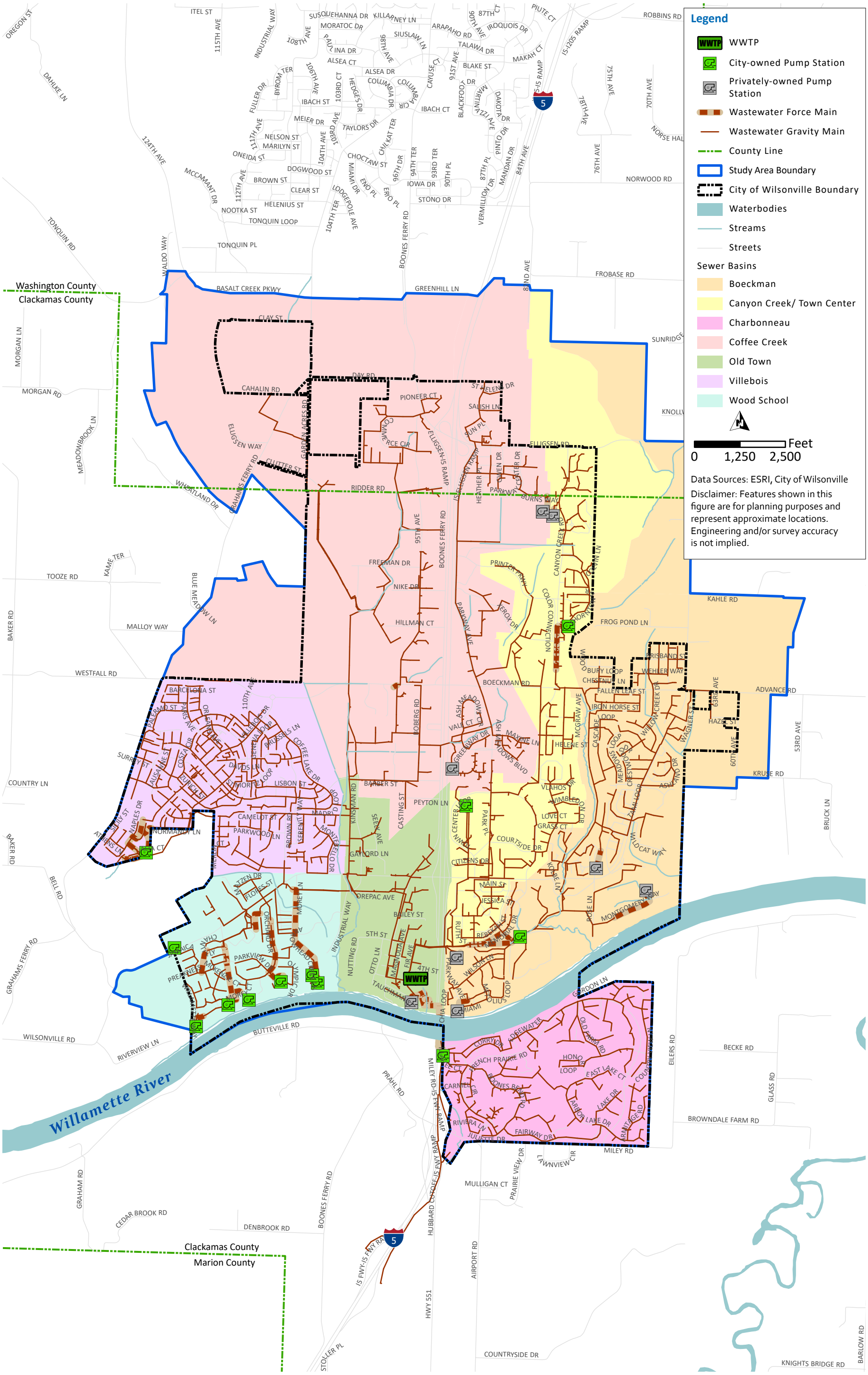





Figure 1.2 Conveyance Infrastructure and Treatment Facility

## 1.4 Land Use

The Statewide Goal 11: Public Facilities, Oregon Statue 197, and Oregon Administrative Rule (OAR) 660 require the following information to be included in facilities planning documents:

- An inventory and general condition assessment of all significant public facility systems supporting the land uses designed in the acknowledged comprehensive plan.
- A list of significant public facility projects that will support the land uses designated in the acknowledged comprehensive plan.
- Planning level cost estimate for each public facility project.
- A map and written description of each public facility project's general location or service area.
- Policy statements or urban growth management agreements identifying the provider of each public facility system.
- An estimate of when each facility project will be needed.
- An assessment of the provider's existing funding mechanism, their ability to fund the development of each public facility project or system, and possible new funding mechanism.

### 1.4.1 Locally Adopted Comprehensive Plans

The City of Wilsonville is within Metro jurisdiction. Metro serves more than 1.5 million people in Clackamas, Multnomah, and Washington counties with a boundary that encompasses Portland, Oregon and 23 other cities.

In 1992, the region's voters adopted a Charter for Metro which gave Metro jurisdiction over matters of metropolitan concern and required the adoption of a Regional Framework Plan. The Regional Framework Plan unites all of Metro's adopted land use planning policies and requirements. Under the Metro Charter and state law, cities and counties within Metro's boundaries are required to comply and be consistent with Metro's adopted Urban Growth Management Functional Plans and the Regional Framework Plan.

By state law, Metro is responsible for establishing the Portland metropolitan area's UGB, which includes Wilsonville. Land uses and densities inside the UGB are selected to support urban services such as police and fire protection, roads, schools, and water and sewer systems.

The City's Comprehensive Plan, updated most recently in 2020, reflects the land uses and UGB established by Metro. All parcels within the City have been assigned a land use designation, which includes various categories of commercial, industrial, institutional, and residential land uses. The City then assigns specific zoning within the broader land use designations.

Consistent with these requirements, Figure 1.3 shows the City's land use designations within the Plan Study Area Boundary.

## 1.5 Physical Characteristics

The natural environment is an important determinant of growth within a region; it contains resources which must be protected or avoided making it a key consideration in the Plan.

The northern section of the City is within Washington County, but the majority of the City is located in the northwestern part of Clackamas County. The Willamette River separates the majority of the City from the Charbonneau District, a neighborhood within the city limits south of the Willamette River.

The main thoroughfares are the Interstate-5 (I-5) freeway, which runs north-south through the City, and Boeckman Road and SW Wilsonville Road, which both run east-west through the City.

### 1.5.1 Climate

The City's climate has warm, dry summers, and cool, moist winters. During the wet winter season, rainfall is generally light with periods of more intense rainfall. The wettest period of the year is from November through March with the most rainfall occurring in December with an average of 6.61 inches of precipitation. July and August are the warmest months, with an average high temperature of 81-degrees Fahrenheit, and December is the coldest month, with an average low temperature of 34-degrees Fahrenheit (Source: The Weather Channel).

### 1.5.2 Topography

The planning area is relatively flat, except for steep slopes surrounding the natural drainage channels through the region, such as Boeckman Creek and Coffee Lake Creek. Topography ranges from 375 feet above sea level at the northern end of the study area to 60 feet above sea level at the Willamette River near the I-5 crossing. Generally, the region slopes downward towards the Willamette River. Figure 1.4 shows the topography in the planning area.

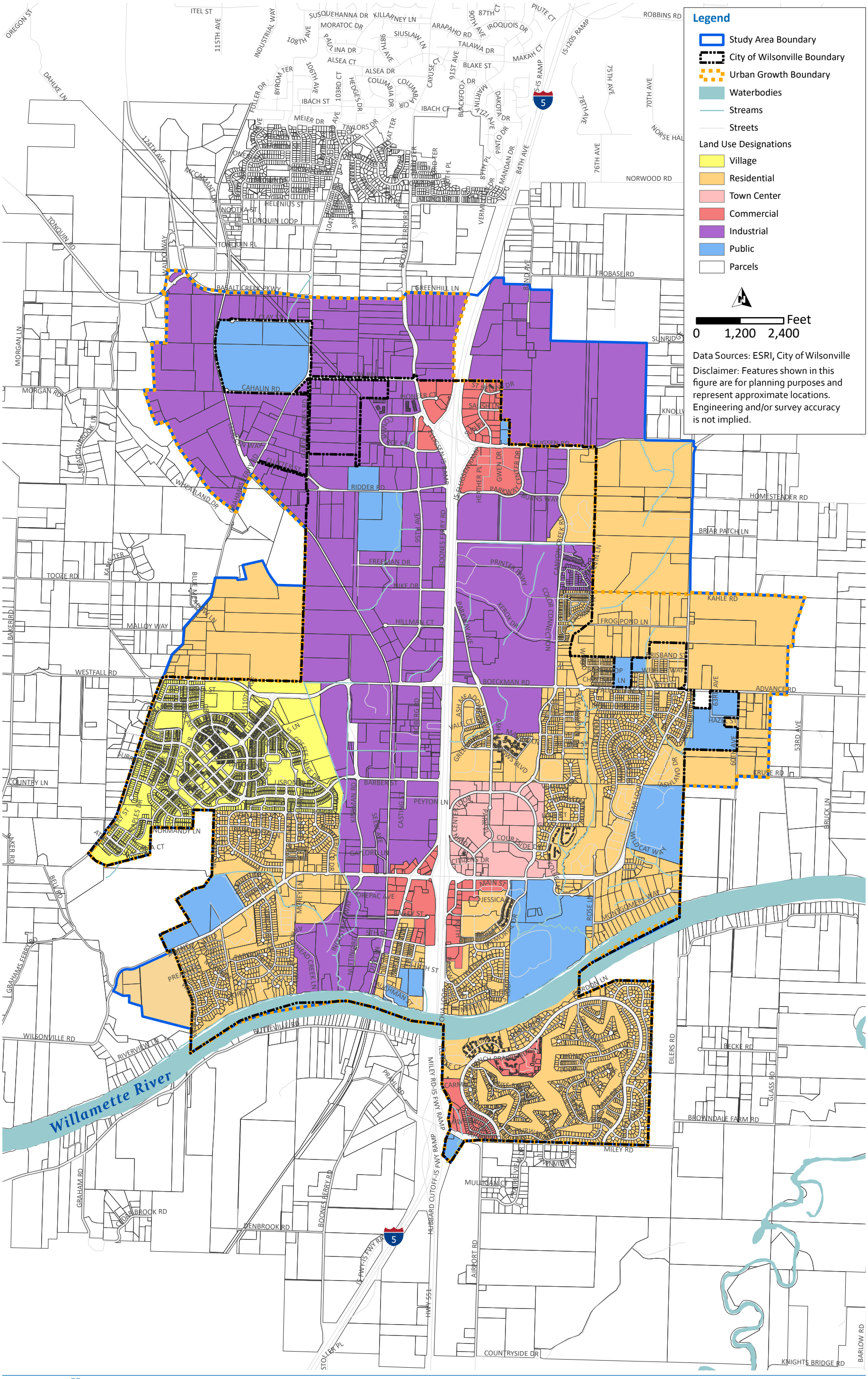



Figure 1.3 City Land Use Designations

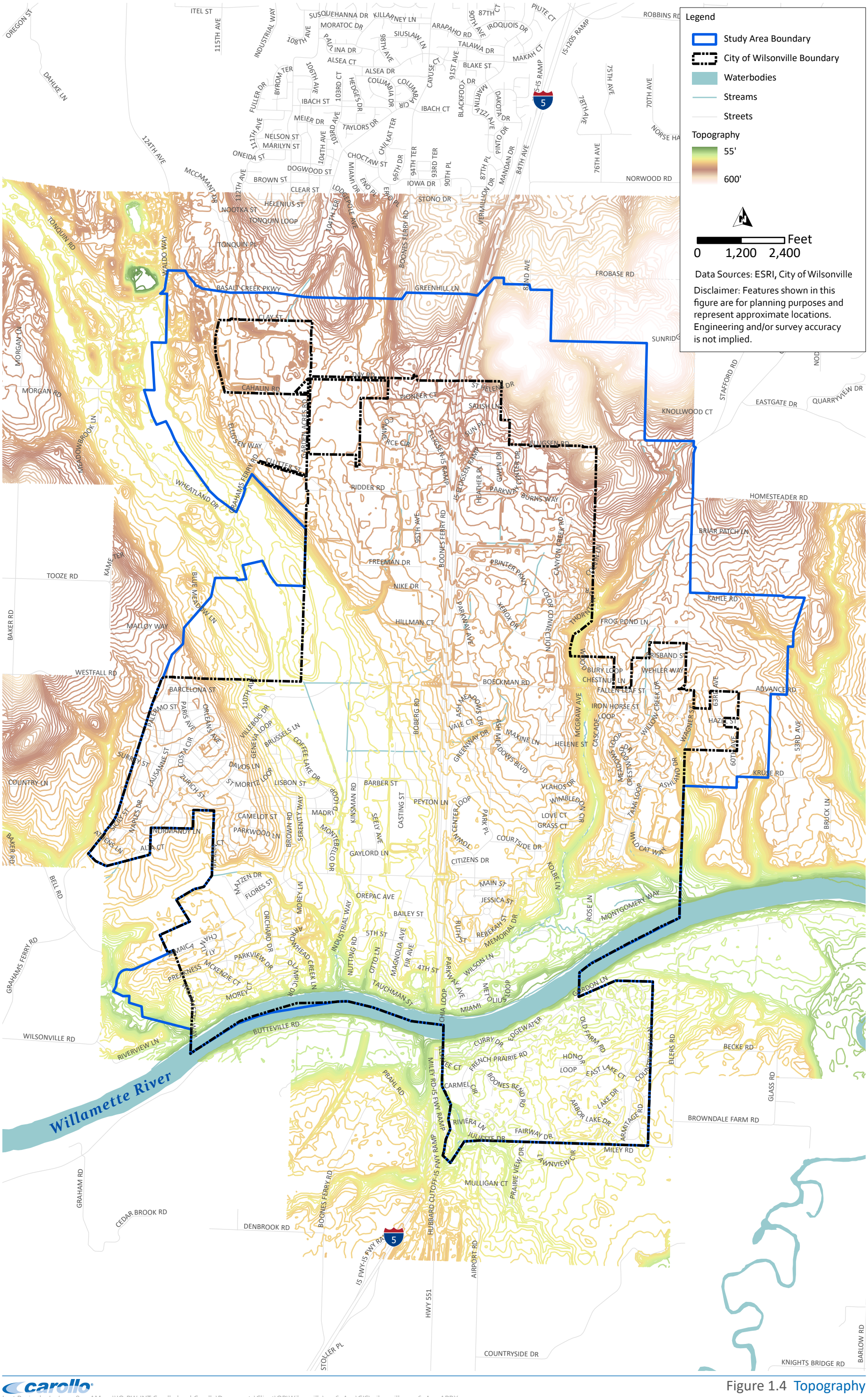





Figure 1.4 Topography

### 1.5.3 Geology and Soils

The geology of the City's service area is dominated by Quaternary deposits consisting of backwater deposits from the Missoula Floods as well as glaciofluvial, lacustrine, and fluvial sedimentary deposits. Higher elevations in the area are dominated by basalts from the Columbia River deposits.

The region's geologic history begins with the formation of the Columbia River Basalts (CRB) groups, which formed from millions of years of lava flows. The ancestral Columbia River and local streams carved through the CRB flows and began depositing fluvial sediments.

Over thousands of years, the Catastrophic Missoula Floods left layers of flood deposits. Local streams reestablished their courses through the flood deposits, and widespread landslide failure, many of which are still active, started occurring in canyons.

The planning area's morphology and soils were influenced significantly by the historical catastrophic flood events on the Columbia River known as the Missoula Floods. The NRCS classifies soils based on many characteristics, including hydrologic soil group, which are based on estimates of runoff potential. Table 1.1 summarizes the hydrologic soil groups, and the percentages of each soil group within the City's service area.

Table 1.1 Hydrologic Soil Groups

| Group | Description | Percent of Soil in City's Service Area |
|---|---|---|
| Group A | Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands of gravelly sands. These soils have a high rate of water transmission | 1% |
| Group B | Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. | 29% |
| Group C | Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture of fine texture. These soils have a slow rate of water transmission. | 30% |
| Group D | Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay later at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission. | 2% |

| Group | Description | Percent of Soil in City's Service Area |
|---|---|---|
| Group C/D Dual Group(1) | The first letter of this grouping refers to drained condition and the second to undrained condition. The drained condition for this Dual Group is characterized by Group C soil (see description above), and the undrained condition for this Dual Group is characterized by Group D soil (see description above). | 38% |

Notes:
(1) Certain wet soils are placed in Group D basely solely on the presence of a water table within 24 inches of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. If these soils can be adequately drained, then they are assigned to dual hydrologic soul groups based on their saturated hydraulic conductivity and the water table depth when drained.
(Reference: https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba)

### 1.5.4 Environmentally Sensitive Areas and Species

The planning area extends across the Coffee Lake Creek-Willamette River watershed (Middle Willamette). According to the Oregon Department of Fish and Wildlife (ODFW), the rivers and streams in the planning area serve as a habitat for endangered, threatened, or vulnerable native fish. Table 1.2 summarizes these species and the federal and state status of planning efforts for them.

Table 1.2 Aquatic Species Status

| Species | Federal Status | State Status |
|---|---|---|
| Fall and spring chinook | Listed threatened | Sensitive vulnerable |
| Coho | Listed threatened | Sensitive vulnerable |
| Pacific lamprey | Species of concern | Sensitive vulnerable |
| Summer and winter steelhead | Listed threatened | Sensitive critical |
| White sturgeon | -- | Data gap |
| Coastal cutthroat trout | Species of concern | Sensitive vulnerable |

The City has identified significant natural resource areas that warrant special use management consideration to preserve water quality, visual quality, and sensitive wildlife habitats. The management and protection of these natural resource areas is implemented through the provisions of the Significant Resource Overland Zone (SROZ) ordinance.

In 2016, ODFW produced the Oregon Conservation Strategy, which serves as an overarching state strategy for conserving fish and wildlife. The Conservation Strategy identified key conservation issues that are landscape-scale threats affecting species and habitats throughout the state.

Table 1.3 summarizes the key conservation issues for the Willamette Valley Ecoregion, of which the City is a part.

Table 1.3 Key Conservation Issues of Concern in Willamette Valley Ecoregion

| Conservation Issue | Description |
|---|---|
| Land Use Conversion and Urbanization | Habitat continues to be lost through conversion to other uses. |
| Altered Fire Regimes | Maintaining open-structured strategy habitats, such as grasslands, oak savannas, and wet prairies, partly depends on periodic burning. Fire exclusion has allowed succession to more forested habitats. |
| Altered Floodplain | The floodplain dynamics of the Willamette River have been significantly altered. Multiple braided channels dispersed floodwaters, deposited fertile soil, moderated water flow and temperatures, and provided a variety of slow-water habitats, such as sloughs and oxbow lakes. The Willamette River has largely been confined to a single channel and disconnected from its floodplain. |
| Habitat Fragmentation | Habitats for at-risk native plant and animal species are largely confined to small and often isolated fragments, such as roadsides and sloughs. |
| Invasive Species | Invasive plants and animals disrupt native plant and animal communities and affect populations of at-risk native species. |
| Wildlife Hazards | Urban landscapes can present a variety of hazards for wildlife, such as bird collisions with windows, impacts due to light pollution, predation and pet disturbance, collisions with vehicles and power lines, exposure to pesticides and contaminants, and harassment and illegal take of wildlife. |

The Conservation Strategy identifies habitats of conservation concern in Oregon that provide important benefits to strategy species. These species are defined as Oregon's "species of greatest conservation need." Table 1.4 summarizes strategy habitats in the Willamette Valley Ecoregion.

Table 1.4 Strategy Habitats in the Willamette Valley Ecoregion

| Type | Name |
|---|---|
| Flowing River and Riparian Habitats | Flowing water and riparian habitats include all naturally occurring flowing freshwater streams and rivers as well as the adjacent riparian habitat. |
| Grasslands | Grasslands in the Willamette Valley, also called upland prairies, are dominated by grasses, forbs, and wildflowers. |
| Natural Lakes | Natural lakes are relatively large bodies of freshwater surrounded by land. For the Conservation Strategy, they are defined as standing water bodies larger than 20 acres. |
| Oak Woodlands | Oak woodlands are characterized by an open canopy dominated by Oregon white oak. |
| Wetlands | Wetlands are covered with water for all or part of the year. Permanently wet habitats include backwater sloughs, oxbow lakes, and marshes, while seasonally wet habitats include seasonal ponds, vernal pools, and wet prairies. |

### 1.5.5 Cultural Resources

This section lists the potential types and numbers of resources that may be encountered during construction of projects identified in this Plan. If during formal Oregon State Environmental Review Process (SERP) review further built environment resources, archaeological, or other historic resources are observed, they will be documented at a level appropriate for assessing them as potential historic properties. An inadvertent discovery plan should be established prior to implementing projects that have the potential to impact cultural resources.

Cultural Resource review includes assessing direct effects to any potential archaeological resources related to project activities, as well as assessing any indirect impacts to historic properties listed in, or eligible for, inclusion in the NRHP that would result from the project and that are within a 0.5-mile radius study area.

Review of Oregon State HSD shows there are historic districts, buildings, and structures within the City of Wilsonville. Based on the review of the HSD, there are no historic objects or sites within the City of Wilsonville.

### 1.5.6 Regional Hazards

Natural hazards that may occur in the planning area include earthquakes, floods, and landslides. The City is within the active area of the Cascadia Seismic Zone (CSZ), which can cause a magnitude 9.0+ earthquake. According to the Oregon Department of Geology and Mineral Industries (DOGAMI), a CSZ earthquake could produce very strong to severe shaking in the City.

Flood hazards exist along the Willamette River in the City's service area. If flooding occurs in the Willamette River, as well as Coffee Lake Creek or Boeckman Creek, extensive damage could be caused. Metro documented areas along these rivers and creeks that the FEMA designated as 100-year floodplains.

Landslide hazards exist on steeper slopes within the City. According to DOGAMI, landslide hazards in the City range from low (landsliding unlikely) to very high (existing landslide) as shown in Figure 1.5.

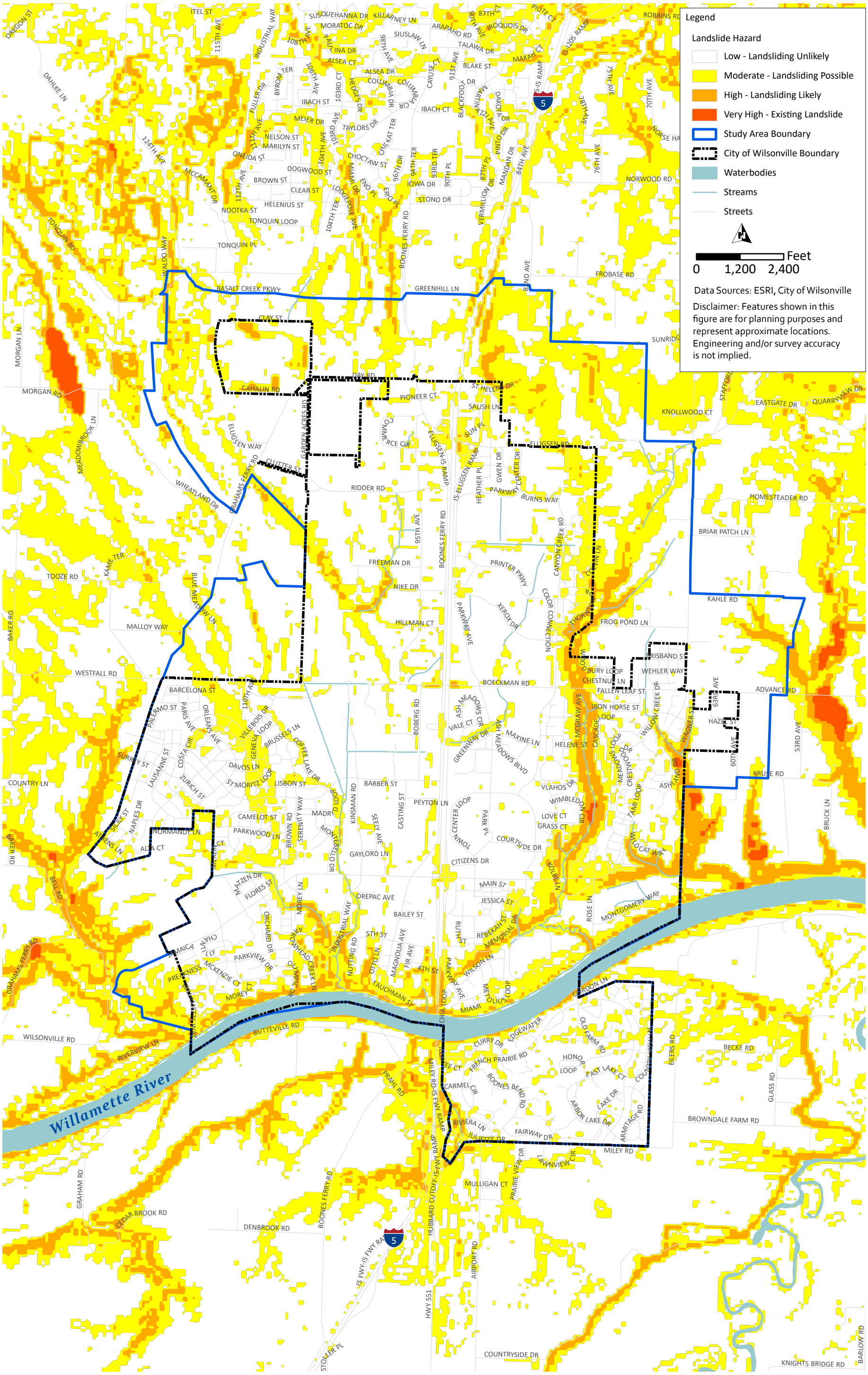





Figure 1.5 Landslide Hazards

### 1.5.7 WWTP Surrounding Area

As shown in Figure 1.6, the City's WWTP is located in Wilsonville north of the Willamette River just west of the I-5 crossing of that water body. The facility is bounded by I-5 to the east, residential areas to the north and west, and Boones Ferry Park to the south. The site is approximately 110 to 135 feet above sea level.

Portions of the WWTP property are within the City's SROZ. which incorporates Metro's Title 13 Habitat Conservation Areas and Habitat-Friendly Development Practices. Improvements and operations at the WWTP are consistent with the City's SROZ and Metro standards.

The dominant soils at the site include Quaternary surficial deposits, alluvial deposits, and mixed- and coarse-grained sediments. According to DOGAMI, a CSZ earthquake could produce very strong shaking at the WWTP site, and the potential landslide hazard is moderate with landsliding possible. Areas surrounding the site have a high landslide hazard with landsliding likely. Chapter 2 of this Plan presents a summary of a seismic analysis of the WWTP. The full report is included in Appendix D. A seismic response and geologic hazards assessment of the WWTP is included in Appendix E.

## 1.6 Water Resources

In 2012, the State of Oregon's Water Resources Commission adopted the IWRS. The goal was to bring various sectors and interests together to work toward the common goal of maintaining healthy water resources for Oregonians and the environment for generations to come.

The IWRS provides a blueprint to help the state focus its efforts on two key goals: improving the understanding of Oregon's water resources and meeting Oregon's water resources needs. The document discusses critical issues facing the state and recommends actions to address the issues. In 2017, the IWRS was updated and introduced nine new recommended actions.

Table 1.5 summarizes the IWRS-recommended actions applicable to wastewater planning.

Table 1.5 IWRS Recommended Actions for Wastewater Planning

| Number | Recommended Action Description |
|---|---|
| 7A | Develop and upgrade water and wastewater infrastructure. |
| 7B | Encourage regional (sub-basin) approaches to water and wastewater systems. |
| 9A | Undertake place-based integrated, water resources planning. |
| 10C | Encourage additional water reuse projects. |
| 10D | Reach environmental outcomes with non-regulatory alternatives. |
| 12B | Reduce the use of and exposure to toxics and other pollutants. |
| 12C | Implement water quality pollution control plans. |
| 13C | Fund communities needing feasibility studies for water conservation, storage and reuse projects. |




Figure 1.6 WWTP Vicinity Map

## 1.7 Population and Employment

Population and employment trends are significant factors in the planning for wastewater conveyance and treatment facilities. This section describes the trends and summarizes the projections used to determine future flows and loads as part of this Plan. Chapter 3 includes a detailed analysis of the population projections.

### 1.7.1 Local Industry and Significant Non-Residential Dischargers

The key industries in the City are as follows:

- Advanced manufacturing.
- Clean technology.
- Food manufacturing and distribution.
- General warehousing, distribution, and logistics.
- Medical product manufacturing and distribution.
- Software and technology.

In addition to the industries identified above, the City provides wastewater service to the Coffee Creek Correctional Facility as well.

### 1.7.2 Socio-Economic Trends

The US Census Bureau conducts an annual American Community Survey (ACS) to help local officials and businesses understand changes in their communities. The ACS provides data on jobs and occupations, educational attainment, and homeownership, in addition to other population trends. Table 1.6 summarizes socio-economic statistics and trends from 2010 to 2018 for the City.

According to Table 1.6, the economic trend for the City was generally positive from 2013 to 2018, with the unemployment rate steadily decreasing from 2013 to 2018. The median household income, median family income, and median nonfamily income all generally trended upwards from 2010 to 2018. The percent of people with food stamps/SNAP benefits increased between 2010 and 2016 but then began to decrease in 2017 and 2018. The percent of people without health insurance coverage steadily decreased between 2012 and 2018.

As of 2018, 96.2 percent of the population 25 years of age or older were high school graduates or had completed some education beyond high school, and 44.8 percent had received a bachelor's degree or higher.

Table 1.6 City of Wilsonville Socio-Economic Trends[(1)]

| Clackamas County | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|
| Unemployed | 4.4 % | 5.5% | 6.0% | 6.3% | 5.6% | 4.5% | 4.3% | 3.4% | 2.6% |
| Unemployment Rate | 7.0% | 8.7% | 9.5% | 10.0% | 8.9% | 7.1% | 6.8% | 5.3% | 4.1% |
| Median Household Income | $55,881 | $55,316 | $55,443 | $56,430 | $58,757 | $60,672 | $63,097 | $67,694 | $69,043 |
| Median Family Income | $75,027 | $76,597 | $77,757 | $75,904 | $80,955 | $76,802 | $76,201 | $79,238 | $83,935 |
| Median Nonfamily Income | $34,862 | $35,593 | $36,215 | $37,939 | $39,583 | $42,756 | $42,938 | $46,332 | $52,079 |
| With Food Stamp/SNAP Benefits in Past 12 Months | 7.2% | 6.8% | 7.9% | 9.5% | 9.4% | 9.5% | 10.4% | 10.0% | 8.3% |
| No Health Insurance Coverage (Civilian Noninstitutionalized Population) | No data | No data | 16.2% | 16.2% | 14.6% | 11.9% | 9.5% | 7.3% | 6.5% |

Notes:
(1) Source: U.S. Census Bureau American Community Surveys (https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/).
Abbreviations: SNAP - Supplemental Nutrition Assistance Program.

### 1.7.3 Current Service Area Populations

The Portland State University Population Research Center publishes annual estimates for populations of cities, towns, and counties in Oregon. Table 1.7 summarizes recent historical population estimates for the City.

Table 1.7 Historical Population Estimates[1]

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|
| City of Wilsonville | 23,740 | 24,315 | 25,250 | 25,625 | 25,915 | 27,186 | 27,414 |

Notes:
(1) Source: Portland State University Population Research Center (Certified Estimated Populations from 2015 through 2022).

### 1.7.4 Population Projections

Population projections for the City are estimated by Metro. In addition to Metro population projections, the City also identifies a build-out population estimate of over 52,400 presented in their prior Water System (Keller and Assoc., 2012) and Wastewater Collection System Master Plans. An applied growth rate of 2.9 percent, along with the land use and densities outlined in the WSMP anticipate that build-out conditions may be reached in the year 2045 with a population for the study area of approximately 52,400 residents. For purposes of assessing potential demand for treatment within the City's wastewater service area (as described in section 1.3.1) and to maintain consistency with these prior plans, population projections were generated assuming a 2.9 percent rate of growth and achieving build-out conditions during the planning period (present to 2045). Note, the Water System and Wastewater Collection System Master Plan study area boundaries differ from that applied to the analysis for this WWTP Master Plan due to the 2018 Basalt Creek Concept Plan refinements discussed in section 1.3.1. As a result, the build-out population of the WWTP Master Plan Study Area is estimated to be slightly lower than projections presented in those previous plans. To align the expected build-out of the wastewater service area in 2045 with those presented in the WSMP and CSMP, along with the slight service area reduction resulting from the Basalt Creek Concept Plan, a revised growth rate of 1.9 percent was applied from 2040 to 2045. Table 1.8 summarizes the population projections for build-out of the City's wastewater service area.

Table 1.8 Summary of Build-out Population Projections[1]

| | 2020 | 2030 | 2040 | 2045 |
|---|---|---|---|---|
| City of Wilsonville | 25,915[2] | 34,491 | 45,904 | 50,388 |

Notes:
(1) A growth rate of 2.9% is applied from 2020-2040 for population projections. A revised growth rate of 1.9% is applied from 2040-2045 to accommodate the 2018 Basalt Creek Concept Plan refinements to the service area.
(2) Actual PRC data for 2020.

The build-out population is used in conjunction with assumptions about development of non-residential land uses within the service area during the planning period to project possible future flows and loads considered in this Plan. Further details are provided in Chapter 3.

Chapter 2

# CONDITION ASSESSMENT AND TIER 1 SEISMIC ANALYSIS SUMMARY

## 2.1 Summary of Condition Assessment

In 2019, Jacobs Engineering Group Inc. (Jacobs) and Brown & Caldwell each conducted condition assessments at the City WWTP. Appendix A includes Jacobs' complete report, submitted to the City in April 2019. Brown & Caldwell's condition assessment is included in Appendix B, submitted to the City in June 2019. The City undertook an updated assessment of WWTP condition in the summer of 2023. This assessment did not identify additional condition related issues requiring significant capital outlays during the Master Plan planning period.

A total of 322 major assets (per Jacobs' report), including process and mechanical equipment (e.g., valves, gates, fans, pumps), motors and drives, control panels, generators, instrumentation, and structures, were examined for a variety of conditions that may indicate their need for maintenance or replacement. Some examples of common asset characteristics examined include corrosion; leaks; excessive vibration; unusual noise, heat, or smell during operations; and safety concerns.

For accessibility and convenience, the results of this condition assessment are summarized in a series of tables. To begin, Table 2.1 presents notable plant assets that were excluded from this condition assessment.

Table 2.1 Assets Excluded from the 2019 Condition Assessments

| Asset | Description |
|---|---|
| Dryer Condensate Cooling Tower and Associated Equipment | These assets are disused since the condensate contains too much grease that fouls the cooling tower.(1) |
| Secondary Effluent Cooling Towers and Associated Equipment | These assets were not in operation at the time of the inspection. Operations staff report no issues with these assets when in use. |
| GBT and Associated Equipment | These assets were not in operation at the time of the inspection.(2) |
| Control Panels for the Blowers | Aside from the unit that serves blower No. 4, the control panels were not fully evaluated since they were not in operation at the time of inspection. Given that they are critical to the WWTP's ability to meet its NPDES permit requirements and effectively manage biosolids, these assets must be reassessed while in operation. |
| Secondary Clarifier No. 3 - Spray Pump | This unit was not in operation at the time of the inspection. |

Notes:
(1) The 2020 Refurbishment project included redesign of the condensate system. Jacobs reports this is a small side stream with little influence on overall effluent temperature, and with refurbishment much cooler and not in need of cooling.
(2) GBTs are typically used but were not in operation during the 2019 condition assessment.
Abbreviations: GBT - gravity belt thickener.

Table 2.2 presents assets that had been recently replaced or refurbished at the time of the 2019 condition assessments and, thus, currently exhibit excellent condition and performance.

Table 2.2 Assets Recently Replaced or Refurbished

| Asset | Description |
|---|---|
| Aeration Basin Anaerobic Zone Mixers | These mixers were evaluated after they'd already failed and were subsequently replaced with a new large bubble mixing system as part of secondary treatment upgrades completed with the 2020 Refurbishment project. These elements (metal plates that capture and release large bubbles) are assumed to be in excellent condition. |
| Centrifuges | These assets were recently refurbished and observed to be in excellent condition at the time of inspection. While centrifuge performance is suboptimal at the time of this writing, this is not believed to be a condition issue. |
| Effluent Composite Sampler No. 1 | This asset has been repaired since the completion of the condition assessment. |
| Biosolids Dryer, Dryer Discharge Conveyor, and Dryer Product Cooling Conveyor | All these assets were previously identified as being in extremely poor condition and requiring immediate replacement. As a result, they were all replaced, and the dryer was completely refurbished in 2020 as part of the larger WWTP Refurbishment project. However, despite this recent rehabilitation, critical components of the dryer are still subject to sudden failure, as evidenced by the recent failure of the unit rotary joint and seal, which took the unit out of service from October 2021 until early 2022. |
| Vactor Sump Pump | This asset's poor performance led to its recent replacement. As a result, this pump is assumed to be in current excellent condition. |

Table 2.3 summarizes critical assets that require short-term rehabilitation or replacement.

Table 2.3 Critical Assets Needing Short-term Rehabilitation or Replacement

| Asset | Description |
|---|---|
| Plant Drain Pumps | Pump No. 1's seal fail light was lit on at the time of inspection. Both pumps had poor insulation resistance and high amperage draw, and the pump rails showed mild deterioration. |
| W-3 Pumps | At the time of inspection, these pumps and their motors were running at higher-than-normal temperatures, and all had some degree of coating failure, corrosion, and leakage. Similarly, the W-3 strainer was somewhat deteriorated and corroded. |
| Trojan UV 4000 System | While only used as a backup to the Ozonia UV system, the Trojan system's HMI has errors that prevent it from showing the status of the lamps in module 3. Since it is used infrequently, the system's condition is largely unknown. After review of the 2019 condition assessment reports and discussion with the City and Jacobs staff, it was concluded that the UV 4000 unit must be replaced. |
| Secondary Clarifier No. 1(1) | This clarifier's drive was excessively noisy during the inspection, and the structure showed some minor staining, corrosion, and wear. The oil seal showed moderate wear, and the weir washers were not operable at the time of inspection. Operations staff has identified replacement of the clarifier mechanism as a near-term priority. Subsequent to review of the 2019 condition assessment reports, after discussion at Recommended Plan Workshop for this Master Plan, City and Jacobs staff concluded the secondary clarifier mechanisms should be replaced within the next three years. |
| Secondary Clarifier No. 2(1) | This clarifier structure was in similar condition as secondary clarifier No. 1, though it did not have issues with excessive drive noise. One of the weir washers was not operable at the time of inspection. The clarifier structure itself showed some concrete spalling. Operations staff has identified replacement of the clarifier mechanism as a near-term priority. Subsequent to review of the 2019 condition assessment reports, after discussion at Recommended Plan Workshop for this Master Plan, City and Jacobs staff concluded the secondary clarifier mechanisms should be replaced within the next three years. |

Notes:
(1) Ovivo completed a field review of the secondary clarifiers in April 2022. Although both units were operational, repairs were identified to improve the operation of the clarifiers. The detailed Ovivo Field Service Report is included in Appendix C.

Finally, Table 2.4 shows assets that are less critical to operations, or which reflect more minor condition issues, but which may be included in a short-term improvements project or a task order for Jacobs operations personnel.

Table 2.4 Less Critical Assets for Short-term Improvement

| Asset | Description |
|---|---|
| Retractable Loadout Chute No. 3 (Biosolids Loadout Area) | This chute has failed and been left in the "up" position to facilitate trailer movement. |
| Odor Control Filters 20001 and 20002 | These filters' structural concrete showed minor corrosion. |
| Level Element 10-12100 (Headworks) | Although it functions properly, the display for this instrument does not indicate the water level. |
| Influent Screens No. 2 and No. 3 (Mechanical Screens) | The bar screen rake had several bent teeth in the rake assembly, preventing the rake from meshing with the bar screen. |
| Screenings Washer and Compactors No. 1 and No. 2 | These assets show slight staining and small holes and chips in the coating. The hoses and belts were in moderate condition. Washer compactor No. 2 required maintenance at the time of evaluation. |
| Aeration Basin Emergency Bypass Fan 30502 | The fan and motor were found to vibrate excessively, requiring extra maintenance. |
| Biosolids Storage Blower No. 1 | This asset showed moderate belt wear and vibration issues, and some minor coating issues and bearing wear. |
| Centrifuge Polyblend Units | These units were leaking at the metering pump's packing. |
| Plant Air Compressor No. 2 | This unit shows minor seepage, wear, and corrosion. |

## 2.2 Summary of Seismic Evaluation and Analysis

In 2021, Carollo Engineers, Inc. (Carollo) performed a seismic evaluation and analysis of the City's WWTP. Appendix D includes Carollo's complete report, submitted to the City in September 2021. The assessment completed prior to submittal of the November 2021 report included a desktop analysis of plant seismic and life safety risk coupled with a site visit conducted in summer 2021 by Carollo personnel. Following the site visit, Carollo presented the analysis and site visit findings to City staff in a workshop conducted in August 2021. Based on the findings shared, the City directed Carollo to perform a more detailed seismic evaluation of specific structures on the WWTP site.

Because this plant was largely upgraded and expanded in 2014, much of its infrastructure was designed in accordance with the 2010 OSSC which required design and detailing similar to current code requirements. As such, the more detailed seismic evaluation only encompassed the five older and potentially seismically vulnerable structures identified in Table 2.5. The elements of these five structures consist of reinforced concrete masonry (CMU) shear walls, cast-in-place concrete shear walls, or wood-framed shear walls with wood or metal deck roof diaphragms.

Table 2.5 List of Structures Included in Tier 2 Seismic Analysis

| Structure Name | Type | Approximate Date Built |
|---|---|---|
| Operations Building | Building | 1995 |
| Process Gallery | Building | 1995 |
| Workshop | Building | 1979 |
| Aeration Basins and Stabilization Basins | Water-Bearing Basin | 1993 |
| Sludge Storage Basins and Biofilter | Water-Bearing Basin | 1979 |

Performed using procedures established by American Society of Civil Engineers Standard, Seismic Evaluation and Retrofit of Existing Buildings 41-17 (ASCE 41-17), this seismic evaluation was comprised of data collection and review, a site visit, and analyses focused on ASCE 41-17's Tier 1 (Screening) and Tier 2 (Deficiency-based evaluation and retrofit) levels. Additionally, the seismic evaluation included a visual assessment of non-structural elements throughout the plant. Non-structural elements evaluated include pipe supports, light supports, and equipment anchorages to name a few.

Meanwhile, non-building structures with structural systems and load paths dissimilar to buildings (e.g., concrete tanks) were evaluated per American Concrete Institute (ACI) 350.3-06: Seismic Design of Liquid-Containing Concrete Structures and Commentary and ACI 350-06: Code Requirements for Environmental Engineering Concrete Structures.

During Tier 1 evaluations, Carollo identified potential deficiencies and needs for additional investigation. The WWTP's structures were classified as Risk Category III since they serve an important public function but their performance requirements after a seismic event are less stringent than those of a Risk Category IV structure.

Though a structure's performance level is typically evaluated against two seismic hazards, both basic safety earthquakes defined by ASCE 41-17 have lower seismic ground motions than those estimated for a magnitude 9.0 (M9.0) CSZ earthquake. Much of Oregon is currently preparing for this catastrophic natural disaster, since it is estimated there is a 35 percent likelihood of this event occurring in the Pacific Northwest within the next 50 years.

The WWTP's five structures were thus evaluated against an S-4 Limited Safety structural performance level and N-B Position Retention non-structural performance level for an M9.0 CSZ earthquake.

Following the Tier 1 evaluation and a workshop held in August 2021, Carollo moved onto Tier 2 evaluations for a select number of identified deficiencies associated with the buildings identified in Table 2.5. Though none of the structures showed significant irregularities, the team did identify the seismic deficiencies noted in Table 2.6.

Table 2.6 List of Seismic Deficiencies at the City WWTP

| No. | Deficiency | Description |
|---|---|---|
| **Operations Building** | | |
| S1 | Load Path / Transfer to Shear Walls | No drag connections to transfer diaphragm forces into the shear walls where those walls are discontinuous within the plan of the building. |
| S2 | Plan Irregularities | No diaphragm ties in the N-S direction to transfer diaphragm forces into the shear walls. |
| NS1 | Edge Clearance | The ceiling edges lack a sufficient gap between the enclosing walls, which could cause damage via restraint. |
| NS2 | Lens Covers | The lens covers over the lights lack safety devices. |
| NS3 | Overhead Glazing | The windows above the entrance appear to lack proper restraint in their frame if cracked or damaged. |
| NS4 | Tall Narrow Contents | The storage racks lack restraint to the structure. Also, the refrigerator in the laboratory appears to lack restraint if the wheels are locked. |
| NS5 | Fall-Prone Contents / Suspended Equipment | Team could not determine if adequate lateral bracing is attached to the back of the laboratory hoods. Also, the air handler unit lacks anchorage to the structure. |
| **Process Gallery** | | |
| S1 | Load Path / Transfer To Shear Walls | The roof beam aligned with the interior shear wall lacks the ability to transfer seismic loads into the shear wall. |
| NS1 | In-Line Equipment | The air-handling unit lacks anchorage along the channel support. Also, the aeration blower pumps in the basement lack proper anchorage to the equipment pad. |
| NS2 | Fluid And Gas Piping | Multiple pipes lack restraint to the Unistrut support below. In addition, the compression struts for the RAS piping lack diagonal bracing back to the structure. |
| **Workshop** | | |
| S1 | Narrow Wood Shear Walls | The shear wall segments along the east elevation cannot develop overturning forces due to a lack of hold downs at the ends of each shear wall segment. |
| S2 | Narrow Wood Shear Walls | The shear wall segments along the east elevation lack sufficient shear capacity to resist in-plane seismic loads. |
| S3 | Narrow Wood Shear Walls | The shear wall segments along the east elevation lack adequate sill bolt anchorage to resist in-plane seismic loads. |
| NS1 | Tall Narrow Contents | The storage racks within the building lack restraint back to the structure. In addition, the shelving unit along the south elevation lacks anchorage across the entire length. |

| No. | Deficiency | Description |
|---|---|---|
| **Stabilization Basins** | | |
| S1 | Freeboard | The longitudinal sloshing direction results in a freeboard deficit of approximately 1.2 feet. The aluminum covers can be damaged by sloshing water. |
| **Sludge Storage Basins** | | |
| S1 | Freeboard | The longitudinal sloshing direction results in a freeboard deficit of approximately 1.6 feet. The membrane covers can be damaged by sloshing water. |
| **Overall Plant Structures** | | |
| NS1 | Tall Narrow Contents | The storage racks within the headworks building lack anchorage back to the structure. |
| NS2 | In-Line Equipment | The recirculation pump at the disk filters lacks restraint against overturning. |
| NS3 | Heavy Equipment | The ACCU units near the aeration basins lack anchorage to the structural pads. |

Notes:
Abbreviations: ACCU - air cooled condensing unit; RAS - return activated sludge.

These seismic deficiencies can be mitigated by performing reasonable retrofits and strengthening the existing buildings. Details of proposed mitigation measures to address seismic deficiencies identified during the Tier 2 evaluation can be found in Appendix D. Per standards established for the Association for the Advancement of Cost Engineering's (AACEI) Class 5 estimate, Carollo's recommended mitigation measures are estimated to cost $865,100 in total construction costs with a breakdown by building presented in Table 2.7.

Table 2.7 Summary of Estimated Retrofit Cost

| Description | Class 5 Estimate (2023)<br>Accuracy Range: -50% to + 100% |
|---|---|
| Operations Building | $688,200 |
| Process Gallery | $48,100 |
| Workshop | $122,700 |
| Overall Plant (Non-Structural) | $6,100 |
| Total Estimated Construction Cost | **$865,100** |
| Total Estimated Project Cost (1) | **$1,082,000** |

Notes:
(1) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

## 2.3 Summary of Geologic Hazards Assessment

Prior to the spring/summer 2021 seismic evaluation Carollo's subconsultant, NGI, completed a seismic response and geologic hazards assessment of the City's WWTP. Appendix E includes NGI's complete technical memorandum, which Carollo received on behalf of the City on June 25, 2021.

The City's WWTP sits on a former gravel pit located approximately 600 feet from the Willamette River. A pit-mining operation in 1953 removed a portion of the site's Missoula flood deposit (MFD) formation. Today, the plant site has the following notable geological features:

- The pit base rest at elevations of 91 feet in the north to 85 feet in the south. Gravel and pavement surfacing throughout the site ranges from elevations of 113 feet in the north to 107 feet in the south.
- Land adjacent to the pit's west side slopes north to south from 160 feet down to 135 feet. Land to the east of the site is currently being used by the Oregon Department of Transportation (ODOT) as a stockpile site for soil spoils.
- The plant site's pit backfill consists primarily of loose-to-medium-density granular soils with cobbles and boulders. Native soils below the backfill consist of the MFD composed of medium-dense sandy gravel with cobbles and boulders. The Troutdale formation rests beneath the MFD and is composed of stratified, over-consolidated hard clay and cohesive silts with inter-beds of weathered sands and gravels.

To estimate the WWTP's structural response to a full-rupture along the CSZ, NGI developed deterministic acceleration response spectra of ground motions and assessed geologic hazards and risks that may influence the City's master-planning efforts. To this end, NGI performed three geophysical survey lines across the plant site utilizing micro-tremor array measurements and multichannel analysis of surface waves.

Through past and present site investigations and engineering analyses, NGI determined that the native soils below the site's granular pit backfill pose low risks of liquefaction and its slopes revealed no obvious areas of concern. As for ODOT's spoil site, site managers were confirmed to be making concerted efforts to maintain a top-of-slope offset approximately 25 to 30 feet wide, and to incorporate an erosion containment berm so heavy rainfall does not cause the spoils to negatively affect the plant.

Additionally, NGI performed a variety of published methods to assess the potential risk of seismically induced settlement of the pit backfill. They recommended assuming one inch of seismic settlement for every 15 feet of fill anticipated to be present beneath the site and one inch of differential settlement for every 30 lateral feet.

NGI ultimately determined that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping, which raises the risk of sinkholes forming beneath structures and pipelines. Soil piping typically occurs in unsaturated soils when a water source percolates into the ground. While the site is mostly paved and stormwater is actively collected, there may be numerous areas where infiltration is occurring adjacent to structures or beneath pipelines.

To mitigate the risk of soil piping, NGI recommended that the City take the following actions:

- Incorporate a stormwater evaluation and control process into the master plan program.
- Continue to capture and meter stormwater or release it off-site.
- Pave right up to structures' exterior walls.
- Include low-viscosity, cement pressure-grouting beneath key structures that have significant thicknesses of fill beneath them or foundation types more susceptible to differential settlement and loss of support.
- Retrofit pipeline entrances and exits to and from structures with a flexible section or joint to reduce the risk of pipeline failure caused by differential ground movement.
- Periodically perform drone topographic surveys of the site's eastern slope and ODOT's spoil area to monitor for spoil pile growth and potential encroachment.

Since the potential for soil piping and sinkhole development beneath structures and pipelines requires water or other fluids (including wastewater) to move soils vertically or horizontally, the control of surface water or any leakage is paramount. Paving up to structure exterior walls is intended to reduce the opportunity for infiltration of surface water or plant process overflows/leaks to cause soil piping and compromise support of portions of those structures. To further reduce risk to structural support, pressure-grouting beneath key structures located on significant depths of fill should be considered. Fill on the site is known to include significant boulders which contributes to the risk of soil piping. Flex couplings at underground pipe penetrations of structures, or flexible pipe materials in these locations may further reduce the risk of pipe failure due to differential ground movement, but also risk of liquid leakage contributing to potential soil piping.

In spring 2023, NGI performed a visual crack survey and mapped existing cracks at accessible structure floor and foundation stem wall locations. Cracking was categorized as open or tight. In addition, general locations of prior sinkholes or repaired differential settlement were identified on a facility site map. It is anticipated this information will be used to prioritize locations where mitigation may be applied to reduce risk of soil piping.

In addition, NGI completed a 50-foot boring utilizing a sonic drilling technique near the center of the former aggregate mine to assist in determining grouting conditions, prior maximum pit depth, and fill materials present in the vicinity of secondary clarifier 3.

The NGI report summarizing the findings of this spring 2023 study is provided in Appendix F. NGI recommends new structure planning include ground improvement or deep foundation systems and structural slabs. Existing structures planned for seismic upgrade investments should also include ground improvement in the form of grouting to limit the risk of excessive settlement/loss of use of key facilities. . The City intends to further evaluate the need and extent of ground improvement for WWTP structures during preliminary design of seismic upgrades identified in this Chapter. Accordingly, an allowance for future foundation mitigation measures of $2 million is included in the City's CIP. The City will also consider ground improvement on future projects involving new or existing structures, as appropriate.

# Chapter 3
# WASTEWATER FLOW AND LOAD PROJECTIONS

This chapter presents an evaluation of historical wastewater flows and loads generated in the City service area along with flow and load projections through buildout.

## 3.1 Planning Basis

This section summarizes the service area, residential population, non-residential contribution, and rainfall records used in the analysis.

The following definitions are used throughout the memorandum:

- **Wet Season:** November 1 through April 30.
- **Dry Season:** May 1 through October 31.
- **Base Season:** July and August, when precipitation and groundwater levels are at annual lows.
- **1-in-5 year 24-hour Storm:** a 24-hour storm event that has a 20 percent probability of occurring in any given year.
- **1-in-10 year 24-hour Storm:** a 24-hour storm event that has a 10 percent probability of occurring in any given year.

This section summarizes the current and future population used throughout this chapter and the precipitation data used in estimating flows.

### 3.1.1 Current and Future Population

Current and future population information for the City of Wilsonville was pulled from four different sources:

- **United States Census**: US census population estimates are typically viewed as the most accurate source of current population and are available in 10-year increments. The US Census population estimates for Wilsonville for 2010 and 2020 are 19,509 and 26,664, respectively which represents a 3.2 percent compounded growth rate over these 10 years.
- **Portland State University Population Research Center (PSU PRC)**: PSU PRC provides certified population for the years between the US Census estimates. After each census is complete, PSU PRC revises their estimated populations to bring them in line with the US Census values. PSU PRC revised population data for 2010 through 2020 was not available at the time this document was prepared. Because of this, the original PSU PRC population data from 2015 to 2020 was used to estimate per capita flows and loads. The PSU PRC population estimate for 2020 is 25,915 which is 3 percent less than the US Census value for 2020.
- **Metro**: Metro is the regional government for the Portland Metropolitan area and provides population projections for the City of Wilsonville. Metro produces projections of households by Transportation Analysis Zone (TAZ). The City overlayed those TAZs

onto the City's wastewater service area and found those projections to be consistent with population projections that serve as the basis for recent water system and wastewater collection system master planning documents. Those prior planning efforts are described in the bullet which follows.

- **Collection System Master Plan (CSMP) (2014, MSA) / Water System Mater Plan (WSMP) (2003, Keller Associates):** The 2003 WSMP estimated the buildout population to be 52,400 based on anticipated land use, dwelling units per acre and people per household. They also assumed a 2.9 percent compounded growth rate which was in line with the growth in households between 2000 and 2010 based on the US Census data. (Page 2-4, WSMP). The CSMP used this same buildout population assumption along with the assumed growth rate (Page 5-2, CSMP) and estimated that buildout would occur between the years 2044 and 2045.

Since the 2014 CSMP was published, the City service area boundary upon which 2045 Urban Growth Boundary (UGB) build-out projections were based, has been altered slightly to account for Wilsonville service area refinements resulting from the Basalt Creek Conceptual Plan, as discussed in Chapter 1 of this Plan. The population for this portion of the UGB that will no longer be served by the City was estimated applying the following methodology:

- Area of the UGB expected to be annexed to the City of Tualatin = 180.1 acres.
  - Estimated area removed from residential growth = 83.2 acres.
  - Estimated area removed from commercial growth = 43.7 acres.
  - Estimated area removed from industrial growth = 53.2 acres.
- Buildable area reduction for undeveloped parcels = 65 percent (Page 5-13, CSMP 2014).
- Dwelling units per acre = 15 (Table 5-10 – "High Density", CSMP 2014).
- People per household = 2.48 (Page 5-1 and 5-13, CSMP 2014).
- Population estimated within the Basalt Creek area = 83.2 acres x 0.65 x 15 dwelling units/acre x 2.48 people dwelling unit = 2012.
- Revised 2045 population for Wilsonville: 52,400 – 2012 = 50,388.
- Population growth rate (2020-2040): 2.9 percent (Page 5-2. CSMP, 2014).
- Revised population growth rate (2040-2045): A lower revised population growth rate of 1.9 percent was assumed for the years 2040 through 2045. This growth rate was selected so that the buildout projected population would occur in the year 2045 consistent with the assumptions for the buildout year with the CSMP.

The historical per capita flow and loads presented later in this Chapter are based on the PSU PRC certified population estimates while future flow and load projections are based on the CSMP estimates to maintain consistency with prior water and sewer enterprise planning (with the slight modification to exclude the portion of the Basalt Creek Planning Area (BCPA) mentioned above). Figure 3.1 details the current population along with the historical population and growth expected for the City using the CSMP projections along with the modification to the CSMP projection discussed above. As is shown in Figure 3.1, the WSMP (2003) assumption of a 2.9 percent growth rate lines up well with the PSU PRC and US census data for the years 2010 through 2022.

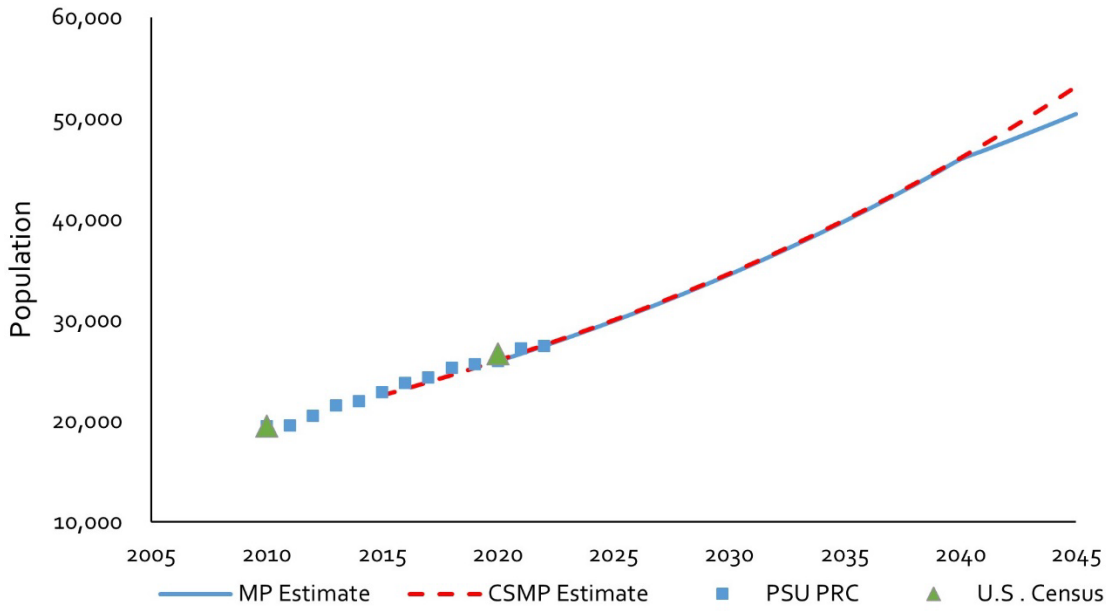



Figure 3.1 Historical Population and Expected Growth for the City of Wilsonville

### 3.1.2 Precipitation

The City is classified as a Marine west coast climate, which sees most of its precipitation in the winter months. During the early winter months, groundwater levels begin to elevate as precipitation increases (typically November and December). As precipitation continues from January through May, the treatment plant will experience increased influent flows as infiltration occurs throughout the collection system. Precipitation measurements are used by the Oregon DEQ methodology to predict wet weather flows. Precipitation does not typically affect biochemical oxygen demand ($BOD_5$) and total suspended solids (TSS) loads, though the first large storm event of the wet season will often cause high TSS loads due to the flushing of the collection system.

The National Oceanic and Atmospheric Administration (NOAA) provides daily precipitation records which can be used to determine statistical storms. For the City, the nearest gage with adequate historical data and data coverage is located at the Aurora airport (station USW00094281), approximately three miles south of the treatment facility. Figure 3.2 shows the location of the gage relative to the City's treatment facility and UGB.

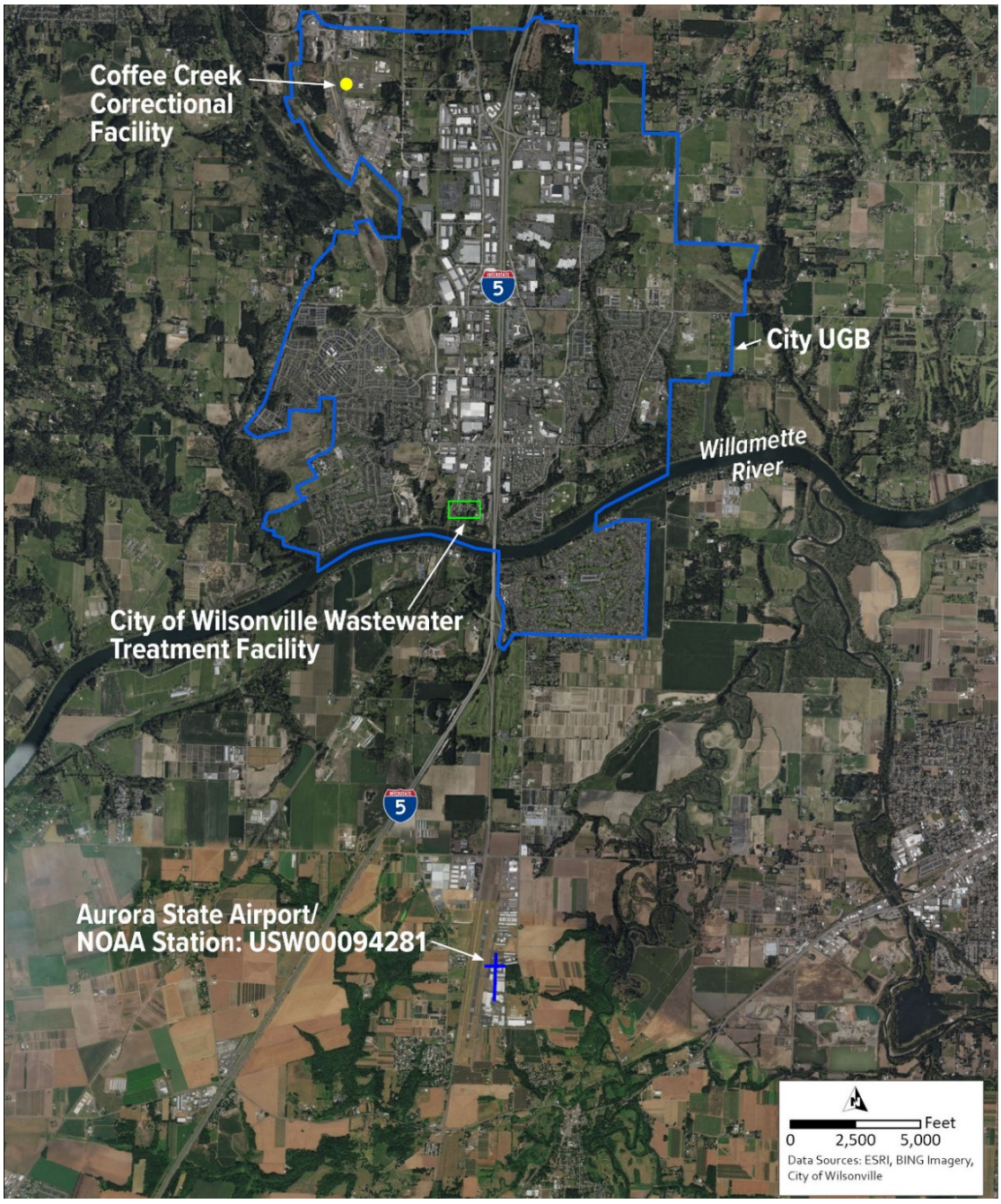



Figure 3.2 City of Wilsonville UGB

Data from January 1, 1999, through December 31, 2020, was used to create the statistical storm features found in Table 3.1. In addition to direct precipitation records, NOAA also provides isopluvial maps for these statistical storms. The NOAA maps yielded higher 1-in-5-year and 1-in-10-year 24-hour precipitation values than the direct analysis, so the larger isopluvial values were used for the DEQ flow analysis as a conservative measure.

Table 3.1 Annual Historical Rainfall Stats

| Item | Value (inches) | Source |
|---|---|---|
| Average Annual | 38.0 | Aurora Airport NOAA data |
| Average Wet Season | 28.3 | Aurora Airport NOAA data |
| Average Dry Season | 9.7 | Aurora Airport NOAA data |
| 1-in-5 year 24-hour storm | 2.9 | NOAA isopluvial maps |
| 1-in-10 year 24-hour storm | 3.3 | NOAA isopluvial maps |

Figure 3.3 below shows the average rainfall distribution by month from 1999-2020.

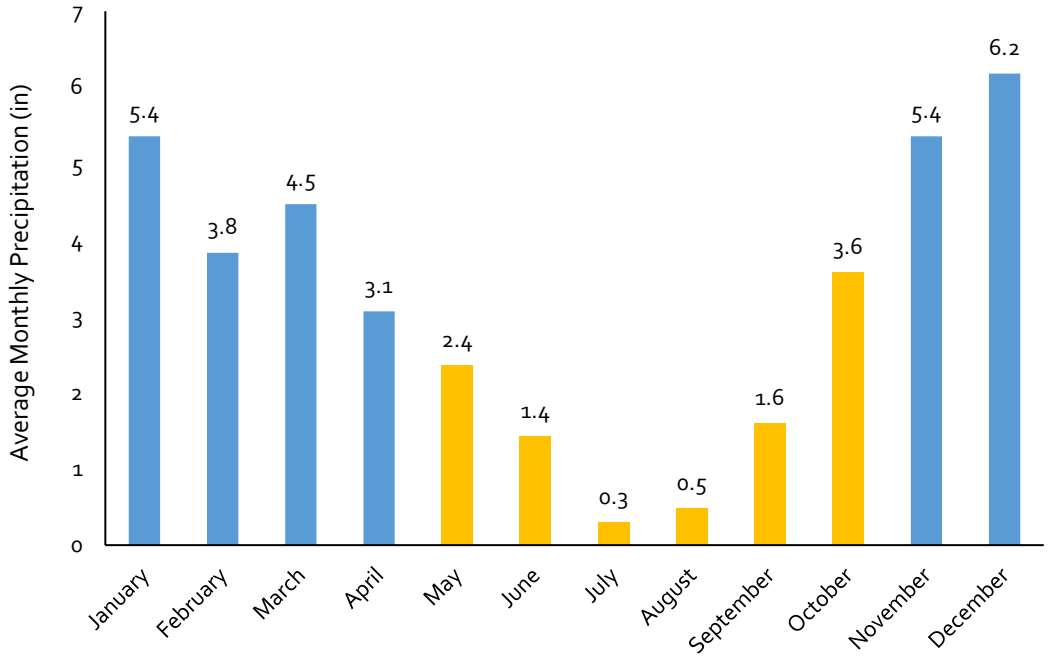



Figure 3.3 Average Monthly Rainfall at the Aurora Airport

## 3.2 Historical and Existing Flows

Daily monitoring reports (DMR) for the period of January 2015 – December 2020 were provided by the City. Two sets of flows will be reported in the following sections: 1) the total influent flow measured at the facility representative of all contributors in the service area and, 2) the residential/commercial (R/C) flows which represent the total influent flow less the industrial contribution.

This section summarizes the flow parameters used throughout this section, the historic industrial flow data along with the facility influent and R/C flows.

### 3.2.1 Flow Parameters

The flow parameters of primary interest for planning purposes are defined below. Analysis was performed considering two methods: 1) analysis of historical plant records; and 2) DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon, herein described as the DEQ methodology. The average dry weather flow (ADWF), average base flow (ABF), maximum week dry weather flow (MWDWF), maximum week wet weather flow (MWWWF), and peak day dry weather flow (PDDWF) were determined through the direct analysis of historical plant records as there is no defined DEQ methodology for these parameters:

- ABF:
  - **Direct:** The average daily flow in the months of July and August where antecedent conditions have minimal effect on influent flows. ABF flows are indicative of population contribution and used to establish peak factors.
  - **DEQ:** not applicable (N/A).
- ADWF:
  - **Direct:** The average of daily flows over the six-month dry weather season, May 1 through October 31.
  - **DEQ:** N/A.
- Average Wet Weather Flow (AWWF):
  - **Direct:** The average of daily flows over the six-month wet weather season, November 1 through April 30.
  - **DEQ:** The average flow experienced during an average wet weather precipitation period from November 1 through April 30.
- Maximum Month Dry Weather Flow (MMDWF):
  - **Direct:** The maximum 30-day running average flow occurring during the months of May through October.
  - **DEQ:** The monthly average flow in the rainiest dry weather month of high groundwater, typically always May, during a 1-in-10-year precipitation month.
- Maximum Month Wet Weather Flow (MMWWF):
  - **Direct:** The maximum 30-day running average flow occurring during the months of May through October.
  - **DEQ:** The monthly average flow in the rainiest wet weather month of high groundwater during a 1-in-5-year precipitation month.
- MWDWF:
  - **Direct:** The maximum 7-day running average flow occurring during the months of May through October.
  - **DEQ:** N/A.
- MWWWF:
  - **Direct:** The maximum 7-day running average flow occurring during the months of November through April.
  - **DEQ:** N/A.
- PDDWF:
  - **Direct:** The maximum daily flow from May 1 through October 31.
  - **DEQ:** N/A.

- Peak Day Wet Weather Flow (PDWWF):
  - **Direct:** The maximum daily flow from November 1 through April 30.
  - **DEQ:** The daily flow that corresponds to a 24-hour 5-year storm event. This flow will typically occur in January-April when groundwater levels are high.
- Peak Hour Flow (PHF):
  - **Direct:** The peak flow sustained for one hour.
  - **DEQ:** The peak flow determined by the following probabilities of exceedance. An underlying assumption is that all the below flow parameters occur in the same wet year:
    - The average annual flow (AAF) is exceeded 50 percent of the time.
    - The MMWWF is exceeded 8.3 percent of the time.
    - The MWWWF is exceeded 1.9 percent of the time.
    - The PDWWF is exceeded 0.27 percent of the time.
    - The PHF is exceeded 0.011 percent of the time.

### 3.2.2 Industrial Contribution

The City's system receives a significant contribution from permitted industrial sources. These sources are considered significant industrial users (SIU) and are regulated through the City's pre-treatment program. Data was obtained from the City's pre-treatment coordinator on the following permitted contributors:

1. **Fujimi:** Manufacturer of a variety of lapping and polishing products.
2. **Xerox:** Manufacturer of printers and other technology supplies.
3. **Swire Pacific:** Bottling plant for Coca-Cola™ products.
4. **Flir:** Tech manufacturer of thermal imaging and night vision cameras.
5. **Oregon Department of Corrections (ODOC):** Prison with a capacity of approximately 1,684 people, specifically the Coffee Creek Correctional Facility (CCCF). This prison is the only female prison in the state and is the on-boarding facility for all male prisoners.
6. **Leadtek:** Metal plating shop which, as of 2019, uses an evaporator to discharge water and no longer discharges to the City's system.
7. **Sysco:** Supplier of kitchen goods. Elevated TSS was previously measured here when truck washing occurred on site, however that operation ceased in 2019.
8. **Curran Coil Spring:** Spring manufacturer which no longer discharges to the City's system. Process water is held in a holding tank and hauled off-site.
9. **Photo Solutions:** Newly permitted user as of 2020 and a manufacturer of optical encoders.

Data was provided on a monthly-average basis, with peak values within the respective months for some users. Table 3.2 summarizes the average flows (ABF, AAF, ADWF and AWWF) and maximum month flows (MMF) for the City's SIUs between the years 2015 and 2020. For the purposes of planning, the long-term average annual flow of 0.17 mgd was selected for average flows (ABF, AAF, ADWF and AWWF). To reflect the lower maximum month flow observed in recent years, the maximum month flow over the last three years of 0.19 was selected for the MMDWF and MMWWF. Since industrial data was provided with only a monthly resolution, no data is available for the maximum weekly flows or the combined peak daily flows. The maximum month industrial flow of 0.19 was assumed to be representative of these higher peak flows as well (MWDW, MWWW, PDDW, PDWW and PHF). In addition to the permitted industrial sources, the City's collection system also includes non-permitted industrial sources. Since the flow and load from these sources is not tracked, the non-permitted industrial flow is part of the calculated residential / commercial (R/C) flow and load.

Table 3.2 Annual Average and Maximum Monthly Industrial Contributions

| Year | ABF (mgd) | AAF (mgd) | ADWF mgd) | AWWF (mgd) | MMF (mgd) |
|---|---|---|---|---|---|
| 2015 | 0.20 | 0.18 | 0.18 | 0.18 | 0.20 |
| 2016 | 0.21 | 0.19 | 0.19 | 0.19 | 0.21 |
| 2017 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 2018 | 0.19 | 0.16 | 0.16 | 0.16 | 0.19 |
| 2019 | 0.17 | 0.15 | 0.15 | 0.15 | 0.17 |
| 2020 | 0.16 | 0.15 | 0.15 | 0.15 | 0.16 |
| Average | 0.19 | 0.17 | 0.17 | 0.17 | 0.20 |
| **Selected** | | | **0.17**(1) | | **0.19**(2) |

Notes:
(1) The average annual flow over the last five years was selected as the average industrial flow for all average flow conditions (ABF, AAF, ADWF and AWWF conditions).
(2) For the purposes of planning, the maximum month flow of the last three years was selected.

### 3.2.3 Average Flows

This section documents the current average flows (ABF, AAF, ADWF and AWWF) along with the historic and selected ABF per capita flow and the AAF, ADWF and AWWF. The selected per capita flows and peaking factors will be utilized in Section 3.3 to project future flows. The methodology used to select the ABF per capita flows, AAF, ADWF and AWWF flow peaking factors and current flows is as follows:

- **R/C ABF per capita flow**: R/C ABF per capita flows were calculated for each year between 2015 and 2020 by dividing the R/C ABF flow by the estimated population for that year. Since the City has seen a decrease in the ABF per capita flow between 2015 and 2020, the average per capita flow from the three most recent years was selected as the basis of the R/C ABF flow projections. This value was selected as it more accurately represents the City's current base flows. The selected R/C ABF was then calculated by multiplying the selected ABF per capita flow by the estimated 2020 population.
- **R/C AAF, ADWF and AWWF peaking factors**: The R/C AAF, ADWF and AWWF peaking factors were calculated for each year between 2015 and 2020 by diving the R/C AAF, ADWF and AWWFs by the R/C ABF for that year. The average peaking factors from 2015

through 2020 were used as the basis of the R/C AAF, R/C ADWF and R/C AWWF projections. The selected R/C AAF, ADWF and AWWF were then calculated by multiplying the selected peaking factor by the selected R/C ABF discussed in the previous bullet.

- **Average industrial flows**: The average permitted industrial flow from 2015 – 2020 was selected to represent the permitted industrial contribution to the current ABF, AAF, ADWF and AWWFs. As discussed above, the non-permitted industrial contribution is part of the calculated R/C flow and load.
- **ABF, AAF, ADWF and AWWF**: The selected current facility influent ABF, AAF, ADWF and AWWFs were calculated by adding the selected industrial flow to the selected R/C flow.

#### 3.2.3.1 Average Base Flow

The ABF was calculated to establish peak factors. From Figure 3.3, the ABF was determined to occur in July and August. These months have the lowest average precipitation and are in the middle of the dry season, when groundwater levels are not elevated, and flows are not readily influenced by storm events.

Table 3.3 summarizes the measured ABF for the years 2015 through 2020 along with the industrial and R/C components of these average flows. Between 2015 and 2020, the per capita flow ranged from 69 to 64 gallons per capita per day (gpcd). The average per capita flow for the last six years was 67 gpcd, while the average per capita flow for the last three years was 65 gpcd. To reflect the lower per capita flows observed in recent years, the average per capita flow for the last three years was selected as the basis of planning. By multiplying this per capita rate by the 2020 population, the selected R/C ABF was determined to be 1.68 mgd, which agrees well with the R/C ABFs calculated for the last three years. By adding the average industrial flow of 0.17 mgd to the selected R/C ABF, the selected ABF is calculated to be 1.85 mgd.

Table 3.3 Average Base Flow

| Data Source | Population[1] | ABF (mgd) | Industrial (mgd) | R/C ABF[2] (mgd) | Per Capita (gpcd)[3] |
|---|---|---|---|---|---|
| 2015 DMRs | 22,870 | 1.77 | 0.20 | 1.57 | 69 |
| 2016 DMRs | 23,740 | 1.82 | 0.21 | 1.61 | 68 |
| 2017 DMRs | 24,315 | 1.86 | 0.18 | 1.68 | 69 |
| 2018 DMRs | 25,250 | 1.87 | 0.19 | 1.68 | 67 |
| 2019 DMRs | 25,635 | 1.87 | 0.17 | 1.69 | 66 |
| 2020 DMRs | 25,915 | 1.81 | 0.16[4] | 1.65 | 64 |
| Average Value (2015 – 2020) | | 1.83 | 0.19 | 1.65 | 67 |
| **Selected Value** | **25,915[5]** | **1.85[6]** | **0.17[7]** | **1.68[8]** | **65[9]** |

Notes:
(1) Certified PSU PRC estimates.
(2) R/C contribution = ABF - Industrial.
(3) Calculated by dividing the R/C ABF by the population.
(4) Data was only available through June of 2020.
(5) 2020 population.
(6) Selected value equals the sum of the selected industrial flow and the selected R/C ABF.
(7) Selected average value from Table 3.2.
(8) Calculated by multiplying the selected per capita by the selected population.
(9) Selected equals the average value from 2018 through 2020.

### 3.2.3.2 Average Annual Flow

The AAF is determined as the average daily flow throughout the calendar year. Table 3.4 details the measured AAFs between the years 2015 and 2020 along with the industrial and R/C breakdown of these averages. The average R/C AAF peaking factor between 2015 and 2020 was 1.22, which was selected as the basis of projecting the AAF. By multiplying this peaking factor by the selected R/C ABF of 1.68 mgd, the selected R/C AAF is calculated to be 2.05 mgd, which agrees well with the measured historic data. By adding the average industrial flow of 0.17 mgd to the selected R/C AAF, the selected AAF is calculated to be 2.22 mgd.

Table 3.4 Average Annual Flow

| Data Source | AAF (mgd) | Industrial (mgd) | R/C AAF(1) (mgd) | R/C Peaking Factor(2) |
|---|---|---|---|---|
| 2015 DMRs | 2.07 | 0.18 | 1.89 | 1.20 |
| 2016 DMRs | 2.27 | 0.19 | 2.08 | 1.30 |
| 2017 DMRs | 2.39 | 0.18 | 2.21 | 1.32 |
| 2018 DMRs | 2.14 | 0.16 | 1.98 | 1.18 |
| 2019 DMRs | 2.07 | 0.15 | 1.92 | 1.13 |
| 2020 DMRs | 2.09 | 0.15(3) | 1.95 | 1.18 |
| Average Value (2015 -2020) | 2.17 | 0.17 | 2.00 | 1.22 |
| **Selected Value** | **2.22(4)** | **0.17** | **2.05(5)** | **1.22** |

Notes:
(1) R/C contribution = AAF - Industrial.
(2) Calculated by dividing the R/C AAF by the R/C ABF from Table 3.3.
(3) Data was only available through June of 2020. Calculated the average from January through June.
(4) Calculated by adding the selected Industrial flow (Table 3.2) to the selected R/C AAF.
(5) Calculated by multiplying the selected peaking factor by the selected R/C ABF from Table 3.3.

### 3.2.3.3 Average Dry Weather Flow

The ADWF is determined as the average daily flow during the dry season, (May through October). Table 3.5 details the measured ADWFs between the years 2015 and 2020 along with the industrial and R/C breakdown of these averages. The average R/C ADWF peaking factor between 2015 and 2020 was 1.03, which was selected as the basis for projecting the ADWF. By multiplying this peaking factor by the selected R/C ABF of 1.68 mgd, the selected R/C ADWF is calculated to be 1.74 mgd, which agrees well with the measured historic data. By adding the average industrial flow of 0.17 mgd to the selected R/C ADWF, the selected ADWF is calculated to be 1.91 mgd.

Table 3.5 Average Dry Weather Flow

| Data Source | ADWF (mgd) | Industrial (mgd) | R/C ADWF(1) (mgd) | R/C Peaking Factor(2) |
|---|---|---|---|---|
| 2015 DMRs | 1.76 | 0.18 | 1.57 | 1.00 |
| 2016 DMRs | 1.93 | 0.19 | 1.72 | 1.07 |
| 2017 DMRs | 1.96 | 0.18 | 1.77 | 1.06 |
| 2018 DMRs | 1.88 | 0.16 | 1.70 | 1.01 |
| 2019 DMRs | 1.92 | 0.15 | 1.75 | 1.04 |
| 2020 DMRs | 1.86 | 0.15(3) | 1.71 | 1.04 |
| Average Value (2015 – 2020) | 1.88 | 0.17 | 1.70 | 1.03 |
| **Selected Value** | **1.91(4)** | **0.17** | **1.74(5)** | **1.03** |

Notes:
(1) R/C contribution = ADWF - Industrial.
(2) Calculated by dividing the R/C ADWF by the R/C ABF from Table 3.3.
(3) Data was only available through June of 2020. Used the average of May through June.
(4) Calculated by adding the selected Industrial flow (Table 3.2) to the selected R/C ADWF.
(5) Calculated by multiplying the selected peaking factor by the selected R/C ABF from Table 3.3.

### 3.2.3.4 Average Wet Weather Flow

The AWWF is based on the period November through April. The AWWF was determined by both direct calculations and using DEQ methodology.

The DEQ methodology for AWWF correlates the average rainfall for each wet season with that season's precipitation. The average wet weather precipitation (28.3 inches) is fit to the trendline to calculate the DEQ AWWF, which yields an AWWF of 2.47 mgd. Figure 3.4 below illustrates the DEQ methodology applied to the City.

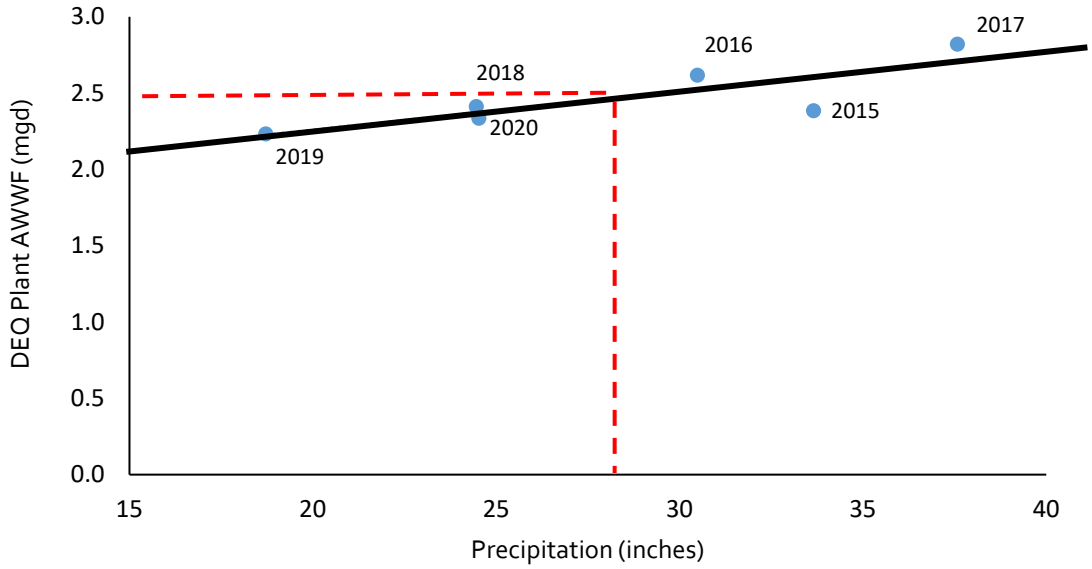



Figure 3.4 Average Wet Weather Flow DEQ Methodology

Table 3.6 details the AWWF measured for the years 2015 through 2020 along with the industrial and R/C components of these averages. The average R/C AWWF peaking factor between 2015 and 2020 was 1.40, which was selected as the basis of projecting the AWWF. By multiplying this peaking factor by the selected R/C ABF of 1.68 mgd, the selected R/C AWWF is calculated to be 2.36 mgd, which agrees well with the measured historic data. By adding the average industrial flow of 0.17 mgd to the selected R/C AWWF, the selected AWWF is calculated to be 2.53 mgd, which is slightly more conservative than the value calculated using the DEQ methodology.

Table 3.6 Average Wet Weather Flow

| Data Source | AWWF (mgd) | Industrial (mgd) | R/C AWWF(1) (mgd) | R/C Peaking(2) Factor |
|---|---|---|---|---|
| 2015 DMRs | 2.38 | 0.18 | 2.22 | 1.41 |
| 2016 DMRs | 2.62 | 0.19 | 2.44 | 1.52 |
| 2017 DMRs | 2.82 | 0.18 | 2.66 | 1.59 |
| 2018 DMRs | 2.41 | 0.16 | 2.27 | 1.35 |
| 2019 DMRs | 2.23 | 0.15 | 2.09 | 1.23 |
| 2020 DMRs | 2.33 | 0.15(3) | 2.19 | 1.33 |
| DEQ Method | 2.47 | 0.17(4) | 2.30(5) | 1.35(6) |
| Average Value (2015 – 2020) | 2.47 | 0.17 | 2.31 | 1.40 |
| **Selected Value** | **2.53(7)** | **0.17** | **2.36(8)** | **1.40** |

Notes:
(1) R/C contribution = AWWF - Industrial.
(2) Calculated by dividing the R/C AWWF by the R/C ABF from Table 3.3.
(3) Data was only available through June of 2020. AWWF calculated as the average of January though April.
(4) The average industrial flow from Table 3.2 was assumed.
(5) The R/C AWWF for the DEQ methodology was calculated by subtracting the assumed industrial flow from the DEQ methodology AWWF.
(6) The DEQ R/C AWWF peaking factor was determined by dividing the resultant DEQ methodology R/C AWWF by the selected R/C ABF from Table 3.3.
(7) Calculated by adding the selected Industrial flow to the selected R/C AWWF.
(8) Calculated by multiplying the selected peaking factor by the selected R/C ABF from Table 3.3.

### 3.2.4 Maximum Month Flows

This section documents the historic MMDWF and MMWWF along with the historic MMDWF and MMWWF peaking factors. The selected peaking factors will be utilized in Section 3.3 to project future flows. The methodology used to calculate the current flows and peaking factors is as follows:

- **R/C MMDWF and MMWWF peaking factors**: The R/C MMDWF and MMWWF peaking factors were calculated for each year between 2015 and 2020 by diving the R/C MMDWF and MMWWFs by the R/C ABF for that year. Additionally, R/C MMDWF and MMWWF peaking factors were calculated from the estimated MMDWF and MMWWFs utilizing the DEQ methodology by subtracting the selected industrial flows from these calculated values. DEQ methodology R/C peaking factors were then calculated by dividing the DEQ methodology R/C flows by the selected ABF. The peaking factors calculated using the DEQ methodology and the direct calculation method were compared, and the largest value was selected as basis of the R/C MMDWF and R/C MMWWF projections. The selected R/C MMDWF and R/C MMWWF were then calculated by multiplying the selected peaking factor by the selected R/C ABF discussed in the previous section.

- **MM industrial flows**: The average MM industrial flow from 2015 – 2020 was selected to represent the industrial contribution to the current MMDWF and MMWWF.
- **MMDWF and MMWWF**: The selected current facility influent MMDWF and MMWWFs were calculated by adding the selected industrial flow to the selected R/C flow.

#### 3.2.4.1 Maximum Month Dry Weather Flow

The MMDWF was calculated by both direct and DEQ methodology. The MMDWF typically occurs in May, when groundwater levels are highest and precipitation is moderate (during the dry season), though it may occur during an exceptionally wet October as was seen in 2016 where 9.7 inches of precipitation occurred that month. Table 3.7 shows the maximum dry weather month flow for each year on record and lists the precipitation that occurred in the respective month.

Table 3.7 Direct MMDWF Calculations

| Year | MMDWF (mgd) | Month | Precipitation (inches) |
|---|---|---|---|
| 2015 | 1.8 | May | 1.2 |
| 2016 | 2.4 | October | 9.7 |
| 2017 | 2.2 | May | 1.8 |
| 2018 | 1.9 | May | 0.5 |
| 2019 | 2.0 | May | 1.3 |
| 2020 | 2.0 | June | 3.3 |

October 2016 was an exceptionally wet month. Rainfall data from 1999-2020 show that the 1-in-10-year October precipitation is 6.8 inches. Groundwater levels are typically low in October so precipitation does not have as large of an influence on flows as it would have if the large storm were to occur in May, where groundwater levels are elevated from the wet season. DEQ methodology was also employed to calculate the MMDWF and give perspective to the large flow from October 2016.

The DEQ methodology for MMDWF assumes that the precipitation from November and December serve to elevate the groundwater and saturate the soils. These soils are saturated from January through May and each storm event in that window creates a predictable response on the influent flows. A plot is created comparing the average precipitation and flows for January through May and a trendline is created. Since May is the only dry weather month where the soils can be assumed to be saturated and the groundwater elevated, the 1-in-10-year May precipitation (4.1 inches) is fit to the data to determine the MMDWF of 2.47 mgd. Figure 3.5 shows the DEQ plot to determine MMDWF.

Table 3.8 details the measured MMDWFs between the years 2015 and 2020 along with the industrial and R/C components of these values. The maximum R/C MMDWF peaking factor between 2015 and 2020 was 1.38, which was selected as the basis of planning. By multiplying this peaking factor by the selected R/C ABF of 1.68 mgd, the selected R/C MMDWF is calculated to be 2.32 mgd. The selected MMDWF of 2.51 mgd is then calculated by adding the selected maximum month industrial flow of 0.19 mgd to the selected R/C MMDWF. The selected MMDWF is approximately two percent greater than the MMDWF calculated using the DEQ methodology.

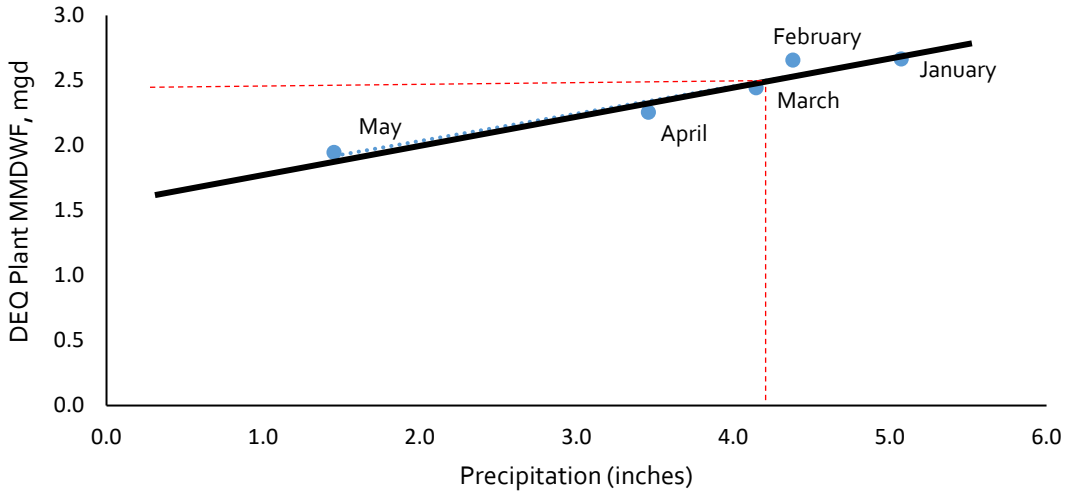



Figure 3.5 Maximum Month Dry Weather Flow DEQ Methodology

Table 3.8 Maximum Month Dry Weather Flows and Peaking Factors

| Data Source | MMDWF (mgd) | Industrial(1) (mgd) | R/C MMDWF(2) (mgd) | R/C Peaking(3) Factor |
|---|---|---|---|---|
| 2015 DMRs | 1.80 | 0.17 | 1.62 | 1.03 |
| 2016 DMRs | 2.40 | 0.19 | 2.22 | 1.38 |
| 2017 DMRs | 2.16 | 0.21 | 1.96 | 1.17 |
| 2018 DMRs | 1.94 | 0.16 | 1.77 | 1.05 |
| 2019 DMRs | 2.00 | 0.17 | 1.83 | 1.08 |
| 2020 DMRs | 1.97 | 0.16 | 1.81 | 1.10 |
| DEQ Method | 2.47 | 0.19(4) | 2.28(5) | 1.35(6) |
| Maximum Value (2015 – 2020) | 2.47 | 0.21 | 2.28 | 1.38 |
| **Selected Value** | **2.51(8)** | **0.19(4)** | **2.32(7)** | **1.38** |

Notes:
(1) Average monthly industrial flow that occurred in the month corresponding to the influent MMDWF.
(2) R/C = MMDWF - Industrial.
(3) Calculated by dividing the R/C MMDWF by the R/C ABF from Table 3.3.
(4) The maximum combined SIU MMF flow from the last three years was assumed (Table 3.2).
(5) The R/C MMDWF for the DEQ methodology was calculated by subtracting the assumed industrial flow from the DEQ methodology MMDWF.
(6) The DEQ R/C MMDWF peaking factor was determined by dividing the resultant DEQ methodology R/C MMDWF by the selected R/C ABF from Table 3.3.
(7) Calculated by multiplying the selected peaking factor by the selected R/C ABF from Table 3.3.
(8) Calculated by adding the selected Industrial flow to the selected R/C MMDWF.

### 3.2.4.2 Maximum Month Wet Weather Flow

The MMWWF was calculated by both direct and DEQ methodology. The MMWWF is typically expected to occur in the wettest month between January and April, where groundwater levels are highest. Table 3.9 shows the MMWWF for each year on record and lists the precipitation that occurred during the respective month.

Table 3.9 Direct MMWWF Calculations

| Year | MMWWF (mgd) | Month | Precipitation (inches) |
|---|---|---|---|
| 2015 | 3.5 | December | 13.7 |
| 2016 | 2.9 | November | 7.0 |
| 2017 | 3.7 | February | 10.4 |
| 2018 | 2.8 | January | 5.6 |
| 2019 | 2.5 | February | 4.0 |
| 2020 | 2.9 | January | 7.1 |

December of 2015 was an exceptionally wet month. Rainfall data from 1999-2020 show that the 1-in-10-year December precipitation is expected to be 10 inches. The November precipitation for 2016 is near the 1-in-5-year November from historical rainfall data, but the preceding October was very wet (9.7 inches). For both 2016 and 2015, the groundwater was likely elevated prior to January, causing the MMWWF to occur in November and December.

The DEQ methodology for MMWWF assumes that the precipitation from November and December serve to elevate the groundwater and saturate the soils. These soils are assumed to be saturated from January through May and the cumulative precipitation in that window creates a predictable response on the influent flows. A plot is created comparing the average precipitation and flows for January through May. The 1-in-5-year monthly precipitation totals for each month in January through May are fit to the data; the highest resulting flow is determined to be the MMWWF. January had the highest 1-in-5-year precipitation at 7.7 inches, resulting in a DEQ MMWWF of 3.2 mgd. Figure 3.6 shows the DEQ plot to determine MMWWF.

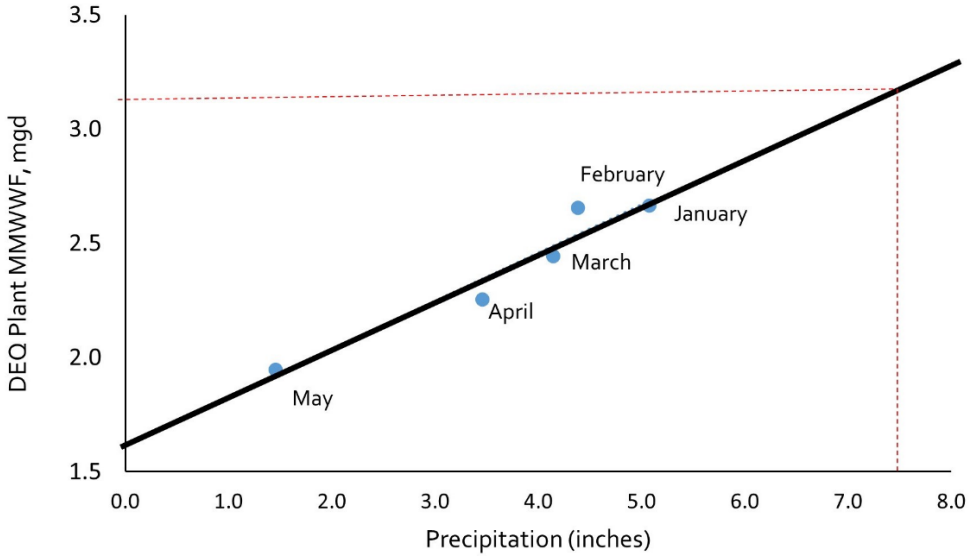



Figure 3.6 Maximum Month Wet Weather Flow DEQ Methodology

Table 3.10 shows the measured MMWWFs between the years 2015 and 2020 along with the industrial and R/C components of these numbers. The maximum R/C MMWWF peaking factor between 2015 and 2020, was 2.10 which was selected as the basis of planning. By multiplying this peaking factor by the selected R/C ABF of 1.68 mgd, the selected R/C MMWWF is calculated to be 3.54 mgd. The selected MMWWF of 3.73 mgd is then calculated by adding the maximum industrial flow of 0.19 mgd to the selected R/C MMWWF. The selected MMWWF is approximately 2 percent greater than the maximum measured historical MMWWF and is also greater than the MMWWF calculated using the DEQ methodology.

Table 3.10 Maximum Month Wet Weather Flows and Peaking Factors

| Data Source | MMWWF) (mgd) | Industrial(1) (mgd) | R/C MMWWF(2) (mgd) | R/C Peaking Factor(3) |
|---|---|---|---|---|
| 2015 DMRs | 3.45 | 0.16 | 3.29 | 2.10 |
| 2016 DMRs | 2.86 | 0.16 | 2.70 | 1.68 |
| 2017 DMRs | 3.69 | 0.17 | 3.53 | 2.10 |
| 2018 DMRs | 2.83 | 0.14 | 2.68 | 1.59 |
| 2019 DMRs | 2.50 | 0.14 | 2.37 | 1.40 |
| 2020 DMRs | 2.90 | 0.14 | 2.76 | 1.67 |
| DEQ Method | 3.24 | 0.19(4) | 3.05(5) | 1.80(6) |
| Maximum Value (2015 – 2020) | 3.69 | 0.17 | 3.53 | 2.10 |
| **Selected Value** | **3.73(8)** | **0.19(4)** | **3.54(7)** | **2.10** |

Notes:
(1) Average monthly industrial flow that occurred in the month corresponding to the influent MMWWF.
(2) R/C = MMWWF - Industrial.
(3) Calculated by dividing the R/C MMWWF by the R/C ABF from Table 3.3.
(4) The maximum combined SIU MMF flow from the last three years was assumed (Table 3.2).
(5) The R/C MMWWF for the DEQ methodology was calculated by subtracting the assumed industrial flow from the DEQ methodology MMDWF.
(6) The DEQ R/C MMDWF peaking factor was determined by dividing the resultant DEQ methodology R/C MMWWF by the selected R/C ABF from Table 3.3.
(7) Calculated by multiplying the selected peaking factor by the selected R/C ABF from Table 3.3.
(8) Calculated by adding the selected Industrial flow to the selected R/C MMWWF.

### 3.2.5 Maximum Weekly Flows

There is no DEQ guidance to calculate weekly flows; both the MWDWF and MWWWF were calculated using direct methodology based on 7-day running averages. The selected peaking factors will be utilized in Section 3.3 to project future flows. The methodology used to calculate the current flows and peaking factors is as follows:

- **R/C MWDWF and MWWWF peaking factors**: The R/C MWDWF and MWWWF peaking factors were calculated for each year between 2015 and 2020 by diving the R/C MWDWF and MWWWFs by the R/C ABF for that year. Since selecting the largest peaking factor from 2015 through 2020 resulted in facility influent flows that were greater than five percent above the maximum observed facility influent flows, slightly lower peaking factors were selected. These peaking factors were selected by dividing the maximum observed R/C MWDWF and R/C MWWWF by the selected ABF.

- **Maximum week industrial flows**: Since weekly industrial flow data is not available, the average MM industrial flow from 2015 – 2020 was selected to represent the industrial contribution to the current MWDWF and MWWWF.
- **MWDWF and MWWF**: The selected current facility influent MWDWF and MWWWFs were calculated by adding the selected industrial flow to the selected R/C flow.

#### 3.2.5.1 Maximum Week Dry Weather Flow

Table 3.11 details the measured MWDWF for the years 2015 through 2020 along with the industrial and R/C components of these numbers. The maximum R/C MWDWF peaking factor between 2015 and 2020 was 1.72, which occurred in the year 2016. If this peaking factor were used as the basis of planning, the selected MWDWF would be more than 5 percent greater than the maximum MWDWF measured in the last six years. To account for the lower MWDWF peaking factors observed in more recent years, a slightly lower MWDWF peaking factor of 1.64 was selected as the basis of planning. This peaking factor was selected as it yielded the maximum observed historic R/C MWDWF of 2.76 mgd. The selected MWDWF of 2.95 mgd is then calculated by adding the maximum industrial flow of 0.19 mgd to the selected R/C MWDWF.

Table 3.11 Maximum Week Dry Weather Flows and Peaking Factors

| Data Source | MWDWF (mgd) | Industrial(1) (mgd) | R/C MWDWF(2) (mgd) | R/C Peaking Factor(3) |
|---|---|---|---|---|
| 2015 DMRs | 2.20 | 0.16 | 2.04 | 1.30 |
| 2016 DMRs | 2.94 | 0.19 | 2.76 | 1.72 |
| 2017 DMRs | 2.52 | 0.17 | 2.35 | 1.40 |
| 2018 DMRs | 2.08 | 0.17 | 1.91 | 1.13 |
| 2019 DMRs | 2.23 | 0.16 | 2.08 | 1.23 |
| 2020 DMRs | 2.13 | 0.16 | 1.97 | 1.19 |
| Maximum Value (2015 – 2020) | 2.94 | 0.19 | 2.76 | 1.72 |
| **Selected Value** | **2.95(7)** | **0.19(4)** | **2.76(5)** | **1.64(6)** |

Notes:
(1) No weekly industrial flow data is available. Used average monthly industrial flow that occurred in the month corresponding to the influent MWDWF.
(2) R/C = MWDWF - Industrial.
(3) Calculated by dividing the R/C MWDWF by the R/C ABF from Table 3.3.
(4) No weekly industrial flow data is available. Used the maximum month industrial flow from the last three years (Table 3.2).
(5) Highest calculate R/C MWDWF between 2015 and 2020 was selected as the current R/C MWDWF.
(6) Calculated by dividing the selected R/C MWDWF by the selected ABF (Table 3.3).
(7) Calculated by adding the selected Industrial flow to the selected R/C MWDWF.

#### 3.2.5.2 Maximum Week Wet Weather Flow

Table 3.12 details the measured MWWWF for the years 2015 through 2020 along with the industrial and R/C components of these numbers. The maximum R/C MWWWF peaking factor between 2015 and 2020 was 2.78, which occurred in the year 2015. If this peaking factor were used as the basis of planning, the selected MWWWF would be more than 5 percent greater than the maximum MWWWF measured in the last six years. To account for the lower MWWWF peaking factors observed in more recent years, a slightly lower MWWWF peaking factor of 2.59 was selected as the basis of planning. This peaking factor was selected as it yielded a R/C MWWWF of 4.37 mgd, a value equal to the maximum observed historic R/C MWWWF. The selected MWWWF of 4.56 mgd is then calculated by adding the maximum industrial flow of 0.19 mgd to the selected R/C MWWWF.

Table 3.12 Maximum Week Wet Weather Flows and Peaking Factors

| Data Source | MWWWF (mgd) | Industrial[1] (mgd) | R/C MWWWF[2] (mgd) | R/C Peaking Factor[3] |
|---|---|---|---|---|
| 2015 DMRs | 4.53 | 0.16 | 4.37 | 2.78 |
| 2016 DMRs | 3.52 | 0.17 | 3.36 | 2.09 |
| 2017 DMRs | 4.39 | 0.17 | 4.22 | 2.52 |
| 2018 DMRs | 3.38 | 0.14 | 3.21 | 1.91 |
| 2019 DMRs | 3.11 | 0.17 | 2.94 | 1.74 |
| 2020 DMRs | 3.48 | 0.14 | 3.32 | 2.02 |
| Maximum Value (2015 – 2020) | 4.53 | 0.17 | 4.37 | 2.78 |
| **Selected Value** | **4.56[7]** | **0.19[4]** | **4.37[5]** | **2.59[6]** |

Notes:
(1) No weekly industrial flow data is available. Used average monthly industrial flow that occurred in the month corresponding to the influent MWWWF.
(2) R/C = MWWWF - Industrial.
(3) Calculated by dividing the R/C MWWWF by the R/C ABF from Table 3.3.
(4) No weekly industrial flow data is available. Used the maximum month industrial flow from the last three years (Table 3.2).
(5) Highest calculate R/C MWWWF between 2015 and 2020 was selected as the current R/C MWWWF.
(6) Calculated by dividing the selected R/C MWWWF by the selected ABF (Table 3.3).
(7) Calculated by adding the selected Industrial flow to the selected R/C MWWWF.

### 3.2.6 Peak Day Flows

This section documents the historic PDDWF and PDWWF along with the historic PDDWF and PDWWF peaking factors. The selected peaking factors will be utilized in Section 3.3 to project future flows. The methodology used to calculate the current flows and peaking factors is as follows:

- **R/C PDDWF and PDWWF peaking factors**: The R/C PDDWF and PDWWF peaking factors were calculated for each year between 2015 and 2020 by diving the R/C PDDWF and PDWWFs by the R/C ABF for that year. Additionally R/C PDDWF and PDWWF peaking factors were calculated from the estimated PDDWF and PDWWFs utilizing the DEQ methodology by subtracting the selected industrial flows from these calculated values. DEQ methodology R/C peaking factors were then calculated by dividing the DEQ methodology R/C flows by the selected ABF. Since selecting the largest peaking factor from 2015 through 2020 (including the peaking factor estimated utilizing the DEQ methodology) resulted in facility influent flows that were greater than five percent

above the maximum observed facility influent flows, slightly lower peaking factors were selected. These peaking factors were selected by dividing the maximum calculated R/C PDDWF and R/C PDWWF by the selected ABF.

- **Peak day industrial flows**: The average MM industrial flow from 2015 – 2020 was selected to represent the industrial contribution to the current PDDWF and PDWWF.
- **PDDWF and PDWWF**: The selected current facility influent PDDWF and PDWWFs were calculated by adding the selected industrial flow to the selected R/C flow.

#### 3.2.6.1 Peak Day Dry Weather Flow

There is no DEQ methodology for PDDWF. Table 3.13 details the measured PDDWFs between the years 2015 and 2020 along with the industrial and R/C components of these numbers. The maximum R/C PDDWF peaking factor between 2015 and 2020 was 2.12, which occurred in the year 2016. If this peaking factor were used as the basis of planning, the selected PDDWF would be more than 5 percent greater than the maximum PDDWF measured in the last six years. To account for the lower PDDWF peaking factors observed in more recent years, a slightly lower PDDWF peaking factor of 2.04 was selected as the basis of planning. This peaking factor was selected as it yielded the maximum observed historic R/C PDDWF of 3.44 mgd. The selected PDDWF of 3.63 mgd is then calculated by adding the selected maximum industrial flow of 0.19 mgd to the selected R/C PDDWF.

Table 3.13 Peak Day Dry Weather Flows and Peaking Factors

| Data Source | PDDWF (mgd) | Industrial[(1)] (mgd) | R/C PDDWF[(2)] (mgd) | R/C Peaking Factor[(3)] |
|---|---|---|---|---|
| 2015 DMRs | 2.63 | 0.16 | 2.46 | 1.57 |
| 2016 DMRs | 3.63 | 0.19 | 3.44 | 2.14 |
| 2017 DMRs | 3.19 | 0.17 | 3.02 | 1.80 |
| 2018 DMRs | 2.25 | 0.17 | 2.08 | 1.23 |
| 2019 DMRs | 3.06 | 0.17 | 2.89 | 1.70 |
| 2020 DMRs | 2.29 | 0.16 | 2.13 | 1.29 |
| Maximum Value (2015 – 2020) | 3.63 | 0.19 | 3.44 | 2.14 |
| **Selected Value** | **3.63[(7)]** | **0.19[(4)]** | **3.44[(5)]** | **2.04[(6)]** |

Notes:
(1) No daily industrial flow data is available. Used average monthly industrial flow that occurred in the month corresponding to the influent PDDWF.
(2) R/C = PDDWF - Industrial.
(3) Calculated by dividing the R/C PDDWF by the R/C ABF from Table 3.3.
(4) No daily industrial flow data is available. Used the maximum month industrial flow from the last three years (Table 3.2).
(5) Highest calculate R/C PDDWF between 2015 and 2020 was selected as the current R/C PDDWF.
(6) Calculated by dividing the selected R/C PDDWF by the selected ABF (Table 3.3).
(7) Calculated by adding the selected Industrial flow to the selected R/C PDDWF.

### 3.2.6.2 Peak Day Wet Weather Flow

DEQ recommends plotting the ten largest daily flows on record against the measured precipitation on that day. The 1-in-5-year 24-hour storm (2.9 inches) is then fit to the data to determine the PDWWF of 5.5 mgd. Figure 3.7 displays the DEQ methodology for determining PDWWF.

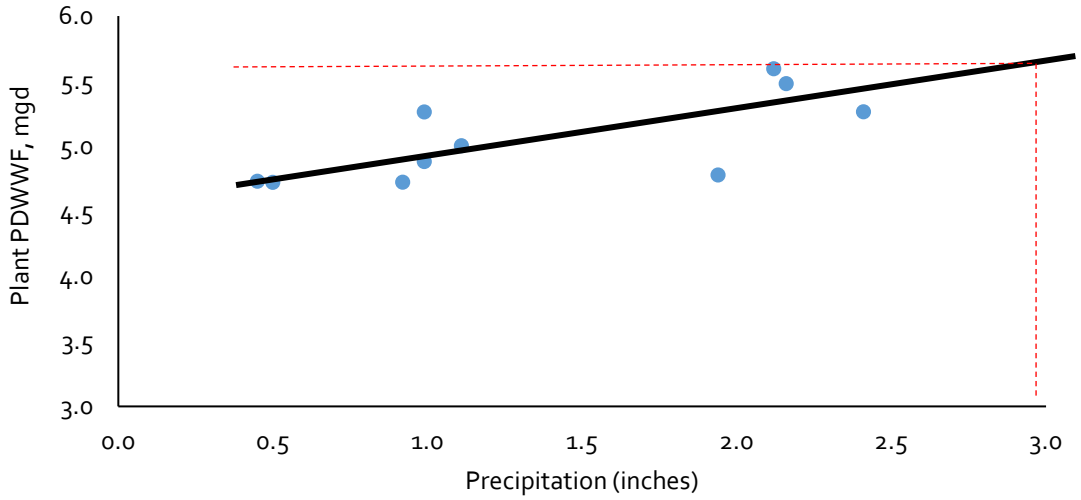



Figure 3.7 Peak Day Wet Weather Flow DEQ Methodology

Table 3.14 Peak Day Wet Weather Flows and Peaking Factors

| Data Source | PDWWF (mgd) | Industrial[2] (mgd) | R/C PDWWF[2] (mgd) | R/C Peaking Factor[3] |
|---|---|---|---|---|
| 2015 DMRs | 5.48 | 0.16 | 5.32 | 3.39 |
| 2016 DMRs | 4.15 | 0.17 | 3.98 | 2.48 |
| 2017 DMRs | 5.59 | 0.17 | 5.43 | 3.24 |
| 2018 DMRs | 4.38 | 0.14 | 4.24 | 2.52 |
| 2019 DMRs | 3.64 | 0.17 | 3.47 | 2.05 |
| 2020 DMRs | 4.78 | 0.13[4] | 4.65 | 2.82 |
| DEQ Method | 5.54 | 0.19[5] | 5.35[6] | 3.18[7] |
| Maximum Value (2015 – 2020) | 5.59 | 0.17 | 5.43 | 3.39 |
| **Selected Value** | **5.62[8]** | **0.19[5]** | **5.43[9]** | **3.22[10]** |

Notes:
(1) No daily industrial flow data is available. Used average monthly industrial flow that occurred in the month corresponding to the influent PDDWF.
(2) R/C = PDWWF - Industrial.
(3) Calculated by dividing the R/C PDWWF by the R/C ABF from Table 3.3.
(4) Data is only available through June 2020. Since the PDWWF in 2020 occurred in December, the measured industrial flow for December of 2019 was assumed for this year.
(5) No daily industrial flow data is available. Used the maximum month industrial flow from the last three years (Table 3.2).
(6) The R/C PDWWF for the DEQ methodology was calculated by subtracting the assumed industrial flow from the DEQ methodology PDWWF.
(7) The DEQ R/C PDWWF peaking factor was determined by dividing the resultant DEQ methodology R/C PDWWF by the selected R/C ABF from Table 3.3.
(8) Calculated by adding the selected Industrial flow to the selected R/C PDWWF.
(9) Highest calculate R/C PDWWF between 2015 and 2020 was selected as the current R/C PDDWF.
(10) Calculated by dividing the selected R/C PDWWF by the selected ABF (Table 3.3).

### 3.2.7 Peak Hour Flow

The DEQ methodology for estimating PHF involves assigning probability of exceedances to determined design flows. The major assumption in the DEQ method is that all design flows are exceeded in a 1-in-5 probability precipitation year. The flows are plotted on a log-normal plot against the probability of exceedances, which are as follows:

- AAF: 50 percent.
- MMWWF: 8.3 percent (or one month in year).
- Peak Weekly Flow: 1.9 percent (or one week in a year).
- PDWWF: 0.27 percent (or one day in a year).
- PHF 0.011 percent (or one hour in a year).

Using this methodology, the estimated PHF is estimated to be 7.78 mgd as is shown in Figure 3.8. The DEQ methodology R/C PHF was estimated by subtracting the selected MM industrial flow (Table 3.2) from the PHF generated using the DEQ methodology. A R/C DEQ PHF peak factor equal to 4.51 was then calculated by dividing this flow by the selected R/C ABF from Table 3.3.

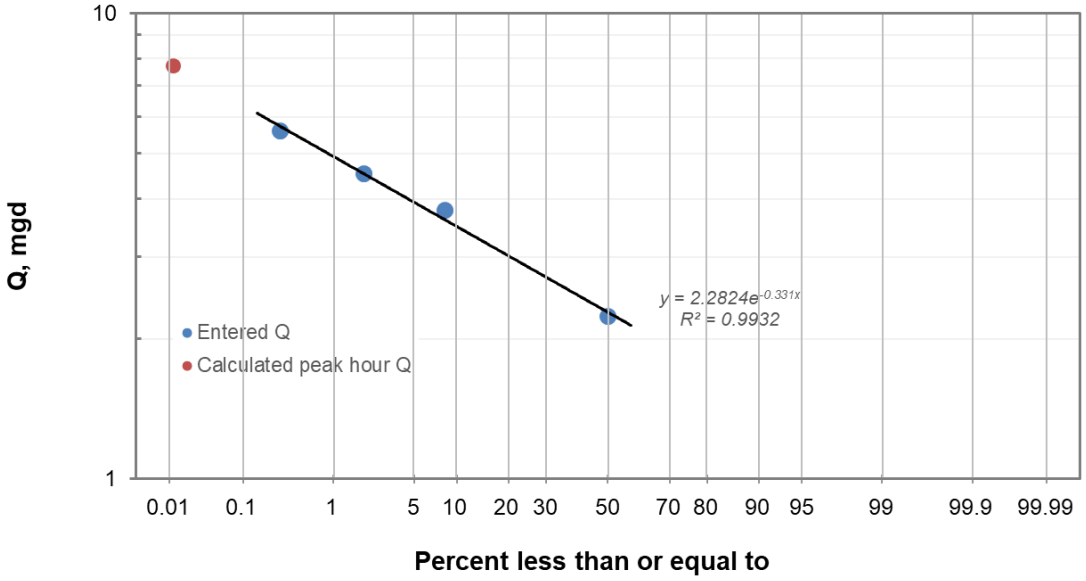



Figure 3.8 Peak Hour Flow DEQ Methodology

Instantaneous plant data from 2015-2020 was provided by the City and gives measurements every 15 minutes. A running average was performed to determine the hourly flows. These measured PHFs for the years 2015 through 2020 are summarized in Table 3.15. The highest hourly flow recorded was 8.79 mgd on December 7, 2015, which saw 2.2 inches of rain. This event also produced the greatest R/C peaking factor of 5.50 which also exceeded the R/C DEQ PHF peaking factor. If this peaking factor were used as the basis of planning, the selected PHF would be more than 5 percent greater than the maximum PHF measured in the last six years. To account for the lower peaking factors observed in more recent years, a slightly lower PHF peaking factor of 5.10 was selected as the basis of planning. This peaking factor was selected as it yielded the maximum observed historic PHF of 8.79 mgd.

Table 3.15 Peak Hour R/C Flows Peaking Factors

| Data Source | PHF (mgd) | Industrial[1] (mgd) | R/C PHF[2] (mgd) | R/C Peaking Factor[3] |
|---|---|---|---|---|
| 2015 Plant Data | 8.79 | 0.16 | 8.63 | 5.50 |
| 2016 Plant Data | 5.64 | 0.17 | 5.47 | 3.40 |
| 2017 Plant Data | 6.95 | 0.17 | 6.78 | 4.04 |
| 2018 Plant Data | 5.78 | 0.14 | 5.64 | 3.35 |
| 2019 Plant Data | 4.54 | 0.15 | 4.39 | 2.59 |
| 2020 Plant Data | 5.15 | 0.14 | 5.01 | 3.04 |
| DEQ Method | 7.78 | 0.19[4] | 7.59[5] | 4.51[6] |
| Maximum Value (2015 – 2020) | 8.79 | 0.19 | 8.63 | 5.50 |
| **Selected Value** | **8.79[7]** | **0.19[4]** | **8.60[8]** | **5.10[9]** |

Notes:
(1) No hourly industrial flow data is available. Used average monthly industrial flow that occurred in the month corresponding to the influent PHF.
(2) R/C PHF = PHF - Industrial.
(3) Calculated by dividing the R/C PHF by the R/C ABF from Table 3.3.
(4) No hourly industrial flow data is available. Used the maximum month industrial flow from the last three years (Table 3.2).
(5) The R/C PHF for the DEQ methodology was calculated by subtracting the assumed industrial flow from the DEQ methodology PHF.
(6) The DEQ R/C PHF peaking factor was determined by dividing the resultant DEQ methodology R/C PHF by the selected R/C ABF from Table 3.4.
(7) Highest PHF between 2015 and 2020 was selected as the current PHF.
(8) Calculated by subtracting the selected industrial flow from the selected current PHF.
(9) Calculated by dividing the selected R/C PHF by the selected ABF (Table 3.3).

### 3.2.8 Existing Flow Summary

Table 3.16 below details the existing flows calculated and explained in this section. The R/C peaking factor will serve as the basis for flow projections.

Table 3.16 Existing (2020) Flow Summary

| Item | Selected Flow (mgd) | Industrial Flow (mgd) | R/C Flow (mgd) | R/C Peaking Factor |
|---|---|---|---|---|
| ABF | 1.85 | 0.17 | 1.68 | 1.00 |
| AAF | 2.17 | 0.17 | 2.00 | 1.19 |
| ADWF | 1.91 | 0.17 | 1.74 | 1.03 |
| AWWF | 2.53 | 0.17 | 2.36 | 1.40 |
| MMDWF | 2.51 | 0.19 | 2.32 | 1.38 |
| MMWWF | 3.73 | 0.19 | 3.54 | 2.10 |
| MWDWF | 2.95 | 0.19 | 2.76 | 1.64 |
| MWWWF | 4.56 | 0.19 | 4.37 | 2.59 |
| PDDWF | 3.63 | 0.19 | 3.44 | 2.04 |
| PDWWF | 5.62 | 0.19 | 5.43 | 3.22 |
| PHF | 8.79 | 0.19 | 8.60 | 5.10 |

## 3.3 Flow Projections

Flow projections were developed by adding the projected industrial flow to the projected R/C flows. This section documents the industrial flow projections along with the projections for the R/C and combined flows.

### 3.3.1 Industrial Flow Projection

Certain SIUs within the City's existing service area have permitted flow (and in one case load) limits established by the City. Industrial flows for these permitted SIUs was to equal the maximum permitted flow by the year 2045. Since weekly, daily and hourly data are not available for industrial flows, this permitted maximum flows was assumed to equal the MMDWF, MMWWF, MWDWF, MWWWF, PDDWF, PDWWF and PHF for each SIU. This assumption results in a projected 2045 maximum flow from the SIUs within the current industrial areas of 0.58 mgd. The projected average flows from the SIUs (ABF, AAF, ADWF and AWWF) were calculated by multiplying the selected 2045 MMF by the ratio of the current selected average SIU flow (0.17 mgd) to the current selected maximum month SIU flow (0.19 mgd). With this assumption, the City's current largest industrial sources (Swire and CCF) would increase their maximum effluent flow up to the limits currently set by the City which represents an approximately 250 and 150 percent growth over current flow generation, respectively while the smaller SIUs would see much larger growth percentages. Table 3.17 summarizes the methodology used to project the 2045 industrial AAF and MMFs from the City's current SIUs.

In addition to the current SIUs, the CSMP (2014) projects that 1,220 acres within the UGB could be zoned for industrial use by the year 2045. The projected 2045 AAF and MMF from these new areas was projected using the following methodology:

- **New total industrial area**:
  - 1,220 acres (The sum of the "Future Development UGB" industrial designed category and the "Future Development UGB" industrial re-zone from Table 2-2 from the CSMP, 2014).
  - 53.2 acres of that lies within the BCPA and is planned to be served by others.
  - 1,166.8 acres thus represents the planned new industrial area for 2045.
- **New buildable industrial area**: 65 percent of 1,166.8 acres or 758 acres. This reduction accounts for the net buildable area (Page 5-13, CSMP 2014).
- **New industrial area AAF**: 350 gallons per acre per day (gpad) flow factor multiplied by 758 acres. This flow factor is from Table 5-10 in the CSMP (2014) and represents a "low density" flow for industrial areas. This flow factor was selected because it is more similar to the current industrial flow of about 170 gpad than the "medium density" flow factor of 500 gpad or the "high density" flow factors of 1,000 gpad presented in the CSMP. This results in a projected industrial AAF of 0.27 mgd. This flow applies to all the average flows (AAF, ADWF, AWWF and ABF).
- **New industrial area MMF**: The new industrial area MMF was calculated by multiplying the new industrial area AAF by the ratio of the current industrial MMF to AAF and equals 0.30 mgd.

The projected 2045 permitted industrial flows are the sum of the flows projected for the current industrial area and the areas within the UGB that could be zoned for industrial uses in the future. These flows are summarized in Table 3.18. By using this methodology, the industrial flow is projected to grow by 460 percent through the year 2045 and results in a per acre AAF of 414 gpad. While this represents a 240 percent increase in the industrial flow factor, it is about half of the "high density" industrial flow factor assumed in the CSMP.

Since the flows associated with the non-permitted industrial sources is not tracked, this flow is part of the calculated R/C flow and is assumed to grow with the residential population.

Table 3.17 Industrial Flow Projections for the Current Industrial Area

| Item | Current AAF (mgd) | Percent of Current AAF | Calculated Current MMF (mgd)(1) | Permitted Maximum Flow (mgd) | Growth Potential(2) | Selected 2045 AAF (mgd)(3) | Selected 2045 MMF (mgd)(4) |
|---|---|---|---|---|---|---|---|
| Swire | 0.06 | 33% | 0.06 | 0.16 | 254% | 0.14 | 0.16 |
| ODOC | 0.09 | 55% | 0.10 | 0.16 | 153% | 0.14 | 0.16 |
| Fujimi | 0.01 | 8% | 0.02 | 0.12 | 776% | 0.11 | 0.12 |
| Xerox | 0.00 | 1% | 0.00 | 0.025 | 1095% | 0.02 | 0.03 |
| Flir | 0.00 | 0% | 0.00 | 0.006 | 4527% | 0.01 | 0.01 |
| SIUs with no permitted maximum(5) | 0.00 | 3% | 0.01 | NA | NA | 0.00 | 0.01 |
| SIUs with no monitoring data | NA | | | 0.106 | NA | 0.09 | 0.11 |
| Total | **0.17** | | **0.19** | **0.577** | **334%** | **0.52** | **0.58** |

Notes:
(1) Since the MMFs of each SIU do not necessarily occur at the same time, the MMF for each SIU was calculated by multiplying each SIUs percent of current AAF by the selected current SIU MMF from Table 3.2.
(2) Calculated by dividing the permitted maximum flow by the calculated MMF.
(3) Calculated by multiplying the selected MMF for each SIU by the ratio of the current total SIU AAF to MMF from Table 3.2.
(4) Selected MMF for each SIU equals the permitted maximum flow if available or the current MMF if no permitted flows are available.
(5) SIUs with no permitted maximum flow include: Sysco and Leadteck.
(6) SIUs with no monitoring data include: Photo Solutions, Old Castle, Twist Bioscience, DAS North Valley Complex, PW Building and Marten Transport.

Table 3.18 Industrial Flow Projections

| | Current Industrial Area | New Industrial Area | Combined Industry |
|---|---|---|---|
| 2020 | | | |
| Area, acres | 1,000(1) | 0 | 1,000 |
| AAF, gpad | 170 | NA | 170 |
| AAF, mgd | 0.17 | NA | 0.17 |
| MMF, mgd | 0.19 | NA | 0.19 |
| 2045 | | | |
| Area, acres | 1,000 | 758(2) | 1,758 |
| AAF, gpad | 516 | 350 | 444 |
| AAF, mgd | 0.52 | 0.27 | 0.78 |
| MMF, mgd | 0.58 | 0.30 | 0.87 |

Notes:
(1) From Table 2-2 of the CSMP (2014).
(2) 0.65x(1220 acres [Table 2-2 CSMP 2014]– 53.2 acres [BCPA]).

### 3.3.2 Total Influent Flow Projection

To produce a total influent (combined industrial and R/C) flow projection for the planning period, the R/C ABF was first projected by multiplying the selected R/C per capita flow of 65 gpcd (Table 3.3) by the projected 2045 population of 50,388 (Section 3.1.1). The remaining R/C flows were developed by multiplying the selected peaking factors (Section 3.3) by the projected R/C ABF. The total influent flow was then projected by adding the projected industrial flows (Table 3.18) to the projected R/C flows. Total influent flow projections for the year 2045 are summarized in Table 3.19.

Table 3.19 2045 Flow Projections

| Item | Existing R/C Flow (mgd) | R/C Peaking Factor | 2045 R/C Flow | 2045 Industrial Flow (mgd) | Projected 2045 Plant Flow (mgd) |
|---|---|---|---|---|---|
| ABF | 1.7 | 1.0 | 3.3 | 0.78 | 4.1 |
| AAF | 2.1 | 1.2 | 4.0 | 0.78 | 4.8 |
| ADWF | 1.7 | 1.0 | 3.4 | 0.78 | 4.2 |
| AWWF | 2.4 | 1.4 | 4.6 | 0.78 | 5.4 |
| MMDWF | 2.3 | 1.4 | 4.5 | 0.87 | 5.4 |
| MMWWF | 3.5 | 2.1 | 6.9 | 0.87 | 7.8 |
| MWDWF | 2.8 | 1.6 | 5.4 | 0.87 | 6.2 |
| MWWWF | 4.4 | 2.6 | 8.5 | 0.87 | 9.4 |
| PDDWF | 3.4 | 2.0 | 6.7 | 0.87 | 7.6 |
| PDWWF | 5.4 | 3.2 | 10.5 | 0.87 | 11.4 |
| PHF | 8.6 | 5.1 | 16.7 | 0.87 | 17.6 |

As is shown in Table 3.20, the 2045 PHF developed for this Plan of 17.6 mgd is approximately 5.9 mgd less than the 2045 PHF developed during the CSMP (2014). This difference is primarily due to the different assumptions applied to estimate industrial flow. The CSMP assumed that the industrial flow would grow from a current base flow (un-peaked) of 0.2 mgd (CSMP Table 5-3) to a future base flow of around 2.6 mgd (future gross area zoned for industrial use (CSMP Table 2-2) multiplied by a 65 percent factor to convert the gross acreage to net acreage (CSMP Page 5-13), multiplied by 1000 gpad for the designated industrial areas and 2,492 gpad for the re-zone industrial areas (CSMP Table 5-13).This represents a 13 fold increase in the base industrial flow. The CSMP also assumed that the maximum recorded DWF peaking factor for Canyon Creek applied to all flows including the industrial flows (CSMP Page 5-14 and Table 6-1). Between these two assumptions (13-fold increase in base flow and a peaking factor of 2.3 on the base industrial flow), the CSMP projected that the peak industrial flow would increase from about 0.3 mgd to 5.9 mgd by the year 2045, which represents a 17 fold increase in peak industrial flow. Additionally, by the year 2045, the CSMP is projecting that 41 percent of the flow coming to the treatment plant will be from industrial sources.

The growth in industrial flows projected as part of the CSMP is in contrast to the industrial flow growth projected as part of this plan. This plan projects that the peak industrial flow will increase from 0.19 mgd to 0.87 mgd by the year 2045, which represents a 4.6 fold increase in industrial flows. Over this same period, the R/C flows are expected to almost double and thus this Plan is projecting that the growth in industrial flow will outpace the R/C growth by more than a factor of two.

These different industrial flow assumptions were discussed with the City on April 20, 2023 and the group decided that the lower industrial flows projected in this plan are in line with the assumption that future industrial growth will be similar in nature to the City's current industries. The group felt that the industrial flow assumptions from the CSMP were conservative and appropriate for sizing collection system assets but that the approach outlined in this Plan provides a more realistic approach to planning for future expansions at the WWTP where overly conservative assumptions can yield inefficient and difficult to operate processes. The group discussed that the City should closely monitor industrial flow and growth and revise this planning document if necessary to accommodate future changes in industrial flows not accounted for by this Plan.

Table 3.20 Comparison of 2045 CSMP Flow Projections to the Current Plan's Projections

| | CSMP | Current Plan | Difference (CSMP – Current Plan) |
|---|---|---|---|
| Industrial DWF | 5.88(1) | 0.87(2) | 5.01 |
| R/C DWF | 8.32(3) | 6.70(2) | 1.62 |
| WWF | 9.26(4) | 10.00(5) | -0.74 |
| PHF | 23.46(6) | 17.57(7) | 5.89 |

Notes:

(1) Calculated as follows: sum of (1) existing industrial flow = 0.2 (CSMP Table 5-3) x 1.7 peaking factor (CSMP Table 5-5 used value for the WWTP); (2) future industrial flow = future gross area zoned for industrial use (CSMP Table 2-2) * 0.65 conversion from gross area to net area (CSMP page 5-13) * 1000 gpad for designated industrial areas and 2,492 gpad for the re-zone industrial areas (CSMP Table 5-13) * 2.3 peaking factor (CSMP Page 5-14 and Table 6-1).
(2) Table 3.19 PDDWF.
(3) Sum of Existing DWF, Future UGB DWF and Future URA DWF from CSMP Table 5-15 less the CSMP Industrial DWF.
(4) Sum of the Existing WWF, Future UGB WWF and Future URA WWF from CSMP Table 5-15.
(5) PHF – PDDWF from Table 3-19.
(6) CSMP Table 5-15.
(7) Table 3-19 PHF.

## 3.4 Historical and Existing Loads

Historical loading was gathered from the DMRs for the years 2015 through 2020. The DMRs displayed data for twice-weekly sampling events for $BOD_5$ and TSS. Nitrogen measurements were available from 2017 through 2019. Influent total phosphorous (TP) concentrations were not available on the DMRs, so their loading was estimated using standard published ratios.

The following parameters were defined for $BOD_5$, TSS, ammonia ($NH_3$), and TP loads. There is no DEQ methodology for load analysis, so all measurements were from direct calculation:

- **Average Annual (AA):** The average load over a calendar year.
- **Maximum Month (MM):** The maximum 30-day running average load.
- **Maximum Week (MW):** The maximum 7-day running average load.
- **Peak Day (PD):** The maximum daily load.

This section develops the per capita loads, industrial contributions and peaking factors used as the basis of future load projections. The methodology used to calculate the current loads and peaking factors is as follows:

- **Industrial loads**:
  - **$BOD_5$ and TSS**: Since flows and loads are only available from the permitted industrial sources, this section discusses the methodology used to estimate the current permitted industrial loads. The non-permitted industrial loads are part of the calculated R/C loads. Monthly industrial data was used to calculate the AA and MM industrial loads for the years 2015 through 2020. The average of AA and MM values was selected for the current AA and MM industrial contribution. Since no weekly or daily industrial data is available, the MM industrial contribution was also assumed for the MW and PD industrial contribution.
  - **Ammonia**: Since no industrial data is available for ammonia, the industrial load was assumed to have the same concentration as the influent. Using this methodology, AA and MM industrial ammonia loads were estimated for the years 2015 through 2020. The average of AA and MM values was selected for the current AA and MM industrial contribution. Additionally, the estimated industrial MM ammonia load was assumed for the MW and PD industrial contribution.
  - **TP**: Since no data is for either the industrial TP concentration or the facility influent TP concentration, TP concentrations can be estimated as a fraction of $BOD_5$ concentration. Table 3.18 of Metcalf & Eddy Fifth Edition lists TP concentrations as three percent of $BOD_5$ concentrations in typical domestic wastewater. This percentage was assumed for the industrial loads as well and was used to estimate industrial TP loads.
- **R/C AA per capita loads**: R/C AA loads were calculated for each year by subtracting the selected AA industrial load from the measured influent loads. The R/C AA per capita loads were calculated by dividing the load by the estimated population for that year. The average per capita load between 2015 and 2020 was selected to represent the current condition.
- **R/C MM, MW and PD peaking factors**: The R/C MM, MW and PD loads were calculated by subtracting the measured industrial load during the month that the peak load occurred from the measured influent load. The R/C peaking factors were calculated for each year by dividing that peak load by the AA load. A "current" load was then

calculated by adding the selected MM industrial load to the multiplication of the maximum peak factor between 2015 and 2020 by the selected R/C AA load. If this load was less than 5 percent greater than the maximum observed facility influent load, this peaking factor was selected to represent the R/C peak condition. If this calculated load was greater than 5 percent above the maximum observed facility influent load, a lower peak factor was selected that corresponded to the maximum observed R/C load.

- **MM, MW and PD loads:** R/C MM, MW and PD loads were calculated by multiplying the selected peak factors by the selected AA load. The facility influent MM, MW and PD loads were then calculated by adding the selected MM industrial load to the calculated R/C MM, MW and PD loads.
- **R/C AA, MM, MW and PD TP loads:** Since not data is available on the influent TP concentration, the AA, MM, MW, PD loads as well as the R/C AA, MM, MW and PD TP loads were estimated by assuming that the influent TP concentrations are 3 percent of the influent BOD concentrations (Table 3.18 from Metcalf and Eddy 5th Edition).

### 3.4.1 Total Suspended Solids

This section summarizes the historical data for industrial TSS loads along with the facility influent and R/C TSS loads.

#### 3.4.1.1 Industrial TSS Loads

The City's system receives a significant contribution from permitted industrial sources. These sources are considered SIUs and are regulated through the City's pre-treatment program. TSS data was obtained from the City's pre-treatment coordinator for the following permitted contributors:

1. **Fujimi:** Manufacturer of a variety of lapping and polishing products.
2. **Xerox:** Manufacturer of printers and other technology supplies.
3. **Swire Pacific:** Bottling plant for Coca-Cola™ products.
4. **Flir:** Tech manufacturer of thermal imaging and night vision cameras.
5. **Oregon Department of Corrections (ODOC):** Prison with a capacity of approximately 1,684 people, specifically the Coffee Creek Correctional Facility (CCCF). This prison is the only female prison in the state and is the on-boarding facility for all male prisoners.
6. **Sysco:** Supplier of kitchen goods. Elevated TSS was previously measured here when truck washing occurred on site, however that operation reportedly ceased in 2019.

The City's pre-treatment program primarily monitors metal concentrations, so comprehensive coverage of $BOD_5$ and TSS were not always available. TSS data was provided on a monthly-average basis. If average concentrations of $BOD_5$ and/or TSS were not available, the peak concentration for that month was used as a conservative basis. Typically, when this assumption was used, flows were low and/or the peak concentrations were low, and the resulting mass load was still very small relative to total plant loads with combined industrial loads accounting for approximately 6 percent of the influent TSS loads. For TSS loads, ODOC's contribution accounts for 89 percent of the Industrial TSS. Table 3.21 summarizes the combined AA and MM industrial loads. The average of the AA and MM industrial TSS loads were assumed when estimating the current facility influent TSS loads. Since weekly and daily industrial flows and TSS concentrations were not available, the MM industrial TSS load was also assumed for the MW and PD conditions.

Table 3.21 Annual Average and Maximum Monthly Industrial TSS Contributions

| Year | AA TSS load (ppd) | MM TSS load (ppd) |
|---|---|---|
| 2015 | 427 | 672 |
| 2016 | 470 | 655 |
| 2017 | 449 | 636 |
| 2018 | 412 | 655 |
| 2019 | 435 | 846 |
| 2020 | 293 | 389 |
| Average | 414 | 642 |

### 3.4.1.2 Average Annual TSS Loads

Average Annual TSS loads from 2015 through 2020 are reported in Table 3.22 and indicate increased loading primarily from the R/C contributors. As mentioned previously, industrial TSS comes primarily from the prison. Between the years 2015 and 2020, the average per capita TSS load was 0.23 pounds per capita day (ppcd) which is within the expected range. The selected R/C AA load was calculated by multiplying the selected per capita load by the 2020 PSU PRC population estimates. The selected AA load was calculated by adding the average annual industrial load of 414 ppd to the calculated R/C AA load.

Table 3.22 Average Annual TSS Load

| Data Source | Population[1] | Facility[2] (ppd) | Industrial (ppd) | R/C[3] (ppd) | R/C Per Capita (ppd)[4] |
|---|---|---|---|---|---|
| 2015 DMRs | 22,870 | 5,201 | 426 | 4,775 | 0.21 |
| 2016 DMRs | 23,740 | 5,600 | 470 | 5,130 | 0.22 |
| 2017 DMRs | 24,315 | 6,904 | 450 | 6,454 | 0.27 |
| 2018 DMRs | 25,250 | 6,275 | 413 | 5,863 | 0.23 |
| 2019 DMRs | 25,635 | 6,635 | 435 | 6,201 | 0.24 |
| 2020 DMRs | 25,915 | 6,471[5] | 296 | 6,175 | 0.24 |
| Average Value (2015 – 2020) | – | 6,181 | 415 | 5,766 | 0.23 |
| **Selected Value** | **25,915[6]** | **6,472[7]** | **414[8]** | **6,058[9]** | **0.23** |

Notes:
(1) Certified PSU PRC estimates.
(2) Direct average from influent readings on DMRs for the water year (November 1st of the previous calendar year through October 31st).
(3) R/C = Facility – Industrial.
(4) Calculated by dividing the R/C load by the population.
(5) Industrial data only available through June of 2020.
(6) 2020 population.
(7) Calculated by adding the selected industrial load to the selected R/C load.
(8) Average of the AA values from Table 3.21.
(9) Calculated by multiplying the selected per capita load by the selected population.

### 3.4.1.3 Maximum Month TSS Loads

The MM TSS loads are reported in Table 3.23 for the years 2015 through 2020. Between the years 2015 and 2020, the maximum MM peaking factor was 1.36 which occurred in the year 2016. This peaking factor was used as the basis of planning and was multiplied by the selected R/C AA TSS load to calculate the selected R/C MM TSS load of 8,242 ppd. The selected MM TSS load of 8,884 ppd was calculated by adding the maximum industrial TSS load to the selected R/C maximum month TSS load. This selected load is within 5 percent of the MM TSS load of 8,835 ppd measured in the year 2017.

Table 3.23 Maximum Month TSS Loads and Peaking Factors

| Data Source | Facility[1] (ppd) | Industrial[2] (ppd) | R/C[3] (ppd) | R/C Peaking Factor[4] |
|---|---|---|---|---|
| 2015 DMRs | 5,906 | 454 | 5,452 | 1.14 |
| 2016 DMRs | 7,358 | 361 | 6,997 | 1.36 |
| 2017 DMRs | 8,835 | 481 | 8,354 | 1.29 |
| 2018 DMRs | 7,445 | 489 | 6,956 | 1.19 |
| 2019 DMRs | 7,820 | 466 | 7,353 | 1.19 |
| 2020 DMRs | 7,662 | 234 | 7,428 | 1.20 |
| Maximum Value (2015 – 2020) | 8,835 | 489 | 8,354 | 1.36 |
| **Selected Value** | **8,906[5]** | **642[6]** | **8,264[7]** | **1.36** |

Notes:
(1) Maximum 30-day running average.
(2) Equal to the 30-day average industrial load occurring at the same time as the maximum 30-day average of the facility influent. Since maximum month industrial loads may not occur at the same time as the maximum month of the facility influent loads, the loads shown here, may be different than the loads summarized in Table 3.21.
(3) Facility Influent – Industrial.
(4) Calculated by dividing the R/C maximum month load by the R/C average annual load from Table 3.22.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Average of the MM values in Table 3.21.
(7) Calculated by multiplying the selected R/C AA load from Table 3.22 by the selected peaking factor.

### 3.4.1.4 Maximum Week TSS Loads

The MW TSS loads are reported in Table 3.24 for the years 2015 through 2020. During this time, the peaking factors ranged from 1.45 to 1.92, with the maximum peaking factor occurring in the year 2016. If this peaking factor is used as the basis of calculating MW loads, the selected loads would exceed the maximum measured values by around 9 percent. Given the fact that considerably lower peaking factors were recorded in recent years, a lower peaking factor of 1.74 was selected. This value corresponds to the maximum calculated R/C load of 10, 531 ppd. The selected MW TSS load was calculated by adding the maximum industrial load of 642 ppd to the selected MW R/C load.

Table 3.24 Maximum Week TSS Loads and Peaking Factors

| Data Source | Facility[1] (ppd) | Industrial[2] (ppd) | R/C[3] (ppd) | R/C Peaking Factor[4] |
|---|---|---|---|---|
| 2015 DMRs | 8,390 | 260 | 8,130 | 1.70 |
| 2016 DMRs | 10,280 | 383 | 9,897 | 1.93 |
| 2017 DMRs | 10,953 | 422 | 10,531 | 1.63 |
| 2018 DMRs | 8,700 | 174 | 8,525 | 1.45 |
| 2019 DMRs | 10,959 | 481 | 10,478 | 1.69 |
| 2020 DMRs | 9,208 | 234 | 8,974 | 1.45 |
| Maximum Value (2015 – 2020) | 10,959 | 481 | 10,531 | 1.93 |
| **Selected Value** | **11,173[5]** | **642[6]** | **10,531[7]** | **1.74[8]** |

Notes:
(1) Maximum 7-day average.
(2) Monthly average industrial load that occurred in the month containing the maximum weekly facility influent load. Since the maximum facility influent and industrial loads may not occur at the same time, the industrial loads listed here may differ from those summarized in Table 3.21.
(3) Facility influent – industrial.
(4) Calculated by dividing the R/C maximum week load by the R/C average annual load from Table 3.22.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Since weekly data is not available for industrial loads, used the average of the MM values in Table 3.21.
(7) Selected the largest R/C load from 2015 – 2020.
(8) Calculated by dividing the maximum R/C load by the selected AA R/C load from Table 3.22.

#### 3.4.1.5 Peak Day TSS Loads

The PD TSS loads are reported in Table 3.25 for the years 2015 through 2020. During this time, the peaking factors ranged from 1.70 to 2.69, with the maximum peaking factor occurring in the year 2016. If this peaking factor is used as the basis of calculating peak day loads, the selected loads would exceed the maximum measured values by around 16 percent. Given the fact that considerably lower peaking factors were recorded in recent years, a lower peaking factor of 2.28 was selected. This value corresponds to the maximum calculated R/C load of 13,800 ppd. The selected PD TSS load was calculated by adding the maximum industrial load of 642 ppd to the selected PD R/C load.

Table 3.25 Peak Day TSS Loads and Peaking Factors

| Data Source | Facility (ppd) | Industrial[(1)] (ppd) | R/C[(2)] (ppd) | R/C Peaking Factor[(3)] |
|---|---|---|---|---|
| 2015 DMRs | 9,386 | 324 | 9,062 | 1.90 |
| 2016 DMRs | 14,184 | 383 | 13,800 | 2.69 |
| 2017 DMRs | 14,020 | 462 | 13,558 | 2.10 |
| 2018 DMRs | 12,629 | 283 | 12,346 | 2.11 |
| 2019 DMRs | 12,230 | 380 | 11,850 | 1.91 |
| 2020 DMRs | 10,753 | 234 | 10,519 | 1.70 |
| Maximum Value (2015 – 2020) | 14,184 | 462 | 13,800 | 2.69 |
| **Selected Value** | **14,442[(4)]** | **642[(5)]** | **13,800[(6)]** | **2.28[(7)]** |

Notes:
(1) Monthly average industrial load that occurred in the month containing the maximum day facility influent load. Since the maximum facility influent and industrial loads may not occur at the same time, the industrial loads listed here may differ from those summarized in Table 3.21.
(2) Facility influent – industrial.
(3) Calculated by dividing the R/C peak day load by the R/C average annual load from Table 3.22.
(4) Calculated by adding the selected industrial load to the selected R/C load.
(5) Since daily data is not available for industrial loads, used the average of the MM values in Table 3.21.
(6) Selected the largest R/C load from 2015 – 2020.
(7) Calculated by dividing the maximum R/C load by the selected AA R/C load from Table 3.22.

The summary of TSS loads is found in Table 3.26.

Table 3.26 TSS Existing Loads Summary

| Data Source | Facility (ppd) | Industrial (ppd) | R/C (ppd) | R/C Peaking Factor |
|---|---|---|---|---|
| Annual Average | 6,472 | 414 | 6,058 | 1.00 |
| Maximum Month | 8,906 | 642 | 8,264 | 1.36 |
| Maximum Week | 11,173 | 642 | 10,531 | 1.74 |
| Peak Day | 14,442 | 642 | 13,800 | 2.28 |

### 3.4.2 Biochemical Oxygen Demand

This section summarizes the historical data for industrial $BOD_5$ loads along with the facility influent and R/C $BOD_5$ loads.

#### 3.4.2.1 Industrial $BOD_5$ Loads

The City's system receives a significant contribution from permitted industrial sources. $BOD_5$ data was obtained from the City's pre-treatment coordinator on the following permitted contributors: Fujimi, Xerox, Swire Pacific, Flir, ODOC and Sysco.

$BOD_5$ data was provided on a monthly-average basis and accounts for approximately 10 percent of the influent $BOD_5$ loads. For $BOD_5$ loads, the sum of the Swire and ODOC's loads accounts for 97 percent of the Industrial $BOD_5$ loads. Table 3.27 summarizes the combined AA and MM industrial loads. The average of the AA and MM industrial $BOD_5$ loads were assumed when estimating the current facility influent $BOD_5$ loads. Since weekly and daily industrial flows and $BOD_5$ concentrations were not available, the MM industrial $BOD_5$ load was also assumed for the MW and PD conditions.

Table 3.27 Annual Average and Maximum Monthly Industrial $BOD_5$ Contributions

| Year | AA $BOD_5$ load (ppd) | MM $BOD_5$ load (ppd) |
|---|---|---|
| 2015 | 786 | 1,271 |
| 2016 | 829 | 1,681 |
| 2017 | 714 | 1,039 |
| 2018 | 605 | 778 |
| 2019 | 642 | 906 |
| 2020 | 874 | 1,621 |
| Average | 742 | 1,216 |

### 3.4.2.2 Average $BOD_5$ Loads

Average Annual $BOD_5$ loads are reported in Table 3.28. Between the years 2015 and 2020, the average per capita $BOD_5$ load was 0.26 ppcd, which is on the high side of the expected range. The selected R/C AA load was calculated by multiplying the selected per capita load by the 2020 population. The selected AA load was calculated by adding the AA industrial load of 742 ppd to the calculated R/C AA load.

Table 3.28 Average Annual $BOD_5$ Load

| Data Source | Population(1) | Facility(2) (ppd) | Industrial (ppd) | R/C(3) (ppd) | R/C Per Capita (ppd)(4) |
|---|---|---|---|---|---|
| 2015 DMRs | 22,870 | 6,741 | 787 | 5,954 | 0.26 |
| 2016 DMRs | 23,740 | 7,226 | 827 | 6,399 | 0.27 |
| 2017 DMRs | 24,315 | 7,348 | 716 | 6,632 | 0.27 |
| 2018 DMRs | 25,250 | 6,941 | 604 | 6,336 | 0.25 |
| 2019 DMRs | 25,635 | 7,237 | 643 | 6,594 | 0.26 |
| 2020 DMRs | 25,915 | 7,563 | 890(5) | 6,673 | 0.26 |
| Average Value (2015 – 2020) | | 7,176 | 744 | 6,431 | 0.26 |
| **Selected Value** | **25,915(6)** | **7,516(7)** | **742(8)** | **6,774(9)** | **0.26** |

Notes:
(1) Certified PSU PRC estimates.
(2) Direct average from influent readings on DMRs for the water year (November 1st of the previous calendar year through October 31st).
(3) R/C = Facility – Industrial.
(4) Calculated by dividing the R/C load by the population.
(5) Industrial data only available through June of 2020.
(6) 2020 population.
(7) Calculated by adding the selected industrial load to the selected R/C load.
(8) Average of the AA values from Table 3.27.
(9) Calculated by multiplying the selected per capita load by the selected population.

### 3.4.2.3 Maximum Month $BOD_5$ Loads

The MM $BOD_5$ loads are reported in Table 3.29. Between the years 2015 and 2020, the maximum month peaking factor ranged from 1.12 to 1.43, with the maximum peak factor of 1.43 occurring in the year 2017. To account for the lower peak factors observed in recent years, a slightly lower peak factor of 1.40 was selected as the basis of planning. This peak factor corresponds to the maximum calculated R/C load of 9,469 ppd. The selected MM load of 10,685 ppd was calculated by adding the maximum industrial $BOD_5$ load to the selected R/C MM $BOD_5$ load. This selected load is approximately 5 percent greater than the maximum measured MM $BOD_5$ load of 10,220 ppd measured in the year 2017.

Table 3.29 Maximum Month $BOD_5$ Loads and Peaking Factors

| Data Source | Facility[(1)] (ppd) | Industrial[(2)] (ppd) | R/C[(3)] (ppd) | R/C Peaking Factor[(4)] |
|---|---|---|---|---|
| 2015 DMRs | 7,692 | 1026 | 6,666 | 1.12 |
| 2016 DMRs | 9,177 | 1270 | 7,907 | 1.24 |
| 2017 DMRs | 10,220 | 751 | 9,469 | 1.43 |
| 2018 DMRs | 8,876 | 592 | 8,284 | 1.31 |
| 2019 DMRs | 8,409 | 541 | 7,868 | 1.19 |
| 2020 DMRs | 8,914 | 657 | 8,257 | 1.24 |
| Maximum Value (2015 – 2020) | 10,220 | 1,270 | 9,469 | 1.43 |
| **Selected Value** | **10,685[(5)]** | **1,216[(6)]** | **9,469[(7)]** | **1.40[(8)]** |

Notes:
(1) Maximum 30-day running average.
(2) Equal to the 30-day average industrial load occurring at the same time as the maximum 30-day average of the facility influent. Since maximum month industrial loads may not occur at the same time as the maximum month of the facility influent loads, the loads shown here, may be different than the loads summarized in Table 3.27.
(3) Facility Influent – Industrial.
(4) Calculated by dividing the R/C maximum month load by the R/C average annual load from Table 3.28.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Average of the MM values in Table 3.27.
(7) Greatest R/C load between 2015 and 2020.
(8) Calculated by dividing the selected R/C load by the selected AA R/C load from table 3.28.

### 3.4.2.4 Maximum Week $BOD_5$ Loads

The MW $BOD_5$ loads are reported in Table 3.30. Between the years 2015 and 2020, the MW peaking factor ranged from 1.42 to 1.80, with the maximum peak factor occurring in the year 2017. To account for the lower peak factors observed in recent years, a slightly lower peak factor of 1.77 was selected as the basis of planning. This peak factor corresponds to the maximum calculated R/C load of 11,970 ppd. The selected MW $BOD_5$ load of 13,186 ppd was calculated by adding the maximum industrial $BOD_5$ load to the selected R/C MW $BOD_5$ load. This selected load is approximately 5 percent greater than the maximum measured MW $BOD_5$ load of 12,529 ppd measured in the year 2017.

Table 3.30 Maximum Week BOD5 Loads and Peaking Factors

| Data Source | Facility[(1)] (ppd) | Industrial[(2)] (ppd) | R/C[(3)] (ppd) | R/C Peaking Factor[(4)] |
|---|---|---|---|---|
| 2015 DMRs | 10,264 | 1271 | 8,993 | 1.51 |
| 2016 DMRs | 12,141 | 969 | 11,172 | 1.75 |
| 2017 DMRs | 12,529 | 559 | 11,970 | 1.80 |
| 2018 DMRs | 10,686 | 567 | 10,119 | 1.60 |
| 2019 DMRs | 10,105 | 526 | 9,579 | 1.45 |
| 2020 DMRs | 10,321 | 852 | 9,469 | 1.42 |
| Maximum Value (2015 – 2020) | 12,529 | 1,271 | 11,970 | 1.81 |
| **Selected Value** | **13,186[(5)]** | **1,216[(6)]** | **11,970[(7)]** | **1.77[(8)]** |

Notes:
(1) Maximum 7-day running average.
(2) Equal to 30-day average industrial load occurring at the same time as the maximum 7-day average of the facility influent. Since maximum month industrial loads may not occur at the same time as the maximum week of the facility influent loads, the loads shown here, may be different than the loads summarized in Table 3.27.
(3) Facility Influent – Industrial.
(4) Calculated by dividing the R/C maximum week load by the R/C average annual load from Table 3.28.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Average of the MM values in Table 3.27.
(7) Greatest R/C load between 2015 and 2020.
(8) Calculated by dividing the selected R/C load by the selected AA R/C load from table 3.28.

#### 3.4.2.5 Peak Day $BOD_5$ Loads

The PD $BOD_5$ loads are reported in Table 3.31. Between the years 2015 and 2020, the PD peaking factor ranged from 1.51 to 2.73, with the maximum peaking factor occurring in the year 2017. To account for the lower peak factors observed in recent years, a slightly lower peak factor of 2.67 was selected as the basis of planning. This peak factor corresponds to the maximum calculated R/C load of 18,078 ppd. The selected PD $BOD_5$ load of 19,294 ppd was calculated by adding the maximum industrial $BOD_5$ load to the selected R/C PD $BOD_5$ load. This selected load is within 5 percent of the maximum measured PD $BOD_5$ load of 18,588 ppd measured in the year 2017.

Table 3.31 Peak Day BOD5 Loads and Peaking Factors

| Data Source | Facility(1) (ppd) | Industrial(2) (ppd) | R/C(3) ppd | R/C Peaking Factor(4) |
|---|---|---|---|---|
| 2015 DMRs | 10,264 | 1271 | 8,993 | 1.51 |
| 2016 DMRs | 14,389 | 955 | 13,434 | 2.10 |
| 2017 DMRs | 18,588 | 510 | 18,078 | 2.73 |
| 2018 DMRs | 12,711 | 567 | 12,144 | 1.92 |
| 2019 DMRs | 11,483 | 854 | 10,629 | 1.61 |
| 2020 DMRs | 12,030 | 613 | 11,417 | 1.71 |
| Maximum Value (2015 – 2020) | 18,588 | 1,271 | 18,078 | 2.73 |
| **Selected Value** | **19,294(5)** | **1,216(6)** | **18,078(7)** | **2.67(8)** |

Notes:
(1) Maximum daily value.
(2) Equal to 30-day average industrial load occurring at the same time as the maximum day for the facility influent. Since maximum month industrial loads may not occur at the same time as the maximum day facility influent loads, the loads shown here, may be different than the loads summarized in Table 3.27.
(3) Facility Influent – Industrial.
(4) Calculated by dividing the R/C maximum daily load by the R/C average annual load from Table 3.28.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Average of the MM values in Table 3.27.
(7) Greatest R/C load between 2015 and 2020.
(8) Calculated by dividing the selected R/C load by the selected AA R/C load from table 3.28.

#### 3.4.2.6 Summary of $BOD_5$ Loads

The summary of existing $BOD_5$ loads is found in Table 3.32.

Table 3.32 $BOD_5$ Existing Loads Summary

| Data Source | Facility (ppd) | Industrial (ppd) | R/C (ppd) | R/C Peaking Factor |
|---|---|---|---|---|
| Annual Average | 7,516 | 742 | 6,774 | 1.00 |
| Maximum Month | 10,685 | 1,216 | 9,469 | 1.40 |
| Maximum Week | 13,186 | 1,216 | 11,970 | 1.77 |
| Peak Day | 19,294 | 1,216 | 18,078 | 2.67 |

### 3.4.3 Ammonia

Limited data was available to characterize the ammonia loading at the WWTP. Influent ammonia concentrations were measured from January 2017 through October of 2019 and no data was available on the industrial ammonia concentrations.

This section summarizes the methodology for estimating the industrial ammonia contribution, characterizing historical facility influent ammonia data and R/C ammonia loads. Note that all loads presented in this chapter are presented as pounds of ammonia as nitrogen.

#### 3.4.3.1 Industrial Ammonia Loads

Since no data is available on ammonia contributions from industrial sources, the industrial ammonia loads were assumed to have the same ammonia concentration as was measured at the facility influent. The industrial ammonia loads were estimated on a daily basis between 2017 and 2019 based on the daily measured combined industrial flow and the measured facility influent ammonia concentration. Table 3.33 summarizes the average annual and maximum monthly estimated ammonia loads for these years. The average of the estimated AA and MM industrial ammonia loads were assumed when estimating the current facility influent ammonia loads. Since weekly and daily industrial flows were not available, the estimated MM industrial ammonia load was also assumed for the MW and PD conditions.

Table 3.33 Estimated Annual Average and Maximum Monthly Industrial Ammonia Contributions

| Year | AA ammonia load (ppd)(1) | MM ammonia load (ppd)(1) |
|---|---|---|
| 2015 | | |
| 2016 | | |
| 2017 | 49 | 79 |
| 2018 | 48 | 64 |
| 2019(2) | 46 | 63 |
| 2020 | | |
| Average | 48 | 69 |

Notes:

(1) Since no data is available on ammonia contributions from industrial sources, the industrial ammonia loads were assumed to have the same ammonia concentration as was measured at the facility influent. Daily industrial ammonia loads were estimated based on the measured influent ammonia concentration and the measured combined industrial load. Loads are presented for the water year (November 1st of the previous calendar year through October 31st).

(2) Data only available through October of 2019.

### 3.4.3.2 Average Ammonia Loads

Average annual ammonia loads were reported for the years 2017 through 2019 and are summarized in Table 3.34 Between the years 2017 and 2019, the R/C per capita ammonia load was 0.02 ppcd. The selected R/C AA ammonia load was calculated by multiplying the selected per capita load by the 2020 population. The selected AA load was calculated by adding the average industrial load of 48 ppd to the selected R/C AA load.

Table 3.34 Average Annual Ammonia Load

| Data Source | Population[1] | Facility[2] (ppd) | Industrial[3] (ppd) | R/C[4] (ppd) | R/C Per Capita (ppd)[5] |
|---|---|---|---|---|---|
| 2015 DMRs | 22,870 | – | – | – | – |
| 2016 DMRs | 23,740 | – | – | – | – |
| 2017 DMRs | 24,315 | 624 | 49 | 574 | 0.02 |
| 2018 DMRs | 25,250 | 627 | 48 | 579 | 0.02 |
| 2019 DMRs | 25,635 | 603 | 46 | 558 | 0.02 |
| 2020 DMRs | 25,915 | -- | -- | -- | – |
| Average Value (2017 – 2019) | | 618 | 48 | 570 | 0.02 |
| **Selected Value** | **25,915[6]** | **638[7]** | **48** | **590[8]** | **0.02** |

Notes:
(1) Certified PSU PRC estimates.
(2) Direct average loads from influent readings on DMRs, as nitrogen.
(3) Since no information is available on the ammonia load from the industrial sources, the industrial flow was assumed to have the same ammonia concentration as the influent flow.
(4) R/C = Facility - Industrial.
(5) Calculated by dividing the R/C load by the population.
(6) 2020 population
(7) Calculated by adding the selected industrial load to the selected R/C load.
(8) Calculated by multiplying the selected R/C per capita load by the 2020 population.

### 3.4.3.3 Maximum Month Ammonia Loads

The MM ammonia loads are reported in Table 3.35 and indicate relatively consistent loading. Between the years 2017 and 2019, the MM peaking factor ranged from 1.09 to 1.13, with the maximum peak factor of 1.13 occurring in the years 2018 and 2019. This peaking factor was used as the basis of planning and was multiplied by the selected R/C AA ammonia load to calculate the selected R/C MM ammonia load of 668 ppd. The selected MM load of 728 ppd was calculated by adding the maximum industrial ammonia load to the selected R/C MM ammonia load. This selected load is within five percent of the maximum measured MM ammonia load of 688 ppd measured in the year 2018.

Table 3.35 Maximum Month Ammonia Loads and Peaking Factors

| Data Source | Facility[(1)] (ppd) | Industrial[(2)] (ppd) | R/C[(3)] (ppd) | R/C Peaking Factor[(4)] |
|---|---|---|---|---|
| 2015 DMRs | – | – | – | – |
| 2016 DMRs | – | – | – | – |
| 2017 DMRs | 685 | 60 | 625 | 1.09 |
| 2018 DMRs | 695 | 39 | 656 | 1.13 |
| 2019 DMRs | 688 | 60 | 627 | 1.13 |
| 2020 DMRs | -- | -- | -- | -- |
| Maximum Value (2017 – 2019) | 695 | 60 | 656 | 1.13 |
| **Selected Value** | **725[(5)]** | **69[(6)]** | **656** | **1.11[(7)]** |

Notes:
(1) Maximum 30-day average loads from influent readings on DMRs, as nitrogen.
(2) Since no information is available on the ammonia load from the industrial sources, the industrial flow was assumed to have the same ammonia concentration as the influent flow. Estimated industrial load for the month corresponding to the facility influent maximum month.
(3) R/C = Facility - Industrial.
(4) Calculated by dividing the maximum month R/C load by the average annual R/C load from Table 3.34.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Selected value equals the average estimated MM industrial load from Table 3.33.
(7) Calculated by dividing the selected R/C MM ammonia load by the selected R/C AA ammonia load from Table 3.34.

#### 3.4.3.4 Maximum Week Ammonia Loads

The MW ammonia loads are reported in Table 3.36. Between the years 2017 and 2019, the MW peaking factor ranged from 1.22 to 1.46, with the maximum peak factor of 1.46 occurring in the year 2017. If this peaking factor were used as the basis of planning, the resultant facility influent MW ammonia load would be approximately 7 percent higher than the maximum measured MW load. So as to not have an overly conservative projected maximum week ammonia load, a slightly lower MW peaking factor of 1.42 was selected. This peak factor correlates to the maximum calculated R/C load of 839 ppd. The selected MW load of 919 ppd was calculated by adding the maximum industrial ammonia load to the selected R/C MW ammonia load. This selected load is approximately five percent greater than the measured MW ammonia load of 875 ppd measured in the year 2019.

Table 3.36 Maximum Week Ammonia Loads and Peaking Factors

| Data Source | Facility[1] (ppd) | Industrial[2] (ppd) | R/C[3] (ppd) | R/C Peaking Factor[4] |
|---|---|---|---|---|
| 2015 DMRs | – | – | – | – |
| 2016 DMRs | – | – | – | – |
| 2017 DMRs | 874 | 35 | 839 | 1.46 |
| 2018 DMRs | 788 | 79 | 708 | 1.22 |
| 2019 DMRs | 875 | 81 | 794 | 1.42 |
| 2020 DMRs | – | -- | -- | -- |
| Maximum Value (2017 – 2019) | 875 | 81 | 839 | 1.46 |
| **Selected Value** | **919[5]** | **81** | **839** | **1.42[6]** |

Notes:
(1) Maximum 7-day average loads from influent readings on DMRs, as nitrogen.
(2) Since no information is available on the ammonia load from the industrial sources, the industrial flow was assumed to have the same ammonia concentration as the influent flow. Estimated industrial load for the week corresponding to the facility influent maximum week.
(3) R/C = Facility - Industrial.
(4) Calculated by dividing the maximum week R/C load by the average annual R/C load from Table 3.33.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Calculated by dividing the selected R/C MW ammonia load by the selected R/C AA ammonia load from Table 3.33.

### 3.4.3.5 Peak Day Ammonia Loads

The PD ammonia loads are reported in Table 3.37. Between the years 2017 and 2019, the PD peaking factor ranged from 1.33 to 2.10, with the maximum peak factor of 2.10 occurring in the year 2017. If this peaking factor were used as the basis of planning, the resultant facility influent PD ammonia load would be approximately 7 percent higher than the maximum measured PD load. So as to not have an overly conservative projected peak day ammonia load, a slightly lower PD peaking factor of 2.04 was selected. This peak factor correlates to the maximum calculated R/C load of 1,202 ppd. The selected PD load of 1,289 ppd was calculated by adding the maximum industrial ammonia load to the selected R/C PD ammonia load. This selected load is within 5 percent of the maximum measured PD ammonia load of 1,244 ppd measured in the year 2017.

Table 3.37 Peak Day Ammonia Loads and Peaking Factors

| Data Source | Facility[1] (ppd) | Industrial[2] (ppd) | R/C[3] (ppd) | R/C Peaking Factor |
|---|---|---|---|---|
| 2015 DMRs | – | – | – | – |
| 2016 DMRs | – | – | – | – |
| 2017 DMRs | 1,244 | 42 | 1,202 | 2.10 |
| 2018 DMRs | 805 | 33 | 772 | 1.33 |
| 2019 DMRs | 963 | 87 | 892 | 1.60 |
| 2020 DMRs | -- | -- | -- | -- |
| Maximum Value (2017 – 2020) | 1,244 | 87 | 1,202 | 2.10 |
| **Selected Value** | **1,289** | **87** | **1,202** | **2.04** |

Notes:
(1) Maximum daily average loads from influent readings on DMRs, as nitrogen.
(2) Since no information is available on the ammonia load from the industrial sources, the industrial flow was assumed to have the same ammonia concentration as the influent flow. Estimated industrial load for the day corresponding to the facility influent maximum day.
(3) R/C = Facility - Industrial.
(4) Calculated by dividing the peak daily R/C load by the average annual R/C load from Table 3.33.
(5) Calculated by adding the selected industrial load to the selected R/C load.
(6) Calculated by dividing the selected R/C PD ammonia load by the selected R/C AA ammonia load from Table 3.33.

### 3.4.3.6 Summary of Ammonia Loads

The summary of existing ammonia loads is found in Table 3.38.

Table 3.38 Ammonia Existing Loads Summary

| Data Source | Facility (ppd) | Industrial (ppd) | R/C (ppd) | R/C Peaking Factor |
|---|---|---|---|---|
| Annual Average | 638 | 48 | 590 | 1.00 |
| Maximum Month | 725 | 69 | 656 | 1.11 |
| Maximum Week | 907 | 69 | 839 | 1.42 |
| Peak Day | 1,302 | 69 | 1,233 | 2.09 |

### 3.4.4 Phosphorous

Influent TP concentrations were not available on the supplied DMRs. TP concentrations can be estimated as a fraction of $BOD_5$ concentration. Table 3.18 of Metcalf & Eddy Fifth Edition lists TP concentrations as 2.8 percent of $BOD_5$ concentrations in typical domestic wastewater. This fraction was used to prepare the following estimated TP (Table 3.39) loading.

Table 3.39 Estimate of Existing Total Phosphorous Loads

| Data Source | Facility (ppd) | Industrial (ppd) | R/C (ppd) | R/C Peaking Factor |
|---|---|---|---|---|
| Annual Average | 209 | 21 | 188 | 1.00 |
| Maximum Month | 297 | 34 | 263 | 1.40 |
| Maximum Week | 366 | 34 | 332 | 1.77 |
| Peak Day | 536 | 34 | 502 | 2.67 |

## 3.5 Load Projections

Load projections were developed by adding the projected industrial load to the projected R/C loads. This section documents the industrial load projections along with the projections for the R/C and combined loads.

### 3.5.1 Industrial Load Projection

As was discussed in Section 3.3.1, industrial flows for the City's current SIUs are assumed to grow to the current permitted maximum flow capacity by the year 2045. Year 2045 loads were calculated for each industry assuming that they stay at their current strength, and thus loads were assumed to increase proportional to the projected flow increase. The following describes how TSS and $BOD_5$ loads were projected for each of the current SIUs.

- **Current AA loads for each SIU**: Current AA industrial loads from each SIU were calculated from the reported monthly data.
- **Current MM loads for each SIU**: Since the MM for each industry typically does not occur at the same time, current MM loads for each SIU were calculated by multiplying each SIUs proportion of the current AA load by the selected current MM industrial load (Table 3.20 for TSS and 3.26 for $BOD_5$).
- **2045 AA and MM loads for each of the current SIUs**: Since only one industry has a permitted maximum load, the AA TSS and $BOD_5$ concentrations for each SIU were assumed to remain at current concentrations. The projected increase 2045 AA and MM loads for each SIU was then assumed to be proportional to the expected increase in flow for each SIU (Table 3.17). These projected loads were then checked against permitted loads and held at the permitted loads if the projection exceeded the permitted value.

The methodology used to project the TSS and $BOD_5$ loads from the current SIUs is shown in more detail in Tables 3.40 and 3.41 for TSS and $BOD_5$, respectively. As is shown in Table 3.39, the majority of the current industrial TSS load comes from ODOC which has the smallest potential for growth. Due to this limitation, the industrial TSS load from the current SIUs is only projected to increase by 163 percent. Both ODOC and Swire split the current industrial $BOD_5$ load. While Swire has a greater growth potential for flow, this SIUs growth potential for $BOD_5$ is limited by

the permit issued by the City. For this reason, the overall industrial $BOD_5$ load growth is expected to be very similar to the potential growth in industrial TSS load.

In addition to the current areas zones for industrial use, the CSMP (2014) projects that 1,220 acres within the UGB could be zoned for industrial areas by the year 2045. The projected 2045 $BOD_5$ and TSS AA and MM loads from these new areas was projected assuming that the new industries have the same AA and MM concentration as the current SIUs.

The projected 2045 permitted industrial TSS and $BOD_5$ loads are the sum of the loads projected for the current industrial area and the areas within the UGB that could be zoned for industrial uses in the future. These loads are summarized in Tables 3.42 and 3.43 for TSS and $BOD_5$, respectively. By using this methodology, the industrial TSS and $BOD_5$ load is projected to grow by 319 percent through the year 2045 which is slightly less than the projected increase in industrial flow of 460 percent.

Since the loads associated with the non-permitted industrial sources are not tracked, this load is part of the calculated R/C load and is assumed to grow with the residential population.

Table 3.40 Industrial TSS Load Projections for Permitted Industrial Users within the Current Industrial Area

| Item | Current AA TSS (ppd) | Percent of Current AA Load | Calculated Current MM TSS (ppd)(1) | Permitted maximum load (ppd) | Growth Potential(2) | Selected 2045 AA TSS (ppd)(3) | Selected 2045 MM TSS (ppd)(4) |
|---|---|---|---|---|---|---|---|
| Swire | 24 | 6% | 37 | NA | 254% | 60 | 93 |
| ODOC | 370 | 89% | 573 | NA | 153% | 566 | 878 |
| Fujimi | 4 | 1% | 6 | NA | 776% | 29 | 45 |
| Xerox | 0 | 0% | 0 | NA | 1095% | 2 | 3 |
| Flir | 0 | 0% | 0 | NA | 4527% | 1 | 2 |
| Sysco | 17 | 4% | 26 | NA | NA | 17 | 26 |
| Total | **414** | | **642** | | **163%** | **675** | **1,046** |

Notes:
(1) Since the MMs of each SIU do not necessarily occur at the same time, the MM load for each SIU was calculated by multiplying each SIUs percent of current AA load by the selected current SIU MM load from Table 3.20.
(2) Growth potential was set equal to the calculated growth potential for flow as shown in Table 3.17.
(3) Calculated by multiplying the selected MM load for each SIU by the ratio of the current total SIU AAF to MMF from Table 3.20.
(4) Selected MM load for each SIU equals the calculated current MM load multiplied by the growth potential.

Table 3.41 Industrial $BOD_5$ Load Projections for Permitted Industrial Users within the Current Industrial Area

| Item | Current AA $BOD_5$ (ppd) | Percent of Current AA Load | Calculated Current MM $BOD_5$ (ppd)(1) | Permitted maximum load (ppd) | Growth Potential(2) | Selected 2045 AA $BOD_5$ (ppd)(3) | Selected 2045 MM $BOD_5$ (ppd)(4) |
|---|---|---|---|---|---|---|---|
| Swire | 367 | 49% | 602 | 1,000 | 254% | 932 | 1,000 |
| ODOC | 353 | 48% | 579 | NA | 153% | 540 | 886 |
| Fujimi | 6 | 1% | 9 | NA | 776% | 45 | 73 |
| Xerox | 0 | 0% | 0 | NA | 1095% | 2 | 3 |
| Flir | 0 | 0% | 0 | NA | 4527% | 2 | 3 |
| Sysco | 16 | 2% | 26 | NA | NA | 16 | 26 |
| Total | **742** | | **1,216** | | **164%(5)** | **1,536** | **1,991** |

Notes:
(1) Since the MMs of each SIU do not necessarily occur at the same time, the MM load for each SIU was calculated by multiplying each SIUs percent of current AA load by the selected current SIU MM load from Table 3.26.
(2) Growth potential was set equal to the calculated growth potential for flow as shown in Table 3.17. Permitted maximum loads may reduce this potential.
(3) Calculated by multiplying the selected MM load for each SIU by the ratio of the current total SIU AAF to MMF from Table 3.26.
(4) Selected MM load for each SIU equals the calculated current MM load multiplied by the growth potential.
(5) Calculated by dividing the total selected 2045 MM $BOD_5$ load by the total calculated current MM $BOD_5$ load.

Table 3.42 Industrial TSS Load Projections

| | Current Industrial Area | New Industrial Area | Combined Industry |
|---|---|---|---|
| 2020 | | | |
| AA TSS, ppd | 414(1) | | 414 |
| AA TSS, mg/L | 292(2) | | 292 |
| MM TSS, ppd | 642(1) | | 642 |
| MM TSS, mg/L | 405(2) | | 405 |
| 2045 | | | |
| AA TSS, ppd | 675(1) | 646(3) | 1,322(4) |
| AA TSS, mg/L | 157(5) | 292(6) | 203(7) |
| MM TSS, ppd | 1,046(1) | 1,002(3) | 2,049(4) |
| MM TSS, mg/L | 218(5) | 405(6) | 281(7) |

Notes:
(1) From Table 3.39.
(2) Calculated by dividing the current load by the selected current industrial flow from Table 3.2.
(3) Calculated by multiplying the selected TSS concentration for the new industrial areas by the selected flow for the new industrial areas (Table 3.18).
(4) Calculated as the sum of the load from the current industrial area and the new industrial area.
(5) Calculated by dividing the projected 2045 load by the selected 2045 flow for the current industries (Table 3.17).
(6) Conservatively assumed to equal the calculated 2020 concentration for the current industrial area.
(7) Calculated by dividing the combined industrial load by the combined industrial flow from Table 3.18.

Table 3.43 Industrial $BOD_5$ Load Projections

| | Current Industrial Area | New Industrial Area | Combined Industry |
|---|---|---|---|
| 2020 | | | |
| AA $BOD_5$, ppd | 742(1) | | 742 |
| AA $BOD_5$, mg/L | 523(2) | | 523 |
| MM $BOD_5$, ppd | 1,216(1) | | 1,216 |
| MM $BOD_5$, mg/L | 767(2) | | 767 |
| 2045 | | | |
| AA $BOD_5$, ppd | 1,536(1) | 1,159(3) | 2,695(4) |
| AA $BOD_5$, mg/L | 357(5) | 523(6) | 413(7) |
| MM $BOD_5$, ppd | 1,991(1) | 1,899(3) | 3,890(4) |
| MM $BOD_5$, mg/L | 414(5) | 767(6) | 534(7) |

Notes:
(1) From Table 3.40.
(2) Calculated by dividing the current load by the selected current industrial flow from Table 3.2.
(3) Calculated by multiplying the selected $BOD_5$ concentration for the new industrial areas by the selected flow for the new industrial areas (Table 3.18).
(4) Calculated as the sum of the load from the current industrial area and the new industrial area.
(5) Calculated by dividing the projected 2045 load by the selected 2045 flow for the current industries (Table 3.17).
(6) Conservatively assumed to equal the calculated 2020 concentration for the current industrial area.
(7) Calculated by dividing the combined industrial load by the combined industrial flow from Table 3.18.

Since no data is available for industrial ammonia or TP concentrations, these parameters were projected using a different methodology from TSS and $BOD_5$. The 2045 AA industrial ammonia concentration was assumed to be equal to the current influent ammonia concentration. The projected 2045 MM ammonia load was then calculated by multiplying the projected AA ammonia load by the ratio of the selected current MM industrial ammonia load to the current AA industrial ammonia load (Table 3.32). Since no data is available for either the industrial or the facility influent TP concentration, the industrial TP load was assumed to equal 2.8 percent of the industrial BOD load. This percentage was selected because it represents a typical ratio of TP to $BOD_5$ for domestic wastewater (Table 3.18 from Metcalf and Eddy 5th Edition).

Table 3.44 summarizes the projected 2045 industrial loads.

Table 3.44 2045 Industrial Load Summary

| Data Source | TSS (ppd) | $BOD_5$ (ppd) | Ammonia (ppd) | TP (ppd) |
|---|---|---|---|---|
| Annual Average | 1,322(1) | 2,695(2) | 224(3) | 75(4) |
| Maximum Month | 2,049(1) | 3,890(2) | 323(5) | 108(4) |
| Maximum Week(6) | 2,049 | 3,890 | 323 | 108 |
| Peak Day(6) | 2,049 | 3,890 | 323 | 108 |

Notes:
(1) From Table 3.42.
(2) From Table 3.43.
(3) Calculated by multiplying the selected 2045 AA industrial flow by the current AA facility influent ammonia concentration. The current AA facility influent ammonia concentration was calculated by dividing the selected current AA ammonia load (Table 3.34) by the selected current facility influent AAF (Table 3.4).
(4) Calculated by multiplying the industrial loads by 2.8% (from Table 3.18 of Metcalf and Eddy 5th edition).
(5) Calculated by multiplying the 2045 AA industrial ammonia load by the ratio of the selected current MM industrial ammonia load (Table 3.33) to the selected current AA industrial ammonia load (Table 3.33).
(6) Assumed equal to the maximum month industrial loads.

### 3.5.2 Total Influent Load Projection

Influent loads were developed by adding the projected 2045 industrial loads to the projected R/C loads. The AA R/C loads for TSS, $BOD_5$ and ammonia were developed by multiplying the selected per capita load (Tables 3.22, 3.28 and 3.34 for TSS, $BOD_5$, and ammonia respectively) by the projected 2045 population. The MM, MW and PD R/C loads for TSS, $BOD_5$ and ammonia were developed by multiplying the selected peaking factors (Tables 3.26, 3.32 and 3.38 for TSS, BOD and ammonia respectively) by the projected AA load. TP loads were assumed to equal 2.8 percent of the projected $BOD_5$ loads as discussed above. These loads are summarized in Table 3.45.

Table 3.45 Load Projections for the year 2045

| Load Parameters | 2045 R/C (ppd) | 2045 Industrial (ppd) | 2045 Facility (ppd) |
|---|---|---|---|
| AA $BOD_5$ | 13,171 | 2695 | 15,865 |
| MM $BOD_5$ | 18,411 | 3890 | 22,301 |
| MW $BOD_5$ | 23,274 | 3890 | 27,163 |
| PD $BOD_5$ | 35,151 | 3890 | 39,041 |
| AA TSS | 11,780 | 1,322 | 13,101 |
| MM TSS | 16,068 | 2,049 | 18,116 |
| MW TSS | 20,475 | 2,049 | 22,524 |
| PD TSS | 26,833 | 2,049 | 28,882 |
| AA ammonia | 1,147 | 224 | 1,372 |
| MM ammonia | 1,275 | 323 | 1,598 |
| MW ammonia | 1,631 | 323 | 1,953 |
| PD ammonia | 2,398 | 323 | 2,721 |
| AA TP | 366 | 75 | 441 |
| MM TP | 511 | 108 | 619 |
| MW TP | 646 | 108 | 754 |
| PD TP | 976 | 108 | 1,084 |

Chapter 4

# CAPACITY ANALYSIS

## 4.1 Introduction

This chapter identifies existing capacity ratings and deficiencies for the liquid and solids stream treatment processes at the City WWTP. Analyses are based on current operational practices and effluent limits required by the WWTP's National Pollutant Discharge Elimination System (NPDES) permit. Biological process modeling was performed using BioWin 6.2 to predict plant performance under current and future flows and loads and evaluate the timing of unit process capacity exceedance within the planning period (present through 2045). Alternatives to address identified capacity limitations and achieve compliance with potential future effluent limits are evaluated in Chapter 6. Recommendations for improving systems that support major unit processes (e.g., aeration blowers, solids pumps, chemical systems) are also included in the discussion of alternatives evaluation (Chapter 6).

## 4.2 Design Criteria

Design criteria recommended for the Wilsonville WWTP are summarized in Table 4.1 and elaborated upon for each unit process in Section 4.3. The design criteria were established from the following sources:

- 2015-2020 WWTP operations data.
- 1971 Phase 1 WWTP Record Drawings.
- 1979 Phase 3 WWTP Expansion Record Drawings.
- 2012 WWTP Improvements Project Documents.
- 2018 Outfall Replacement Record Drawings.
- 2019 Aeration Basin Improvements Record Drawings.
- NPDES Permit.
- Discussion with City and WWTP operations staff.
- *Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities* by Oregon Department of Environmental Quality et al., rev. 2019.

Table 4.1 Unit Process Capacity Summary

| Unit Process | Design Parameter | Redundancy Criteria | Design Criteria | Plant Loadings | | Year of Capacity Exceedance | Notes |
|---|---|---|---|---|---|---|---|
| | | | | Current (2020) | Future (2045) | | |
| Influent Screening | • PHF | • One mechanical screen out of service | • 2 x 8 mgd (mechanical)<br>• 1 x 16 mgd (manual) | • 8.8 mgd | • 17.6 mgd | • >2045 | • 3/8-inch bar spacing.<br>• 1-inch bar spacing. |
| Grit Chamber | • PHF | • All units in service | • Hydraulicly pass flow (17.6 mgd) | • 8.8 mgd | • 17.6 mgd | • 2045 | • 12 ft diameter vortex grit removal process<br>• Performance is anticipated to be poor when the flow exceeds 8 mgd. |
| Aeration / Stabilization Basins | • MW MLSS inventory at PDF<br>• MM MLSS inventory at PDF<br>• ADW MLSS inventory at PDDWF<br>• ADW MLSS inventory at PDDWF<br>• ADW MLSS inventory at PDDWF | • All units in service<br>• All units in service<br>• One AB unit out of service<br>• One stabilization basin out of service<br>• One clarifier out of service | • 5-day total SRT<br>• 6-day total SRT<br>• 6-day total SRT<br>• 6-day total SRT<br>• 6-day total SRT | • 5.6 days<br>• 8.8 days<br>• 11.3 days<br>• 10.6 days<br>• 15.2 days | • 1.8 days<br>• 2.2 days<br>• 3.8 days<br>• 3.5 days<br>• 3.3 days | • 2027<br>• 2028<br>• 2035<br>• 2033<br>• 2035 | • Aeration Basin Anoxic Volume = 78,550 gallons, each.<br>• Aeration Basin Aerobic Volume = 314,150 gallons, each.<br>• Stabilization Basin Aerobic Volume = 168,300 gallons, each. |
| Secondary Clarifiers | • PHF SOR<br>• MMDWF SOR | • All units in service<br>• Largest unit out of service | • 1386 gpd/sf<br>• 1386 gpd/sf | • 761 gpd/sf<br>• 220 gpd/sf | • 1,484 gpd/sf<br>• 430 gpd/sf | • 2041<br>• >2045 | • Based on an SVI of 150 mL/g; Vo of 21.31 ft/hr; k of 0.403 L/g.- |
| Secondary Effluent Cooling Towers | • June 1 - Sept 30 PDF | • All units in service | • 4.0 mgd | • 2.3 mgd | • 4.9 mgd | • 2036 | • Design ambient wet bulb temperature = 68 °F.<br>• Heat Transfer Capacity = 300 tons of refrigerant each. |
| Disk Filters | • PDDWF<br>• MMDWF | • All units in service<br>• One unit out of service | • 7.5 mgd<br>• 3.75 mgd | • 3.6 mgd<br>• 2.5 mgd | • 7.6 mgd<br>• 5.4 mgd | • 2044<br>• 2032 | • Net Effective Filtration Area = 808 sf each. |
| UV Disinfection Channels | • PHF<br>• PDDWF | • All units in service<br>• One unit out of service | • 16 mgd<br>• 8 mgd | • 8.8 mgd<br>• 3.6 mgd | • 17.6 mgd<br>• 7.6 mgd | • 2041<br>• >2045 | • Avg. UVT = 65%, Peak Flow UVT = 55%.<br>• Channel 1 = 25 MW-s/cm$^2$, Channel 2 = 30 MW-s/cm$^2$. |
| Outfall | • PHF | - | • 19.3 mgd | • 8.8 mgd | • 17.6 mgd | • >2045 | |
| Gravity Belt Thickening | • MW Load | • One unit out of service | • 300 gpm<br>• 900 lb/hr | • 140 gpm<br>• 450 lb/hr | • 174 gpm<br>• 950 lb/hr | • >2045<br>• 2042 | • 24 hours per day, 7 days per week.<br>• Assume TWAS at 4% TS, 95% solids capture. |
| Dewatering Centrifuges | • MW Load | • One unit out of service | • 50 gpm<br>• 1,000 lb/hr | • 20 gpm<br>• 430 lb/hr | • 45 gpm<br>• 900 lb/hr | • >2045<br>• >2045 | • 24 hours per day, 7 days per week.<br>• Assume dewatered cake at 20% TS, 90% solids capture. |
| Biosolids Dryer | • MW Load | • All units in service | • 3,600 lb/hr<br>• 17 dry cy/day | • 1,510 lb/hr | • 3,190 lb/hr | • >2045 | • 24 hours per day, 7 days per week.<br>• Assume dried solids at 92% TS. |

Notes:
Abbreviations: °F – degree(s) Fahrenheit; ADW – average dry weather; BOD – biochemical oxygen demand; cy – cubic yards; ft/hr - feet per hour; gpd – gallons per day; gpm – gallons per minute; hr – hour; lb – pound(s); L/g - liters per gram; mg/L – milligram(s) per liter; MLR – mixed liquor recycle; MLSS – mixed liquor suspended solids; PDF – peak hour flow; psi – pound(s) per square inch; s/cm$^2$ – square centimeter per second; scfm – standard cubic foot/feet per minute; sf – square feet; SOR – surface overflow rate; SRT – solids retention time; TDH – total dynamic head; TWAS – thickened waste activated sludge; UVT - ultraviolet transmissivity.

## 4.3 Unit Process Capacity

This section describes each unit process and its design criteria to establish the unit process capacity. For reference, process schematics and simplified design criteria for each unit process are shown in Appendix G. Each unit process capacity described is compared to the current and projected flows and loads as obtained from Chapter 3 – Wastewater Flow and Loads Projections, as well as the associated BioWin model output (where appropriate). Generally, except where noted otherwise, when the current and projected loads exceed the capacity criteria for each unit process, expansion or modification of that process may be needed, providing the framework for identifying process upgrade alternatives to be described in Chapter 6 - Alternatives Development and Evaluation.

### 4.3.1 Preliminary Treatment

Sewage enters the WWTP through gravity influent lines into the headworks structure, constructed as part of the 2012 WWTP Improvements project. The onsite septage receiving station also discharges to the headworks using a sump pump. Preliminary treatment consists of screening and grit removal. A schematic illustrating the preliminary treatment process, including ancillary processes not evaluated as part of this Chapter, is shown in Figure G.1 of Appendix G.

#### 4.3.1.1 Screening

Raw sewage is split between two mechanically raked bar screens, each with 3/8-inch openings between the bars. The design criteria for the screens are as follows:

- Each screen is rated to accommodate 8 mgd, per the design criteria provided in the 2012 WWTP Improvements project documents.
- If one of these screens is out of service and additional screening capacity is necessary, the raw sewage can flow through a bypass channel containing a manual bar rack with one-inch openings between the bars.
- The bypass channel is rated for 16 mgd, per the design criteria provided in the 2012 WWTP Improvements project documents.

As illustrated in Figure 4.1, the projected PHF is 17.6 mgd by the year 2045. If both mechanical screens were in operation at this time, an additional 1.6 mgd would need to be routed through the bypass channel and the manual bar rack. If one of the mechanical screens were out of service during this PHF, 8 mgd could pass through the mechanical bar screens and 9.6 mgd would need to be routed through the bypass channel and the manual bar rack. Based on this continued use of the mechanical bar screens and bypass channel with the manual bar rack, there is sufficient process capacity for the bar screens to accommodate the projected 2045 PHF. Hydraulic modeling conducted by Jacobs (*Hydraulic Analysis* TM, August 31 2023) (Appendix H) indicates that hydraulically the influent screening can pass the projected PHF of 17.6 mgd.

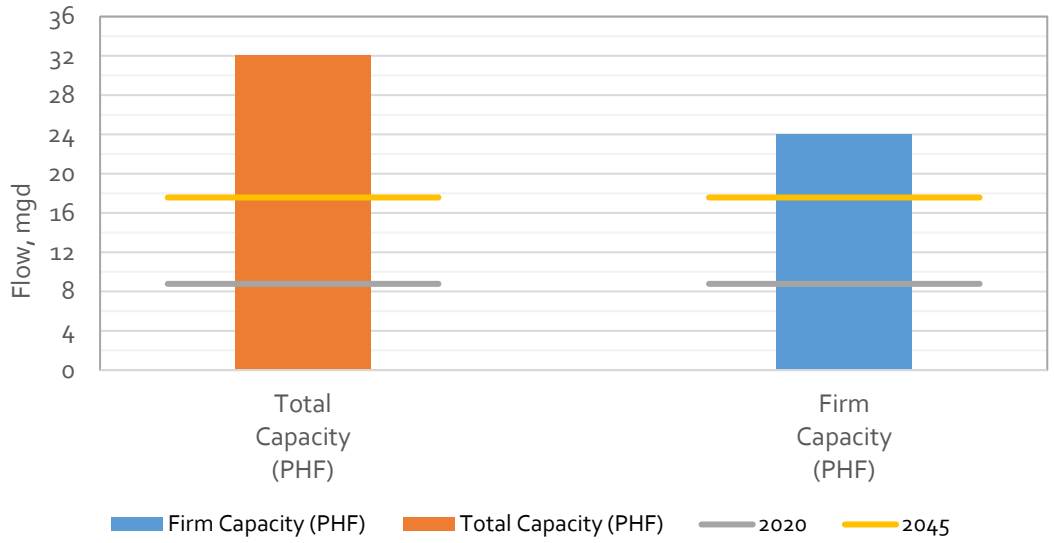



Figure 4.1 Mechanical Screening Capacity

Note: With either mechanical screen out of service, the remaining unit does not have sufficient (firm) capacity to handle projected peak hour flows. In these instances, the manual bar rack provides necessary capacity.

### *Grit Removal*

Downstream of the influent screens, grit is removed from the sewage via a vortex grit removal process that can be bypassed for maintenance purposes. The 2012 WWTP Improvement documents indicate a design capacity of 16 mgd for the vortex grit basin. Although this capacity is consistent with the design criteria of the 2012 WWTP Improvement documents, the drawings show a 12-foot diameter grit removal process. For a 12-foot diameter vortex grit removal process, the manufacturers rated capacity would typically be 12 mgd. Carollo's experience with these types of vortex grit removal systems suggests that they have a better chance of meeting the manufacturer targeted removals when peak flows decrease by 30 to 40 percent below the rated capacity. For a 12-foot diameter grit removal process, this would equate to a flow of approximately 8 mgd. However, the actual performance of the grit removal process will depend on the particle size distribution of the grit. If the influent has a high percentage of large size grit particles, the current grit removal process will perform better than anticipated. Hydraulic modeling conducted by Jacobs (*Hydraulic Analysis* TM, August 31, 2023) (Appendix H) indicates that hydraulically, the grit removal system can pass a PHF of 17.6 mgd. At this flow rate the anticipated performance would be poor.

The plant has seen PHFs above 8 mgd and PHFs are projected to more than double by the year 2045. Additionally, the PHF is anticipated to increase above a typical manufacturer rated capacity for a 12 foot diameter unit by the year 2030. Based on discussions with the City, poor performance under PHF conditions is acceptable as long as the system can hydraulicly pass the flow. As is shown in Figure 4.2, purely based on the hydraulic capacity, the grit removal system should have sufficient capacity through the year 2045.

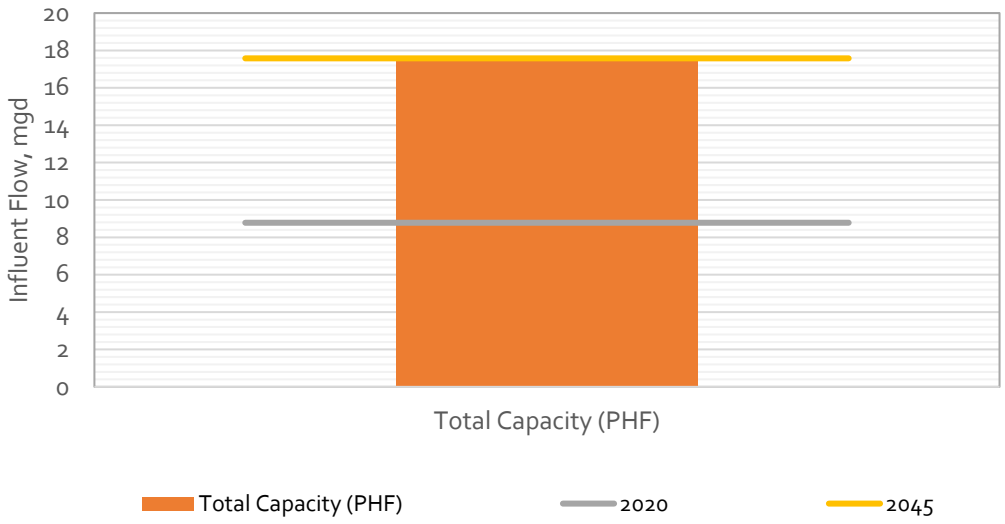



Figure 4.2 Grit Removal Capacity

### 4.3.2 Secondary Treatment

#### 4.3.2.1 Background

Following preliminary treatment, screened and degritted wastewater flows to the secondary treatment process. A schematic illustrating the secondary treatment process is shown in Figure G.2 of Appendix G.

The WWTP has three similarly sized aeration basins. The first two were constructed in the 1970s, while the third was constructed in 2012 as an expansion to the existing process. Each tank is 175 feet long, 20 feet wide, and 15 feet deep. Each basin is divided into four zones by baffle walls, with the first zone being unaerated. Although the final sections of the aeration basins contain two distinct diffuser grids, referred to on the drawings as "Zone 4" and "Zone 5", there is no baffle wall separating the two zones. The unaerated zones are mixed via large bubble forming plates that agitate the mixed liquor with minimal oxygen transfer. These bubbles are generated from dedicated air compressors and do not require supplemental aeration blower capacity to provide mixing.

The basins were modified in 2020 to provide MLR pumping from the final aerated zone to the first zone in each basin, allowing for the operation of a Modified Ludzack-Ettinger process. Each basin is equipped with its own dedicated submersible, axial-flow MLR pump and variable frequency drive (VFD) to allow for modulation of the MLR flow rate based on maintaining an operator set point ratio of MLR flow to influent flow. These modifications also reduced the unaerated volume in the aeration basins by approximately 50 percent to 79,000 gallons each, with the remaining aerated volume representing approximately 314,000 gallons per basin.

Mixed liquor from the end of the aeration basins recombines in an effluent channel and is then split between three 70-foot diameter secondary clarifiers. Each clarifier has a sidewater depth of 16 feet. RAS is withdrawn from the underside of each secondary clarifier to one of four RAS pumps. Each of the RAS pumps is equipped with a 20-horsepower motor and a VFD, and the pump speed is modulated to control the sludge blanket depth. These pumps return activated sludge to the stabilization basin.

The stabilization basins contain RAS that has not yet been returned to the aeration basins. This operating configuration, called contact stabilization, allows for the accumulation of the aeration basin inventory at the front end of the basin. Since the stabilization basin is aerated, this mode of operation increases the aerobic solids retention time (aSRT), which provides stable nitrification at a reduced basin volume. (Note that the WWTP operations staff uses total SRT instead of aSRT, so total SRT is presented throughout this chapter except when describing calibration of the BioWin model). There is also capacity to divert a portion of the influent flow to the stabilization basins, allowing for step feed operation. Step feed operation was most recently used during the aeration basin modification project's construction.

Lastly, air for the aeration and stabilization basins is provided by six 1,700 scfm blowers. Three of these are older, constant speed multistage centrifugal blowers, while the other three are single stage high-speed turbo blowers with adjustable speed, installed as part of the 2012 plant upgrades.

#### 4.3.2.2 Historical Performance

Historical SRT is presented in Figure 4.3. Operations staff has historically run the secondary treatment process at a long SRT, typically 10-15 days. This was done to minimize the solids load to the dryer and address poor BOD removal when the SRT was reduced. However, the recent modifications to the aeration basins have allowed operations staff to reduce SRT significantly, with stable secondary treatment performance observed at an SRT of only six days.

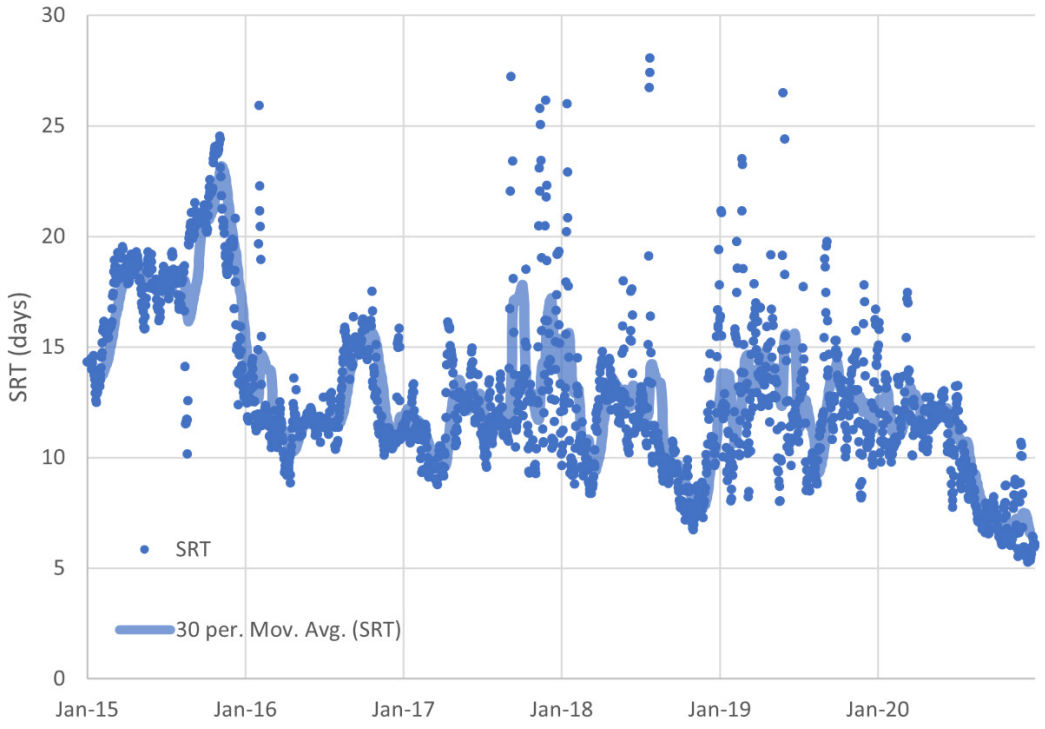



Figure 4.3 Historical Solids Retention Time

The historical MLSS concentration in the aeration basins is shown in Figure 4.4. In general, SRT and MLSS concentration trend in the same direction except for in 2020, when aeration basins were shut down in sequence as part of the installation of the 2019 Aeration Basin Improvements Project. This modification resulted in a significant increase in MLSS without any corresponding increase in SRT.

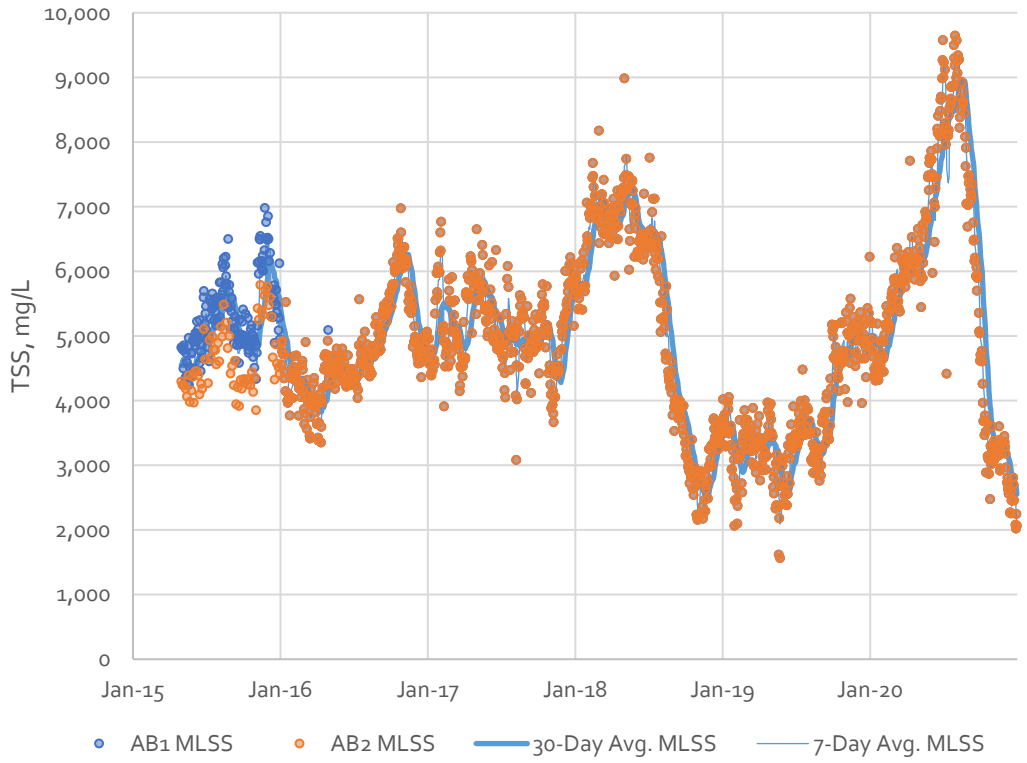



Figure 4.4 Historical Aeration Basin Mixed Liquor Suspended Solids

Effluent ammonia concentrations are typically low, as shown in Figure 4.5, indicating that the plant is fully nitrifying and has created conditions favorable for the growth of nitrifying organisms. This is typical for plants operating at long SRTs. Nitrification significantly increases the oxygen consumed in the secondary treatment process. Since there are currently no permit limits associated with effluent ammonia, nor are there expected to be any new limits imposed during the planning period as described in Chapter 5 - Regulatory Considerations and Strategy, nitrification is not necessary to meet the NPDES permit requirements.

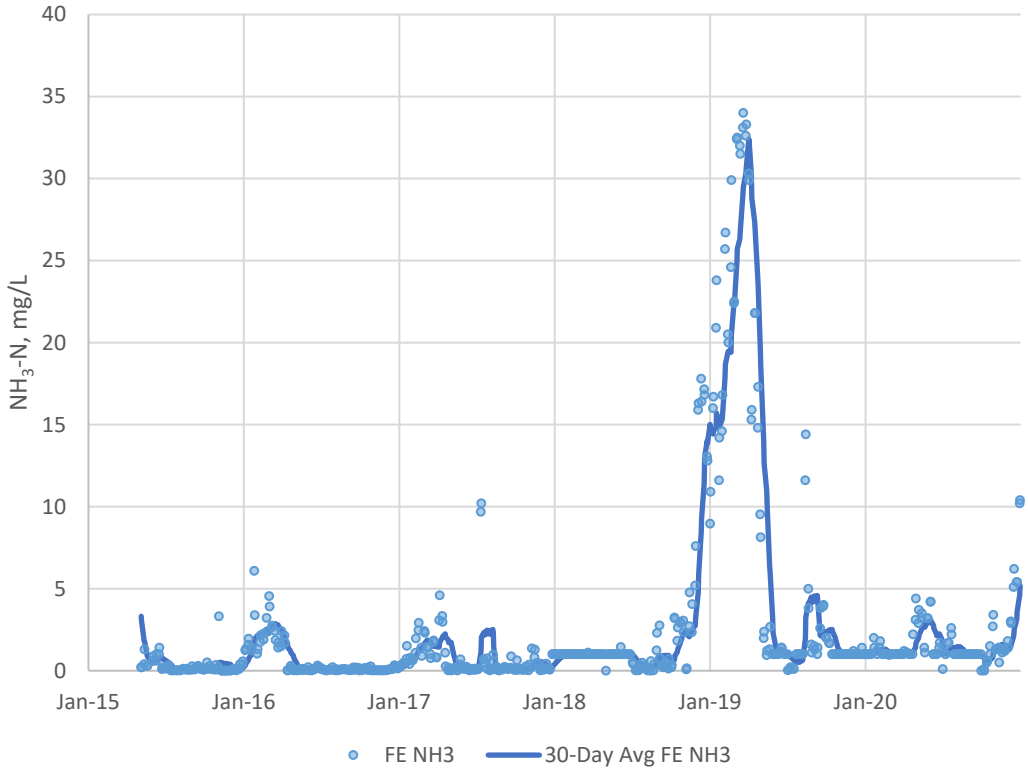



Figure 4.5 Historical Final Effluent Ammonia Concentration

Historical final effluent TSS loads are shown in Figure 4.6. As indicated in this figure, there have been several events in which the NPDES permit was violated due to an overwhelming effluent solids load. These events correspond to peak flow events and, in mid-2020, to the installation of aeration basin improvements, which required shutting down part of the secondary treatment system. Since the effluent filters should reduce the effluent TSS load to well below the NPDES permit criteria, these events indicate that the effluent filters became overwhelmed with solids during these periods, which suggests clarifier blanket failure occurred.

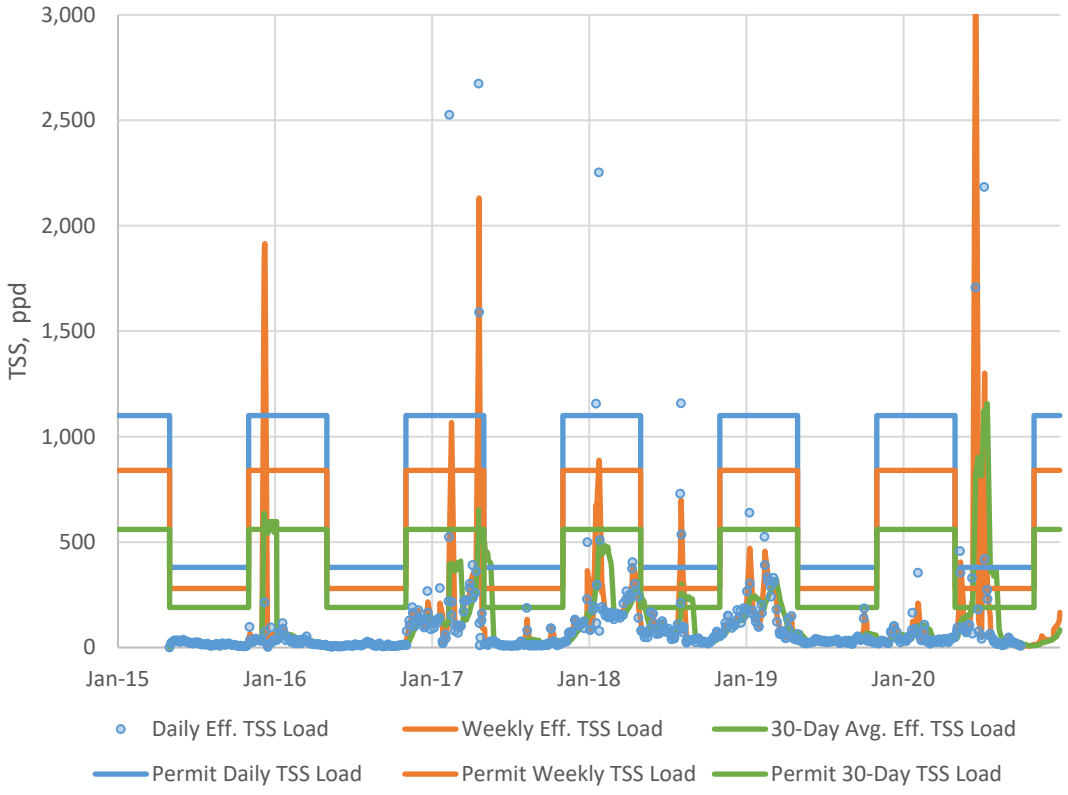



Figure 4.6 Historical Final Effluent TSS Loading

The maximum allowable maximum month MLSS concentration in the aeration basins is defined by the ability for MLSS to settle in the secondary clarifiers, quantified by measurement of the sludge volume index (SVI). Figure 4.7 shows the historical SVI in the secondary process alongside a 30-day running average value. During the period of record, the average 30-day SVI ranged from approximately 70 to 160 milliliters per gram (mL/g) and averaged approximately 100 mL/g. Subsequent analysis of secondary clarifier assumes a design SVI value of 150 mL/g, which is a typical maximum for well-settling sludge.

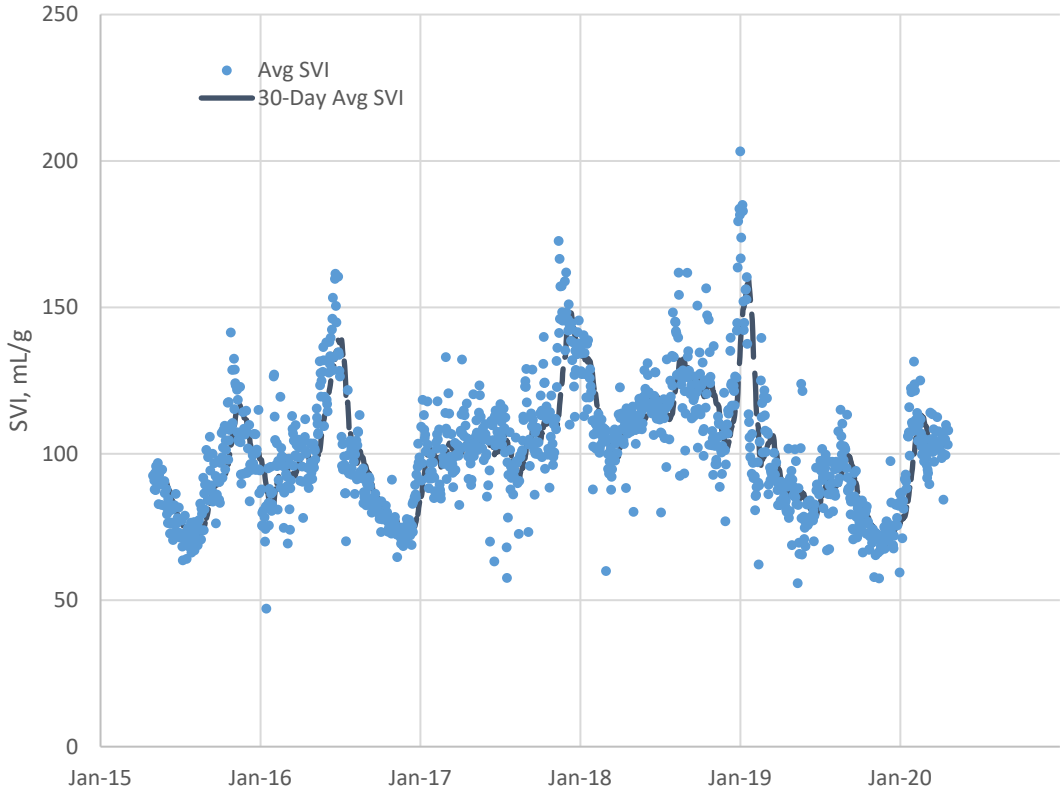



Figure 4.7 Historical Sludge Volume Index

### 4.3.2.3 BioWin Model Calibration

A steady state process model was used to determine the capacity of the secondary process and develop solids projections. The process model was developed in BioWin 6.2 and calibrated to the most recent data available which included the period when the new MLR pumps were operational – October 6, 2020 through December 31, 2020. During this period, the plant operated with all three aeration basins, all three secondary clarifiers, and both stabilization basins online. Table 4.2 shows the selected wastewater characteristics for the calibration period, and Table 4.3 summarizes the calibration results.

Table 4.2 BioWin Model Wastewater Characteristics

| Influent COD Fraction | Selected Value | BioWin Default Value |
|---|---|---|
| $F_{bs}$ (fraction of total COD which is readily biodegradable) | 0.160 | 0.160 |
| $F_{ac}$ (fraction of readily biodegradable COD which is VFAs) | 0.150 | 0.150 |
| $F_{xsp}$ (fraction of slowly biodegradable COD which is particulate) | 0.693(1) | 0.750 |
| $F_{us}$ (fraction of total COD which is soluble unbiodegradable) | 0.050 | 0.050 |
| $F_{up}$ (fraction of total COD which is non-colloidal particulate unbiodegradable) | 0.130 | 0.130 |
| $F_{cel}$ (fraction of unbiodegradable particulate COD which is cellulose) | 0.500 | 0.500 |
| $F_{na}$ (fraction of TKN which is ammonia) | 0.660 | 0.660 |
| $F_{nox}$ (fraction of nitrogen which is particulate organic nitrogen) | 0.500 | 0.500 |
| $F_{nus}$ (fraction of TKN which is soluble unbiodegradable) | 0.020 | 0.020 |
| $F_{upN}$ (ratio of nitrogen to COD for unbiodegradable particulate COD) | 0.035 | 0.035 |
| $F_{zbh}$ (fraction of total COD which is ordinary heterotrophic organisms) | 0.020 | 0.020 |
| COD/VSS ratio for slowly degradable COD | 1.6327 | 1.6327 |
| COD/VSS ratio of $F_{zbh}$ | 1.420 | 1.420 |
| COD/VSS ratio of $F_{up}$ | 1.600 | 1.600 |

Notes:
(1) Decreased from default to match measured influent BOD/TSS ratio.
Abbreviations: COD–- chemical oxygen demand, TKN–- total kjeldahl nitrogen; VFA – volatile fatty acids; VSS – volatile suspended solids.

Table 4.3 BioWin Model Calibration Summary

| Characteristic | Measured Value | Modeled Value | % Error |
|---|---|---|---|
| **Influent** | | | |
| Flow, mgd | 2.19 | 2.19 | 0.0% |
| BOD load, ppd | 7,530 | 7,540 | 0.1% |
| TSS load, ppd | 6,080 | 6,080 | 0.1% |
| $NH_3$-N load, ppd | 580 | 580 | -0.1% |
| **Secondary Treatment** | | | |
| MLSS, mg/L | 3,060 | 3,170 | 3.7% |
| MLVSS, mg/L | 2,740 | 2,880 | 4.8% |
| RAS, mg/L | 6,040 | 6,060 | 0.4% |
| RAS flow, % of Influent | 141% | 120% | -14% |
| aSRT, days | 7.3 | 7.3 | 0.1% |
| Yield, lb TSS / lb BOD | 0.81 | 0.83 | 2.3% |
| **Secondary Effluent** | | | |
| cBOD load, ppd | 6.2 | 3.0 | -51% |
| TSS load, ppd | 110 | 120 | 8.2% |
| **Final Effluent** | | | |
| BOD load, ppd | 68 | 35 | -48% |
| TSS load, ppd | 44 | 48 | 10% |
| $NH_3$-N load, ppd | 53 | 2.7 | -95% |
| **Solids** | | | |
| WAS load, ppd | 5,880 | 6,060 | 3.1% |
| TWAS load, ppd | | | |
| Cake load, ppd | 4,380 | 4,280 | -2.3% |

Notes:
Abbreviations: cBOD – Carbonaceous Biochemical Oxygen Demand; $NH_3$-N – ammonia (as Nitrogen); MLVSS – mixed liquor volatile suspended solids; WAS – waste activated sludge.

During this calibration period, the dewatering centrifuge solids capture was poor (approximately 72 percent). Operations staff reliably achieve 90 percent solids capture under normal operating conditions. Since these centrifuges are currently being refurbished, it is assumed for subsequent model runs that the solids capture on the dewatering centrifuges is 90 percent.

Key differences between the calibrated model and the measured values include that the calibrated model indicates somewhat higher BOD removal and significantly higher $NH_3$ removal. The latter difference, commonly observed in steady-state modeling, is likely due to the nature of steady-state models, which does not subject the activated sludge process to diurnal variations. Since the NPDES permit for the WWTP does not include effluent nitrogen limits, this difference between modeled and actual performance was disregarded.

Lastly, Chapter 3 – Wastewater Flow and Loads Projections indicates that the fraction of influent load from industrial sources is expected to increase in the future. To maintain the projected ratio of influent BOD to TSS expected under future loads, $F_{bs}$ was increased to 0.1648 from the default of 0.1600, and $F_{xsp}$ was decreased from 0.6930 to 0.6722 accordingly. These changes reflect an increase in the ratio of soluble COD to particulate COD entering the plant with higher industrial.

#### 4.3.2.4 Design Criteria

The design criteria for the secondary treatment system are as follows:

- The aeration and stabilizations basins should provide a total SRT of six days under average dry weather and maximum month conditions, per the design criteria provided in the 2019 Aeration Basin Improvements project record drawings. The total SRT is reduced to five days under maximum week conditions, per discussion with operations staff.
- The hydraulic model results from the 2012 WWTP Improvements project indicates the three secondary clarifiers can pass a peak hour flow of 16 mgd (or 1,386 gpd/sf).
- The secondary clarifiers must be capable of settling sludge under peak day flow conditions at a maximum week solids inventory in the secondary treatment process, with sludge settling at a design SVI of 150 mL/g. The selection of this design SVI is described below. The maximum week inventory was determined by running a BioWin model starting at the steady state maximum month condition and then running a seven-day dynamic model using the maximum week flows and loads.
- Under average dry weather conditions, the secondary treatment system should be able to operate normally with either a single stabilization basin, a single aeration basin, or a single secondary clarifier out of service to allow for maintenance in the dry weather season. Under maximum month and maximum week conditions, it is assumed that all basins and clarifiers are in service.
- The overall RAS pumping rate must be sufficient for removing solids from the secondary clarifiers under all conditions with a single pump out of service to allow for pump maintenance as needed. This value is either the flow percentage required to avoid blanket failure in state point analysis under peak hour flow conditions, 50 percent of the peak hour flow, or 100 percent of the maximum month flow, whichever is largest.
- The blowers must provide sufficient air under maximum week and peak (modeled as 1.3 multiplied by the maximum month oxygen transfer rate) flow and load conditions with the largest unit out of service to allow for blower maintenance as needed. In this case, modeled peak conditions resulted in more conservative air demands, so only peak conditions are presented throughout the rest of this Chapter.

#### 4.3.2.5 Unit Process Capacities

State point analysis (SPA) was used to evaluate the ability of secondary clarifiers to settle sludge under various conditions. The design SVI was used to generate the state point diagram, shown in Figure 4.8. The solids flux curve describes the capacity for a secondary clarifier to settle sludge. The overflow line is defined by the surface overflow rate at the design flow, and the underflow line is defined by the RAS flow rate and concentration. The point at which the underflow line and the overflow line intersect is the state point. If the state point is above solids flux curve, then settling failure will occur in the clarifier. Additionally, sludge blanket failure may occur if the maximum RAS rate generates an underflow line which intersects the solids flux curve to the right

of the state point. This indicates that the solids removed from the clarifier via RAS is insufficient to prevent the sludge blanket from rising.

Figure 4.8 shows the 2027 SPA using the max week MLSS predicted from the BioWin modeling using a design total SRT of five days at peak day flow with all secondary clarifiers in service. Since the state point falls under the solids flux curve, the state point analysis indicates that secondary system capacity is sufficient to handle the maximum week inventory through approximately the year 2027. This same analysis was done with the maximum month inventory coupled with the peak day flow and indicates the secondary system has sufficient capacity through approximately the year 2028.When receiving average dry weather loads, the system has sufficient capacity to take either an aeration basin or a secondary clarifier out of service for maintenance through approximately the year 2035 when coupled with the peak day dry weather flow. The current system has capacity through approximately the year 2033 if a stabilization basin needs to be taken out of service during the average dry weather loads coupled with the peak day dry weather flow. These capacities are represented in Figure 4.9, presented in terms of the influent BOD load corresponding to the design year in which the state point analysis indicates clarifier failure may occur.

Note that the plant has historically operated at significantly longer SRTs than are used as the basis for this capacity evaluation, as illustrated in Figure 4.3. This is largely due to the limited solids handling capacity of the plant forcing operations staff to minimize solids wasting to the extent possible. Following the completion of the 2019 Aeration Basin Improvements project, operations staff have significantly reduced the SRT in the secondary treatment system and indicate that they can operate the secondary treatment system at a six-day SRT year-round.

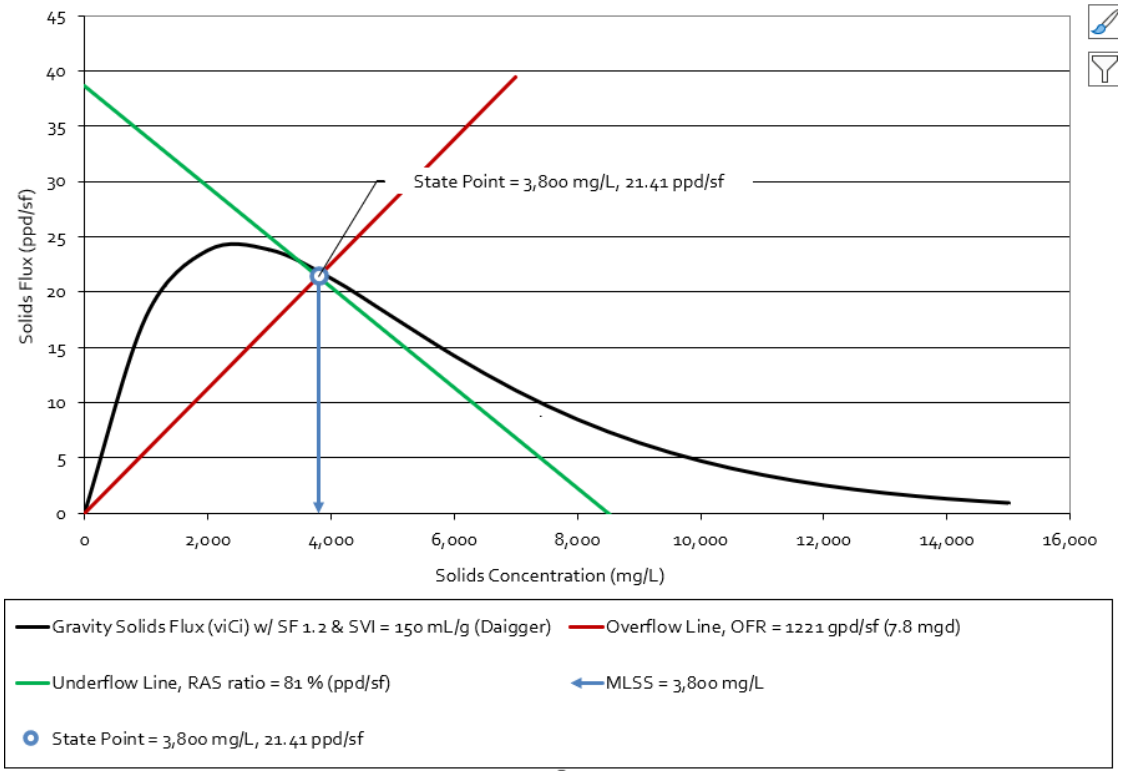



Figure 4.8 SPA for 2045 Max Week MLSS at Peak Day Flow

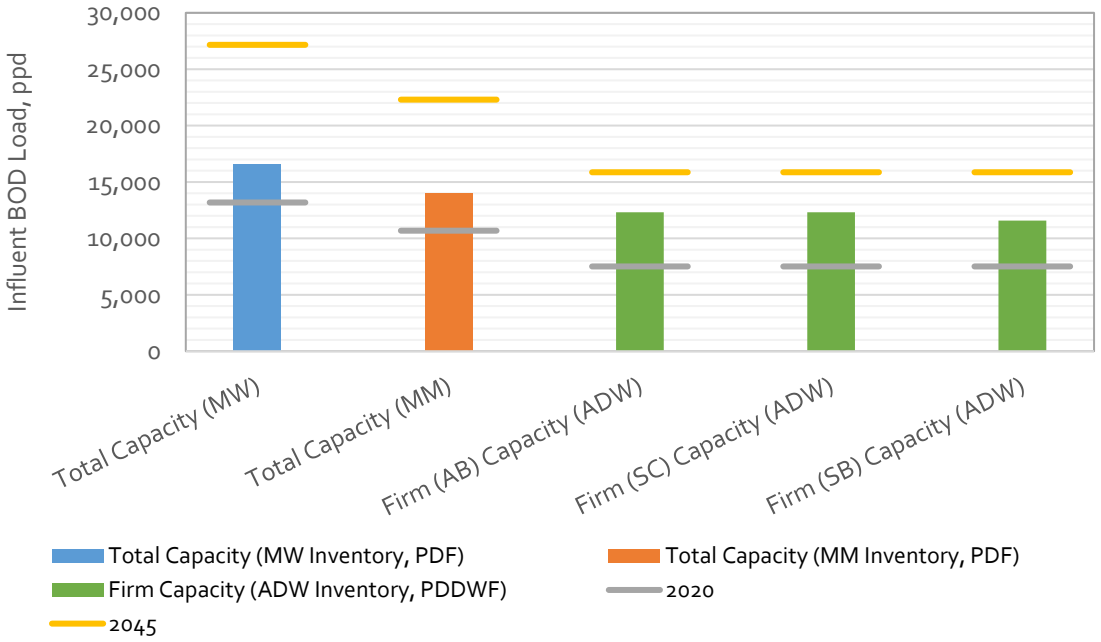



Figure 4.9 Secondary Treatment Capacity

As shown in Figure 4.10, the secondary clarifiers are expected to exceed the maximum hydraulic capacity of 16 mgd with all units in service by 2045. However, with one secondary clarifier out of service, the firm hydraulic capacity of the secondary clarification has sufficient capacity to treat the max month dry weather flows for the entirety of the planning period.

The secondary treatment process analysis indicates that the existing secondary treatment process does not provide sufficient capacity through the planning period. Additional aeration basin capacity is required by approximately the year 2027 to treat the projected maximum week load and additional clarification capacity is required by approximately the year 2040.

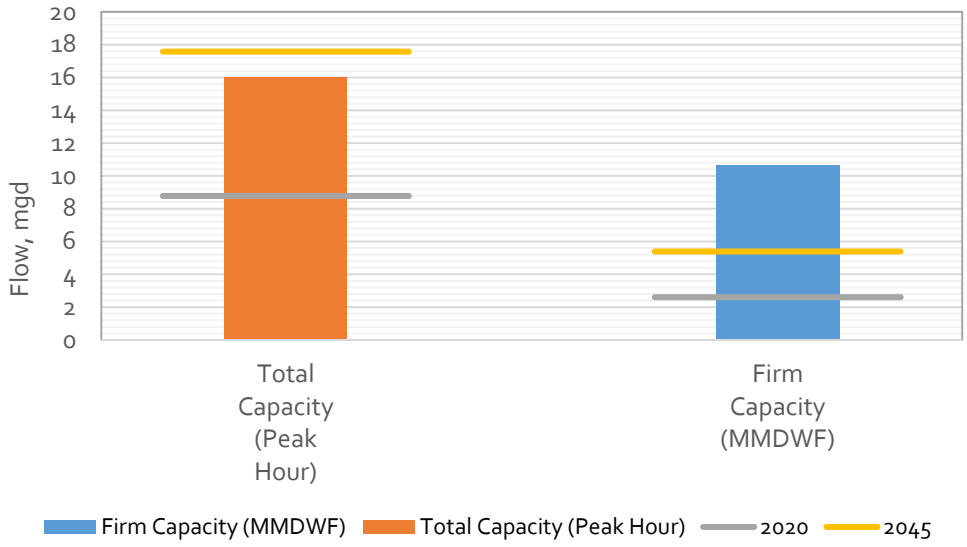



Figure 4.10 Secondary Clarifier Capacity (Surface Overflow Rate)

### 4.3.3 Tertiary Treatment and Disinfection

Following secondary treatment, secondary effluent is filtered, cooled, and disinfected. Tertiary filtration is used year-round, but only treats a portion of the total secondary effluent flow. Likewise, the cooling towers only treat a portion of the secondary effluent flow, but they are only used when required to meet excess thermal load (ETL) permit limits. All the treated wastewater is disinfected by the UV system prior to discharge. A schematic illustrating the tertiary treatment and disinfection processes is provided in Figure G.3 of Appendix G.

The secondary effluent pump station lifts secondary effluent to the level required to flow by gravity through the disc filters and subsequent disinfection. These pumps also lift flow to the secondary effluent cooling towers. Since the plant operates the filters year-round, irrespective of effluent quality, and since the firm capacity of the filters is greater than the cooling towers, it is assumed that all flow through the cooling towers is also sent through the filters. Thus, the secondary effluent pump station needs to only lift the amount of flow required for filtration.

#### 4.3.3.1 Disc Filters

Two sets of Siemens 40-X Disc Filters were installed downstream of the secondary clarifiers as part of the 2012 WWTP Improvements project. Disc filters reduce the TSS of the plant's secondary effluent and aids with the efficacy of UV disinfection by increasing the UVT. While the strict TSS limits during the dry weather season drove the installation of these tertiary filters, operators run secondary effluent through these filters year-round, as they improve effluent quality and do not require significant additional energy or maintenance to run them continuously.

The design criteria for the disc filters are as follows:

- Each disc filter treats up to 3.75 mgd, per the manufacturer's data sheet.
- The net effective filtration area for each filter is 808 sf, per the manufacturer's data sheet.
- The maximum solids loading rate on the filters is 1 lb/day/sf, per the 2012 WWTP Improvements Project Documents. Thus, the overall maximum solids loading rate to each filter is 808 lb/day.
- The disc filters needs to be able to accommodate the PDDWF with all units in service and the MMDWF with a single unit out of service.

As seen in Figure 4.11, the existing disc filters will not have adequate capacity to handle MMDWF in 2045 with one unit out of service. The hydraulic capacity of the filters is expected to be exceeded by 2032.

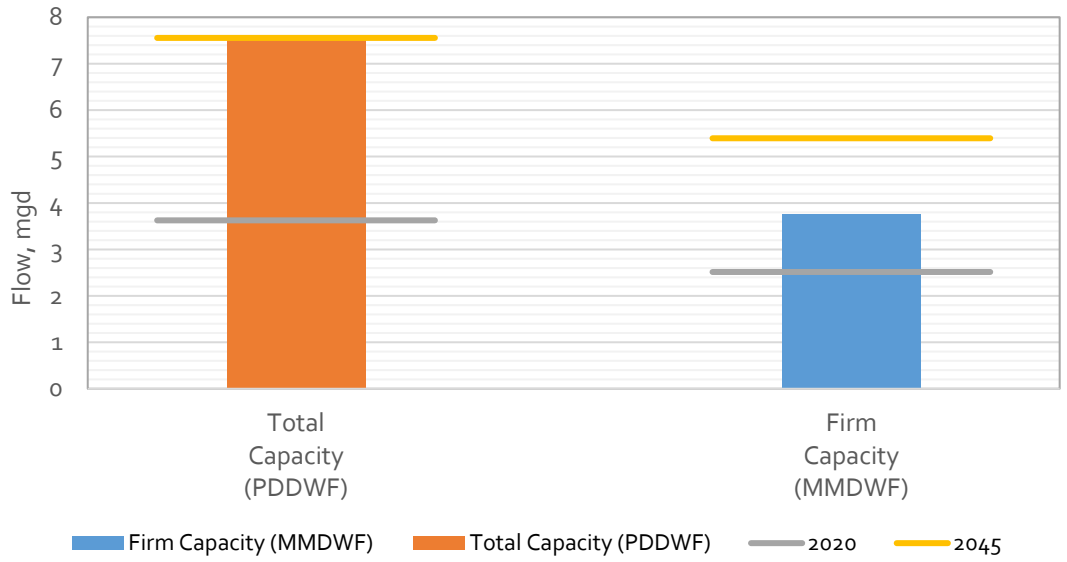



Figure 4.11 Disc Filter Hydraulic Capacity

The filter capacity is limited by the maximum solids loading rate. Therefore, effective secondary clarification upstream of the filters is critical to limit the solids loading rate to the filters to maintain filter capacity. The disc filters can only filter effectively when the influent TSS concentration is less than 35 mg/L based on the manufacturer's data sheet, but as the flow to a single disc filter increases above 2.8 mgd, the influent TSS concentration must be reduced even further to prevent exceedance of the solids loading rate criterion. At the hydraulic loading rate limit of 3.75 mgd, a single filter can only operate effectively when the influent TSS is less than 26 mg/L. Thus, maintaining effective secondary clarification and maintaining a low secondary effluent TSS is essential to realizing the full capacity of the disc filters. Historical plant data was analyzed to determine the frequency with which the secondary effluent TSS exceeded 26 mg/L. Excluding 2020 when process upsets associated with the Aeration Basin Improvements Project construction resulted in high secondary effluent TSS events, the 92nd percentile secondary effluent TSS concentration was only 23 mg/L.

#### 4.3.3.2 Secondary Effluent Cooling Towers

From June 1 to September 30, secondary effluent must be cooled in one of two cooling towers to comply with the ETL limits in the NPDES permit. Option A of the City's NPDES permit limits the ETL to 39 million kilocalories per day. This option assumes that the temperature of the river is 20 degrees Celsius (°C) and does not consider actual river temperatures. The permit also indicates that the 39 million kilocalories per day limit be compared to a seven-day average effluent thermal load calculated based on the maximum daily temperature and the average daily flow. Cooling tower feed pumps must lift flow through the cooling towers from the pumped

secondary effluent flow stream. The design criteria for the secondary effluent cooling towers are as follows:

- The design wet bulb temperature for the cooling towers is 68°F, per the 2012 WWTP Improvements project documents.
- The design approach temperature for the cooling towers is 5°F, per the 2012 WWTP Improvements project documents. This indicates that at the design wet bulb temperature, the secondary effluent can be cooled to 73°F.
- The design flow rate through the cooling towers is two mgd each, per the 2012 WWTP Improvements project documents.
- The cooling towers should be capable of reducing the secondary effluent temperature such that the ETL to the Willamette River is less than 39 million kilocalories per day with both towers in service. It is assumed that both units are available for duty service from June 1 to September 30, and that any necessary maintenance is completed outside of this period.

The capacity of the cooling towers to remove the necessary ETL is, in practice, limited by the ambient conditions in which it operates. When the wet bulb temperature equals 68°F, the maximum weekly flow that can be discharged while staying under the ETL of 39 million kilocalories per day is 3.7 mgd. During the low flow periods of July and August, this flow is expected to be exceeded by the year 2040. The 2021 ASHRAE Handbook - Fundamentals documents the July wet bulb temperatures for the Aurora State Airport located approximately three miles south of the WWTP as less than 67.7°F 95 percent of the time in July and August. This means that about 37 hours during each of these summer months may be expected to exceed the design wet bulb temperature for the cooling towers potentially contributing to exceedances of the effluent ETL, depending on the plant daily flow rate.

During periods where the wet bulb temperature exceeds 68°F, the secondary effluent can only be reduced to a temperature 5°F higher than the wet bulb temperature. Hot, humid days reduce the efficacy of the cooling towers. The 2021 ASHRAE Handbook - Fundamentals documents that the July wet bulb temperature is expected to be less than 73.1°F, 99.6 percent of the time at the Aurora State Airport. This means that 3 hours of the month are expected to exceed this design wet bulb temperature. At a design wet bulb temperature of 73.1°F, the maximum seven-day average flow that can be discharged is approximately 1.8 mgd which is close to the current maximum weekly flows during the low flow periods of July and August. Given the impact of the actual wet bulb temperature on the maximum allowable weekly flows, careful attention should be paid to the flows and actual wet bulb temperatures during these months.

In addition to the ambient temperature considerations impacting evaporative cooling effectiveness described above, the existing cooling towers must also be assessed in light of their rated hydraulic capacity. On a flow basis, there were several days in the dry weather period from 2015-2020 in which the ETL prior to cooling exceeded 39 million kilocalories per day, and the effluent flow rate exceeded 2 mgd. It is assumed that, on these days, 100 percent of the secondary effluent flow must be cooled to meet the ETL limit, and operation of both cooling towers would be required to meet the permitted ETL. For 2045 conditions, it was assumed that the influent wastewater temperature would be the same as current conditions, but that the daily flow rates on days when the cooling towers are needed to meet the ETL limit would increase by the ratio of the 2045 base wastewater flow rate to the 2021 base wastewater flow rate established in Chapter– 3 - Wastewater Flows and Load Projections.

The cooling towers are designed for a maximum combined hydraulic flow rate of 4 mgd. As illustrated in Figure 4.12, while the total hydraulic capacity of the cooling towers is sufficient currently, it will not be sufficient in 2045 . The hydraulic capacity of the cooling towers is predicted to be exceeded in 2036.

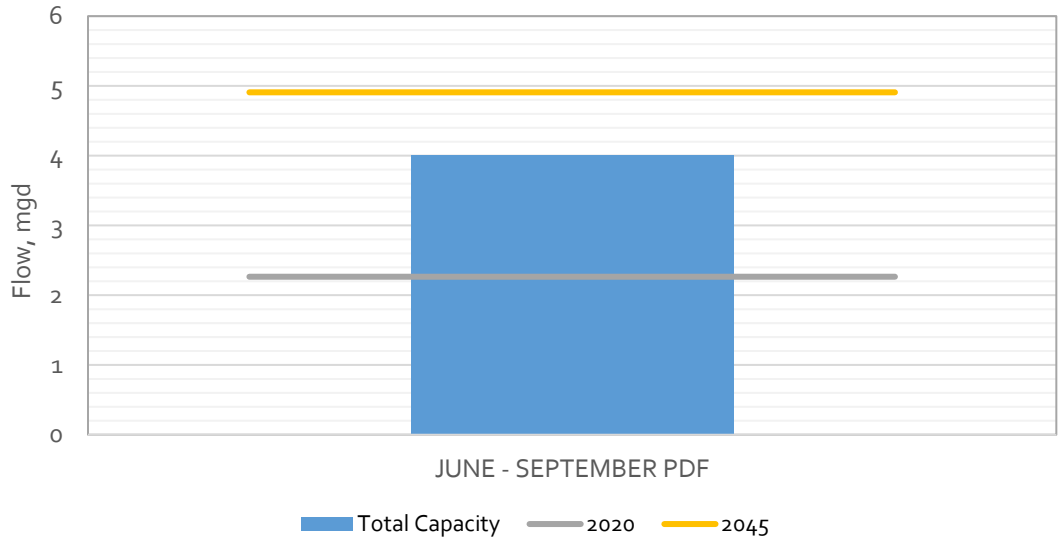



Figure 4.12 Cooling Tower Capacity

#### 4.3.3.3 UV Disinfection

Filtered and/or cooled effluent is combined with the remaining secondary effluent and flows through one of two UV disinfection channels. The design criteria for the UV system is as follows:

- Each channel and UV system is rated for eight mgd. Critically, the UV systems are only rated for this flow when the UVT is 65 percent or higher on average, or 55 percent or higher under peak conditions, per the 2012 WWTP Improvements Project.
- Per the *Wastewater Planning Design Guide*, the plant must be capable of disinfecting the PDDWF with one unit out of service, and the PHF with all units in service.

As seen in Figure 4.13, the existing UV channels do not have adequate capacity to disinfect the 2045 PHF with all units in service. However, the firm capacity of the UV system is sufficient to treat the PDDWF through the year 2045 with one channel out of service.

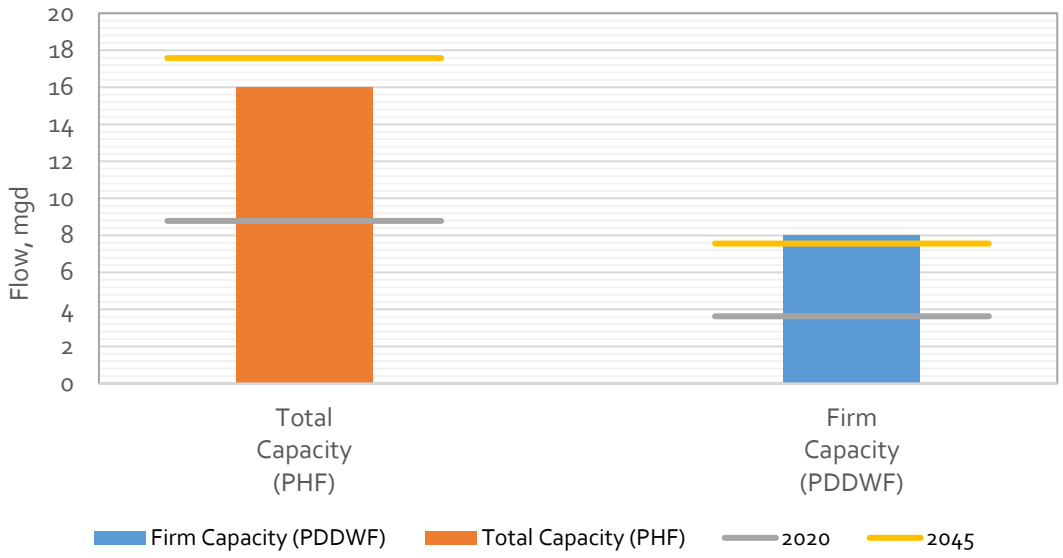



Figure 4.13 UV Disinfection Capacity

#### 4.3.3.4 Outfall

Carollo Hydraulix® hydraulic modeling software was used to establish the hydraulic capacity of the outfall and water surface elevations for current and future flows. The model provides both energy and hydraulic grade lines according to each hydraulic element's head loss and velocity using Darcy-Weisbach equation for friction losses. The model was built using pipe and facility information taken from record drawings. The outfall capacity was defined in this case as the amount of flow that could pass through the outfall pipeline while still providing a six-inch drop over the UV channel effluent weir. This hydraulic break between the UV system and the outfall pipe ensures that the outfall has no hydraulic impact on the upstream processes.

The existing outfall was recently modified with five parallel diffuser pipes equipped with duckbill check valves to improve the mixing zone characteristics in the Willamette River. This analysis assumed that the Willamette River was at its 100-year flood elevation. Even at this maximum river level, it is expected that the outfall can discharge approximately 19 mgd before the UV channel effluent weirs are at risk of submergence. This is well above the hydraulic capacity of the rest of the plant, as shown in Figure 4.14, and thus no expansion will be needed during the planning period.

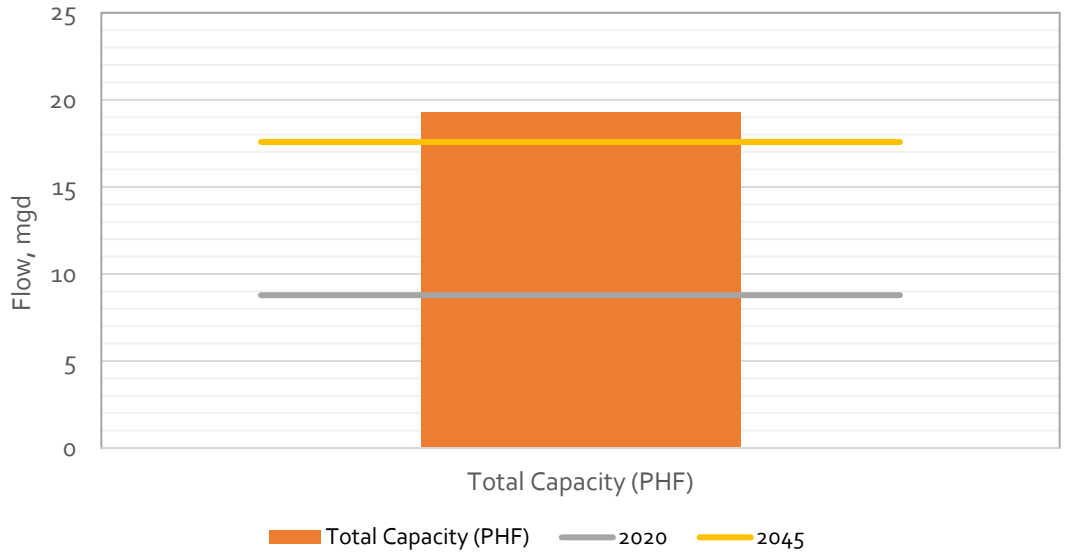



Figure 4.14 Outfall Hydraulic Capacity

### 4.3.4 Solids Handling

The solids handling process consists of WAS storage, WAS thickening, TWAS storage, centrifuge dewatering, and biosolids drying. A schematic illustrating the solids handling process at the plant is provided in Figure G.4 in Appendix G.

#### 4.3.4.1 WAS Storage

WAS is diverted from the main RAS pump discharge header at a target rate using a flow control valve into a pair of 49,500 gallon WAS storage tanks to allow for intermittent operation of the GBTs. The typical storage time in these tanks is 10 - 23 hours. However, the GBT can operate continuously if needed, so the WAS storage capacity is not a capacity-limiting criterion, as WAS storage is only needed when the GBTs are not in use.

### 4.3.4.2 WAS Thickening

WAS is pumped from the WAS storage tanks and thickened in one of two 1.5-meter GBTs. As seen in Figure 4.15, from mid-2015 to mid-2017, the typical TWAS concentration ranged from approximately 3 to 6.5 percent TS and averaged approximately four percent TS. Operations staff prefer to maintain a TWAS concentration of four percent or less to maintain centrifuge performance, which does not perform as well at higher feed TS concentrations.

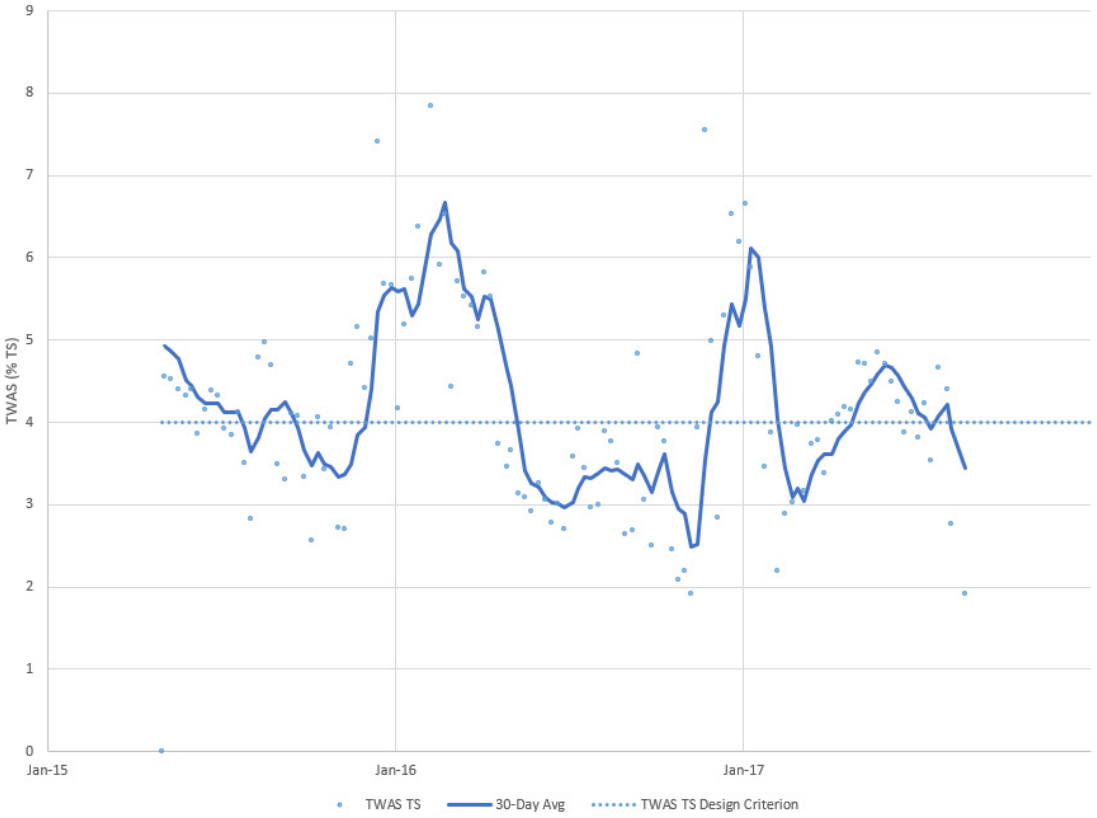



Figure 4.15 Historical Gravity Belt Thickener Performance

The design criteria for the gravity belt thickeners are as follows:

- Each GBT can thicken up to 300 gpm of feed sludge, or 200 gpm per meter of belt width, based on the record drawings from the 1993 upgrade.
- Each GBT is limited to a maximum solids loading rate of 900 lb/hr, or 600 lb/hr per meter of belt width, based on Carollo's experience with similar sized equipment of approximately the same age.
- The GBTs can be operated 24 hours per day, seven days per week, per discussion with operations staff.
- To allow for efficient dewatering operation and maintenance, the GBTs must be capable of thickening WAS to 4 percent under maximum week conditions with one unit out of service.

The capacity analysis results indicate that based on these operational parameters, there is sufficient capacity through approximately the year 2042 to thicken the projected maximum week WAS loads with one unit out of service as shown in Figure 4.16.

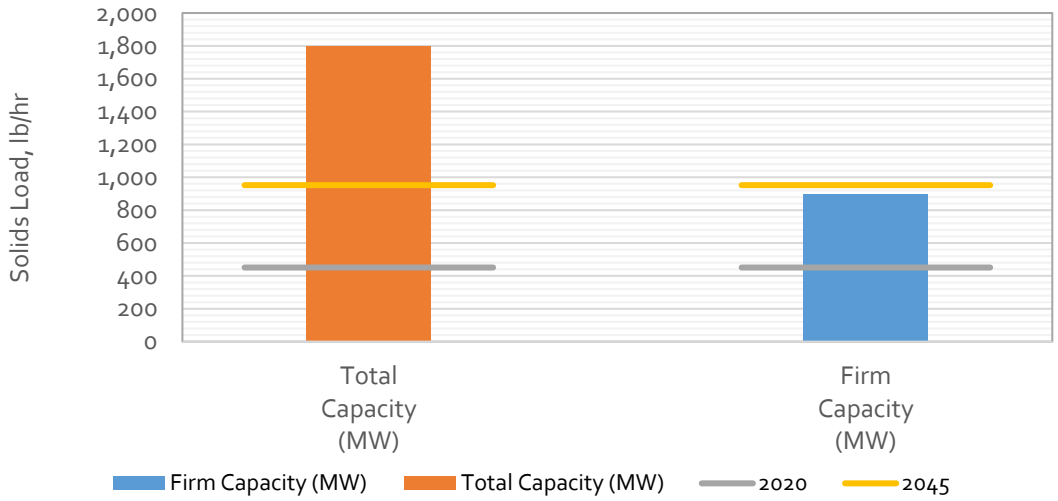



Figure 4.16 Gravity Belt Thickener Capacity

#### 4.3.4.3 TWAS Storage

After thickening on the GBTs, TWAS is pumped to the TWAS storage tanks adjacent to the WAS storage tanks with progressive cavity pumps. The TWAS storage tanks provide the ability to store TWAS if the dewatering or drying processes are out of service. TWAS is stored in two 67,000 aerated holding tanks that allow for intermittent operation of the dewatering centrifuges. This volume provides sufficient capacity for approximately two days of storage of the projected maximum week TWAS loads with both tanks in service and about two days of storage of the projected average annual TWAS loads with one tank out of service. The City and contract operations staff indicated that this capacity is sufficient.

#### 4.3.4.4 Dewatering Centrifuges

Two centrifuges dewater WAS and TWAS to approximately 20 percent TS. As described in section 4.3, the centrifuges typically achieve a solids capture percentage of approximately 90 percent, and have recently undergone major refurbishment to improve the low solids capture observed during the model calibration period.

The design criteria for the dewatering centrifuges are as follows:

- The maximum solids loading rate to a single centrifuge is 1,000 lb TS/hr, per the manufacturer's design criteria.
- The maximum hydraulic loading rate to a single centrifuge is 50 gpm, based on discussions with the City.
- The centrifuges are run 24 hours per day, 7 days per week.
- The centrifuges must be capable of dewatering the maximum week solids load with one unit out of service.

Based on these criteria, the current centrifuges have sufficient capacity to dewater the maximum week load with one unit out of service as is shown in Figure 4.17. Recently the City has not been able to operate their dewatering process at its rated capacity. If this issue can't be resolved, larger units will need to be installed to increase capacity.

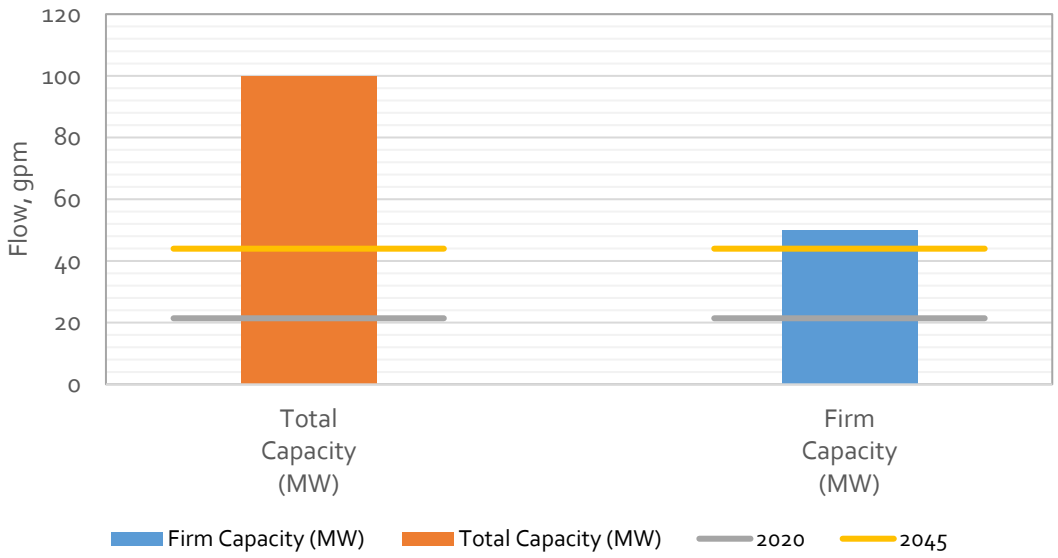



Figure 4.17 Dewatering Centrifuge Solids Loading Capacity

#### 4.3.4.5 Biosolids Dryer and Solids Disposal

The biosolids dryer is currently operated five days per week, 24 hours per day. The operations staff have had difficulty with reliable operation of the dryer. At the beginning of the project the operations staff reported that the dryer began to experience problems after approximately four to six hours of running at its design temperature. Since that time, repairs were made to the dryer and now the dryer can operate continuously. This lack of redundancy and reliability have created issues for solids disposal. If the dewatered cake is not dried, the weight and volume is significantly higher and must be disposed of at the landfill.

The design criteria for the biosolids dryer are as follows:

- The evaporation rate in the dryer is limited to 3,600 lb/hr of water, per the 2012 WWTP Improvements Project Documents.
- Dewatered cake is fed to the dryer at 20 percent TS and dried to 92 percent TS, reflecting typical performance based on analysis of WWTP operations data.
- The dryer is operated 24 hours per day, seven days per week.
- Since there is no dryer redundancy, dryer maintenance necessitates that un-dried, dewatered solids are disposed of at the landfill.

As shown in Figure 4.18, the capacity of the biosolids dryer is adequate for the current and projected max week solids loads based on the above design criteria. However, as discussed above, dryer reliability concerns may lead the City to investigate replacement options within the planning period.

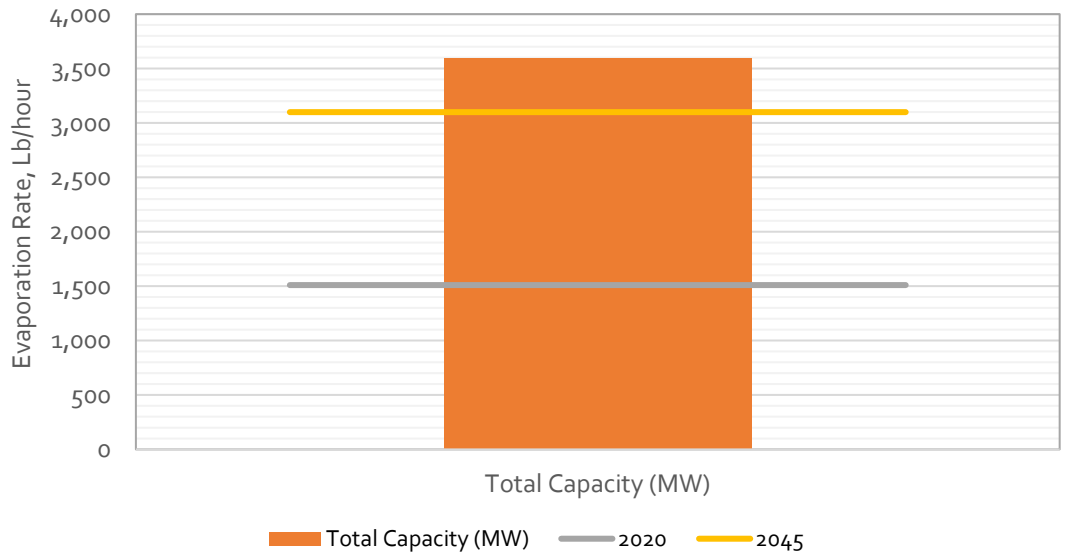



Figure 4.18 Biosolids Dryer Capacity

### 4.3.5 Plant Hydraulics

As mentioned in Section 4.3.1, the City engaged Jacobs in the summer of 2023 to evaluate plant hydraulics based on predicted 2045 influent PHF. That document (*Hydraulic Analysis TM*, August 31, 2023) is provided for reference in Appendix H. Jacobs found that under projected 2045 PHF conditions certain process and effluent piping may be hydraulically deficient.

At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized piping is expected to be necessary to convey flow from the headworks to the secondary process under these conditions

The 24-inch piping between MH-B (downstream of the UV disinfection process) and the 42-inch outfall downstream of MH-D2 is a hydraulic restriction for the PHF 17.6 mgd and 0.8 mgd recycle scenario. There are several options that could relieve the restriction. These are discussed further in Chapter 6.

## 4.4 Summary of Key Capacity Issues

The years in which key processes are expected to be exceeded within the planning period are summarized in Table 4.4. Prior to the year of capacity exceedance, the necessary planning, design, and construction activities will be required to be completed. Alternatives for addressing these capacity shortcomings are included in Chapter 6 - Alternatives Development and Evaluation. In addition, concerns with performance of the solids dryer unit led City staff to request evaluation of alternatives for replacement of that equipment. As such, additional discussion of the solids unit processes is presented in Chapter 6.

Table 4.4 Unit Process Capacity Year Summary

| Unit Process | Design Parameter | Redundancy Criteria | Year of Capacity Exceedance |
|---|---|---|---|
| Influent Screening | PHF | Bypass channel with manual bar rack in service and one mechanical screen out of service | >2045 |
| Grit Chamber | PHF | All units in service | 2045 |
| Secondary Treatment | MW MLSS Inventory at PDF | All units in service | 2027 |
| Secondary Effluent Cooling Towers | June 1 - Sept 30 PDF | All units in service | 2036 |
| Disk Filters | MWDWF | One unit in backwash | 2032 |
| UV Disinfection Channels | PHF | All units in service | 2040 |
| Outfall | PHF | - | >2045 |
| Gravity Belt Thickening | MW Load | One unit out of service | 2042 |
| Dewatering Centrifuges | MW Load | One unit out of service | >2045 |
| Biosolids Dryer | MW Load | All units in service | >2045 |

Chapter 5

# REGULATORY CONSIDERATIONS AND STRATEGY

## 5.1 Willamette River Flow

Flow data for the Willamette River is available from the U.S. Geological Survey (USGS) Water Data Reports at Newberg (USGS Station 14197900). Flow data are available from October 19, 2001 through July 30, 2020. Table 5.1 summarizes the monthly mean, maximum, and minimum river flows for the Newberg station between the dates available.

Table 5.1 Willamette River Flow Data from the USGS Station in Newberg

| Month | Average Flow (cfs) | Maximum Flow (cfs) | Minimum Flow (cfs) |
|---|---|---|---|
| January | 51,726 | 164,000 | 11,500 |
| February | 36,496 | 120,000 | 9,440 |
| March | 34,505 | 107,000 | 6,460 |
| April | 32,107 | 148,000 | 11,100 |
| May | 21,571 | 54,500 | 8,090 |
| June | 15,604 | 89,900 | 5,830 |
| July | 8,020 | 16,700 | 4,860 |
| August | 7,161 | 10,500 | 4,700 |
| September | 8,594 | 36,300 | 5,170 |
| October | 13,345 | 60,600 | 5,970 |
| November | 26,398 | 104,000 | 6,910 |
| December | 44,973 | 137,000 | 5,920 |

Notes:
Abbreviations: cfs - cubic feet per second.

River flow varies seasonally; Figure 5.1 shows the discharge curve from the USGS Station 14197900.

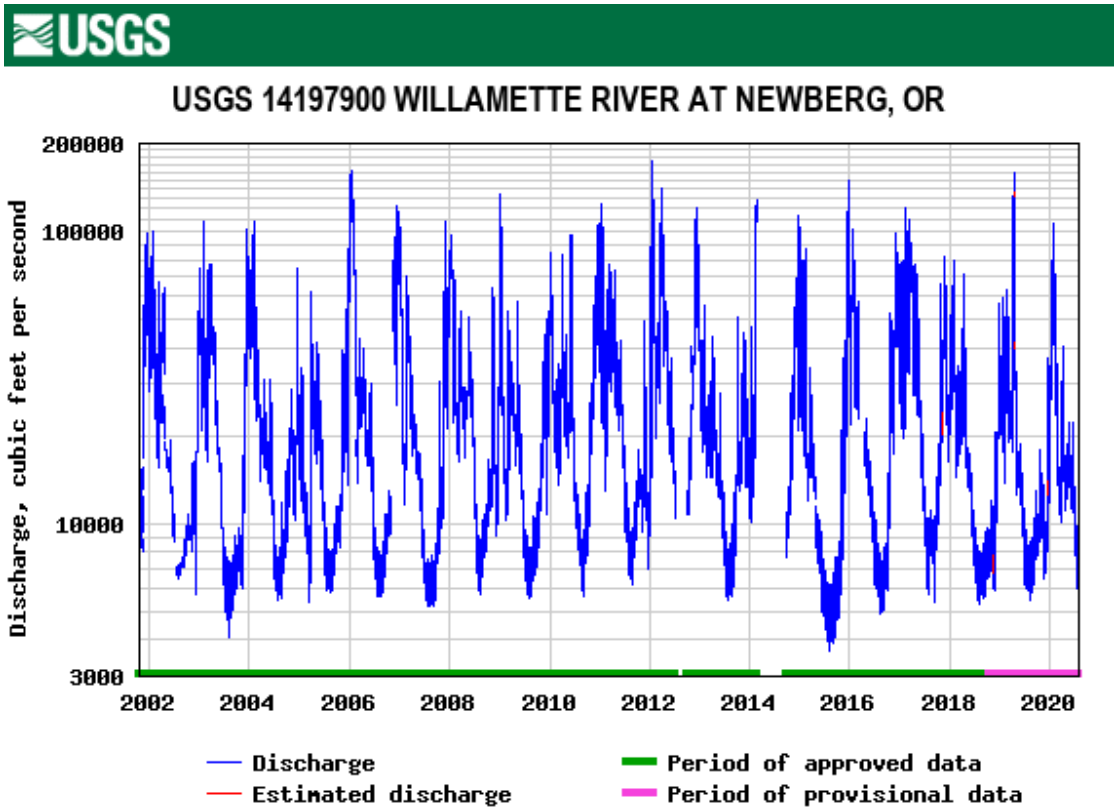



Figure 5.1 Historical Flow of the Willamette River at Newberg

A mixing zone study was published in February 2019 by Jacobs which evaluated the change in the mixing zone characteristics following the outfall replacement in 2018.

The study detailed the statistical flows for the Willamette River found in Table 5.2.

Table 5.2 Willamette River Statistical Flows

| Item | Flow (cfs) |
|---|---|
| Dry Season 1Q10 | 5,646 |
| Dry Season 7Q10 | 5,752 |
| 30Q5 | 6,315 |
| Harmonic mean flow | 13,966 |
| Wet Season 7Q10 | 7,136 |
| Wet season 50th percentile | 25,970 |

The mixing zone study also listed the dilution factors associated with the statistical flows in Table 5.2. These dilution factors are based off 2018 WWTP flows and are found in Table 5.3. The NPDES permit defines the regulatory mixing zone (RMZ), also known as the chronic mixing zone and Zone of Initial Dilution (ZID), also known as the acute mixing zone, as:

"That portion of the Willamette River within 150 feet downstream of the outfall diffuser. The ZID is that portion of the allowable mixing zone that is within 15 feet downstream of each outfall diffuser port."

Table 5.3 Dilution Factors from Mixing Zone Study

| Item | Centerline Dilution at 15-foot ZID | Existing Flux-average Dilution at 150-foot RMZ | 2025 Flux-average Dilution at 150-foot RMZ |
|---|---|---|---|
| Dry Season 1Q10 | 24 | N/A | N/A |
| Dry Season 7Q10 | N/A | 192 | 107 |
| 30Q5 | N/A | 191 | 116 |
| Harmonic mean flow | N/A | 247 | 193 |
| Wet season 50th percentile | N/A | 198 | 88 |

## 5.2 Regulatory Framework

It is the responsibility of the Oregon DEQ to establish and enforce water quality standards that ensure the Willamette River's beneficial uses are preserved. The DEQ's general policy is one of antidegradation of surface water quality. Discharges from wastewater treatment plants are regulated through the NPDES. All discharges of treated wastewater to a receiving stream must comply with the conditions of an NPDES permit. The Environmental Protection Agency (EPA) oversees state regulatory agencies and can intervene if the state agencies do not successfully protect water quality.

The Wilsonville WWTP discharges to the Willamette River at River Mile 38.5 just upstream of the Interstate 5 bridge. A new multi-port diffuser was installed by the City in 2018 which improved the mixing available for the plant discharge.

## 5.3 Beneficial Uses

To assist in the development of water quality standards, a list of beneficial uses is established for each water body in the state. OAR 340-041-0340 lists the beneficial uses for the Willamette River in the vicinity of the City's treatment plants (Table 5.4).

The Willamette River at Wilsonville is designated for rearing and migration of all species of Salmon and Trout.

Table 5.4 Designated Beneficial Uses for the Willamette River from the Willamette Falls to Newberg

| Beneficial Uses |
|---|
| Public Domestic Water Supply(1) |
| Private Domestic Water Supply(1) |
| Industrial Water Supply |
| Irrigation |
| Livestock Watering |
| Fish and Aquatic Life |
| Wildlife and Hunting |
| Fishing |
| Boating |
| Water Contact Recreation |
| Aesthetic Quality |
| Hydro Power |
| Commercial Navigation and Transportation |

Notes:
(1) With adequate pretreatment (filtration & disinfection) and natural quality to meet drinking water standards.
Source: OAR 340-041-0340.

## 5.4 Oregon Administrative Rules for Wastewater Treatment

The state surface water quality and waste treatment standards for the Willamette Basin are detailed in the following sections of the OARs:

- OAR 340-041-0004 lists policies and guidelines applicable to all basins. DEQ's policy of antidegradation of surface waters is set forth in this section.
- OAR 340-041-0007 through 340-041-0036 describes the standards that are applicable to all basins.
- OAR 340-041-0340 through 340-041-0345 contain requirements specific to the Willamette Basin including beneficial uses, approved TMDL in the basin, and water quality standards and policies.

The surface water quality and waste treatment standards in the OARs are viewed as minimum requirements. Additional, more stringent limits developed though the TMDL process would supersede the basin standards.

## 5.5 Total Maximum Daily Loads

The Clean Water Act requires DEQ to establish TMDLs and corresponding waste load allocations for all water bodies on the 303 (d) list. DEQ prepared a TMDL for mercury in 2006 which is being revised at this time. DEQ issued the revised draft TMDL in June 2019, and this draft was rejected by EPA. On December 30, 2019, EPA established the Willamette Basin Mercury TMDL. Minor changes were made to the TMDL after reviewing comments received during the public comment period, and EPA reissued the TMDL on February 4, 2021. It is anticipated that a waste minimization strategy will be used along with a variance since the mercury targets may not be attainable in the near term. Publicly owned treatment plants contribute 0.01 kilograms per year (kg/year) of the total of 2.23 kg/year.

DEQ also issued the temperature TMDL in 2006 which was initially approved by EPA. However, EPA's approval was challenged in Federal Court which ruled that the TMDL should not have been approved because it included a natural conditions provision that changed the temperature standard without due process. DEQ will need to update the Willamette Basin temperature TMDL. DEQ will present the Willamette Subbasins TMDL to the Environmental Quality Commission for proposed rule adoption in November 2023 to give EPA a minimum of 60 days for their approval or disapproval by Jan. 15, 2024. DEQ allocated the thermal loads to the City's plants as shown in Table 5.5.

Table 5.5 Temperature TMDL Allocations

| River Flow Greater than, (cfs) | Allowed Temperature Increase, (degrees Celsius) | Thermal Load, (million Kcal/day) |
|---|---|---|
| 0 | 0.0029 | 39 |
| 6,041 | 0.0027 | 40 |
| 6,367 | 0.0026 | 41 |
| 6,739 | 0.0025 | 41 |
| 7,415 | 0.0024 | 44 |
| 8,556 | 0.0022 | 46 |
| 13,001 | 0.0017 | 54 |

## 5.6 Cold Water Refuge

DEQ published the "Lower Willamette River Cold-Water Refuge Narrative Criterion Interpretation Study" in March 2020, which was submitted to the National Marine Fisheries Service. This study identifies six cold-water refuge (CWR) areas in the reach between the Willamette River Falls and Newberg. Just upstream of Wilsonville, the Coffee Lake Creek and Corral Creek confluences are listed CWRs. The closest downstream CWR is the Ryan Creek confluence at River Mile 44.2. The Wilsonville discharge will not influence these CWRs.

Implementation of the cold-water refuge is outlined in the draft report and the three proposed steps are listed below:

1. DEQ will implement existing temperature TMDLs to address temperature reductions in the main stem and cold-water tributaries to maintain and enhance the CWRs identified in this report. For example, implementing the Clackamas Basin TMDL will protect the quality of cold-water refuge provided by the Clackamas River confluence.

2. Designated management agencies (DMA) along the mainstem Willamette River are required to address CWR according to the 5-year Willamette Basin TMDL Implementation Plans. The Implementation Plans require DMAs to evaluate impacts to existing CWR, now identified in this study, identify additional CWR if applicable, and provide options for protecting or enhancing such areas.
3. NPDES permits for discharges are required to evaluate and prohibit thermal impacts to CWR under the authority of OAR 340-041-0053(2)(d). When permits are issued for discharges within the migration corridor, potential for impacts to the CWR identified in this report or by DMAs must be evaluated and thermal plume limitations applied as necessary.

In the recent permit fact sheet, DEQ summarized their analysis of the Wilsonville discharge and concluded that the discharge meets the thermal plume limits in OAR 340-041-0053(2)(d).

## 5.7 Clean Water Act 303 (d) Listing

The federal Clean Water Act requires that the responsible regulatory agency establish a list of water bodies that do not meet applicable water quality standards. In Oregon, this responsibility falls to the DEQ. This list, known as the 303 (d) list, classifies Category 5 impairments and is updated every two years. In September 2019, DEQ released the draft Oregon 2018-20 Integrated Report and is soliciting comments. The causes of impaired uses for the Assessment Unit from Champoeg Creek to the confluence with the Clackamas River are listed below:

- Aquatic Weeds
- Biocriteria
- Temperature-Year-Round
- Aldrin - Human Health
- Polychlorinated biphenyls - Human Health
- Dichlorodiphenyldichloroethylene 4,4′ - Human Health
- Dichlorodiphenyltrichloroethane (DDT) 4,4′ - Human Health
- Dieldrin - Human Health

In addition to the listing for this reach, listings of parameters for the downstream assessment units are shown below:

- Cyanide - Aquatic Life
- Ethylbenzene - Human Health
- Chlordane
- Chlorophyll-a
- Harmful Algal Blooms
- Iron (total) - Aquatic Life
- Dissolved Oxygen - Year-Round
- Hexachlorobenzene - Human Health
- Polycyclic Aromatic Hydrocarbons - Human Health

For the listed parameters, aquatic weeds and the biocriteria could all be related to the nutrient loading in the river. Aquatic growth is typically stimulated by nutrients that are available in the water. DEQ has not evaluated the conditions in the river to determine if the river is either nitrogen or phosphorous limited. However, upstream tributaries have been found to be phosphorous limited. A TMDL process will be necessary to establish future treatment requirements. Long-term planning should include provision of footprint at the plant for nutrient removal.

DEQ is required to implement the recent methylmercury standard promulgated by EPA. It is likely that DEQ will implement compliance through source control measures rather than permit limits.

Permit limits are not anticipated for the pesticides and legacy pollutants such as DDT and its derivatives.

## 5.8 Permit Limits

The existing permit limits for the Wilsonville WWTP are shown in Table 5.6. This permit became effective on September 1, 2020 and expires July 30, 2025.

Table 5.6 Effluent Permit Limits

| Parameter | Average Effluent Concentration | | Monthly Average (lb/day) | Weekly Average (lb/day) | Daily Maximum (lbs) |
|---|---|---|---|---|---|
| | Monthly | Weekly | | | |
| **May 1 - October 31** | | | | | |
| $CBOD_5$ | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| TSS | 10 mg/L | 15 mg/L | 190 | 280 | 380 |
| **November 1 - April 30** | | | | | |
| $BOD_5$ | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| TSS | 30 mg/L | 45 mg/L | 560 | 840 | 1100 |
| **Other Parameters Limitations** | | | | | |
| E. coli Bacteria | • Shall not exceed 126 organisms per 100 ml monthly geometric mean. No single sample shall exceed 406 organisms per 100 ml. | | | | |
| pH | • Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0. | | | | |
| $BOD_5$ Removal Efficiency | • Shall not be less than 85 percent monthly average. | | | | |
| TSS Removal Efficiency | • Shall not be less than 85 percent monthly average. | | | | |
| ETL June 1 through September 30 | • Option A: 39 million kcal/day 7-day rolling average.<br>• Option B: Calculate the daily ETL limit. | | | | |

For Option B shown in Table 5.6 for the ETL limit, the daily ETL is calculated using the following formula:

- ETL = (((0.00006878 x $Q_R$) + .8745)-0.1) x 2.94 x 2.447 x (24.3 – 20).
- $Q_R$ = Rolling 7-day average ambient river flow at USGS Gauge No. 14197900 (Newberg).

The excess thermal load is computed based on the following formula:

- ETL = 3.785 x $Q_e$ x ΔT.
- ETL = Excess Thermal Load.
- $Q_e$ = Daily average flow (million gallons per day [mgd]).
- ΔT = Daily maximum effluent temperature (°C) minus ambient criterion (20°C).

## 5.9 Outfall

The Wilsonville WWTP Outfall 001 is located at River Mile (RM) 38.6. The peak wet weather hydraulic capacity of the WWTP is 16 mgd. In 2018, the single-port WWTP outfall was replaced with a new multi-port diffuser outfall that extends farther offshore to provide better dilution that enhances the ability for the discharge to meet water quality criteria. The outfall replacement eliminated the need for ammonia limits for toxicity control on future NPDES permits.

A mixing zone study evaluating the RMZ of the new diffuser outfall was published by Jacobs in 2019. Improved mixing is provided by the new diffusers and the dilution values shown in Table 5.3 are based on the new diffuser.

## 5.10 Toxicity

DEQ completed the Reasonable Potential Analysis (RPA) for metals and the priority pollutants based on the mixing zone analysis submitted by the City. This analysis is based on the mixing provided by the new outfall as shown in Table 5.3. This analysis included pH, temperature, ammonia, and toxics. The following conclusions were reached by DEQ:

- The RPA confirmed that the basin standards for pH will be met at the edge of the mixing zones.
- The Wilsonville WWTP discharge will not have a reasonable potential to exceed the temperature criteria.
- The discharge has no reasonable potential to exceed the ammonia water quality criteria.
- There is no reasonable potential that the discharge will cause aquatic toxicity at the edge of the mixing zones related to metals or priority pollutants.
- Except for mercury, there is no reasonable potential that human health criteria will be exceeded.

The City received approval from DEQ for the NPDES permit-required mercury minimization plan on May 10, 2022.

## 5.11 Temperature

The Willamette River temperature standard in the in the Lower Willamette River is 20° C during the dry season. DEQ established TMDLs for temperature and the City installed cooling towers to help meet the thermal load limits. Figure 5.2 shows the effluent temperature for the last five years of record and Figure 5.3 shows the thermal load discharged compared to the limit. In 2018 the WWTP approached the thermal limit.

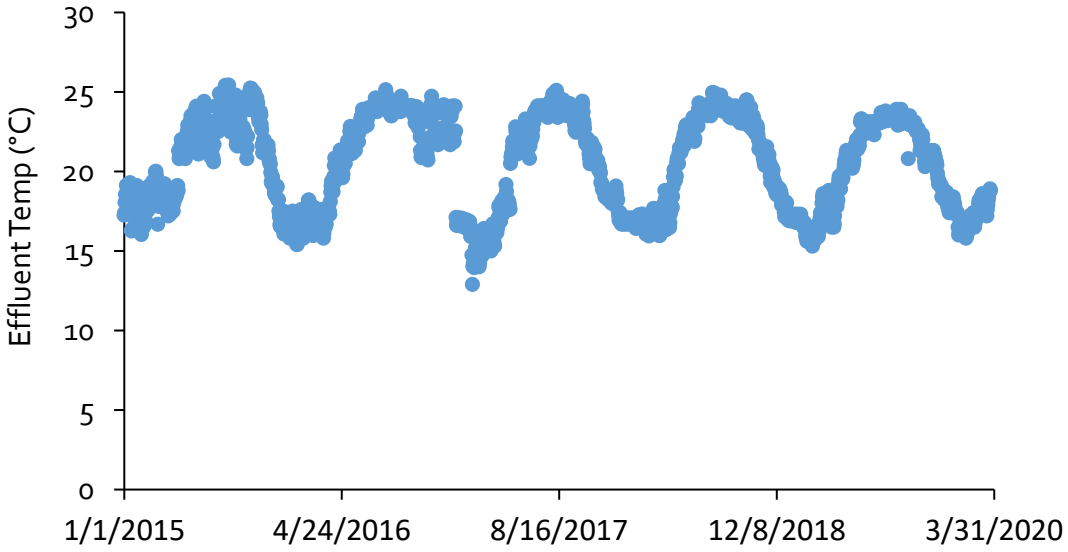



Figure 5.2 Effluent temperatures from 2015 through 2019

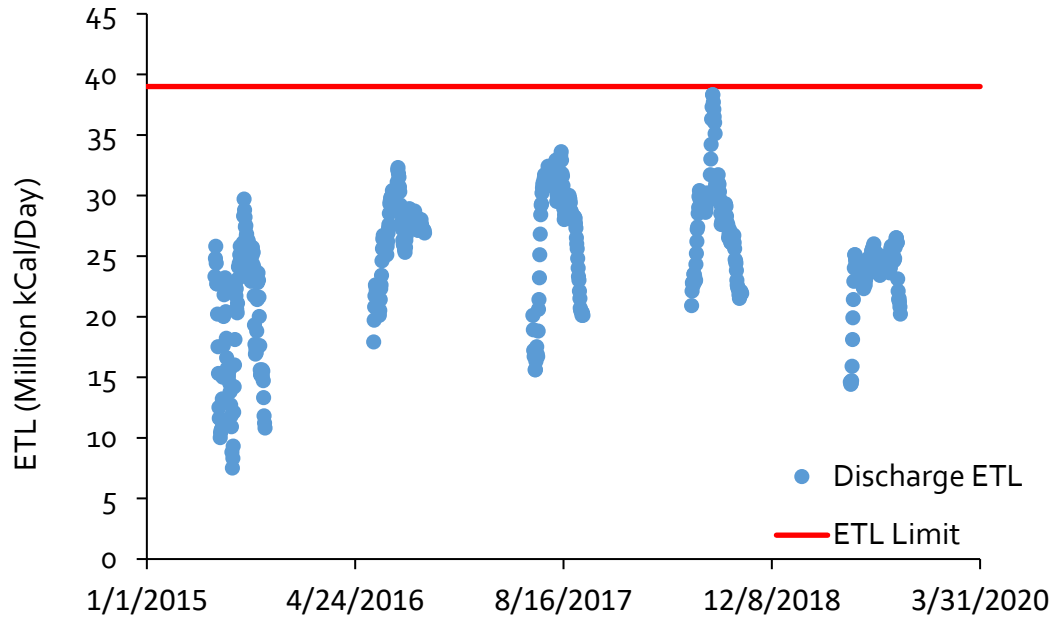



Figure 5.3 DMR-Reported ETL Discharged Compared to the NPDES Permit of 39 million kCal/day

The permit includes a provision for calculating the ETL limit based on river flow. An analysis for 2018 shows that Option B in the permit is not favorable during the peak temperature periods. Figure 5.4 shows the actual load versus both Option A and Option B. The Option B limit is lower than Option A during the critical period.

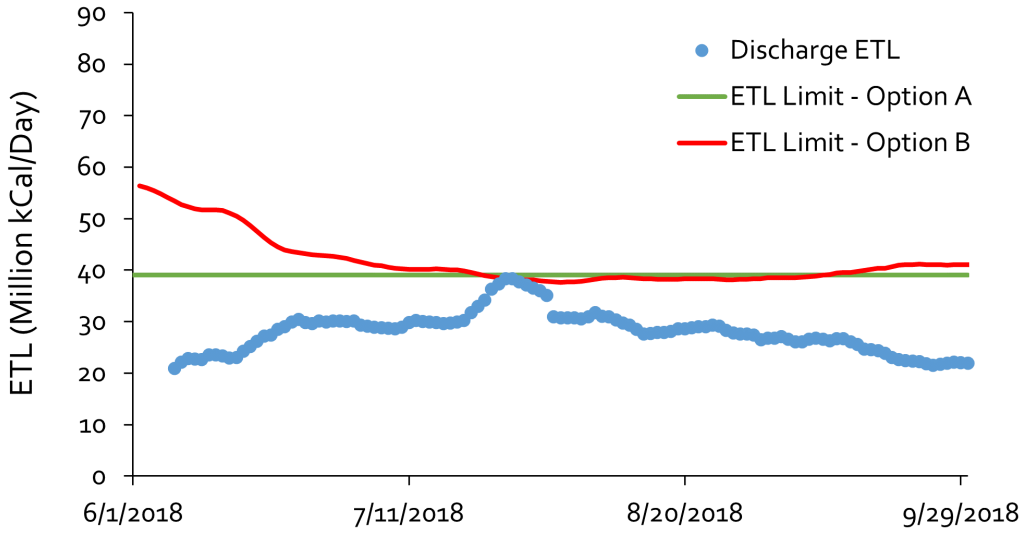



Figure 5.4 2018 Thermal Load versus Option A and Option B limits

The discharge ETL is based on the effluent flow and temperature compared to the river standard of 20° C. As effluent flows increase, the ETL will increase since the difference between the effluent temperature and river standard will not likely change. The cooling towers were designed with a minimum water discharge temperature of 22.8°C based on a wet bulb temperature of 20°C. Based on the current flow projections, this amount of cooling should allow the City to comply with the temperature TMDL through approximately the year 2040. The 2021 ASHRAE Handbook - Fundamentals documents the July wet bulb temperatures for the Aurora State Airport located approximately 3 miles south of the WWTP as less than 67.7°F, 95-percent of the time in July and August. This means that 37 hours of the month are expected to exceed the design wet bulb temperature for the cooling towers and thus, potentially exceed the ETL, depending on the plant daily flow rate.

During periods where the wet bulb temperature exceeds 68°F, the secondary effluent can only be reduced to a temperature 5°F higher than the wet bulb temperature. Hot, humid days reduce the efficacy of the cooling towers. The 2021 ASHRAE Handbook – Fundamentals documents that the July wet bulb temperature is expected to be less than 73.1°F, 99.6-percent of the time at the Aurora State Airport. This means that 3 hours of the month are expected to exceed this design wet bulb temperature. At a design wet bulb temperature of 73.1F, the maximum seven-day average flow that can be discharged is approximately 1.8 mgd which is close to the current maximum weekly flows during the low flow periods of July and August.

Additional strategies will be necessary to comply with the ETL limit once the wet bulb temperature begins to limit the amount of water that can be discharged and still meet ETL. Strategies to meet the ETL could include reducing the volume of water discharged through reuse, purchasing shading credits, or using a chiller to cool the water below temperatures which

the cooling towers can provide due to evaporative cooling limitations at elevated wet bulb temperatures.

## 5.12 Future treatment requirements

The City of Wilsonville NPDES permit became effective on September 1, 2020. Future treatment requirements will likely be implemented when the DEQ prepares TMDLs for the lower Willamette River.

## 5.13 Mass Load

Schedule D of the permit includes the following requirement related to mass load:

> *10. Within 24 months of permit expiration (beginning of the 4th year of the permit), the permittee shall submit either an engineering evaluation which demonstrates the design average wet weather flow, or a request to retain the existing mass load limits at the next permit renewal. The design average wet weather flow is defined as the average flow between November 1 and April 30 when the sewage treatment facility is projected to be at design capacity for that portion of the year. Upon acceptance by DEQ of the design average wet weather flow determination, the permittee may request a permit modification to include higher winter mass loads based on the design average wet weather flow.*

Mass load will control the maximum concentration of CBOD and suspended solids that can be discharged as growth increases plant flows. Based on the 2045 flows that are projected for the City, the concentration that can be discharged will be lower than the permitted concentration limits as shown in Table 5.7.

Table 5.7 Permitted Mass Load Limits Impact on Allowable Concentrations

| Flow | Projected 2045 Plant Flow (mgd) | Permit Limit (lbs/day) | Concentration, mg/L | | |
|---|---|---|---|---|---|
| | | | Mass Limited | NPDES Permit Limits | DBO Limits |
| MMDWF | 5.4 | 190 | 4.2 | 10 | 5 |
| MMWWF | 7.8 | 560 | 8.6 | 30 | 16 |
| MWDWF | 6.3 | 280 | 5.3 | 15 | 8 |
| MWWWF | 9.4 | 840 | 10.7 | 45 | 25 |
| PDDWF | 7.6 | 380 | 6.0 | NA | NA |
| PDWWF | 11.4 | 1100 | 11.6 | NA | NA |

The wastewater treatment plant is operated by the Design Build Operate (DBO) firm (Jacobs) under a contract that stipulates that the concentration of effluent for both CBOD and suspended solids must be half of the concentration limits in the NPDES permit. As is shown in Table 5.7, impact of the projected flow and loads suggests that by the year 2045 the mass load limited concentrations will be lower than what is currently required in the DBO contract. The City anticipates the approach to managing effluent TSS load could become more challenging as service area growth occurs resulting in mass load exceedances for TSS in the future. As a result, the City submitted a request to DEQ on June 15, 2023 to consider increasing the effluent mass load limit in the WWTP NPDES permit.

## 5.14 Dissolved Oxygen

Future treatment requirements will depend on water quality assessments of the Lower Willamette River to address the water quality parameters that are not being met. The dissolved oxygen in the lower reaches does not always meet water quality standards. Under existing permitted conditions for wastewater treatment plants that discharge to the river, the dissolved oxygen would drop well below the water quality standard. This is both a function of the $BOD_5$ and ammonia that is being discharged.

When DEQ completes a TMDL related to dissolved oxygen, it is possible that treatment plants will be required to reduce their discharge ammonia load. This would involve some level of nitrification at the plant. The TMDL process is typically a lengthy process and new requirements will not be forthcoming soon. For planning purposes, providing summer nitrification should be anticipated for future plant footprint requirements. The alternatives considered for addressing capacity needs identified in Chapter 4 are summarized in Chapter 6. For liquid treatment, alternatives were evaluated assuming the need for future summer nitrification. The scope of the dissolved oxygen issue is not defined. For planning purposes, a dry weather seasonal limit could be anticipated, especially for the initial limit.

## 5.15 Nutrients

Indications of excessive nutrients are present in the Lower Willamette River including exceedances of chlorophyll-a, aquatic weeds and harmful algal blooms. Work completed by USGS and others indicates that the river is likely phosphorous limited which would indicate that future phosphorous limits are possible. The level of chlorophyll-a in the river is currently limited by the lack of light penetration in the water and not the amount of phosphorous in the water. For planning purposes, providing summer phosphorus treatment should be anticipated for future plant footprint requirements. The alternatives considered for addressing capacity needs identified in Chapter 4 are summarized in Chapter 6. For liquid treatment, alternatives were evaluated assuming the need for future summer phosphorous removal. There will likely be a dry weather seasonal limitation.

## 5.16 Triennial Review

DEQ has initiated the triennial review of Oregon's water quality criteria. One of the highest priorities indicated by the state is to evaluate the potential to more fully use bio criteria to protect aquatic life. Also, the narrative standard related to excessive aquatic plant and algal growth and nuisance phytoplankton growth are high priority areas of review. All of these could result in new or more stringent discharge requirements, but this process will take several years before any clarity on their impact is known. As discussed above, these criteria will primarily influence nutrient requirements.

## 5.17 Pre-Treatment Limit Evaluation

The City of Wilsonville (City) Wastewater Treatment Plant (WWTP) began a new industrial local limits evaluation in the summer of 2021. It will be the first update since 2004. The City operates a state-approved industrial pretreatment program and must operate the program in compliance with the General Pretreatment Regulations (40 CFR 403). The NPDES permit for the WWTP requires that the City perform a technical evaluation of the local limits and update them if necessary, by February 2022. The new local limits evaluation was conducted to comply with this permit requirement.

The scope of this Wastewater Treatment Master Plan included an evaluation of Pre-Treatment Limits. The purpose of this evaluation was to provide high-level comments and recommendations for consideration in the industrial local limits update. This review is intended to provide continuity with the planning and evaluation of potential WWTP upgrades in the WWTP Master Plan.

Penny Carlo Engineering, LLC (Penny Carlo) was contracted to complete the Pre-Treatment Limit Evaluation for the WWTP Master Plan. Penny Carlo produced a Technical Memorandum titled Wastewater Treatment Facilities Plan 2020 (the Pre-Treatment TM), dated September 13, 2021. That document is provided for ease of reference as Appendix I to this WWTP Master Plan.

The Pre-Treatment TM considered potential pollutants of concern (POC) in the context of:

- the City's local limits in place at the time of the evaluation,
- NPDES permit effluent limits,
- EPA biosolids regulations (40 CFR 503),
- EPA's list of 15 National POCs established by the National Pretreatment Program, and
- the City's design/build/operate agreement with Jacobs Engineering which includes certain limitations on effluent discharged from the City WWTP.

An evaluation was conducted to identify regulatory elements that are the primary drivers for improvements to the WWTP and may trigger the need for industrial source control. Three future POCs for the local limits program were identified:

- Phosphorous.
- Ammonia.
- Methylmercury.

Prior WWTP upsets or problems were also explored. No instances of process interference or pass through of pollutants that would trigger the need for new local limits or updates to current local limits were identified. Influent and effluent metals and priority pollutant data was also reviewed, in addition to biosolids metals results. Results of a program of specialized sampling conducted at the WWTP in July and August 2021 were also evaluated.

Based on this high-level review, the following recommendations were provided:

- The local limits evaluation will need to consider, at a minimum, the list of initial POCs provided in Table 5.8. Other potential POCs may be added during the project, following a more detailed screening of WWTP, industrial, and background (domestic) pollutant data or new data acquired through a sampling program.

- Phosphorous and ammonia are potential future POCs based on anticipation of future TMDLs. A local limit for phosphorous does not need to be considered until a TMDL or effluent limitation is established. A local limit for ammonia does not need to be considered to address the future TMDL, but because it is a national POC (Table 5.8), it must be considered in the local limits evaluation.
- No other new POCs were identified for the local limits evaluation during this review.

Table 5.8 Initial List of POCs for the Local Limits Evaluation

| Pollutant | Current Local Limit | NPDES Effluent Limit | Seasonal Ammonia Effluent Limit(1) | EPA National POC | EPA Biosolids Metal(2) |
|---|---|---|---|---|---|
| Ammonia | | | ✓ | ✓ | |
| Arsenic | ✓ | | | ✓ | ✓ |
| BOD/CBOD | | ✓ | | ✓ | |
| Cadmium | ✓ | | | ✓ | ✓ |
| Chromium | | | | ✓ | |
| Copper | ✓ | | | ✓ | ✓ |
| Cyanide | ✓ | | | ✓ | |
| Lead | ✓ | | | ✓ | ✓ |
| Mercury | ✓ | | | ✓ | ✓ |
| Molybdenum | | | | ✓ | ✓ |
| Nickel | ✓ | | | ✓ | ✓ |
| pH | ✓ | ✓ | | | |
| Selenium | | | | ✓ | ✓ |
| Silver | ✓ | | | ✓ | |
| TSS | | ✓ | | ✓ | |
| Zinc | ✓ | | | ✓ | ✓ |

Notes:
(1) City of Wilsonville and Jacobs Engineering DBO contract.
(2) Regulated pollutants for land applied biosolids (40 CFR § 503.13).

Chapter 6

# ALTERNATIVES DEVELOPMENT AND EVALUATION

## 6.1 Introduction

The purpose of this Chapter is to present the methodology and findings of an evaluation of alternatives for wastewater treatment improvements for the City's WWTP. The existing and future needs of the WWTP's processes were defined by comparing the plant's existing condition and capacity, as defined in Chapters 2 and 4, respectively with the projected flows, loads, and regulatory constraints for the recommended alternatives in Chapters 3 and 5, respectively. The Consultant team identified alternatives to be evaluated in collaboration with City staff in a workshop setting and further developed them considering existing and future service flows and loads requiring treatment through 2045. Evaluation of future needs considered operating parameters, space requirements, capital and operation and maintenance (O&M) costs.

Where capacity shortcomings were identified, at least two alternatives were evaluated for each corresponding unit process. Notably alternatives to address gravity thickening and UV disinfection process capacity limitations under future conditions were not considered. The existing backup Trojan UV unit needs urgent replacement due to age and the fact the equipment is no longer supported/serviced by the manufacturer. When this replacement occurs, the capacity of the backup UV unit is expected to increase. Regardless, the capacity of the UV process is predicted to be exceeded after 2040. By that time, both existing (newer) Suez UV equipment and the replacement unit(s) for the backup Trojan system will have exceeded or be approaching their expected service life. Similarly, the GBTs currently operating at the WWTP will exceed their useful life near or before the time capacity of those units is reached. As these technologies are well suited for the existing facility configuration at the WWTP and operations staff are comfortable with these technologies, no alternative evaluation was conducted for these process areas. Necessary facility modifications and equipment costs were considered in developing estimates for replacement of these units. These estimates are presented in Chapter 7 – Recommended Alternative.

Modifications to the existing WWTP evaluated in this Chapter were modeled in BioWin using the calibrated model described in Chapter 4 to evaluate the overall impact of each alternative on WWTP operations. Modifications to the WWTP to meet potential future NPDES permit limitations or prohibitions discussed in Chapter 5 were considered in selecting a preferred alternative, although performance and capacity needs have been based on existing permit conditions.

Chapter 7 presents the combined capacity and condition improvement recommendations, including the timing and estimated cost of improvements.

## 6.2 Secondary Treatment

As identified in Chapter 4, the secondary treatment process at the WWTP is expected to require additional capacity by approximately the year 2027. This assessment is based on the assumption that the City continues to operate at higher SRTs than necessary to reliably reduce BOD. This higher SRT operational mode was initiated by the operations team to reduce the risk of discharging ammonia at concentrations that could drive reasonable potential, and therefore trigger ammonia limitations in future NPDES permits issued by Oregon DEQ. This analysis has considered the capacity necessary to treat effluent during the planning period (through 2045) assuming that summer ammonia removal (nitrification) and phosphorous removal may be necessary. In the interim before an additional aeration basin is built, the City will likely need to operate at SRTs less than 5 days during the maximum week condition if growth occurs as predicted. Operating at lower SRTs can allow the City to meet current permit limitations and stretch the secondary treatment capacity until upgrades to meet expected demand can be constructed. This section presents alternatives to address these capacity limitations identified in collaboration with City Public Works and operations staff during a September 2021 workshop. The two alternatives considered to increase secondary capacity are:

1. Expansion of the existing conventional activated sludge process.
2. Intensification of the existing treatment process.

### 6.2.1 Conventional Secondary Expansion

Expansion of the existing secondary treatment process could occur through the addition of an aeration basin or a secondary clarifier. Aeration basin expansion increases capacity by allowing for the same inventory spread over more volume, which results in a lower overall MLSS concentration and lower solids loading rates on the secondary clarifier. Secondary clarifier expansion increases capacity because it spreads the solids loading over more clarifiers, thus decreasing the solids loading rate on each individual clarifier. As described in Chapter 4, by the year 2027 the projected MLSS concentration under MWWWF loading conditions is expected to be approximately 3,900 mg/L which matches the capacity of the existing secondary clarifiers assuming a sludge volume index (SVI) of 150 mL/g.

The construction of a fourth aeration basin would allow for reduction in the MLSS concentration entering the secondary clarifiers, allowing for sludge to settle under future peak flow events. However, the addition of a fourth aeration basin increases the capacity of the secondary process only through approximately the year 2031. At that time, operating conditions in the basins are predicted to result in an MLSS concentration of approximately 3,700 mg/L which matches the capacity of the secondary clarifiers assuming an SVI of 150 mL/g and the higher peak flows associated with the projections for 2031. This predicted MLSS concentration (approaching 4,000 mg/L), suggests adding a fourth secondary clarifier at that time would provide minimal benefit.

A fourth aeration basin may be added immediately adjacent to aeration basin 3, as shown in Figure 6.1. While construction in this area is likely feasible, there are a number of challenges associated with the construction of a new aeration basin in this location. There would only be approximately 15 feet between the outer wall of the new basin and the existing fence line, which is insufficient to accommodate both a sloped cutback and vehicular access. To allow for vehicle access, shoring must be installed near the property boundary to permit excavation and vehicular access around all sides of the new basin. Additionally, the design would need to consider vehicular access around the northeast corner of the new basin to prevent limitations on the

turning radius of vehicles navigating this area. Preliminary assessment indicates that passenger cars and trucks may be accommodated, but larger vehicles may be unable to access the full perimeter of the proposed additional basin. Furthermore, while not located on site, there is a large mound of excavated soil near the property line on the adjacent property (owned by the Oregon Department of Transportation) that must be avoided and protected throughout construction. Lastly, to maintain vehicular access around the basin after backfilling the basin exterior, the surrounding area must be regraded, which will likely require installation of a short retaining wall along the length of the basin at the property boundary.

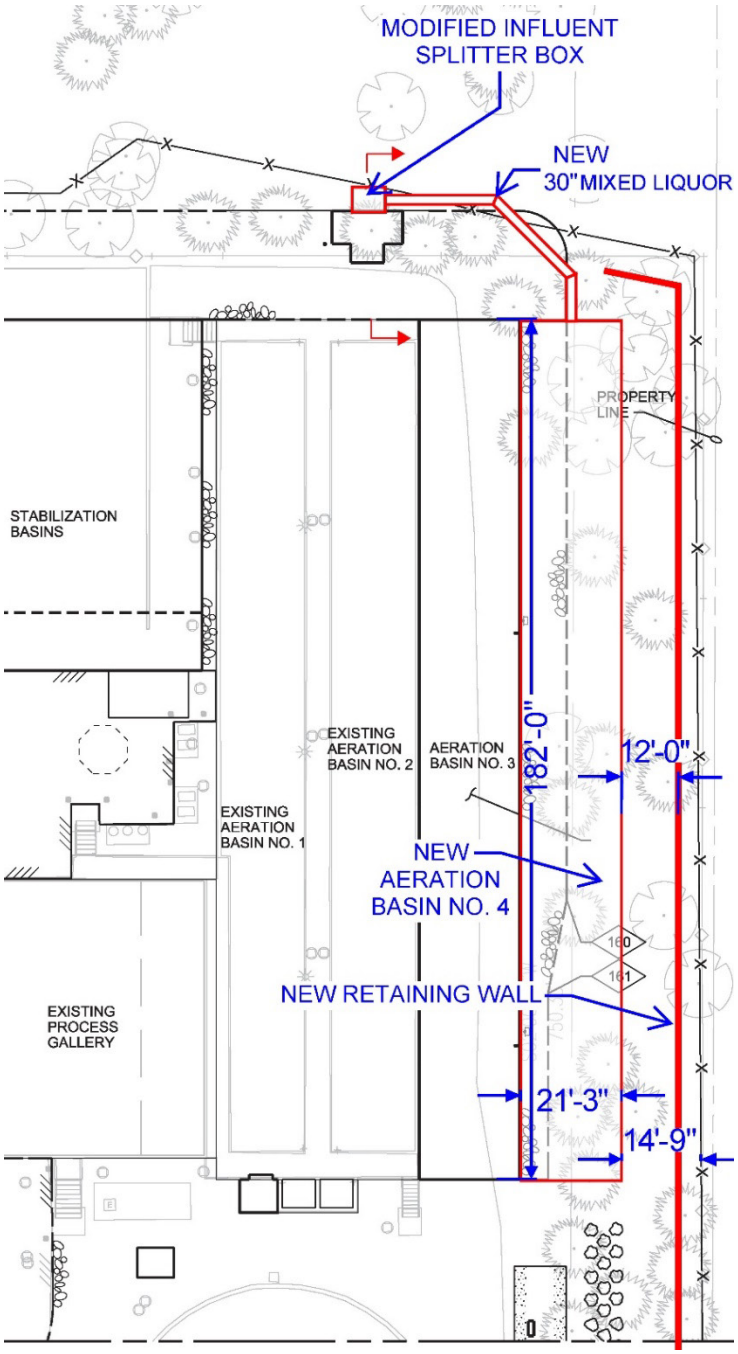



Figure 6.1 Proposed Fourth Aeration Basin Site Plan

In estimating the cost of a new aeration basin, the following assumptions were made:

- The influent splitter box immediately north of the aeration basins can be modified to include a fourth gate to evenly distribute influent between four aeration basins instead of three. A proposed section view of this modification is shown in Figure 6.2.
- The new aeration basin will be constructed identically to the existing aeration basins, with coarse bubble mixing in the anoxic zone, fine bubble aeration diffusers in the aerobic zones, intermediate baffle walls, mixed liquor recycle pumping, basin covers and connections to the odor control system, and identical instrumentation and control systems.
- The retaining wall will be a concrete cantilevered design with a height ranging from 4.5 feet to 12.5 feet. Figure 6.3 depicts the estimated dimensions of the wall and foundation. The wall was assumed to have no additional surge loading except for soil load. If surge is present, the loading and wall design parameters will need to be evaluated by a geotechnical engineer. A 12-foot roadway suitable for small utility trucks is assumed to be constructed around the new aeration basin. These grading and sitework concepts may change based on specific soil conditions, angle of placement, and further geotechnical evaluation during preliminary design.
- The existing blowers will not provide sufficient capacity through the planning period. To meet the 2045 demand, seven 3,000 scfm blowers will be required. This project assumes the addition of one 3,000 scfm blower with the new aeration basin.
- No new stabilization basins will be constructed upstream of the aeration basins.

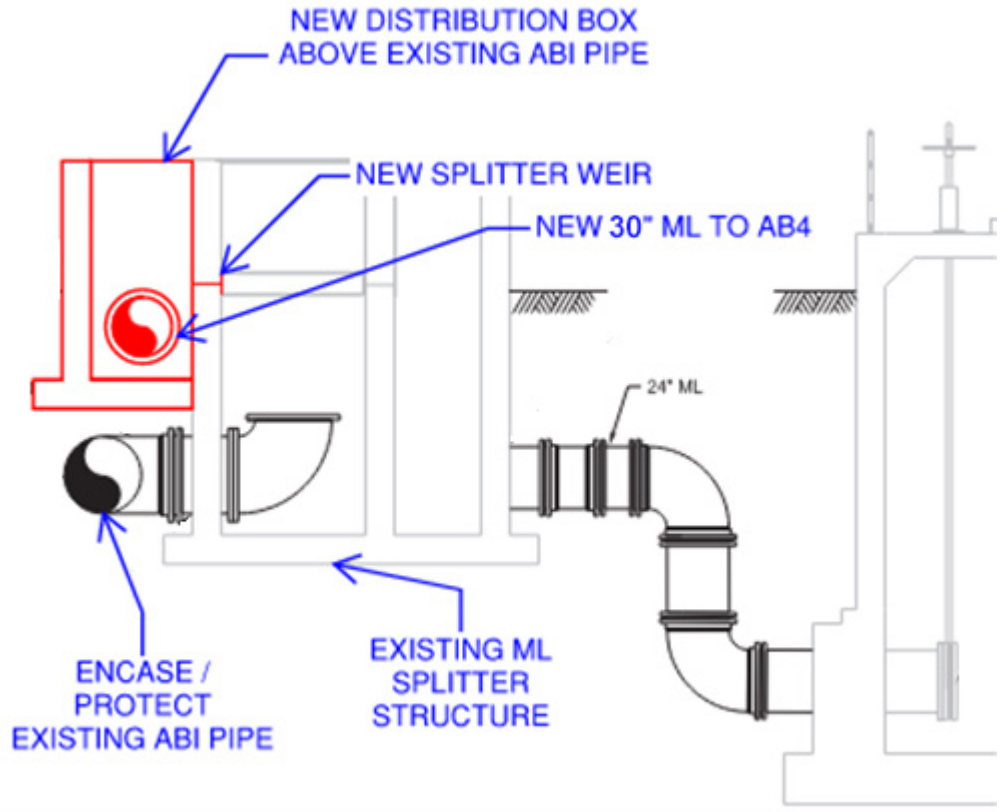
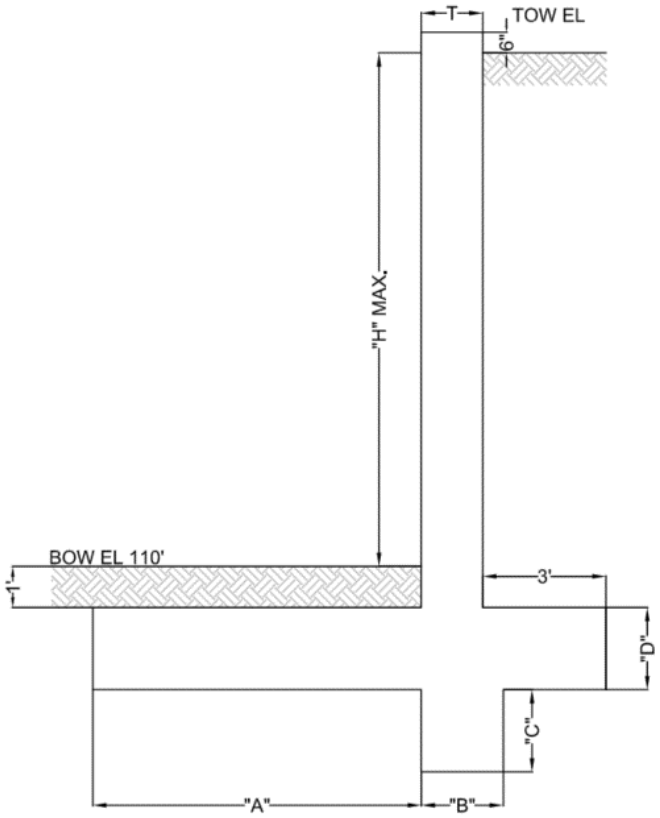



Figure 6.2 Proposed Mixed Liquor Splitter Box Modification (Section)




| TOW EL | H | T | A | B | C | D |
|---|---|---|---|---|---|---|
| 123' | 12.5' | 1.5' | 12' | 2' | 3' | 3' |
| 115' | 4.5' | 1' | 7' | | | 2' |

Figure 6.3 Proposed Retaining Wall Dimension

A cost estimate for a new aeration basin is presented in Table 6.1. Additional detail on the cost estimate is provided in Appendix J.

Table 6.1 New Aeration Basin Opinion of Probable Cost

| Description | Class 5 Estimate (2023) Accuracy Range: -50% to + 100% |
|---|---|
| Excavation, Earthwork and Retaining Wall | $2,317,000 |
| New Concrete Tank and Baffle Walls | $1,168,000 |
| Blower | $208,000 |
| Mechanical | $680,000 |
| Electrical, Instrumentation, and Control Improvements | $600,000 |
| **Total Direct Cost** | **$4,973,000** |
| **Total Estimated Construction Cost(1)** | **$8,178,000** |
| **Total Estimated Project Cost(2)** | **$10,222,000** |

Notes:
(1) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

Although building a fourth aeration basin increases the capacity of the secondary process, it does not provide sufficient capacity to meet the projected 2045 loads and does not provide capacity to meet future summer ammonia and phosphorus limits. As mentioned previously, additional secondary clarifiers are not expected to provide more secondary treatment capacity given the high (~4,000 mg/L) MLSS concentrations predicted to be produced even with a fourth aeration basin in operation. Given the site limitations, construction of a fifth aeration basin is not feasible, thus further conventional expansion cannot provide sufficient secondary capacity through the planning period.

### 6.2.2 Intensification

The second option considered to provide additional secondary capacity is through intensification. Intensification of the existing biological process can be achieved through various means including processes like BioMag or integrated fixed film active sludge (IFAS) that increase inventory through the addition of a ballast or a membrane bioreactor (MBR) which operates at a higher MLSS concentration and replaces secondary clarifiers with membrane separation technology. This section provides an overview of these three different intensification technologies along with more detailed discussion of the selected representative technology.

#### 6.2.2.1 BioMag

BioMag is a process that allows for a higher biomass concentration than conventional suspended growth by physically improving settling velocities with a weighted ballast material. The BioMag® system is patented and offered by Evoqua Water Technologies in the United States.

This process uses very small, dense particles of magnetite introduced into the aeration basins. Magnetite is $Fe_3O_4$, an inert form of iron ore with a specific gravity that is five times that of biological sludge. The biomass attaches to the magnetite in the sludge, which drastically improves the settling velocity of the mixed liquor suspended solids. The increase in settling velocity allows the activated sludge process to be designed with higher MLSS concentrations, resulting in the need for much smaller bioreactors and clarifiers volumes. WAS from the secondary process is pumped, screened and then conveyed to a shear mill and a magnetic recovery drum to recover and reuse the magnetite. A sample process schematic is shown in Figure 6.4.

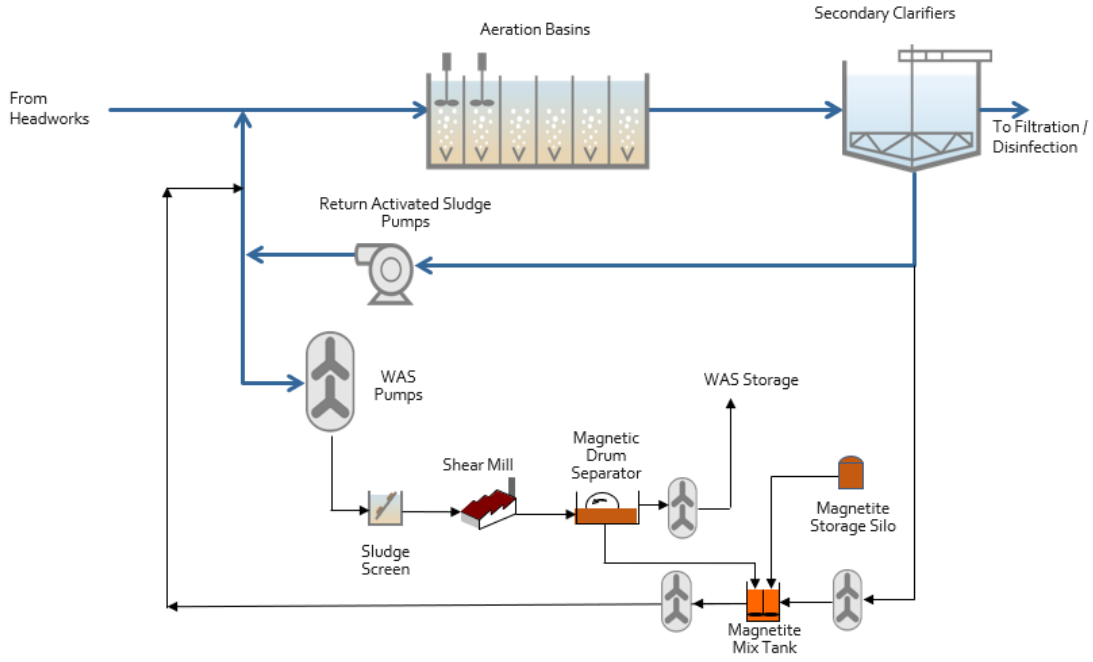



Figure 6.4 Sample BioMag® System Schematic

### 6.2.2.2 IFAS

The IFAS process is another variation of an intensification process that allows for a higher biomass concentration than a conventional suspended growth culture.

Intensification is accomplished by adding media (e.g., pieces of plastic media, ropes, or sponges) to the aeration tank to provide "fixed film" type surfaces on which bacteria can attach and grow with the intent of increasing the overall biomass inventory in the aeration tank than would typically be sustainable in a conventional activated sludge suspended growth process. Most IFAS media systems are proprietary, but there are many suppliers allowing competitive selection of IFAS illustrated in the examples presented in Table 6.2 and Figure 6.5. To avoid mounding of media at the end of the aeration basins, the design needs to maintain an adequate velocity through the basin. In addition to media screens, further modifications to the basin to allow for longitudinal flow may be required.

Table 6.2 Suppliers of IFAS Systems Nitrogen Removal Alternative Evaluation, City of Porterville

| Free (Dynamic) Media | | Fixed Media (Ropes, Nets, or Sheets) | |
|---|---|---|---|
| Company | Media | Company | Media |
| M2T Technologies | Linpor™ | Ringlace Products Inc. | Ringlace™ |
| AnoxKaldnes | Kaldnes™ | Entex Technologies Inc. | BioWeb™ |
| Siemens/US Filter | Agar™ | Brentwood Industries | AccuWeb™ |
| Infilco Degrement Inc. | Hydroxyl™ | GLV/Dorr-Oliver/Eimco | Cleartec™ |
| Entex Technologies | BioPortz™ | BioProcess Technologies Ltd. | Looped Cored Media (LCM™) |

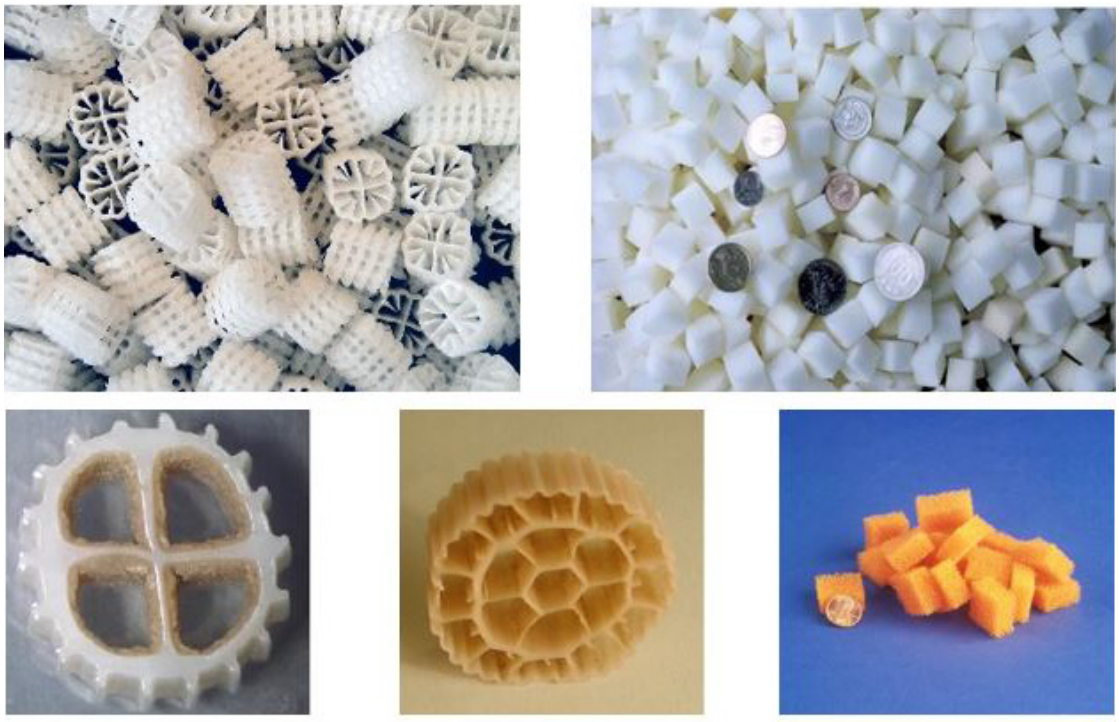


Figure 6.5 Examples of "Wagon Wheel" and Sponge Media Used in an IFAS Technology

### 6.2.2.3 MBR

MBRs are a combination of activated sludge reactors and membrane facilities. Membrane systems are pressure driven solids separation processes, which use membranes with extremely small pore spaces to remove pollutants. Typically, a vacuum is applied to a header pipe connected to the membranes, which draws the treated effluent through the membranes and into the pump. These systems can be used to replace clarifiers and filtration in the activated sludge process. Without the limitations set by solids flux in secondary clarification, the mixed liquor can be more concentrated (up to 10,000 mg/L) than with conventional activated sludge, which reduces the size of the activated sludge process. MBRs produce a high-quality effluent that is superior to the effluent from both final clarification and tertiary filtration. A sample process schematic is shown in Figure 6.6.

Due to the small pore size of the membrane, the influent will need to pass through fine screens (one millimeter opening) prior to the aeration tanks. Membrane systems typically have a higher operation and maintenance cost than a traditional activated sludge system due to higher power requirements (from the higher aeration and pumping demands), the higher chemical costs (due to the need for periodic membrane cleanings), and the need for periodic membrane replacement (every six to ten years).

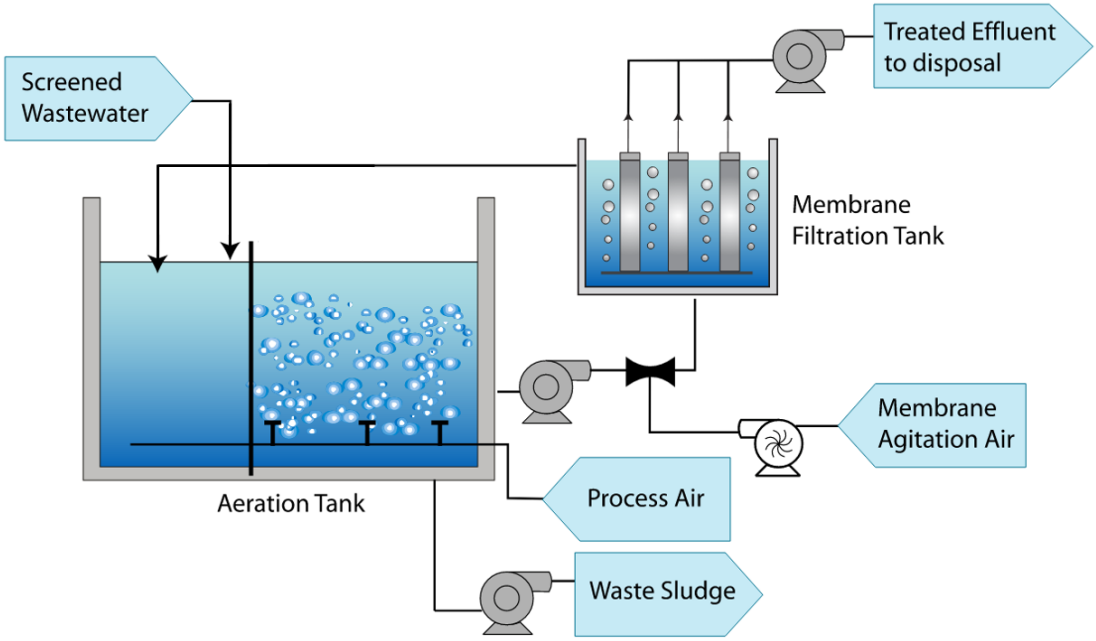



Figure 6.6 MBR Schematic

### 6.2.2.4 Selected Intensification Alternative

An initial evaluation of these three alternative technologies suggests that even with a fourth aeration basin, and secondary clarifier IFAS and BioMag will not be able to provide sufficient capacity for the design year flows and loads and future permit requirements for summer nitrification and phosphorus removal. With a fourth aeration basin, the MBR process will be able to provide sufficient capacity. Additionally, to produce a filterable floc, the MBR process will need to nitrify year-round and thus can meet the anticipated future requirements for summer

nitrification. Future summer phosphorus limits can be met with the MBR by the addition of coagulants such as alum to the aeration basin.

In addition to capacity considerations, the implications of the intensification technologies on the solids processing were also compared. While the IFAS and MBR technologies are anticipated to have little change on the solids process, the potential for magnetite to be present in the waste activated sludge from a BioMag process needs to be considered. The BioMag vendor was contacted and reports that no BioMag facilities exist that process undigested solids in a thermal dryer, and thus the fate of the iron in the sludge is unclear. For coal processing facility applications, once iron concentrations reach approximately 5 percent in the dried solids, the iron can oxidize, reheat and smolder. Additionally, the presence of iron in the sludge will likely increase the wear on pumps and other mechanical equipment used for processing solids, including the dryer.

Table 6.3 summarizes the comparison of the three considered intensification technologies. Given uncertainty with magnetite solids impacts on the drying process, and since the IFAS and BioMag processes are not anticipated to provide sufficient capacity to treat the projected 2045 flows and loads while providing for summer nitriifcaiton and phosphorus removal, the MBR process was selected. Identifying the MBR process in the CIP does not preclude the City from revisiting intensification options (including BioMag) prior to commencing preliminary design.

Table 6.3 Comparison of Intensification Technologies

| | BioMag | IFAS | MBR |
|---|---|---|---|
| Additional facilities required. | • Magnetite separator.<br>• 4th aeration basin.<br>• 4th secondary clarifier.<br>• Additional blower capacity. | • Significant basin modifications.<br>• 4th aeration basin.<br>• 4th secondary clarifier.<br>• Additional blower capacity. | • Fine screens.<br>• 4th aeration basin.<br>• Membrane tanks.<br>• Additional blower capacity. |
| Provides sufficient capacity for anticipated 2045 loads with summer nitrification and phosphorus removal. | • Almost | • No | • Yes |
| Anticipated interactions with the solids processing system. | • Yes: Iron concentrations in the biosolids exceeding 5% could cause smoldering. | • No | • No |

The calibrated BioWin model was used to evaluate how MBRs could expand the capacity of the existing plant. Due to the relatively uniform solids concentration in the aeration basins and the RAS, the MBR basins would operate in a plug flow mode as opposed to the solids contact mode used by the existing aeration basins. The existing solids contact tanks could serve as unaerated selectors for the process, allowing for alkalinity to be recovered through denitrification. With this operational configuration, four aeration basins and five membrane tanks will be required to provide capacity for the 2045 flows and loads. Since the secondary clarifiers will no longer be required, the five new membrane tanks could be constructed over one of the exiting secondary clarifiers as is shown in Figure 6.7. New fine screening will be required to protect the membrane units and could be located between the existing Dewatering/Drying Building and the stabilization basins.

In addition, blower capacity will need to be expanded to meet projected 2045 loads. To provide the aeration air required for the 2045 loads, a seventh blower will need to be provided at 3,000 scfm as discussed in section 6.2.1. The expected location of the seventh blower is shown in Figure 6.8. The seventh blower is assumed to be added when the new aeration basin is constructed. The existing six 1,700 scfm blowers would also need to be replaced with 3,500 scfm blowers to provide the predicted aeration capacity required. This is anticipated to occur in a phased manner over the planning period.

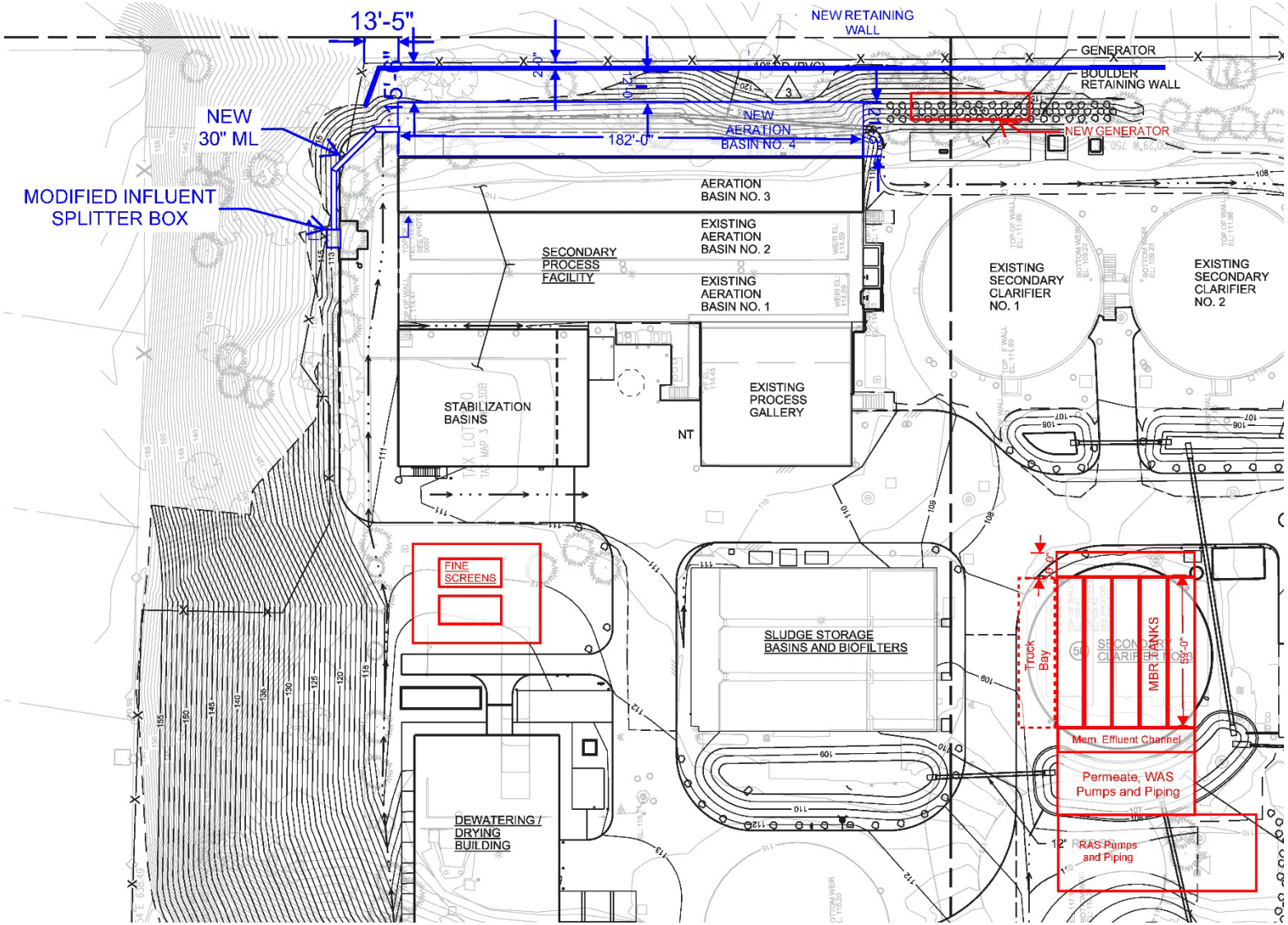



Figure 6.7 Potential MBR and Fine Screen Facility Site Plan

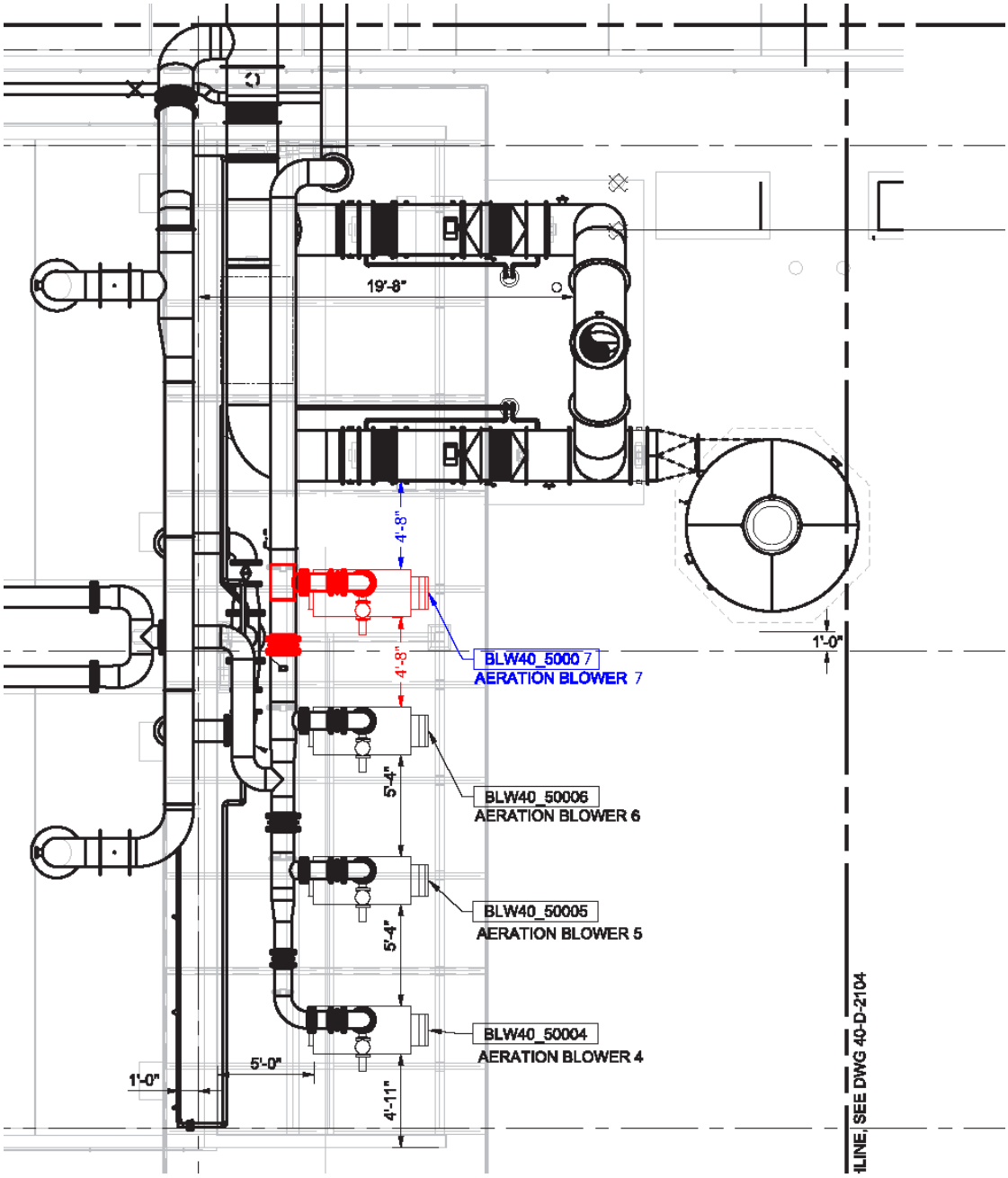



Figure 6.8 Proposed Modifications to Blower Canopy

Planning level costs were developed for this MBR approach as presented in Table 6.4. Additional detail on the cost estimate is provided in Appendix J. Given site limitations and uncertainty with the compatibility of magnetite from the BioMag process with current solids handling practices, the MBR intensification alternative was selected to provide necessary secondary treatment capacity to address predicted loads through the year 2045.

Table 6.4 MBR Opinion of Probable Cost

| Description | Class 5 Cost Estimate (2023) Accuracy Range: -50% to + 100% |
|---|---|
| Site Work + Yard Piping + Stormwater Infrastructure | $4,095,000 |
| Fine Screens | $3,339,000 |
| Fourth Aeration Basin + Retaining Wall + Blower(1) | $4,973,000 |
| 6 x 3500 scfm Blowers | $1,250,000 |
| MBR Tank, RAS/WAS/Permeate Pumping | $17,492,000 |
| Electrical Upgrade | $4,950,000 |
| Electrical, Instrumentation, and Control Improvements | $7,875,499 |
| **Total Direct Cost** | $43,975,000 |
| **Total Estimated Construction Cost(2)** | $72,317,000 |
| **Total Estimated Project Cost(3)** | $90,396,000 |

Notes:
(1) See Table 6.1 for additional details.
(2) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(3) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

### 6.2.3 Secondary Expansion Phasing

MBRs typically have a higher operation and maintenance cost than conventional treatment due to the need to periodically replace the membranes, the chemicals required for the membrane cleaning, the increased pumping requirement for the RAS and permeate, and for the increased aeration energy required to scour the membranes. Due to these higher operation and maintenance costs, it is in the City's best interest to phase intensification of the secondary treatment process. The secondary process capacity expansion could be phased as follows:

- Construct aeration basin 4 (around the year 2027): Build the fourth aeration basin along with the addition of the seventh blower.
- MBR Phase 1 (around the year 2031): Build the RAS, WAS and permeate pumping and blower building along with five MBR tanks in the location of one of the existing secondary clarifiers. For this initial phase, add membranes to only three of the membrane tanks. Build the fine screening and replace three of the existing 1,700 scfm blowers with 3,500 scfm blowers. Two aeration basin and one solids contact tank will initially be operated with three of the MBR tanks. To treat the flow from the two aeration basins directed towards the membrane tanks, five membrane cassettes will be added to three of the membrane tanks (a total of 15 membrane cassettes). The two existing aeration basins and two secondary clarifiers will continue to provide conventional treatment.
- MBR Phase 2 (around the year 2038): Three total aeration basins and one solids contact tank will be operated with three MBR tanks. To treat the flow from the three aeration

basins directed towards the membrane tanks, one additional membrane cassettes will be added to each of the three membrane tanks (three additional membrane cassettes, bringing the total installed to 12). Additionally, two of the existing 1,700 scfm blowers will be replaced with 3,500 scfm blowers. The remaining solids contact tank, one existing aeration basin and two secondary clarifiers will continue to provide conventional treatment.

MBR Phase 3 (around the year 2043): All the aeration basins and solids contact tanks will be operated with five MBR tanks. To treat the flow from the four aeration basins six membrane cassettes will be added to the fourth membrane tank (bringing the total one additional membrane cassette will be added to the three MBR tanks with membranes and seven cassettes will be added to the two new MBR tanks (bringing the total number of installed cassettes to 26). Additionally, the one remaining 1,700 scfm blowers will be replaced with a 3,500 scfm blower.

The phased approach to intensification with MBR technology positions the City to address needs beyond projected 2045 loading, or if limitations on effluent discharges to the Willamette River become more stringent. Both solids contact basins could be operated as external selector zones, and the MLSS from all four of the aeration basins could be routed to the five MBR tanks.

The final phase of the MBR expansion is as large as it is primarily due to the elimination of the CAS side of the process. For MBR Phases 1 and 2, the MBR process is only treating approximately 50 percent of the peak flow with the rest of the peak flow being handled by the CAS side of the process. Once the CAS side is eliminated, additional membrane capacity is required to handle this additional peak flow. In addition, with this alternative, Jacobs identified hydraulic limitations that limit the peak RAS flow to only 26.72 mgd (*Hydraulic Analysis* TM, August 31, 2023, Jacobs). According to the Jacobs *Hydraulic Analysis* TM (Appendix H), this 26.72 mgd RAS flow can be accommodated at the WWTP with "moderate" upgrades to the existing stabilization basin/splitter structure, aeration basins, and yard piping. Jacobs also notes that RAS flow of 70.4 mgd (4 times PHF) can be accommodated at the WWTP with the addition of a lift station, which would require significantly raising the aeration basins and associated stabilization basin/splitter structure, and significantly upsizing yard piping. Additional pumping and upsizing of yard piping is not desirable, thus options for configuring secondary treatment upgrades were assessed that would limit RAS flow to 26.72 mgd.

Even at this "limited" future RAS flow, the projected solids mass flux on the membrane tanks controls capacity requiring even more membrane surface area. If peak flows to the plant could be equalized (or reduced) so that the 2045 PHF would equal the projected 2045 PDF, the solids flux limitations would likely be eliminated and the entire system could be smaller, potentially saving approximately $10,000,000 in project cost. If the final phase of the MBR process could also be eliminated due to lower growth projections and peak flow reductions, the City could potentially save approximately $17,000,000 i in total project costs for the MBR process as presented in Table 6.3 which includes three phases. These savings could be realized from building fewer membrane tanks, constructing smaller RAS/WAS and blower buildings and installing fewer membranes. It does not include potential savings from smaller yard piping between the existing headworks, future fine screen facilities, stabilization basins, and aeration basins as well as reducing the diameter of required RAS piping.

It is advised the City consider opportunities for attenuation of peak flows within their collection system with the goal of reducing future PHF. This may best be achieved through exercise of the City's collection system hydraulic model. Confirming estimates of wastewater flow contributions from currently undeveloped lands within the service area during the planning period is also advised. As the 2014 Collection System Master Plan established the unit flow factors for future growth within the service area, these have a direct impact on the predicted flow anticipated to be received at the WWTP. It is expected the City will be updating their Collection System Master Plan within the next few years. This offers an opportunity to both confirm expected wastewater generation and consider possible attenuation of peak flows within the collection system.

## 6.3 Tertiary Treatment

During the dry weather season, the City's NPDES permit limits monthly effluent TSS concentrations to 10 mg/L. The City's agreement with their DBO firm requires that effluent TSS concentrations need to be half of the NPDES permit requirement.

With the installation of stainless-steel media in 2019 to replace the old cloth media in the disc filters, the rated capacity of the filters was reduced from a peak flow of six mgd per filter bank to only 3.75 mgd. However, operations staff has stated that the stainless-steel media is much more resistant to wear and failure, and that identifying points where the media has failed is very easy. Despite this seeming operational and maintenance advantage, additional capacity is expected to be needed around the year 2032 to provide full treatment of the MMDWF with one disc filter out of service or in backwash mode.

As discussed in the previous section, by the year 2031 a portion of the treatment plant flow will be receiving membrane treatment thus alleviating the capacity limitations on the tertiary filtration process. Given the expected timing of the membrane intensification process, expansion of the existing tertiary filtration process is not recommended.

## 6.4 Effluent Cooling – Cooling Towers and Other Considerations

As summarized in Chapters 4 and 5, the cooling tower technology's ability to cool the water is dependent on the wet bulb temperature. For wet bulb temperatures less than or equal to the design of 68F, the current system can provide cooling sufficient to meet the current thermal load for maximum weekly summertime flows of 3.7 mgd or less. If instead the maximum wet bulb temperatures are more like the maximum predictions from the ASHRAE handbook of 73.1F, the current system can only provide cooling sufficient to meet the current thermal load limit for maximum weekly summertime flows of approximately 1.8 mgd or less.

Since the maximum weekly summer flows between the low flow months of July and August are anticipated to reach 4.1 mgd by the year 2045, additional strategies would be required to comply with this limit by the design year. Thes strategies could include:

- **Reuse**: The City currently has effluent filters and plans for a future MBR facility which will allow for the production of Class A reclaimed water. For wet bulb temperatures equal to the design wet bulb temperature of 68F, the City would need to provide reuse for approximately 0.4 mgd of maximum weekly summertime flow during the months of July and August under projected 2045 effluent flow conditions. If instead the wet bulb temperature was as high as 73.1F, the City would need to provide approximately 2.3 mgd of reuse to comply with the effluent thermal load limits.

- **Shading**: Several utilities in Oregon, such as Clean Water Services and the City of Medford, have a shade program in place to help them comply with their effluent thermal load limit. Through these programs, the utilities plant trees along rivers to provide natural shading and thermal load credits which can be used to meet their effluent limits.
- **Chillers**: A chiller with a capacity of 700 tons downstream of the existing cooling tower would provide the ability to cool the water below the wet bulb temperature and allow the City to comply with their effluent thermal load limit during all but the most extreme heat conditions under projected 2045 effluent flow conditions.

Given the impact of the actual wet bulb temperature on the maximum allowable weekly flows, careful attention should be paid to the flows and actual wet bulb temperatures during these months. As flows increase, the City can determine if strategies such as reuse and shading can provide sufficient cooling to meet the anticipated effluent thermal load limit or if energy intensive technologies such as chillers would be required.

Chillers are a technology deployed by industries and municipalities throughout North America, including at wastewater treatment plants. They are considered a proven, reliable technology for cooling. Chillers require power input to further cool effluent as compared to a more passive process like evaporative cooling employed by cooling towers. As such operating costs (electricity) are higher. Considering projected 2045 effluent flows, a chiller unit sufficient to provide confidence that the City can avoid exceedances of the ETL limit for all conditions except for the most extreme 1 in 100-year anticipated heat wave, may cost approximately $3.5-4.5 million to design, procure and install. Given the availability of options including effluent reuse and shading, it is understood the City wishes to avoid installing chillers if at all possible. The City intends to further investigate these potential options and monitor wet bulb temperature. If reuse or shading is not a viable, or more cost-effective option, the City may need to install chillers to address effluent cooling needs.

In addition to the cooling capacity limits dictated by the wet bulb temperature, the existing effluent cooling system is expected to run out of hydraulic capacity by 2036. However, prior planning anticipated this need and space for an additional cooling tower unit (with similar size and design parameters as the existing units) exists on-site and can be added to ensure there is sufficient capacity to cool effluent through the end of the planning period. There is adequate space to install a third unit, including a flanged connection to facilitate installation, as shown in Figure 6.9. Planning level costs for an additional cooling tower are presented in Table 6.5. The City should begin to track wet bulb temperatures and as flows increase determine whether a third cooling tower will provide cost effective cooling. Additional detail on the cost estimate is provided in Appendix J.

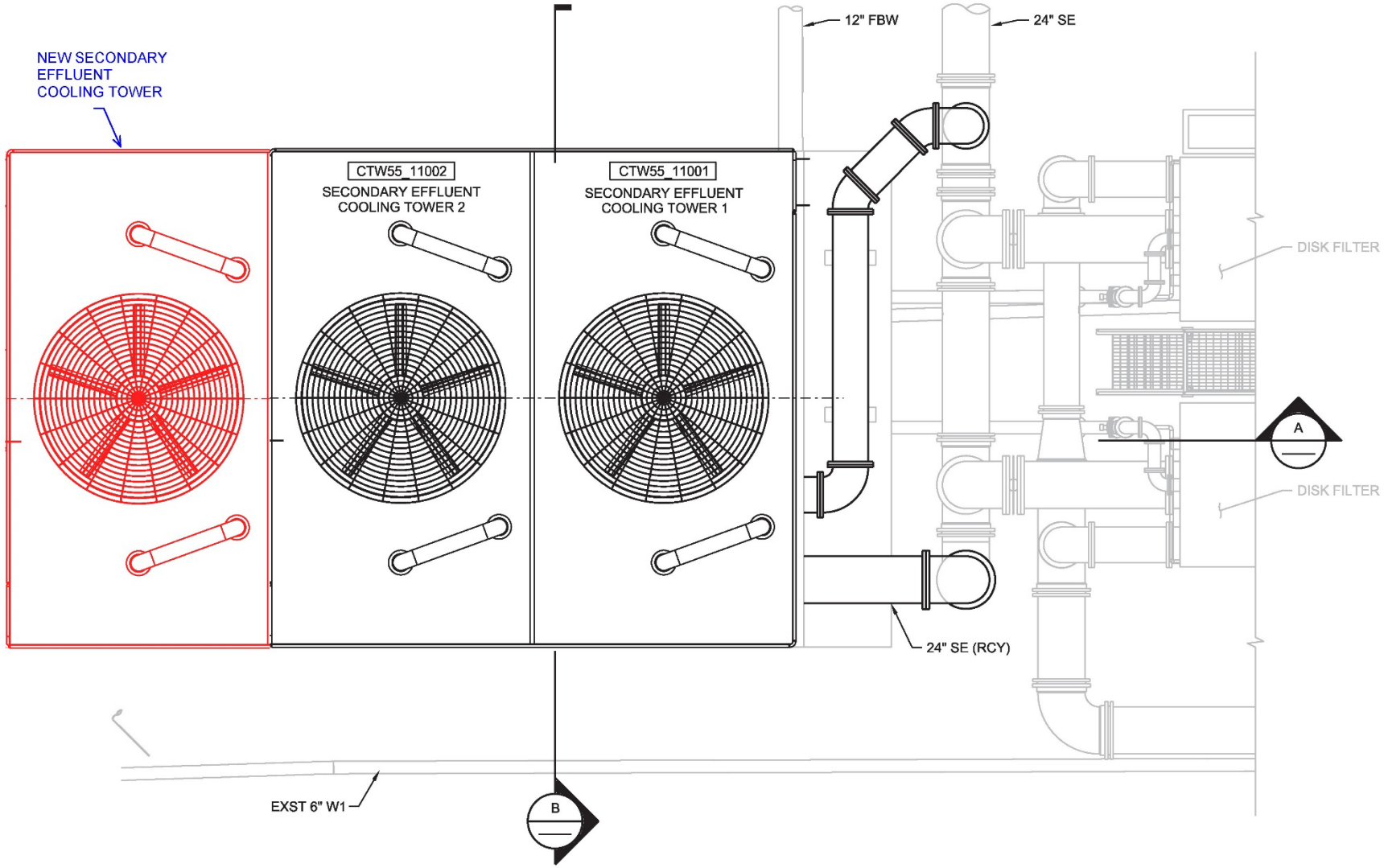



Figure 6.9 Proposed Cooling Tower Layout

Table 6.5 New Cooling Tower Opinion of Probable Cost

| Description | Class 5 Cost Estimate (2023) Accuracy Range: -50% to + 100% |
|---|---|
| Demolition | - |
| Mechanical | $250,000 |
| Electrical, Instrumentation, and Control Improvements | $62,000 |
| **Total Direct Cost** | **$312,000** |
| **Total Estimated Construction Cost(1)** | **$514,000** |
| **Total Estimated Project Cost(2)** | **$642,000** |

Notes:
(1) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

## 6.5 Solids Handling

The City has committed to producing United States Environmental Protection Agency Class A biosolids at the facility using a wastewater solids dryer. The capacity evaluation of the existing dryer unit presented in Chapter 4 concluded the nameplate capacity of the dryer unit will provide solids drying capacity through 2045 with the following assumptions:

- The secondary treatment process at the City's WWTP consistently produces a sludge of appropriate quality to allow the existing dryer unit to perform optimally (consistent with expected solids loading rates and sludge characteristics stipulated by the manufacturer of the unit).
- The dewatering centrifuges produce a sludge feed to the dryer greater than 18 percent solids.
- Dewatering and drying operate 24 hours per day, 7 days per week, in 2045.

The WWTP secondary treatment and sludge dewatering processes have not been performing consistently since the 2019 thermal event due to several factors detailed further in this section. It is difficult to assess dryer performance if secondary treatment has not been operating to meet the assumptions summarized above. More detail on secondary treatment facilities and capacity is provided in Chapter 4.

### 6.5.1 Dewatering

Centrifuges dewater thickened WAS prior to solids drying. The capacity assessment findings presented in Chapter 4 concluded that the centrifuges have sufficient capacity with all units in operation performing within stated minimum performance criteria. These criteria include:

- The maximum solids loading rate to a single centrifuge is 1,000 pounds total solids (TS) per hour, per the manufacturer's design criteria.
- The maximum hydraulic loading rate to a single centrifuge is 50 gpm, based on discussions with the City.
- The centrifuges achieve a solids capture of approximately 90 percent and dewater solids to between 18 and 20 percent TS.
- The centrifuges run 24 hours per day, seven days per week.
- The centrifuges must be capable of dewatering the maximum week solids load with one unit out of service.

Based on these criteria, the City has sufficient dewatering capacity through the year 2045, with one unit out of service. Chapter 4 documents the capacity of the existing units but that evaluation did not consider equipment age and expected service life. The centrifuges were refurbished in 2021 but were installed when the plant underwent major upgrades in 2014. In 2045, the existing units will have been in service for at least 30 years. The City should plan for their replacement. At the time of replacement, the City should evaluate the capacity of those units based on updated solids projections.

Further, performance issues with the existing centrifuges may be the primary driver of equipment replacement timing. Since the refurbishment in 2021, the units have struggled to achieve a solids capture rate of 90 percent or achieve consistent performance, which inhibits continuous operation of the dryer. Study of the liquid and solid stream processes is advised to identify opportunities to optimize centrifuge performance. This may allow the City to extend the time before replacement with new (potentially higher capacity) units will be required. Alternatively, the City may need to consider replacement of the units with similar or higher capacity units sooner.

The secondary process was modified in 2020 and has experienced extended periods during which mixed liquor concentrations have been elevated above typical ranges for conventional activated sludge or extended aeration processes. Given these complications with secondary process operation and performance issues with the centrifuges, it is advised the City study the secondary treatment and dewatering processes to confirm that the assumptions and conclusions regarding centrifuge capacity may be relied upon. Without uninterrupted operation of these processes over an extended time to allow analysis of performance data, it is difficult to eliminate variables contributing to performance of the solids handling equipment (both centrifuges and dryer).

Therefore, Carollo recommends the City consider:

- Renting portable dewatering equipment (belt filter press [BFP] or centrifuges) and begin processing WAS from the secondary process to reduce MLSS to more typical concentrations.
- Experimenting with different polymer chemicals or removing polymer addition altogether from the secondary process to evaluate effect on centrifuge performance.
- Undertaking polymer chemical experimentation would be one element of a study of the solids treatment, dewatering and solids drying processes described in Section 6.5.3.

Until the performance of the centrifuge units can be analyzed using data collected over a period of several months of continuous, reliable operation, the limitations of the existing units remains unclear. Therefore, this alternatives analysis does not consider dewatering technology options. A belt filter press or screw press could also be used for solids dewatering. Both of those technologies require significantly more footprint, process fewer solids given a comparable footprint, and would likely not achieve the same cake solids concentrations as the centrifuges. However, they would require less electrical power to operate and may save money on polymer consumption. For budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is provided in Appendix K. Timing of that equipment replacement will be dependent upon performance of the existing units. Replacement sizing will be based on an assessment of capacity needs over the life of the new centrifuge units.

### 6.5.2 Solids Dryer

The existing sludge dryer, installed as part of the 2014 WWTP improvements project, is a paddle dryer system manufactured by ThermaFlite. Thermaflite filed for Chapter 7 bankruptcy in 2016 and its patents were subsequently sold to BCR, Inc. (BCR). In April 2019, the dryer experienced a fire that caused extensive damage to the equipment. A subsequent condition assessment in 2019 identified the dryer as being in extremely poor condition. Extensive rehabilitation was performed on the unit in 2020 and the dryer was returned to service in February 2021. After approximately 7 months of service, the dryer failed again due to a leaking rotary joint and a damaged seal that allowed air into the dryer. Operations continues to work with BCR to replace parts, revise the design, and troubleshoot operations, but the dryer continues to malfunction. When the dryer was not functional, raw dewatered solids were trucked offsite to Coffin Butte Landfill. The dryer has been repaired and is operating satisfactorily as of February 2023.

A potential ongoing issue with the existing paddle dryer is the nature of the solids produced by the secondary treatment system. Aeration systems without primary treatment tend to create a "sticky" sludge, particularly during winter months when an extended solids retention time may be required resulting in an increased "sludge age". Wastewater solids generally experience a glue-like plastic phase in the 55 to 75 percent dry solids range, but secondary solids produced in an extended aeration system have a plastic phase through a larger range of solids content. As a result, the mechanical torque required to transfer solids through rotary equipment like a paddle dryer will be higher than other types of sludges and the dryer likely requires a considerable safety factor to achieve the rated capacity.

It was observed that during a plant upgrade in 2020, during which portions of the secondary process were taken offline, and again during periods when the solids dryer was out of service, solids were retained in the secondary process for a longer period than the design intent of the facility. Retaining solids in the aeration basins resulted in MLSS concentrations as high as the 8,000 to 9,000 mg/L range and SRTs greater than six days. These ranges can be compared to the desired operating conditions of maximum MLSS concentrations ranging from 3000 to 4000 mg/L and SRTs ranging from five to six days.

Whether immediate replacement of the dryer unit is preferred, or it retains significant remaining useful life, the City will eventually need to replace the unit.

Given the City's commitment to solids drying as the preferred process to achieve Class A biosolids, this alternatives evaluation has been prepared focusing on thermal drying options only. The current practice of indirect drying is evaluated as well as direct drying technologies such as belt or drum dryers. Belt and drum dryers have a more robust record of performance at wastewater facilities, thus a switch to either of these technologies would likely result in improved solids drying performance. However, every solids processing technology has pros and cons. Biological, solar, and microwave drying technologies are also available and could be evaluated in the future, although those technologies are less popular at wastewater facilities due to technology maturity and/or footprint considerations.

Solids drying technology has benefits for plants with small footprints and Class A goals, such as the City's WWTP. Presumably, these were the primary reasons for selecting this technology when the plant was upgraded and the current DBO contract was executed. However, solids drying is labor-intensive, involves significant housekeeping, must address hazardous and odorous air conditions, and (most importantly) carries the risk of thermal events such as fires.

These drawbacks can be managed for a successful drying application, but the risk will always be present.

This report evaluated the following alternatives to revise and improve the drying system:

1. Continue operating the existing BCR paddle dryer and defer replacement.
2. Modify the existing Dewatering and Drying Building to accommodate a different solids dryer technology or a redundant dryer.
3. Construct a new dryer building with a different solids dryer technology.

#### 6.5.2.1 Alternative 1 - Continue Operating Existing BCR Paddle Dryer

It may be possible to continue working with BCR to achieve reliable service with the existing dryer. If this alternative is selected, an updated Solids Management Plan could be beneficial. The revised plan could include agreements with nearby municipal wastewater treatment facilities, compost facilities, or other entity that could receive dewatered cake during dryer downtimes. Continuing the current practice of landfilling may be an acceptable option for the short-term but shifts in the regulatory environment may make solids landfilling illegal, similar to the State of California where solids landfilling is currently illegal.

#### 6.5.2.2 Alternative 2 - Modify Existing Dewatering and Solids Dryer Building to Accommodate a Different Solids Dryer Technology or a Redundant Dryer

While the current dryer is out of service, the City wanted to explore other options to increase the reliability or performance of their solids drying operation. Three options are discussed below to reuse or retrofit the existing Dewatering and Solids Dryer Building to support a different solids dryer technology or a redundant dryer.

### *Alternative 2a - Replace Existing Solids Dryer with a Similar Unit from a Different Manufacturer*

It may be possible to replace the existing BCR solids dryer with an equivalent unit from a different manufacturer. Andritz, Haarslev, Komline-Sanderson, and others manufacturer similar indirect-type dryers. An Andritz paddle dryer was used to develop a potential configuration that would fit within the existing Dewatering and Drying Building as shown in Figure 6.10, but other indirect-type dryer manufacturers may also be considered during preliminary design. The replacement unit is expected to have a similar footprint as the existing dryer, but the roof of the building would likely need to be revised to accommodate the increased height of the new unit.

An alternative solids management protocol would be required during construction of this alternative. Like Alternative 1, an updated Solids Management Plan is recommended to temporarily manage dewatered cake while the existing dryer is being replaced.

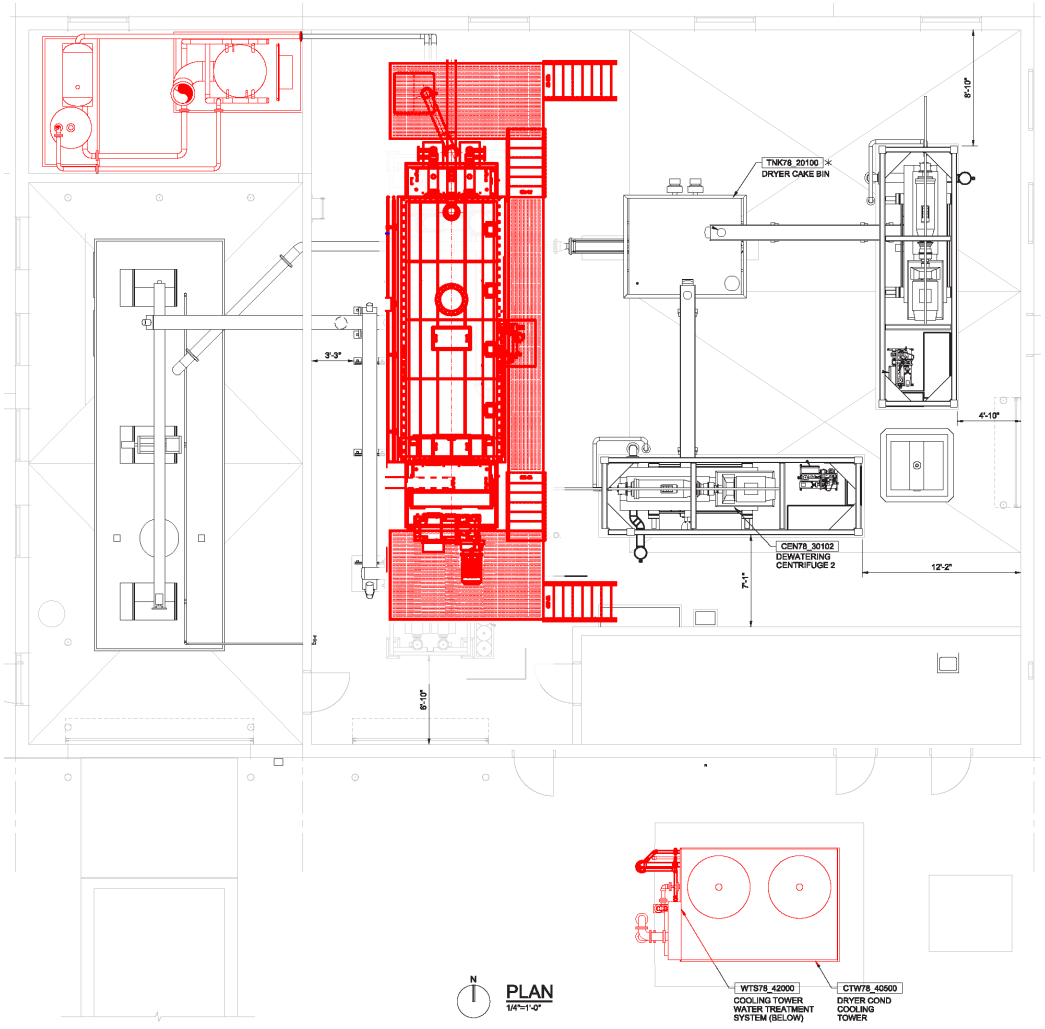



Figure 6.10 Andritz Solids Paddle Dryer Layout in Existing Dewatering and Dryer Building

### *Alternative 2b - Expand Existing Dewatering and Dryer Building to Accommodate a Second Solids Paddle Dryer*

Expanding the existing Dewatering and Dryer Building west would allow a second solids dryer to be installed. The installation of a second solids dryer building would provide redundancy to the drying process, allowing the new unit to act as duty and the current unit to act as standby. Given the relatively small footprint, an indirect-type dryer is likely the best selection for this space, although alternative technologies could also be evaluated.

This alternative would require a retaining wall in the hillside west of the building. The existing Plant Drain Pump Station located southwest of the Dewatering and Dryer Building will also need to be modified or relocated to provide roadway access to the building expansion. However, construction and commissioning of the second solids dryer would not affect current drying operations, which may minimize interruptions to ongoing plant operations if the existing dryer is returned to service before construction of this alternative.

Figure 6.11 shows the approximate building expansion footprint to accommodate the second solids dryer.

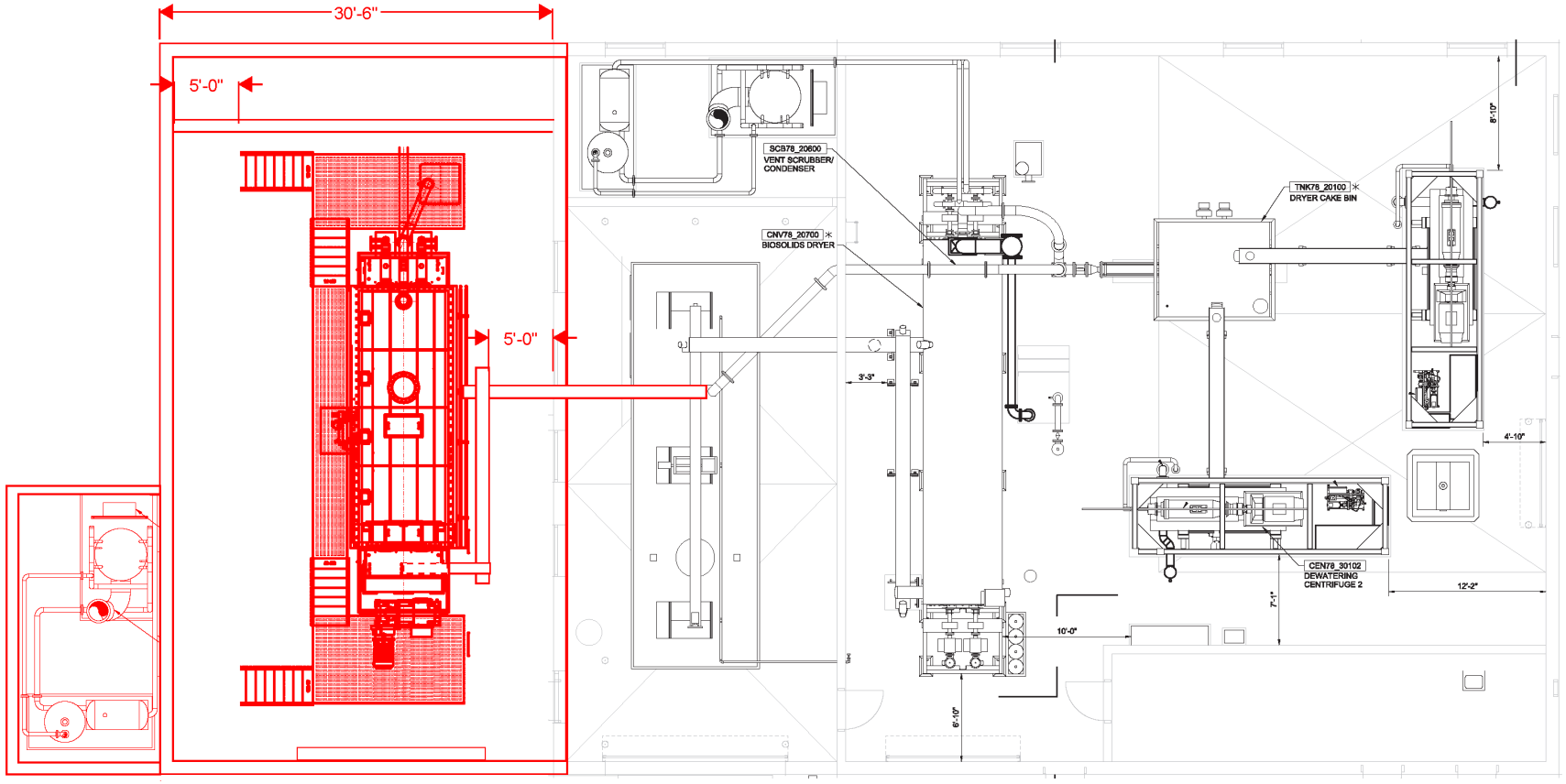



Figure 6.11 Dewatering and Dryer Building Expansion for Redundant Solids Paddle Dryer

### *Alternative 2c - Replace Existing Solids Paddle Dryer with a Different Solids Dryer Technology in the Existing Dewatering and Dryer Building*

Other solids drying technologies have a reliable and proven solids drying track record compared to the current paddle dryer technology, such as drum or belt dryers. Both drum and belt dryers are considered "direct-type" dryers, where evaporation of water occurs by direct contact of solids with a stream of hot air.

For rotary drum dryer systems, the major components are a wet cake bin, recycle bin, mixer, furnace, drying drum, air/solids separator, screen, crusher, cooler, main fan, saturator, and storage silos, although configurations differ depending on the manufacturer. The evaporation process takes place in a horizontally mounted, slowly rotating drying drum. Dried material is conveyed through the drum where the hot air stream comes into direct contact with wet solids, evaporating the water contained in the solids.

For belt dryers, sludge is pumped or otherwise distributed onto a slowly moving horizontal belt enclosed in a housing. Solids move through one or more drying chambers where moisture is evaporated. Significant variations in belt dryer configurations exist, including the use of multiple (stacked) belts, direct or indirect heating, upward or downward airflow, and different distribution systems.

Relative benefits of the different dryer technologies are summarized below:

- Drum Dryer:
  - Produces uniform spherical pellets that can be marketed as a fertilizer. Spherical pellets produced by rotary dryers can be among the most desirable biosolids product achievable.
  - Effective at drying all types of sludges, including sticky sludge that other technologies have trouble drying.
- Belt Dryer:
  - Safest dryer technology due to relative low temperatures used.
    Capable of using low-temperature waste heat to provide drying, if available.

For both technologies, Andritz was used as the basis for the layouts prepared in this document.

The installation of a different solids dryer system in the existing building will require a major expansion of the building as well as relocation of the existing centrifuge equipment to accommodate the larger footprints of the drum or belt dryer systems. Figure 6.12 shows the required building expansion to accommodate a drum dryer system. A drum dryer was used for this alternative because it has the largest footprint. A belt dryer system has a comparable or slightly smaller footprint. Similar to Alternative 1, it is recommended to develop a Solids Management Plan to temporarily manage dewatered cake while the existing building is being modified.

Carollo recommends additional evaluation before the final selection, design, and installation of replacement dryer equipment. A new dryer unit is expected to be a significant improvement over the current paddle dryer installation. Regardless of the final selection, however, the additional risk/operational effort associated with sludge drying will be present.

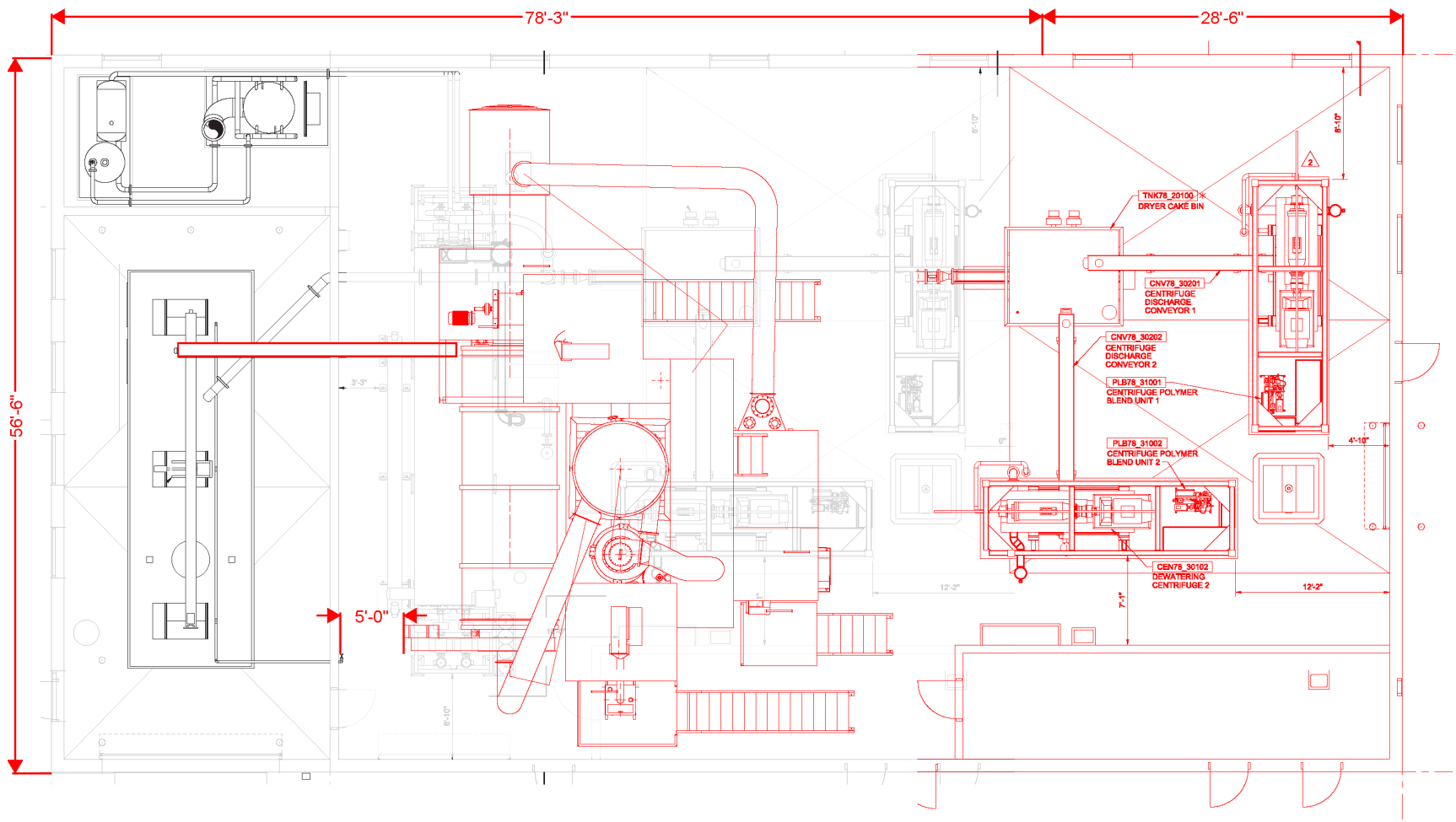



Figure 6.12 Dewatering and Dryer Building Modification for Drum Dryer System

### *Total Estimated Project Cost for Alternative 2*

Cost estimates for all three options in Alternative 2 are shown in Table 6.6.

Table 6.6 Opinion of Probable Costs for Alternatives 2a, 2b, and 2c

| Description | Class 5 Cost Estimate (2023) Accuracy Range: -50% to + 100% | | |
|---|---|---|---|
| | Alternative 2a | Alternative 2b | Alternative 2c |
| Demolition | $53,000 | - | $93,000 |
| Temporary Sludge Dewatering | - | - | $1,020,000 |
| Civil Site Improvements | - | $195,000 | $27,000 |
| Process / Mechanical Improvements | $6,097,000 | $6,625,000 | $8,269,000 |
| Building Improvements | $149,000 | $845,000 | $2,720,000 |
| Electrical, Instrumentation and Control Improvements | $218,000 | $669,000 | $603,000 |
| **Total Direct Cost** | **$6,517,000** | **$8,333,000** | **$12,731,000** |
| **Total Estimated Construction Cost(1)** | **$10,717,000** | **$13,704,000** | **$20,936,000** |
| **Total Estimated Project Cost(2)** | **$13,396,000** | **$17,130,000** | **$26,170,000** |

Notes:
(1) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

*Alternative 3 - Construct New Dryer Building with a Different Solids Dryer Technology*

This alternative includes constructing a new solids dryer building to accommodate a second solids dryer and truck loadout facility. Figure 6.13 provides one feasible location south of the headworks for the new building. Constructing a new solids dryer building would facilitate installation of a direct-type solids dryer like a drum or belt technology, which may provide operational and performance benefits compared to the existing technology. This alternative would also allow continued use of the existing dryer as a potential standby unit.

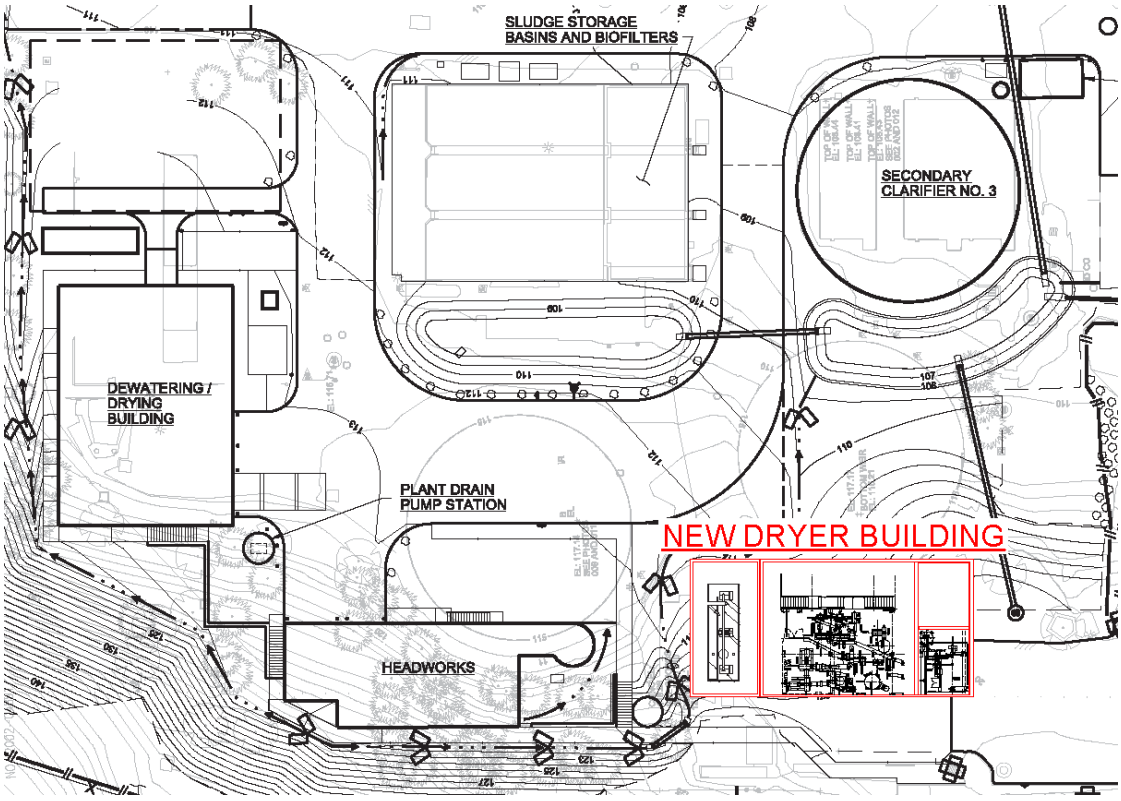



Figure 6.13 Proposed New Solids Dryer Site Plan

The following assumptions were made for this alternative's cost estimate:

- The new dryer building will be smaller than the existing Dewatering and Dryer Building because it does not need to house centrifuges. However, it will need to include a new electrical room and truck loadout facility.
- Addition of a new dryer will not require significant plant electrical infrastructure upgrades.
- Additional cake pumps will be installed in the existing Dewatering and Dryer Building to convey cake to the new dryer building.

The total project cost estimate for a new dryer building and associated cake pumps, conveyors, and truck loadout are shown in Table 6.7. Additional detail on the cost estimate is provided in Appendix J.

Table 6.7 Opinion of Probable Cost for Alternative 3

| Description | Class 5 Cost Estimate (2023) Accuracy Range:-50% to + 100% |
|---|---|
| Demolition | - |
| Civil Site Improvements | $398,000 |
| Process / Mechanical Equipment | $10,622,000 |
| New Building | $2,463,000 |
| Electrical, Instrumentation, and Control Improvements | $1,026,000 |
| **Total Direct Cost** | **$14,509,000** |
| **Total Estimated Construction Cost(1)** | **$23,860,000** |
| **Total Estimated Project Cost(2)** | **$29,825,000** |

Notes:
(1) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

### 6.5.3 Solids Drying Alternatives Comparison

As described above, recent reliability issues suggest the dryer may have a limited useful remaining service life. However, the agreement the City has with their DBO contractor, Jacobs, includes clauses (Section 8.3 - Managed Asset Valuations) describing the condition of assets which are to be met at the time of contract expiration or termination. Currently the contract is scheduled to expire September 21, 2026. The agreement includes an option to extend for an additional five years (September 2031).

It is anticipated that some useful life will remain in the existing paddle dryer and associated equipment in 2026. However, by 2031 the dryer will have been in place and operational for over fifteen years. Whether the City elects to simply replace the paddle dryer with a unit of similar size and technology or install different drying technology, it is recommended the planning and design of those upgrades begin in 2029, or sooner if operational concerns arise.

The City has indicated a preference for implementing Alternative 2b - Expand Existing Dewatering and Dryer Building to Accommodate a Second Solids Paddle Dryer. This affords some backup capacity to allow the City to continue delivering Class A solids during periods of downtime due to mechanical failure or to accommodate regular maintenance of one dryer train. Considering issues the City has experienced with the current paddle dryer, it is advised that as the anticipated time for dryer replacement approaches, they revisit the decision to plan around this technology. Advancements in technology occur regularly and equipment may be available which would alter these preliminary recommendations.

Carollo recommends the City undertake a detailed study of the secondary sludge quality, secondary process performance, chemical addition types and locations, and overall solids handling process performance prior to making a final selection of the preferred dryer alternative from the various options (1, 2a, 2b, 2c and 3) presented in this section. For purposes of capital planning, it is assumed the City will implement Alternative 2b (installing a redundant paddle dryer), with a study and confirmation of this selection beginning in 2029.

## 6.6 Fiber Optic Cable Addition

The City desires to establish a direct connection between the City's fiber optics network and the WWTP. This addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the site entrance, where it will then be picked up outside of the WWTP's boundary and tied into the City's fiber optics network. Figure 6.14 provides one potential routing from the Operations Building to the site entrance that would minimize impact to existing yard utilities.

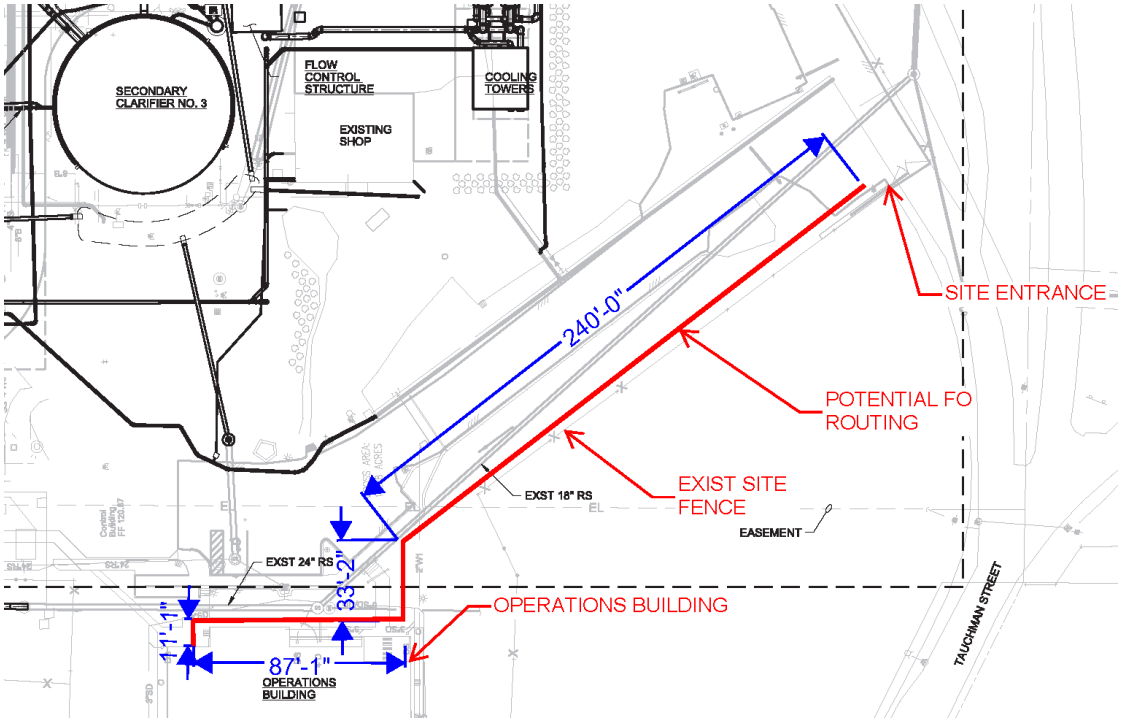



Figure 6.14 Proposed Fiber Optic Cable Addition

A cost estimate for the fiber optics conduit addition and associated costs are shown in Table 6.8. Additional detail on the cost estimate is provided in Appendix J.

Table 6.8 Fiber Optic Cable Addition Opinion of Probable Cost

| Description | Class 5 Cost Estimate (2023) Accuracy Range: -50% to + 100% |
|---|---|
| Trench and Backfill | $11,900 |
| Two Conduits and One FO Cabling | $15,800 |
| **Total Direct Cost** | **$28,000** |
| **Total Estimated Construction Cost(1)** | **$46,000** |
| **Total Estimated Project Cost(2)** | **$60,000** |

Notes:

(1) Assumes 30% Design Contingency, 10% General Conditions, and 15% Contractor Overhead and Profit.
(2) Assumes 25% Engineering, Legal, and Administrative Fees and ENR Construction Cost Index = 13473 (August 2023).

Alternatives recommended for implementation are summarized together with additional WWTP needs (rehabilitation and replacement of existing equipment) in Chapter 7.

Chapter 7

# RECOMMENDED ALTERNATIVE

## 7.1 Introduction

This chapter outlines the recommended alternatives for improvements to the City WWTP. The capacities of the liquid and solids processes for the WWTP were assessed in Chapter 4. Detailed information about the methodology and conclusions of condition assessments and alternatives considered can be found in Chapters 2 and 6 respectively.

## 7.2 Summary

Table 7.1 summarizes the upgrades required through the planning period. As shown in Table 7.1, within the planning period (through 2045) increased capacity will be needed in the secondary treatment process, specifically additional process volume in the form of a new aeration basin as well as aeration blower capacity and intensification utilizing membrane bioreactor technology. Within the next five years, Secondary Clarifiers Number (No.) 1 and No. 2 will require new mechanisms. Table 7.1 also identifies replacement of aging equipment or equipment that has not been performing as desired.

Table 7.1 Recommended Plan Through the Year 2045

| Unit Process | Upgrade | Year Upgrade Required | Trigger |
|---|---|---|---|
| Aeration Basins and Blowers | New Aeration Basin and Blower | 2027 | Capacity |
| Secondary Clarifiers | New Mechanisms | 2027 | Condition |
| Secondary Treatment | New MBR and Support Facilities | 2031,2039, 2044 | Capacity |
| Disinfection | Replace Standby UV Equipment<br>Replace UV System Equipment | 2025,<br>2040 | Condition |
| Outfall | Outfall Improvements | 2040 | Capacity |
| Effluent Cooling Tower | New Cooling Tower | 2036 | Capacity |
| WAS Thickening/Storage, TWAS Storage, Dewatering Centrifuges | Dewatering Performance Optimization | 2025 | Condition |
| Dewatering and Thickening(1) | Replace Centrifuge and GBT Equipment | 2033 | Condition |
| Biosolids Drying(2) | Replace Dryer Equipment | 2031 | Condition |
| Communication/IT | Fiber Optic Cable Addition | 2025 | Condition |
| Support Buildings | Seismic Improvements | 2026 | Condition |
| Support Buildings | Geotechnical Foundation Mitigation | 2026 | Condition |

Notes:

(1) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2042. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.

(2) Analysis has concluded that the existing solids dryer equipment has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade and is approaching the end of its useful life. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan.

Abbreviations: CIP - capital improvement plan.

Chapter 4 presents a summary of detailed capacity analyses conducted for this Master Plan. The years in which key processes are projected to exceed capacity are presented in Figure 7.1. The green line illustrates projected MM BOD triggers for existing and proposed new secondary treatment facilities. Projected PHF is shown in blue indicating capacity exceedance of the cooling tower and certain elements of plant hydraulics. Prior to the year of projected exceedance, planning, design, and construction activities will be required to allow upgrades to be commissioned to prevent capacity exceedances. It is important to note that the timing of improvements should be driven by the rate of growth in influent flow and load. Dates indicated in Figure 7.1 and elsewhere in this document should be considered best, conservative estimates based on projections presented herein and professional judgement.

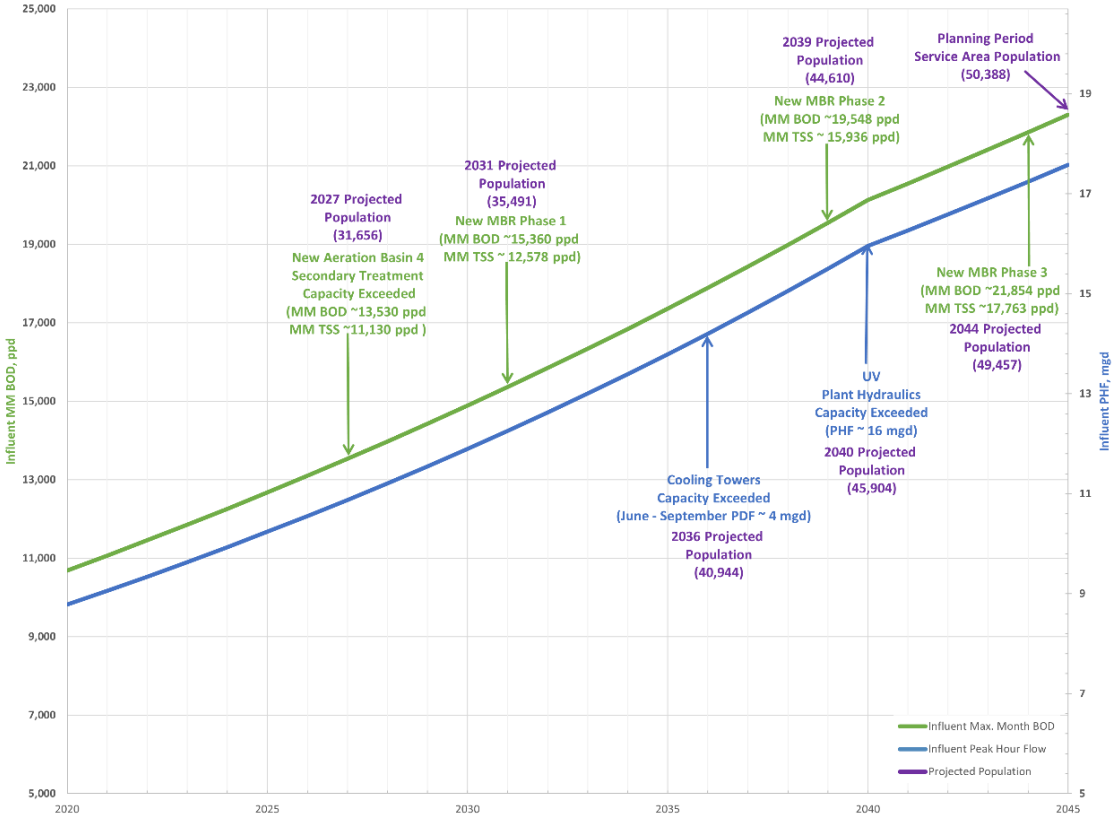



Figure 7.1 Capacity Trigger Graph

## 7.3 Recommended Improvements

The WWTP improvement recommendations are based on the evaluation and conclusions previously described in Chapter 2 - Condition Assessment and Tier 1 Seismic Analysis Summary, Chapter 4 - Capacity Analysis, and Chapter 6 - Alternative Development and Evaluation. The seismic improvements are also described in Chapter 2, and Appendix D includes Carollo's complete seismic evaluation report.

### 7.3.1 Liquid Treatment System Improvements

The recommended capacity and condition improvements for the major liquid stream unit processes through 2045 are summarized below:

- **New Aeration Basin:** In the next few years, the MLSS concentration in the aeration basins is projected to exceed 4,000 mg/L, which will require the addition of secondary treatment capacity. An additional aeration basin would increase capacity by providing more volume, which would result in a lower overall MLSS concentration and lower solids loading rates on the secondary clarifiers. The City should begin re-evaluating capacity and planning for expansion when the max month influent biochemical oxygen demand (BOD) reaches approximately 13,500 ppd, which is estimated to occur in 2027. Additional aeration blower capacity will be required to provide sufficient air when a new basin is added. The recommended plan includes addition of a seventh blower and conversion of one of the existing blowers. The new and converted blowers would have a capacity of 3,000 scfm each.
- **New MBR and Support Facilities:** To provide the projected secondary treatment capacity required in 2045, a fourth aeration basin will not be sufficient. In fact, as described in greater detail in Chapters 4 and 6, the City will need to intensify the secondary treatment process. The process selected for this intensification is MBR technology which the City intends to phase in over time as capacity demands dictate. Eventually membrane treatment will eliminate the need for secondary clarification and tertiary filtration altogether. Phasing the MBR improvements over the planning period anticipates reliance on clarifiers and tertiary filters for some time. In addition to the core membrane facility, which will involve construction of a new building and five membrane reactor basins, the City will need to install fine screens to protect the membrane units themselves and additional blower capacity to provide sufficient aeration through 2045. The first phase of the MBR upgrade is anticipated to be in place around 2031, with the third phase of the upgrade for this planning period (through 2045) needed some time around 2044. The phased approach to intensification with MBR technology positions the City to address needs beyond projected 2045 loading, or if limitations on effluent discharges to the Willamette River become more stringent. Plans for the MBR infrastructure buildings and support facilities anticipate these potential needs to minimize significant site work or building/structure construction at that time.
- **New Secondary Clarifier Mechanisms:** From April 19 to April 21, 2022, Ovivo completed a field service report of the plant's secondary clarifiers No. 1 and No. 2. While both units were in operating condition, a couple repairs are needed. The recommended repairs include drive controls for both units, new skimmers for both units, squeegees for both tanks rake arms, energy dissipating inlet chains, one motor and reducer assembly, and one skimmer arm assembly. The detailed Ovivo Field Service Report is included in Appendix C. In addition to requiring repairs, both secondary clarifiers have been in service for 25 years, so new secondary clarifier mechanisms are recommended due to age.
- **Trojan UV 4000 System:** While only used as a backup to the existing Suez UV system, the Trojan system's human-machine interface (HMI) has errors that prevent it from showing the status of the lamps in module 3, and its overall condition is mostly unknown. Additionally, this backup UV system predates the WWTP's 2014 Upgrade, so

the system is no longer supported. The City's contract operations team (Jacobs) have concluded that replacement of this system is recommended and are currently pursuing this course of action. When this replacement occurs, the capacity of the backup UV unit is expected to increase. Regardless the capacity of the UV process is predicted to be exceeded after 2040. By that time, both existing (newer) Suez UV equipment and the replacement unit(s) for the backup Trojan system will have exceeded, or be approaching their expected service life. Although Jacobs is initiating the initial backup system replacement , it is still included in the recommended WWTP CIP for budgeting purposes. Since the replacement of the Trojan 4000 UV system backup equipment is driven by condition needs, costs were not previously presented in Chapter 6 of this Master Plan and are provided in Appendix K.

- **Outfall/Plant Hydraulics:** The Jacobs *Hydraulic Analysis TM* (Appendix H) found that under projected 2045 PHF conditions certain process and effluent piping may be hydraulically deficient. At PHF 17.6 mgd and assuming a 0.8 mgd recycle scenario the headworks screens and grit removal systems are expected to be unsubmerged. However, upsized piping is expected to be necessary to convey flow from the headworks to the secondary process under these conditions. These hydraulic deficiencies are expected to be addressed with the phased MBR upgrades described elsewhere. The 24-inch piping between MH-B (downstream of the UV disinfection process) and the 42-inch pipeline downstream of MH-D2, but upstream of the Willamette River outfall/diffuser, is a hydraulic restriction under the PHF 17.6 mgd and 0.8 mgd recycle scenario. This outfall piping improvement is included in the recommended WWTP CIP by the year 2040, once plant hydraulics exceed a PHF of 16 mgd. There are several options that could relieve the restriction and are further discussed in the Jacobs analysis found in Appendix H.
- **New Cooling Tower Unit:** The existing effluent cooling system is expected to run out of firm capacity by 2036. However, prior planning anticipated this need and space for an additional cooling tower unit (with similar size and design parameters as the existing units) exists on-site and can be added to ensure there is sufficient capacity to cool effluent through the end of the planning period. There is adequate space to insert a third unit including a flanged connection installed in anticipation of this need.

The recommended liquid stream improvements will provide additional capacity. Addition of MBR facilities and equipment will significantly alter the liquid stream biological treatment process configuration. Figure 7.1 illustrates this future configuration in a simplified process flow diagram. More detailed process flow schematics of current WWTP processes are provided in Appendix G.

### 7.3.2 Solids Treatment System Improvements

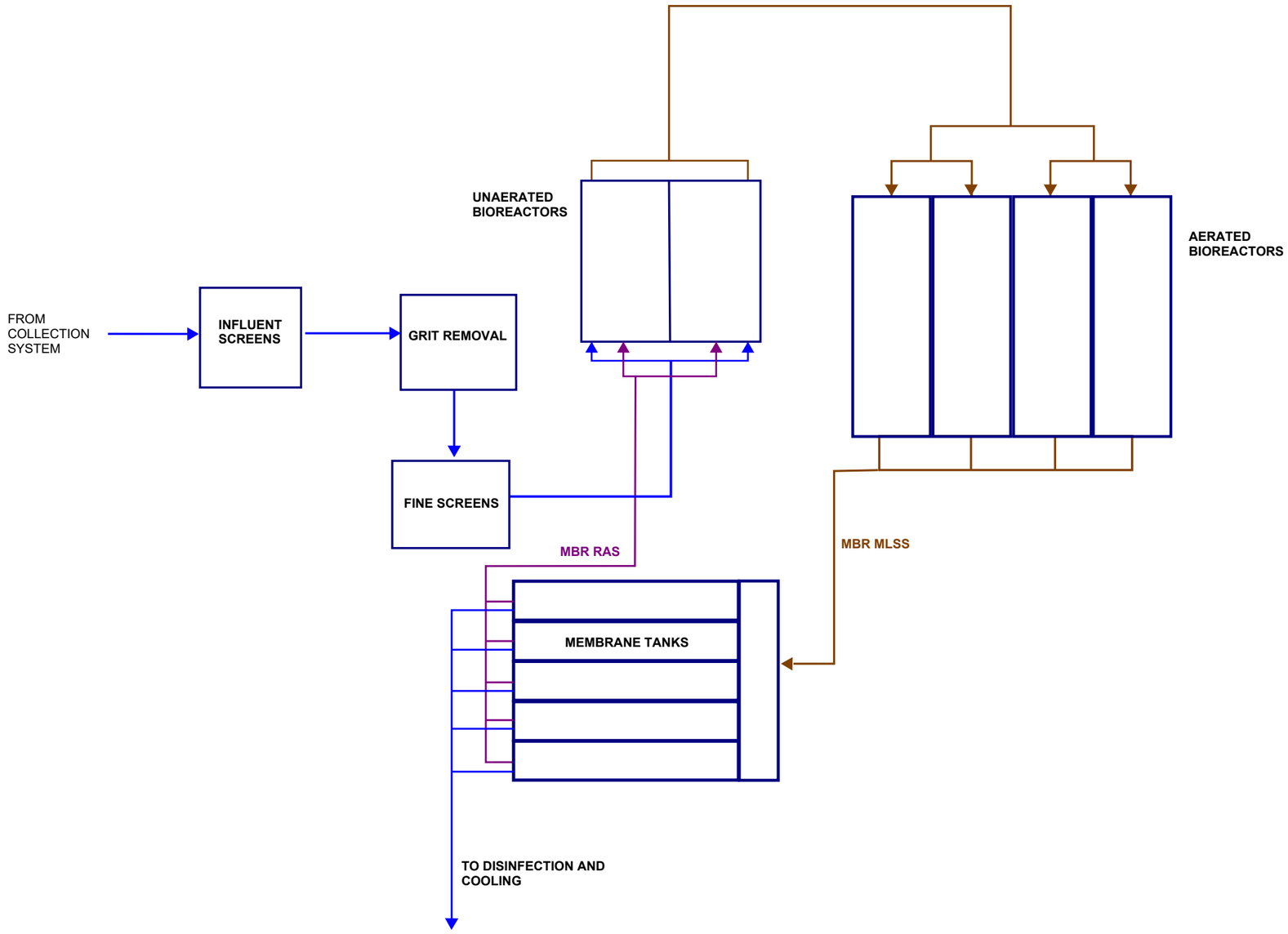
The recommended improvements for the major solids stream unit processes through 2045 are summarized below:

- **Dewatering and Thickening:** As detailed in Chapter 6, the dewatering system has sufficient capacity through the year 2042 with one unit out of service. By the year 2042 though, the existing centrifuge and GBT units will have been in service for at least 30 years. Therefore, the City should plan for their replacement before 2045 with the new units sized for updated projected solids loading. Timing of the dewatering equipment replacement will depend upon performance and wear of the existing units. For

budgeting purposes, an opinion of probable cost for replacing the existing centrifuges is provided in Appendix K and included in the WWTP CIP. Current CIP costs assume a slightly larger unit to account for the potential for updated solids loading projections to exceed the capacity of the existing units over the life of the replacement units. Larger units also provide enhanced flexibility to effectively dewater more difficult sludges, reduce operational periods, and provide increased resiliency to plant upsets.

- **Solids Dryer Improvement:** As discussed in Chapter 6, the existing solids dryer capacity appears sufficient through 2045. However, in recent years the equipment has not functioned reliably. Due to the history of operational issues and failures, as well as the fact the unit will have been in operation for over 30 years by 2045, the City has chosen to plan for the replacement of the dryer unit during the planning horizon of this Master Plan. Several alternatives to replace the existing paddle dryer unit were considered and presented in Chapter 6. For the purposes of capital planning, this Master Plan assumes the City will expand the existing Dewatering and Dryer Building to the west to allow installation of a second solids paddle dryer, with the existing dryer remaining available as a redundant unit after refurbishment. The City plans to evaluate the preferred dryer replacement approach beginning in 2031. This future study will likely assess the suitability of an indirect-type dryer given the space constraints. The City will adjust budgetary projections for the dryer replacement as appropriate based on the results of this future study.

A process flow diagram illustrating the solids treatment process is shown in Figure 7.2.




NOTE: Liquid stream biological treatment process under future conditions. Operational split between CAS and MBR processes to remain in place until completion of Phase 3 MBR upgrades, expected by 2044.

**Figure 7.2**
**SIMPLIFIED LIQUID STREAM PROCESS FLOW DIAGRAM**
CITY OF WILSONVILLE

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### 7.3.3 Seismic and Geologic Hazard Recommendations

Prior to the seismic evaluation discussed in Chapter 2, Carollo's subconsultant, Northwest Geotech Inc. (NGI), conducted a geologic hazard assessment of the City's WWTP. The assessment determined that the WWTP's primary site hazard is the differential settlement that may be caused by soil piping. In 2023, NGI conducted a survey to map existing cracks in structures and identified previous sinkholes and settlement repairs to help prioritize areas for soil piping risk reduction. The City intends to evaluate the need and extent of ground improvement for WWTP structures during preliminary design of seismic upgrades identified in Chapter 2. Accordingly, an allowance for future foundation mitigation measures of $2 million is included in the City's CIP. The City will also consider ground improvement on future projects involving new or existing structures, as appropriate. NGI's complete technical memoranda can be found in Appendices E and F, with more details regarding the geologic hazard assessment and survey outlined in Chapter 2.

In 2021 Carollo performed a seismic evaluation and analysis of the City's WWTP, as detailed in Chapter 2. First, a Tier 1 (Screening) seismic evaluation was completed to identify potential deficiencies and needs for additional analysis, which identified five older structures for further investigation. This plant was upgraded in 2014, so much of the infrastructure was designed in accordance with the 2010 Oregon Structural Specialty Code (OSSC) and follows modern seismic design and detailing. The Tier 2 (deficiency-based evaluation and retrofit) seismic evaluation included the five structures identified during the Tier 1 evaluation, which are the:

- Operations building.
- Process gallery.
- Workshop.
- Aeration basins and stabilization basins.
- Sludge storage basins and biofilter.

Table 7.2 below summarizes the number of seismic deficiencies identified for each structure and provides a cost estimate for each structure. No deficiencies were found for the aeration basins and biofilter structures. The only potential deficiency identified for the stabilization and sludge storage basins was a potential freeboard deficit, which is detailed further in Chapter 2 and Appendix D.

Table 7.2 Summary of Estimated Retrofit Opinion of Probable Cost

| Structure | No. of Deficiencies Identified | Class 5 Cost Estimate (2023) Accuracy Range:-50% to + 100% |
|---|---|---|
| Operations Building | 7 | $688,200 |
| Process Gallery | 3 | $48,100 |
| Workshop | 4 | $122,700 |
| Overall Plant (Non-Structural) | 3 | $6,100 |
| **Total Estimated Construction Cost** | | **$865,100** |
| **Total Estimated Project Cost(1)** | | **$1,082,000** |

Notes:
(1) Assumes 25% Engineering, Legal, and Administrative Fees (ELA) and ENR Construction Cost Index = 13473 (August 2023).

### 7.3.4 Fiber Optic Cable Addition

The City would like to install a direct connection between the City's fiber optics network and the WWTP. As presented in Chapter 6, this addition consists of routing two new conduits (one spare) and fiber optic cabling from the WWTP's Operations Building to the Site Entrance, where it will then be picked up outside of the WWTP's boundary and tied into the City's fiber optics network. The estimated cost for this addition is included in Chapter 6 and the WWTP CIP.

## 7.4 Site Plan

Detailed site plan layouts are presented for improvement alternatives considered in Chapter 6. A site plan depicting the collective recommended improvements is presented here in Figure 7.3.

## 7.5 Planning Level Opinion of Probable Cost and Phasing

Summaries of opinions of probable costs and anticipated phasing for the recommended improvements are provided in Table 7.3. Estimates of each of the projects presented within the table with component element breakdown, including contingency and soft costs, are presented elsewhere in this Master Plan. Contingency factors included in cost opinions are considered reasonable for the facility planning stage to account for "known" elements of project scope. This allowance does not anticipate potential project specific risks, such as market conditions at time of implementation, unknown construction conditions (rock, groundwater etc.) that may be revealed during design (detailed field investigations) or construction, or change orders which may arise as a result.

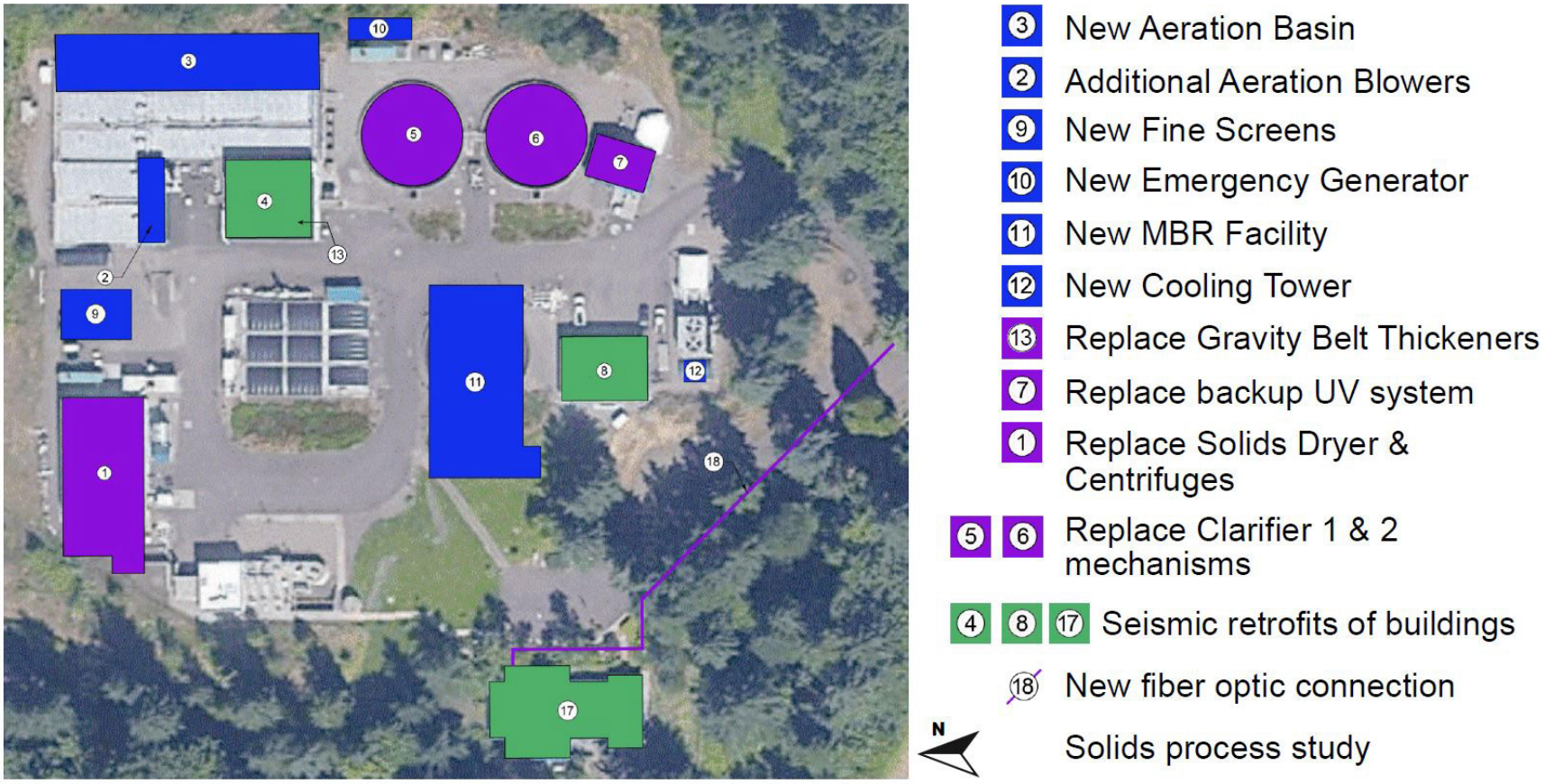



Figure 7.3 Proposed WWTP Improvements Site Plan

Table 7.3 WWTP Recommended Alternative Opinion of Probable Cost and Phasing

| Plant Area | Project[1] | Opinion of Probable Cost[2] | Approximate Year Online |
|---|---|---|---|
| Solids Handling | Dewatering Performance Optimization | $150,000 | 2025 |
| Communications/IT | Fiber Optic Cable Addition | $60,000 | 2025 |
| UV System | Backup UV System Improvement | $1,705,000 | 2026 |
| Support Buildings | Seismic Improvements | $1,082,000 | 2026 |
| Support Buildings | Geotechnical Foundation Mitigation | $2,000,000 | 2026 |
| Secondary Treatment | New Conventional Aeration Basin and Blower | $10,222,000 | 2027[3] |
| Secondary Treatment | New Secondary Clarifier Mechanisms | $1,775,000 | 2027 |
| Secondary Treatment | New MBR, Blowers and Fine Screens (Phase 1) | $69,727,000 | 2031 |
| Solids Handling | Solids Dryer Improvement | $17,130,000 [7] | 2033 |
| Solids Handling | Existing Centrifuge and GBT Replacement | $3,701,000 [4,6] | 2033[5] |
| Cooling Towers | New Effluent Cooling Tower | $642,000 | 2036 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 2) | $2,330,000 | 2039 |
| UV System | UV Equipment Replacement | $2,571,000 | 2040 |
| Outfall | Outfall Improvements | $1,244,000 | 2040 |
| Secondary Treatment | Additional MBR and Blower Capacity (Phase 3) | $8,117,000 | 2044 |
| **TOTAL** | | **$122,456,000** | |

Notes:
White rows indicate projects that are in the City's 5-year CIP and blue rows indicate projects that are outside the 5-year CIP window.

(1) Details of each project can be found in Chapter 2 or Chapter 6 of this Master Plan.

(2) The estimated opinion of probable costs include the construction costs plus ELA (or soft costs). Details on the estimated project costs can be found in Chapter 2 or Chapter 6 of the plan, with the exception of costs for the backup UV system and centrifuges which are presented earlier in Chapter 7. All costs presented are based on an August 2023 ENR index of 13473.

(3) As identified in Chapter 4, the secondary treatment process at the Wilsonville WWTP is expected to require additional capacity by the year 2027. Since design and construction of a new aeration basin may take longer than the year 2027, the City will likely need to operate at SRTs lower than 5 days during the maximum week condition if growth occurs as predicted in Chapter 3.

(4) For budgeting purposes, the Option B centrifuge cost from Table H-2 in Appendix K is used for the project cost summary and the CIP.

(5) Replacement timing dependent upon satisfactory equipment performance.

(6) The centrifuges installed with the City's 2014 upgrade project have exhibited inconsistent performance in recent months. The City recently refurbished these units and expects they will provide sufficient capacity through 2042. However, by that time, the units will have been in service for over 30 years. It is recommended the City plan for replacement of these units during the planning horizon of this Master Plan. Assuming replacement occurs in the mid-2030's the City should reassess capacity needs of those units beyond the 2045 horizon, consistent with the expected service life of the new equipment.

(7) The existing solids dryer has sufficient capacity through 2045. As with the dewatering centrifuges, the dryer equipment will soon have been in operation for a decade. It is recommended the City plan for replacement of the dryer during the planning horizon of this Master Plan. The City plans to replace the existing dryer with a new piece of equipment using similar technology and potentially rehabilitate the existing unit to serve as a backup. See Alternative 2B, Chapter 6.

## 7.6 Project Schedule and Phasing

Figure 7.4 presents a summary of the recommended project phasing for the 20-year CIP. The necessary planning and design phases of work for each project would need to precede the listed dates to allow for these improvements to be operational by the listed date.

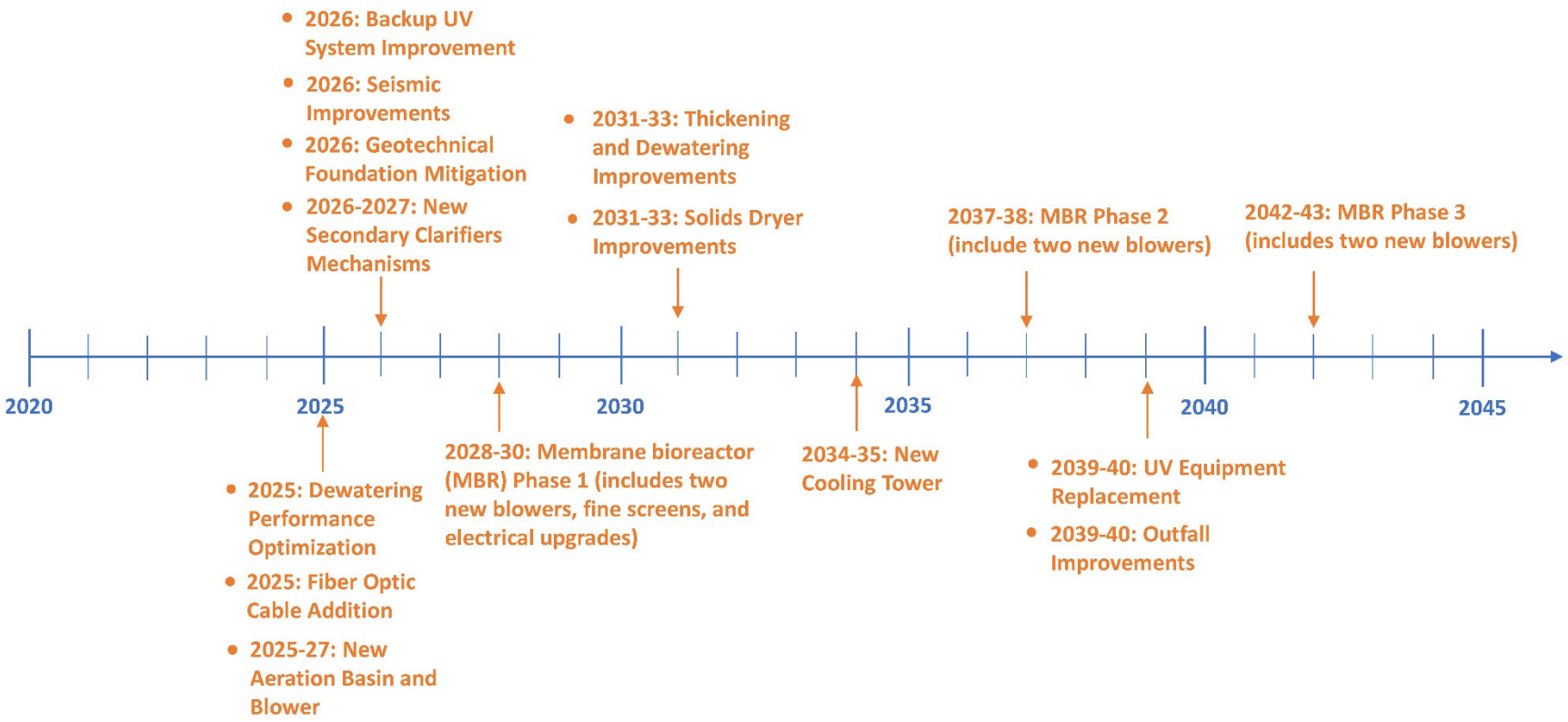



Figure 7.4 Recommended Project Phasing Schedule

## 7.7 Financial Analysis – Capital Improvement Plan

The expected cash flow for the planning period was determined for the recommended improvements summarized in Table 7.4. The cash flow through 2045 is summarized in Table 7.4, which includes an escalation rate of three percent. The peak expenditure is approximately $55,434,000 in 2030. The projected CIP expenditures through 2045 are also visually shown in Figure 7.5.

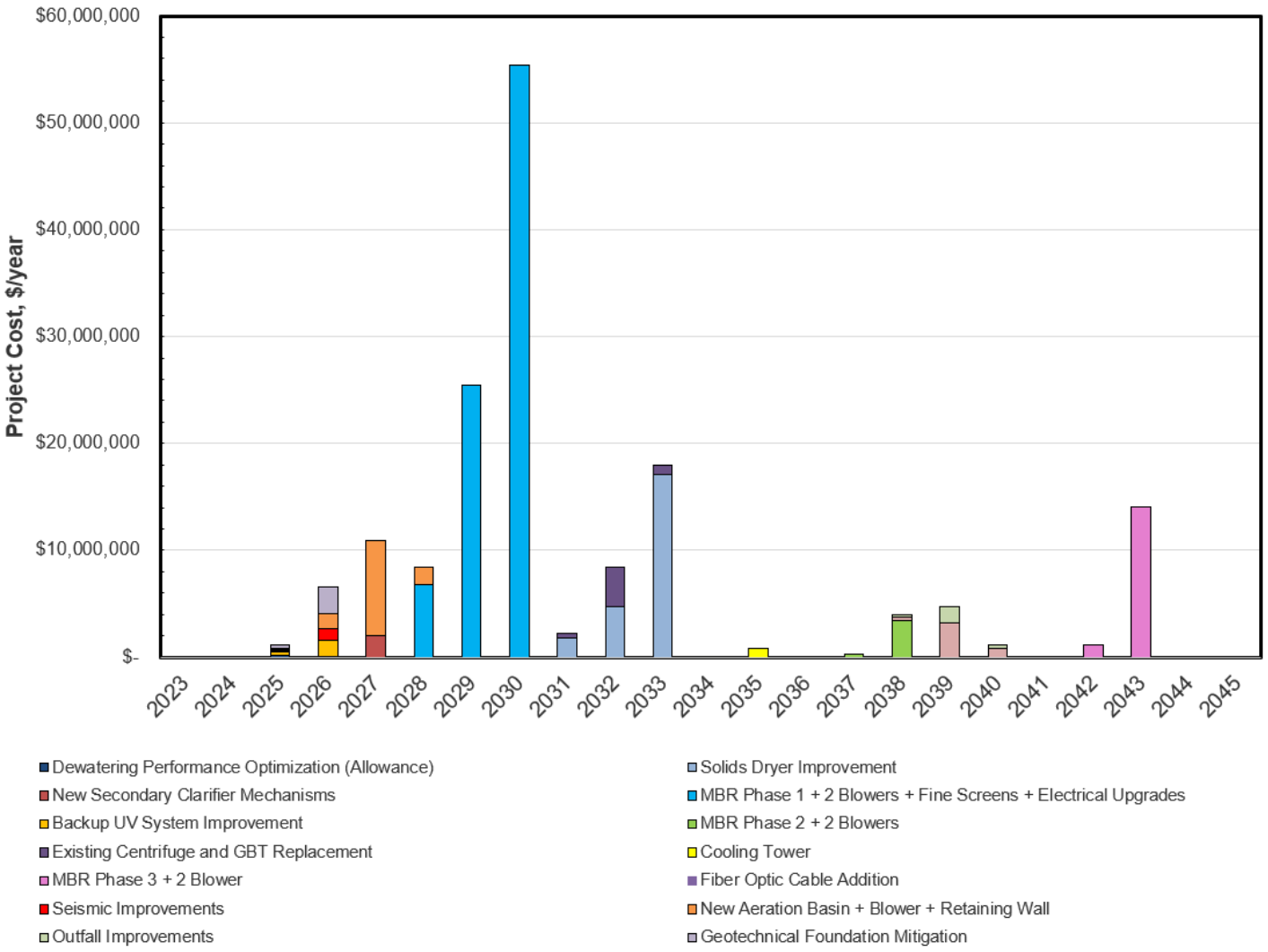



Figure 7.5 Projected 20-Year CIP Expenditures

Table 7.4 Cash Flow Summary[1][2]

| By Project | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2037 | 2038 | 2039 | 2040 | 2042 | 2043 | 2044-2045 | Project Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dewatering Performance Optimization | $167,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $167,000 |
| Backup UV System Improvement | $363,000 | $1,565,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $1,928,000 |
| Fiber Optic Cable Addition | $63,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $63,000 |
| Seismic Improvements | $131,000 | $1,094,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $1,225,000 |
| Geotechnical Foundation Mitigation | $302,000 | $2,527,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $2,829,000 |
| New Aeration Basin + Blower + Retaining Wall | $115,000 | $1,356,000 | $8,819,000 | $1,613,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $11,903,000 |
| New Secondary Clarifier Mechanisms | - | $21,000 | $2,067,000 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $2,088,000 |
| MBR Phase 1 + 2 Blowers + Fine Screens + Electrical Upgrades | - | - | - | $6,767,000 | $25,449,000 | $55,434,000 | - | - | - | - | - | - | - | - | - | - | - | - | $87,650,000 |
| Solids Dryer Improvement | - | - | - | - | - | - | $1,812,000 | $4,716,000 | $17,050,000 | - | - | - | - | - | - | - | - | - | $23,578,000 |
| Existing Centrifuge and GBT Replacement | - | - | - | - | - | - | $393,000 | $3,746,000 | $912,000 | - | - | - | - | - | - | - | - | - | $5,051,000 |
| Cooling Tower | - | - | - | - | - | - | - | - | - | $101,000 | $846,000 | - | - | - | - | - | - | - | $947,000 |
| MBR Phase 2 + 2 Blowers | - | - | - | - | - | - | - | - | - | - | - | $297,000 | $3,468,000 | - | - | - | - | - | $3,765,000 |
| UV Equipment Replacement | - | - | - | - | - | - | - | - | - | - | - | - | $337,000 | $3,193,000 | $777,000 | - | - | - | $4,307,000 |
| Outfall Improvements | - | - | - | - | - | - | - | - | - | - | - | - | $163,000 | $1,546,000 | $376,000 | - | - | - | $2,085,000 |
| MBR Phase 3 + 2 Blower | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $1,197,000 | $14,009,000 | - | $15,206,000 |
| Total | $1,141,000 | $6,563,000 | $10,886,000 | $8,380,000 | $25,449,000 | $55,434,000 | $2,205,000 | $8,462,000 | $17,962,000 | $101,000 | $846,000 | $297,000 | $3,968,000 | $4,739,000 | $1,153,000 | $1,197,000 | $14,009,000 | - | $162,972,000 |

Notes:
(1) Costs in this table reflect application of a 3% per year escalation over the planning period. Costs elsewhere in this Chapter are indexed to August 2023.
(2) No expected cash flow in the years of 2036, and 2041. (Not shown in table).

Appendix A

# JACOBS CONDITION ASSESSMENT 2019

Appendix B

# BROWN AND CALDWELL CONDITION ASSESSMENT 2019

Appendix C

# OVIVO FIELD SERVICE REPORT

Appendix D

# SEISMIC EVALUATION

Appendix E

# SESIMIC RESPONSE AND GEOLOGIC HAZARDS ASSESSMENT

Appendix F

# GEOTECHNICAL ASSESSMENT TM 2023

Appendix G

# WASTEWATER TREATMENT PLANT SCHEMATICS

Appendix H

# JACOBS HYDRAULIC ANALYSIS TM 2023

Appendix I

# PENNY CAROLO CONSIDERATIONS FOR NEXT PRETREATMENT LOCAL LIMITS EVALUATION

Appendix J

# CLASS 5 COST ESTIMATES

Appendix K

# BACKUP UV REPLACEMENT AND DEWATERING EQUIPMENT REPLACEMENT COST ESTIMATES

The Wastewater Treatment Plant Master Plan (LP22-0001) Appendices can be found at this link:

https://www.ci.wilsonville.or.us/comm-dev/page/wastewater-treatment-plant-master-plan

WILSONVILLE
OREGON

## CITY COUNCIL MEETING
## STAFF REPORT

| | |
|---|---|
| **Meeting Date:** January 18, 2024 | **Subject: Ordinance Nos. 886 and 887** *-1st Reading* Annexation and Zone Map Amendment for Frog Pond Cottage Park Place Subdivision<br><br>**Staff Member:** Cindy Luxhoj AICP, Associate Planner<br><br>**Department:** Community Development |
| **Action Required** | **Advisory Board/Commission Recommendation** |
| ☒ Motion<br>☒ Public Hearing Date: January 18, 2024<br>☒ Ordinance 1st Reading Date: January 18, 2024<br>☒ Ordinance 2nd Reading Date: February 22, 2024<br>☐ Resolution<br>☐ Information or Direction<br>☐ Information Only<br>☐ Council Direction<br>☐ Consent Agenda | ☐ Approval<br>☐ Denial<br><br>☐ None Forwarded<br><br>☒ Not Applicable<br><br>**Comments:** During a public hearing on January 8, 2024, Development Review Board Panel 'A' reviewed and recommended adoption of the Annexation and Zone Map Amendment to City Council and approved the associated Frog Pond Cottage Park Place subdivision. |
| **Staff Recommendation:** Staff recommends Council adopt Ordinance Nos. 886 and 887 on 1st Reading. | |
| **Recommended Language for Motion:** In two separate motions, I move to adopt Ordinance Nos. 886 on 1st Reading and I move to adopt Ordinance 887 on 1st Reading. | |
| **Project / Issue Relates To:** | |
| ☐Council Goals/Priorities: | ☒Adopted Master Plan(s): Frog Pond West<br>☐Not Applicable |

**ISSUE BEFORE COUNCIL:**

Approve, modify, or deny Ordinance Nos. 886 and 887 to annex and rezone approximately 5.00 acres at 7252 SW Frog Pond Lane within the Frog Pond West Master Plan area, enabling development of a 17-lot residential subdivision.

**EXECUTIVE SUMMARY:**
The proposed 17-lot subdivision is the twelfth development proposal in Frog Pond West. The subdivision will connect to the previously approved Frog Pond Overlook subdivision to the north and Morgan Farm subdivision to the south, blending together as one cohesive neighborhood consistent with the Frog Pond West Master Plan. Concurrent with the adoption of the Frog Pond West Master Plan, the City added a new zoning district, Residential Neighborhood (RN), intended for application to the Master Plan area. The requested Zone Map amendment proposes applying the Residential Neighborhood (RN) Zone to the Frog Pond Cottage Park Place subdivision consistent with this intention.

**EXPECTED RESULTS:**
Adoption of Ordinance Nos. 886 and 887 will bring this portion of the Frog Pond West Master Plan area into the City and zone it for development consistent with the Master Plan.

**TIMELINE:**
The annexation and zone map amendment will be in effect 30 days after ordinance adoption on second reading and upon filing the annexation records with the Secretary of State as provided by ORS 222.180.

**CURRENT YEAR BUDGET IMPACTS:**
The project will result in income and expenditures consistent with the infrastructure financing plan of the Frog Pond West Master Plan.

**COMMUNITY INVOLVEMENT PROCESS:**
Staff sent the required public hearing notices. In addition, significant public involvement occurred during development and approval of the Frog Pond Area Plan and Frog Pond West Master Plan, with which the proposed actions are consistent.

**POTENTIAL IMPACTS OR BENEFIT TO THE COMMUNITY:**
Annexation and development of the subject land will provide additional housing choices and continued development of quality neighborhoods.

**ALTERNATIVES:**
The alternatives are to modify, approve, or deny the annexation and zone map amendment requests.

**CITY MANAGER COMMENT:**
N/A

**ATTACHMENTS:**
1. Ordinance No. 886
    A. Legal Description and Sketch Depicting Land/Territory to be Annexed
    B. Petition for Annexation
    C. Annexation Findings

D. Development Review Board Panel 'A' Resolution No. 425 Recommending Approval of Annexation

2. Ordinance No. 887
   A. Zoning Order ZONE23-0001 Including Legal Description and Sketch Depicting Zone Map Amendment
   B. Zone Map Amendment Findings
   C. Development Review Board Panel 'A' Resolution No. 425 Recommending Approval of Zone Map Amendment

**ORDINANCE NO. 886**

**AN ORDINANCE OF THE CITY OF WILSONVILLE ANNEXING APPROXIMATELY 5.00 ACRES OF PROPERTY LOCATED AT 7252 SW FROG POND LANE FOR DEVELOPMENT OF A 17-LOT RESIDENTIAL SUBDIVISION.**

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by Brian Matteoni for Sullivan Homes LLC – Owner/Applicant, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code; and

WHEREAS, the subject site is located at 7252 SW Frog Pond Lane, on Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon; and

WHEREAS, a petition submitted to the City requests annexation of certain real property legally described and depicted in Exhibit A; and

WHEREAS, Brian Matteoni, representing 100 percent of the property ownership within the annexation area, signed the petition; and

WHEREAS, Wesley Goode, representing a majority of the electors located within the annexation area, signed the petition; and

WHEREAS, ORS 227.125 authorizes the annexation of territory based on consent of all owners of land and a majority of electors within the territory and enables the City Council to dispense with submitting the questions of the proposed annexation to the electors of the City for their approval or rejection; and

WHEREAS, the land to be annexed is within the Urban Growth Boundary and has been master planned as part of the Frog Pond West Neighborhood; and

WHEREAS, the land to be annexed is contiguous to the City and can be served by City services; and

WHEREAS, the Development Review Board Panel 'A' considered the annexation and after a duly advertised public hearing held on January 8, 2024, unanimously recommended City Council approve the annexation; and

WHEREAS, on January 18, 2024, the City Council held a public hearing as required by Metro Code 3.09.050; and

WHEREAS, reports were prepared and considered as required by law; and because the annexation is not contested by any party, the City Council chooses not to submit the matter to the voters and does hereby favor the annexation of the subject tract of land based on findings and conclusions, and the Development Review Board's recommendation to City Council.

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

Section 1. Findings. The tract of land, described and depicted in Exhibit A, is declared annexed to the City of Wilsonville.

Section 2. Determination. The findings and conclusions incorporated in Exhibit C are adopted. The City Recorder shall immediately file a certified copy of this ordinance with Metro and other agencies required by Metro Code Chapter 3.09.050(g) and ORS 222.005. The annexation shall become effective upon filing of the annexation records with the Secretary of State as provided by ORS 222.180.

Section 3. Effective Date. This Ordinance shall be declared to be in full force and effect thirty (30) days from the date of final passage and approval.

SUBMITTED by the Wilsonville City Council and read for the first time at a regular meeting thereof this 18th day of January, 2024, and scheduled the second reading on the 22nd day of February, 2024, commencing at the hour of 7:00 p.m. at the Wilsonville City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon.

_____

Kimberly Veliz, City Recorder

ENACTED by the City Council on the 22nd day of February, 2024, by the following votes:

Yes: _____ No: _____

_____

Kimberly Veliz, City Recorder

DATED and signed by the Mayor this 22nd day of February, 2024.

_____

JULIE FITZGERALD MAYOR

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Berry

Councilor Dunwell

Councilor Linville

EXHIBITS:

A. Legal Description and Sketch Depicting Land/Territory to be Annexed
B. Petition for Annexation
C. Annexation Findings
D. Development Review Board Panel 'A' Resolution No. 425 Recommending Approval of Annexation

AKS ENGINEERING & FORESTRY, LLC
12965 SW Herman Road, Suite 100, Tualatin, OR 97062
P: (503) 563-6151 | www.aks-eng.com
AKS Job #6175
OFFICES IN: BEND, OR - KEIZER, OR - TUALATIN, OR - VANCOUVER, WA

# EXHIBIT A

City of Wilsonville Annexation Description

A tract of land located in the Southeast One-Quarter of Section 12, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon, and being more particularly described as follows:

Beginning at the northeast corner of the plat "Morgan Farm No. 2", Plat No. 4610, Clackamas County Plat Records, also being on the north right-of-way line of SW Brisband Street (11.00 feet from centerline) and the City of Wilsonville city limits line; thence along said north right-of-way line and said city limits line, North 88°36'03" West 30.96 feet to the southwest corner of Document Number 2021-041768, Clackamas County Deed Records; thence leaving said city limits line along the west line of said Deed, North 01°38'13" East 858.15 feet to the northwest corner of said Deed, also being on the south right-of-way line of SW Frog Pond Lane (16.50 feet from centerline) and said city limits line; thence along said south right-of-way line and said city limits line, South 88°35'24" East 254.01 feet to the northeast corner of said Deed; thence leaving said city limits line along the east line of said Deed, South 01°38'13" West 858.11 feet to the south line of said Deed and said city limits line; thence along said south line and said city limits line, North 88°36'03" West 223.05 feet to the Point of Beginning.

The above described tract of land contains 5.00 acres, more or less.

The Basis of Bearings for this description are based on Survey Number 2022-119, Clackamas County Survey Records.

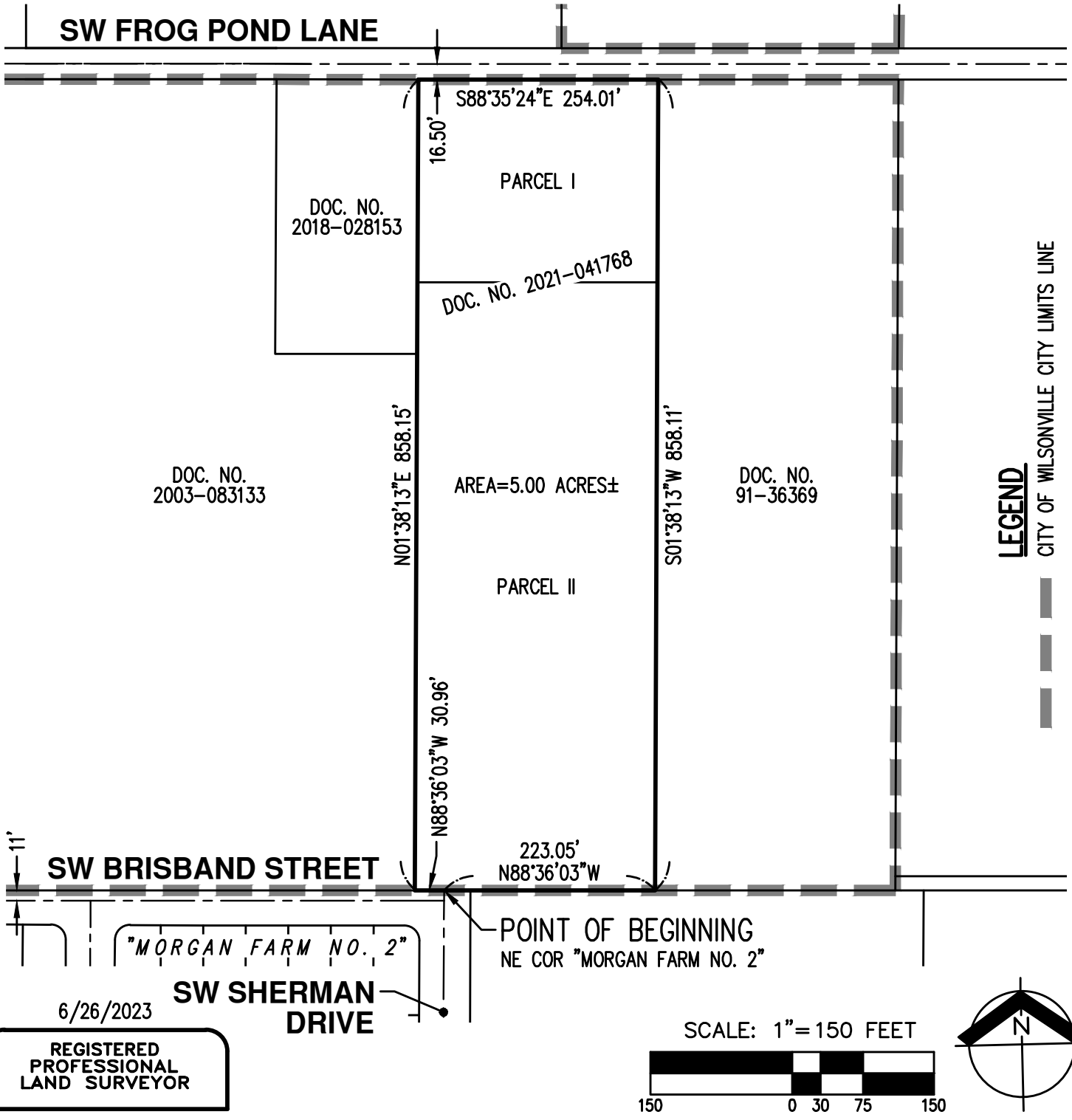
6/26/2023

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 12, 2016
MICHAEL S. KALINA
89558PLS
RENEWS: 6/30/23

# EXHIBIT B

## A TRACT OF LAND LOCATED IN THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON




6/26/2023

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JANUARY 12, 2016
MICHAEL S. KALINA
89558PLS
RENEWS: 6/30/25

| CITY OF WILSONVILLE ANNEXATION MAP | EXHIBIT B |
|---|---|
| AKS ENGINEERING & FORESTRY, LLC<br>12965 SW HERMAN RD, STE 100<br>TUALATIN, OR 97062<br>503.563.6151 WWW.AKS-ENG.COM | DRWN: WCB<br>CHKD: MSK<br>AKS 790 |

DWG: 6175 20230626 EXB | EXB1

# PETITION FOR ANNEXATION

We, the undersigned owner(s) of the property described in **Exhibit A** and/or elector(s) residing at the referenced location(s), hereby petition for, and give consent to, Annexation of said property to the City of Wilsonville:

**NOTE: This petition may be signed by any qualified persons even though they may not know their property description or precinct number.**

| SIGNATURE | PRINTED NAME | I AM A:* | | | PROPERTY ADDRESS | PROPERTY DESCRIPTION | | | | PRECINCT # | DATE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PO | RV | OV | | LOT # | ¼ SEC | T | R | | |
| | BRIAN MARTINI | X | | | 7252 SW Frog Pond Lane Wilsonville, OR 97070 | 1200 | 12 | 3S | 1W | 323 | |
| | BRIAN MARTINI | X | | | No Situs | 1300 | 12 | 3S | 1W | 323 | |
| Wesley Goode | Wesley Goode | | X | | 7252 SW Frog Pond Lane Wilsonville, OR 97070 | 1200 | 12 | 3S | 1W | 323 | 08/31/22 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

* PO - Property Owner
RV - Registered Voter
OV - Property Owner & Registered Voter

Metro

# Metro District Annexation
# Certification of Property Ownership of at Least One-half of the Land Area

I hereby certify that the proposed petition for inclusion within the **Metro District Boundary** contains the names of property owners[1] of at least one-half of the land area within the annexation area, as shown on the last complete assessment roll.

Name: Terry Donovan

Title: GIS Cartographer 2

Department: A+T

County: Clackamas

Date: 12/1/22




[1] A landowner means any person shown as the owner of land on the last available assessment roll. However, where such person no longer holds the title of the property, then the term refers to any person entitled to be shown as the owner of that land on the next assessment roll. This could also include a written agreement of sale, which specifies a purchaser to the exclusion of the seller or a public agency owning land.

# CERTIFICATION OF PROPERTY OWNERSHIP

I hereby certify that the attached petition for annexation contains the names of the owners[1] (as shown on the last available complete assessment roll) of 100% of the land area of the territory proposed for annexation as described in the attached petition.

NAME: TERRY DONOVAN

TITLE: GIS CARTOGRAPHER 2

DEPARTMENT: ~~CLACKAMAS~~ A&T

COUNTY OF: CLACKAMAS

DATE: 12/1/22




[1] "Owner" means the legal owner of record or, where there is a recorded a land contract which is in force, the purchaser thereunder. If there is a multiple ownership in a parcel of land each consenting owner shall be counted as a fraction to the same extent as the interest of the owner in the land bears in relation to the interest of the other owners and the same fraction shall be applied to the parcel's land mass and assessed value for purposes the consent petition. If a corporation owns land in territory proposed to be annexed, the corporation shall be considered the individual owner of that land.

Metro

# Metro District Annexation
# **Certification of Legal Description and Map**

I hereby certify that the description of the property included within the attached petition has been checked by me and it is a true and exact description of the property under consideration, and the description corresponds to the attached map.

Name: Kelly Donovan

Title: GIS Cartographer 2

Department: ART

County: Clackamas

Date: 12/1/22

DEC 2022
RECEIVED
CLACKAMAS
COUNTY
ASSESSOR

# CERTIFICATION OF LEGAL DESCRIPTION AND MAP

I hereby certify that the description of the property included within the attached petition (located on Assessor's Map 31W12D) has been checked by me and it is a true and exact description of the property under consideration, and the description corresponds to the attached map indicating the property under consideration.

NAME: Terry Donovan

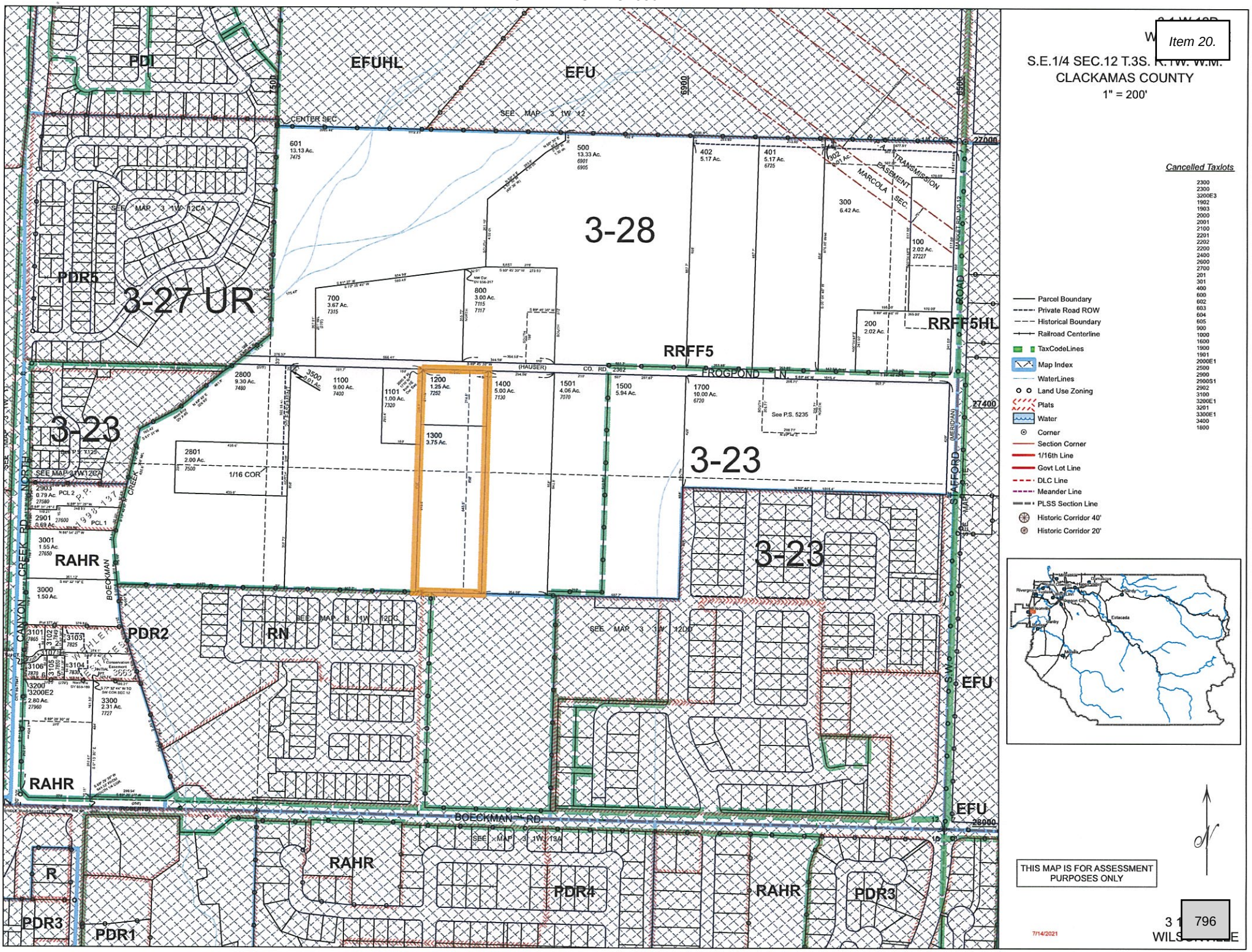
TITLE: GIS Cartographer 2

DEPARTMENT: A&T

COUNTY OF: Clackamas

DATE: 12/1/22

DEC 2022
RECEIVED
CLACKAMAS
COUNTY
ASSESSOR


S.E.1/4 SEC.12 T.3S. R.1W. W.M.
CLACKAMAS COUNTY
1" = 200'
3-28
3-27 UR
3-23
PDI
EFUHL
EFU
PDR5
RRFF5
RRFF5HL
RAHR
PDR2
RN
PDR4
PDR3
PDR1
R
SEE MAP 3 1W 12CA
SEE MAP 3 1W 12DC
SEE MAP 3 1W 13A
CENTER SEC
1/16 COR
FROGPOND LN.
BOECKMAN RD.
CANYON CREEK RD. NORTH
BOECKMAN
MARKET RD. NO. 12
STAFFORD ROAD
S.W.
TRANSMISSION EASEMENT
MARCOLA SEC.
(HAUSER) CO. RD 2302
(MERIDIAN)
See P.S. 5235
See P.S. X128
THIS MAP IS FOR ASSESSMENT PURPOSES ONLY
7/14/2021
Cancelled Taxlots
2300
2300
3200E3
1902
1903
2000
2001
2100
2201
2202
2200
2400
2600
2700
201
301
400
600
602
603
604
605
900
1000
1600
1900
1901
2000E1
2500
2900
2900S1
2902
3100
3200E1
3201
3300E1
3400
1800
Parcel Boundary
Private Road ROW
Historical Boundary
Railroad Centerline
TaxCodeLines
Map Index
WaterLines
Land Use Zoning
Plats
Water
Corner
Section Corner
1/16th Line
Govt Lot Line
DLC Line
Meander Line
PLSS Section Line
Historic Corridor 40'
Historic Corridor 20'

WILSONVILLE
OREGON

# Ordinance No. 886 Exhibit C
# Annexation Findings

## Frog Pond Cottage Park Place 17-Lot Subdivision

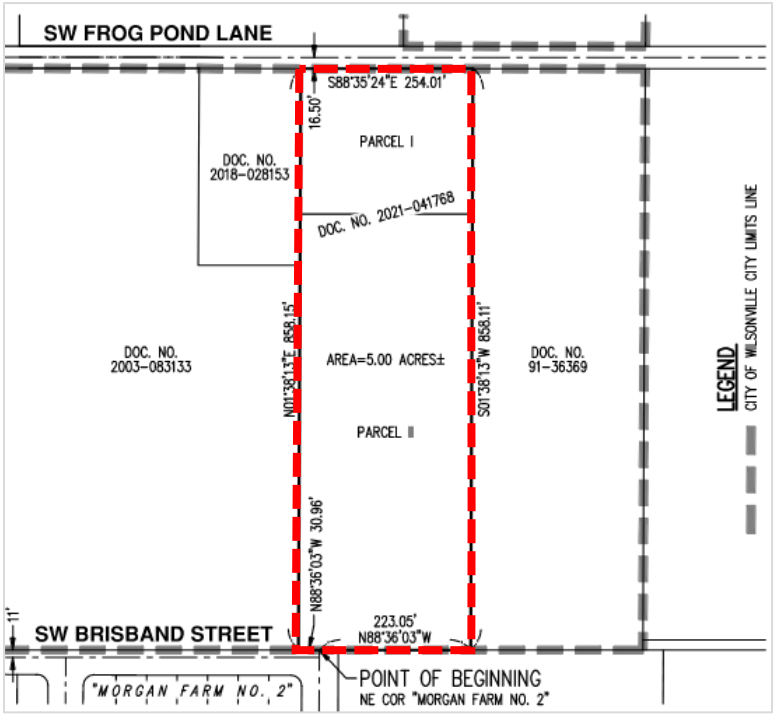
## City Council
## Quasi-Judicial Public Hearing

| | |
|---|---|
| **Hearing Date:** | January 18, 2024 |
| **Date of Report:** | January 2, 2024 |
| **Application No.:** | ANNX23-0001 Annexation |
| **Request/Summary:** | City Council approval of a quasi-judicial annexation of approximately 5.00 acres for a 17-lot residential subdivision concurrently with proposed development consistent with the Frog Pond West Master Plan. |
| **Location:** | 7252 SW Frog Pond Lane. The property is specifically known as Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon. |
| **Owner/Applicant:** | Sullivan Homes LLC (Contact: Brian Matteoni) |
| **Petitioners:** | Brian Matteoni and Wesley Goode |
| **Applicant's Representative:** | AKS Engineering & Forestry, LLC (Contact: Glen Southerland, AICP) |
| **Comprehensive Plan Designation:** | Residential Neighborhood |
| **Zone Map Classification (Current):** | Rural Residential Farm Forest 5-Acre (RRFF-5) |
| **Zone Map Classification (Proposed):** | Residential Neighborhood (RN) |
| **Staff Reviewer:** | Cindy Luxhoj AICP, Associate Planner |
| **Staff Recommendation:** | **Approve** the requested annexation. |

## Applicable Review Criteria:

| **Development Code:** | |
|---|---|
| Section 4.700 | Annexation |
| **Comprehensive Plan and Sub-elements:** | |
| Citizen Involvement | |
| Urban Growth Management | |
| Public Facilities and Services | |
| Land Use and Development | |
| Plan Map | |
| Transportation Systems Plan | |
| Coffee Creek Master Plan | |
| **Regional and State Law and Planning Documents:** | |
| Metro Code Chapter 3.09 | Local Government Boundary Changes |
| ORS 222.111 | Authority and Procedures for Annexation |
| ORS 222.125 | Annexation by Consent of All Land Owners and Majority of Electors |
| ORS 222.170 | Annexation by Consent Before Public Hearing or Order for Election |
| Statewide Planning Goals | |

## Vicinity Map



## Background / Summary:

The subject property has long been rural/semi-rural, adjacent to the growing City of Wilsonville. Metro added the 181-acre area now known as Frog Pond West to the Urban Growth Boundary in 2002 to accommodate future residential growth. To guide development of the area and the urban reserve areas to the east and southeast, the City of Wilsonville adopted the Frog Pond Area Plan in November 2015. The Frog Pond Area Plan envisions that: "The Frog Pond Area in 2035 is an integral part of the Wilsonville community, with attractive and connected neighborhoods. The community's hallmarks are the variety of quality homes; open spaces for gathering; nearby services, shops and restaurants; excellent schools; and vibrant parks and trails. The Frog Pond Area is a convenient bike, walk, drive, or bus trip to all parts of Wilsonville."

As a follow up to the Area Plan and in anticipation of forthcoming development, in July 2017 the City of Wilsonville adopted the Frog Pond West Master Plan for the area within the UGB. To guide development and implement the vision of the Area Plan, the Master Plan includes details on land use (including residential types and unit count ranges), residential and community design, transportation, parks and open space, and community elements such as lighting, street trees, gateways, and signs. The Master Plan also lays out the infrastructure financing plan.

The proposed 17-lot subdivision is the twelfth development proposal in Frog Pond West. It will connect to the previously approved Frog Pond Overlook subdivision to the north, and the Morgan Farm subdivision and primary school site to the south, resulting in one cohesive neighborhood consistent with the Frog Pond West Master Plan.

All property owners and a majority of electors located within the annexation area have consented in writing to the annexation.

## Conclusion and Conditions of Approval:

Staff recommends the City Council annex the subject property with the following condition:

Request: Annexation (ANNX23-0001)

| | |
|---|---|
| **PDA 1.** | **Prior to Issuance of any Public Works Permits by the City within the Annexation Area:** The developer shall be subject to a Development and Annexation Agreement with the City of Wilsonville as required by the Frog Pond West Master Plan. The developer shall enter into the Development and Annexation Agreement prior to issuance of any public works permits by the City within the annexation area. |
| **PDA 2.** | **Prior to Final Filing of the Annexation:** The applicant either shall provide the City with a plan to remove and properly dispose of the hazard Trees #10718, #10744, and #10749, or enter into an agreement with the City to carry out the removal and disposal at the applicant's expense. See Finding A9. |

## Findings of Fact:

NOTE: Pursuant to Section 4.014 the burden of proving that the necessary findings of fact can be made for approval of any land use or development application rests with the applicant in the case.

### General Information

Application Procedures-In General
Section 4.008

The City's processing of the application is in accordance with the applicable general procedures of this Section.

Initiating Application
Section 4.009

The owners of all property included in the application signed the application forms and initiated the application.

### Request: Annexation (ANNX23-0001)

As described in the Findings below, the request meets the applicable criteria or will by Conditions of Approval.

### Comprehensive Plan-Annexation and Boundary Changes

Consistent with Future Planned Public Services
Implementation Measure 2.2.1.a.

**A1.** The Frog Pond West Master Plan establishes the future planned public services and funding plan for the subject property. The development of public services and funding will be consistent with the Frog Pond West Master Plan thus allowing the annexation to proceed. Sullivan Homes LLC and the City will enter into a Development and Annexation Agreement detailing provision and development of public services as required by Conditions of Approval.

Demonstrated Need for Immediate Urban Growth
Implementation Measure 2.2.1.a.

**A2.** Metro brought the subject area into the Urban Growth Boundary (UGB) in 2002 to meet demonstrated regional housing needs. With adoption for the Frog Pond West Master Plan the subject area is now primed for development to help meet regional housing needs.

Adherence to State and Metro Annexation Laws and Standards
Implementation Measure 2.2.1.e.

**A3.** This review applies all applicable Metro and State rules, regulations, and statutes as seen in findings below.

### Orderly, Economic Provision of Public Facilities and Services
Implementation Measure 2.2.1.e. 1.

**A4.** The Frog Pond Area Plan includes implementation measures to ensure the orderly and economic provision of public facilities and services for the Frog Pond Area, including Frog Pond West. The applicant proposes site development with concurrent applications for Stage 1 and Stage 2 Planned Unit Development and Land Division, which proposes the extension of public facilities and services to the subject site. These proposed services are generally consistent with the Frog Pond Area Plan and Frog Pond West Master Plan, and the City's Finance Plan and Capital Improvements Plan.

### Availability of Sufficient Land for Uses to Insure Choices over 3-5 Years
Implementation Measure 2.2.1.e. 2.

**A5.** The inclusion of the Frog Pond area within the UGB and the adoption of the Frog Pond Area Plan demonstrate the need for residential development in the Frog Pond area. Annexation of the subject site will allow development of the uses envisioned by the adopted Frog Pond West Master Plan.

## Wilsonville Development Code-Annexation

### Authority to Review Quasi-Judicial Annexation Requests
Subsections 4.030 (.01) A. 11., 4.031 (.01) K, 4.033 (.01) F., and 4.700 (.02)

**A6.** Review of the quasi-judicial annexation request by DRB and City Council is consistent with the authority established in the Development Code.

### Procedure for Review, Etc.
Subsections 4.700 (.01). and (.04)

**A7.** The submission materials from the applicant include an annexation petition signed by the necessary parties, a legal description and map of the land to be annexed, and a narrative describing conformance with applicable criteria. City Council, upon recommendation from the DRB, will declare the subject property annexed.

### Adoption of Development Agreement with Annexation
Subsection 4.700 (.05)

**A8.** Subject to requirements in this subsection and the Frog Pond West Master Plan, Conditions of Approval require the necessary parties enter into a Development and Annexation Agreement with the City covering the annexed land.

## Wilsonville Code-Public Health and Welfare-Nuisances

### Creating a Hazard
Subsection 6.208 (1) (c)

**A9.** Subsection 6.208 (1) (c) of the Wilsonville Code states, in part, that no person shall create a hazard by maintaining filth, rubbish, waste material, and any other substance which may

endanger or injure neighboring property, passersby, or the health, safety or welfare of the public. With respect to the subject property, 55 trees are proposed to be removed, including Tree #10718, an on-site Oregon white oak that has been confirmed to be infested by Mediterranean oak borer (MOB), and Trees #10744 and #10749, also Oregon white oaks, that are suspected of MOB infestation. If these trees are not removed from the subject property and disposed of appropriately, they can be considered to create a hazard that may endanger or injure neighboring property, were the MOB in the trees to infest other Oregon white oaks in Frog Pond West. Further, failure to remove the infested trees may produce dead and decaying trees and limbs that may affect the health, safety and welfare of the public in proximity to the trees. The City places particular value on Oregon white oaks, native yews, and other species of historic significance to the City and Willamette Valley, and prioritizes their protection and preservation. For these reasons, a Condition of Approval requires that prior to final filing of the annexation, the applicant either will provide the City with a plan to remove and properly dispose of the hazard Trees #10718, #10744 and #10749, or enter into an agreement with the City to carry out the removal and disposal at the applicant's expense.

## Metro Code

### Local Government Boundary Changes
Chapter 3.09

**A10.** The request is within the UGB, meets the definition of a minor boundary change, satisfies the requirements for boundary change petitions, and is consistent with both the Comprehensive Plan and the Frog Pond West Master Plan.

## Oregon Revised Statutes (ORS)

### Authority and Procedure for Annexation
ORS 222.111

**A11.** The request meets the applicable requirements in State statute including the facts that the subject property is within the UGB and is contiguous to the City, the request has been initiated by the property owners of the land being annexed, and all property owners and a majority of electors within the annexed area consent in writing to the annexation.

### Procedure Without Election by City Electors
ORS 222.120

**A12.** The City charter does not require elections for annexation, the City is following a public hearing process defined in the Development Code, and the request meets the applicable requirements in State statute including the facts that all property owners and a majority of electors within the annexed area consent in writing to the annexation. Annexation of the subject property thus does not require an election.

### Annexation by Consent of All Owners and Majority of Electors
ORS 222.125

**A13.** All property owners and a majority of electors within the annexed area have provided their consent in writing. However, the City is following a public hearing process as prescribed in the City's Development Code concurrent with a Zone Map amendment request and other quasi-judicial land use applications.

## Oregon Statewide Planning Goals

### Planning Goals – Generally
Goals 1, 2, 5, 6, 8, 9, 11, 12, 13, 14

**A14.** The area proposed for annexation will be developed consistent with the City's Comprehensive Plan and the Frog Pond West Master Plan, both of which have been found to meet the Statewide Planning Goals.

### Housing
Goal 10

**A15.** The proposed Comprehensive Plan map amendments will continue to allow the City to meet its housing goals and obligations reflected in the Comprehensive Plan. Specifically:

- The City has an existing Housing Needs Analysis and Buildable Lands Inventory adopted in 2014 collectively known as the Wilsonville Residential Land Study. The key conclusions of this study are that Wilsonville: (1) may not have a 20-year supply of residential land and (2) the City's residential policies meet Statewide Planning Goal 10 requirements.

- Under the Metro forecast, Wilsonville is very close to having enough residential land to accommodate expected growth. Wilsonville could run out of residential land by 2032.

- If Wilsonville grows faster than the Metro forecast, based on historic City growth rates, the City will run out of residential land before 2030.

- Getting residential land ready for development is a complex process that involves decisions by Metro, City decision makers, landowners, the Wilsonville community, and others. The City has completed the master planning process for the Frog Pond East and South neighborhoods to ensure that additional residential land is available within the City. The City also adopted a new plan and development standards for more multi-family units in the Wilsonville Town Center. Finally, the City provides infill opportunities, allowing properties with existing development at more rural densities to be re-zoned for more housing, which this application falls under.

- Wilsonville is meeting Statewide Planning Goal 10 requirements to "provide the opportunity for at least 50 percent of new residential units to be attached single

family housing or multiple family housing" and to "provide for an overall density of 8 or more dwelling units per net buildable acre."

- Wilsonville uses a two-map system, with a Comprehensive Plan Map designating a density for all residential land and Zone Map with zoning to implement the Comprehensive Plan designation. Rezoning the subject property to a higher density zone consistent with the Comprehensive Plan will ensure related Zone Map Amendment and development approvals support the Comprehensive Plan and Goal 10.

- The proposal increases density allowed and development capacity within the existing urban growth boundary and improving the capacity identified in the 2014 study. The type of housing is anticipated to be a mix of attached and detached units, and the approval will allow middle housing consistent with House Bill 2001 and newly implemented City code to allow middle housing types.

- The proposal directly impacts approximately 1.0% of the developable residential land identified in the 2014 Wilsonville Residential Land Study (approximately 5.00 of 477 acres).

**DEVELOPMENT REVIEW BOARD**
**RESOLUTION NO. 425**

**A RESOLUTION ADOPTING FINDINGS RECOMMENDING APPROVAL TO CITY COUNCIL OF ANNEXATION AND ZONE MAP AMENDMENT FROM RURAL RESIDENTIAL FARM FOREST 5-ACRE (RRFF-5) TO RESIDENTIAL NEIGHBORHOOD (RN) OF APPROXIMATELY 5.00 ACRES, AND ADOPTING FINDINGS AND CONDITIONS APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW OF PARKS AND OPEN SPACE, TENTATIVE SUBDIVISION PLAT, TYPE C TREE REMOVAL PLAN, MIDDLE HOUSING LAND DIVISION, AND WAIVER FOR A 17-LOT RESIDENTIAL SUBDIVISION.**

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by Brian Matteoni for Sullivan Home, LLC – Owner/Applicant, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code, and

WHEREAS, the subject site is located at 7252 SW Frog Pond Lane on Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated December 28, 2023, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel A at a scheduled meeting conducted on January 8, 2024, at which time exhibits, together with findings and public testimony were entered into the public record, and

WHEREAS, the Development Review Board considered the subject and the recommendations contained in the staff report, and

WHEREAS, interested parties, if any, have had an opportunity to be heard on the subject.

NOW, THEREFORE, BE IT RESOLVED that the Development Review Board of the City of Wilsonville does hereby adopt the staff report dated December 28, 2023, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

DB23-0004 Frog Pond Cottage Park Place: Annexation (ANNX23-0001), Zone Map Amendment (ZONE23-0001), Stage 1 Preliminary Plan (STG123-0002), Stage 2 Final Plan (STG223-0003), Site Design Review of Parks and Open Space (SDR23-0003), Tentative Subdivision Plat (SUBD23-0001), Type C Tree Removal Plan (TPLN23-0002), Middle Housing Land Division (MHLD23-0003), and Waiver (WAIV23-0005).

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 8th day of January, 2024, and filed with the Planning Administrative Assistant on Jan. 9, 2024. This resolution is final on the 15th calendar day after the postmarked date of the written notice of decision per *WC Sec 4.022(.09)* unless appealed per *WC Sec 4.022(.02)* or called up for review by the Council in accordance with *WC Sec 4.022(.03)*.

Clark Hildum, Acting Chair - Panel A
Wilsonville Development Review Board

Attest:

Shelley White, Planning Administrative Assistant

**ORDINANCE NO. 887**

**AN ORDINANCE OF THE CITY OF WILSONVILLE APPROVING A ZONE MAP AMENDMENT FROM THE CLACKAMAS COUNTY RURAL RESIDENTIAL FARM FOREST 5-ACRE (RRFF-5) ZONE TO THE RESIDENTIAL NEIGHBORHOOD (RN) ZONE ON APPROXIMATELY 5.00 ACRES LOCATED AT 7252 SW FROG POND LANE FOR DEVELOPMENT OF A 17-LOT RESIDENTIAL SUBDIVISION.**

WHEREAS, an application, together with planning exhibits for the above-captioned development, has been submitted by Brian Matteoni for Sullivan Homes LLC – Owner/Applicant, in accordance with the procedures set forth in Section 4.008 of the Wilsonville Code; and

WHEREAS, the subject site is located at 7252 SW Frog Pond Lane, on Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon; and

WHEREAS, certain real property within the Frog Pond West Master Plan is being annexed into the City; and

WHEREAS, the City of Wilsonville desires to have the properties zoned consistent with their Wilsonville Comprehensive Plan Map designation of “Residential Neighborhood” rather than maintain the current Clackamas County zoning designation; and

WHEREAS, concurrent with the adoption of the Frog Pond West Master Plan and designating the subject property as “Residential Neighborhood” in the Comprehensive Plan Map, the City added a new zoning district Residential Neighborhood (RN) intended for application to the Master Plan area; and

WHEREAS, the Zone Map Amendment is contingent on annexation of the property to the City of Wilsonville, which annexation has been petitioned for concurrently with the Zone Map Amendment request; and

WHEREAS, the City of Wilsonville Planning Staff analyzed the Zone Map Amendment request and prepared a staff report for the Development Review Board, finding that the application met the requirements for a Zone Map Amendment and recommending approval of the Zone Map Amendment, which staff report was presented to the Development Review Board on January 8, 2024; and

WHEREAS, the Development Review Board Panel 'A' held a duly advertised public hearing on the application for a Zone Map Amendment on January 8, 2024, and after taking public testimony and giving full consideration to the matter, adopted Resolution No. 425 which recommends City Council approval of the Zone Map Amendment request (Case File No. ZONE23-0001; see DB23-0004), adopts the staff report with findings and recommendation, all as placed on the record at the hearing; and

WHEREAS, on January 18, 2024, the Wilsonville City Council held a public hearing regarding the above described matter, wherein the City Council considered the full public record made before the Development Review Board, including the Development Review Board and City Council staff reports; took public testimony; and, upon deliberation, concluded that the proposed Zone Map Amendment meets the applicable approval criteria under the City of Wilsonville Development Code.

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

Section 1. Findings. The City Council adopts, as findings and conclusions, the forgoing Recitals and the Zone Map Amendment Findings in Exhibit B, as if fully set forth herein.

Section 2. Determination. The official City of Wilsonville Zone Map is hereby amended, upon finalization of the annexation of the property to the City, by Zoning Order ZONE23-0001, attached hereto as Exhibit A, from the Clackamas County Rural Residential Farm Forest 5-Acre (RRFF-5) Zone to the Residential Neighborhood (RN) Zone.

Section 3. Effective Date. This Ordinance shall be declared to be in full force and effect thirty (30) days from the date of final passage and approval.

SUBMITTED by the Wilsonville City Council and read for the first time at a regular meeting thereof this 18th day of January 2024, and scheduled the second reading on the 22nd day of February, 2024, commencing at the hour of 7:00 p.m. at the Wilsonville City Hall, 29799 SW Town Center Loop East, Wilsonville, Oregon.

_____

Kimberly Veliz, City Recorder

ENACTED by the City Council on the 22nd day of February, 2024, by the following votes:

Yes: _____ No: _____

_____

Kimberly Veliz, City Recorder

DATED and signed by the Mayor this 22nd day of February, 2024.

_____

JULIE FITZGERALD MAYOR

SUMMARY OF VOTES:

Mayor Fitzgerald

Council President Akervall

Councilor Berry

Councilor Dunwell

Councilor Linville

EXHIBITS:

A. Zoning Order ZONE23-0001 Including Legal Description and Sketch Depicting Zone Map Amendment
B. Zone Map Amendment Findings

C. Development Review Board Panel ‘A’ Resolution No. 425 Recommending Approval of Zone Map Amendment

**BEFORE THE CITY COUNCIL OF THE CITY OF WILSONVILLE, OREGON**

| | | |
|---|---|---|
| In the Matter of the Application of Brian Matteoni for Sullivan Homes LLC, for a Rezoning of Land and Amendment of the City of Wilsonville Zoning Map Incorporated in Section 4.102 of the Wilsonville Code. | ) ) ) ) ) ) | **ZONING ORDER ZONE23-0001** |

The above-entitled matter is before the Council to consider the application of ZONE23-0001, for a Zone Map Amendment and an Order, amending the official Zoning Map as incorporated in Section 4.102 of the Wilsonville Code.

The Council finds that the subject property ("Property"), legally described and shown on the attached legal description and sketch, has heretofore appeared on the Clackamas County zoning map Rural Residential Farm Forest 5-Acre (RRFF-5).

The Council having heard and considered all matters relevant to the application for a Zone Map Amendment, including the Development Review Board record and recommendation, finds that the application should be approved.

THEREFORE IT IS HEREBY ORDERED that the Property, consisting of approximately 5.00 acres located at 7252 SW Frog Pond Lane comprising Tax Lots 1200 and 1300 of Section 12D, as more particularly shown and described in the attached legal description and sketch, is hereby rezoned to Residential Neighborhood (RN), subject to conditions detailed in this Order's adopting Ordinance. The foregoing rezoning is hereby declared an amendment to the Wilsonville Zoning Map (Section 4.102 WC) and shall appear as such from and after entry of this Order.

Dated: This 22nd day of February, 2024.

_____

JULIE FITZGERALD, MAYOR

APPROVED AS TO FORM:

_____

Amanda Guile-Hinman, City Attorney

ATTEST:

_____
Kimberly Veliz, City Recorder

Attachment: Legal Description and Sketch Depicting Land/Territory to be Rezoned

AKS ENGINEERING & FORESTRY, LLC
12965 SW Herman Road, Suite 100, Tualatin, OR 97062
P: (503) 563-6151 | www.aks-eng.com
AKS Job #6175
OFFICES IN: BEND, OR - KEIZER, OR - TUALATIN, OR - VANCOUVER, WA

# EXHIBIT A

Zoning Change Description

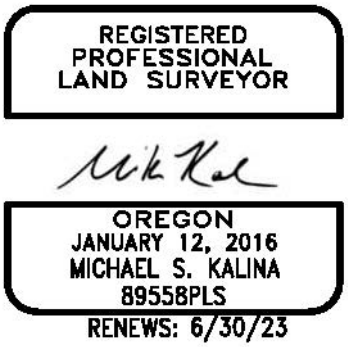
A tract of land located in the Southeast One-Quarter of Section 12, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon, and being more particularly described as follows:

Beginning at the northeast corner of the plat "Morgan Farm No. 2", Plat No. 4610, Clackamas County Plat Records, also being on the north right-of-way line of SW Brisband Street (11.00 feet from centerline) and the City of Wilsonville city limits line; thence along said north right-of-way line and said city limits line, North 88°36'21" West 30.96 feet to the southwest corner of Document Number 2021-041768, Clackamas County Deed Records; thence leaving said city limits line along the west line of said Deed, North 01°38'13" East 858.18 feet to the south right-of-way line of SW Frog Pond Lane (16.50 feet from centerline); thence along said south right-of-way line, South 88°35'24" East 254.01 feet to the northeast corner of said Deed; thence along the east line of said Deed, South 01°38'13" West 858.11 feet to the south line of said Deed and said city limits line; thence along said south line and said city limits line, North 88°36'21" West 223.05 feet to the Point of Beginning.

The above described tract of land contains 5.00 acres, more or less.

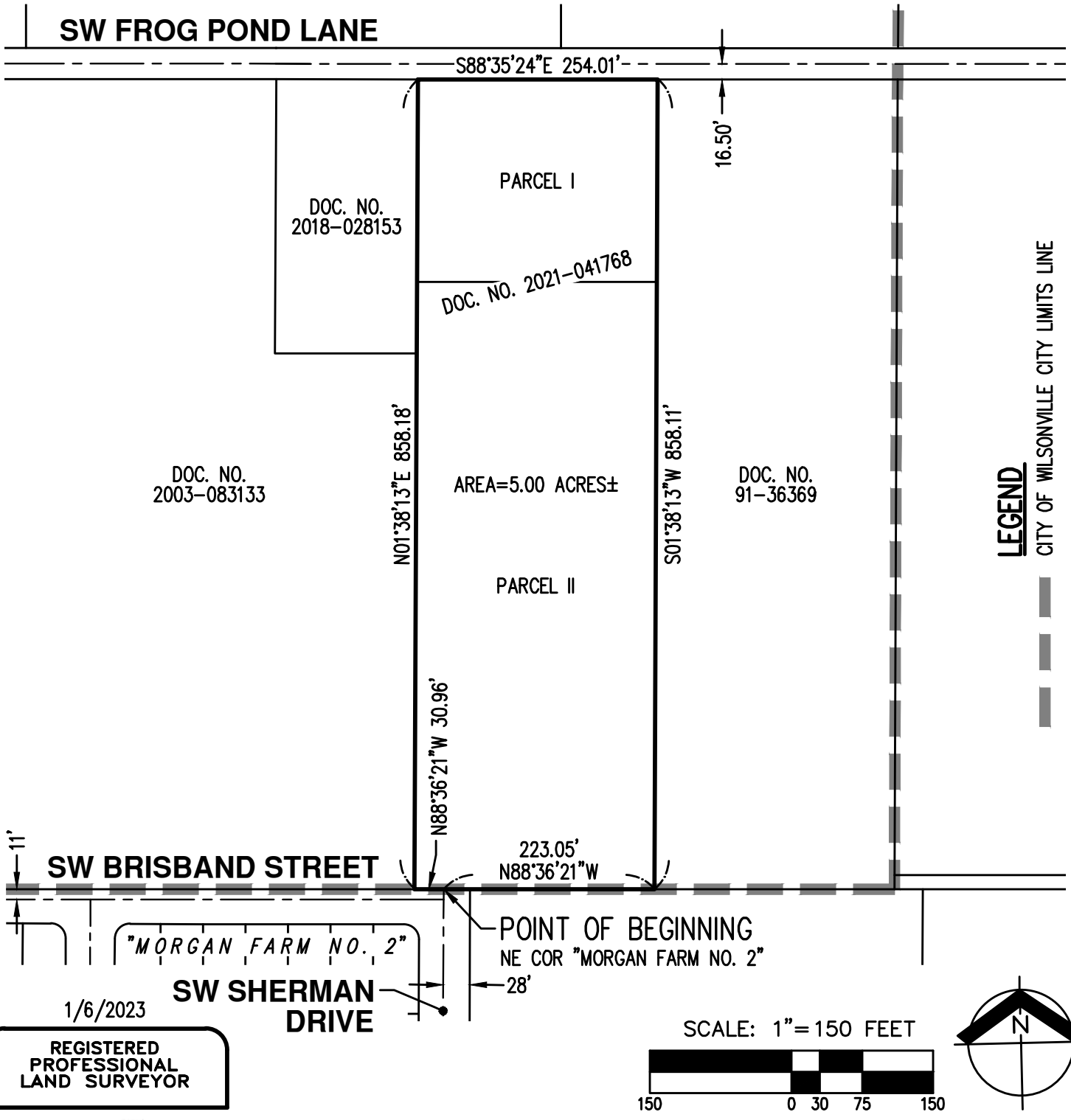
The Basis of Bearings for this description are based on Survey Number 2022-119, Clackamas County Survey Records.

1/6/2023



# EXHIBIT B

## A TRACT OF LAND LOCATED IN THE SOUTHEAST 1/4 OF SECTION 12, TOWNSHIP 3 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, CLACKAMAS COUNTY, OREGON




1/6/2023

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JANUARY 12, 2016
MICHAEL S. KALINA
89558PLS
RENEWS: 6/30/23

| | |
|---|---|
| ZONING CHANGE MAP | EXHIBIT B |
| AKS ENGINEERING & FORESTRY, LLC<br>12965 SW HERMAN RD, STE 100<br>TUALATIN, OR 97062<br>503.563.6151 WWW.AKS-ENG.COM | DRWN: WCB<br>CHKD: MSK<br>AKS 814 |

DWG: 6175 20230106 EXB | EXB1

WILSONVILLE
OREGON

# Ordinance No. 887 Exhibit B
# Zone Map Amendment Findings

## Frog Pond Cottage Park Place 17-Lot Subdivision

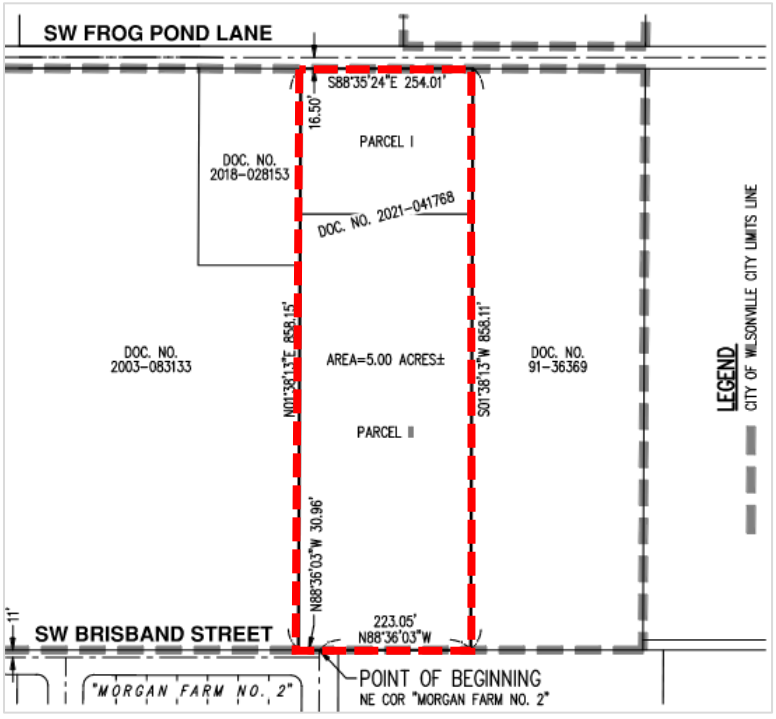
## City Council
## Quasi-Judicial Public Hearing

| | |
|---|---|
| **Hearing Date:** | January 18, 2024 |
| **Date of Report:** | January 2, 2024 |
| **Application Nos.:** | ZONE23-0001 Zone Map Amendment |
| **Request/Summary:** | City Council approval of a quasi-judicial Zone Map amendment of approximately 5.00 acres. |
| **Location:** | 7252 SW Frog Pond Lane. The property is specifically known as Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon. |
| **Owner/Applicant:** | Sullivan Homes LLC (Contact: Brian Matteoni) |
| **Applicant's Representative:** | AKS Engineering & Forestry, LLC (Contact: Glen Southerland, AICP) |
| **Comprehensive Plan Designation:** | Residential Neighborhood |
| **Zone Map Classification (Current):** | Rural Residential Farm Forest 5-Acre (RRFF-5) |
| **Zone Map Classification (Proposed):** | Residential Neighborhood (RN) |
| **Staff Reviewer:** | Cindy Luxhoj AICP, Associate Planner |
| **Staff Recommendation:** | **Adopt** the requested Zone Map Amendment. |

## Applicable Review Criteria:

| **Development Code:** | |
|---|---|
| Section 4.110 | Zones |
| Section 4.127 | Residential Neighborhood (RN) Zone |
| Section 4.197 | Zone Changes |
| **Comprehensive Plan and Sub-elements:** | |
| Citizen Involvement | |
| Urban Growth Management | |
| Public Facilities and Services | |
| Land Use and Development | |
| Plan Map | |
| Transportation Systems Plan | |
| Coffee Creek Master Plan | |
| **Regional and State Law and Planning Documents** | |
| Statewide Planning Goals | |

## Vicinity Map



## Summary:

Zone Map Amendment (ZONE23-0001)

Concurrent with the adoption of the Frog Pond West Master Plan, the City added a new zoning district, Residential Neighborhood (RN), intended for application to the Master Plan area. The applicant proposes applying the RN Zone to the annexed area consistent with this intention.

## Conclusion and Conditions of Approval:

Staff recommends approval with the following conditions:

Request: Zone Map Amendment (ZONE23-0001)

| |
|---|
| This action is contingent upon annexation of the subject property to the City of Wilsonville (ANNX23-0001). |
| No conditions for this request. |

## Findings of Fact:

NOTE: Pursuant to Section 4.014 the burden of proving that the necessary findings of fact can be made for approval of any land use or development application rests with the applicant in the case.

### General Information

Application Procedures-In General
Section 4.008

The City's processing of the application is in accordance with the applicable general procedures of this Section.

Initiating Application
Section 4.009

The owners of all property included in the application signed the application forms and initiated the application.

### Request: Zone Map Amendment (ZONE23-0001)

As described in the Findings below, the request meets the applicable criteria or will by Conditions of Approval.

### Comprehensive Plan

"Residential Neighborhood" on Comprehensive Plan Map, Purpose of "Residential Neighborhood" Designation
Policy 4.1.7.a.

**B1.** The subject area has a Comprehensive Plan Map Designation of "Residential Neighborhood". The designation enables development of the site consistent with the purpose of this designation as set forth in the legislatively adopted Frog Pond West Master Plan, resulting in an attractive, cohesive and connected residential neighborhood with high quality architecture and community design, transportation choices, and preserved and enhanced natural resources.

"Residential Neighborhood" Zone Applied Consistent with Comprehensive Plan
Implementation Measure 4.1.7.c.

**B2.** The applicant requests the subject area receive the zoning designation of Residential Neighborhood (RN) as required for areas with the Comprehensive Plan Map Designation of "Residential Neighborhood".

### Safe, Convenient, Healthful, and Attractive Places to Live
Implementation Measure 4.1.4.c.

**B3.** The proposed RN zoning allows the use of planned developments consistent with the legislatively adopted Frog Pond West Master Plan, enabling development of safe, convenient, healthful, and attractive places to live.

### Residential Density
Implementation Measure 4.1.4.u.

**B4.** The subject area will be zoned RN allowing application of the adopted residential densities of the Frog Pond West Master Plan. The sub-districts established in the Frog Pond West Master Plan govern the allowed residential densities.

## Development Code

### Zoning Consistent with Comprehensive Plan
Section 4.029

**B5.** The applicant requests a zone change concurrently with a Stage 1 Preliminary Plan, Stage 2 Final Plan, and other related development approvals. The proposed zoning designation of RN is consistent with the Comprehensive Plan "Residential Neighborhood" designation. See also Finding B2 above.

### Base Zones
Subsection 4.110 (.01)

**B6.** The requested zoning designation of RN is among the base zones identified in this subsection.

## Residential Neighborhood (RN) Zone

### Purpose of the Residential Neighborhood (RN) Zone
Subsection 4.127 (.01)

**B7.** The request to apply the RN Zone on lands designated "Residential Neighborhood" on the Comprehensive Plan Map enables a planned development process implementing the "Residential Neighborhood" policies and implementation measures of the Comprehensive Plan and the Frog Pond West Master Plan.

### Permitted Uses in the Residential Neighborhood (RN) Zone
Subsection 4.127 (.02)

**B8.** Concurrent with the Zone Map Amendment request the applicant requests approval of a 17-lot residential subdivision. Single-family dwelling units, Duplex, Triplex, Quadplex, Cluster Housing, Cohousing, Cluster Housing (Frog Pond West Master Plan), open space, and public and private parks are among the permitted uses in the RN Zone.

## Residential Neighborhood (RN) Zone Sub-districts and Residential Density
Subsection 4.127 (.05) and (.06)

**B9.** The proposed uses, number of lots, preservation of open space, and general block and street layout are generally consistent with the Frog Pond West Master Plan. Specifically in regards to residential lot count, the proposed Stage 1 area includes a portion of medium lot Sub-district 4 and a portion of large lot Sub-district 7. The following table summarizes how the proposed residential lots in this Sub-district are consistent with the Master Plan recommendations.

While the applicant proposes 11 lots in Sub-district 4, which is the minimum proportional density calculation, 6 lots are proposed in Sub-district 7, exceeding the proportional density calculation for this part of the site by one (1) lot.

| Subdistrict and Land Use Designation | Gross Site Area (ac) | Percent of Sub-district | Established lot range for Sub-district | Lot Range for Site | Proposed Lots | Total lots within Sub-district - Approved and Proposed |
|---|---|---|---|---|---|---|
| 4 – R-7 | 3.28 | 13.1% | 86-107 | 11-14 | 11 | 49 Approved<br>11 Proposed<br>60 Total |
| 7 – R-10 | 1.71 | 17.2% | 24-30 | 4-5 | 6 | 8 Approved<br>6 Proposed<br>14 Total |
| Total | 5.0 | | | 15-19 | 17 | |

With regard to Sub-district 4, the applicant proposes the minimum proportional density calculation of 11 lots, which allows for future development that meets all dimensional standards for lots in this portion of the site.

The proportional density allocation does not account for site-specific characteristics that influence the ability of a specific property to accommodate residential lots meeting minimum dimensional standards. With respect to part of the subject property in Sub-district 7, minimal right-of-way dedication is required because the adjacent section of SW Frog Pond Lane is a local street that allows driveway access, SW Sherman Drive is not being extended through this part of the site to preserve numerous mature trees, including Oregon white oaks, along the west property boundary, and access to Lots 1 through 6 is provided via a private alley. As a result, the proposed site area within Sub-district 7 easily accommodates six (6) lots that meet or exceed all dimensional standards, including minimum lot size requirements. The proposed development of 6 lots in this portion of Sub-district 7 exceeds minimum lot development standards while preserving significant trees and allowing for compliant future development within the master plan area.

The configuration of lots as proposed, which meet all dimensional requirements for the individual lots, will allow for buildout of these sub-districts consistent with the Master Plan recommendations.

**DEVELOPMENT REVIEW BOARD**
**RESOLUTION NO. 425**

**A RESOLUTION ADOPTING FINDINGS RECOMMENDING APPROVAL TO CITY COUNCIL OF ANNEXATION AND ZONE MAP AMENDMENT FROM RURAL RESIDENTIAL FARM FOREST 5-ACRE (RRFF-5) TO RESIDENTIAL NEIGHBORHOOD (RN) OF APPROXIMATELY 5.00 ACRES, AND ADOPTING FINDINGS AND CONDITIONS APPROVING A STAGE 1 PRELIMINARY PLAN, STAGE 2 FINAL PLAN, SITE DESIGN REVIEW OF PARKS AND OPEN SPACE, TENTATIVE SUBDIVISION PLAT, TYPE C TREE REMOVAL PLAN, MIDDLE HOUSING LAND DIVISION, AND WAIVER FOR A 17-LOT RESIDENTIAL SUBDIVISION.**

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WHEREAS, the subject site is located at 7252 SW Frog Pond Lane on Tax Lots 1200 and 1300, Section 12D, Township 3 South, Range 1 West, Willamette Meridian, Clackamas County, Oregon, and

WHEREAS, the Planning Staff has prepared the staff report on the above-captioned subject dated December 28, 2023, and

WHEREAS, said planning exhibits and staff report were duly considered by the Development Review Board Panel A at a scheduled meeting conducted on January 8, 2024, at which time exhibits, together with findings and public testimony were entered into the public record, and

WHEREAS, the Development Review Board considered the subject and the recommendations contained in the staff report, and

WHEREAS, interested parties, if any, have had an opportunity to be heard on the subject.

NOW, THEREFORE, BE IT RESOLVED that the Development Review Board of the City of Wilsonville does hereby adopt the staff report dated December 28, 2023, attached hereto as Exhibit A1, with findings and recommendations contained therein, and authorizes the Planning Director to issue permits consistent with said recommendations for:

DB23-0004 Frog Pond Cottage Park Place: Annexation (ANNX23-0001), Zone Map Amendment (ZONE23-0001), Stage 1 Preliminary Plan (STG123-0002), Stage 2 Final Plan (STG223-0003), Site Design Review of Parks and Open Space (SDR23-0003), Tentative Subdivision Plat (SUBD23-0001), Type C Tree Removal Plan (TPLN23-0002), Middle Housing Land Division (MHLD23-0003), and Waiver (WAIV23-0005).

ADOPTED by the Development Review Board of the City of Wilsonville at a regular meeting thereof this 8th day of January, 2024, and filed with the Planning Administrative Assistant on Jan. 9, 2024. This resolution is final on the 15th calendar day after the postmarked date of the written notice of decision per *WC Sec 4.022(.09)* unless appealed per *WC Sec 4.022(.02)* or called up for review by the Council in accordance with *WC Sec 4.022(.03)*.

Clark Hildum, Acting Chair - Panel A
Wilsonville Development Review Board

Attest:

Shelley White, Planning Administrative Assistant

WILSONVILLE
COMMUNITY DEVELOPMENT

# December 2023 Monthly Report

**From The Director's Office**

Greetings!

Candi "Claus" Garrett of our Engineering Division has done it again! She has made one Wilsonville family's holiday one to remember by organizing and coordinating another fantastic "Family Giving" event. This is our 14th year helping a family have the best holiday ever. The family that we helped this year is a single Mom with four daughters ages one, three, ten and twelve.

2023 FAMILY GIVING










For folks that aren't familiar with our Family Giving, I'll explain. Staff contacts a local school counselor in October asking for one or two families that we could help. We then get a lot of information from the family about clothes styles, sizes, houseware needs, game ideas and favorite holiday foods. Tags are hung on the wall in the City Hall lobby near the tree with specific items that have been requested by the family. Staff members pick tags and bring unwrapped gifts to City Hall. Then staff gathers to wrap all the presents and delivers everything to the family with Santa (this year there were two!) and his elves the week before the Holiday. It's a wonderful, heartwarming tradition Candi and Shelley White of the Planning Division love to do year after year. I am personally proud to be a part of such a wonderful tradition that positively impacts a Wilsonville family.

The Community Development Department wishes you all a wonderful holiday season filled with good times, laughter, and loved ones.

Respectfully submitted,

Chris Neamtzu, AICP

Community Development Director

# Building Division

## Winter Maintenance: Keeping Your Property Safe and Sound

As we enter the winter season, it's essential to address property maintenance in the face of colder temperatures and potential weather-related challenges. Let's delve into strategies to safeguard your property and ensure safety during the winter months.

**Roof and Gutter Maintenance:** The weight of snow and ice can put stress on your roof. Check for loose or damaged shingles and ensure gutters are clean and free from debris to prevent ice dams that can lead to water damage.

**Insulation and Heat Sources:** Inspect and maintain insulation to prevent heat loss, and check heating sources like furnaces, fireplaces, and space heaters for proper functionality. Ensure they are safely installed and well-ventilated to avoid carbon monoxide hazards.

**Pipe Protection:** Protect pipes from freezing by insulating them and allowing faucets to drip during freezing temperatures. Locate your main water shut-off valve in case of emergencies and learn how to turn it off.

**Exterior Property Maintenance:** Clear pathways, driveways, and sidewalks from snow and ice promptly to prevent slips and falls. Use ice melt or sand to create safer walking surfaces.

**Exterior Lighting:** Ensure that outdoor lights are in working order. Longer nights in winter call for proper lighting to enhance safety around your property.

**Fire Safety Precautions:** If using supplemental heating sources, such as space heaters or fireplaces, be vigilant about fire safety. Keep flammable materials away from heat sources and have fire extinguishers readily available.

**Stay Informed and Prepared:** Stay updated on local weather forecasts and emergency notifications. Being informed allows for better preparation and proactive measures to mitigate potential risks.

As we embrace the winter season, property maintenance and preparedness are key to safeguarding your home and ensuring the safety of your loved ones. The City of Wilsonville Building Division encourages proactive measures to prevent weather-related incidents. Wishing everyone a fun and safe winter season!



# Economic Development Division

## Building Networks

December is a busy month for end-of-year and holiday oriented gatherings. This year was no exception. Staff attended the following meetings, representing the City of Wilsonville:

- GPI Investor Mixer
- Westside Economic Alliance – State of the Westside Lunch
- Wilsonville Area Chamber of Commerce Annual Meeting
- Washington County Small Business Support Network
- Lunch with Affordable Housing developer, Greenlight Development

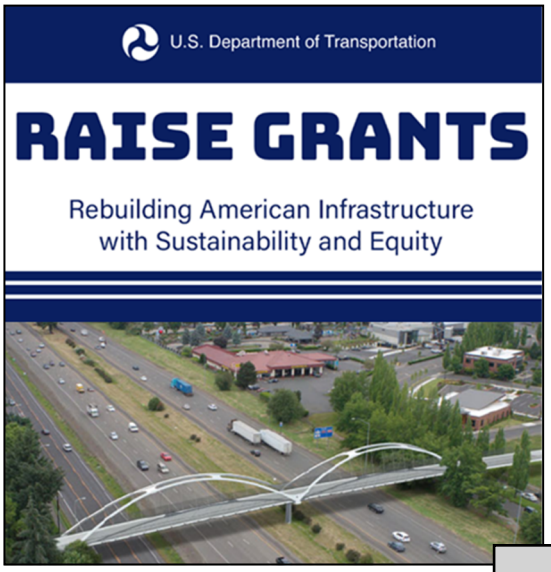
## Economic Development and Communications Team Up for Town Center Urban Renewal Public Outreach




Staff from both departments have been collaborating and putting foundational pieces in place, in order to properly inform the public about the advisory vote on Town Center Urban Renewal in May 2024. Materials that originate from the City must be information and factual and cannot attempt to influence a voter. We can encourage voters to cast their vote, but not suggest they should vote any certain way.

All materials will be driving voters to "learn more" at a stand-alone website we are creating, which will have the url: wilsonvilletowncenter.com. The website will be home to all things Town Center, including the Town Center Plan, past documents and studies that have pointed the City toward urban renewal, meeting presentations, engaging graphics, and the ballot language itself. We will also highlight successful past uses of urban renewal: the Year 2000 plan and the Westside Plan. Front and center on the website will be a 60-90 second video describing urban renewal and how it would be used in Town Center. Staff is putting the contract in place right now with the video production company, based in Portland.

## In Pursuit of a Federal Grant to Support Construction of Bike/Pedestrian Bridge




Economic Development staff are teaming up with Engineering to contract with an experienced consulting team in pursuit of a federal "RAISE" grant to help fund the construction of the I-5 Bike/Pedestrian Bridge.

CFM Consultants is a firm with an active presence in both Salem and Washington DC. They provide grant-writing services as well as advocacy support with Oregon's senators and representatives in DC, whose voice matters when it comes to grant award decision-making.

This will be a fast-moving project. The application deadline is February 28. Staff will be providing all the supporting information and documentation, while CFM will be crafting the application and narrative itself.

# Economic Development Division

## Town Center Urban Renewal Feasibility Study

Staff and consultants briefed the City Council on December 18, for the last time regarding the Town Center Urban Renewal Feasibility Study, which has been ongoing since the summer.

The briefing covered the final draft of the Feasibility Study document, with appendices, draft ballot language, and a basic outline of communication methods and channels to be employed in advance of a potential advisory vote on the question of Town Center Urban Renewal in May 2024.




Council provided feedback regarding the ballot language and posed several questions about urban renewal generally, as well as specifically regarding the potential use of urban renewal in Town Center.

## Miscellanea

A significant portion of each week is often committed to miscellaneous activities that do not fit within a certain theme or category, but nonetheless support business development and business retention in the city. In December staff also completed the following:

- Assembled and submitted a response to Request For Information (RFI) called Project Topaz. This opportunity seeks a facility for a call center to house up to 1000 employees. The Peyton Business Center is an excellent candidate.
- Delivered books to each active member of the Childcare Provider Consortium, as a “thank you” for their time and energy, and to encourage thought as we head into 2024.
- Met with Clackamas County Childcare Coalition, with the Leo Company, to support their policy advocacy efforts. Greg and Rachel Leo are engaging and will add a lot of value in this area.
- Created a draft two-page summary to recognize the astonishing success of the imminently-closing, Westside Urban Renewal Plan.
- Created a two-page summary of statutory reporting requirements for urban renewal agencies across the State. This was done in support of the City’s role as co-chair of Oregon Economic Development Association’s “TIF Committee.”
- Convened ESS (Wilsonville-based Battery Manufacturer) and Business Oregon to encourage ESS to submit an application for a $50,000 award to support their efforts in obtaining funding made available through the Federal Inflation Reduction Act (IRA). Preliminary feedback indicates ESS will receive the award.
- Met with real estate broker, Peter Stalick, together with CD Director Chris Neamtzu, to discuss grievances as well as ideas for improvement with regard to land-use and building permitting within the CD Department.
- Supported the Planning division’s efforts to create a scope of work to advance the Basalt Creek Industrial Area toward development readiness. These efforts are supported by $390,000 of grant dollars, obtained through joint efforts between Planning and Economic Development staff.

Onward to 2024!

## Engineering Division, Capital Projects

**2022 Street Maintenance(4014/4118/4717)**

This project included Pedestrian Curb Ramp Replacements (4014), Signal Modifications (4118), and Pedestrian Crossing Improvements (4717). The curb ramps and pedestrian push button replacements were done to comply with ADA requirements ahead of the 2023 Street Maintenance project that is repaving Wilsonville Road adjacent to the ramps. Also included within this project was pedestrian crossing improvements along French Prairie Road in Charbonneau that enhance the safety and visibility of pedestrians. The collective project was performed by Emery & Sons and its subcontractors. This project has been accepted by the City and is now in a two-year warranty period. Over the course of the next two years, staff will inspect the improvements to make sure they are free from defects prior to warranty expiration.

**2023 Street Maintenance (4014/4118/4717)**

The following improvements were performed by S-2 Contractors:

- Boeckman Road (near I-5 Overpass): Road base reconstruction, paving and re-striping.
- Wilsonville Road (between I-5 and Kinsman Road): Road base reconstruction, all paving and striping.
- Wilsonville Road (near Rose Lane): Road base reconstruction, all paving and striping

Staff has performed a final inspection and working to resolve issues where the contract was not fulfilled.

**2024 Street Maintenance (4014/4717)**

In the fall, Staff walked the project limits with the consulting team to establish expectations and discuss future efforts such as future pavement design.

**Boones Ferry Road (Wilsonville Road to Bailey Street)**

- Reconstruction of pavement section
- Updating of all non-compliant ADA pedestrian ramps
- Pedestrian signal improvements at Boones Ferry Road at the entrance to Fred Meyer
- Updating of the mid-block pedestrian crossing near Killer Burger

**Bailey Street (Boones Ferry Road to cul-de-sac near Subaru Dealership)**

- Reconstruction of pavement section
- Updating of all non-compliant ADA pedestrian ramps

**Boberg Road (Boeckman Road to Barber Road)**

- Reconstruction of pavement section

**Boeckman Creek Interceptor (2107)**

This project will upsize the existing Boeckman Creek Interceptor sewer collection pipeline in order to support the development of the Frog Pond area. A regional trail will be installed as a part of the maintenance path from Boeckman Road to Memorial Park. Field investigations are nearly finished, and the design is approaching 30 percent complete. A preliminary review of the trail layout and maintenance concept plan is under review. Once review is completed, a public open house will be held to seek input on the design to refine the layout. One additional open house event is planned for advance designs. The dates for both events will be set and advertised in advance of the events.

# Engineering Division, Capital Projects

**Boeckman Road Corridor Project (4212/4206/4205/2102/7065)**

This project involves the design and construction of the Boeckman Dip Bridge, Boeckman Road Improvements (Canyon Creek Road – Stafford Road), Canyon Creek Traffic Signal, and Boeckman Road Sanitary Sewer projects. The Tapani-Sundt Joint Venture is pushing to design the project and advancing time-critical components. Property acquisitions were completed in December. This project has been divided into several guaranteed maximum price (GMP).

- **GMP 1: Temporary Traffic Signal at Stafford and 65th Ave**
  - ◊ Work is complete on this package.
- **GMP 2: Meridian Creek Culverts, House Demo**
  - ◊ Work is complete on this package.
- **GMP 3: Bridge, Roundabout, and Road Widening**
  - ◊ Costs have been accepted by the City Council as of December 4. Notice to proceed (NTP) has been issued, and long lead items have been ordered. A trailer, minor clearing, and erosion control will be installed in the coming days at the intersection of Canyon Creek and Boeckman. Road closure is expected to start on January 22, with extensive public communication and information being distributed prior to the closure.





Other work is occurring in advance of the bridge work such as tree clearing, utility relocations, and coordination with the new primary school site. The recent photos to the right show current ongoing progress of this project.

**Charbonneau Consolidated Plan—Edgewater and Village Greens (1500/2500/4500/7500)**

This project is one of 38 project areas designated by the Charbonneau Consolidated Plan for the design and construction of water, wastewater, and stormwater improvements. This project specifically focuses on Edgewater Lane, Village Greens Circle and French Prairie Road. This project is ready for bid once funding becomes available.

**Charbonneau Lift Station (2106)**

This project involves replacing the Charbonneau wastewater lift station with a submersible lift station and replacing the force main from the station to the I-5 bridge. The design contract was awarded to Murraysmith in December 2021, and final design was completed in October 2023. A construction contract with Tapani, Inc. will be presented to City Council for award in December 2023, with construction anticipated for completion in September 2024.

**West Side Level B Reservoir and Transmission Main (1149)**

This project will design and construct a new three million gallon water reservoir just west of City limits, along with a 24-inch transmission main connecting to the City water system. City Council awarded the design contract to Consor in February 2023. Design will be completed in 2024, followed by construction in 2024-2025.

# Engineering Division, Capital Projects

## WTP Expansion to 20 MGD (1144)

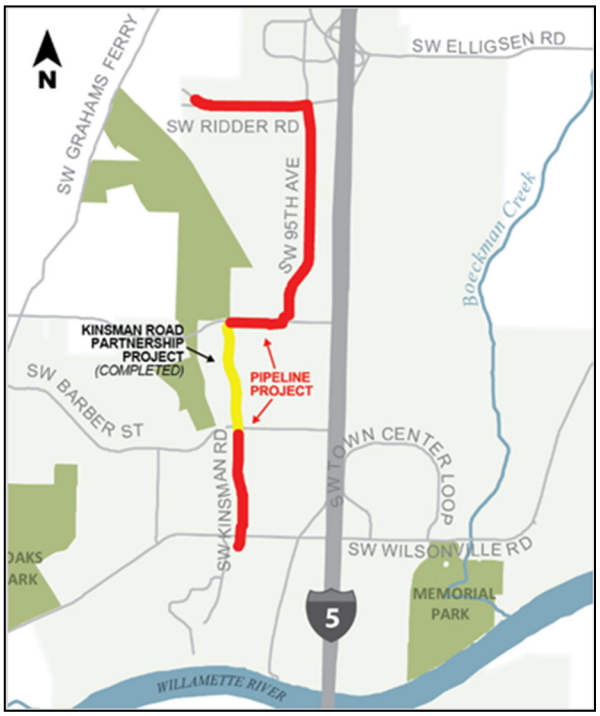


This project will expand the WTP capacity to 20 MGD and incorporate related WTP capital improvements. A CMGC alternative contracting method was approved by City Council in March 2020. An engineering contract was awarded to Stantec in July 2020. The CMGC contract was awarded to Kiewit in August 2021. City Council approved an early work package for ozone generator replacement in October 2021. Final design was completed in coordination with the CMGC in March 2022. Construction (pictured) began in June 2022 with completion expected in June 2024.

## WWSP Coordination (1127)

Ongoing coordination efforts continue with the Willamette Water Supply Program (WWSP). Here are the updates on major elements within Wilsonville:

- **Phase 1, Wilsonville Road (PLM_1.1)** Arrowhead Creek Lane to Wilsonville Road—**COMPLETE**
- **Phase 2, Garden Acres Road to 124th (PLM_1.2)** Ridder Road to Day Road—**COMPLETE**
- **Phase 3, Wilsonville Road to Garden Acres Road (PLM_1.3)** The WWSP's last section of transmission pipeline to be constructed in the City of Wilsonville began in fall 2022, with completion planned for 2024. It will connect the remaining portion of the pipeline through Wilsonville and has an alignment along Kinsman Road, Boeckman Road, 95th Avenue, and Ridder Road (see image). The Engineering Division is currently in the process of reviewing final plans and coordinating construction. The trenchless crossing under Wilsonville Road has been completed. Pipe install on the northern half of 95th Avenue to Ridder Road has been completed and restoration of the sidewalk, curb, and gutter on the east side of the road is ongoing. The east side of 95th Avenue from Hillman Court to Ridder Road will be temporarily paved and opened to two way traffic, with concrete road panel restoration to follow in Spring 2024. Pipe installation has been completed on Kinsman Road between Wilsonville Road and Barber Street, and the street has been temporarily paved. The contractor will begin restoring the concrete road panels on the west side of Kinsman Road after restoration has been completed on 95th Avenue. The trenchless crossing under Boeckman Road has begun.




## Wastewater Treatment Plant (WWTP) Master Plan (2104)

This project evaluates capacity of WWTP processes to accommodate projected growth and regulatory changes. A prioritized capital improvement plan and budget has been developed. The project was completed and the findings presented to the Planning Commission in December 2023. The Master Plan will be presented to City Council for adoption in January 2024.

# Engineering Division, Private Development

## Residential Construction Activities

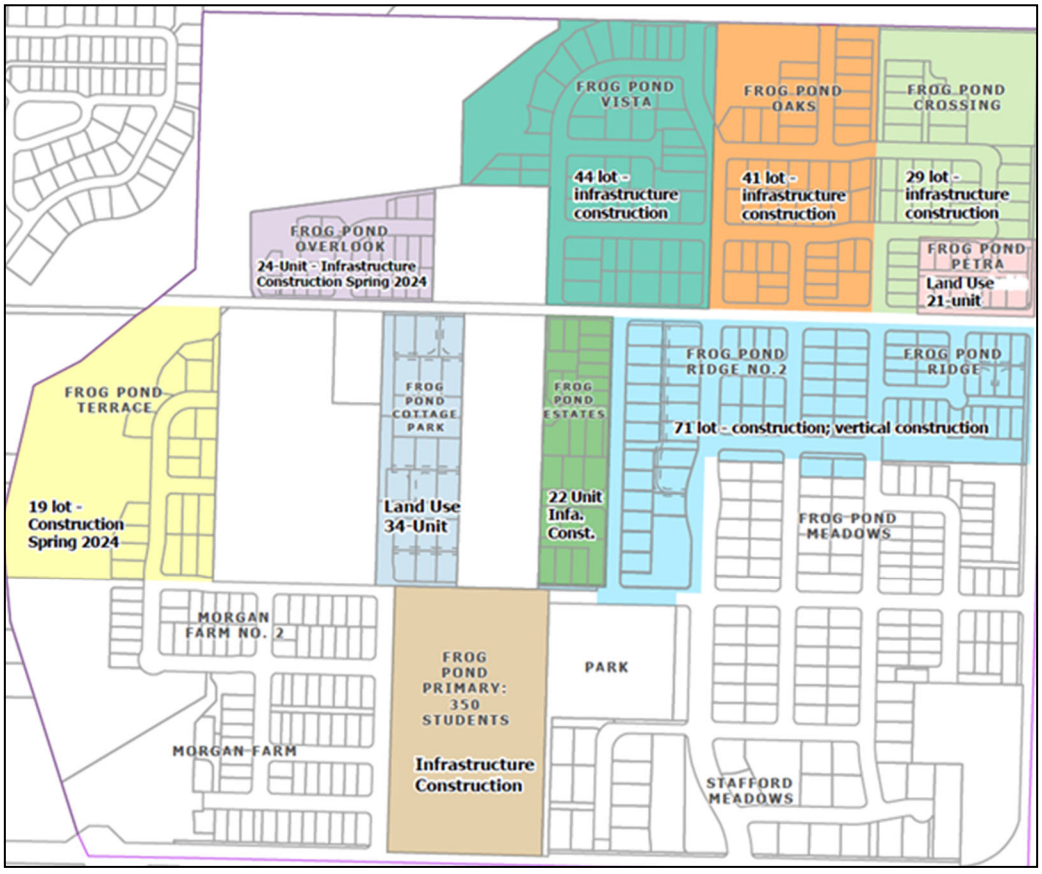
### *Canyon Creek South Phase 3*

The contractor paved at the beginning of December, and is working on punchlist items for closeout including open space improvements.

### *Frog Pond West*

Frog Pond West continues to see significant construction activities. Housing construction in Frog Pond Ridge, located south of Frog Pond Lane, is ongoing.

- Frog Pond Crossing subdivision, a 29-lot subdivision located north of Frog Pond Lane, was paved at the end of July. The contractor is working on punchlist items for project closeout. Home construction is underway.
- Frog Pond Estates, a 17-lot subdivision located south of Frog Pond Lane and west of Frog Pond Ridge, was paved in December.
- Frog Pond Oaks subdivision, a 41-lot subdivision located to the west of Frog Pond Crossing, was paved at the end of September. The contractor is working on punchlist items for project closeout.
- Frog Pond Overlook, a 24-lot subdivision located north of Frog Pond Lane and west of Frog Pond Vista, is anticipated to start construction in spring 2024.
- Frog Pond Primary, the new West Linn-Wilsonville School District primary school on Boeckman Road, is working primarily onsite.
- Frog Pond Terrace, a 19-lot subdivision located north of Morgan Farms, is anticipated to start construction in spring 2024.
- Frog Pond Vista subdivision, a 38-lot subdivision to the west of Frog Pond Oaks, was paved at the beginning of December. The contractor is working on punchlist items for project closeout.




### *Villebois Clermont*

The contractor is continuing to work on punch list items at Regional Parks 5 and 6. Home construction continues.

# Natural Resources Division

## NPDES MS4 Annual Report

An annual report is prepared every fall for the City's National Pollution Discharge Ellimination System (NPDES) MS4 stormwater program. The report is submitted to the Oregon Department of Environmental Quality and documents stormwater management practices, land use changes and new development activities, program expenditures, and water quality monitoring.

Highlights from this year's report include:

- Erosion and sediment control (ESC) – All new and redevelopment projects disturbing over 500 square feet shall have an approved ESC plan. During the reporting year (July 1, 2022 to June 30, 2023), certified City inspectors approved ESC plans for 156 projects and conducted 836 ESC inspections.
- New stormwater facilities – Every year sees an increase in the number of private stormwater facilities constructed to treat and control stormwater runoff from development sites. During the reporting year, thirty rain gardens, thirty vegetated swales, ten planter boxes, and one detention pond were installed.
- Existing structural controls – During the reporting year, staff inspected 190 public structural controls. All of the structural controls were given an inspection ranking and entered into the City's asset management system (i.e., Cartegraph).
- Approximately 18,174 linear feet of the stormwater conveyance system was cleaned and maintained by Public Works during the reporting year.
- And Public Works swept 3,449 miles of City streets during the reporting year, which resulted in the removal of 579 tons of debris.



Vegetated Swale



Planter Box

## Planning Division, Current

**Administrative Land Use Decisions Issued**

- 1 Type A Tree Permit
- 4 Type B Tree Permits
- 1 Type C Tree Permit
- 2 Class 2 Administrative Reviews
- 2 Class 1 Sign Permits

**Construction Permit Review, Development Inspections, and Project Management**

In December, Planning staff worked with developers and contractors to ensure construction of the following projects are consistent with Development Review Board and City Council approvals:

- Industrial development on Day Road
- New gas station and convenience store on Boones Ferry Road
- New Public Works Building
- Residential subdivisions in Frog Pond West

**Development Review Board (DRB)**

DRB Panel A met on December 11. At the meeting the Board continued a hearing on a new industrial building at ParkWorks off Parkway Avenue to their January meeting. The Board also approved a 21-unit subdivision at the corner of Frog Pond Lane and Stafford Road in Frog Pond West.

DRB Panel B did not meet in December.

**DRB Projects Under Review**

During December, Planning staff actively worked on the following major projects in preparation for potential public hearings before the Development Review Board:

- 21-unit subdivision in Frog Pond West
- 34-unit subdivision in Frog Pond West
- Conditional Use Permit for short-term rental in residential zone on Wilsonville Road
- Design of private park in new subdivision at 28700 SW Canyon Creek Road South
- Digital changeable copy sign on Boeckman Creek Primary School
- New electric substation along Parkway Avenue north of Boeckman Road
- New industrial building at ParkWorks off Parkway Avenue
- New Office Building for CIS (City County Insurance Services) at Wilsonville and Kinsman Roads
- Transit-Oriented Mixed-Use Development adjacent to SMART Central/WES Station on Barber Street
- Warehouse expansion on Boberg Road



Proposed Office Building Kinsman and Wilsonville Road, Elevation Facing Wilsonville Road

# Planning Division, Long Range

## Coffee Creek Form-based Code Assessment and Basalt Creek Code Implementation

Planning staff is conducting an assessment of the Coffee Creek Form-based Code standards to identify ways in which they could be adjusted to streamline land use review and encourage additional high-quality industrial development. This information also will be used to help determine what zoning is appropriate for the Basalt Creek industrial area. In addition to zoning, implementation in Basalt Creek involves infrastructure planning, funding, and other steps to ensure the land in this area is development-ready. In December, staff worked on scoping and determining the consultant team to support the project using $390,000 in grant funds. These funds include an additional $120,000 in from Metro to expand the scope to include economic opportunities and strategies throughout the City.

## Frog Pond East and South Master Plan

With the Frog Pond East and South Master Plan adopted in December 2022, the City is now focusing on implementation. Two outstanding implementation steps are in process: (1) Development Code amendments, and (2) an infrastructure funding plan. During December, the project team continued work on testing and refining draft code concepts, particularly siting and design standards and housing variety. Work sessions were held with both the City Council and Planning Commission. The month also included meetings with staff as well as with consultants and stakeholders. Also during December, work continued on the infrastructure funding plan, including reviewing a draft memo that will be a major portion of the plan.

FROG POND EAST & SOUTH MASTER PLAN

## Housing Our Future

This multi-year project will analyze Wilsonville's housing capacity and need followed by developing strategies to produce housing to meet the identified housing needs. The City's last Housing Needs Analysis was adopted in 2014. In December, the project team worked on finishing the last tasks of phase 2 of the project and getting contracts and detailed work plans in place for the third and final phase of the project.

## Oregon White Oak Response Coordination

In December, Associate Planner Georgia McAlister continued as a key member of the Mediterranean Oak Borer (MOB) task force, continuing to coordinate efforts between various City Divisions and Departments, as well as contract arborists, property owners, and others to diagnose and make a plan to address the declining health of a number of the City's Oregon White Oak trees. Other members of the Planning Division were involved as well advising Georgia and working on permits for removal and how to best address White Oak trees in existing and planned development. The MOB task force focused on planning for the winter season when tree failures are more likely, establishing the best practices for our roads crew. Georgia helped prepare a Council briefing on the MOB efforts.

# Planning Division, Long Range

## Statewide Policy Involvement

In December, members of the Planning Staff, together with Engineering and Building Staff continued to track the Governor's Housing Production Advisory Council (HPAC) and other policy discussions to inform upcoming legislative sessions focused on fees, permitting process, and review standards to support increased housing production.

In addition, the City's Planning Director, Miranda Bateschell, continued serving on the State's Oregon Housing Needs Analysis Rulemaking Advisory Committee for HB 2001 (2023) and attended multiple meetings. This effort will amend rules related to Goals 10 (Housing) and 14 (Urbanization) as well as housing- and urbanization-related sections of Oregon Revised Statute (ORS 197.286 to 197.314). The intent of this rulemaking is to refocus the implementation of Goal 10 from a narrow focus on housing capacity towards a more comprehensive framework that emphasizes local actions to promote housing production, affordability, and choice within their community and across the state.

## Planning Commission

The Planning Commission met on December 13. The Commission held a public hearing for and unanimously recommended to City Council approval of the Wastewater Treatment Plant Master Plan. The Planning Commission additionally held two work sessions. First, they discussed and gave tentative support to refinements to the Coffee Creek Industrial design standards. Second, they continued the discussion on implementing development code for Frog Pond East and South.

## Transit-Oriented Development at the Wilsonville Transit Center

The Equitable Housing Strategic Plan identified exploration of Transit-Oriented Development (TOD) at the Wilsonville Transit Center as a near-term implementation action. Throughout 2023, the City has been working with the project's selected developer, Palindrome, to refine development plans for the site. The proposed project includes 121 units of housing affordable to households making between 30% and 80% of Area Median Income, along with ground-floor tenants including a welcome center for SMART, a new home for Wilsonville Community Sharing, and a coffee house/taproom space. During December, the City continued review of the submitted land use application.

General project information is available on the project website:

https://ci.wilsonville.or.us/planning/page/wilsonville-transit-center-tod

## Wilsonville Town Center Plan Implementation

During December, the Town Center project team neared completion of work on a detailed Urban Renewal Feasibility Study, taking the findings of the recently adopted Infrastructure Funding Plan and further assessing forecasted revenues, maximum indebtedness, a project list, and proposed district boundary for an Urban Renewal District in Town Center. After the final Urban Renewal Task Force meeting on November 30, the project team held two work sessions with City Council to discuss the project list, draft ballot language, and communications plan for the planned advisory vote on the proposed Urban Renewal Area in May 2024. City Council will make a final decision on ballot language in January.



WILSONVILLE
FINANCE

# DECEMBER MONTHLY REPORT

*FINANCE—The department where everyone counts*

- **Financial Reporting:** The City's yearly outside independent auditing process is now complete and the fiscal year 2023, audited Annual Comprehensive Financial Report (ACFR) along with the audited Urban Renewal Annual Financial Report have been filed with the Oregon Secretary of State, posted on the City's website (www.ci.wilsonville.or.us/finance/page/financial-reports), and posted on the electronic municipal market access website (EMMA). EMMA is the official U.S. Securities and Exchange Commission (SEC) repository for municipal securities disclosures (www.emma.msrb.org).

- **Year End Reporting**: The department is working on end of calendar year reconciliations and reporting including Form W-2 (Payroll) and Form 1099 (Accounts Payable) issuance. Due dates for both are January 31, 2024. In general, Form W-2's (Payroll) must be issued for any payroll compensation issued to employees and Form 1099's (Accounts Payable) for any non-employee compensation. Once issued, both will be filed electronically with the IRS and State.

- **Budget:** In December, we kicked off the fiscal year 2024 budget preparation process with the assistance of every department in the City. Additionally we reached out to our three newly appointment budget committee member to schedule an orientation to this annual process and discuss roles and responsibilities. **Budget Committee** meetings have been scheduled for May 9, 2024 (THU), May 15, 2024 (WED), and only if needed on May 16, 2024 (THU).

- **Sustainability**: In keeping with one of City Council's prior year goals, Finance continues to promote a paperless/electronic environment whenever/wherever possible. This includes most notably: Accounts Payable, Payroll and Utility Billing. Over the course of the last two years:
  - Accounts Payable—has transitioned from ~53% to ~61% of our vendors enrolled in electronic funds transfer (EFT). An increase of ~30 more payments payable electronically each month. Additionally, an increasing number of invoices and statements are also received electronically.
  - Payroll—has transitioned to 100% of our employees currently enrolled in EFT! Additionally, our transition to the new Employee Self Service portal, which includes also electronic timesheets, is almost complete.
  - Utility Billing— The percentage of customers on paperless billing started the year at 52% and ended at 59%. The customer portal has the paperless option selected requiring customers to uncheck the box to opt out. Many customer move in and out through the year. We processed approximately 1500 online forms this last year.

- **Attached Financials**: Finance continues to monitor all departments for on-going budget compliance.

**City of Wilsonville - Fund Summaries**
**Reporting Month: Dec FY 2024**

| | | Current Year Budget | Year to Date Activity | *Remaining Balance* | *% Used* |
|---|---|---|---|---|---|
| **110 - General Fund** | | | | | |
| | Taxes | $ 15,090,000 | $ 8,639,559 | $ 6,450,441 | *57%* |
| | Intergovernmental | 2,715,173 | 198,686 | 2,516,487 | *7%* |
| | Licenses and permits | 242,800 | 110,496 | 132,304 | *46%* |
| | Charges for services | 413,164 | 210,673 | 202,491 | *51%* |
| | Fines and forfeitures | 250,000 | 79,510 | 170,490 | *32%* |
| | Investment revenue | 304,600 | 224,970 | 79,630 | *74%* |
| | Other revenues | 681,450 | 197,013 | 484,437 | *29%* |
| | Transfers in | 5,572,496 | 2,270,888 | 3,301,608 | *41%* |
| | **TOTAL REVENUES** | **$ 25,269,683** | **$ 11,931,795** | **$ 13,337,888** | ***47%*** |
| | Personnel services | $ 12,185,032 | $ 5,234,542 | $ 6,950,490 | *43%* |
| | Materials and services | 12,860,094 | 2,688,481 | 10,171,613 | *21%* |
| | Capital outlay | 311,177 | 164,072 | 147,105 | *53%* |
| | Debt service | 1,134,284 | 1,129,631 | 4,653 | *100%* |
| | Transfers out | 8,777,843 | 1,303,027 | 7,474,816 | *15%* |
| | **TOTAL EXPENDITURES** | **$ 35,268,430** | **$ 10,519,752** | **$ 24,748,678** | ***30%*** |
| **610 - Fleet Fund** | | | | | |
| | Charges for services | $ 1,722,180 | $ 861,090 | $ 861,090 | *50%* |
| | Investment revenue | 8,200 | 12,940 | (4,740) | *158%* |
| | Other revenues | - | 1,790 | (1,790) | - |
| | **TOTAL REVENUES** | **$ 1,730,380** | **$ 875,820** | **$ 854,560** | ***51%*** |
| | Personnel services | $ 985,470 | $ 412,811 | $ 572,659 | *42%* |
| | Materials and services | 801,417 | 315,594 | 485,823 | *39%* |
| | Capital outlay | 303,800 | 181,292 | 122,508 | *60%* |
| | Transfers out | 2,400 | 1,200 | 1,200 | *50%* |
| | **TOTAL EXPENDITURES** | **$ 2,093,087** | **$ 910,897** | **$ 1,182,190** | ***44%*** |
| **230 - Building Inspection Fund** | | | | | |
| | Licenses and permits | $ 1,204,000 | $ 756,314 | $ 447,686 | *63%* |
| | Investment revenue | 71,700 | 38,660 | 33,040 | *54%* |
| | **TOTAL REVENUES** | **$ 1,275,700** | **$ 794,975** | **$ 480,725** | ***62%*** |
| | Personnel services | $ 1,076,940 | $ 423,347 | $ 653,593 | *39%* |
| | Materials and services | 198,774 | 109,124 | 89,650 | *55%* |
| | Transfers out | 346,058 | 173,034 | 173,024 | *50%* |
| | **TOTAL EXPENDITURES** | **$ 1,621,772** | **$ 705,506** | **$ 916,266** | ***44%*** |
| **231 - Community Development Fund** | | | | | |
| | Licenses and permits | $ 852,302 | $ 425,031 | $ 427,271 | *50%* |
| | Charges for services | 743,714 | 245,562 | 498,152 | *33%* |
| | Intergovernmental | 21,713 | - | 21,713 | *0%* |
| | Investment revenue | 44,400 | 20,544 | 23,856 | *46%* |
| | Other revenues | - | 25 | (25) | - |
| | Transfers in | 3,335,385 | 1,205,083 | 2,130,302 | *36%* |
| | **TOTAL REVENUES** | **$ 4,997,514** | **$ 1,896,245** | **$ 3,101,269** | ***38%*** |
| | Personnel services | $ 3,685,060 | $ 1,546,835 | $ 2,138,225 | *42%* |
| | Materials and services | 803,584 | 225,890 | 577,694 | *28%* |
| | Transfers out | 729,639 | 303,966 | 425,673 | *42%* |
| | **TOTAL EXPENDITURES** | **$ 5,218,283** | **$ 2,076,691** | **$ 3,141,592** | ***40%*** |
| **240 - Road Operating Fund** | | | | | |
| | Intergovernmental | $ 2,240,600 | $ 308,924 | $ 1,931,676 | *14%* |
| | Investment revenue | 52,200 | 44,098 | 8,102 | *84%* |
| | Other revenues | - | 742 | (742) | - |
| | **TOTAL REVENUES** | **$ 2,292,800** | **$ 353,764** | **$ 1,939,036** | ***15%*** |
| | Personnel services | $ 524,370 | $ 197,233 | $ 327,137 | *38%* |
| | Materials and services | 616,212 | 347,343 | 268,869 | *56%* |
| | Capital outlay | 300,000 | 8,950 | 291,050 | *3%* |
| | Debt service | 358,000 | 47,524 | 310,476 | *13%* |
| | Transfers out | 2,708,462 | 1,852,316 | 856,146 | *68%* |
| | **TOTAL EXPENDITURES** | **$ 4,507,044** | **$ 2,453,366** | **$ 2,053,678** | ***54%*** |

**City of Wilsonville - Fund Summaries**
**Reporting Month: Dec FY 2024**

| | Current Year Budget | Year to Date Activity | *Remaining Balance* | *% Used* |
|---|---|---|---|---|
| **241 - Road Maintenance Fund** | | | | |
| Charges for services | $ 2,249,000 | $ 1,120,337 | $ 1,128,663 | *50%* |
| Investment revenue | 87,100 | 42,712 | 44,388 | *49%* |
| **TOTAL REVENUES** | **$ 2,336,100** | **$ 1,163,048** | **$ 1,173,052** | ***50%*** |
| Transfers out | $ 4,235,000 | $ 2,361,196 | $ 1,873,804 | *56%* |
| **TOTAL EXPENDITURES** | **$ 4,235,000** | **$ 2,361,196** | **$ 1,873,804** | ***56%*** |
| **260 - Transit Fund** | | | | |
| Taxes | $ 6,000,000 | $ 2,888,047 | $ 3,111,953 | *48%* |
| Intergovernmental | 4,174,500 | 1,716,843 | 2,457,657 | *41%* |
| Charges for services | 40,000 | 4,167 | 35,833 | *10%* |
| Fines and forfeitures | 5,000 | 2,700 | 2,300 | *54%* |
| Investment revenue | 425,100 | 156,046 | 269,054 | *37%* |
| Other revenues | 16,000 | 948 | 15,053 | *6%* |
| **TOTAL REVENUES** | **$ 10,660,600** | **$ 4,768,751** | **$ 5,891,849** | ***45%*** |
| Personnel services | $ 5,058,100 | $ 1,702,986 | $ 3,355,114 | *34%* |
| Materials and services | 3,239,530 | 1,250,308 | 1,989,222 | *39%* |
| Capital outlay | 2,060,000 | 608,201 | 1,451,799 | *30%* |
| Transfers out | 1,043,990 | 375,913 | 668,077 | *36%* |
| **TOTAL EXPENDITURES** | **$ 11,401,620** | **$ 3,937,408** | **$ 7,464,212** | ***35%*** |
| **510 - Water Operating Fund** | | | | |
| Charges for services | $ 10,104,780 | $ 5,792,010 | $ 4,312,770 | *57%* |
| Fines and forfeitures | - | 7,420 | (7,420) | - |
| Investment revenue | 324,500 | 242,582 | 81,918 | *75%* |
| Other revenues | 1,168,080 | 1,153,500 | 14,580 | *99%* |
| **TOTAL REVENUES** | **$ 11,597,360** | **$ 7,195,513** | **$ 4,401,847** | ***62%*** |
| Personnel services | $ 687,800 | $ 267,816 | $ 419,984 | *39%* |
| Materials and services | 5,050,863 | 1,759,030 | 3,291,833 | *35%* |
| Capital outlay | 695,000 | 52,960 | 642,040 | *8%* |
| Debt service | 371,000 | 49,432 | 321,568 | *13%* |
| Transfers out | 12,343,417 | 2,521,482 | 9,821,935 | *20%* |
| **TOTAL EXPENDITURES** | **$ 19,148,080** | **$ 4,650,721** | **$ 14,497,359** | ***24%*** |
| **520 - Sewer Operating Fund** | | | | |
| Charges for services | $ 8,477,900 | $ 3,422,412 | $ 5,055,488 | *40%* |
| Investment revenue | 114,900 | 149,466 | (34,566) | *130%* |
| Other revenues | 31,500 | 14,788 | 16,712 | *47%* |
| Transfers in | 600,000 | 600,000 | - | *100%* |
| **TOTAL REVENUES** | **$ 9,224,300** | **$ 4,186,666** | **$ 5,037,634** | ***45%*** |
| Personnel services | $ 449,960 | $ 199,122 | $ 250,838 | *44%* |
| Materials and services | 4,121,454 | 1,479,581 | 2,641,873 | *36%* |
| Capital outlay | 125,509 | 125,509 | - | *100%* |
| Debt service | 2,880,000 | 174,470 | 2,705,530 | *6%* |
| Transfers out | 10,828,059 | 1,289,022 | 9,539,037 | *12%* |
| **TOTAL EXPENDITURES** | **$ 18,404,982** | **$ 3,267,705** | **$ 15,137,277** | ***18%*** |
| **550 - Street Lighting Fund** | | | | |
| Charges for services | $ 540,540 | $ 236,204 | $ 304,336 | *44%* |
| Investment revenue | 17,000 | 11,663 | 5,337 | *69%* |
| **TOTAL REVENUES** | **$ 557,540** | **$ 247,866** | **$ 309,674** | ***44%*** |
| Materials and services | $ 366,450 | $ 98,604 | $ 267,846 | *27%* |
| Transfers out | 661,954 | 12,317 | 649,637 | *2%* |
| **TOTAL EXPENDITURES** | **$ 1,028,404** | **$ 110,921** | **$ 917,483** | ***11%*** |
| **570 - Stormwater Operating Fund** | | | | |
| Charges for services | $ 3,678,840 | $ 1,485,292 | $ 2,193,548 | *40%* |
| Investment revenue | 55,100 | 69,053 | (13,953) | *125%* |
| **TOTAL REVENUES** | **$ 3,733,940** | **$ 1,554,344** | **$ 2,179,596** | ***42%*** |
| Personnel services | $ 324,810 | $ 164,891 | $ 159,919 | *51%* |
| Materials and services | 830,350 | 279,501 | 550,849 | *34%* |
| Debt service | 838,000 | 42,841 | 795,159 | *5%* |
| Transfers out | 7,145,858 | 1,065,686 | 6,080,172 | *15%* |
| **TOTAL EXPENDITURES** | **$ 9,139,018** | **$ 1,552,919** | **$ 7,586,099** | ***17%*** |

**City of Wilsonville - SDC Fund Summaries**
**Reporting Month: Dec FY 2024**

| | | Current Year Budget | Year to Date Activity | *Remaining Balance* | *% Used* |
|---|---|---|---|---|---|
| **336 - Frog Pond Development** | | | | | |
| | Licenses and permits | $ 2,000,000 | $ 1,342,579 | $ 657,421 | *67%* |
| | Investment revenue | 28,300 | 44,963 | (16,663) | *159%* |
| | **TOTAL REVENUES** | **$ 2,028,300** | **$ 1,387,542** | **$ 640,758** | ***68%*** |
| | Materials and services | $ 36,180 | $ - | $ 36,180 | *0%* |
| | Transfers out | 4,447,454 | 193,335 | 4,254,119 | *4%* |
| | **TOTAL EXPENDITURES** | **$ 4,483,634** | **$ 193,335** | **$ 4,290,299** | ***4%*** |
| **348 - Washington County TDT** | | | | | |
| | Washington County TDT | $ 250,000 | $ - | $ 250,000 | *0%* |
| | Investment revenue | 44,700 | 16,168 | 28,532 | *36%* |
| | **TOTAL REVENUES** | **$ 294,700** | **$ 16,168** | **$ 278,532** | ***5%*** |
| **346 - Roads SDC** | | | | | |
| | System Development Charges | $ 1,800,000 | $ 1,923,839 | $ (123,839) | *107%* |
| | Investment revenue | 40,000 | 116,389 | (76,389) | *291%* |
| | **TOTAL REVENUES** | **$ 1,840,000** | **$ 2,040,228** | **$ (200,228)** | ***111%*** |
| | Materials and services | $ 43,130 | $ - | $ 43,130 | *0%* |
| | Transfers out | 11,449,559 | 162,036 | 11,287,523 | *1%* |
| | **TOTAL EXPENDITURES** | **$ 11,492,689** | **$ 162,036** | **$ 11,330,653** | ***1%*** |
| **396 - Parks SDC** | | | | | |
| | System Development Charges | $ 550,000 | $ 220,072 | $ 329,928 | *40%* |
| | Investment revenue | 12,000 | 20,870 | (8,870) | *174%* |
| | **TOTAL REVENUES** | **$ 562,000** | **$ 240,942** | **$ 321,058** | ***43%*** |
| | Materials and services | $ 17,570 | $ - | $ 17,570 | *0%* |
| | Transfers out | 1,506,903 | 19,671 | 1,487,232 | *1%* |
| | **TOTAL EXPENDITURES** | **$ 1,524,473** | **$ 19,671** | **$ 1,504,802** | ***1%*** |
| **516 - Water SDC** | | | | | |
| | System Development Charges | $ 1,515,000 | $ 937,328 | $ 577,672 | *62%* |
| | Investment revenue | 50,000 | 114,566 | (64,566) | *229%* |
| | **TOTAL REVENUES** | **$ 1,565,000** | **$ 1,051,894** | **$ 513,106** | ***67%*** |
| | Materials and services | $ 26,980 | $ - | $ 26,980 | *0%* |
| | Debt service | 452,000 | 83,601 | 368,399 | *18%* |
| | Transfers out | 9,487,826 | 1,431,792 | 8,056,034 | *15%* |
| | **TOTAL EXPENDITURES** | **$ 9,966,806** | **$ 1,515,393** | **$ 8,451,413** | ***15%*** |
| **526 - Sewer SDC** | | | | | |
| | System Development Charges | $ 725,000 | $ 415,825 | $ 309,175 | *57%* |
| | Investment revenue | 9,900 | 15,289 | (5,389) | *154%* |
| | **TOTAL REVENUES** | **$ 734,900** | **$ 431,114** | **$ 303,786** | ***59%*** |
| | Materials and services | $ 22,930 | $ - | $ 22,930 | *0%* |
| | Transfers out | 1,905,265 | 774,203 | 1,131,062 | *41%* |
| | **TOTAL EXPENDITURES** | **$ 1,928,195** | **$ 774,203** | **$ 1,153,992** | ***40%*** |
| **576 - Stormwater SDC** | | | | | |
| | System Development Charges | $ 690,000 | $ 263,060 | $ 426,940 | *38%* |
| | Investment revenue | 109,700 | 37,273 | 72,427 | *34%* |
| | **TOTAL REVENUES** | **$ 799,700** | **$ 300,334** | **$ 499,366** | ***38%*** |
| | Materials and services | $ 5,980 | $ - | $ 5,980 | *0%* |
| | Transfers out | 1,140,868 | 77,640 | 1,063,228 | *7%* |
| | **TOTAL EXPENDITURES** | **$ 1,146,848** | **$ 77,640** | **$ 1,069,208** | ***7%*** |

**City of Wilsonville - URA Fund Summaries**
**Reporting Month: Dec FY 2024**

| | Current Year Budget | Year to Date Activity | *Remaining Balance* | *% Used* |
|---|---|---|---|---|
| **800 - Year 2000 Program Income** | | | | |
| Investment revenue | $ 800 | $ 1,289 | $ (489) | *161%* |
| Other revenues | - | 6,000 | (6,000) | - |
| **TOTAL REVENUES** | **$ 800** | **$ 7,289** | **$ (6,489)** | ***911%*** |
| Materials and services | $ 5,000 | $ 942 | $ 4,058 | *19%* |
| Transfers out | 25,000 | - | 25,000 | *0%* |
| **TOTAL EXPENDITURES** | **$ 30,000** | **$ 942** | **$ 29,058** | ***3%*** |
| **805 - Year 2000 Capital Projects** | | | | |
| Investment revenue | $ 262,000 | $ 141,451 | $ 120,549 | *54%* |
| **TOTAL REVENUES** | **$ 262,000** | **$ 141,451** | **$ 120,549** | ***54%*** |
| Materials and services | $ 295,572 | $ 106,026 | $ 189,546 | *36%* |
| Capital outlay | 10,940,556 | 2,784,652 | 8,155,904 | *25%* |
| **TOTAL EXPENDITURES** | **$ 11,236,128** | **$ 2,890,678** | **$ 8,345,450** | ***26%*** |
| **810 - Westside Program Income** | | | | |
| Investment revenue | $ 3,715 | $ 1,354 | $ 2,361 | *36%* |
| **TOTAL REVENUES** | **$ 3,715** | **$ 1,354** | **$ 2,361** | ***36%*** |
| **815 - Westside Capital Projects** | | | | |
| Investment revenue | $ 165,000 | $ 61,772 | $ 103,228 | *37%* |
| **TOTAL REVENUES** | **$ 165,000** | **$ 61,772** | **$ 103,228** | ***37%*** |
| Materials and services | $ 277,178 | $ 56,432 | $ 220,746 | *20%* |
| Capital outlay | 710,000 | - | 710,000 | *0%* |
| **TOTAL EXPENDITURES** | **$ 987,178** | **$ 56,432** | **$ 930,746** | ***6%*** |
| **817 - Westside Debt Service** | | | | |
| Taxes | $ 1,672,200 | $ 1,212,054 | $ 460,146 | *72%* |
| Investment revenue | 20,630 | 37,534 | (16,904) | *182%* |
| **TOTAL REVENUES** | **$ 1,692,830** | **$ 1,249,588** | **$ 443,242** | ***74%*** |
| Debt service | $ 4,702,025 | $ 4,187,519 | $ 514,506 | *89%* |
| **TOTAL EXPENDITURES** | **$ 4,702,025** | **$ 4,187,519** | **$ 514,506** | ***89%*** |
| **825 - Coffee Creek Capital Projects** | | | | |
| Investment revenue | $ 3,095 | $ 1,157 | $ 1,938 | *37%* |
| Transfers in | 500,000 | - | 500,000 | *0%* |
| **TOTAL REVENUES** | **$ 503,095** | **$ 1,157** | **$ 501,938** | ***0%*** |
| Materials and services | $ 136,500 | $ 68,000 | $ 68,500 | *50%* |
| **TOTAL EXPENDITURES** | **$ 136,500** | **$ 68,000** | **$ 68,500** | ***50%*** |
| **827 - Coffee Creek Debt Service** | | | | |
| Taxes | $ 566,800 | $ 365,898 | $ 200,902 | *65%* |
| Investment revenue | 8,510 | 2,943 | 5,567 | *35%* |
| **TOTAL REVENUES** | **$ 575,310** | **$ 368,841** | **$ 206,469** | ***64%*** |
| Debt service | $ 782,000 | $ 139,245 | $ 642,755 | *18%* |
| **TOTAL EXPENDITURES** | **$ 782,000** | **$ 139,245** | **$ 642,755** | ***18%*** |
| **830 - Wilsonville Investment Now Program** | | | | |
| Taxes | $ 750,000 | $ 664,969 | $ 85,031 | *89%* |
| Investment revenue | 10,300 | - | 10,300 | *0%* |
| **TOTAL REVENUES** | **$ 760,300** | **$ 664,969** | **$ 95,331** | ***87%*** |
| Materials and services | $ 750,000 | $ - | $ 750,000 | *0%* |
| **TOTAL EXPENDITURES** | **$ 750,000** | **$ -** | **$ 750,000** | ***0%*** |

WILSONVILLE PUBLIC LIBRARY

# December 2023 Monthly Report

## *From the Director*



It felt like winter had arrived at the library in December with our holiday display! Sledding bear cubs sat on top of bookshelves with the snowmen, while the rest of our furry friends defrosted by the fire with toasty beverages, and huge snowflakes continued to fall all around. Definitely inspirational for cozy reading!

Youth programs completed their fall season with a special Family Storytime featuring our librarians' unique abridged version of The Nutcracker. "STEAM Stuff" for elementary school-age children was held on the Early Release Day of Dec. 6. The teens continued the Teen Afterschool Drop-In Activities through Dec. 12.

During the winter program break, children and their caregivers colored paper mittens, which were featured as part of a big wintry scene on the bulletin boards in the Children's Room. Take and Make Kits were quite popular again, with all kits 300 claimed within three days of availability. Over 100 participants of all ages searched throughout the library for clues to solve a wintry riddle and receive a fun prize.

The library's youth librarians kicked off the City's Tree Lighting Event at the Town Center Park with a storytime and song performance. Believe it or not, the youth and adult librarians have also started the huge task of preparing and planning for summer reading!

Adult programs included a presentation about the Gordon House, the only Oregon building designed by Frank Lloyd Wright, and an online program about past and present efforts by the United States to explore the Moon. The Book Notes Concert featured a performance by local acoustic trio Hushfire. The Walking Book Club, Genealogy Club, and English (ESL) class met.

The Wilsonville Garden Club held their annual Swag Sale the first weekend in December. The sweet scents of pine and cedar throughout the library were delightful and a treat leading up to the holiday season.

*-Shasta Sasser, Library Director*

ANNUAL REPORT
FISCAL YEAR 2022-2023

# WILSONVILLE LIBRARY

## CIRCULATION & VISITS

The percentages below indicate the annual increases.

| +38% | +15% | +108% | +6% | +44% |
|---|---|---|---|---|
| 159,792 LIBRARY VISITS | 61,468 DIGITAL CHECKOUTS | 1,331 LIBRARY OF THINGS | 313,670 PHYSICAL CHECKOUTS | 647 CULTURAL PASS USE |

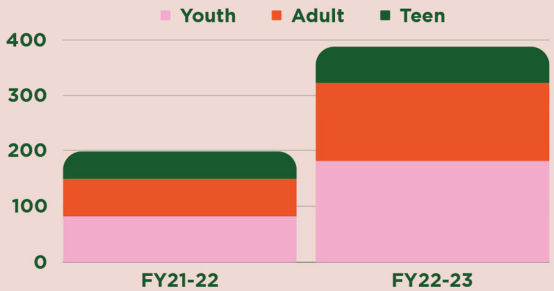
## SERVICE AREA

The library service population is **31,032**.



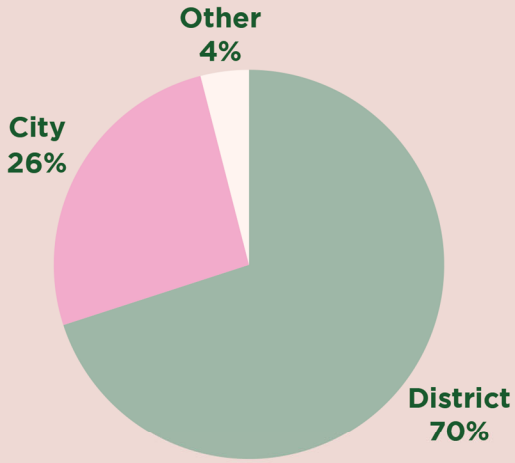
**43%**
Card Holders

## NUMBER OF PROGRAMS




The total number of programs was up 96% over last year (388 programs)

## LIBRARY REVENUE




Other revenue includes fines & fees, donations, and contributions from the Friends and Foundation.

## COLLECTION SIZE

- 94,000 Books
- 47,000 eAudio-books
- 83,000 eBooks
- 4,300 Spanish Items
- 16,600 Audio-Visual
- 175 Library of Things
- 90,500 Borrowed LINCC Items
- 10,100 Items Added



122 Storytimes

## ADDED SERVICES

- Classic Family Movie & Games
- Walking Book Club
- Seed Library
- Writing Classes
- Clackamas ESD Health/Hearing Screenings
- Murder Mystery Night
- Card Making





# Parks and Recreation Report | December 2023

## Director's Report

Since the official arrival of Emerald Ash Borer (EAB) in Oregon (June 2022 in Forest Grove) the team has been proactively preparing for its arrival here in Wilsonville. This pest has proven deadly to all ash species in North America and Europe and it is only a matter of time before our Ash trees succumb. With that said, the team has taken action to identify those Ashes worth preserving through pesticide treatments vs. those that will be lost to EAB. The trees that are not treated should be removed prior to infestation to prevent further spread and creating hazardous conditions. As EAB overtakes a tree it creates very weak and brittle branch structure that creates hazardous conditions as the branches break and fall to the ground. With this in mind, the team has been removing Ash trees that fit the criteria and using these removals as important training opportunities for new members. The removed trees will be replaced with a variety of species to diversify our urban forest and help guard against the vulnerability of a monoculture.

On the recreation side of the department, the team wrapped up the annual toy drive, senior stocking collections, letters to Santa, and the hunt for holiday symbols scavenger hunt. These programs are always popular and once again the toy drive was a huge success thanks to the generosity of the Wilsonville community.

Grateful for a passionate and talented parks and recreation team that made 2023 a successful and memorable year!

~Kris Ammerman

## Community Center & Recreation Updates




### Winter/Spring 2024 Registration Now Open

The Winter/Spring 2024 Activity Guide arrived in mailboxes across Wilsonville the week of December 4. Registration opened on Monday, December 11. Camps and classes include, Barre, Yoga, Sit & Be Fit, a "Life 101" lecture series, Baking, Body Sculpt, drop-in programs, youth school break camps, and more! A full listing of classes can be found at WilsonvilleParksandRec.com/Register

### Hunt for the Holiday Symbols

The popular Hunt for the Holiday Symbols scavenger hunt ran through December 17 this year. The Hunt for the Holiday Symbols is a winter holiday themed scavenger hunt that takes place around City parks and facilities in Wilsonville. Each symbol represents a corresponding winter holiday from around the globe. Clues to each symbol's location were posted online, and participants could submit photos of all the symbols they found to be entered into a prize drawing. Three winners were chosen at random and announced the week of December 18.



### Letters to Santa

The annual holiday tradition continued again this year as some of our youngest community members dropped off their handwritten letters to Santa in the big red mailbox at the Parks and Recreation Office. All participants who included their return mailing address on their letter received a letter back in the mail from Santa. Santa mailed out nearly 100 letters this year, and he shared with the Parks and Recreation team that he loves to read all the letters from the community.

### Toy Drive

This year, the Community Center was the collection point for the popular annual toy drive. The Wilsonville community came together and made 2023 another successful year with over 600 toys donated. The new toys were then distributed through Clackamas Compassion in Action.



### Senior Stockings

Once again, the community came together to provide overflowing stockings of holiday treats and goodies for the 85 individuals on the City's home delivered meal program.

### Holidays Lunch

Over 60 community members came to the Community Center for a festive holiday lunch. Every attendee at the holiday lunch was treated to a treat-filled stocking compliments of a local business.




### White Elephant Gift Exchange

Members of the Center's congregate lunch brought their favorite "can't live with it anymore" item for a white elephant gift game complete with their best/favorite/ugliest holiday attire.

## Board Highlights

**Arts, Culture, and Heritage Commission (ACHC)**

At the December ACHC meeting the Commission reviewed the applications that were received for Community Cultural Events & Programs (CCEP) Grant funding. Five applications were received and all applicants were in attendance to present to the Commission. The nonprofits that applied included: Charbonneau Arts Association, Siempre la Guitarra, Wilsonville Choral Arts Society, Wilsonville Rotary Foundation and Wilsonville STAGE. The Commission is excited for the opportunity to support local nonprofits with funding.

**Kitakata Sister City Advisory Board**

The Kitakata Sister City Advisory Board did not meet in December, however, a Cultural Awareness training will take place with Council on January 4, 2024 in preparation for the trip to Kitakata, Japan.

**Parks and Recreation Advisory Board**

The Parks and Recreation Advisory Board did not meet in December. The next regularly schedule meeting is planned for Thursday, January 11 at 4:00 pm. It will be held at City Hall in the Council Chambers.

## Other Group Highlights

**Wilsonville Community Seniors Inc.**

The Wilsonville Community Seniors Inc. continues to prepare for the March 9 BINGO fundraiser. There will be a 50/50 raffle and a raffle for prize baskets. The Peacemakers quilting group will be asked if they would also like to contribute items to be raffled off. The board signed and sent out holiday cards to all home delivered meal recipients.

## Upcoming Events

**City Hall Art Gallery Reception Honoring Artist W.S. Cranmore:** January 17, 6:30pm, Wilsonville City Hall
**Wilsonville Delegation to Visit Sister City:** February 2-10, Kitakata, Japan
**Daddy Daughter Dance:** February 23, 7-9pm, Wilsonville Community Center
**Community Egg Hunt:** March 30, 10am, Memorial Park Sports Fields
**WERK Day:** May 18, 9-11am, Memorial Park (Complimentary Breakfast at the Community Center, 8-9 am)

## Parks Updates

December was a landscape focused month for the Parks team. The team took on the task of removing 26 Ash Trees in Murase Plaza. These trees were proactively removed as a part of the city's Emerald Ash Borer (EAB) action plan. The team will replant 26 trees in Murase Plaza in the coming months. The team also spent time planting new native plants and trees in both the Memorial Dog Park and Memorial Nature Play area. The team also worked to upkeep parking lots and other parks infrastructure as we head into the rainy season.



**Tree Removal in Murase Plaza**



**Tree Removal in Murase Plaza**



**Adult Transition Services working in the Dog Park**



**Grade work in Memorial Park**



**New Plantings at Nature Play**

**As of December 4, Brandon Nicholas Gilpin, 30, and Felisha Marie Cunningham (Wilham), 35,** arrested in connection to the Wilsonville Valentine's Day shooting, were sentenced.

**Gilpin** received prison sentences of 60 months for Unlawful Use of a Weapon with a firearms enhancement, and an additional 20 months for the Unlawful Use of a Motor Vehicle. The sentences will be served one after the other.

**Cunningham** was sentenced to 150 months in prison on two counts of Attempted Murder in the First Degree.

The Wilsonville Police Department and Clackamas County Sheriff's Office received support from surrounding agencies and their community, for which it is grateful.







## Happy Holidays from Wilsonville Police










## Shop with a Cop 2023

Officers from the City of Wilsonville Police Department participated in the Clackamas County Peace Officers Benevolent Foundation's 17th annual Shop with a Cop on December 2.

More than $20k was raised throughout the year, which went to support 127 kiddos at this event. The Clackamas Fred Meyer on SE 82nd Drive hosted, and sworn and non-sworn members, along with a couple of K9s, from the Clackamas County Sheriff's Office were on hand for the shopping, wrapping, and smiles.

# City of Wilsonville
## Call Activity

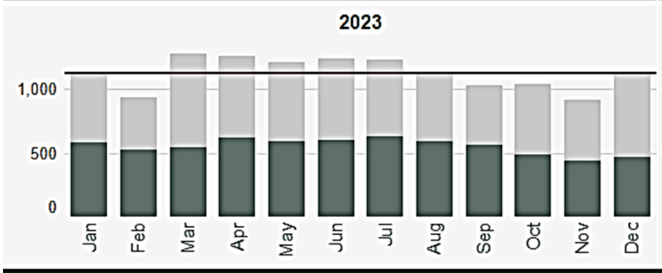
**13,504**
Total Calls

## YEAR 2023

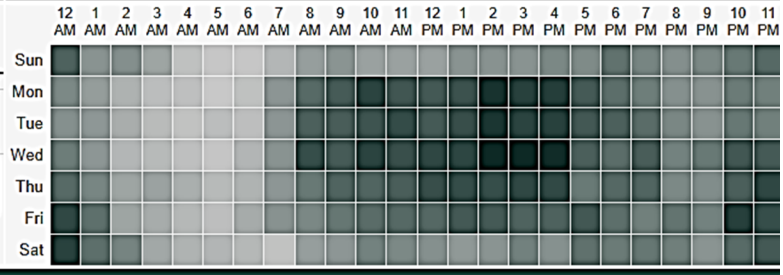
| High Priority • 1,326 | Medium Priority • 9,248 | Low Priority • 2,930 |
|---|---|---|

| Public-Initiated • 6,636 | Deputy-Initiated • 6,868 |
|---|---|

### Call Activity by Month and Year




### Call Activity by Day of Week and Hour of Day




*This dashboard is maintained by CCSO's Strategic Analysis Unit*
*Data source: Clackamas County Communication's Computer Aided Dispatch (CAD) software*
*Updated: 1/2/2024 8:52:58 PM (UTC)*

## DECEMBER 2023

| 56 | 66 | 68 | 146 | 374 | 75 | 66 | 269 |
|---|---|---|---|---|---|---|---|
| Alarm | Assist | Civil | Crime | Disorder | Follow-up | Other | Traffic |

| | | |
|---|---|---|
| **Alarm** | Alarm | 56 |
| **Assist** | Assist Public | 46 |
| | Assist Other Agency | 8 |
| | Assist Fire/Medical | 7 |
| | Warrant | 3 |
| | Assist Law Enforcement | 1 |
| | Missing Person | 1 |
| **Civil** | Civil | 49 |
| | Behavioral Health | 19 |
| **Crime** | Domestic Violence | 27 |
| | Harassment/Menacing | 26 |
| | Theft | 24 |
| | Fraud | 15 |
| | Criminal Mischief | 12 |
| | Assault/Abuse | 9 |
| | Hit & Run | 9 |
| | Stolen Vehicle | 6 |
| | Violation of Restraining Order | 6 |
| | Burglary | 5 |
| | Robbery | 2 |
| | Sex Offense | 2 |
| | Trespass | 2 |
| | Vice | 1 |

| | | |
|---|---|---|
| **Disorder** | Suspicious Activity | 117 |
| | Premise Check | 89 |
| | Parking Disorder | 77 |
| | Welfare Check | 39 |
| | Subject Contact | 11 |
| | Distrurbance | 8 |
| | Extra Patrol | 8 |
| | Juvenile Disorder | 8 |
| | Noise Disorder | 7 |
| | Unwanted Person | 5 |
| | Recovered Stolen Vehicle | 3 |
| | Animal Disorder | 2 |
| **Follow-Up** | Follow-Up | 75 |
| **Other** | Other | 66 |
| **Traffic** | Traffic Stop | 243 |
| | Traffic Crash | 15 |
| | Hazard | 5 |
| | Traffic Disorder | 5 |
| | DUII | 1 |

**Dashboards | Clackamas County**

# City of Wilsonville
## Call Activity

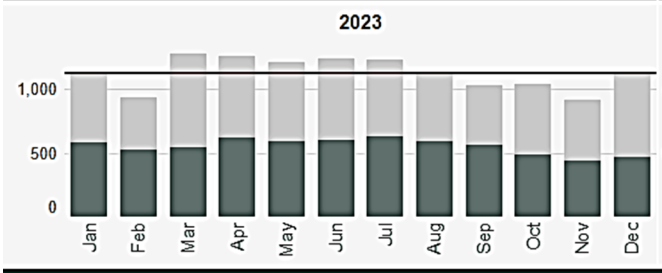
**13,504**
Total Calls

## YEAR 2023

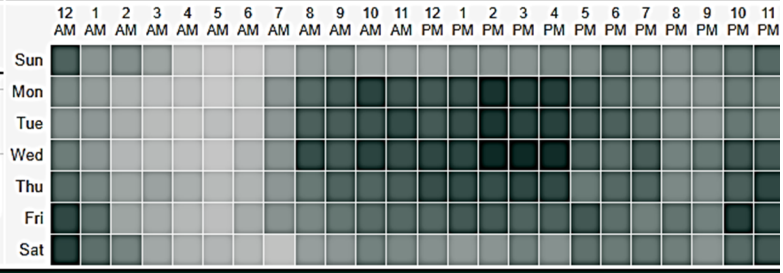
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### Call Activity by Month and Year




### Call Activity by Day of Week and Hour of Day




*This dashboard is maintained by CCSO's Strategic Analysis Unit*
*Data source: Clackamas County Communication's Computer Aided Dispatch (CAD) software*
*Updated: 1/2/2024 8:52:58 PM (UTC)*

| 704 | 921 | 732 | 2,062 | 3,713 | 1,156 | 929 | 3,287 |
|---|---|---|---|---|---|---|---|
| Alarm | Assist | Civil | Crime | Disorder | Follow-up | Other | Traffic |

| | | |
|---|---|---|
| **Alarm** | Alarm | 704 |
| **Assist** | Assist Public | 590 |
| | Assist Fire/Medical | 119 |
| | Assist Other Agency | 103 |
| | Missing Person | 45 |
| | Warrant | 41 |
| | Assist Law Enforcement | 22 |
| | Marine Assist/Rescue | 1 |
| **Civil** | Civil | 555 |
| | Behavioral Health | 177 |
| **Crime** | Harassment/Menacing | 342 |
| | Theft | 322 |
| | Domestic Violence | 279 |
| | Trespass | 190 |
| | Fraud | 181 |
| | Criminal Mischief | 145 |
| | Assault/Abuse | 137 |
| | Hit & Run | 125 |
| | Stolen Vehicle | 96 |
| | Burglary | 75 |
| | Sex Offense | 52 |
| | Vice | 43 |
| | Violation of Restraining Order | 32 |
| | Escape/Pursuit | 15 |
| | Littering | 14 |
| | Robbery | 13 |
| | Arson | 1 |

| | | |
|---|---|---|
| **Disorder** | Suspicious Activity | 1,672 |
| | Welfare Check | 594 |
| | Parking Disorder | 380 |
| | Premise Check | 276 |
| | Subject Contact | 174 |
| | Juvenile Disorder | 129 |
| | Distrurbance | 111 |
| | Noise Disorder | 96 |
| | Animal Disorder | 90 |
| | Unwanted Person | 68 |
| | Extra Patrol | 50 |
| | Recovered Stolen Vehicle | 35 |
| | Shots Fired | 19 |
| | Prowler | 8 |
| | Fireworks | 5 |
| | Ordinance Disorder | 5 |
| | Marine Patrol | 1 |
| **Follow-Up** | Follow-Up | 1,156 |
| **Other** | Other | 929 |
| **Traffic** | Traffic Stop | 2,855 |
| | Traffic Crash | 198 |
| | Traffic Disorder | 120 |
| | Hazard | 86 |
| | DUII | 28 |

WILSONVILLE
PUBLIC WORKS

# DECEMBER 2023 MONTHLY REPORT

## From The Director's Office:

During December, staff, owner's representative and the contractor toured the Public Works Complex building and site to identify "punchlist" items that need to be completed, corrected or changed before the project is deemed finally complete. Additionally, the vendors held training session for staff to learn more about the operations and maintenance of various systems such as fire suppression, solar **PV**, HVAC, plumbing equipment, irrigation, and car charging stations. Furniture was delivered and installed last month bring us one step closer to the completion of this project.



***Ponderosa Pine 1 & 2 Conference Rooms in Public Works Building***

PUBLIC WORKS

FIRST RESPONDER

**Best Regards,**

**Delora Kerber, Public Works Director**

# Industrial Pretreatment

## Permits and Practices

### Industrial Wastewater Permits

The Pretreatment Program issues Industrial Wastewater Discharge Permits to businesses that are subject to Federal Pretreatment Standards. These industries meet one of two criteria. Either the industry has a specific manufacturing processes that could harm the wastewater treatment plant (WWTP) or it discharges at least 25,000 gallons of wastewater per day. These Permits require businesses to install and maintain pretreatment equipment, sample their non-domestic wastewater, and submit monthly reports to the City to show compliance with local discharge limits, City Code and Federal Regulations. The image below shows the nine businesses covered by Industrial Wastewater Discharge Permits.




### Best management Practice (BMP)

For industries that are subject to general or specific discharge prohibitions, but do not fall under the Federal Pretreatment Standards, the Pretreatment Program issues Best Management Practice (BMP) agreements . BMPs protect the WWTP by creating schedules of activities, prohibitions of practices, maintenance procedures, and other management practices. Similar to Wastewater Permits, businesses install and maintain pretreatment equipment, and maintain monthly reports to show compliance with the agreement. The image below shows the ten businesses covered by BMP agreements.



# Utilities— Water

## Water Leak under the Golf Course

The Utilities Crew kicked off December with repairing a water main break. The leak sprung up on a 6” cast iron pipe that crosses over the Charbonneau golf course. The crew had to brave some pretty harsh conditions, working through cold sideways rain and on a saturated golf course. The location of the leak made the repair a little more challenging than something in or near a road. The crew had to lay down sheets of plywood to drive the excavator across the course and had to carry equipment such as pumps and shoring out to the excavation. Once the pipe was exposed the crew installed a repair band to fix the leaking pipe. The repair was performed while maintaining positive pressure and nobody’s water service was affected during the repair. After the rain had let up a few days after, members of the crew had to spend a good amount of time out on the course cleaning up the aftermath of the repair. The crew spent many hours scrapping mud off of the turf and had to wheel barrow loads of fill out to the excavation to bring everything back up to grade.







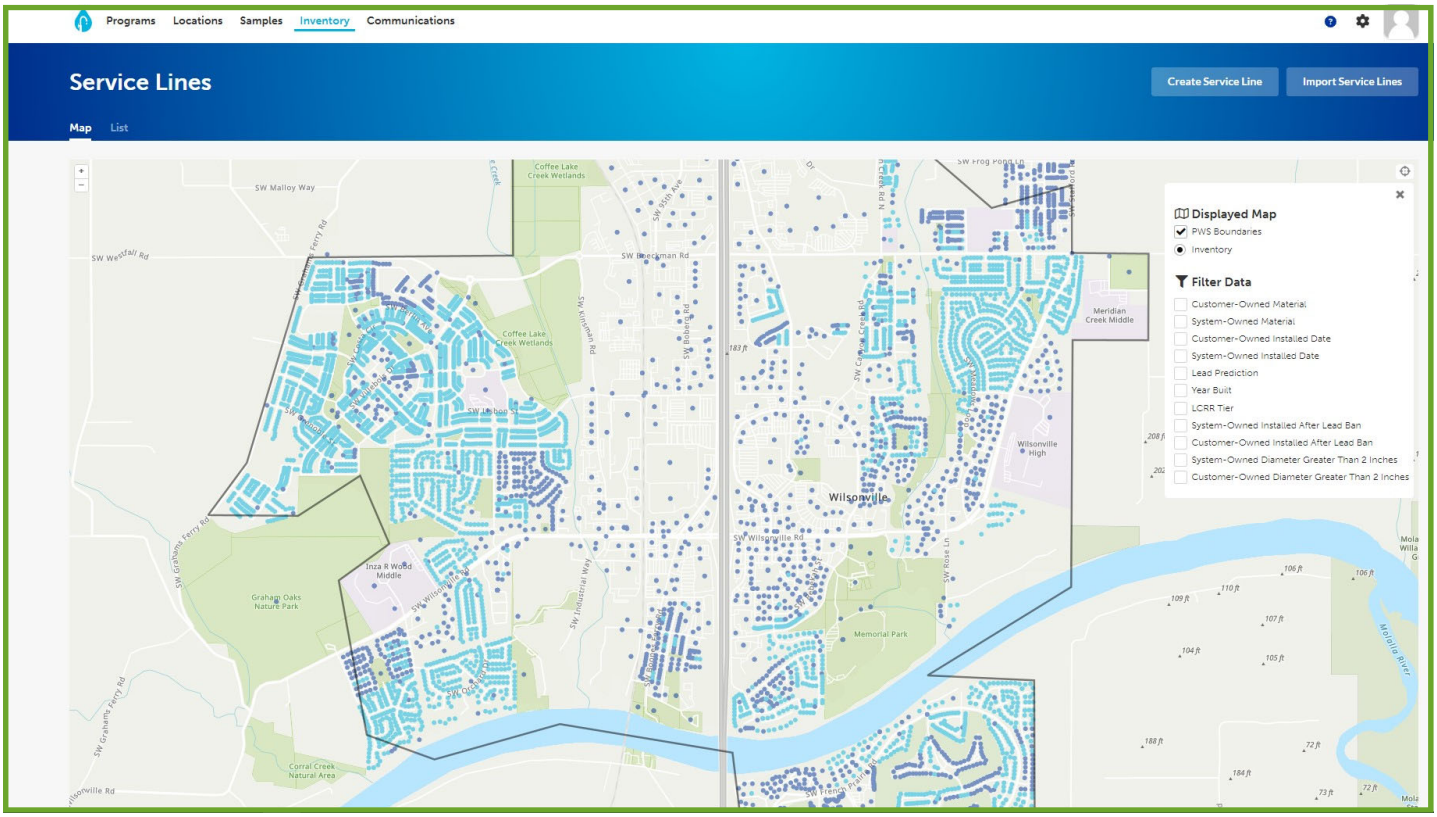





# Utilities– Water

## Determining Service Line Material

This month there was a meeting with the City's consultant 120Water to see the progress that is being made on the service line inventory, which is part of the federally mandated Lead and Copper Rule Revisions to identify the pipe material. Thus far 120Water has imported and cleaned up customer billing information and joined this data with publically available tax records. The next step is to import, clean up and combine the City GIS data. 120Water presented the platform with the data that has been compiled thus far. It is exciting to see all of this information come together and will provide a great jump off point to begin performing field verifications of service lines in the coming months.









# Facilities

## It was Dirty and Now it is Clean

The Facilities Janitorial Crew works tirelessly to ensure the City's buildings are ready to be used by staff and our community members.

This behind the scenes work is crucial to keeping our facilities in top condition.

Here is are examples of the condition of items before cleaning and after the janitorial crew scrubbed them almost spotless.

| ***Before condition*** | ***After condition*** |
|---|---|
|  |  |
|  |  |

# Facilities

## High Up on the Ceiling

Facilities Technicians, Trevor Denfeld and Konnen Bell, assisted the IT department with the installation of the Wireless Access Points (WAP) in building B (aka warehouse) at the new Public Works site.

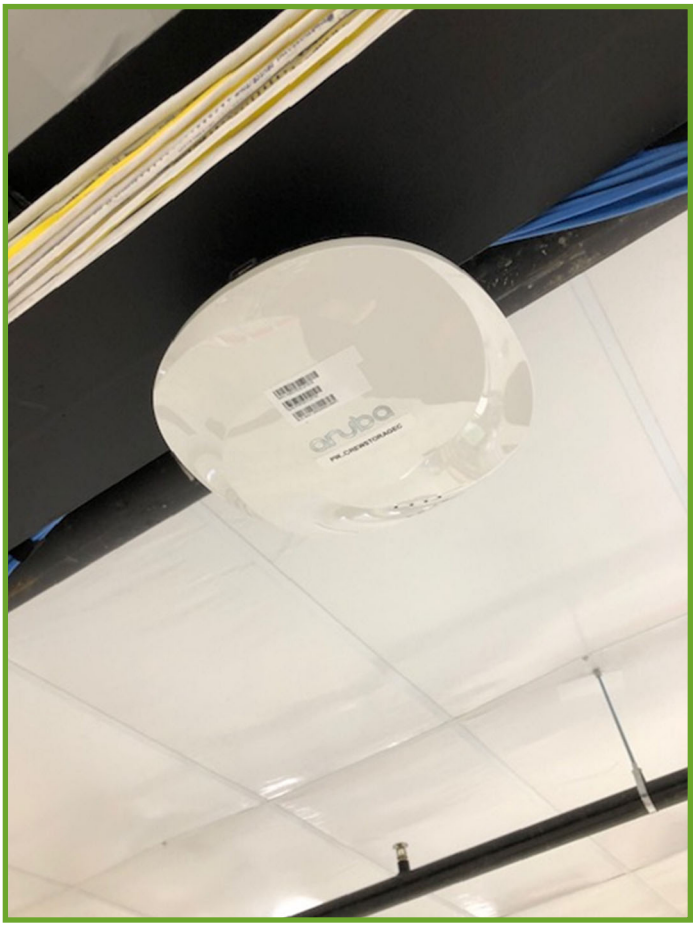
Though it may seem like a simple project, the mounting hardware needed to be custom fabricated by the Facilities team, to ensure the WAPs would have a strong connection to the building support beans. Would not want one of the WAPs falling and down on someone's head.

The WAPS were installed at heights ranging from 18 to 30 feet the warehouse using a scissor lift.

***Custom bracket attached to support structure***



***Wireless Access Point mechanism***



# Roads

## Scrub a Dub on Street Signs

In right of way maintenance each season brings new challenges, and this winter the month of December was no exception.

Roads staff continued their campaign of cleaning every sign in town as a part of our MUTCD (Manual on Uniform Traffic Control Devices) sign retro-reflectivity compliance.



# Roads

## Out with the Old and In with the New Winter Street Banners

Last month we removed the fall seasonal banners along Wilsonville Road with brand new winter ones. Our existing stock of canvas seasonal banners were starting to wear thin, fray, and need replaced. So, we decided to replace them with a more durable printed vinyl banner.

With the manufacturing of new banners came the opportunity to update the color scheme. A handpicked team of design experts among Wilsonville staff were chosen for the picking the new colors and we think they look great!!








# Roads

## Keeping the Rails on Track

Guardrails, handrails, or anything adjacent to the roadway is a motorized vehicle target. The Roads team once again replaced a portion of the handrail along the beauty and the bridge walkway that had been hit and damaged.

Last month staff also took on a much needed and long awaited task of guardrail repair. About 60 feet of damaged guardrail and posts were replaced and spot repairs were completed on other guardrail around town.










# Stormwater

## Rain, Leaves and More Rain

The Wilsonville stormwater team has encountered a lot of both rain and leaves this December.

Staff actively monitor known problems areas of stormwater inlets, outlets, and drainage ways during this time of year.

To help keep our streets from flooding, staff has been out clearing debris off of catch basins all around town.





# Stormwater

## Let it Flow

To help minimize water collecting into ponds during a significant rainfall event, Stormwater staff implemented a project to grind asphalt in an area along a curb where there was puddling and insufficient drainage.

First elevations of the pavement were measured then the grade was calculated and marked onto the pavement so the operator of the grinding machine would know how much material to remove to keep the water flowing to the next catch basin.



SMART

SOUTH METRO AREA REGIONAL TRANSIT

# DECEMBER 2023 REPORT

Transit/Fleet



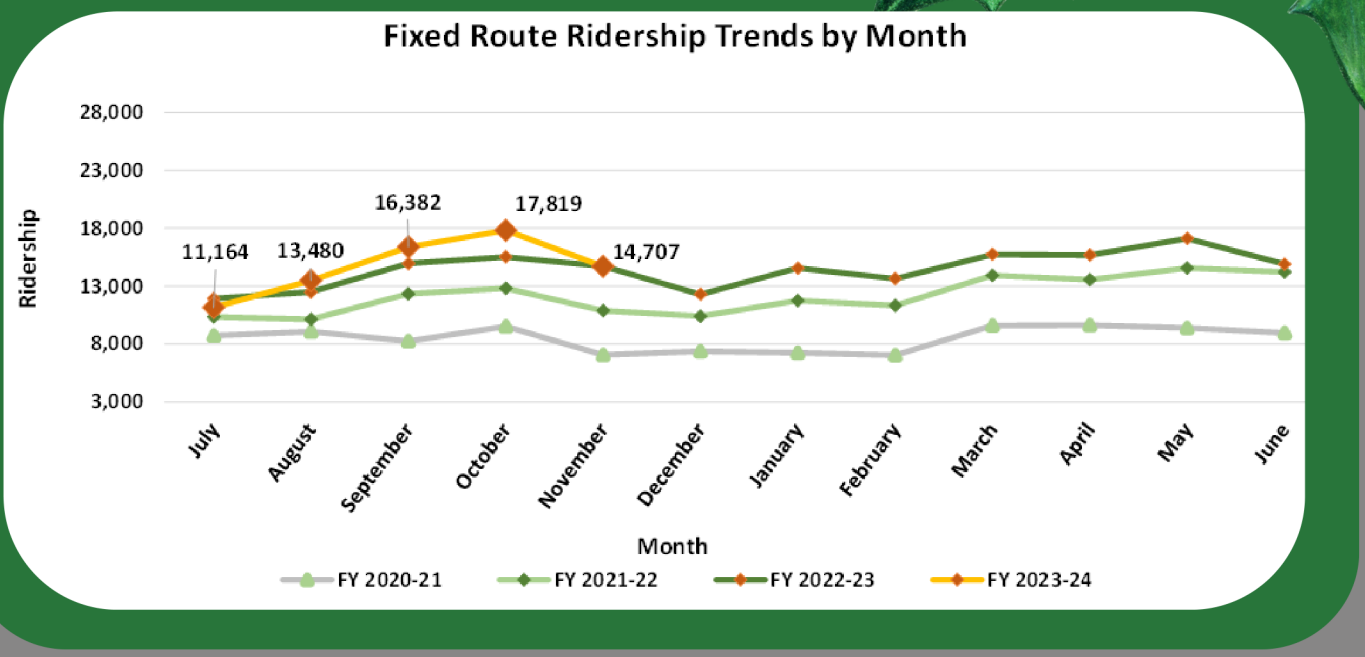

"No change of circumstances can repair a defect of character." The profound words of Ralph Waldo Emerson. So what exactly is character? Merriam-Webster defines character this way – "The complex of mental and ethical traits marking and often individualizing a person, group, or nation." Dr. King believed that we should live in a world where we are all judged by the content of our character. It does appear that Emerson and King agreed that character really does count. If this is indeed the case, why then do so many of us play loose and light with this precious attribute? In my most humble opinion, the answer may rest with our ever-evolving moral relativisms and/or ethical relativisms. We live in a world where many have come to believe that there is nothing absolutely wrong nor is there anything absolutely right. We look to others to determine good and bad, right and wrong. We protect ourselves by taking the position that if the majority of people are engaged in something, it must be good, which would make the adverse true as well. Too many of us are willing to sacrifice our character for what we perceive as the greater good; the path of least resistance. I believe as Eleanor Roosevelt believed – "People grow through experience if they meet life honestly and courageously. This is how character is built."

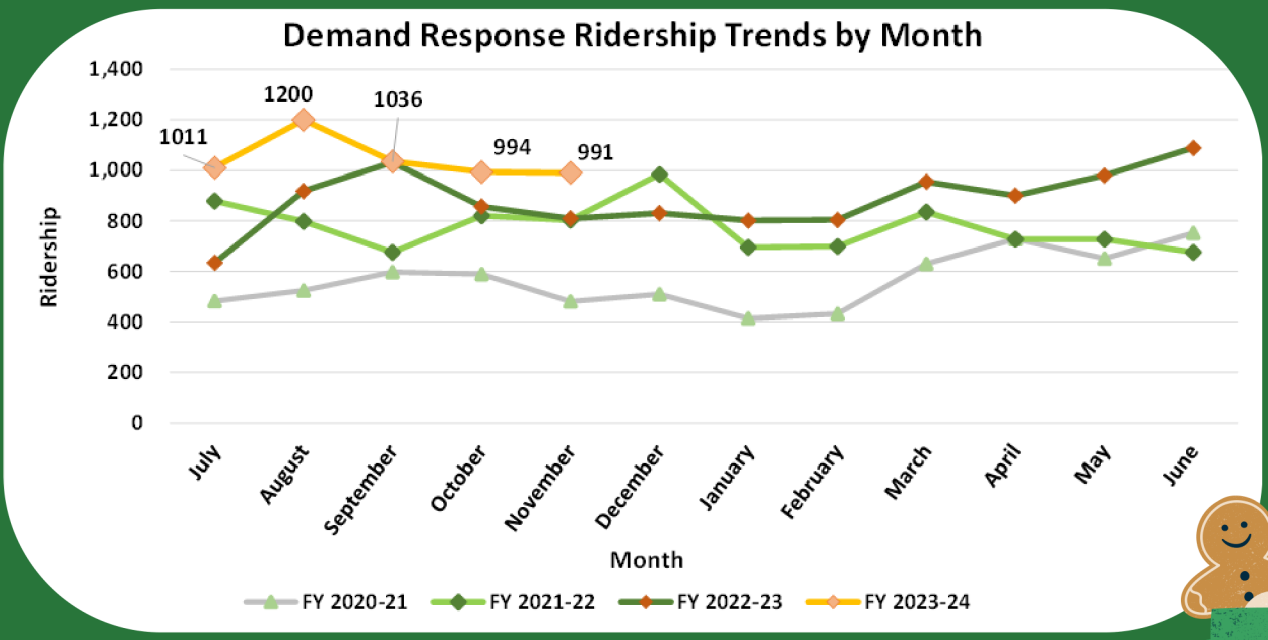
**Dwight Brashear**
**Transit Director**



# RIDERSHIP TRENDS

*Anne MacCracken*



# GRANTS & PROGRAMS

*Kelsey Lewis*

This December I attended trainings on federal procurement and several ODOT trainings on grant management, financial management, and procurement related to our state funding. While this is not the most exciting material, it is helpful and necessary to keep our grant programs running smoothly. We also participated in the City-wide records clean-up day by reviewing and destructing many grant files that have met their retention schedule and retiring old event signage from our warehouse space.

# FLEET SERVICES

*Scott Simonton*

We recently purchased new equipment to help Public Works crews better handle tree removal tasks. A hydraulically operated log splitter arrived in early December, and has been installed and tested. This equipment will allow an operator to split logs into halves or quarters, depending on size and need.  The splitter attaches to our existing Bobcat utility vehicle, and will increase the speed, as well as the safety of tree removal projects.



# COMMUTE OPTIONS

*Michelle Marston*

During December, efforts were focused on utilizing our edisplays with static messages on the *Info* button.

Display units now have active transportation programs advertised as we move through different dates of the year.

In addition, this gives us another method to let the riding public know about holiday closures or any potential road closures that may effect service. Shown are the ereader displays of holiday closures & other connecting transit provider closures.






# SAFE ROUTES TO SCHOOL

*Patty Tiburcio*














Northwest Housing Alternatives and SMART staff continue to lead the Walking School Bus (WSB) during the winter.

The Walking School Bus from Autumn Park Apartments to Boones Ferry Primary started at the beginning of the 2023-2024 school year. Whether it's rainy or foggy, the WSB "keeps on stepping" every Wednesday while school is in session.