PLANNING COMMISSION
MEETING AGENDA

Online via Zoom and In Person at
Tumwater Fire Department
Headquarters, Training Room, 311 Israel
Rd. SW, Tumwater, WA 98501

Tuesday, November 28, 2023
7:00 PM

1. Call to Order
2. Roll Call
3. Changes to Agenda
4. Approval of Minutes
5. Commissioner's Reports
6. Manager's Report
7. Public Comment
8. Ordinance No. O2023-002, Final Docket for 2023 Comprehensive Plan Amendments
9. 2025 Comprehensive Plan Periodic Update – Lands for Public Purposes & Utilities
10. 2024 Long Range Planning Work Program
11. Next Meeting Date - Joint City Council and Planning Commission Meeting on 12/12/2023 at 6:00 PM, Planning Commission Meeting to follow
12. Adjourn

Meeting Information
The public are welcome to attend in person, by telephone or online via Zoom.

Watch Online
https://us02web.zoom.us/webinar/register/WN_gei2GZHuQEGShcaqsCZR5A

Listen by Telephone
Call (253) 215-8782, listen for the prompts, and enter the Webinar ID 840 4491 8564 and Passcode 418432.

Public Comment
The public is invited to attend the meeting and offer comment. The public may register in advance for this webinar to provide comment:

https://us02web.zoom.us/webinar/register/WN_gei2GZHuQEGShcaqsCZR5A

After registering, you will receive a confirmation email containing information about joining the webinar.

The public may also submit comments prior to the meeting by sending an email to: cdd@ci.tumwater.wa.us. Please send the comments by 1:00 p.m. on the date of the meeting. Comments are submitted directly to the Commission Members and will not be read individually into the record of the meeting.

If you have any questions, please contact Planning Manager, Brad Medrud at (360) 754-4180 or bmedrud@ci.tumwater.wa.us.

Post Meeting
Audio of the meeting will be recorded and later available by request, please email CityClerk@ci.tumwater.wa.us.

Accommodations
The City of Tumwater takes pride in ensuring that people with disabilities are able to take part in, and benefit from, the range of public programs, services, and activities offered by the City. To request an accommodation or alternate format of communication, please contact the City Clerk by calling (360) 252-5488 or email CityClerk@ci.tumwater.wa.us. For vision or hearing impaired services, please contact the Washington State Relay Services at 7-1-1 or 1-(800)-833-6384. To contact the City's ADA Coordinator directly, call (360) 754-4128 or email ADACoordinator@ci.tumwater.wa.us.

What is the Planning Commission?

> *The Tumwater Planning Commission is a citizen advisory commission that is appointed by and advisory to the City Council on the preparation and amendment of land use plans and implementing ordinances such as zoning. Actions by the Planning Commission are not final decisions; they are Commission recommendations to the City Council who must ultimately make the final decision. If you have any questions or suggestions on ways the Commission can serve you better, please contact the Community Development Department at (360) 754-4180.*

Decorum Statement
Welcome to the Planning Commission meeting. We thank you for attending.

The City Council encourages community engagement in local government and provides a variety of ways to participate.

The Chair of the Planning Commission will be responsible for conducting orderly and efficient meetings within the scheduled time. To accomplish that, the Chair will maintain order and decorum and can regulate inappropriate debate, repetitious discussion, and disruptive behavior when needed.

The Chair will recognize those that wish to speak and may limit the time allowed for individual comments. City staff will record questions and comments during the meeting. If an issue or question cannot be addressed during the meeting, City staff will address the issue or respond to the question by following up with the individual.

We respectfully request that attendees refrain from disruptions during the meeting and comply with decorum rules.

Thank you for participating.

TO: Planning Commission

FROM: Erika Smith-Erickson, Land Use and Housing Planner, and Brad Medrud, Planning Manager

DATE: November 28, 2023

SUBJECT: Ordinance No. O2023-002, Final Docket for 2023 Comprehensive Plan Amendments

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1) Recommended Action:

Read materials, be prepared to discuss as part of a work session on the ordinance, and schedule a public hearing for the December 12, 2023, Planning Commission meeting.

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2) Background:

Pursuant to RCW 36.70A.130 and TMC 18.60.025(A)(2), amendments to the City's Comprehensive Plan and corresponding rezones are only considered once per calendar year. On October 18, 2022, the City Council approved Ordinance No. O2022-023, which suspended the Comprehensive Plan Annual Amendment Cycle during the 2023 – 2025 Comprehensive Plan Update, except for City-sponsored amendments.

The City's annual 2023 Final Docket of Comprehensive Plan amendments include two City-sponsored Comprehensive Plan amendments: adoption of the 2024 – 2029 Six-Year Capital Facilities Plan Update and adoption of the Old Highway 99 Corridor Plan.

The Planning Commission started discussions of the 2024 – 2029 Capital Facilities Plan at their July 11, 2023, work session with an introduction to the transportation and general government project list. Discussions of water, sanitary sewer, and storm drain project lists occurred at a second work session on August 8, 2023.

The Capital Facilities Plan programs City expenditures for a six-year period in five broad, programmatic categories: general government, transportation, water, sanitary sewer, and storm drain projects. The Capital Facilities Plan is updated every two years, opposite the biennial budget process and is part of the City's Comprehensive Plan update that will be scheduled for Council consideration later this fall.

The Planning Commission received a briefing on the final docket and Ordinance No. O2023-002 at their November 14, 2023, meeting.

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3) Alternatives:

- ❑ None

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4) Attachments:

A. Staff Report
B. Ordinance No. O2023-002
C. 2024 – 2029 Capital Facilities Report
D. Old Highway 99 Corridor Study

Attachment A

STAFF REPORT

Date: November 28, 2023
To: Planning Commission
From: Erika Smith-Erickson, Land Use and Housing Planner

2023 Annual City of Tumwater Comprehensive Plan Amendments Final Docket (Ordinance No. O2023-002)

Pursuant to RCW 36.70A.130 and TMC 18.60.025(A)(2), amendments to the City's Comprehensive Plan can only be considered once per calendar year. On October 18, 2022, the City Council approved Ordinance No. O2022-023, which suspended the Comprehensive Plan Annual Amendment Cycle during the 2025 Comprehensive Plan periodic update, except for City-sponsored amendments.

The City Council approved the preliminary docket of 2023 Comprehensive Plan amendments on February 21, 2023. The final docket includes two City-sponsored Comprehensive Plan amendments:

1. Old Highway 99 Corridor Plan
2. 2024-2029 Six-Year Capital Facilities Plan Update

The proposed Comprehensive Plan amendments were reviewed separately in the staff report and then all together with the criteria found in TMC 18.60.025(B):

1. *Does the amendment conform to the Growth Management Act?*
2. *Is it consistent with the Comprehensive Plan, Thurston County-Wide Planning Policies, and related plans?*
3. *Have area conditions changed or are changing to justify a change in land use for the area?*
4. *Is there a need to provide a community-related use not anticipated by the Comprehensive Plan?*

The Planning Commission received a briefing on the final docket and Ordinance No. O2023-002 at their November 14, 2023, meeting and will be asked to schedule a public hearing on the ordinance for their December 12, 2023, meeting.

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AMENDMENT #1 – OLD HIGHWAY 99 CORRIDOR PLAN

Summary

The proposal is a Comprehensive Plan amendment to adopt the Old Highway 99 Plan.

Old Highway 99 is a major transportation corridor connecting the City of Tumwater with communities to the south. Commercial and residential use levels have crept upwards in recent years, extending peak commute hours and lengthening vehicle queues. Studies suggest expanding the highway to two lanes in either direction that would include upgrades such as sidewalks and bike lanes.

Proposal

Adopt the Old Highway 99 Corridor Plan to reduce commute times and provide adequate level of service to a main traffic corridor.

Proponent

City of Tumwater

Background

The Old Highway 99 Corridor Plan examines multimodal safety and mobility issues and incorporates land use, environmental, and transportation considerations as necessary to determine preferred alignment, cross sections, intersection control, stormwater strategies, mitigation strategies, right-of-way needs, implementation strategies, and future project estimates.

Old Highway 99 was first assigned in the mid-1920s as the original north-south highway running along the West Coast of the United States. From Blaine, Washington, in the north to its southern terminus in Calexico, California, it ran 1,600 miles border to border.

In Washington State, this corridor spurred growth and commerce for more than forty different communities as goods and travelers could quickly navigate from one City to the next.

While this route has since lost many of its once-daily travelers to Interstate 5, the corridor still offers an identity that is closely linked to many early west coast cities. In recent years, many of these communities have invested in revitalizing this route through main street projects, place-making efforts, and expanded boulevards.

At the local level, Old Highway 99 connects south Thurston County, Bush Prairie, and the Olympia Regional Airport to the City of Tumwater and Interstate 5. Commercial and residential use levels

have crept upwards in recent years, extending peak commute hours and lengthening vehicle queues.

The City of Tumwater has invested in planning studies and improvements to the north along the Capitol Boulevard corridor. The results of these studies can be found on the Capitol Boulevard Corridor Planning Project page on the City website.

In 2016, the City updated the Transportation Element of its Comprehensive Plan. This process determined two lanes are required in either direction on Old Highway 99 from 79th Avenue to 88th Avenue to meet increasing demands of traffic.

Design alternatives were evaluated based on how well they met the identified needs of the community and the requirements of the City's Transportation Plan. Consistent with the Transportation Plan, the project stakeholders recommended the replacement of existing signals with roundabouts.

Old Highway 99 Corridor Plan addresses the development and improvement of Old Highway 99 from 79th Avenue to 93rd Avenue. Currently, there are no bike lanes along this stretch of the corridor, and sidewalks only exist in a few locations.

The City asked for feedback on the corridor in the fall of 2020 using a platform called Maptionnaire that allowed users to provide map-based comments along the corridor in addition to a traditional survey.

The five main improvements people wanted to see along the corridor included:

- Bicycle Lanes/Paths
- Sidewalks
- Reduced Traffic Congestion
- Intersection Safety
- Street Lighting

The City Council placed the proposed Comprehensive Plan amendment on the 2023 Long Range Planning Work Program on January 17, 2023. The Planning Commission recommended further review of the proposal on January 24, 2023, as part of the 2023 preliminary docket. On February 8, 2023, the General Government Committee reviewed the preliminary docket and forwarded it to the full City Council for review with a recommendation for further review.

The City Council held a work session on February 21, 2023 to consider the recommendations from the Planning Commission and General Government Committee and included the proposal in the 2023 annual Comprehensive Plan amendment preliminary docket to be reviewed by Community Development Department staff and presented later in 2023.

The Planning Commission held a briefing on the Final Docket of Comprehensive Plan amendments together on November 14, 2023.

Review and Approval Criteria

Comprehensive Plan amendments are subject to the criteria below from TMC 18.60.025(B):

1. *All amendments to the comprehensive plan must conform with the requirements of the Washington State Growth Management Act, Chapter 36.70A RCW, and all amendments for permanent changes to the comprehensive plan must be submitted to the Washington State Department of Commerce, pursuant to RCW 36.70A.106.*

   The amendment being considered is in accordance with the City's annual Comprehensive Plan amendment process, as required by RCW 36.70A. If the amendment is approved by the City Council, the proposed amendment will be submitted to the Washington State Department of Commerce pursuant to RCW 36.70A.106.

   The amendment meets the goals of the Washington State Growth Management Act as follows:

   1) ***Urban growth***. *Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.*

      The proposed Comprehensive Plan amendment is intended to support the growth and development of the City as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

   2) ***Reduce sprawl***. *Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.*

      The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment is intended to reduce the inappropriate conversion of undeveloped land into sprawling, low-density development and focus future growth in the City as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

   3) ***Transportation***. *Encourage efficient multimodal transportation systems that will reduce greenhouse gas emissions and per capita vehicle miles traveled, and are based on regional priorities and coordinated with county and city comprehensive plans.*

      The proposed Comprehensive Plan amendment supports urban level development in the City that would provide for efficient multimodal transportation systems as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

   4) ***Housing***. *Plan for and accommodate housing affordable to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.*

      The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment supports the provision of a range of residential

development in the City, including permanently affordable housing as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

5) ***Economic development***. *Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, promote the retention and expansion of existing businesses and recruitment of new businesses, recognize regional differences impacting economic development opportunities, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.*

   The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment supports development that provides economic development and allows more people to live closer to jobs and services as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

6) ***Property rights***. *Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.*

   The proposed Comprehensive Plan amendment does not require any taking of private property without just compensation.

7) ***Permits***. *Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.*

   The proposed Comprehensive Plan amendment is being considered as a part of the City's annual Comprehensive Plan amendment review.

8) ***Natural resource industries***. *Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forestlands and productive agricultural lands, and discourage incompatible uses.*

   The proposed Comprehensive Plan amendment does not affect natural resource industries.

9) ***Open space and recreation***. *Retain open space and green space, enhance recreational opportunities, enhance fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.*

   The proposed Comprehensive Plan amendment supports the goals, policies, and actions for open space and recreation as outlined in the Comprehensive Plan

10) ***Environment***. *Protect and enhance the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.*

The proposed Comprehensive Plan amendment would protect the environment by directing future development towards urban rather than rural areas as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

11) ***Citizen participation and coordination***. *Encourage the involvement of citizens in the planning process, including the participation of vulnerable populations and overburdened communities, and ensure coordination between communities and jurisdictions to reconcile conflicts.*

City residents and all interested parties, agencies and jurisdictions will be notified about the application and the public hearing for the proposal as part of the proposed 2023 Comprehensive Plan amendment process.

12) ***Public facilities and services***. *Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.*

The proposed Comprehensive Plan amendment is supported by the City's provision of sewer and water service in the urban area.

13) ***Historic preservation***. *Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.*

The proposed Comprehensive Plan amendment does not affect historic preservation. As future development occurs, it would need to comply with all the applicable historical or archaeological regulations.

14) ***Climate change and resiliency***. *Ensure that comprehensive plans, development regulations, and regional policies, plans, and strategies under RCW 36.70A.210 and chapter 47.80 RCW adapt to and mitigate the effects of a changing climate; support reductions in greenhouse gas emissions and per capita vehicle miles traveled; prepare for climate impact scenarios; foster resiliency to climate impacts and natural hazards; protect and enhance environmental, economic, and human health and safety; and advance environmental justice.*

The proposed Comprehensive Plan amendment would allow for the reduction of greenhouse gas emissions by reducing idling emissions and the multimodal components would reduce vehicle miles traveled.

15) ***Shorelines of the state***. *For shorelines of the state, the goals and policies of the shoreline management act as set forth in RCW 90.58.020 shall be considered an element of the county's or city's comprehensive plan.*

The proposed Comprehensive Plan amendment does not affect the shorelines of the state. As future development occurs, it would need to comply with the City's Shoreline Management Program, as required.

2. *Amendments and site-specific rezone applications should be evaluated for internal consistency with the comprehensive plan, and for consistency with the county-wide*

planning policies, related plans, and the comprehensive plan of Thurston County or cities which have common borders with Tumwater.

The proposed Comprehensive Plan amendment is consistent with the Transportation Plan of the Comprehensive Plan. The Comprehensive Plan is consistent with the Thurston County-Wide Planning Policies and the goals of Sustainable Thurston.

The applicable goals, policies, and actions of the Transportation Plan of the Comprehensive Plan that support the proposed Comprehensive Plan amendment is as follows:

Transportation Plan Goal 1 states:

Ensure the design and function of transportation facilities are consistent with and support sustainable, healthy urban, suburban, and rural communities.

Transportation Plan Policy 1.a states:

Commit to the development and implementation of land use plans, development patterns, parking requirements, and design standards that encourage walking, bicycling, transit use, and other alternatives to driving alone.

Transportation Plan Policy 1.b states:

Provide transportation facilities that support the location of jobs, housing, industry, and other activities as called for in Tumwater's adopted land use plan.

Transportation Plan Policy 1.i states:

Ensure adequate transportation capacity to address growth consistent with this Comprehensive Plan.

Transportation Plan Goal 2 states:

Work toward an integrated, multimodal transportation system that supports adopted land use plans, reduces overall need to drive, and provides alternative travel choices.

Transportation Plan Policy 2.a states:

Provide quality travel choices appropriate to existing and future land uses, including walking, bicycling, transit, motor vehicles including freight, and rail.

Transportation Plan Policy 2.d states:

Incorporate practical design considerations where appropriate, designing to solve mobility problems more so than to meet design standards if doing so increases functional mobility of the transportation system.

Transportation Plan Goal 6 states:

Increase overall operating efficiency of the transportation system through the effective use of measures that reduce the need to drive alone.

Transportation Plan Policy 6.a states:

Promote transportation-efficient development and redevelopment, and site public services and facilities where transit, walking, and biking are now or will be viable alternatives to driving alone.

Transportation Plan Policy 6.b states:

Encourage use of public transportation, ridesharing, biking, and walking by improving access, convenience, and reliability of those options.

Transportation Plan Goal 8 states:

Promote efficient, cost-effective, timely, and safe movement of the freight within and through the region.

Transportation Plan Policy 8.c states:

Explore strategies to reduce conflict and optimize safety for all transportation system users where industrial or commercial land uses are adjacent to highly urbanized areas.

Transportation Plan Goal 9 states:

Establish a street and road network that provides for the safe and efficient movement of people and goods while supporting adopted land use goals.

Transportation Plan Policy 9.a states:

Design and construct multimodal, context-sensitive, complete streets and roads.

Transportation Plan Goal 11 states:

Increase the share of all trips made safely and conveniently by bicycle.

Transportation Plan Policy 11.a states:

Develop a continuous, safe, and convenient bicycle network that functions as an integral part of the whole transportation system.

Transportation Plan Goal 12 states:

Increase the share of all trips made safely and conveniently by walking.

Transportation Plan Policy 12.a states:

Provide a convenient, interconnected, safe pedestrian network that supports existing and desired land uses.

Transportation Plan Policy 12.e states:

Require pedestrian-friendly site design and building standards in activity centers, along urban corridors and other key transit routes, and in high density mixed-use zoning districts.

3. *Whether conditions in the area for which comprehensive plan change/zoning amendment is requested have changed or are changing to such a degree that it is in the public interest to encourage a change in land use for the area.*

The criterion does not apply, because a Comprehensive Plan map amendment and corresponding rezone is not proposed.

4. *Whether the proposed comprehensive plan zoning amendment is necessary in order to provide land for a community-related use which was not anticipated at the time of adoption of the comprehensive plan.*

   The criterion does not apply.

Staff Conclusions

1. The proposal meets the review and approval criteria found in TMC 18.60.025(B).
2. The proposed Comprehensive Plan amendment is consistent with the goals of the Washington State Growth Management Act.
3. The proposed Comprehensive Plan amendment is consistent with Goals 1, 2, 6, 8, 9, 11, and 12 and Policies 1.a, 1.b, 1.i, 2.a, 2.d, 6.a, 6.b,8.c, 9.a, 11.a. 12.a, and 12.e of the Transportation Plan of the Comprehensive Plan.
4. The potential impacts of the proposed Comprehensive Plan amendments have been considered together with the other amendments in the 2023 annual Comprehensive Plan amendment final docket with the criteria found in TMC 18.60.025(B). The proposed amendments do not create any inconsistencies when evaluated together.
5. Based on the above review and analysis, staff concludes that the proposed Comprehensive Plan amendment is consistent with the requirements of the Washington State Growth Management Act, Thurston County-Wide Planning Policies, the goals of Sustainable Thurston, and the Comprehensive Plan.

Staff Recommendation

Staff recommends approval of the proposed Comprehensive Plan amendment to adopt the Old Highway 99 Plan as part of the Comprehensive Plan as shown in Appendix 1.1 – Old Highway 99 Plan.

Effect of the Proposed Amendment

The proposed Comprehensive Plan amendment to adopt the Old Highway 99 Plan as part of the Comprehensive Plan would necessitate changes to the Comprehensive Plan as shown in Appendix 1.1 – Old Highway 99 Plan and Ordinance No. O2023-002.

Staff Contacts

Brandon Hicks, Transportation & Engineering Director
City of Tumwater Transportation & Engineering Department
360-754-4140
bhicks@ci.tumwater.wa.us

Mary Heather Ames, Assistant Transportation & Engineering Director
City of Tumwater Transportation & Engineering Department
360-754-4140
mhames@ci.tumwater.wa.us

Brad Medrud, AICP, Planning Manager
City of Tumwater Community Development Department
(360) 754-4180
bmedrud@ci.tumwater.wa.us

Erika Smith-Erickson, Land Use and Housing Planner
City of Tumwater Community Development Department
(360) 754-4180
ESmith-Erickson@ci.tumwater.wa.us

Appendix 1.1 – Old Highway 99 Plan

(See the Old Highway 99 Plan attached as part of Ordinance No. O2023-002)

AMENDMENT #2 – 2024 – 2029 SIX-YEAR CAPITAL FACILITIES PLAN UPDATE

Summary

The proposal is a Comprehensive Plan amendment to update the Six-Year Capital Facilities Plan to reflect current information.

Proposal

Update the Six-Year Capital Facilities Plan to reflect current information.

Proponent

City of Tumwater

Background

The purpose of the update is to address Growth Management Act requirements to update the City's Six-Year Capital Facilities Plan with new data and analysis and confirm implementation actions every two years.

City staff have been working on the update of the Six-Year Capital Facilities Plan for the past two years. The update reflects the changes that have occurred in the City since the Capital Facilities Plan's last update as part of the 2021 Comprehensive Plan Amendments. The Capital Facilities Plan is an Element of the Comprehensive Plan.

The City Council placed the proposed Comprehensive Plan amendment on the 2023 Long Range Planning Work Program on January 17, 2023. The Planning Commission recommended further review of the proposal on January 24, 2023, as part of the 2023 preliminary docket. On February 8, 2023, the General Government Committee reviewed the preliminary docket and forwarded it to the full City Council for review with a recommendation for further review.

The City Council held a work session on February 21, 2023 to consider the recommendations from the Planning Commission and General Government Committee and included the proposal in the 2023 annual Comprehensive Plan amendment preliminary docket to be reviewed by Community Development Department staff and presented later in 2023.

After the City Council approved the final docket for the 2023 annual Comprehensive Plan amendments on February 21, 2023 for further review, staff from the Transportation & Engineering, Water Resources & Sustainability, and Parks and Recreation Departments reviewed the previous Six-Year Capital Facilities Plan to determine what specific amendments were needed to update the Plan.

The Public Works Committee discussed the update to the Financial Plans for General Government and Transportation on July 6, 2023 and the Financial Plans for the Sanitary Sewer, the Storm Drain, and the Water Funds on July 20, 2023. The Planning Commission met for a briefing on the update to the Six-Year Capital Facilities Plan on July 11, 2023 to address the Financial Plans for General Government and Transportation Funds and a briefing on August 8, 2023 to address the Financial Plans for the Sanitary Sewer, the Storm Drain, and the Water Funds.

The Planning Commission held a briefing on the Final Docket of Comprehensive Plan amendments together on November 14, 2023.

Review and Approval Criteria

Comprehensive Plan amendments are subject to the criteria below from TMC 18.60.025(B):

1) *All amendments to the comprehensive plan must conform with the requirements of the Washington State Growth Management Act, Chapter 36.70A RCW, and all amendments for permanent changes to the comprehensive plan must be submitted to the Washington State Department of Commerce, pursuant to RCW 36.70A.106.*

   The amendment being considered is in accordance with the City's annual Comprehensive Plan amendment process, as required by RCW 36.70A. If the amendment is approved by the City Council, the proposed amendment will be submitted to the Washington State Department of Commerce pursuant to RCW 36.70A.106.

   The amendment meets the goals of the Washington State Growth Management Act as follows:

   1) ***Urban growth***. *Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.*

      The proposed Comprehensive Plan amendment is intended to support the growth and development of the City as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

   2) ***Reduce sprawl***. *Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.*

      The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment is intended to reduce the inappropriate conversion of undeveloped land into sprawling, low-density development and focus future growth in the City as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

   3) ***Transportation***. *Encourage efficient multimodal transportation systems that will reduce greenhouse gas emissions and per capita vehicle miles traveled, and are based on regional priorities and coordinated with county and city comprehensive plans.*

The proposed Comprehensive Plan amendment supports urban level development in the City that would provide for efficient multimodal transportation systems as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

4) ***Housing***. *Plan for and accommodate housing affordable to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.*

   The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment supports the provision of a range of residential development in the City, including permanently affordable housing as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

5) ***Economic development***. *Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, promote the retention and expansion of existing businesses and recruitment of new businesses, recognize regional differences impacting economic development opportunities, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.*

   The proposed Comprehensive Plan amendment is consistent with the goal as the proposed amendment supports development that provides economic development and allows more people to live closer to jobs and services as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

6) ***Property rights***. *Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.*

   The proposed Comprehensive Plan amendment does not require any taking of private property without compensation.

7) ***Permits***. *Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.*

   The proposed Comprehensive Plan amendment is being considered as a part of the City's annual Comprehensive Plan amendment review.

8) ***Natural resource industries***. *Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forestlands and productive agricultural lands, and discourage incompatible uses.*

   The proposed Comprehensive Plan amendment does not affect natural resource industries.

9) ***Open space and recreation***. *Retain open space and green space, enhance recreational opportunities, enhance fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.*

   The proposed Comprehensive Plan amendment supports the goals, policies, and actions for open space and recreation as outlined in the Comprehensive Plan

10) ***Environment***. *Protect and enhance the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.*

    The proposed Comprehensive Plan amendment would protect the environment by directing future development towards urban rather than rural areas as outlined in the maps, goals, policies, and actions of the Comprehensive Plan.

11) ***Citizen participation and coordination***. *Encourage the involvement of citizens in the planning process, including the participation of vulnerable populations and overburdened communities, and ensure coordination between communities and jurisdictions to reconcile conflicts.*

    City residents and all interested parties, agencies and jurisdictions will be notified about the application and the public hearing for the proposal as part of the proposed 2023 Comprehensive Plan amendment process.

12) ***Public facilities and services***. *Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.*

    The proposed Comprehensive Plan amendment is supported by the City's provision of sewer and water service in the urban area.

13) ***Historic preservation***. *Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.*

    The proposed Comprehensive Plan amendment does not affect historic preservation. As future development occurs, it would need to comply with all the applicable historical or archaeological regulations.

14) ***Climate change and resiliency***. *Ensure that comprehensive plans, development regulations, and regional policies, plans, and strategies under RCW 36.70A.210 and chapter 47.80 RCW adapt to and mitigate the effects of a changing climate; support reductions in greenhouse gas emissions and per capita vehicle miles traveled; prepare for climate impact scenarios; foster resiliency to climate impacts and natural hazards; protect and enhance environmental, economic, and human health and safety; and advance environmental justice.*

    The proposed Comprehensive Plan amendment contains projects that support the reduction of greenhouse gas emissions and vehicle miles traveled.

15) ***Shorelines of the state***. *For shorelines of the state, the goals and policies of the shoreline management act as set forth in RCW 90.58.020 shall be considered an element of the county's or city's comprehensive plan.*

The proposed Comprehensive Plan amendment does not affect the shorelines of the state. As future development occurs, it would need to comply with the City's Shoreline Management Program, as required.

2) *Amendments and site-specific rezone applications should be evaluated for internal consistency with the comprehensive plan, and for consistency with the county-wide planning policies, related plans, and the comprehensive plan of Thurston County or cities which have common borders with Tumwater.*

The proposed Comprehensive Plan amendment is consistent with the Land Use Element of the Comprehensive Plan. The Comprehensive Plan is consistent with the Thurston County-Wide Planning Policies and the goals of Sustainable Thurston.

The applicable goals, policies, and actions of the Land Use Element of the Comprehensive Plan that support the proposed Comprehensive Plan amendment is as follows:

Land Use Element Goal LU-1 states:

Ensure the Land Use Element is implementable and coordinated with all applicable City plans and the plans of other jurisdictions in the Thurston region.

Land Use Element Policy LU-1.10 states:

Coordinate the Land Use Element with the City's Lands for Public Purposes Element and the Capital Facilities Plan.

Land Use Element Policy LU-1.11 states:

Make capital budget decisions consistent with the comprehensive plan in accordance with RCW 36.70A.120 (Reference the City's current six-year Capital Facilities and Transportation Improvement Plans).

Land Use Element Goal LU-2 states:

Ensure development takes place in an orderly and cost-efficient manner in order to best utilize available land and public services, conserve natural resources, protect critical areas, preserve open space, and reduce sprawl.

Land Use Element Policy LU-2.6 states:

Ensure the City's capital budget decisions in the City's current six-year Capital Facilities and Transportation Improvement Plans are coordinated with the Land Use Element, Lands for Public Purpose Element, and Transportation Element.

Land Use Element Goal LU-3 states:

Ensure adequate public services, facilities, and publicly owned utilities are available to proposed and existing development.

Land Use Element Policy LU-3.1 states:

Coordinate development with the City's six-year Capital Facilities Plan.

Land Use Element Action LU-3.1.1 states:

Ensure the Capital Facilities Plan can be implemented through the Land Use Element's projected densities and the direction found in the Lands for Public Purposes Element.

The proposed Comprehensive Plan amendment is consistent with the Land Use Element goals, policies, and actions above.

The applicable goals, policies, and actions of the Lands for Public Purposes Element of the Comprehensive Plan that support the proposed Comprehensive Plan amendment is as follows:

Lands for Public Purposes Element Goal LPP-1 states:

Provide sufficient and efficient services to Tumwater and the Urban Growth Area.

Lands for Public Purposes Element Policy LPP-1.1 states:

Coordinate with Thurston Regional Planning Council, Thurston County, and other service providers to identify areas of shared need for public facilities.

Lands for Public Purposes Element Policy LPP-1.2 states:

Ensure concurrency with City, County, and Regional plans to provide the most efficient array of services.

Lands for Public Purposes Element Policy LPP-1.3 states:

Follow the requirements of County-Wide Planning Policy V and RCW 36.70A.200 when siting new facilities and improve the process whenever possible.

Lands for Public Purposes Element Goal LPP-2 states:

Make recommendations for improvements in the provision of public services.

Lands for Public Purposes Element Policy LPP-2.1 states:

Support actions to expand and improve Tumwater's multimodal transit network.

Lands for Public Purposes Element Policy LPP-2.5 states:

Support the fulfillment of citizen requests for public facilities in line with the Parks, Recreation, and Open Space Plan.

The proposed Comprehensive Plan amendment is consistent with the Lands for Public Purposes Element goals, policies, and actions above.

3) *Whether conditions in the area for which comprehensive plan change/zoning amendment is requested have changed or are changing to such a degree that it is in the public interest to encourage a change in land use for the area.*

The criterion does not apply, because a Comprehensive Plan map amendment and corresponding rezone is not proposed.

4) *Whether the proposed comprehensive plan zoning amendment is necessary in order to provide land for a community-related use which was not anticipated at the time of adoption of the comprehensive plan.*

The criterion does not apply.

Staff Conclusions

1. The proposal meets the review and approval criteria found in TMC 18.60.025(B).
2. The proposed Comprehensive Plan amendment is consistent with the goals of the Washington State Growth Management Act.
3. The proposed Comprehensive Plan amendment is consistent with Goals LU-1, LU-2, and LU-3, Policies LU-1.10, LU-1.11, LU-2.6, and LU-3.1 and Action LU-3.1.1 of the Land Use Element of the Comprehensive Plan.
4. The proposed Comprehensive Plan amendment is consistent with Goals LPP-1 and LPP-2 and Policies LPP-1.1, LPP-1.2 LPP-1.3, LPP-2.1, and LPP-2.5 of the Lands for Public Purposes Element of the Comprehensive Plan.
5. The potential impacts of the proposed Comprehensive Plan amendments have been considered together with the other amendments in the 2023 annual Comprehensive Plan amendment final docket with the criteria found in TMC 18.60.025(B) and proposed amendments do not create any inconsistencies when evaluated together.
6. Based on the above review and analysis, staff concludes that the proposed Comprehensive Plan amendment is consistent with the requirements of the Washington State Growth Management Act, Thurston County-Wide Planning Policies, the goals of Sustainable Thurston, and the Comprehensive Plan.

Staff Recommendation

Staff recommend approval of the updated Capital Facilities Plan to reflect current information.

Effect of the Proposed Amendment

The proposal amends the Capital Facilities Plan as shown in Appendix 2.1 and Ordinance No. O2023-002.

Staff Contacts

Brandon Hicks, Transportation & Engineering Director
City of Tumwater Transportation & Engineering Department
360-754-4140
bhicks@ci.tumwater.wa.us

Dan Smith, Water Resources & Sustainability Director
City of Tumwater Water Resources & Sustainability Department
360-754-4150
dsmith@ci.tumwater.wa.us

Brad Medrud, AICP, Planning Manager
City of Tumwater Community Development Department
(360) 754-4180
bmedrud@ci.tumwater.wa.us

Erika Smith-Erickson, Land Use and Housing Planner
City of Tumwater Community Development Department
(360) 754-4180
ESmith-Erickson@ci.tumwater.wa.us

Appendix 2.1 – Amended Capital Facilities Plan

(See Capital Facilities Plan update attached as part of Ordinance No. O2023-02)

SUMMARY OF ALL AMENDMENTS

Public Approval Process

The City Council placed all the proposed amendments on the 2023 Long Range Planning Work Program on January 17, 2023. The Planning Commission recommended further review of all the proposed amendments on January 24, 2023, as part of the 2023 preliminary docket. On February 8, 2023, the General Government Committee reviewed the preliminary docket and forwarded it to the full City Council for review.

On February 21, 2023, the City Council considered the Planning Commission's recommendation and the review by the General Government Committee and included all the proposed amendments in the 2023 annual Comprehensive Plan amendment preliminary docket to be reviewed by Community Development Department staff and presented later in 2023.

The Planning Commission held a briefing on the amendments on November 14, 2023, and the Planning Commission will discuss the proposed amendments at a work session on November 28, 2023.

An Environmental Checklist for a non-project action was prepared October 27, 2023, under the State Environmental Policy Act (Chapter 43.21C RCW), pursuant to Chapter 197-11 WAC, and a Determination of Non-Significance was issued November 8, 2023.

The ordinance was sent to the Washington State Department of Commerce on October 27, 2023 for their required 60-day review before the proposed text amendments are adopted, in accordance with RCW 36.70A.106.

The Planning Commission is expected to hold a public hearing for the proposed amendments on December 12, 2023. Following the public hearing and deliberations, the Planning Commission is expected to make their recommendation on the proposed amendments to the City Council.

The General Government Committee is expected to review the proposed Comprehensive Plan amendments in a briefing on January 10, 2024; the City Council is expected to hold a work session to discuss the amendments on January 23, 2024; and the City Council is scheduled to consider the proposed amendments at a meeting on February 6, 2024.

Public Notification

A Notice of Public Hearing for the Planning Commission is expected to be issued on December 1, 2023. The notice will be published as a press release, distributed to interested individuals and entities that have requested such notices, and published in The Olympian.

Staff Conclusions

1. All the proposed Comprehensive Plan amendments meet the review and approval criteria found in TMC 18.60.025(B).

2. All the proposed Comprehensive Plan amendments are consistent with the goals of the Washington State Growth Management Act.
3. All the proposed Comprehensive Plan amendments are consistent with the goals of the Land Use Element, the Lands for Public Purposes, and the Transportation Plan of the Comprehensive Plan.
4. The potential impacts of all the proposed 2023 Comprehensive Plan amendments rezones have been considered together with the criteria found in TMC 18.60.025(B) and proposed amendments do not create any inconsistencies when evaluated together.
5. Based on the above review and analysis, staff concludes that all the proposed Comprehensive Plan amendments are consistent with the requirements of the Washington State Growth Management Act, Thurston County-Wide Planning Policies, the goals of Sustainable Thurston, and the Comprehensive Plan.

Staff Recommendation

Staff recommends approval of all the proposed Comprehensive Plan amendments by Ordinance No. O2023-002.

Effects of the Proposed Amendments Considered Together

As noted above, the potential impacts of all the proposed 2023 Comprehensive Plan amendments have been considered together with the criteria found in TMC 18.60.025(B) and proposed amendments do not create any inconsistencies when evaluated together.

ORDINANCE NO. O2023-002

AN ORDINANCE of the City Council of the City of Tumwater, Washington, related to planning under the Growth Management Act of the State of Washington and the 2023 City of Tumwater Comprehensive Plan amendments.

WHEREAS, the City is required to plan under the Growth Management Act, Chapter 36.70A RCW; and

WHEREAS, this ordinance meets the goals and requirements of the Growth Management Act; and

WHEREAS, the Growth Management Act, Chapter 36.70A RCW, and Tumwater Municipal Code 18.60.025(A)(2) require amendments to the City's Comprehensive Plan be considered concurrently and no more than once annually; and

WHEREAS, the City Council, Planning Commission, property owners, or City staff may propose amendments to the City's Comprehensive Plan; and

WHEREAS, the City Council approved Ordinance No. O2022-023 on October 18, 2022, which suspended the Comprehensive Plan Annual Amendment Cycle during the 2023 – 2025 Comprehensive Plan Update, except for City-sponsored amendments; and

WHEREAS, Tumwater Municipal Code 18.60.025(A) establishes a process by which the preliminary docket of proposed Comprehensive Plan amendments undergoes an initial review by the Planning Commission for recommendation to the City Council; and

WHEREAS, on February 21, 2023, the City Council determined which proposed Comprehensive Plan amendments in the preliminary docket would be included in the final docket; and

WHEREAS, the Growth Management Act, Chapter 36.70A RCW, requires a process of early and continuous public participation for the proposed Comprehensive Plan amendments; and

WHEREAS, the adoption of proposed Comprehensive Plan amendments must be processed in compliance with the requirements of the State Environmental Policy Act; and

WHEREAS, the City Council reviewed all the evidence presented and has made findings of fact and conclusions related to the proposed Comprehensive Plan amendments which are set forth below.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF TUMWATER, STATE OF WASHINGTON, DOES ORDAIN AS FOLLOWS:

Section 1. Findings. For the purposes of effective land use planning, the Tumwater City Council adopts the following findings of fact:

A. General Findings

1. The proposed Comprehensive Plan amendments meet the intent of and are consistent with the Growth Management Act, Chapter 36.70A RCW, County-Wide Planning Policies, and internal goals and policies of the City's Comprehensive Plan.

2. The Attorney General Advisory Memorandum: Avoiding Unconstitutional Takings of Private Property (September 2018) on takings was reviewed and utilized by the City in objectively evaluating the proposed Comprehensive Plan amendments.

3. The proposed Comprehensive Plan amendments have been prepared in conformance with the Public Participation and Intergovernmental Coordination Procedures contained in the City's Comprehensive Plan, which meet the Growth Management Act, Chapter 36.70A RCW, requirements for the same.

4. The City engaged the community through public briefings, work sessions, and meetings with the Planning Commission, the Public Works Committee, the General Government Committee, and the City Council.

5. An Environmental Checklist for a non-project action was prepared under the State Environmental Policy Act (Chapter 43.21C RCW), pursuant to Chapter 197-11 WAC on October 27, 2023, and a Determination of Non-Significance was issued on November 8, 2023.

6. The ordinance was sent to the Washington State Department of Commerce on October 27, 2023, for the required 60-day review before the proposed Comprehensive Plan amendments were adopted, in accordance with RCW 36.70A.106.

7. The Planning Commission reviewed the preliminary docket and provided a preliminary docket recommendation at their January 24, 2023, meeting.

8. The General Government Committee discussed the Planning Commission's preliminary docket recommendation at their February 8, 2023, meeting.

9. The City Council approved the items in the preliminary docket for further review by staff at their February 21, 2023, meeting.

10. City staff completed their review of the final docket of proposed Comprehensive Plan amendments in October 2023.

11. The potential impacts of the proposed Comprehensive Plan amendments have been considered together and they do not create any inconsistencies when evaluated together.

12. The Public Works Committee received briefings on the general government, transportation, water, sanitary sewer, and stormwater funds of the proposed Capital Facilities Plan amendments on July 6, 2023, July 20, 2023, and September 7, 2023.

13. The Planning Commission received briefings on general government, transportation, water, sanitary sewer, and stormwater funds of the proposed Capital Facilities Plan amendments on July 11, 2023, and August 8, 2023.

14. The Planning Commission received a briefing on the final docket of the proposed Comprehensive Plan amendments on November 14, 2023, and discussed the proposed amendments at a work session on November 28, 2023.

15. A Notice of Public Hearing for the Planning Commission public hearing was issued on December 1, 2023. The notice was posted, published as a press release, distributed to interested individuals and entities that have requested such notices, and published in *The Olympian*.

16. The Planning Commission held the public hearing for the Comprehensive Plan amendments on December 12, 2023.

17. Following a public hearing and deliberations on December 12, 2023, the Planning Commission recommended approval of the proposed Comprehensive Plan amendments to the City Council.

18. The City Council's General Government Committee reviewed the Planning Commission's recommendation on the proposed Comprehensive Plan amendments in a briefing on January 10, 2024, and recommended that the City Council approve the proposed Comprehensive Plan amendments.

19. The City Council discussed General Government Committee recommendation on the proposed Comprehensive Plan amendments in a work session on January 23, 2024.

20. On February 6, 2024, the City Council approved the 2023 Comprehensive Plan amendments.

21. The proposed Comprehensive Plan amendments will be submitted to the Washington State Department of Commerce ten days after final adoption, pursuant to RCW 36.70A.106.

22. Any Conclusion herein, which may be deemed a Finding, is hereby adopted as such.

B. Findings – Capital Facilities Plan Update

1. The proposal is a Comprehensive Plan amendment to update the Capital Facilities Plan to reflect current information.

2. The proposed Comprehensive Plan amendment is in accordance with the City of Tumwater's annual Comprehensive Plan amendment process, as required by Chapter 36.70A RCW.

3. The proposed Comprehensive Plan amendment meets the fifteen goals of the Washington State Growth Management Act.

4. Based on City staff review and analysis, the proposed Comprehensive Plan amendment is internally consistent with the Comprehensive Plan and County-Wide Planning Policies.

C. Findings – Old Highway 99 Plan

1. The proposal is a Comprehensive Plan amendment to adopt the Old Highway 99 Plan as a part of the Transportation Plan of the Comprehensive Plan.

2. The proposed Comprehensive Plan amendment is in accordance with the City of Tumwater's annual Comprehensive Plan amendment process, as required by Chapter 36.70A RCW.

3. The proposed Comprehensive Plan amendment meets the fifteen goals of the Washington State Growth Management Act.

4. Based on City staff review and analysis, the proposed Comprehensive Plan amendment is internally consistent with the Comprehensive Plan and County-Wide Planning Policies.

Section 2. Conclusions. For the purposes of effective land use planning, the Tumwater City Council makes the following conclusions:

A. General Conclusions

1. Based on its review of the requirements of Chapter 36.70A RCW, the analysis and proposed revisions prepared by City staff, and the public comments received, the City Council finds and declares that the Comprehensive Plan amendments have been prepared in conformance with applicable law. This includes Chapter 36.70A RCW, Chapter 43.21C RCW, and the City of Tumwater Public Participation and Intergovernmental Coordination Procedures.

2. Based on its review of the requirements of Chapter 36.70A RCW, the analysis prepared by City staff, the recommendation forwarded by the Planning Commission, and the public comments received, the City Council hereby finds and declares that the Comprehensive Plan amendments comply with the requirements of Chapter 36.70A RCW.

3. Any Finding herein, which may be deemed a Conclusion, is hereby adopted as such.

B. Conclusions – Capital Facilities Plan Update

Consistent with the aforementioned findings, the Capital Facilities Plan of the Comprehensive Plan is to be amended as shown in Exhibit "A".

C. Conclusions – Old Highway 99 Plan

Consistent with the aforementioned findings, the Old Highway 99 Plan is adopted as part of the Transportation Plan of the Comprehensive Plan as shown in Exhibit "B".

Section 3. Capital Facilities Plan Update. The Comprehensive Plan is hereby amended to update the Capital Facilities Plan to reflect current information and meet existing deadlines as specified by the State of Washington as shown in Exhibit "A".

Section 4. Old Highway 99 Plan. The Comprehensive Plan is hereby amended to adopt the Old Highway 99 Plan as part of the Transportation Plan of the Comprehensive Plan as shown in Exhibit "B".

Section 5. Corrections. The City Clerk and codifiers of this ordinance are authorized to make necessary corrections to this ordinance including, but not limited to, the correction of scrivener/clerical errors, references, ordinance numbering, section/subsection numbers, and any references thereto.

Section 6. Ratification. Any act consistent with the authority and prior to the effective date of this ordinance is hereby ratified and affirmed.

Section 7. Severability. The provisions of this ordinance are declared separate and severable. The invalidity of any clause, sentence, paragraph, subdivision, section, or portion of this ordinance or the invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of the ordinance, or the validity of its application to other persons or circumstances.

Section 8. Effective Date. This ordinance shall become effective thirty (30) days after passage, approval, and publication as provided by law.

ADOPTED this _____day of _____, 20___.

CITY OF TUMWATER

_____
Debbie Sullivan, Mayor

ATTEST:

_____
Melody Valiant, City Clerk

APPROVED AS TO FORM:

_____
Karen Kirkpatrick, City Attorney

Published:_____

Effective Date:_____

Exhibit "A"

Amendments to the Capital Facilities Plan of the City of Tumwater Comprehensive Plan

[See attached Capital Facilities Plan update.]

Exhibit "B"

Adoption of the Old Highway 99 Plan as a part of the Transportation Plan of the City of Tumwater Comprehensive Plan

[See attached Old Highway 99 Plan.]

Attachment C

Exhibit A

Capital Facilities Plan 2024-2029

City of Tumwater

The Tumwater Capital Facilities Plan is a document that provides a list of proposed major capital expenditures throughout the City. It also provides a multi-year look at the strategies and financing requirements for major capital programs.

MAYOR

The Honorable Debbie Sullivan

TUMWATER CITY COUNCIL

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Michael Althauser
Joan Cathey
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Capital Facilities Plan 2024 – 2029

City of Tumwater

INTRODUCTION

The Growth Management Act (GMA) has significant requirements in the areas of general government facilities planning and capital improvement financing. The comprehensive plan is developed to ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use, without decreasing current service levels below locally established minimum standards. Both the transportation element and the capital facilities element reinforce the requirement that comprehensive plans prepared according to the GMA be realistic and implementable. The requirement for setting level of service standards, inventories and forecasts of existing and needed capital facilities, six-year financing plans, and concurrency all require coordinated, consistent planning documents.

The Tumwater Capital Facilities Plan is a document that provides a list of proposed major capital expenditures throughout the City. It also provides a multi-year look at the strategies and financing requirements for major capital programs. The plan projects needs six years into the future for major construction, infrastructure improvements, land acquisitions, and machinery and equipment purchases. The plan then provides a funding strategy and projected funding scenarios for each succeeding year. The threshold minimum for inclusion into the Capital Facilities Plan is $25,000.

As previously mentioned, the GMA requirements are the main force behind the need for preparing this plan, but there are other reasons for preparing a Capital Facilities Plan (CFP) when looking at the community and its need in order to prepare for the future with limited resources:

- **It provides policy makers with a current and future view of the capital needs of each department.**
- **It provides a mechanism for assessing the financial ramifications of funding or not funding programs.**
- **It provides an opportunity to combine similar projects across departmental lines.**
- **It provides a means of assessing future maintenance and operating costs, and their impacts upon the City's future finances.**

- **It supports good management that demonstrates the need for facilities and the need for revenues to pay for them.**

- **It provides accessibility to various sources of revenues (e.g., grants, Department of Commerce Public Works Trust Fund loans, impact fees, real estate excise taxes) that require a CFP in order to qualify for the revenue.**

The City of Tumwater is responsible for providing facilities and services, which are needed by the residents and businesses of the City for a safe, secure, and efficient environment within which to conduct their affairs. The GMA defines public facilities to include streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks, open space and recreational facilities, and schools. It further defines public services to include fire protection and suppression, law enforcement, public health, education, recreation, environmental protection, and other governmental services.

As provided in the GMA, capital facilities plans are a required part of the Comprehensive Plan and are to provide capital facilities for land development that is envisioned or authorized by the Land Use element. Also, the plan is meant to coordinate and provide consistency among the many plans for capital improvements, including the Transportation and Parks elements of the Comprehensive Plan, various master plans and other studies. It should ensure the timely provision of adequate facilities as required in the GMA. If funding falls short of meeting existing needs, the land use element must be re-examined to ensure consistency with the capital facilities element.

The CFP is the element that makes the rest of the Comprehensive Plan come to life. By funding projects needed to maintain levels of service and for concurrency, the CFP determines the quality of life in the community. The requirement to fully finance the CFP provides a reality check for the vision of the Comprehensive Plan.

Planning for capital facilities is a complex task. First, it requires an understanding of future needs. Second, it must assess the various types of capital facilities that could be provided, and identify the most effective and efficient array of facilities to support the needed services. Finally, it must address how these facilities will be financed.

Planning what is needed is itself only a beginning. Planning how to pay for these needs is another step. Only so much can and will be afforded. Securing the most effective array of facilities in light of limited resources and competing demands requires coordination of the planned facilities and their implementation. It also requires a thorough understanding of the fiscal capacity of the City to finance these facilities. Financial planning and implementation of capital facilities cannot be effectively carried out on an annual basis, since often the financing requires multi-year commitments of fiscal resources. As such, this plan is long-range in its scope.

Prioritization of the various projects has been completed in order to develop a funded plan. Each project proposal is considered against the following criteria in the order listed:

- **An emergency repair.**
- **A legal or statutory requirement for carrying out the improvement; a legal mandate.**
- **A continuation of multi-year projects, contractual obligations, etc.**
- **Implementation of legislative (Council) goals and objectives.**
- **Ability to leverage outside sources (grants, mitigation, FILO, impact fees, low interest loans, etc.).**
- **An enhancement of or general repair of existing facilities.**
- **An acquisition and development of new facilities.**

For financial and accounting purposes, municipal operations are divided into two broad categories, general governmental and proprietary. General governmental activities are primarily tax and user fee supported, while proprietary activities rely primarily on fees generated from the sale of goods and services for their operations (rate payers). Capital improvements for police, fire, parks, administration, and transportation are traditionally general governmental in nature, while water, sanitary sewer, storm drain and equipment rental are proprietary.

Capital funding for both general governmental and proprietary categories emanates primarily from operating revenues, with grants, local improvement districts, latecomer, and impact fees frequently contributing substantial sums towards capital construction. General governmental and proprietary operations both use such debt financing strategies as bonding and leasing to help fund improvements. It is at this juncture that the similarities between general governmental and proprietary capital projects diverge. In Washington State, it is generally easier to fund proprietary capital improvements than it is general governmental improvements. To carry out a proprietary capital improvement, there may be an increase in the charges for commodities like water, sewer, and storm drain rates or raising the connection charges or system development charges. In the general governmental area, however, Washington State law limits: 1) the sources municipalities can use to raise funds for capital improvements; 2) the tax rates that can be charged to raise funds for capital improvements; and 3) the amount of general obligation debt capacity that can be issued to raise funds for capital improvements. Again, we note that substantial change in this area has arisen because of the Growth Management Act. That Act authorizes, through proper legislation of the City Council, impact fees for various areas that include: (a) public streets and roads; (b) publicly owned parks, open space and recreation facilities; (c) school facilities; and (d) fire protection facilities in jurisdictions that are not part of a fire district.

PLAN GUIDE

Each section of the plan (e.g., General Government, Transportation, Water, Sewer, and Storm Drainage) has a financial plan. That financial plan: 1) prioritizes each project based upon the criteria mentioned earlier; and 2) lists all of the sources of revenues. Each project has an individual worksheet that gives the overall cost of the project and the individual revenue sources. These worksheets may or may not be scheduled for construction in the same year as the financial plan indicates. That would depend on funding available from the various sources and coordination of construction projects. Other elements to be discussed in the plan include concurrency, existing infrastructure, school district plans, levels of service and planning assumptions. The reader is referred to the Table of Contents for the location of these elements.

GLOSSARY OF TERMS

Assessed Valuation: Refers to how much the total real estate and personal property within a jurisdiction is worth. The value is established by the County Assessor at 100% of appraised market value, and adjusted by the State to account for variations in assessment practices among counties.

Bonding: Is the act of issuing the debt to finance capital projects and other expenditures.

Budget: A plan of financial operation embodying an estimate of proposed expenditures for a given period and the proposed means of financing them.

Capital Program: A plan for capital expenditures to be incurred each year over a fixed period of years to meet capital needs arising from the long-term work program or otherwise. It sets forth each project or other contemplated expenditure in which the government is to have a part and specifies the full resources estimated to be available to finance the projected expenditures.

Community Park: Those parks so designated in the City of Tumwater Parks and Recreation Plan.

Concurrent or Concurrency: The physical (infrastructure) improvements (as defined by City policy), that are in place or bonded for at the time the impacts of development occur, or that the necessary financial commitments are in place.

Councilmanic General Obligation Debt: That amount of debt that may be obligated by the legislative body without voter approval. Based on a percentage of the jurisdiction's assessed value as prescribed by statute.

Debt Limits: The maximum amount of gross or net debt that is legally permitted. Debt is an obligation resulting from the borrowing of money or from the purchase of goods and services.

Development Activity: Any construction or expansion of a building, structure, or use, any change in use of a building or structure, or any change in the use of land, that creates additional demand and need for public facilities.

Encumbered: To reserve, set aside or otherwise earmark, the impact fees in order to pay for commitments, contractual obligations or other liabilities incurred for public facilities.

Enterprise Fund: See Proprietary Fund.

General Obligation Debt: Debt that will be repaid mainly by taxes and other general governmental revenues. This debt includes limited and unlimited general obligation bonds, capital leases and other notes and contracts issued with the full faith and credit of the government.

Guaranty Fund: A fund established by a bond issuer that is pledged as security for the payment of one or more bond issues. Normally used for Local Improvement Districts (LIDs).

Impact Fee: A fee assessed on new development that creates additional demand and need for public facilities.

Infrastructure: The underlying foundation, especially the basic installations and facilities on which the continuance and growth of a jurisdiction depends (e.g., streets, and roads, sewer, and water systems).

Latecomer Fees: Fees paid by developers or future service users for their share of past improvements financed by others.

Leasing: A financing technique whereby ownership of the project or equipment remains with the financing entity, and where title may or may not transfer to the City at the end of the lease.

Levy Lid: A statutory restriction on the annual increase in the amount of property tax a given public jurisdiction can assess on regular or excess levies.

Local Improvement District (LID): A method of carrying out a specific improvement by allocating the costs among the benefitting properties. The project is usually financed through a long-term bond issue, and the repayment of which is mainly from the collection of special assessments from the benefitting properties.

Mitigation Fees: Contributions made by developers toward future improvements of City facilities resulting from the additional demand on the City's facilities generated from the development.

Public Facilities: The capital facilities owned or operated by the City or other governmental entities.

Proprietary Fund: Governmental services supported mainly by rates and user fees. A fund established to account for operations: (a) that are financed and

operated in a manner similar to private business enterprises – where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital, maintenance, public policy, management control, accountability, or other purposes (i.e., water, sewer, storm drain).

Real Estate Excise Tax (REET): A tax upon the sale of real property from one person or company to another.

Revenue Bonds: Bonds whose principal and interest are payable exclusively from earnings of an enterprise fund. In addition to a pledge of revenues, such bonds sometime contain a mortgage on the enterprise fund's property.

Special Assessment: A compulsory levy made against certain properties to defray part or all of the cost of a specific improvement or service deemed to primarily benefit those properties.

System Improvement: Public facilities included in the Capital Facilities Plan and designed to provide service within the community, in contrast to project improvements.

Transportation Improvement Board (TIB): The TIB invests state gas tax funds in local communities through five grant programs serving cities, urban counties and transportation benefit districts in Washington State. The TIB identifies and funds the highest-ranking transportation projects based on criteria established by the Board for each program. TIB Project Engineers provide customer service and grant administration throughout the project life. The primary purpose of the TIB is to administer state funding for local government transportation projects. Projects are funded by utilizing TIB revenue in combination with local matching funds and private sector contributions.

Utility Local Improvement District (ULID): Created only for improvement to sewer, water, and other utilities, and differs from an LID in that all assessment revenues must be pledged for payment of debt service of bonds issued to finance the improvements (see Special Assessments).

1 CONCURRENCY OF CAPITAL FACILITIES

1.1 Introduction

The Washington State Growth Management Act requires that capital facilities necessary to support new development are available in a timely fashion. In specific terms, the "concurrent" capital facilities must be constructed or strategies must be in place (such as an impact fee program) at the time the new development is ready for occupancy. Alternatively, it is possible for a city to accept a performance bond to install the concurrent facilities within a six-year period of time after occupancy of the development. Later in this section, specific mention will be made to capital facilities that the City of Tumwater will define as being concurrent.

1.2 Concurrency – What It Is

Concurrency is a comparison of the infrastructure needed by the new development (example: four-lane road) to the existing infrastructure in place (example: two-lane road) and providing for the construction of the new facilities needed (additional two lanes of road). When concurrency is applied to a specific development, one of two outcomes is possible:

Outcome 1

When a new development requires capacity of capital facilities that are already in place, then that development has satisfied the concurrency test. Development and occupancy can then proceed.

Outcome 2

When a new development requires capacity of capital facilities that do not exist, then that development does not satisfy the concurrency test. The new enhanced capital facilities must be strategized for, constructed, or bonded. Costs of the new facilities will be borne by the developer's fair share impact, the City, and possibly other parties participating in the installation of facilities.

In a "white paper" produced by the City of Auburn's Finance Department, concurrency is explained as follows:

> "The location of development is a powerful influence over the amount of concurrent facilities that will be required. So much so, in fact, that the related belief that we can reduce our public costs of supporting development by controlling where new development occurs (not necessarily the amount), is one of the major reasons for growth management. This concept is often popularly expressed by the policy desire to reduce urban sprawl. It is clear that the location of development influences the costs of services. For example, a subdivision located four miles out will generally require four times the concurrency costs (roads and pipe to get there) of one located one

mile away from existing services. A subdivision located in an area served by a park or school with excess capacity will be less costly to serve than one of the same size located where existing facilities are stressed and over capacity. Simply put, better control over where development occurs should reduce total facility costs. This is the job of the City's Land Use and Transportation Plans.

"A less obvious way to reduce demand is to modify the "level of service" (LOS) required by the city. The regulatory system sets standards regarding how a development is to be served by public facilities. This concept is usually referred to as setting a "level of service" standard. The higher this standard is set, the more facilities that will be required to be provided. The lower the standard, the less facilities needed. This can work either to change the amount of facilities required, or the amount of development allowed with a given amount of revenue available for capital development. While level of service standards are often generated by a technical analysis of the relationship between various facilities and various developments (around which a considerable volume of literature has developed), it nonetheless involves significant policy considerations and subjective judgements regarding what is adequate. For example, how many tennis courts are needed to serve a development is related to how long it may be considered acceptable to wait for a court. As another example, the amount of street improvements required might be determined by how long it is acceptable to expect drivers to wait at intersections. Different communities tend to set different standards, reflecting not only their understanding of how important or needed a facility may be, but also by how much they can afford. Not only will standards vary between communities; the level of service standard may vary substantially between facilities. The same community may place a high priority on transportation and a low priority on recreational facilities, while its neighbor may have evolved a reverse priority."

In sum, concurrency is synonymous with the provision of adequate public facilities for a particular development project. The Growth Management Act (RCW 36.70.A) gives numerous statements of standards to follow:

RCW 36.70.A.020(12) Planning Goals.

". . . public facilities and services . . . shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards."

RCW 58.17.110(2) Subdivisions.

"A proposed subdivision and dedication shall not be approved unless the city, town, or county legislative body makes written findings that: (a) appropriate provisions are made for the public health, safety, and general welfare and for such open spaces, drainageways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and schoolgrounds . . ."

RCW 36.70A.070(6)(b) Mandatory Elements.

". . . local governments must adopt and enforce ordinances which prohibit development approval if the development causes the level of services on a transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development . . . For the purposes of this subsection, "concurrent with the development" shall mean that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years."

RCW 82.02.050 (1)(a) Impact Fees.

"It is the intent of the legislature . . . to ensure that adequate facilities are available to serve new growth and development."

RCW 19.27.097(1)(a) Water Right Permit.

"Each applicant for a building permit of a building necessitating potable water shall provide evidence of an adequate water supply . . . in the form of a water right permit from the Department of Ecology . . . a letter from an approved water purveyor stating the ability to provide water, or another form sufficient to verify the existence of an adequate water supply."

1.3 Concurrency Applied

Concurrency will be sought for public facilities as identified below. When concurrency cannot be achieved because of lack of financial resources, then the specific development upon which the concurrency test was applied will not be certified for construction or occupancy. It is also noted that a developer of a project is required to only pay for improvements associated with fair share, growth-related impacts identified. However, if the City or other parties do not have adequate funding available to match funds to construct the necessary infrastructure, the developer may voluntarily finance the construction with a recourse of remuneration through financing techniques such as a traditional latecomers process of future development paying back the costs assigned through the fair share growth cost allocation.

Facilities Requiring Concurrency

- Streets, roads, highways, and traffic signals (mandatory element of concurrency; Transportation Plan first reference for required improvements);
- Sidewalks, street and road lighting systems (Transportation Plan and Development Standards Ordinance first reference for required improvements);
- Mass transit (Development Standards first reference for required improvements);
- Potable water (Development Standards first reference for required improvements);
- Sanitary sewer (Development Standards first reference for required improvements);
- Storm sewer (Development Standards first reference for required improvements);
- Community and neighborhood parks;
- Schools (if an impact fee program is in place); and
- Firefighting.

The level of concurrency needed for each of the above facilities will be defined by "levels of service" or other such measures adopted in respective plans, standards of service and construction as set forth in City of Tumwater Development Standards, development impact fees as defined by the Tumwater Impact Fee Ordinance, or SEPA mitigation payments.

1.4 Absence of Concurrency

If a particular development fails to meet levels of service or other plan performance measures, development standards or impact fee charges, then that development should not be permitted for construction or occupancy.

2 EXISTING CITY OF TUMWATER INFRASTRUCTURE

2.1 Introduction

The Growth Management Act requires a jurisdiction's capital facilities plan to discuss what existing capital facilities are owned and identify their locations and capacities. The State of Washington Administrative Code recommends an inventory of existing capital facilities with the following attributes:

> ". . . showing locations and capacities, including an inventory of the extent to which existing facilities possess presently unused capacity. Capital facilities involved should include water systems, sanitary sewer systems, storm water facilities, schools, parks and recreational facilities, police and fire protection facilities."

The City of Tumwater Existing Infrastructure Inventory is as follows:

2.2. City of Tumwater Parks Facilities

The City currently operates and maintains 12 municipal parks totaling 153 acres. Additionally, the Parks and Recreation Department operates and maintains the 200 acre, Tumwater Valley Golf Course. Parks facilities range from 80 acres to less than one half acre in size and serve a variety of needs and populations within the City. Future park facilities will include additional neighborhood parks, a community park on the west side of town, a community center, and the development of a trail system. Park facilities also include the Union/Calvary Cemetery and two historic homes within the City's Historic District. Please see Appendix "A" for a complete list of City of Tumwater Public Facilities.

2.3 City of Tumwater Parks Facilities Inventory

Please refer to Appendix "A" for the City of Tumwater Public Facilities Inventory. This inventory includes the City's potable water systems, sanitary sewer facilities, storm sewer facilities, street system and buildable lands.

2.4 Police Facilities

The Police Department is headquartered at Tumwater City Hall. Officers patrol throughout the City and respond to calls for service dispatched from the TCOMM 9-1-1 dispatch center that is located at 2703 Pacific Avenue S.E. in Olympia. The police force has increased in size over the years in order to support the population and employment growth in the City. The increase in police officers resulted in the need to expand/remodel the police department facilities a few years ago. The police department currently occupies 10,100 square feet of space, which we continue to modify to meet current needs.

2.5 Fire Facilities

The construction and maintenance of facilities comprises an important part of the overall management responsibility of the Department. The number and location of fire stations plays a significant role in determining emergency response time and, directly impacts the quality of our City's fire and emergency medical services.

The Tumwater Fire Department responds to calls from two City fire stations. The Headquarters Fire Station T-1, located next to Tumwater City Hall, serves primarily the area south of Trosper Road. Station T-2, located at the intersection of Linwood Avenue and Second Avenue, is also staffed full time and serves the northern portion of the City.

Facilities Status

Fire Stations:

Fire Station T–1 – This facility is 23 years old. It is a full-size headquarters facility. The station houses a fire engine, medic unit, command car and back-up apparatus. Within the past few years, many upgrades have been accomplished with the facility including a new roof, new siding, replacement of sheet rock in the apparatus bays, new flooring in the watch office, kitchen, and hallways, and painting throughout the exterior and exterior of the station. A new vehicle exhaust extraction system was installed in 2020, and a new bay heating system in 2022. The Parks and Facilities department continues to work through a few other needs that have been compiled and budgeted for.

Fire Station T–2 – This facility is 28 years old and since 2017, has been staffed full time. The fire station is well suited to meet the needs of the community which covers the north side of the city, and provides back up to Station T–1 when they are out of service. T-2 also has had construction upgrades with a new roof and gutters, new siding, painting inside and out and interior modification such as new lockers both in the bays and sleeping quarters. A new vehicle exhaust extraction system was also installed in 2019. Like station T–1, Parks and Facilities department continues to work through a few other needs that have been complied and budgeted for.

The fire department has recently initiated a facilities inspection program. Needs that cannot be accomplished in house will be forwarded to facilities to mitigate. This new program encourages all personnel to take ownership and pride in our living space with this new program. This can be accomplished by identifying needs that ought to be corrected and mitigated to make our environment safe and healthy.

2.6 Public School Facilities

The City has a relatively modest role to play in school planning. Public schools are operated by local school districts and governed by state and federal laws and regulations. State and federal funds provide a large part of school financing. School districts raise additional funds from local property taxes. State laws set standards for service levels and facility development, such as the site size and enrollment. They also specify funding methods. These laws perform much of the role of a functional plan for schools. The reader is referred to this plan's appendices for the Olympia and Tumwater School Districts' Capital Facilities Plans.

2.7 Public Streets and Road Facilities

Within the City of Tumwater, there are 121 miles of road, of which 57 miles are local access streets; 42 miles are collectors, 18 miles are minor arterials, and 5 miles are principal arterials.

2.8 Tumwater Valley Municipal Golf Course

Tumwater Valley Municipal Golf Course has a total of 232 acres of which 170 acres comprises the golf course "proper." The 18-hole course has a restaurant, pro-shop, a 10-acre driving range, practice greens and a maintenance facility.

3 SCHOOL DISTRICT CAPITAL FACILITIES PLANS

3.1 Introduction

For school districts to be eligible for development impact fees, the State Growth Management Act requires school capital facilities plans to be adopted and incorporated into city capital facilities plans. The Tumwater School District #33 and the Olympia School District #111 operate within the City of Tumwater. This chapter will provide a summary of these school districts' capital facilities planning and actions to incorporate school district planning efforts into this City's Capital Facilities Plan.

3.2 Tumwater School District Capital Facilities Plan

The Tumwater School District Capital Facilities Plan is included as Appendix "B" and is adopted by this plan as part of the City of Tumwater's Capital Facilities Plan process.

The reader is referred to Appendix "B" for information regarding the Tumwater School District's Inventory of Facilities, Forecasts of Future Needs, and Financing Plan.

3.3 Olympia School District Capital Facilities Plan

The Olympia School District Capital Facilities Plan is contained in Appendix "C" and is adopted by this plan as part of the City of Tumwater's Capital Facilities Plan process.

The reader is referred to Appendix "C" for information regarding Olympia School District's Inventory of Facilities, Forecasts of Future Needs, and Financing Plan.

4 COORDINATION OF COMPREHENSIVE PLAN ELEMENTS

4.1 Introduction

The State Growth Management Act and WAC 365-195-315 require local capital facilities plans to ensure that their comprehensive plan's land use, transportation, and capital facilities elements are coordinated and consistent. Additionally, if the Tumwater and Olympia School Districts are to be eligible for an impact fee program in the City, each must have its respective capital facilities plan adopted by and incorporated into the City of Tumwater's Capital Facilities Plan.

4.2 Comprehensive Plan Consistency

As the City's Land Use and Transportation Plans are set forth, capital facility system improvements needed to support growth can be adequately financed by the City through the Capital Facilities Plan (CFP). If, in the future, capital facilities (system improvements) needed to obtain concurrency for development are not funded by the CFP due to omission or lack of funds, one or more of five strategies must be employed to obtain consistency of plans and concurrency of necessary infrastructure:

Strategy 1: *(Developer pays)*

Unfunded infrastructure projects can be voluntarily fully-funded by a project developer. The provision to employ fair-share payback arrangements such as latecomers' agreements would be available. Also, the LID process would be an alternative funding.

Strategy 2: *(Increase revenues)*

The City increases tax revenues, grants, and/or issues bonds to increase CFP funding and thereby construct needed infrastructure.

Strategy 3: *(Reprioritize projects)*

The City amends the CFP to re-prioritize projects and thereby fund infrastructure projects needed to obtain concurrency.

Strategy 4: *(Reassess land use densities)*

The City reassesses its Land Use Plan and zoning to lower land use densities and thereby decrease the demand for construction of new infrastructure.

Strategy 5: *(Lower level of service standards)*

The City reduces its level of service standards for transportation and identifies minimum standards for other infrastructure through respective plan documents.

If the City is engaged in such a preceding reassessment, pending development applications affected by such considerations will be held in suspension for no longer than three months; after which, the City will communicate its intent on whether or not to allow the project to proceed in its application cycle. Specific findings of fact laying out the City's decision amending the CFP should be prepared and approved by the City Council. If the aforementioned three month maximum time period cannot be successfully accomplished with the once per year limitation on comprehensive plan amendments, the City Council may declare an emergency and suspend the comprehensive plan amendment limitation.

4.3 Identification of Existing Capital Facility Needs

The Capital Facilities Plan is required by the State Growth Management Act to identify needs in capital facilities, which are not eligible for development impact fee support. City facilities that are deficient are those that do not now exist in number, size, or location to satisfy levels of service as set forth in City plans for its existing populations:

PARKS FACILITIES:

The City has identified the neighborhood parks, trails and park facilities necessary to serve its current and future residents. Priority projects identified in the Parks, Recreation and Open Space plan include the completion of the Deschutes Valley Trail, acquisition and development of neighborhood and urban parks, development of a swimming facility and/or community center, reinvesting in both park and golf course infrastructure and improving community event space.

FIRE FACILITIES:

There are no current needs identified at this time that are not included in the General Governmental element of this Capital Facilities Plan.

SCHOOL FACILITIES:

The Olympia School District adopted a capital facilities plan and is participating in the Olympia school impact fee program for schools within the city limits of Olympia.

The Tumwater School District has adopted a capital facilities plan and is participating in the Tumwater school impact fee program for schools within the city limits of Tumwater.

STREETS AND ROADS:

There are no transportation facilities identified in the CFP that were identified as being in need of improvements prior to being listed in the CFP:

The reader is also referred to the street and road impact fee rate study accompanying the impact fee ordinance, and the 2036 Transportation Master Plan.

4.4 Future Infrastructure Recommendations

Future infrastructure recommendations contained within the Parks/Open Space, Transportation, Water, Sanitary, and Stormwater Plans are included within Chapter 6 of this plan.

5 LEVELS OF SERVICE AND PLANNING ASSUMPTIONS

5.1 Introduction

State Growth Management Act Administrative Code (WAC 365-196-415) recommends that local capital facilities plans include a discussion on ". . . the selection of levels of service or planning assumptions for the various facilities to apply during the planning period (twenty years or more) and which reflect community goals." Chapter 5 of this plan will constitute that discussion for the Tumwater Capital Facilities Plan.

5.2 Community Goals

In January of 2020, the City Council held a Council Retreat, to which the public was invited and set priority goals and initiatives as indicated in the City of Tumwater Strategic Priorities and Goals 2021-2026, establishing organization-wide goals and action plans on key issues and opportunities facing the community, including residential quality of life, economic development and the fiscal sustainability of the City government, place-making, environmental sustainability, and the cultivation of a healthy community. The direction provided by this Strategic Plan will help the community maximize its assets, stay true to its desired character, and evolve into the community desired by its citizens. The Plan's Vision, Mission, and Belief Statements articulate these overarching principles and serve both as reminders and active guidance for future decision making.

VISION STATEMENT:

Tumwater of the future will be people-oriented and highly livable, with a strong economy, dynamic places, vibrant neighborhoods, a healthy natural environment, diverse and engaged residents, and a living connection to its history.

MISSION STATEMENT:

In active partnership with our citizens, we provide courageous leadership and essential municipal services to cultivate a prosperous economy, a healthy natural environment, vibrant neighborhoods, and a supportive social fabric.

BELIEF STATEMENT:

We Believe in PEOPLE.

People. We respect the diverse citizenry that makes up the social fabric of our community and strive to meet the needs of all citizens. We value and seek to strengthen our vibrant neighborhoods, which are cornerstones of civic life and community identity. As we pursue our goals and the long-term sustainability of the City organization, we value the contributions of our staff, support their continued personal and professional growth, and act to retain their expertise for the good of the community.

Excellence. We strive for excellence and integrity in providing City services. By providing quality services, being responsible and efficient stewards of public resources, and empowering employees to achieve excellence, we continue to build public trust and encourage civic involvement. We know that excellence does not have to come at the price of our sense of community or our small city character.

Opportunity. We seize opportunities to improve our community's social, environmental, and economic well-being. We endeavor to realize positive opportunities in adverse situations and period of change.

Partnership. We work collaboratively with citizens, businesses, and community organizations. We also actively partner with other jurisdictions to address regional, state, and even broader issues.

Learning. We are a learning organization that tries to benefit from past experience, foresight, and innovation to seek new ways to enhance the community and improve City operations and services.

Environment. We act to preserve and enhance the natural environment and the social fabric of our community.

In March 2020, the City Council approved Resolution No. R2020-005, adopting Strategic Priorities and Goals for 2021-2026 providing measures of achievement for the Council and staff to use in coming years. The Council updated the Strategic Priorities and Goals for 2023-2024 at a Council Retreat and adopted the updates as part of the biennial budget in December 2022. The Strategic Priorities are summarized as follows:

- Build a Community Recognized for Quality, Compassion and Humanity
- Be a Leader in Environmental Sustainability
- Create and Maintain a Transportation System Safe for All Modes of Travel
- Provide and Sustain Quality Public Safety Services
- Pursue Targeted Community Development Opportunities
- Refine and Sustain a Great Organization

5.3 Levels of Service and Planning Assumptions

The Growth Management Act requires that transportation plans contain specific levels of service for the purpose of quantifying and qualifying traffic congestion levels at strategic roads and intersections. The Tumwater Transportation Plan uses a Level of Service (LOS) methodology. Other infrastructure plans use various techniques that identify what should be built where, when, and by whom.

5.3.1 Transportation Plan Planning Assumptions

The Transportation Master Plan, adopted in 2016, describes the City's transportation network and needed improvements.

Level of Service (LOS) Standards for streets consider travel conditions perceived by motorists – travel speed, travel time, freedom to maneuver, traffic interruptions and delays, comfort, and convenience. These standards are typically expressed with letter designations ranging from A – completely free flow conditions – to F, or failing, when chronic congestions is predictable and extends well beyond a "peak 15 minutes" at the end of the work day. The Transportation Master Plan, adopted in 2016, describes the City's transportation network and needed improvements.

Sometimes chronic congestion results not from too many vehicles but from system inefficiency – poorly timed signals, too many left-turning movements, inadequate storage space at intersections. Analysis of traffic operations can help determine whether the problem is one of too many cars or a need for better intersection or roadway design.

Tumwater will continue to evaluate the performance of its arterials and collectors using congestion measures that equate to delay. Since the late 1990s this has included acceptance of a bit more congestion on streets offering a wider range of travel choices, such as Capitol Boulevard. Expectations are that congestion will be less acceptable on more suburban streets like 70th Avenue and R.W. Johnson Boulevard.

The following LOS designations describe Tumwater's policy in the city and its urban growth area:

- For the designated "Urban Core Areas" LOS E is the acceptable standard of system performance.
- For the rest of the City and its urban growth area, LOS D will apply.
- The City has established Tumwater Strategy Corridors where the local LOS standard still applies as a goal, but it is acknowledged that some intersections or roadways may experience periodic congestion that exceeds the applicable standard.

Tumwater's use of regionally coordinated level of service standards for arterials and collectors ensures consistency in evaluation methods between Tumwater and its neighboring jurisdictions.

5.3.2 City Water System Planning Assumptions

The Tumwater Water System Plan was completely updated in 2020 and approved and adopted in 2021. Projects identified in this update were prioritized and most are included in this Capital Facilities Plan. The plan does not rely on a "Level of Service" style of project identification and prioritization; but, rather, uses the more traditional plan approach of applying system analysis and best professional

judgement to arrive at priority system improvements. That priority system is set out as follows from highest to lowest:

- Regulatory Compliance
- Health and Safety
- Water Quality (general improvements)
  - Reliability/Redundancy
  - Fire Flow and Pressure
  - Coordination with other Projects

5.3.3 *City Stormwater Planning Assumptions*

The Comprehensive Stormwater Management Plan (CSMP) completed its first major update in 2018. While there have been a number of sub-basin planning and other related efforts, this is the first comprehensive update in over 20 years. The augmented CSMP is organized around analysis of:

A. The continued implementation of the National Pollution Discharge Elimination System (NPDES) permit to meet requirements for water quality and infrastructure necessary to manage stormwater runoff, including public and private stormwater systems.

B. Identification of flooding problems and ongoing maintenance needs, which both contribute to the development of CFP projects.

C. Wetland, riparian area and habitat preservation, where possible, and restoration where needed.

D. The need for stormwater treatment facilities to enhance treatment of stormwater runoff in support of City goals, TMDL requirements, and Endangered Species Act-related protections for salmonid habitat and instream water quality.

Additionally, recent regulations require the comprehensive stormwater program to include the following elements:

- An ongoing stormwater facilities inventory and inspection program for both public and private systems,
- Program, process, and facility improvements related to City Operations,
- Management or elimination of sources of pollution, such as illicit connections and discharges, broken infrastructure and construction site management, critical to protect water quality and riparian habitats,
- Public involvement and education, and
- Surface water quality monitoring.

The GSMP is complete and considers new and anticipated provisions of the City NPDES permit, which was reissued in August 2019.

5.3.4 City Sanitary Sewer Planning Assumptions

The most recent General Sewer Plan was completed in 2015, replacing the 1996 plan. As with the other City utility plans, a "Level of Service" method of identification and prioritization is not used. Instead, the plan quantifies overall wastewater management, and contains the following elements:

- An evaluation of the existing collection system to identify any deficiencies;
- An evaluation of future wastewater flows and alternatives to manage them and correct deficiencies;
- An evaluation of the Operations & Maintenance program(s);
- Development of a capital program to meet recommendations of the plan, including the financial mechanisms to fund and sustain the utility.

There are two primary functions for wastewater management; collections and treatment. The City manages the collection of wastewater generated from developed properties to the City's collection system. Through gravity, force mains and pump stations, wastewater is delivered to the LOTT Clean Water Alliance (LOTT) for treatment, disposal, and reclaimed water generation. LOTT is operated as a partnership between the cities of Olympia, Lacey, Tumwater, and Thurston County.

In 2014, the Cities of Lacey, Olympia and Tumwater re-examined the potential for water quality impacts in the region's groundwater due to urban-density concentrations of septic systems. The "Urban Septic Assessment Report" (March 2015) recommends the jurisdictions continue progress toward implementation of a voluntary connection program to reduce the amount of septic systems in the urban areas, and consider more intensive actions in areas identified as "high risk" for impacts to public and environmental health. In 2017, the City – in partnership with LOTT – took an initial step to offer a financial rebate for existing, developed properties interested in voluntarily connecting to the City sanitary sewer system. This financial incentive remains available during the 2022-2023 biennium, and was expanded in 2022 to include City fees.

5.3.5 Other Plans and Their Assumptions

Other City plans, which play a more minor role in the development of infrastructure projects for the Capital Facilities Plan, include:

PLAN	METHODOLOGY OF PROJECT IDENTIFICATION
• Parks and Open Space Plan (2016)	Combination of "Levels of Service" for parks and "best professional judgement" for trails and open space.

• Fire Department Master Plan (2016)	This plan bases its recommendations upon service area radius, available technology, risk analysis and capacity capability.
• Historical District Master Plan (1993) Historic Brewery Properties SEPA Planned Action and FEIS (2016)	Based upon diverse projects needed to Create a Historic-Commercial District in the lower falls area of the Deschutes River.
• Union/Calvary Cemetery Master Plan (1996)	Development of the plan was a synthesis of historic research, oral interviews, and an examination of present cemetery conditions. Research also involved examining current literature on cemetery preservation and restoration.
• City Hall Campus Master Plan (2014)	The Tumwater Civic Center Master Plan (TCCMP) is a conceptual roadmap addressing the future development of the following buildings and their associated sites: Tumwater City Hall, Tumwater Timberland Regional Library and the Tumwater Fire Station. It takes into consideration the Town Center Plan as well as adjacent land uses.

6 CAPITAL FACILITIES PLAN PROJECTS AND FINANCIAL PLANS

This chapter contains the financial plans and project worksheets for the General Governmental Fund, Transportation Fund, Water Fund, Sanitary Sewer Utility Fund, and the Storm Drain Fund.

FINANCIAL PLAN FOR GENERAL GOVERNMENTAL PROJECTS

SOURCE	DESCRIPTION
PIF	Park Impact Fee
MPD	Metropolitan Park District
LLL	Levy Lid Lift
CDBG	Community Development Block Grant
GENERAL	General Fund
GRANT	External Grant Funding
DEBT	Loan, External or Internal
GG CFP	General Governmental CFP Ending Fund Balance

FUND REVENUE:	2024	2025	2026	2027	2028	2029	2024-2029
Beginning Fund Balance	$ 652,473	$ 204,231	$ 206,944	$ 2,225	$ 155,913	$ 122,581	$ 652,473
Base Utility Tax (1.5% of the 6%)	$ 1,071,200	$ 1,081,912	$ 1,092,731	$ 1,103,658	$ 1,114,695	$ 1,125,842	$ 6,590,039
Increased Utility Tax*	$ 369,940	$ 369,940	$ 369,940	$ 268,260		$ -	$ 1,378,080
Interest Income	$ 2,158	$ 1,825	$ 1,750	$ 1,454	$ 1,174	$ 1,159	$ 9,520
Debt Service and Transfers Out	$ (783,940)	$ (777,715)	$ (664,140)	$ (564,685)	$ (294,200)	$ (296,425)	$ (3,381,105)
Projected Fund Revenues	$ 1,311,831	$ 880,194	$ 1,007,225	$ 810,913	$ 977,581	$ 953,157	$ 5,249,007
FUND SOURCES:							
Grants	$ 535,000	$ 6,754,250	$ 3,705,000	$ 2,500,000	$ -	$ 4,250,000	$ 17,744,250
Loan/Debt	$ 1,534,200	$ 14,584,600	$ 6,065,200	$ 180,950	$ 517,000	$ 3,575,000	$ 26,456,950
Impact/FILO Fees	$ 715,000	$ 50,000	$ 1,020,000	$ 3,389,050	$ 633,000	$ 3,050,000	$ 8,857,050
Levy Lid Lift	$ -	$ -	$ 1,250,000	$ -	$ -	$ -	$ 1,250,000
Metropolitan Park District	$ 1,635,000	$ 1,275,000	$ 345,000	$ 2,175,000	$ 2,575,000	$ 75,000	$ 8,080,000
Other Sources	$ 238,500	$ 2,500,000	$ 60,000	$ 2,700,000	$ -	$ 4,250,000	$ 9,748,500
TOTAL PROJECTED FUNDING	**$ 5,969,531**	**$ 26,044,044**	**$ 13,452,425**	**$ 11,755,913**	**$ 4,702,581**	**$ 16,153,157**	$ 77,385,757

*Transportation CFP utility tax revenue diverted to General Governmental CFP for years 2021-2028 as needed to cover debt service for General Governmental CFP detailed in Ordinance O2020-009. If there is sufficient funding in any given year, 303 ending fund balance will cover associated debt service.

	Project	GENERAL GOVERNMENTAL PROJECTS	SOURCE	PRIOR YRS	6 YEAR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YRS	GRAND TOTAL
	1	Enterprise Resource Planning Business System	GG CFP	$ 650,000	$ 400,000	$ 137,500	$ 137,500	$ 125,000	$ -	$ -	$ -	$ -	$ 1,050,000
	2	Operations and Maintenance Facility	DEBT	$ 881,400	$ 10,952,600	$ 1,652,800	$ 8,234,600	$ 1,065,200	$ -	$ -	$ -	$ -	$ 11,834,000
	3	Emerging Projects	GG CFP, MPD, PIF	$ -	$ 990,000	$ 150,000	$ 150,000	$ 150,000	$ 180,000	$ 180,000	$ 180,000	$ -	$ 990,000
New	4	Prairie Mitigation Land Acquisition	GRANT	$ -	$ 2,500,000	$ -	$ 2,500,000	$ -	$ -	$ -	$ -	$ -	$ 2,500,000
	5	Deschutes Valley Trail	GRANT, MPD, PIF	$ 2,950,000	$ 13,700,000	$ 565,000	$ 600,000	$ 3,100,000	$ 6,435,000	$ -	$ 3,000,000	$ -	$ 16,650,000
	6	Isabella Bush Park Development	PIF	$ 322,000	$ 500,000	$ 500,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 822,000
	7	Trails End Park	MPD	$ -	$ 2,460,000	$ 60,000	$ 1,200,000	$ -	$ -	$ 1,200,000	$ -	$ -	$ 2,460,000
	8	South Tumwater Neighborhood Park	MPD	$ -	$ 750,000	$ -	$ -	$ -	$ 450,000	$ 300,000	$ -	$ -	$ 750,000
	9	Open Space / Park Land Acquisition	MPD	$ -	$ 270,000	$ -	$ -	$ 270,000	$ -	$ -	$ -	$ -	$ 270,000
	10	SW Neighborhood Park	MPD	$ -	$ 1,050,000	$ -	$ -	$ -	$ 50,000	$ 1,000,000	$ -	$ -	$ 1,050,000
	11	Community Center	MPD, DEBT	$ 200,000	$ 12,800,000	$ 1,300,000	$ 6,500,000	$ 5,000,000	$ -	$ -	$ -	$ -	$ 13,000,000
	12	Community Garden Program	MPD	$ -	$ 150,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ -	$ 150,000
	13	Historic District Improvements	MPD	$ -	$ 200,000	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
	14	Parks Commission Funding	GG CFP	$ -	$ 120,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ -	$ 120,000
	15	Historic Commission Funding	GG CFP	$ -	$ 60,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ -	$ 60,000
	16	Deschutes Valley Property	PIF	$ -	$ 800,000	$ -	$ -	$ 800,000	$ -	$ -	$ -	$ -	$ 800,000
	17	Golf Course Parking Lot Resurfacing	GG CFP, GRANT	$ 175,000	$ 590,000	$ 590,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 765,000
	18	Golf Range Building Replacement	PIF	$ 20,000	$ 400,000	$ -	$ -	$ 400,000	$ -	$ -	$ -	$ -	$ 420,000
	19	Golf Restaurant Upgrade	GG CFP	$ -	$ 575,000	$ -	$ -	$ -	$ -	$ 575,000	$ -	$ -	$ 575,000
New	20	Golf Course Maintenance Shop Stormwater Improvements	GG CFP, GRANT	$ -	$ 240,000	$ -	$ 60,000	$ 180,000	$ -	$ -	$ -	$ -	$ 240,000
New	21	Golf Course Stockpile Covers	GG CFP	$ -	$ 160,000	$ -	$ 160,000	$ -	$ -	$ -	$ -	$ -	$ 160,000
New	22	Golf Course Fueling Station Renovation	GG CFP, GRANT	$ -	$ 500,000	$ -	$ 290,000	$ 210,000	$ -	$ -	$ -	$ -	$ 500,000
	23	Parks and Recreation Facility	GG CFP, PIF, DEBT	$ -	$ 1,610,000	$ -	$ -	$ 125,000	$ 385,000	$ 1,100,000	$ -	$ -	$ 1,610,000
	24	Market Building	GG CFP, DEBT	$ -	$ 685,000	$ -	$ -	$ 50,000	$ -	$ -	$ 635,000	$ -	$ 685,000
	25	City Hall Renovation	GG CFP, DEBT	$ -	$ 1,040,000	$ -	$ -	$ 100,000	$ -	$ -	$ 940,000	$ -	$ 1,040,000
New	26	City Hall Parking Expansion	GG CFP	$ -	$ 350,000	$ -	$ -	$ -	$ 350,000	$ -	$ -	$ -	$ 350,000
	27	Solar Panel Installation	GRANT	$ -	$ 285,000	$ -	$ 35,000	$ 250,000	$ -	$ -	$ -	$ -	$ 285,000
	28	WSDOT Olympic Region Property	GG CFP	$ 25,000	$ 75,000	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000
	29	Wayfinding Signage	GG CFP	$ 110,000	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000	$ -	$ -	$ 160,000
	30	Fire Engine Replacement Program	LLL	$ -	$ 1,250,000	$ -	$ -	$ 1,250,000	$ -	$ -	$ -	$ -	$ 1,250,000
New	31	Fire Station T-2 Improvements	GRANT	$ -	$ 75,000	$ -	$ -	$ -	$ 75,000	$ -	$ -	$ -	$ 75,000
	32	Digital Alerting Systems	GG CFP	$ -	$ 125,000	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
New	33	Animal Services - Control Facility	DEBT, GENERAL	$ -	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ 2,000,000	$ -	$ 2,000,000
	34	Old Brewhouse Tower Rehabilitation	GRANT, PRIVATE	$ 2,955,000	$ 16,750,000	$ 50,000	$ 5,000,000	$ -	$ 3,200,000	$ -	$ 8,500,000	$ 7,500,000	$ 27,205,000
	35	Brewery Open Space Acquisition	GRANT	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000
	36	Washington Center Renovations	GG CFP	$ 75,000	$ 25,000	$ 25,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000
New	37	Energy and Water Efficiency Upgrades	GG CFP, UTILITIES	$ -	$ 750,000	$ 270,000	$ 120,000	$ 120,000	$ 120,000	$ 120,000	$ -	$ -	$ 750,000
New	38	City Hall and Library Solar Installations	GG CFP, GRANT	$ -	$ 750,000	$ 30,000	$ 720,000	$ -	$ -	$ -	$ -	$ -	$ 750,000
New	39	Electric Vehicle Charging Stations	GG CFP, GRANT	$ -	$ 255,000	$ 105,000	$ 75,000	$ 75,000	$ -	$ -	$ -	$ -	$ 255,000
		TOTAL GENERAL GOVERNMENTAL PROJECT COSTS			**$ 76,542,600**	**$ 5,765,300**	**$ 25,837,100**	**$ 13,450,200**	**$ 11,600,000**	**$ 4,580,000**	**$ 15,310,000**	**$ 7,500,000**	**$ 92,406,000**

2029 Ending Fund Balance	$ 843,157

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Troy Niemeyer
FUND: General Governmental
DEPT: Finance
PROJECT NO.
NEW: No
PRIOR: GG-01

GG-01

PROGRAM TITLE: **Enterprise Resource Planning Business System**

PROGRAM DESCRIPTION:

Assessment and Analysis of curent ERP System (Tyler Eden) replacement. Costs are split 50% General Fund and 50% between the Water, Sewer, and Storm Utilities. Only the General Fund portion is shown here.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction (Implementation)	650,000	400,000	137,500	137,500	125,000	-	-	-	-	1,050,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 650,000**	**$ 400,000**	**$ 137,500**	**$ 137,500**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,050,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other (ERR)	300,000	38,500	38,500	-	-	-	-	-	-	338,500
Total Outside Sources	$ 300,000	$ 38,500	$ 38,500	$ -	$ -	$ -	$ -	$ -	$ -	$ 338,500
Use of Fund Balance	350,000	361,500	99,000	137,500	125,000	-	-	-	-	711,500
TOTAL SOURCES	**$ 650,000**	**$ 400,000**	**$ 137,500**	**$ 137,500**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,050,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: General Governmental, Water, Sewer, Storm
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: GG-02

GG-02

PROGRAM TITLE: **Operations and Maintenance Facility**

PROGRAM DESCRIPTION:

Construct new Operations and Maintenance Facility at the City's Trails End Drive property. The new facility will house the Operations divisions for the Transportation and Engineering and Water Resources and Sustainability departments. The relocation of these divisions will provide for a higher and better use of the existing properties occupied by those operations, in order to fully develop the City's Town Center area. Site and frontage costs are distributed approximately 33% General Fund, 33% Water, 17% Sewer, and 17% Storm. Offsite mitigation costs are distributed 50% Transportation CFP, 24% Water, 13% Sewer, and 13% Storm. Cost distribution is estimated based on allocation of resources between the funds and is subject to reevaluation based on final design. Construction is presumed to be financed over 20 years, debt service included in the budget. Expenses and funding shown are for General Fund only, see Water, Sewer, and Storm for portions associated with thise funds. Grant funding is from a Legislative Capitol Budget allocation that was reauthorized in 2023.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Campus Master Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 478,400	$ 684,600	$ 684,600	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,163,000
Land & R-O-W	204,000	-	-	-	-	-	-	-	-	204,000
Construction	199,000	9,682,000	968,200	7,745,600	968,200	-	-	-	-	9,881,000
Equipment	-	489,000	-	489,000	-	-	-	-	-	489,000
Other (1% Construction for Arts)	-	97,000	-	-	97,000	-	-	-	-	97,000
TOTAL EXPENSES	**$ 881,400**	**$ 10,952,600**	**$ 1,652,800**	**$ 8,234,600**	**$ 1,065,200**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 11,834,000**
Outside Sources of Funds:										
Grants	$ -	$ 150,000	$ -	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ 150,000
Loan/Debt Financed	-	10,684,000	1,534,200	8,084,600	1,065,200	-	-	-	-	10,684,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 10,834,000	$ 1,534,200	$ 8,234,600	$ 1,065,200	$ -	$ -	$ -	$ -	$ 10,834,000
Use of Fund Balance	881,400	118,600	118,600	-	-	-	-	-	-	1,000,000
TOTAL SOURCES	**$ 881,400**	**$ 10,952,600**	**$ 1,652,800**	**$ 8,234,600**	**$ 1,065,200**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 11,834,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-28

GG-03

PROGRAM TITLE: **Emerging Projects**

PROGRAM DESCRIPTION:

Reserve funds for projects that emerge during the coming CFP cycle. Priority for use of funds will be given to projects the City is obligated to complete. Projects are limited to those eligible for a given fund source.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 165,000	$ 25,000	$ 25,000	$ 25,000	$ 30,000	$ 30,000	$ 30,000	$ -	$ 165,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	825,000	125,000	125,000	125,000	150,000	150,000	150,000	-	825,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 990,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 180,000**	**$ 180,000**	**$ 180,000**	**$ -**	**$ 990,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	300,000	50,000	50,000	50,000	50,000	50,000	50,000	-	300,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	300,000	50,000	50,000	50,000	50,000	50,000	50,000	-	300,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 600,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ -	$ 600,000
Use of Fund Balance	-	390,000	50,000	50,000	50,000	80,000	80,000	80,000	-	390,000
TOTAL SOURCES	**$ -**	**$ 990,000**	**$ 150,000**	**$ 150,000**	**$ 150,000**	**$ 180,000**	**$ 180,000**	**$ 180,000**	**$ -**	**$ 990,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Mike Matlock
FUND: General Governmental
DEPT: Community Development
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-04

PROGRAM TITLE: **Prairie Mitigation Land Acquisition**

PROGRAM DESCRIPTION:

The City is working jointly with the Port of Olympia to adopt a Habitat Conservation Plan (HCP) to protect four federally listed endangered species through creating and maintaining approximately 1,500 acre parried reserve system. The HCP will also allow planned growth according to our comprehensive plan to proceed with mitigation authorized by a comprehensive HCP, as opposed to on a case by case basis. The purchase and maintenance of these lands will be primarily funded through mitigation fees paid at the time of development. Seed money is needed to acquire the first mitigation area because the mitigation for impacts to species habitat must be in place before any authorized impacts. After the initial prairie property purchase, it is expected mitigation fees will fund all subsequent prairie land purchase and maintenance.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	2,500,000	-	2,500,000	-	-	-	-	-	2,500,000
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 2,500,000**	**$ -**	**$ 2,500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,500,000**
Outside Sources of Funds:										
Grants	$ -	$ 2,500,000	$ -	$ 2,500,000	$ -	$ -	$ -	$ -	$ -	$ 2,500,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 2,500,000	$ -	$ 2,500,000	$ -	$ -	$ -	$ -	$ -	$ 2,500,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 2,500,000**	**$ -**	**$ 2,500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,500,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-05

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-05

PROGRAM TITLE: **Deschutes Valley Trail**

PROGRAM DESCRIPTION:

Design and construction of the Deschutes Valley Trail from the Tumwater Falls Park to Pioneer Park. The project has been included for partial funding in the state Transportation Budget, partially. This project is being constructed in segments; the Tumwater Historical Park to Brewery Park and Tumwater Fall segment was constructed in 2020.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Thur Reg Transp/Trail Plan; PR&OS Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 1,060,000	$ 950,000	$ 400,000	$ 400,000	$ 100,000	$ -	$ -	$ 50,000	$ -	$ 2,010,000
Land & R-O-W	240,000	200,000	-	200,000	-	-	-	-	-	440,000
Construction	1,650,000	12,550,000	165,000	-	3,000,000	6,435,000	-	2,950,000	-	14,200,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 2,950,000**	**$ 13,700,000**	**$ 565,000**	**$ 600,000**	**$ 3,100,000**	**$ 6,435,000**	**$ -**	**$ 3,000,000**	**$ -**	**$ 16,650,000**
Outside Sources of Funds:										
Grants	$ 1,300,000	$ 5,800,000	$ 400,000	$ 600,000	$ 3,100,000	$ 1,700,000	$ -	$ -	$ -	$ 7,100,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	1,650,000	5,900,000	165,000	-	-	2,735,000	-	3,000,000	-	7,550,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	2,000,000	-	-	-	2,000,000	-	-	-	2,000,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 2,950,000	$ 13,700,000	$ 565,000	$ 600,000	$ 3,100,000	$ 6,435,000	$ -	$ 3,000,000	$ -	$ 16,650,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ 2,950,000**	**$ 13,700,000**	**$ 565,000**	**$ 600,000**	**$ 3,100,000**	**$ 6,435,000**	**$ -**	**$ 3,000,000**	**$ -**	**$ 16,650,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-06

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-06

PROGRAM TITLE: **Isabella Bush Park Development**

PROGRAM DESCRIPTION:

Improvements for development of Isabella Bush Park to include parking, frontage, landscaping/turf, irrigation, signage and paved ADA pathways according to 2020 master plan design.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Parks Recreation & Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 39,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39,000
Land & R-O-W	191,000	-	-	-	-	-	-	-	-	191,000
Construction	92,000	500,000	500,000	-	-	-	-	-	-	592,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 322,000**	**$ 500,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 822,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	322,000	500,000	500,000	-	-	-	-	-	-	822,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 322,000	$ 500,000	$ 500,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 822,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ 322,000**	**$ 500,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 822,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-07

GG-07

PROGRAM TITLE: **Trails End Park**

PROGRAM DESCRIPTION:

Develop a neighborhood park on the City property adjacent to the future City Operations and Maintenance Facility. The park master plan contains play structures, shelters, restroom, walking paths, active recreation/open space turf areas, basketball and pickleball. The site will maintain several natural areas and provide interpretive signage along ADA pathways.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Parks, Recreation and Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 60,000	$ 60,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 60,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	2,400,000	-	1,200,000	-	-	1,200,000	-	-	2,400,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 2,460,000**	**$ 60,000**	**$ 1,200,000**	**$ -**	**$ -**	**$ 1,200,000**	**$ -**	**$ -**	**$ 2,460,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	2,460,000	60,000	1,200,000	-	-	1,200,000	-	-	2,460,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 2,460,000	$ 60,000	$ 1,200,000	$ -	$ -	$ 1,200,000	$ -	$ -	$ 2,460,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 2,460,000**	**$ 60,000**	**$ 1,200,000**	**$ -**	**$ -**	**$ 1,200,000**	**$ -**	**$ -**	**$ 2,460,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-11

GG-08

PROGRAM TITLE: **South Tumwater Neighborhood Park**

PROGRAM DESCRIPTION:

Acquire land and develop a neighborhood park in the southwestern portion of the City, near Black Hills High School. This park may include play structures, walking paths, picnic shelter, sports courts, natural areas and open turf/play areas for active and passive recreation.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** MPD; Park Recr & Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 50,000	$ -	$ -	$ -	$ 50,000	$ -	$ -	$ -	$ 50,000
Land & R-O-W	-	400,000	-	-	-	400,000	-	-	-	400,000
Construction	-	300,000	-	-	-	-	300,000	-	-	300,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 750,000**	**$ -**	**$ -**	**$ -**	**$ 450,000**	**$ 300,000**	**$ -**	**$ -**	**$ 750,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	400,000	-	-	-	400,000	-	-	-	400,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	350,000	-	-	-	50,000	300,000	-	-	350,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 750,000	$ -	$ -	$ -	$ 450,000	$ 300,000	$ -	$ -	$ 750,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 750,000**	**$ -**	**$ -**	**$ -**	**$ 450,000**	**$ 300,000**	**$ -**	**$ -**	**$ 750,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-12

GG-09

PROGRAM TITLE: **Open Space / Park Land Acquisition**

PROGRAM DESCRIPTION:

These funds will enable the City to take advantage of opportunities and/or partnerships to purchase park land in key locations around the City. The land may be developed for future use as a neighborhood park, trail corridor or open space.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** MPD; Park, Recreation and Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	270,000	-	-	270,000	-	-	-	-	270,000
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 270,000**	**$ -**	**$ -**	**$ 270,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 270,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	270,000	-	-	270,000	-	-	-	-	270,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 270,000	$ -	$ -	$ 270,000	$ -	$ -	$ -	$ -	$ 270,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 270,000**	**$ -**	**$ -**	**$ 270,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 270,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-10

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-13

PROGRAM TITLE: **SW Neighborhood Park**

PROGRAM DESCRIPTION:

Development of a new neighborhood park behind Tumwater Middle School. This 18-acre park will contain 12 acres of protected natural areas, wetlands and buffers, and a 6-acre active recreation area providing one soccer field, one youth baseball field, a play structure, restroom, trails and parking area. This park property was purchased in 1995, and a master plan was developed through a public process. The plan will be reviewed/updated as a part of this development.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** MPD; Parks, Recreation and Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 50,000	$ -	$ -	$ -	$ 50,000	$ -	$ -	$ -	$ 50,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	1,000,000	-	-	-	-	1,000,000	-	-	1,000,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,050,000**	**$ -**	**$ -**	**$ -**	**$ 50,000**	**$ 1,000,000**	**$ -**	**$ -**	**$ 1,050,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	1,050,000	-	-	-	50,000	1,000,000	-	-	1,050,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,050,000	$ -	$ -	$ -	$ 50,000	$ 1,000,000	$ -	$ -	$ 1,050,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 1,050,000**	**$ -**	**$ -**	**$ -**	**$ 50,000**	**$ 1,000,000**	**$ -**	**$ -**	**$ 1,050,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-11

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-14 and GG-15

PROGRAM TITLE: **Community Center**

PROGRAM DESCRIPTION:

Development of the Tumwater Community Center as outlined in the Municipal Park District plan approved by voters. This facility may contain indoor sports facilities, meeting rooms, excercise areas, senior services, youth programming space and event space. Ideal location will provide ample space for the construction of the community center and associated support facilities along with park amenities and expansion space for possible future swimming facilities, as outlined in the municipal park district proposal approved by voters. A loan will be needed for the project with debt service to be included in the MPD budget.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** MPD; Park, Recreation and Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 200,000	$ 300,000	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 500,000
Land & R-O-W	-	1,000,000	1,000,000	-	-	-	-	-	-	1,000,000
Construction	-	11,500,000	-	6,500,000	5,000,000	-	-	-	-	11,500,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 200,000**	**$ 12,800,000**	**$ 1,300,000**	**$ 6,500,000**	**$ 5,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,000,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	11,500,000	-	6,500,000	5,000,000	-	-	-	-	11,500,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	200,000	1,300,000	1,300,000	-	-	-	-	-	-	1,500,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 200,000	$ 12,800,000	$ 1,300,000	$ 6,500,000	$ 5,000,000	$ -	$ -	$ -	$ -	$ 13,000,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ 200,000**	**$ 12,800,000**	**$ 1,300,000**	**$ 6,500,000**	**$ 5,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,000,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-12

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-16

PROGRAM TITLE: **Community Garden Program**

PROGRAM DESCRIPTION:

These funds are for the development of a community garden program in partnership with local non-profits or other community group.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	150,000	25,000	25,000	25,000	25,000	25,000	25,000	-	150,000
TOTAL EXPENSES	**$ -**	**$ 150,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ -**	**$ 150,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	150,000	25,000	25,000	25,000	25,000	25,000	25,000	-	150,000
Other	-	-								-
Total Outside Sources	$ -	$ 150,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ -	$ 150,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 150,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ -**	**$ 150,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental (MPD)
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-17

GG-13

PROGRAM TITLE: **Historic District Improvements**

PROGRAM DESCRIPTION:

These funds are for improvements to the City's park properties in the Tumwater Historic District and may include trail upgrades, interpretive areas, active and passive recreation opportunities or other park amenities.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	200,000	200,000	-	-	-	-	-	-	200,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 200,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	200,000	200,000	-	-	-	-	-	-	200,000
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 200,000	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 200,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-20

GG-14

PROGRAM TITLE: **Parks Commission Funding**

PROGRAM DESCRIPTION:

This funding is available to support Parks Commission special projects and programs for parks, recreation and equipment needs.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	120,000	20,000	20,000	20,000	20,000	20,000	20,000	-	120,000
TOTAL EXPENSES	**$ -**	**$ 120,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ -**	**$ 120,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	120,000	20,000	20,000	20,000	20,000	20,000	20,000	-	120,000
TOTAL SOURCES	**$ -**	**$ 120,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ -**	**$ 120,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-15

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-21

PROGRAM TITLE: **Historic Commission Funding**

PROGRAM DESCRIPTION:

This funding is available to support Historic Preservation Commission special projects and programs.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	60,000	10,000	10,000	10,000	10,000	10,000	10,000	-	60,000
TOTAL EXPENSES	**$ -**	**$ 60,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ -**	**$ 60,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	60,000	10,000	10,000	10,000	10,000	10,000	10,000	-	60,000
TOTAL SOURCES	**$ -**	**$ 60,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ 10,000**	**$ -**	**$ 60,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-16

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-18

PROGRAM TITLE: **Deschutes Valley Property**

PROGRAM DESCRIPTION:

This funding is set aside for the acquisition of property or use rights for a portion of the LOTT property located in the Deschutes River Valley that isn't required for future LOTT facilities. The property includes the LOTT ownership west of the Union Pacific Railroad tracks and adjacent to the Deschutes River. The property could be used for park space, parking for City events, and environmental mitigation. If acquired, fund source will be adjusted to reflect actual purpose of property.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	800,000	-		800,000					800,000
Construction	-	-	-							-
Equipment	-	-	-							-
Other	-	-	-							-
TOTAL EXPENSES	**$ -**	**$ 800,000**	**$ -**	**$ -**	**$ 800,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 800,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	800,000	-	-	800,000	-	-	-	-	800,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 800,000	$ -	$ -	$ 800,000	$ -	$ -	$ -	$ -	$ 800,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 800,000**	**$ -**	**$ -**	**$ 800,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 800,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-23

GG-17

PROGRAM TITLE: **Golf Course Parking Lot Resurfacing**

PROGRAM DESCRIPTION:

Originally identified as a need when the City purchased the golf course in 1996, the parking lot has continued to deteriorate. This project will resurface the parking lot, reconfigure the area to maximize parking spaces and improve pedestrian safety. The construction will also include a storm water treatment system which currently does not exist.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** Park Recreation & Open Space Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 175,000	$ 90,000	$ 90,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 265,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	500,000	500,000	-	-	-	-	-	-	500,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 175,000**	**$ 590,000**	**$ 590,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 765,000**
Outside Sources of Funds:										
Grants	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
Use of Fund Balance	135,000	590,000	590,000	-	-	-	-	-	-	725,000
TOTAL SOURCES	**$ 175,000**	**$ 590,000**	**$ 590,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 765,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-18

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-24

PROGRAM TITLE: **Golf Range Building Replacement**

PROGRAM DESCRIPTION:

The existing covered hitting and teaching building at the golf course driving range was constructed in 1969 and does not meet safety standards or provide adequate space for golf practice. The building beams and walls show signs of rot and deterioration. This project includes the demolition of the existing building and pad and replacement with a multi-use, open air building for practice, teaching, youth lessons and special events. Partial funding will include $25,000 from the golf fund, $10,000 from First Tee and $25,000 in sponsorship money.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	400,000	-	-	400,000	-	-	-	-	400,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 20,000**	**$ 400,000**	**$ -**	**$ -**	**$ 400,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 420,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	20,000	170,000	-	-	170,000	-	-	-	-	190,000
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	60,000	-	-	60,000	-	-	-	-	60,000
Total Outside Sources	$ 20,000	$ 230,000	$ -	$ -	$ 230,000	$ -	$ -	$ -	$ -	$ 250,000
Use of Fund Balance	-	170,000	-	-	170,000	-	-	-	-	170,000
TOTAL SOURCES	**$ 20,000**	**$ 400,000**	**$ -**	**$ -**	**$ 400,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 420,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-19

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-19

PROGRAM TITLE: **Golf Restaurant Upgrade**

PROGRAM DESCRIPTION:

The Golf Course Restaurant is a vital and important part of the golf experience. While some renovations have occurred to HVAC and carpet, the furniture, fixtures, restrooms, and electronics are in need of upgrade and/or replacement.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 25,000	$ -	$ -	$ -	$ -	$ 25,000	$ -	$ -	$ 25,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	440,000	-	-	-	-	440,000	-	-	440,000
Equipment	-	110,000	-	-	-	-	110,000	-	-	110,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 575,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 575,000**	**$ -**	**$ -**	**$ 575,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other (G.O. Bonds, Non Voted)	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	575,000	-	-	-	-	575,000	-	-	575,000
TOTAL SOURCES	**$ -**	**$ 575,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 575,000**	**$ -**	**$ -**	**$ 575,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-20

PROGRAM TITLE: **Golf Course Maintenance Shop Stormwater Improvements**

PROGRAM DESCRIPTION:

This Project will address stormwater treatment requirements for the Golf Course Maintenance Shop that comply with current City and State regulations and TMDL requirements. This project is contingent on grant funding.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** NPDES Permit **PAGE#** 21

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 60,000	$ -	$ 60,000	$ -	$ -	$ -	$ -	$ -	$ 60,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	100,000	-	-	100,000	-	-	-	-	100,000
Equipment	-	80,000	-	-	80,000	-	-	-	-	80,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 240,000**	**$ -**	**$ 60,000**	**$ 180,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 240,000**
Outside Sources of Funds:										
Grants	$ -	$ 180,000	$ -	$ 45,000	$ 135,000	$ -	$ -	$ -	$ -	$ 180,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 180,000	$ -	$ 45,000	$ 135,000	$ -	$ -	$ -	$ -	$ 180,000
Use of Fund Balance	-	60,000	-	15,000	45,000	-	-	-	-	60,000
TOTAL SOURCES	**$ -**	**$ 240,000**	**$ -**	**$ 60,000**	**$ 180,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 240,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-21

PROGRAM TITLE: **Golf Course Stockpile Covers**

PROGRAM DESCRIPTION:

This project includes procurement and installation of stockpile covers at the Golf Course as required by the Drainage Design and Erosion Control Manual. Stormwater runoff from stockpiles currently enters the stormwater system and discharges to the Deschutes River untreated.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	80,000	-	80,000	-	-	-	-	-	80,000
Equipment	-	80,000	-	80,000	-	-	-	-	-	80,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 160,000**	**$ -**	**$ 160,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 160,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	160,000	-	160,000	-	-	-	-	-	160,000
TOTAL SOURCES	**$ -**	**$ 160,000**	**$ -**	**$ 160,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 160,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-22

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: Yes
PRIOR: N/A

PROGRAM TITLE: **Golf Course Fueling Station Renovation**

PROGRAM DESCRIPTION:

This project will provide for design and construction of a new fueling station for golf course equipment. The existing fueling station at the Tumwater Valley Golf Course does not meet stormwater pollution source control standards presecribed in the 2022 Drainage Design and Erosion Control Manual (DDECM). Current standards for fueling stations include an impervious concrete pad and a roof. Other design criteria standards are listed in the DDECM and Washington State Fire Code. This project is contingent on grant funding.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 75,000	$ -	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ 75,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	125,000	-	65,000	60,000	-	-	-	-	125,000
Equipment	-	300,000	-	150,000	150,000	-	-	-	-	300,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 500,000**	**$ -**	**$ 290,000**	**$ 210,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**
Outside Sources of Funds:										
Grants	$ -	$ 375,000	$ -	$ 217,500	$ 157,500	$ -	$ -	$ -	$ -	$ 375,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 375,000	$ -	$ 217,500	$ 157,500	$ -	$ -	$ -	$ -	$ 375,000
Use of Fund Balance	-	125,000	-	72,500	52,500	-	-	-	-	125,000
TOTAL SOURCES	**$ -**	**$ 500,000**	**$ -**	**$ 290,000**	**$ 210,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-03

GG-23

PROGRAM TITLE: **Parks and Recreation Facility**

PROGRAM DESCRIPTION:

This project includes renovation and converson of the existing Public Works Operations Facility into the Parks and Recreation Facility, after completion of the Operations and Maintenenace Facility. Major items include paving, stromwater upgrades, building repair, roof repair, interior renovations, new HVAC system, Police storage and yard construction, and other work. This project will address both existing capacity issues and accommodate for future growth with approximately 53% of the project attributed to growth.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 125,000	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	1,485,000	-	-	-	385,000	1,100,000	-	-	1,485,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,610,000**	**$ -**	**$ -**	**$ 125,000**	**$ 385,000**	**$ 1,100,000**	**$ -**	**$ -**	**$ 1,610,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	697,950	-	-	-	180,950	517,000	-	-	697,950
Impact/FILO Fees	-	787,050	-	-	-	204,050	583,000	-	-	787,050
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,485,000	$ -	$ -	$ -	$ 385,000	$ 1,100,000	$ -	$ -	$ 1,485,000
Use of Fund Balance	-	125,000	-	-	125,000	-	-	-	-	125,000
TOTAL SOURCES	**$ -**	**$ 1,610,000**	**$ -**	**$ -**	**$ 125,000**	**$ 385,000**	**$ 1,100,000**	**$ -**	**$ -**	**$ 1,610,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-24

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-04

PROGRAM TITLE: **Market Building**

PROGRAM DESCRIPTION:

This project includes renovation and converson of the existing Parks and Recreation Facility into a dedicated Farmer's Market space or other use after the Parks and Recreation Facility relocates to the existing Public Works Operations Facility. Major items include public restrooms, interior renovations, heating upgrades, door replacement, roof repair, awnings, signage, and other work.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 50,000	$ -	$ -	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	635,000	-	-	-	-	-	635,000	-	635,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 685,000**	**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ 635,000**	**$ -**	**$ 685,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	635,000	-	-	-	-	-	635,000	-	635,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 635,000	$ -	$ -	$ -	$ -	$ -	$ 635,000	$ -	$ 635,000
Use of Fund Balance	-	50,000	-	-	50,000	-	-	-	-	50,000
TOTAL SOURCES	**$ -**	**$ 685,000**	**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ 635,000**	**$ -**	**$ 685,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-25

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: No
PRIOR: GG-30

PROGRAM TITLE: **City Hall Renovation**

PROGRAM DESCRIPTION:

The City Hall building is over 35 years old. While some elements, such as the HVAC have been upgraded, the building has a number of elements needing upgrading. The builiding spaces also need to be upgraded to be a modern workplace and take advantage of teleworking and reduced building occupancy.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 100,000	$ -	$ -	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	740,000	-	-	-	-	-	740,000	-	740,000
Equipment	-	200,000	-	-	-	-	-	200,000	-	200,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,040,000**	**$ -**	**$ -**	**$ 100,000**	**$ -**	**$ -**	**$ 940,000**	**$ -**	**$ 1,040,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	940,000	-	-	-	-	-	940,000	-	940,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other (G.O. Bonds, Non Voted)	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 940,000	$ -	$ -	$ -	$ -	$ -	$ 940,000	$ -	$ 940,000
Use of Fund Balance	-	100,000	-	-	100,000	-	-	-	-	100,000
TOTAL SOURCES	**$ -**	**$ 1,040,000**	**$ -**	**$ -**	**$ 100,000**	**$ -**	**$ -**	**$ 940,000**	**$ -**	**$ 1,040,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-26

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Parks and Recreation
PROJECT NO.
NEW: Yes
PRIOR: N/A

PROGRAM TITLE: **City Hall Parking Expansion**

PROGRAM DESCRIPTION:

Expand the main parking lot at City Hall into the current Public Works yard after completion of the Operations and Maintenenace Facility.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 40,000	$ -	$ -	$ -	$ 40,000	$ -	$ -	$ -	$ 40,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	310,000	-	-	-	310,000	-	-	-	310,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 350,000**	**$ -**	**$ -**	**$ -**	**$ 350,000**	**$ -**	**$ -**	**$ -**	**$ 350,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	350,000	-	-	-	350,000	-	-	-	350,000
TOTAL SOURCES	**$ -**	**$ 350,000**	**$ -**	**$ -**	**$ -**	**$ 350,000**	**$ -**	**$ -**	**$ -**	**$ 350,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-27

CONTACT: Chuck Denney
FUND: General Governmental
DEPT: Park/Facilities
PROJECT NO.
NEW: No
PRIOR: GG-26

PROGRAM TITLE: **Solar Panel Installation**

PROGRAM DESCRIPTION:

Install additional solar panels at General Fund buildings utilizing grant support.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 35,000	$ -	$ 35,000	$ -	$ -	$ -	$ -	$ -	$ 35,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	250,000	-	-	250,000	-	-	-	-	250,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 285,000**	**$ -**	**$ 35,000**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 285,000**
Outside Sources of Funds:										
Grants	$ -	$ 213,750	$ -	$ 26,250	$ 187,500	$ -	$ -	$ -	$ -	$ 213,750
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 213,750	$ -	$ 26,250	$ 187,500	$ -	$ -	$ -	$ -	$ 213,750
Use of Fund Balance	-	71,250	-	8,750	62,500	-	-	-	-	71,250
TOTAL SOURCES	**$ -**	**$ 285,000**	**$ -**	**$ 35,000**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 285,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-28

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-42

PROGRAM TITLE: **WSDOT Olympic Region Property**

PROGRAM DESCRIPTION:

Funding for Plan Development for the disposition of the property currently oocupied by the WSDOT Olympic Region Maintenance Facility on Capitol Boulevard.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Wayfinding Signage Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 25,000	$ 75,000	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 25,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 100,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	25,000	75,000	75,000	-	-	-	-	-	-	100,000
TOTAL SOURCES	**$ 25,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 100,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-33

GG-29

PROGRAM TITLE: **Wayfinding Signage**

PROGRAM DESCRIPTION:

Continuation of the City's Wayfinding Signage Program to new/emerging locations.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Wayfinding Signage Plan **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	110,000	50,000	-	-	-	-	50,000	-	-	160,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 110,000**	**$ 50,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ 160,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	110,000	50,000	-	-	-	-	50,000	-	-	160,000
TOTAL SOURCES	**$ 110,000**	**$ 50,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 50,000**	**$ -**	**$ -**	**$ 160,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-30

CONTACT: Brian Hurley
FUND: General Governmental
DEPT: Fire
PROJECT NO.
NEW: No
PRIOR: GG-21

PROGRAM TITLE: **Fire Engine Replacement Program**

PROGRAM DESCRIPTION:

This program includes a 25-year replacement program for fire engines. This program is funded through a property tax levy lid lift approved by voters in 2011. The acquisition of one fire engine occurred in 2012 and the second purchased in 2018. A third engine has been ordered (under contract April 2023) with anticipated delivery in 2026. Approximately 50% due 90 days prior to delivery and balance upon delivery. According to our strategic plan, frontline apparatus will be evaluated for replacement after 6 years of service or when the mileage exceeds 120,000 miles. Projections are for replacement of the 2018 Pierce pumper in 2032 (fourth engine purchased under 2011 levy lid lift).

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** FD Master Plan / Emer Svcs LLL **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	1,250,000	-	-	1,250,000	-	-	-	-	1,250,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,250,000**	**$ -**	**$ -**	**$ 1,250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,250,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	1,250,000	-	-	1,250,000	-	-	-	-	1,250,000
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,250,000	$ -	$ -	$ 1,250,000	$ -	$ -	$ -	$ -	$ 1,250,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 1,250,000**	**$ -**	**$ -**	**$ 1,250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,250,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-31

CONTACT: Brian Hurley
FUND: General Governmental
DEPT: Fire
PROJECT NO.
NEW: Yes
PRIOR:

PROGRAM TITLE: **Fire Station T-2 Improvements**

PROGRAM DESCRIPTION:

Station T2 was built in 1995 and is staffed full-time with a minimum of three firefighters. Normal wear on the facility necessitates planning for a full kitchen remodel in this CFP plan period.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	75,000	-	-	-	75,000	-	-	-	75,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	75,000	-	-	-	75,000	-	-	-	75,000
TOTAL SOURCES	**$ -**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-32

CONTACT: Brian Hurley
FUND: General Governmental
DEPT: Fire
PROJECT NO.
NEW: No
PRIOR: GG-23

PROGRAM TITLE: **Digital Alerting Systems**

PROGRAM DESCRIPTION:

Install digital station alerting system in Stations T1 and T2. Current alerting system uses manual VHF toning to alert crews for response, turn on lights, and shut off power/gas in the kitchen. The current system has little flexibility broadcasting throughout the station. Digital alerting will provide for multiple alerts including voice, LED lighting, and visual information display. Alerting can be controlled in each dorm room so staff are only alerted to calls for their unit, not all calls. This reduces stress for responders. Most area departments are installing this technology which has been shown to reduce response time. Plan to apply for Assistance to Firefighters Grant (AFG) funding in 2024 and/or 2025 if these grant programs are continued by FEMA.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	35,000	-	-	35,000	-	-	-	-	35,000
Equipment	-	90,000	-	-	90,000	-	-	-	-	90,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125,000**
Outside Sources of Funds:										
Grants	$ -	$ 125,000	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 125,000	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-33

PROGRAM TITLE: **Animal Services - Control Facility**

PROGRAM DESCRIPTION:

City contribution in new animal control facility. Assume total cost is $20 million and assume 10% coming from the City.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	2,000,000	-	-	-	-	-	2,000,000	-	2,000,000
TOTAL EXPENSES	**$ -**	**$ 2,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,000,000**	**$ -**	**$ 2,000,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	2,000,000	-	-	-	-	-	2,000,000	-	2,000,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ 2,000,000	$ -	$ 2,000,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 2,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,000,000**	**$ -**	**$ 2,000,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Ann Cook
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-26

GG-34

PROGRAM TITLE: **Old Brewhouse Tower Rehabilitation**

PROGRAM DESCRIPTION:

This project includes ongoing renovation work on the Old Brewhouse Tower including Phases 2 and 3 (A, B, and C). Phase 2 work (2022-2025) includes seismic upgrades and has received a Heritage Capital Grant from the State. Phase 3A (2027) includes interior renovation and utility work; Phase 3B (2029) includes civil improvements such as parking, landscaping, access road improvements, and offsite transportation improvements; and Phase 3C (future years) includes tenant improvements and other work as needed to make the building occupiable. All donations and grant revenue for Phase 3 are speculative. Based on current construction material trends, Phase 2 may be revised to just include doors and glazing which would push all remaing work out further in the CFP.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 455,000	$ 250,000	$ 50,000	$ -	$ -	$ 200,000	$ -	$ 1,000,000	$ 500,000	$ 1,205,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	2,500,000	8,000,000	-	5,000,000	-	3,000,000	-	7,500,000	7,000,000	17,500,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 2,955,000**	**$ 8,250,000**	**$ 50,000**	**$ 5,000,000**	**$ -**	**$ 3,200,000**	**$ -**	**$ 8,500,000**	**$ 7,500,000**	**$ 18,705,000**
Outside Sources of Funds:										
Grants	$ 645,000	$ 3,000,000	$ -	$ 2,500,000	$ -	$ 500,000	$ -	$ 4,250,000	$ 3,750,000	$ 7,395,000
Loan/Debt Financed	2,215,000	-	-	-	-	-	-	-	-	2,215,000
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other (Donations)	-	5,250,000	50,000	2,500,000	-	2,700,000	-	4,250,000	3,750,000	9,000,000
Total Outside Sources	$ 2,860,000	$ 8,250,000	$ 50,000	$ 5,000,000	$ -	$ 3,200,000	$ -	$ 8,500,000	$ 7,500,000	$ 18,610,000
Use of Fund Balance	95,000	-	-	-	-	-	-	-	-	95,000
TOTAL SOURCES	**$ 2,955,000**	**$ 8,250,000**	**$ 50,000**	**$ 5,000,000**	**$ -**	**$ 3,200,000**	**$ -**	**$ 8,500,000**	**$ 7,500,000**	**$ 18,705,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-35

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-25

PROGRAM TITLE: **Brewery Open Space Acquisition**

PROGRAM DESCRIPTION:

This project includes the acquisition of the open space areas adjacent to the Historic Brewhouse for public purposes. Project is dependent on receipt of grant funding. In 2015, the City did receive Thurston County Conservation Futures for acquisition of a trail easement across the historic brewhouse property.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	300,000	-	-	-	300,000	-	-	-	300,000
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ 300,000**
Outside Sources of Funds:										
Grants	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ -	$ 300,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ 300,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-36

CONTACT: Lisa Parks
FUND: General Governmental
DEPT: Executive
PROJECT NO.
NEW: No
PRIOR: GG-31

PROGRAM TITLE: **Washington Center Renovations**

PROGRAM DESCRIPTION:

This project provides support to the major renovations of the Washington Center in downtown Olympia. The Center is the largest performing arts venue in the region and is utilized by Tumwater groups and patrons from Tumwater.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	75,000	25,000	25,000	-	-	-	-	-	-	100,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 75,000**	**$ 25,000**	**$ 25,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 100,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	75,000	25,000	25,000	-	-	-	-	-	-	100,000
TOTAL SOURCES	**$ 75,000**	**$ 25,000**	**$ 25,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 100,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: General Governmental
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-37

PROGRAM TITLE: **Energy and Water Efficiency Upgrades**

PROGRAM DESCRIPTION:

Energy and Water Efficiency Upgrades as identified by the Investment Grade Audit. Activities may include, but will not be limited to: converting City Hall HVAC to a Variable Refrigerant Flow system, Lighting and Controls upgrades, HVAC controls upgrade, Smart building analytics, water conservation (indoor and outdoor) measures, replacing hot water heaters to heat pump hot water heaters, converting Public Works Building #2 HVAC to electric. Final measures will be identified in the Investment Grade Audit process as part of Interagency Agreement K7666 with DES. "Other" Source is Water, Sewer, and Storm utilities.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Thurston Climate Mitigation Plan **PAGE#** 90

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	750,000	270,000	120,000	120,000	120,000	120,000	-	-	750,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 750,000**	**$ 270,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ -**	**$ -**	**$ 750,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	150,000	150,000	-	-	-	-	-	-	150,000
Total Outside Sources	$ -	$ 150,000	$ 150,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 150,000
Use of Fund Balance	-	600,000	120,000	120,000	120,000	120,000	120,000	-	-	600,000
TOTAL SOURCES	**$ -**	**$ 750,000**	**$ 270,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ -**	**$ -**	**$ 750,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

GG-38

CONTACT: Dan Smith
FUND: General Governmental
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR: N/A

PROGRAM TITLE: **City Hall and Library Solar Installations**

PROGRAM DESCRIPTION:

In 2021 Staff submitted a grant proposal to the Department of Commerce to complete two feasibility assessments for the construction of solary arrays with battery storage at City Hall and the Tumwater Timberland Library. This CFP item is a placeholder in case that funding is awarded and the feasibility assessments prove optimistic. More certain funding needs will be updated following the feasibility assessments.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Thurston Climate Mitigation Plan **PAGE#** 78

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 30,000	$ 30,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 30,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	600,000	-	600,000	-	-	-	-	-	600,000
Equipment	-	120,000	-	120,000	-	-	-	-	-	120,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 750,000**	**$ 30,000**	**$ 720,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**
Outside Sources of Funds:										
Grants	$ -	$ 678,000	$ 30,000	$ 648,000	$ -	$ -	$ -	$ -	$ -	$ 678,000
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 678,000	$ 30,000	$ 648,000	$ -	$ -	$ -	$ -	$ -	$ 678,000
Use of Fund Balance	-	72,000	-	72,000	-	-	-	-	-	72,000
TOTAL SOURCES	**$ -**	**$ 750,000**	**$ 30,000**	**$ 720,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: General Governmental
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR: N/A

GG-39

PROGRAM TITLE: **Electric Vehicle Charging Stations**

PROGRAM DESCRIPTION:

Install Level 2 Electric Vehicle Charging Stations at Pioneer Park, Tumwater Historical Park, and Overlook Park.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes **PLAN:** Thurston Climate Mitigation Plan **PAGE#** 85

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	120,000	-	60,000	60,000	-	-	-	-	120,000
Equipment	-	135,000	105,000	15,000	15,000	-	-	-	-	135,000
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 255,000**	**$ 105,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 255,000**
Outside Sources of Funds:										
Grants	$ -	$ 172,500	$ 105,000	$ 67,500	$ -	$ -	$ -	$ -	$ -	$ 172,500
Loan/Debt Financed	-	-	-	-	-	-	-	-	-	-
Impact/FILO Fees	-	-	-	-	-	-	-	-	-	-
Levy Lid Lift	-	-	-	-	-	-	-	-	-	-
Metropolitan Park District	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 172,500	$ 105,000	$ 67,500	$ -	$ -	$ -	$ -	$ -	$ 172,500
Use of Fund Balance	-	82,500	-	7,500	75,000	-	-	-	-	82,500
TOTAL SOURCES	**$ -**	**$ 255,000**	**$ 105,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 255,000**

FINANCIAL PLAN FOR TRANSPORTATION PROJECTS

REVENUE:	2024	2025	2026	2027	2028	2029		2024-2029
Beginning Fund Balance	$ 11,400,905	$ 9,054,336	$ 5,550,587	$ 4,167,263	$ 3,499,949	$ 1,001,716		$ 11,400,905
Base Utility Tax (.8% of the 6%)	$ 562,277	$ 579,145	$ 596,520	$ 614,415	$ 632,848	$ 651,833		$ 3,637,038
Diverted Utility Tax*	$ (369,940)	$ (369,940)	$ (369,940)	$ (268,260)	$ -	$ -		$ (1,378,080)
Motor Veh. Fuel and Multimodal Transp. Tax	$ 176,120	$ 176,120	$ 176,120	$ 176,120	$ 176,120	$ 176,120		$ 1,056,720
Real Estate Excise Tax (.05%)	$ 695,250	$ 716,108	$ 737,591	$ 759,718	$ 782,510	$ 805,985		$ 4,497,162
Retail Sales & Use Tax	$ -	$ -	$ -	$ -	$ -	$ -		$ -
Interest Income	$ 57,966	$ 46,318	$ 28,886	$ 22,567	$ 20,664	$ 8,268		$ 184,669
Projected Fund Revenues	$ 12,522,578	$ 10,202,087	$ 6,719,763	$ 5,471,824	$ 5,112,091	$ 2,643,922		$ 19,398,413
TRANSFERS & OTHER SOURCES								
Grants	$ 8,243,145	$ 8,715,500	$ 4,512,500	$ 6,658,125	$ 3,514,625	$ 4,177,250		$ 35,821,145
TBD Transfer	$ 4,181,183	$ 3,837,500	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ 1,500,000		$ 14,018,683
Impact Fees	$ 2,272,431	$ 2,065,500	$ 425,000	$ 875,000	$ -	$ -		$ 5,637,931
Mitigation Fees	$ 1,170,000	$ 2,375,000	$ -	$ -	$ 2,180,000	$ -		$ 5,725,000
Other Sources	$ 325,000	$ 2,125,000	$ -	$ -	$ -	$ -		$ 2,450,000
TOTAL PROJECTED FUNDING	**$ 28,714,336**	**$ 29,320,587**	**$ 13,157,263**	**$ 14,504,949**	**$ 12,306,716**	**$ 8,321,172**		$ 83,051,172

*Utility tax revenue for Transportation CFP decreased for years 2021-2028 as needed to cover debt service for General Governmental CFP detailed in Ordinance O2020-009. If there is sufficient funding in any given year, 303 ending fund balance will cover associated debt service.

	PROJECT	TRANSPORTATION PROJECTS		Prior Years		6 YEAR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YRS	GRAND TOTAL
	1	Pavement Maintenance Program		$ -		$ 14,100,000	$ 3,050,000	$ 3,050,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ -	$ 14,100,000
	2	Multimodal Improvements and Traffic Calming Program		$ -		$ 3,280,000	$ 380,000	$ 580,000	$ 580,000	$ 580,000	$ 580,000	$ 580,000	$ -	$ 3,280,000
	3	Safe Routes to School Program		$ -		$ 600,000	$ -	$ -	$ 300,000	$ -	$ -	$ 300,000	$ -	$ 600,000
	4	Emerging Projects		$ -		$ 1,000,000	$ 500,000	$ -	$ 250,000	$ -	$ 250,000	$ -	$ -	$ 1,000,000
	5	Bridge Maintenance Program		$ -		$ 300,000	$ -	$ -	$ -	$ -	$ 300,000	$ -	$ -	$ 300,000
	6	I-5/Trosper Rd/Capitol Blvd Reconfiguration		$ 11,947,000		$ 6,000,000	$ 6,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,947,000
	7	Tumwater Blvd Interchange		$ 3,000,000		$ 15,500,000	$ 1,800,000	$ 6,500,000	$ -	$ -	$ 7,200,000	$ -	$ 13,000,000	$ 31,500,000
	8	Old Hwy 99 and 79th Ave Roundabout		$ 300,000		$ 4,500,000	$ 650,000	$ 3,850,000	$ -	$ -	$ -	$ -	$ -	$ 4,800,000
	9	Israel Rd and Linderson Way Ped and Bike Improvements		$ 730,000		$ 1,985,000	$ 1,985,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,715,000
	10	X Street Roundabout		$ 825,000		$ 5,910,000	$ 2,010,000	$ 3,900,000	$ -	$ -	$ -	$ -	$ -	$ 6,735,000
	11	Percival Creek Fish Passage Barrier Removal Project		$ 100,000		$ 2,000,000	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,100,000
	12	Capitol Blvd Plan - Corridor Improvements		$ 857,000		$ 650,000	$ -	$ 275,000	$ -	$ -	$ -	$ 375,000	$ -	$ 1,507,000
	13	E Street Connection		$ -		$ 6,600,000	$ -	$ 1,000,000	$ 1,000,000	$ 4,600,000	$ -	$ -	$ 50,000,000	$ 56,600,000
	14	Mottman Rd Improvements		$ -		$ 1,700,000	$ -	$ 200,000	$ 1,500,000	$ -	$ -	$ -	$ -	$ 1,700,000
	15	Linwood Avenue Sidewalk, Susitna Lane to 2nd Avenue		$ 65,000		$ 760,000	$ 760,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 825,000
	16	Brewery District Plan - Pedestrian and Streetscape Improvements		$ -		$ 850,000	$ -	$ -	$ 850,000	$ -	$ -	$ -	$ -	$ 850,000
	17	2nd Ave Pedestrian and Bike Improvements		$ -		$ 3,855,000	$ 105,000	$ 3,750,000	$ -	$ -	$ -	$ -	$ -	$ 3,855,000
	18	93rd Ave Interchange Study		$ -		$ 300,000	$ -	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000
	19	Old Hwy 99 - 73rd Ave to 79th Ave		$ -		$ 5,500,000	$ -	$ 300,000	$ 1,700,000	$ 3,500,000	$ -	$ -	$ 13,000,000	$ 18,500,000
	20	Henderson Blvd Bridge		$ -		$ 1,800,000	$ -	$ -	$ -	$ 200,000	$ 250,000	$ 1,350,000	$ -	$ 1,800,000
	21	E Street Connection - Tumwater Valley Drive Realignment		$ 1,500,000		$ 100,000	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,600,000
	22	Traffic Signal Controller and Detection Upgrade		$ 30,000		$ 320,000	$ 320,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 350,000
	23	Capitol Blvd Median and Streetscape Reconstruction		$ -		$ 375,000	$ -	$ -	$ 375,000	$ -	$ -	$ -	$ -	$ 375,000
	24	Rural Rd Shoulder Improvements		$ -		$ 500,000	$ -	$ 65,000	$ 435,000	$ -	$ -	$ -	$ -	$ 500,000
New	25	Dennis Street Roundabout		$ -		$ 4,000,000	$ -	$ -	$ -	$ 125,000	$ 725,000	$ 3,150,000	$ -	$ 4,000,000
New	26	Trosper Road Capacity Study (Littlerock Rd to I-5)		$ -		$ 400,000	$ -	$ -	$ -	$ 200,000	$ -	$ 200,000	$ -	$ 400,000
		TOTAL TRANSPORTATION PROJECT COSTS		**$ 19,354,000**		**$ 82,885,000**	**$ 19,660,000**	**$ 23,770,000**	**$ 8,990,000**	**$ 11,005,000**	**$ 11,305,000**	**$ 7,755,000**	**$ 76,000,000**	**$ 178,239,000**

2029 Ending Fund Balance	$ 166,172

	PROJECT	TRANSPORTATION PROJECTS (RESERVE)		FUTURE TOTAL
	R01	Custer Way Bridge Streetscape and Pedestrian Improvements		$ 450,000
	R02	T Street Roundabout		$ 4,700,000
New	R03	Tumwater Blvd and Henderson Blvd Intersection Improvements		$ 1,000,000
New	R04	Bishop Road Extension		$ 500,000
New	R05	Littlerock Rd and 77th Way Roundabout		$ 4,000,000

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-01

ST-01

PROGRAM TITLE: **Pavement Maintenance Program**

PROGRAM DESCRIPTION:

This program provides for the preservation of existing City streets including structural repairs, crack sealing, construction of sub-grade and resurfacing by use of asphalt overlay or bituminous surface treatments. The projects may include both City funded projects and Transportation Benefit District (TBD) projects. Planned expenses after 2025 assume the TBD receives voter support when its intitial term expires in 2025.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Strategic Plan & TBD Ordinance **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 430,000	$ 75,000	$ 75,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ -	$ 430,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	13,670,000	2,975,000	2,975,000	1,930,000	1,930,000	1,930,000	1,930,000	-	13,670,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 14,100,000**	**$ 3,050,000**	**$ 3,050,000**	**$ 2,000,000**	**$ 2,000,000**	**$ 2,000,000**	**$ 2,000,000**	**$ -**	**$ 14,100,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	11,760,000	2,880,000	2,880,000	1,500,000	1,500,000	1,500,000	1,500,000	-	11,760,000
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 11,760,000	$ 2,880,000	$ 2,880,000	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ -	$ 11,760,000
Use of Fund Balance	-	2,340,000	170,000	170,000	500,000	500,000	500,000	500,000	-	2,340,000
TOTAL SOURCES	**$ -**	**$ 14,100,000**	**$ 3,050,000**	**$ 3,050,000**	**$ 2,000,000**	**$ 2,000,000**	**$ 2,000,000**	**$ 2,000,000**	**$ -**	**$ 14,100,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-02

ST-02

PROGRAM TITLE: **Multimodal Improvements and Traffic Calming Program**

PROGRAM DESCRIPTION:

This Program provides for construction of miscellaneous multimodal and traffic calming improvements throughout the City. Work could include sidewalk maintenance, repair, infill, ADA curb ramps, pedestrian crossings and connections, bicycle improvements, and neighborhood traffic calming. Individual projects would be developed as needs or issues arise. Identified projects include: all deficiencies in right-of-way contained within the City's ADA Transition Plan, extension of sidewalk on Trosper Road to Lambskin Street; widen sidewalk on 2nd Avenue from Custer Way to Desoto Street; annual Sidewalk Program ($200,000 annual, inrease to $400,000 annual starting 2025 pending additional grant funding); and local match for speculative grants. Funding includes the 53% multimodal funds generated by the State Transportation Package gas tax increase of $26,000 - 2018 through 2031.

IS PROJECT RECOMMENDED BY PLAN/POLICY? ADA Transition Plan, Transportation Plan, TIP **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 150,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ -	$ 150,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	3,130,000	355,000	555,000	555,000	555,000	555,000	555,000		3,130,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 3,280,000**	**$ 380,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ -**	**$ 3,280,000**
Outside Sources of Funds:										
Grants	$ -	$ 1,000,000	$ -	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ -	$ 1,000,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,000,000	$ -	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ -	$ 1,000,000
Use of Fund Balance	-	2,280,000	380,000	380,000	380,000	380,000	380,000	380,000	-	2,280,000
TOTAL SOURCES	**$ -**	**$ 3,280,000**	**$ 380,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ -**	**$ 3,280,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-03

ST-03

PROGRAM TITLE: **Safe Routes to School Program**

PROGRAM DESCRIPTION:

Projects in this program seek to improve pedestrian and bicyclist safety near schools. Projects include sidewalks, lighting, ADA ramps, signage, markings, education, beacons and other improvements. This program is shown as a "placeholder" for implementing Safe Routes to School projects when grant funding is available.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	600,000	-	-	300,000	-	-	300,000	-	600,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 600,000**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ 600,000**
Outside Sources of Funds:										
Grants	$ -	$ 480,000	$ -	$ -	$ 240,000	$ -	$ -	$ 240,000	$ -	$ 480,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 480,000	$ -	$ -	$ 240,000	$ -	$ -	$ 240,000	$ -	$ 480,000
Use of Fund Balance	-	120,000	-	-	60,000	-	-	60,000	-	120,000
TOTAL SOURCES	**$ -**	**$ 600,000**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ 600,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-04

ST-04

PROGRAM TITLE: **Emerging Projects**

PROGRAM DESCRIPTION:

Reserve funds for projects that emerge during the coming CFP cycle. Costs shown may be portions of larger projects that have multiple funding sources.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Transportation Plan, TIP **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	1,000,000	500,000	-	250,000	-	250,000	-		1,000,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,000,000**	**$ 500,000**	**$ -**	**$ 250,000**	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ 1,000,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	1,000,000	500,000	-	250,000	-	250,000	-	-	1,000,000
TOTAL SOURCES	**$ -**	**$ 1,000,000**	**$ 500,000**	**$ -**	**$ 250,000**	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ 1,000,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-05

ST-05

PROGRAM TITLE: **Bridge Maintenance Program**

PROGRAM DESCRIPTION:

This project includes general maintenance and repairs to the Capitol Boulevard, Boston Street, and Henderson Boulevard bridges as identified through routine bridge inspections. Repairs generally include patching of spalled concrete, deck repairs, railing repairs, expansion joint maintenance and filling of superficial cracks.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000	$ -	$ -	$ 50,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	250,000	-	-	-	-	250,000	-	-	250,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ 300,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	300,000	-	-	-	-	300,000	-	-	300,000
TOTAL SOURCES	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ 300,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-06

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-06

PROGRAM TITLE: **I-5/Trosper Rd/Capitol Blvd Reconfiguration**

PROGRAM DESCRIPTION:

Modify Interstate 5 NB Off-Ramp and southerly NB On-Ramp; construct new road (6th Avenue) between W Lee Street and Trosper Road; construct roundabouts at Capitol Boulevard/Trosper Road, Trosper Road/6th Avenue and NB Ramp/6th Avenue; extend Trosper Road east of Capitol Boulevard, construct new local access road from Trosper Road extension to Linda Street, and reconstruct Linda Street from Capitol Boulevard to new local access road.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Capitol Blvd Corridor Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 1,312,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,312,000
Land & R-O-W	5,425,000	-	-	-	-	-	-	-	-	5,425,000
Construction	5,210,000	6,000,000	6,000,000	-	-	-	-	-	-	11,210,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 11,947,000**	**$ 6,000,000**	**$ 6,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 17,947,000**
Outside Sources of Funds:										
Grants	$ 6,951,810	$ 2,877,310	$ 2,877,310	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,829,120
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	2,997,114	2,029,748	2,029,748	-	-	-	-	-	-	5,026,862
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 9,948,924	$ 4,907,059	$ 4,907,059	$ -	$ -	$ -	$ -	$ -	$ -	$ 14,855,982
Use of Fund Balance	1,998,076	1,092,941	1,092,941	-	-	-	-	-	-	3,091,018
TOTAL SOURCES	**$ 11,947,000**	**$ 6,000,000**	**$ 6,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 17,947,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-11

ST-07

PROGRAM TITLE: **Tumwater Blvd Interchange**

PROGRAM DESCRIPTION:

The overall project will provide increased capacity for the Tumwater Boulevard / Interstate 5 Interchange. This project is not included in the calculation for transportation impact fees; the funding includes the collection of pro-rata mitigation fees through SEPA, grant funding, and local funding. Project is due to growth. The project will be constructed in four phases, with an interim signal constructed first to allow development to continue, followed by a roundabout on one side of the interchange, then a roundabout on the other side of the interchange, and then finally widening of the overpass.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Transportation Master Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 2,016,000	$ 2,700,000	$ 1,500,000	$ 1,000,000	$ -	$ -	$ 200,000	$ -	$ 1,000,000	$ 5,716,000
Land & R-O-W	$ 12,000	-	-	-	-	-	-	-	-	12,000
Construction	$ 953,000	12,800,000	300,000	5,500,000	-	-	7,000,000		12,000,000	25,753,000
Equipment	$ -	-	-	-	-	-	-	-	-	-
Other	19,000	-	-	-	-	-	-	-	-	19,000
TOTAL EXPENSES	**$ 3,000,000**	**$ 15,500,000**	**$ 1,800,000**	**$ 6,500,000**	**$ -**	**$ -**	**$ 7,200,000**	**$ -**	**$ 13,000,000**	**$ 31,500,000**
Outside Sources of Funds:										
Grants	$ -	$ 4,750,000	$ 400,000	$ 1,850,000	$ -	$ -	$ 2,500,000	$ -	$ 6,500,000	11,250,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-		-	-
Mitigation Fees	-	5,725,000	1,170,000	2,375,000	-	-	2,180,000	-	6,500,000	12,225,000
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 10,475,000	$ 1,570,000	$ 4,225,000	$ -	$ -	$ 4,680,000	$ -	$ 13,000,000	$ 23,475,000
Use of Fund Balance	3,000,000	5,025,000	230,000	2,275,000	-	-	2,520,000	-	-	8,025,000
TOTAL SOURCES	**$ 3,000,000**	**$ 15,500,000**	**$ 1,800,000**	**$ 6,500,000**	**$ -**	**$ -**	**$ 7,200,000**	**$ -**	**$ 13,000,000**	**$ 31,500,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-08

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-08

PROGRAM TITLE: **Old Hwy 99 and 79th Ave Roundabout**

PROGRAM DESCRIPTION:

Design, right-of-way, and construction of a roundabout at the intersection of Old Highway 99 and 79th Avenue. "Other Sources" includes Fiber Funds for fiber network extension and Water, Sewer, and Storm contribution to offiste mitigation for the new Operations and Maintenenace Facility located at the intersection of Trails End Drive and 79th Avenue. Project is due to growth.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Transportation Plan, TIP **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 200,000	$ 400,000	$ 400,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 600,000
Land & R-O-W	100,000	$ 500,000	250,000	250,000	-	-	-	-	-	600,000
Construction	-	$ 3,600,000	-	3,600,000	-	-	-	-	-	3,600,000
Equipment	-	$ -	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 300,000**	**$ 4,500,000**	**$ 650,000**	**$ 3,850,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,800,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	140,000	-	140,000	-	-	-	-	-	140,000
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	102,000	1,394,000	221,000	1,173,000	-	-	-	-	-	1,496,000
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	150,000	2,450,000	325,000	2,125,000	-	-	-	-	-	2,600,000
Total Outside Sources	$ 252,000	$ 3,984,000	$ 546,000	$ 3,438,000	$ -	$ -	$ -	$ -	$ -	$ 4,236,000
Use of Fund Balance	48,000	516,000	104,000	412,000	-	-	-	-	-	564,000
TOTAL SOURCES	**$ 300,000**	**$ 4,500,000**	**$ 650,000**	**$ 3,850,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4,800,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-09

ST-09

PROGRAM TITLE: **Israel Rd and Linderson Way Ped and Bike Improvements**

PROGRAM DESCRIPTION:

Roadway and multimodal improvements including construction of refuge island(s), reconstruction of select sidewalk segments and curb ramps, extend bike lanes, signal improvements, roadway resurfacing, underground conversion, and other improvements. Project includes Israel Road from Linderson Way to Capitol Boulevard and Linderson Way from Israel Road to the northern Labor and Industries access. Project also includes underground conversion of overhead utility lines to be completed in conjunction with the Israel Road and Linderson Way Watermain project in 2023.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 130,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	1,985,000	1,985,000	-	-	-	-	-	-	1,985,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other (U/G Conversion Sch 74)	600,000	-	-	-	-	-	-	-	-	600,000
TOTAL EXPENSES	**$ 730,000**	**$ 1,985,000**	**$ 1,985,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,715,000**
Outside Sources of Funds:										
Grants	$ 73,250	$ 546,750	$ 546,750		$ -	$ -	$ -	$ -	$ -	$ 620,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	54,750	945,250	945,250	-	-	-	-	-	-	1,000,000
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 128,000	$ 1,492,000	$ 1,492,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,620,000
Use of Fund Balance	602,000	493,000	493,000	-	-	-	-	-	-	1,095,000
TOTAL SOURCES	**$ 730,000**	**$ 1,985,000**	**$ 1,985,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,715,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-10

ST-10

PROGRAM TITLE: **X Street Roundabout**

PROGRAM DESCRIPTION:

Construction of a roundabout at the intersection of Capitol Boulevard and X Street as proposed in the Capitol Boulevard Corridor Plan. Grant funding is being shown for implementing the project. Most of the design for this project has been complete under the separate Capitol Boulevard Corridor Plan, Israel Road to M Street Design project.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Capitol Blvd Corridor Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 25,000	$ 10,000	$ 10,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 35,000
Land & R-O-W	800,000	2,000,000	2,000,000	-	-	-	-	-	-	2,800,000
Construction	-	3,400,000	-	3,400,000	-	-	-	-	-	3,400,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other (U/G Conversion)	-	500,000	-	500,000	-	-	-	-	-	500,000
TOTAL EXPENSES	**$ 825,000**	**$ 5,910,000**	**$ 2,010,000**	**$ 3,900,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,735,000**
Outside Sources of Funds:										
Grants	$ 692,000	$ 4,679,650	$ 1,738,650	$ 2,941,000	$ -	$ -	$ -	$ -	$ -	$ 5,371,650
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 692,000	$ 4,679,650	$ 1,738,650	$ 2,941,000	$ -	$ -	$ -	$ -	$ -	$ 5,371,650
Use of Fund Balance	133,000	1,230,350	271,350	959,000	-	-	-	-	-	1,363,350
TOTAL SOURCES	**$ 825,000**	**$ 5,910,000**	**$ 2,010,000**	**$ 3,900,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 6,735,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-11

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-23

PROGRAM TITLE: **Percival Creek Fish Passage Barrier Removal Project**

PROGRAM DESCRIPTION:

This project was formerly titled "Sapp Road Pedestrian and Bike Improvements." This is the street reconstruction portion of the Percival Creek Fish Passage Removal Project shown in the Stormwater Capital Facilities Plan.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	100,000	2,000,000	2,000,000	-	-	-	-	-	-	2,100,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 100,000**	**$ 2,000,000**	**$ 2,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,100,000**
Outside Sources of Funds:										
Grants	$ 100,000	$ 2,000,000	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,100,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 100,000	$ 2,000,000	$ 2,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,100,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ 100,000**	**$ 2,000,000**	**$ 2,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,100,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-12

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineeri
PROJECT NO.
NEW: No
PRIOR: ST-12

PROGRAM TITLE: **Capitol Blvd Plan - Corridor Improvements**

PROGRAM DESCRIPTION:

Implementation of various small projects prescribed in the Capitol Blvd Corridor Plan including right-of-way acquisition for properties on the alignment of the future N-S Road between Linda Street and Ruby Street, construction of select ADA and neighborhood improvements, consultant services, and other miscellaneous tasks. Design for the N-S Road is complete, construction schedule is undetermined at this time.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Capitol Blvd Corridor Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 25,000	$ -	$ 25,000	$ -	$ -	$ -	$ -	$ -	$ 25,000
Land & R-O-W	857,000	375,000	-	-	-	-	-	375,000	-	1,232,000
Construction	-	250,000	-	250,000	-	-	-	-	-	250,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 857,000**	**$ 650,000**	**$ -**	**$ 275,000**	**$ -**	**$ -**	**$ -**	**$ 375,000**	**$ -**	**$ 1,507,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	857,000	-	-	-	-	-	-	-	-	857,000
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 857,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 857,000
Use of Fund Balance	-	650,000	-	275,000	-	-	-	375,000	-	650,000
TOTAL SOURCES	**$ 857,000**	**$ 650,000**	**$ -**	**$ 275,000**	**$ -**	**$ -**	**$ -**	**$ 375,000**	**$ -**	**$ 1,507,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-13

ST-13

PROGRAM TITLE: **E Street Connection**

PROGRAM DESCRIPTION:

Project includes the final design, right-of-way and construction of the E Street Connection per the findings of the E Street Connection Corridor Study. Project assumes receipt of grant funding to proceed with design and construction phases. While construction is shown in future years, the Transportation CFP may have fund balance available for matching funds if a construction grant is secured during the 6-year period.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Transportation Plan / Brewery District Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 3,400,000	$ -	$ 1,000,000	$ 1,000,000	$ 1,400,000	$ -	$ -	$ -	$ 3,400,000
Land & R-O-W	-	3,200,000	-	-	-	3,200,000	-	-	-	3,200,000
Construction	-	-	-	-	-	-	-	-	50,000,000	50,000,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 6,600,000**	**$ -**	**$ 1,000,000**	**$ 1,000,000**	**$ 4,600,000**	**$ -**	**$ -**	**$ 50,000,000**	**$ 56,600,000**
Outside Sources of Funds:										
Grants	$ -	$ 6,600,000	$ -	$ 1,000,000	$ 1,000,000	$ 4,600,000	$ -	$ -	$ 40,000,000	46,600,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	5,000,000	5,000,000
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 6,600,000	$ -	$ 1,000,000	$ 1,000,000	$ 4,600,000	$ -	$ -	$ 45,000,000	$ 51,600,000
Use of Fund Balance	-	-	-	-	-	-	-	-	5,000,000	5,000,000
TOTAL SOURCES	**$ -**	**$ 6,600,000**	**$ -**	**$ 1,000,000**	**$ 1,000,000**	**$ 4,600,000**	**$ -**	**$ -**	**$ 50,000,000**	**$ 56,600,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-14

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-14

PROGRAM TITLE: **Mottman Rd Improvements**

PROGRAM DESCRIPTION:

This project is proposed as a joint project with the City of Olympia for the improvement of Mottman Road from Crosby Boulevard to R.W. Johnson Boulevard. Mottman Road between the City limits near Crosby Boulevard to Mottman Court is within the City of Olympia. Olympia will be constructing frontage improvements along the south side, widening for bike lanes in both directions and resurfacing this section of Mottman Road. The Tumwater portion includes frontage improvements on the north side of this section. The Tumwater work also includes the section from Mottman Court to R.W. Johnson Boulevard, which will be improved to include frontage improvements and bike lanes on both sides and resurfacing of the entire road. The project has received funding through the state legislature.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 200,000	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ 200,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	1,500,000	$ -	-	1,500,000	-	-	-	-	1,500,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,700,000**	**$ -**	**$ 200,000**	**$ 1,500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,700,000**
Outside Sources of Funds:										
Grants	$ -	$ 1,700,000	$ -	$ 200,000	$ 1,500,000	$ -	$ -	$ -	$ -	$ 1,700,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,700,000	$ -	$ 200,000	$ 1,500,000	$ -	$ -	$ -	$ -	$ 1,700,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 1,700,000**	**$ -**	**$ 200,000**	**$ 1,500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,700,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-15

ST-15

PROGRAM TITLE: **Linwood Avenue Sidewalk, Susitna Lane to 2nd Avenue**

PROGRAM DESCRIPTION:

This project includes sidewalk infill and traffic calming on school walking routes in the vicinity of Michael T. Simmons elementary school, in addition to pedestrian and vehicular safety improvements at the intersections of Linwood Avenue with 2nd Avenue and Lake Park Drive. Project may be completed in conjunction with resurfacing.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 65,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 65,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	760,000	760,000	-	-	-	-	-	-	760,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 65,000**	**$ 760,000**	**$ 760,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 825,000**
Outside Sources of Funds:										
Grants	$ 29,250	$ 342,000	$ 342,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 371,250
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	35,750	334,250	$334,250	-	-	-	-	-	-	370,000
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 65,000	$ 676,250	$ 676,250	$ -	$ -	$ -	$ -	$ -	$ -	$ 741,250
Use of Fund Balance	-	83,750	83,750	-	-	-	-	-	-	83,750
TOTAL SOURCES	**$ 65,000**	**$ 760,000**	**$ 760,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 825,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-16

ST-16

PROGRAM TITLE: **Brewery District Plan - Pedestrian and Streetscape Improvements**

PROGRAM DESCRIPTION:

This project is programmed to implement the recommendations developed from the Brewery District Planning Project. The funding identified is not sufficient to implement all of the transportation options that have been identified, but is shown as a "placeholder" for implementing selected projects from the plan. Grant funding is being shown for implementing the project, it is possible that developer funding could be used instead.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Brewery District Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 100,000	$ -	$ -	$ 100,000	$ -	$ -	$ -	$ -	$ 100,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	750,000	-	-	750,000	-	-	-	-	750,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 850,000**	**$ -**	**$ -**	**$ 850,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 850,000**
Outside Sources of Funds:										
Grants	$ -	$ 722,500	$ -	$ -	$ 722,500	$ -	$ -	$ -	$ -	$ 722,500
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 722,500	$ -	$ -	$ 722,500	$ -	$ -	$ -	$ -	$ 722,500
Use of Fund Balance	-	127,500	-	-	127,500	-	-	-	-	127,500
TOTAL SOURCES	**$ -**	**$ 850,000**	**$ -**	**$ -**	**$ 850,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 850,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-17

ST-17

PROGRAM TITLE: **2nd Ave Pedestrian and Bike Improvements**

PROGRAM DESCRIPTION:

Construction of a non-circular compact roundabout at the intersection of 2nd Avenue and Linwood Avenue, curb ramp replacement, sidewalk infill, lane narrowing to accommodate bike lanes, and resurfacing along 2nd Avenue from Linwood Avenue to B Street.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 105,000	$ 105,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 105,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	3,750,000	-	3,750,000	-	-	-	-	-	3,750,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 3,855,000**	**$ 105,000**	**$ 3,750,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,855,000**
Outside Sources of Funds:										
Grants	$ -	$ 2,176,635	$ 61,635	$ 2,115,000	$ -	$ -	$ -	$ -	$ -	$ 2,176,635
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	839,183	21,683	817,500	-	-	-	-	-	839,183
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	839,183	21,683	817,500	-	-	-	-	-	839,183
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 3,855,000	$ 105,000	$ 3,750,000	$ -	$ -	$ -	$ -	$ -	$ 3,855,000
Use of Fund Balance	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES	**$ -**	**$ 3,855,000**	**$ 105,000**	**$ 3,750,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,855,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-18

ST-18

PROGRAM TITLE: **93rd Ave Interchange Study**

PROGRAM DESCRIPTION:

In partnership with WSDOT, study to examine safety and multimobility issues, analyze alternatives, and conduct an Intersection Control Evaluation (ICE) at the intersections, if applicable. This may be expanded to a corridor study for 93rd Avenue (SR 121) from Interstate 5 to Old Highway 99.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 300,000	$ -	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 300,000**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 300,000**
Outside Sources of Funds:										
Grants	$ -	$ 259,500	$ -	$ 259,500	$ -	$ -	$ -	$ -	$ -	$ 259,500
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 259,500	$ -	$ 259,500	$ -	$ -	$ -	$ -	$ -	$ 259,500
Use of Fund Balance	-	40,500	-	40,500	-	-	-	-	-	40,500
TOTAL SOURCES	**$ -**	**$ 300,000**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 300,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-19

ST-19

PROGRAM TITLE: **Old Hwy 99 - 73rd Ave to 79th Ave**

PROGRAM DESCRIPTION:

Design and construct urban road section and improvements derived from the Old Highway 99 Corridor Study. This corridor project will be phased into several smaller projects; funds shown are only sufficient for a portion of the corridor work. The Old Highway 99 and 79th Avenue Roundabout has also been pulled out onto its own CFP worksheet. It is anticipated the next phased project will be a roundabout at the intersection of Old Highway 99 and Henderson Boulevard.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Old 99 Corridor Study, Transpo Master Plan **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 500,000	$ -	$ 300,000	$ 200,000	$ -	$ -	$ -	$ -	$ 500,000
Land & R-O-W	-	1,500,000	-	-	1,500,000	-	-	-	3,000,000	4,500,000
Construction	-	3,500,000	-	-	-	3,500,000	-	-	10,000,000	13,500,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 5,500,000**	**$ -**	**$ 300,000**	**$ 1,700,000**	**$ 3,500,000**	**$ -**	**$ -**	**$ 13,000,000**	**$ 18,500,000**
Outside Sources of Funds:										
Grants	$ -	$ 2,750,000	$ -	$ 150,000	$ 850,000	$ 1,750,000	$ -	$ -	$ 6,500,000	$ 9,250,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	1,375,000	-	75,000	425,000	875,000	-	-	4,420,000	5,795,000
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 4,125,000	$ -	$ 225,000	$ 1,275,000	$ 2,625,000	$ -	$ -	$ 10,920,000	$ 15,045,000
Use of Fund Balance	-	1,375,000	-	75,000	425,000	875,000	-	-	2,080,000	3,455,000
TOTAL SOURCES	**$ -**	**$ 5,500,000**	**$ -**	**$ 300,000**	**$ 1,700,000**	**$ 3,500,000**	**$ -**	**$ -**	**$ 13,000,000**	**$ 18,500,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-20

ST-20

PROGRAM TITLE: **Henderson Blvd Bridge**

PROGRAM DESCRIPTION:

Bridge widening to add capacity, including non-motorized facilities. The project is dependent on the receipt of grant funds.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 270,000	$ -	$ -	$ -	$ 200,000	$ 70,000	$ -	$ -	$ 270,000
Land & R-O-W	-	180,000	-	-	-	-	180,000	-	-	180,000
Construction	-	1,350,000	-	-	-	-	-	1,350,000	-	1,350,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 1,800,000**	**$ -**	**$ -**	**$ -**	**$ 200,000**	**$ 250,000**	**$ 1,350,000**	**$ -**	**$ 1,800,000**
Outside Sources of Funds:										
Grants	$ -	$ 1,200,000	$ -	$ -	$ -	$ -	$ 187,500	$ 1,012,500	$ -	$ 1,200,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 1,200,000	$ -	$ -	$ -	$ -	$ 187,500	$ 1,012,500	$ -	$ 1,200,000
Use of Fund Balance	-	600,000	-	-	-	200,000	62,500	337,500	-	600,000
TOTAL SOURCES	**$ -**	**$ 1,800,000**	**$ -**	**$ -**	**$ -**	**$ 200,000**	**$ 250,000**	**$ 1,350,000**	**$ -**	**$ 1,800,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-21

ST-21

PROGRAM TITLE: **E Street Connection - Tumwater Valley Drive Realignment**

PROGRAM DESCRIPTION:

Design and construct Tumwater Valley Drive on new alignment between Capitol Boulevard and existing Tumwater Valley Drive, including the construction of a new signalized intersection on Capitol Boulevard. Project costs to be shared between the City and private development as part of a development agreement. Costs shown reflect estimated City costs only.

IS PROJECT RECOMMENDED BY PLAN/POLICY? E Street Corridor Study **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 270,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 270,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	1,230,000	100,000	100,000	-	-	-	-	-	-	1,330,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 1,500,000**	**$ 100,000**	**$ 100,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,600,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	1,500,000	100,000	100,000	-	-	-	-	-	-	1,600,000
TOTAL SOURCES	**$ 1,500,000**	**$ 100,000**	**$ 100,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,600,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-22

ST-22

PROGRAM TITLE: **Traffic Signal Controller and Detection Upgrade**

PROGRAM DESCRIPTION:

This project will replace the controllers and necessary associated hardware at eight intersections and will upgrade the detection equipment to current standard cameras at six intersections throughout Tumwater.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 30,000	$ 10,000	$ 10,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	310,000	310,000	-	-	-	-	-	-	310,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ 30,000**	**$ 320,000**	**$ 320,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 350,000**
Outside Sources of Funds:										
Grants	$ 25,950	$ 276,800	$ 276,800	$ -	$ -	$ -	$ -	$ -	$ -	$ 302,750
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ 25,950	$ 276,800	$ 276,800	$ -	$ -	$ -	$ -	$ -	$ -	$ 302,750
Use of Fund Balance	4,050	43,200	43,200	-	-	-	-	-	-	47,250
TOTAL SOURCES	**$ 30,000**	**$ 320,000**	**$ 320,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 350,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-23

ST-23

PROGRAM TITLE: **Capitol Blvd Median and Streetscape Reconstruction**

PROGRAM DESCRIPTION:

Reconstruction of an existing median on Capitol Boulevard from Tumwater Valley Drive to M Street to incorporate low water use / drought tolerant landscaping in addition to wider concrete curbing for more safe and efficient maintenance.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 20,000	$ -	$ -	$ 20,000	$ -	$ -	$ -	$ -	$ 20,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	355,000	-	-	355,000	-	-	-	-	355,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 375,000**	**$ -**	**$ -**	**$ 375,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 375,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	375,000	-	-	375,000	-	-	-	-	375,000
TOTAL SOURCES	**$ -**	**$ 375,000**	**$ -**	**$ -**	**$ 375,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 375,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: No
PRIOR: ST-24

ST-24

PROGRAM TITLE: **Rural Rd Shoulder Improvements**

PROGRAM DESCRIPTION:

Construct widened shoulder along Rural Road from 48th Avenue to Linwood Avenue. The purpose of the project is to improve multimodal access. Timing of the project may deviate from that shown in order to take advantage of other paving projects in the area.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 35,000	$ -	$ 35,000	$ -	$ -	$ -	$ -	$ -	$ 35,000
Land & R-O-W	-	30,000	-	30,000	-	-	-	-	-	30,000
Construction	-	435,000	-	-	435,000	-	-	-	-	435,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 500,000**	**$ -**	**$ 65,000**	**$ 435,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	500,000	-	65,000	435,000	-	-	-	-	500,000
TOTAL SOURCES	**$ -**	**$ 500,000**	**$ -**	**$ 65,000**	**$ 435,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-25

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: Yes
PRIOR: R-03 (Streets CFP Reserve Prc

PROGRAM TITLE: **Dennis Street Roundabout**

PROGRAM DESCRIPTION:

Construction of a roundabout at the intersection of Capitol Boulevard and Dennis Street as proposed in the Capitol Boulevard Corridor Plan. Project is dependent on grant funding. 60 percent design has been completed under a separate design-only project.

IS PROJECT RECOMMENDED BY PLAN/POLICY? **PAGE#** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 50,000	$ -	$ -	$ -	$ 25,000	$ 25,000	$ -	$ -	$ 50,000
Land & R-O-W	-	800,000	-	-	-	100,000	700,000	-	-	800,000
Construction	-	3,150,000	-	-	-	-	-	3,150,000	-	3,150,000
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 4,000,000**	**$ -**	**$ -**	**$ -**	**$ 125,000**	**$ 725,000**	**$ 3,150,000**	**$ -**	**$ 4,000,000**
Outside Sources of Funds:										
Grants	$ -	$ 3,460,000	$ -	$ -	$ -	$ 108,125	$ 627,125	$ 2,724,750	$ -	$ 3,460,000
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ 3,460,000	$ -	$ -	$ -	$ 108,125	$ 627,125	$ 2,724,750	$ -	$ 3,460,000
Use of Fund Balance	-	540,000	-	-	-	16,875	97,875	425,250	-	540,000
TOTAL SOURCES	**$ -**	**$ 4,000,000**	**$ -**	**$ -**	**$ -**	**$ 125,000**	**$ 725,000**	**$ 3,150,000**	**$ -**	**$ 4,000,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

ST-26

CONTACT: Brandon Hicks
FUND: Streets
DEPT: Transportation and Engineering
PROJECT NO.
NEW: Yes
PRIOR: N/A

PROGRAM TITLE: **Trosper Road Capacity Study (Littlerock Rd to I-5)**
Base Utility Tax (.8% of the 6%)

PROGRAM DESCRIPTION:

Capacity study. Anticipating dual roundabout, one at Littlerock Road and one at Tyee Drive/Interstate 5 on/off ramp. This project may need to be expedited given existing capacity issues; however, it will be reevaluated after completion of the I-5/Trosper Rd/Capitol Blvd Reconfiguration project.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No **PLAN:** **PAGE#**

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ 200,000	$ -	$ 200,000
Land & R-O-W	-	-	-	-	-	-	-	-	-	-
Construction	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
TOTAL EXPENSES	**$ -**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**	**$ -**	**$ 200,000**
Outside Sources of Funds:										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
G.O. Bonds: Non-Voted	-	-	-	-	-	-	-	-	-	-
G.O. Bonds: Voted	-	-	-	-	-	-	-	-	-	-
TBD Transfer	-	-	-	-	-	-	-	-	-	-
L.I.D.'s	-	-	-	-	-	-	-	-	-	-
Impact Fees	-	-	-	-	-	-	-	-	-	-
Mitigation Fees	-	-	-	-	-	-	-	-	-	-
Other Sources	-	-	-	-	-	-	-	-	-	-
Total Outside Sources	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Fund Balance	-	200,000	-	-	-	-	-	200,000	-	200,000
TOTAL SOURCES	**$ -**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 200,000**	**$ -**	**$ 200,000**

FINANCIAL PLAN FOR THE WATER FUND

	PROJECT	EXPENSES		6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YRS	GRAND TOTAL
		Capital Projects:	**LEAD**									
	1	Water Rights Acquisition	WRS	$ 6,400,000	$ 3,500,000	$ 580,000	$ 580,000	$ 580,000	$ 580,000	$ 580,000	$ -	$ 6,400,000
	2	Brewery Wellfield - Water Production Infrastructure	WRS	$ 10,297,500	$ 250,000	$ 5,962,500	$ 2,990,000	$ 365,000	$ 365,000	$ 365,000	$ -	$ 10,297,500
	3	Brewery Wellfield - Abandon Existing Wells	WRS	$ 750,000	$ 443,750	$ 306,250	$ -	$ -	$ -	$ -	$ -	$ 750,000
	4	Emerging Projects / Oversizing	WRS	$ 510,000	$ 85,000	$ 85,000	$ 85,000	$ 85,000	$ 85,000	$ 85,000	$ -	$ 510,000
	5	Water Main Replacement and Extension Program	TED	$ 2,350,000	$ -	$ 50,000	$ 750,000	$ 750,000	$ 50,000	$ 750,000	$ -	$ 2,350,000
NEW	6	Well 15 Improvements	WRS	$ 950,000	$ -	$ 950,000	$ -	$ -	$ -	$ -	$ -	$ 950,000
	7	City Operations and Maintenance Facility Relocation	TED	$ 16,670,139	$ 1,839,200	$ 10,198,988	$ 1,964,988	$ 888,988	$ 888,988	$ 888,988	$ -	$ 16,670,139
	8	Southeast Reservoir & System Extension	TED	$ 25,672,222	$ 12,550,000	$ 7,024,444	$ 1,524,444	$ 1,524,444	$ 1,524,444	$ 1,524,444	$ -	$ 25,672,222
	9	New Source Development Planning	WRS	$ 10,195,223	$ 625,000	$ 825,000	$ 250,000	$ 1,750,000	$ 2,622,612	$ 4,122,612	$ 6,000,000	$ 16,195,223
	10	Enterprise Resource Planning Business System	FIN	$ 200,000	$ 66,667	$ 66,667	$ 66,667	$ -	$ -	$ -	$ -	$ 200,000
	11	Water Comprehensive Plan Update	WRS	$ 150,000	$ -	$ -	$ -	$ -	$ 25,000	$ 125,000	$ 125,000	$ 275,000
	12	Capitol Blvd and X St Watermain	TED	$ 650,000	$ 650,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 650,000
	13	Resource Conservation & Sustainability	WRS	$ 250,000	$ 125,000	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ 250,000
NEW	14	Seismic Resiliance	WRS	$ 80,000	$ 80,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 80,000
		TOTAL CAPITAL PROJECT EXPENSES		**$ 75,125,084**	**$ 20,214,617**	**$ 26,173,849**	**$ 8,211,099**	**$ 5,943,432**	**$ 6,141,044**	**$ 8,441,044**	**$ 6,125,000**	**$ 81,250,084**
		SOURCES OF FUNDS:										
		General Governmental		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
		Grants		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
		Operating Income		$ 12,687,928	$ 898,958	$ 2,669,085	$ 2,736,460	$ 2,158,127	$ 1,792,649	$ 2,432,649	$ 100,000	$ 12,787,928
		Connections		$ 18,161,957	$ 1,926,458	$ 3,694,764	$ 4,398,639	$ 2,285,306	$ 2,848,395	$ 3,008,395	$ 25,000	$ 18,186,957
		Revenue Bonds / Debt		$ 50,275,200	$ 33,275,200	$ 5,000,000	$ -	$ 12,000,000	$ -	$ -	$ -	$ 50,275,200
		TOTAL SOURCES		**$ 81,125,084**	**$ 36,100,617**	**$ 11,363,849**	**$ 7,135,099**	**$ 16,443,432**	**$ 4,641,044**	**$ 5,441,044**	**$ 125,000**	**$ 81,250,084**

SIX YEAR FINANCIAL FORECAST

	2023	2024	2025	2026	2027	2028	2029		2024-2029
REVENUES									
Beginning Fund Balance	*$ 20,552,600*	$ 21,255,464	$ 34,814,833	$ 14,528,575	$ 6,846,326	$ 13,744,018	$ 8,786,868		$ 21,255,464
Charges for Services (Rates & Utility Tax)	$ 6,216,203	$ 6,607,824	$ 7,103,411	$ 7,600,649	$ 8,094,692	$ 8,620,846	$ 9,138,097		$ 47,165,519
Misc. Revenues	$ 288,500	$ 292,828	$ 297,220	$ 301,678	$ 306,203	$ 310,796	$ 315,458		$ 1,824,184
Operating Income (Sales + Misc.)	***$ 6,504,703***	***$ 6,900,651***	***$ 7,400,630***	***$ 7,902,328***	***$ 8,400,895***	***$ 8,931,643***	***$ 9,453,556***		*$ 48,989,703*
Connection Charges	$ 535,000	$ 550,000	$ 682,142	$ 743,535	$ 817,889	$ 899,677	$ 989,645		$ 4,682,888
DEBT Proceeds (Bonds , Loans, Etc.)	$ 379,940	$ 33,275,200	$ 5,000,000	$ -	$ 12,000,000	$ -	$ -		$ 50,275,200
TOTAL REVENUES	**$ 27,972,243**	**$ 61,981,316**	**$ 47,897,605**	**$ 23,174,437**	**$ 28,065,109**	**$ 23,575,339**	**$ 19,230,069**		**$ 125,203,255**
EXPENDITURES									
O & M (including Administration)	*$ 6,716,779*	$ 6,951,866	$ 7,195,182	$ 7,447,013	$ 7,707,658	$ 7,977,426	$ 8,256,636		$ 45,535,782
Debt Service	$ -	$ -	$ -	$ 670,000	$ 670,000	$ 670,000	$ 670,000		$ 2,680,000
Capital	$ -	*$ 20,214,617*	*$ 26,173,849*	*$ 8,211,099*	*$ 5,943,432*	*$ 6,141,044*	*$ 8,441,044*		$ 75,125,084
TOTAL EXPENSES	**$ 6,716,779**	**$ 27,166,483**	**$ 33,369,030**	**$ 16,328,112**	**$ 14,321,091**	**$ 14,788,470**	**$ 17,367,680**		**$ 123,340,866**
ENDING FUND BALANCE	**$ 21,255,464**	**$ 34,814,833**	**$ 14,528,575**	**$ 6,846,326**	**$ 13,744,018**	**$ 8,786,868**	**$ 1,862,389**		**$ 1,862,389**
UTILITY RESERVE POLICY (20% O&M + Debt Service)	*$ 1,343,356*	*$ 1,390,373*	*$ 1,439,036*	*$ 1,623,403*	*$ 1,675,532*	*$ 1,729,485*	*$ 1,785,327*		
RATE Increase	4.8%	4.8%	6.0%	5.5%	5.0%	5.0%	4.5%		
CONNECTION FEE Increase	2.0%	2.0%	8.5%	9.0%	10.0%	10.0%	10.0%		

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-03

WA-1

PROGRAM TITLE: Water Rights Acquisition

PROGRAM DESCRIPTION:
This program includes funding for the purchase and processing of existing water rights to support system growth demands. Funding shown reserves funds for water right acquisitions as opportunities to acquire rights become available. The timing of the expenditures will depend on those opportunities.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# S-3 GROWTH: 100%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -								$ -
Land & R-O-W		$ 5,125,000	$ 3,500,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000		$ 5,125,000
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ 1,275,000		$ 255,000	$ 255,000	$ 255,000	$ 255,000	$ 255,000		$ 1,275,000
TOTAL EXPENSES	**$ -**	**$ 6,400,000**	**$ 3,500,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ -**	**$ 6,400,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 1,100,000		$ 220,000	$ 220,000	$ 220,000	$ 220,000	$ 220,000	$ -	$ 1,100,000
Connections		$ 2,300,000	$ 500,000	$ 360,000	$ 360,000	$ 360,000	$ 360,000	$ 360,000	$ -	$ 2,300,000
Revenue Bonds		$ 3,000,000	$ 3,000,000							$ 3,000,000
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 6,400,000**	**$ 3,500,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ 580,000**	**$ -**	**$ 6,400,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO. 2017031
NEW: No
PRIOR: WA-05

WA-2

PROGRAM TITLE: Brewery Wellfield - Water Production Infrastructure

PROGRAM DESCRIPTION:
This project provides funding for the development of water production infrastructure necessary to put to beneficial use the water rights aqcuired from the former Brewery.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# S-5 GROWTH: 80%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 103,000	$ 400,000	$ 250,000	$ 150,000	$ -					$ 503,000
Land & R-O-W		$ -								$ -
Construction		$ 8,437,500		$ 5,812,500	$ 2,625,000		$ -			$ 8,437,500
Equipment		$ -								$ -
Other (Debt Service)		$ 1,460,000			$ 365,000	$ 365,000	$ 365,000	$ 365,000		$ 1,460,000
TOTAL EXPENSES	**$ 103,000**	**$ 10,297,500**	**$ 250,000**	**$ 5,962,500**	**$ 2,990,000**	**$ 365,000**	**$ 365,000**	**$ 365,000**	**$ -**	**$ 10,400,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 20,600	$ 867,000	$ 50,000	$ -	$ 598,000	$ 73,000	$ 73,000	$ 73,000	$ -	$ 887,600
Connections	$ 82,400	$ 4,430,500	$ 200,000	$ 962,500	$ 2,392,000	$ 292,000	$ 292,000	$ 292,000	$ -	$ 4,512,900
Revenue Bonds		$ 5,000,000		$ 5,000,000						$ 5,000,000
Other		$ -								$ -
TOTAL SOURCES	**$ 103,000**	**$ 10,297,500**	**$ 250,000**	**$ 5,962,500**	**$ 2,990,000**	**$ 365,000**	**$ 365,000**	**$ 365,000**	**$ -**	**$ 10,400,500**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-07

WA-3

PROGRAM TITLE: Brewery Wellfield - Abandon Existing Wells

PROGRAM DESCRIPTION:
This project assumes that new wells will be developed as part of the Brewery Wellfield. Existing wells will be required to be decommissioned by WAC. The costs shown are 1/3 of the total cost which would be shared with Olympia and Lacey as co-owners.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# S-7 GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 100,000	$ 100,000							$ 100,000
Land & R-O-W		$ -								$ -
Construction		$ 650,000	$ 343,750	$ 306,250						$ 650,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 750,000**	**$ 443,750**	**$ 306,250**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 375,000	$ 221,875	$ 153,125						$ 375,000
Connections		$ 375,000	$ 221,875	$ 153,125						$ 375,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 750,000**	**$ 443,750**	**$ 306,250**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

WA-4

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-04

PROGRAM TITLE: Emerging Projects / Oversizing

PROGRAM DESCRIPTION:
This funding will be utilized to react to development projects by providing funds for such items as completing "loops" to increase flows, system redundancy, and oversizing costs. Could also be used to fund water line improvements and replacements within City street projects in order to avoid road cuts following road resurfacing.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# D-1 GROWTH: 75%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 60,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000		$ 60,000
Land & R-O-W		$ -								$ -
Construction		$ 450,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000		$ 450,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 510,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ -**	**$ 510,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 127,500	$ 21,250	$ 21,250	$ 21,250	$ 21,250	$ 21,250	$ 21,250	$ -	$ 127,500
Connections		$ 382,500	$ 63,750	$ 63,750	$ 63,750	$ 63,750	$ 63,750	$ 63,750	$ -	$ 382,500
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 510,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ -**	**$ 510,000**

7/19/2004

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

WA-5

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-10

PROGRAM TITLE: Water Main Replacement and Extension Program

PROGRAM DESCRIPTION:
This program aims to replace aging water mains and associated infrastructure in the system, including main replacements on roadways in coordination with other utility, road, or development projects that may not have been previously identified as specific replacement projects. Projects may be combined for efficiency and staffing workload, and not necessarily completed on an annual basis. Projects funded by this program shall be tracked for compliance with WA Department of Health requirements and integrated into the City's comprehensive plan updates.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# D-2 GROWTH: 20%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 400,000		$ 50,000	$ 100,000	$ 100,000	$ 50,000	$ 100,000		$ 400,000
Land & R-O-W		$ -								$ -
Construction		$ 1,950,000			$ 650,000	$ 650,000		$ 650,000		$ 1,950,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 2,350,000**	**$ -**	**$ 50,000**	**$ 750,000**	**$ 750,000**	**$ 50,000**	**$ 750,000**	**$ -**	**$ 2,350,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 1,880,000	$ -	$ 40,000	$ 600,000	$ 600,000	$ 40,000	$ 600,000	$ -	$ 1,880,000
Connections		$ 470,000	$ -	$ 10,000	$ 150,000	$ 150,000	$ 10,000	$ 150,000	$ -	$ 470,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 2,350,000**	**$ -**	**$ 50,000**	**$ 750,000**	**$ 750,000**	**$ 50,000**	**$ 750,000**	**$ -**	**$ 2,350,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: YES
PRIOR:

WA-6

PROGRAM TITLE: Well 15 Improvements

PROGRAM DESCRIPTION:
Well #15 is the City's second largest producer, sited on property owned by the Port of Olympia through a perpetual easement. Infrastructure supporting, surrounding, and securing Well 15 is significantly below City standards for production sites. In addition, recent water quality evaluations for corrosion control suggest the City will be required to install corrosion control treatment at multiple production sites, including Well 15. This project will enhance site security and auxillary power, update infrastructure and building to current standard, and install treatment facilities. *Referenced by: 2020 Water System Plan / 2021 Homeland Security Assessment / 2023 Corrosion Control Memo

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: Multiple* PAGE# GROWTH: 20%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 220,000		$ 220,000						$ 220,000
Land & R-O-W		$ -								$ -
Construction		$ 430,000		$ 430,000						$ 430,000
Equipment		$ 300,000		$ 300,000						$ 300,000
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 950,000**	**$ -**	**$ 950,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 950,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 760,000	$ -	$ 760,000	$ -	$ -	$ -	$ -	$ -	$ 760,000
Connections		$ 190,000	$ -	$ 190,000	$ -	$ -	$ -	$ -	$ -	$ 190,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 950,000**	**$ -**	**$ 950,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 950,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources and Sustainability
PROJECT NO. 2016025
NEW: No
PRIOR: WA-17

WA-7

PROGRAM TITLE: City Operations and Maintenance Facility Relocation

PROGRAM DESCRIPTION:
This project includes the demolition, master planning, design and construction for a new Public Works Operations and Maintenance Facility at the City's Trails End Drive property. Site costs are distributed 34% General Fund, 33% Water, 17% Sewer, and 17% Storm. Offsite mitigation costs are distributed 50% General Fund and Transportation CFP, 24% Water, 13% Sewer, and 13% Storm. Construction will use debt financing, either revenue bond or PWTF loan. Debt payments are included in expenditures.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: City Hall Campus Master Plan PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 330,800	$ 697,200	$ 697,200							$ 1,028,000
Land & R-O-W	$ 281,503	$ -								$ 281,503
Construction	$ 144,531	$ 9,860,000	$ 986,000	$ 7,888,000	$ 986,000					$ 10,004,531
Equipment		$ 498,000		$ 498,000						$ 498,000
Other (incl. Arts & Debt)	$ 72,000	$ 5,614,939	$ 156,000	$ 1,812,988	$ 978,988	$ 888,988	$ 888,988	$ 888,988		$ 5,686,939
TOTAL EXPENSES	**$ 828,833**	**$ 16,670,139**	**$ 1,839,200**	**$ 10,198,988**	**$ 1,964,988**	**$ 888,988**	**$ 888,988**	**$ 888,988**	**$ -**	**$ 17,498,972**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 414,417	$ 4,444,939		$ 888,988	$ 888,988	$ 888,988	$ 888,988	$ 888,988		$ 4,859,355
Connections	$ 414,417	$ -								$ 414,417
Revenue Bonds		$ 12,225,200	$ 12,225,200							$ 12,225,200
Other		$ -								$ -
TOTAL SOURCES	**$ 828,833**	**$ 16,670,139**	**$ 12,225,200**	**$ 888,988**	**$ 888,988**	**$ 888,988**	**$ 888,988**	**$ 888,988**	**$ -**	**$ 17,498,972**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-13

WA-8

PROGRAM TITLE: Southeast Reservoir & System Extension

PROGRAM DESCRIPTION:
This project would design and construct a new 3.0 Million Gallon reservoir south of 93rd Avenue on property that has been previously acquired for this purpose. The project will also include the piping necessary to extend the City water system along 93rd Avenue to the reservoir from the Preserve development. Construction of the project is assumed to be funded with a revenue bond or Public Works Trust Fund Loan. Debt service payments included.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# M-9 GROWTH: 80%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 1,200,000	$ 550,000	$ 550,000							$ 1,750,000
Land & R-O-W		$ -								$ -
Construction		$ 17,500,000	$ 12,000,000	$ 5,500,000						$ 17,500,000
Equipment		$ -								$ -
Other		$ 7,622,222		$ 1,524,444	$ 1,524,444	$ 1,524,444	$ 1,524,444	$ 1,524,444		$ 7,622,222
TOTAL EXPENSES	**$ 1,200,000**	**$ 25,672,222**	**$ 12,550,000**	**$ 7,024,444**	**$ 1,524,444**	**$ 1,524,444**	**$ 1,524,444**	**$ 1,524,444**	**$ -**	**$ 26,872,222**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 240,000	$ 1,524,444	$ -	$ 304,889	$ 304,889	$ 304,889	$ 304,889	$ 304,889		$ 1,764,444
Connections	$ 960,000	$ 6,097,778	$ -	$ 1,219,556	$ 1,219,556	$ 1,219,556	$ 1,219,556	$ 1,219,556	$ -	$ 7,057,778
Revenue Bonds		$ 18,050,000	$ 18,050,000		$ -	$ -	$ -	$ -		$ 18,050,000
Other		$ -								$ -
TOTAL SOURCES	**$ 1,200,000**	**$ 25,672,222**	**$ 18,050,000**	**$ 1,524,444**	**$ 1,524,444**	**$ 1,524,444**	**$ 1,524,444**	**$ 1,524,444**	**$ -**	**$ 26,872,222**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

WA-9

PROGRAM TITLE: New Source Development Planning

PROGRAM DESCRIPTION:
This project will initiate the planning efforts for additional source development in the City of Tumwater, and reserves funding for the design and installation of wells and other infrastructure necessary to produce potable water. Phase 1, "Explore Supply Needs & Options" will occur 2023-2024. Phase 2 will evaluate in greater detail the most feasible alternatives identified in Phase 1, 2024-2025, and Phase 3+ will be the implementation of the recommendations developed in Phase 2, including the design, permitting, installation, and testing of new wells, and ultimately construction of a production site and treatment plant. Costs for future phases will be refined following initial planning efforts.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# 6-8 GROWTH: 80%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 1,450,000	$ 125,000	$ 325,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000		$ 1,450,000
Land & R-O-W		$ 1,000,000	$ 500,000	$ 500,000						$ 1,000,000
Construction		$ 6,000,000				$ 1,500,000	$ 1,500,000	$ 3,000,000	$ 6,000,000	$ 12,000,000
Equipment		$ -								$ -
Other		$ 1,745,223					$ 872,612	$ 872,612		$ 1,745,223
TOTAL EXPENSES	**$ -**	**$ 10,195,223**	**$ 625,000**	**$ 825,000**	**$ 250,000**	**$ 1,750,000**	**$ 2,622,612**	**$ 4,122,612**	**$ 6,000,000**	**$ 16,195,223**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 839,045	$ 125,000	$ 165,000	$ 50,000	$ 50,000	$ 224,522	$ 224,522		$ 839,045
Connections		$ 3,356,179	$ 500,000	$ 660,000	$ 200,000	$ 200,000	$ 898,089	$ 898,089		$ 3,356,179
Revenue Bonds		$ 12,000,000				$ 12,000,000				$ 12,000,000
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 16,195,223**	**$ 625,000**	**$ 825,000**	**$ 250,000**	**$ 12,250,000**	**$ 1,122,612**	**$ 1,122,612**	**$ -**	**$ 16,195,223**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-15

WA-10

PROGRAM TITLE: Enterprise Resource Planning Business System

PROGRAM DESCRIPTION:
Replacement and implementation of the current ERP System (Tyler Eden), currently estimated at approximately $2.5 million. The City currently uses Tyler Technology's Eden program, which is no longer supported or upgraded. This system manages the billing and financial programs for the utilities, among other critical functions for the City, like payroll and permitting. The cost for both vendor fees, technology, and City staff time to implement is split between General Fund (50%) and the Water, Sewer and Storm utilities (50%).

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE# GROWTH: 20%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -								$ -
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other (Software, etc.)	$ 200,008	$ 200,000	$ 66,667	$ 66,667	$ 66,667					$ 400,008
TOTAL EXPENSES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 160,006	$ 160,000	$ 53,333	$ 53,333	$ 53,333					$ 320,006
Connections	$ 40,002	$ 40,000	$ 13,333	$ 13,333	$ 13,333					$ 80,002
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-18

WA-11

PROGRAM TITLE: Water Comprehensive Plan Update

PROGRAM DESCRIPTION:
The WA Department of Health (DOH) requires the City update the Water System Comprehensive Plan every ten years. The current plan, completed in 2021, will need to be updated and approved by DOH by November 2031. The Water Comp Plan update includes an assessment of water rights and production capacity, treatment needs, and distribution system. The report also reviews the City's wellhead protection, water conservation, and water quality programs, makes recommendedations for capital improvements and ensures the City has financial resources to implement the plan and protect public health.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# M-9 GROWTH: 20%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 150,000					$ 25,000	$ 125,000	$ 125,000	$ 275,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 150,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ 125,000**	**$ 125,000**	**$ 275,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 120,000					$ 20,000	$ 100,000	$ 100,000	$ 220,000
Connections		$ 30,000					$ 5,000	$ 25,000	$ 25,000	$ 55,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 150,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ 125,000**	**$ 125,000**	**$ 275,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-13

WA-12

PROGRAM TITLE: Capitol Blvd and X St Watermain

PROGRAM DESCRIPTION:
This project will upsize existing 8-inch AC watermain along Capitol Blvd with 16-inch ductile iron pipe in conjunction with a Transportation CFP project. Undersized cast iron watermain on X Street within project limits will also be replaced. Infrastructure upgrades along Capitol are consistent with seismic protection recommendations.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Water System Plan PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 100,000	$ -								$ 100,000
Land & R-O-W		$ -								$ -
Construction		$ 650,000	$ 650,000							$ 650,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 100,000**	**$ 650,000**	**$ 650,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 50,000	$ 325,000	$ 325,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 375,000
Connections	$ 50,000	$ 325,000	$ 325,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 375,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 100,000**	**$ 650,000**	**$ 650,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 750,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: WA-14

WA-13

PROGRAM TITLE: Resource Conservation & Sustainability

PROGRAM DESCRIPTION:
Set aside funds to support the implementation of City Green Team initiatives and recommendations identified in the Regional Climate Action Plan.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Green Team / Climate Action Plan PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 250,000	$ 125,000	$ 125,000						$ 250,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 250,000**	**$ 125,000**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 250,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 125,000	$ 62,500	$ 62,500			$ -			$ 125,000
Connections		$ 125,000	$ 62,500	$ 62,500			$ -			$ 125,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 250,000**	**$ 125,000**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 250,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Water
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: YES
PRIOR:

WA-14

PROGRAM TITLE: Seismic Resiliance

PROGRAM DESCRIPTION:
Conduct a moderate seismic resiliency study to establish Level of Service goals for utility operation after a major seismic event, update geotechnical hazard maps, develop processes for facility structural resilience evaluations on critical structures and distribution systems, and prepare a critical interdependencies assessment. This project will result in the development of an implementation strategy, identifying all the recommendations for reducing vulnerabilities and mitigating risk for both water and sewer utilities. This is the Drinking Water Fund portion.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2021 Water System Plan PAGE# 7-14 GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 80,000	$ 80,000							$ 80,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 80,000**	**$ 80,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 40,000	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
Connections		$ 40,000	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 40,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 80,000**	**$ 80,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,000**

FINANCIAL PLAN FOR THE SANITARY SEWER FUND

	PROJECT	EXPENSES		6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YRS	GRAND TOTAL
		Capital Projects:	**LEAD**									
	1	Annual Sewer Infrastructure Replacement Program	TED/WRS	$ 3,194,700	$ 920,000	$ -	$ 1,058,000	$ -	$ 1,216,700	$ -	$ -	$ 3,194,700
	2	Oversizing Program	WRS	$ 412,500	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ -	$ 412,500
	3	Regional Pump Station	TED	$ 1,745,000	$ -	$ 445,000	$ 1,300,000	$ -	$ -	$ -	$ -	$ 1,745,000
	4	Old Highway 99 Extension: 79th Avenue to 88th Avenue	TED	$ 225,000	$ 15,000	$ -	$ 210,000	$ -	$ -	$ -	$ 870,000	$ 1,095,000
	5	City Operations and Maintenance Facility Relocation	TED	$ 6,726,001	$ 951,500	$ 5,011,460	$ 190,760	$ 190,760	$ 190,760	$ 190,760	$ -	$ 6,726,001
	6	Streamland Estates Lift Station	TED	$ 460,000	$ 460,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 460,000
	7	Lloyd Street Lift Station	TED	$ 537,500	$ 537,500	$ -	$ -	$ -	$ -	$ -	$ -	$ 537,500
	8	Sewer Extension Program	WRS/TED	$ 4,140,000	$ -	$ 1,150,000	$ -	$ 1,380,000	$ -	$ 1,610,000	$ -	$ 4,140,000
	9	Comprehensive Plan Review/Update	WRS	$ 190,000	$ 190,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 190,000
	10	Enterprise Resource Planning Business System	FIN	$ 200,000	$ 66,667	$ 66,667	$ 66,667	$ -	$ -	$ -	$ -	$ 200,000
	11	I-5 Sanitary Sewer Main Crossings Report	WRS	$ 125,000	$ -	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ 125,000
	12	Capitol Blvd and X St Sewer	TED	$ 300,000	$ -	$ 300,000	$ -	$ -	$ -	$ -	$ -	$ 300,000
NEW	13	Seismic Resiliency Plan	WRS	$ 250,000	$ -	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 250,000
NEW	14	Kimmie Street Lift Station	TED	$ 717,500	$ 62,500	$ 155,000	$ 500,000	$ -	$ -	$ -	$ -	$ 717,500
		TOTAL EXPENSES		**17,955,701**	**3,271,917**	**7,446,877**	**3,519,177**	**1,639,510**	**1,476,210**	**1,869,510**	**870,000**	**20,093,201**
		SOURCES OF FUNDS:										
		General Governmental		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Grants		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Operating Income		$ 9,292,796	$ 1,645,208	$ 1,612,938	$ 1,539,218	$ 1,577,635	$ 1,110,160	$ 1,807,635	$ 87,000	$ 9,379,796
		Connections		$ 7,430,405	$ 1,626,708	$ 3,333,938	$ 1,979,958	$ 61,875	$ 366,050	$ 61,875	$ 783,000	$ 8,213,405
		Revenue Bonds/Debt		$ 2,500,000	$ -	$ 2,500,000	$ -	$ -	$ -	$ -	$ -	$ 2,500,000
		TOTAL SOURCES		**$ 19,223,201**	**$ 3,271,917**	**$ 7,446,877**	**$ 3,519,177**	**$ 1,639,510**	**$ 1,476,210**	**$ 1,869,510**	**$ 870,000**	**$ 20,093,201**

SIX YEAR FINANCIAL FORECAST

	SEWER	2023	2024	2025	2026	2027	2028	2029	TOTAL	2024-2029
	REVENUES									
	Beginning Fund Balance	**$ 16,967,288**	**$ 16,735,150**	**$ 13,608,458**	**$ 8,598,633**	**$ 5,077,068**	**$ 3,544,135**	**$ 2,364,766**		$ 16,735,150
	Charges for Service (Rates & Utility Tax)	$ 3,181,675	$ 3,416,705	$ 3,710,713	$ 4,011,188	$ 4,335,994	$ 4,665,096	$ 5,019,176		$ 25,158,872
	Misc. revenues	$ 13,250	$ 13,449	$ 2,213,650	$ 13,855	$ 14,063	$ 14,274	$ 14,488		$ 2,283,780
	Operating Income (Sales + Misc.) Subtotal	***$ 3,194,925***	***$ 3,430,154***	***$ 5,924,363***	***$ 4,025,043***	***$ 4,350,057***	***$ 4,679,370***	***$ 5,033,665***		*$ 27,442,651*
	LOTT (Pass Thru incl. CDC)	$ 6,602,500	$ 6,800,575	$ 7,004,592	$ 7,214,730	$ 7,431,172	$ 7,654,107	$ 7,883,730		$ 43,988,907
	Interfund Payment (P&I) - Golf Course	$ 36,003	$ 182,139	$ 174,819	$ -	$ -	$ -	$ -		$ 356,958
	Connection & Development Fees	$ 421,750	$ 603,716	$ 549,381	$ 489,734	$ 424,436	$ 441,414	$ 459,070		$ 2,967,751
	TOTAL REVENUES	**$ 10,255,178**	**$ 27,751,734**	**$ 27,261,614**	**$ 20,328,140**	**$ 17,282,733**	**$ 16,319,026**	**$ 15,741,231**		**$ 91,491,418**
	EXPENDITURES									
	O & M (including Administration)	$ 3,884,816	$ 4,020,785	$ 4,161,512	$ 4,307,165	$ 4,457,916	$ 4,613,943	$ 4,775,431		$ 26,336,751
	Debt Service	$ -	$ -	$ -	$ 160,000	$ 160,000	$ 160,000	$ 160,000		$ 640,000
	Capital	$ -	$ 3,321,917	$ 7,496,877	$ 3,569,177	$ 1,689,510	$ 1,526,210	$ 1,919,510		$ 19,523,201
	LOTT (Pass Thru incl. CDC)	$ 6,602,500	$ 6,800,575	$ 7,004,592	$ 7,214,730	$ 7,431,172	$ 7,654,107	$ 7,883,730		$ 43,988,907
	TOTAL EXPENSES	**$ 10,487,316**	**$ 14,143,276**	**$ 18,662,981**	**$ 15,251,072**	**$ 13,738,598**	**$ 13,954,260**	**$ 14,738,671**		**$ 90,488,858**
	ENDING FUND BALANCE	**$ 16,735,150**	**$ 13,608,458**	**$ 8,598,633**	**$ 5,077,068**	**$ 3,544,135**	**$ 2,364,766**	**$ 1,002,560**		**$ 1,002,560**
	UTILITY RESERVE POLICY (20% O&M + Debt Service)	*$ 776,963*	*$ 804,157*	*$ 832,302*	*$ 893,433*	*$ 923,583*	*$ 954,789*	*$ 987,086*		
	Rate Increases	5.8%	5.8%	7.0%	6.5%	6.5%	6.0%	6.0%		
	Connection Fee Increases	2.8%	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%		

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-01

PROGRAM TITLE: Annual Sewer Infrastructure Replacement Program

PROGRAM DESCRIPTION:
This project provides for the systematic rehabilitation of aging sanitary sewer lines in various areas of the City. The funding demonstrates an initial planning project to evaluate and define projects to be completed. A prioritized list of projects include Tumwater Hill (2024) to address aging infrastructure, and I&I concerns, and the Capitol Blvd and Palermo areas (2026) to replace mains containing aesbestos concrete installed approximately 65 years ago. 2028 project(s) to be determined. The actual construction method will be based on the characteristics of the individual replacements.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: 2015 General Sewer Plan PAGE# 8-7 GROWTH: 25%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 416,700	$ 120,000		$ 138,000		$ 158,700			$ 416,700
Land & R-O-W										
Construction		$ 2,778,000	$ 800,000		$ 920,000		$ 1,058,000			$ 2,778,000
Equipment										
Other										
TOTAL EXPENSES	**$ -**	**$ 3,194,700**	**$ 920,000**	**$ -**	**$ 1,058,000**	**$ -**	**$ 1,216,700**	**$ -**	**$ -**	**$ 3,194,700**
Sources of Funds:										
General Government										$ -
Grants										$ -
Operating Income		$ 2,396,025	$ 690,000		$ 793,500		$ 912,525			$ 2,396,025
Connections		$ 798,675	$ 230,000		$ 264,500		$ 304,175			$ 798,675
Revenue Bonds										
L.I.D.'s										
Other										
TOTAL SOURCES	**$ -**	**$ 3,194,700**	**$ 920,000**	**$ -**	**$ 1,058,000**	**$ -**	**$ 1,216,700**	**$ -**	**$ -**	**$ 3,194,700**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-02

PROGRAM TITLE: Oversizing Program

PROGRAM DESCRIPTION:
The City will participate in the funding for projects identified in the Sanitary Sewer Comprehensive Plan to the extent the sewers are constructed as "oversized" relative to the needs of the participating development. The oversizing costs shall be the incremental cost above the cost required to install an 8-inch line. Oversizing will only be funded for those projects where the diameter of pipe required is larger than the capacity needs of the development, exceeding 8-inches.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: 2015 General Sewer Plan PAGE# 8-1 GROWTH: 90%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -								$ -
Land & R-O-W		$ -								$ -
Construction		$ 412,500	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ 68,750	$ 68,750		$ 412,500
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 412,500**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ -**	**$ 412,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 41,250	$ 6,875	$ 6,875	$ 6,875	$ 6,875	$ 6,875	$ 6,875	$ -	$ 41,250
Connections		$ 371,250	$ 61,875	$ 61,875	$ 61,875	$ 61,875	$ 61,875	$ 61,875	$ -	$ 371,250
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 412,500**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ 68,750**	**$ -**	**$ 412,500**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-03

PROGRAM TITLE: Regional Pump Station

PROGRAM DESCRIPTION:
This project would fund the construction of a regional pump station in one of the growth areas of the City. City funding of the station would be to prevent the development of on-site community septic systems in areas of small developments where the construction of a regional station isn't financially feasible. Location and timing of the project would be determined based on development activity.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: 2015 General Sewer Plan PAGE# 8-1 GROWTH: 90%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 195,000		$ 195,000						$ 195,000
Land & R-O-W		$ 250,000		$ 250,000						$ 250,000
Construction		$ 1,300,000			$ 1,300,000					$ 1,300,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 1,745,000**	**$ -**	**$ 445,000**	**$ 1,300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,745,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 174,500	$ -	$ 44,500	$ 130,000	$ -	$ -	$ -	$ -	$ 174,500
Connections		$ 1,570,500	$ -	$ 400,500	$ 1,170,000	$ -	$ -	$ -	$ -	$ 1,570,500
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 1,745,000**	**$ -**	**$ 445,000**	**$ 1,300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,745,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-04

PROGRAM TITLE: Old Highway 99 Extension: 79th Avenue to 88th Avenue

PROGRAM DESCRIPTION:
This project would fund the construction of the sewer infrastructure to serve the southeast area of the City. Timing of the project is dependent on development activity. The first phase shown in this CFP extends watermain through the limits of the Old Hwy 99 and 79th Ave Roundabout project.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: 2015 General Sewer Plan PAGE# 6-24 GROWTH: 90%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 15,000	$ 15,000		$ -	$ -			$ 70,000	$ 85,000
Land & R-O-W		$ -								$ -
Construction		$ 210,000			$ 210,000				$ 800,000	$ 1,010,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 225,000**	**$ 15,000**	**$ -**	**$ 210,000**	**$ -**	**$ -**	**$ -**	**$ 870,000**	**$ 1,095,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income		$ 22,500	$ 1,500	$ -	$ 21,000	$ -	$ -	$ -	$ 87,000	$ 109,500
Connections		$ 202,500	$ 13,500	$ -	$ 189,000	$ -	$ -	$ -	$ 783,000	$ 985,500
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 225,000**	**$ 15,000**	**$ -**	**$ 210,000**	**$ -**	**$ -**	**$ -**	**$ 870,000**	**$ 1,095,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO. 2016025
NEW: No
PRIOR:

SS-05

PROGRAM TITLE: City Operations and Maintenance Facility Relocation

PROGRAM DESCRIPTION:
This project includes the demolition, master planning, design and construction for a new Public Works and Facilities Divisions Operations and Maintenance Facility at the City's Trails End Drive property. Site costs are distributed 34% General Fund, 33% Water, 17% Sewer, and 17% Storm. Offsite mitigation costs are distributed 50% General Fund and Transportation CFP, 24% Water, 13% Sewer, and 13% Storm. Construction will use debt financing either revenue bond or PWTF loan. Debt payments are included.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: City Hall Campus Master Plan PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 184,900	$ 359,100	$ 359,100							$ 544,000
Land & R-O-W		$ -								$ -
Construction		$ 4,571,100	$ 507,900	$ 4,063,200						$ 4,571,100
Equipment		$ 257,000		$ 257,000						$ 257,000
Other (incl. 1% for Arts)		$ 1,538,801	$ 84,500	$ 691,260	$ 190,760	$ 190,760	$ 190,760	$ 190,760		$ 1,538,801
TOTAL EXPENSES	**$ 184,900**	**$ 6,726,001**	**$ 951,500**	**$ 5,011,460**	**$ 190,760**	**$ 190,760**	**$ 190,760**	**$ 190,760**	**$ -**	**$ 6,910,901**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 92,450	$ 1,244,521	$ 475,750	$ 5,730	$ 190,760	$ 190,760	$ 190,760	$ 190,760		$ 1,336,971
Connections	$ 92,450	$ 2,981,480	$ 475,750	$ 2,505,730						$ 3,073,930
Revenue Bonds		$ 2,500,000		$ 2,500,000						$ 2,500,000
Other		$ -								$ -
TOTAL SOURCES	**$ 184,900**	**$ 6,726,001**	**$ 951,500**	**$ 5,011,460**	**$ 190,760**	**$ 190,760**	**$ 190,760**	**$ 190,760**	**$ -**	**$ 6,910,901**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-06

PROGRAM TITLE: Streamland Estates Lift Station

PROGRAM DESCRIPTION:
Project will upgrade the Streamland Estates lift station to account for modeled deficiences to accommodate growth in the system. The existing system has an oversized wet well; upgrades include new pumps, valves piping, generator, control panel, automatic transfer switch, and associated equipment.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: 2015 General Sewer Plan PAGE# 8-7 GROWTH: 60%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 35,000	$ 60,000	$ 60,000			$ -				$ 95,000
Land & R-O-W		$ -								$ -
Construction		$ 400,000	$ 400,000				$ -			$ 400,000
Equipment		$ -								$ -
Other		$ -					$ -	$ -	$ -	$ -
TOTAL EXPENSES	**$ 35,000**	**$ 460,000**	**$ 460,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 495,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 14,000	$ 184,000	$ 184,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 198,000
Connections	$ 21,000	$ 276,000	$ 276,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 297,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 35,000**	**$ 460,000**	**$ 460,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 495,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-07

PROGRAM TITLE: Lloyd Street Lift Station

PROGRAM DESCRIPTION:
Project will upgrade the Lloyd Street lift station to account for modeled deficiences to accommodate growth in the system. Upgrades include wet well oversizing, new pumps, valves, piping, generator, control panel, automatic transfer switch, and associated equipment. Right-of-way acquisition for new generator and control panel is included.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2015 General Sewer Plan PAGE# 8-7 GROWTH: 80%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 45,000	$ 67,500	$ 67,500							$ 112,500
Land & R-O-W		$ 20,000	$ 20,000							$ 20,000
Construction		$ 450,000	$ 450,000							$ 450,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 45,000**	**$ 537,500**	**$ 537,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 582,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 9,000	$ 107,500	$ 107,500	$ -	$ -	$ -	$ -	$ -	$ -	$ 116,500
Connections	$ 36,000	$ 430,000	$ 430,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 466,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 45,000**	**$ 537,500**	**$ 537,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 582,500**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-08

PROGRAM TITLE: Sewer Extension Program

PROGRAM DESCRIPTION:
Project provides funding for extension of sewer mains to neighborhoods to facilitate onsite system conversions to sanitary sewer for protection of drinking water, public and environmental health. Project prioritization results from City evaluation and planning processes. This program is currently under consideration and has not been fully defined. Projects are shown annually, but may be combined for efficiency and workload. WRS will lead the program development; TED will lead the design and construction for identified projects.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2015 General Sewer Plan PAGE# 8-2 GROWTH: 0%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 540,000		$ 150,000		$ 180,000		$ 210,000		$ 540,000
Land & R-O-W		$ -								$ -
Construction		$ 3,600,000		$ 1,000,000		$ 1,200,000		$ 1,400,000		$ 3,600,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 4,140,000**	**$ -**	**$ 1,150,000**	**$ -**	**$ 1,380,000**	**$ -**	**$ 1,610,000**	**$ -**	**$ 4,140,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ -	$ 4,140,000		$ 1,150,000		$ 1,380,000		$ 1,610,000		$ 4,140,000
Connections	$ -	$ -								$ -
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 4,140,000**	**$ -**	**$ 1,150,000**	**$ -**	**$ 1,380,000**	**$ -**	**$ 1,610,000**	**$ -**	**$ 4,140,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-09

PROGRAM TITLE: Comprehensive Plan Review/Update

PROGRAM DESCRIPTION:
Update the existing Sanitary Sewer Comp Plan (last completed in 2015) to reflect current development trends within the service area, integrate sewer programs such as main replacements and extensions into neighborhoods served by individual septic systems and where new development is expected, incorporate current incentive programs for supported housing, and evaluate locations for additional remote monitoring to reduce the potential for sanitary sewer overflows. Project has been initiated in 2023.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: WAC 173-240 PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 135,000	$ 190,000	$ 190,000							$ 325,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 135,000**	**$ 190,000**	**$ 190,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 325,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 67,500	$ 95,000	$ 95,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 162,500
Connections	$ 67,500	$ 95,000	$ 95,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 162,500
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 135,000**	**$ 190,000**	**$ 190,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 325,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-10

PROGRAM TITLE: Enterprise Resource Planning Business System

PROGRAM DESCRIPTION:
Replacement and implementation of the current ERP System (Tyler Eden), currently estimated at approximately $2.5 million. The City currently uses Tyler Technology's Eden program, which is no longer supported or upgraded. This system manages the billing and financial programs for the utilities, among other critical functions for the City, like payroll and permitting. The cost for both vendor fees, technology, and City staff time to implement is split between General Fund (50%) and the Water, Sewer and Storm utilities (50%).

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE# GROWTH: 20%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Land & R-O-W		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Equipment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other (Debt Service)	$ 200,008	$ 200,000	$ 66,667	$ 66,667	$ 66,667	$ -	$ -	$ -	$ -	$ 400,008
TOTAL EXPENSES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**
Sources of Funds:										
General Government		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Grants		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operating Income	$ 160,006	$ 160,000	$ 53,333	$ 53,333	$ 53,333	$ -	$ -	$ -	$ -	$ 320,006
Connections	$ 40,002	$ 40,000	$ 13,333	$ 13,333	$ 13,333	$ -	$ -	$ -	$ -	$ 80,002
Revenue Bonds		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL SOURCES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-11

PROGRAM TITLE: I-5 Sanitary Sewer Main Crossings Report

PROGRAM DESCRIPTION:
This project provides for the evaluation of aging sanitary sewer main crossings under the I-5 corridor and completion of an alternatives analysis report to consider redirection of sewer flows and elimination of crossings under the interstate highway which hinders and complicates routine maintenance. Known crossings include 2nd Avenue at Desoto Street, 2nd Avenue at E Street, 2nd Avenue between 3rd and H Streets and 2nd Avenue at Little Street.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2015 General Sewer Plan PAGE# 8-6 GROWTH: 25%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 125,000	$ -	$ -	$ 125,000					$ 125,000
Land & R-O-W	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Construction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other (Debt Service)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL EXPENSES	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125,000**
Sources of Funds:										
General Government	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operating Income	$ -	$ 93,750	$ -	$ -	$ 93,750	$ -	$ -	$ -	$ -	$ 93,750
Connections	$ -	$ 31,250	$ -	$ -	$ 31,250	$ -	$ -	$ -	$ -	$ 31,250
Revenue Bonds	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL SOURCES	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ 125,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 125,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources and Sustainability
PROJECT NO.
NEW: No
PRIOR:

SS-12

PROGRAM TITLE: Capitol Blvd and X St Sewer

PROGRAM DESCRIPTION:
Funding to replace aging concrete sewer lines on Capitol Blvd and X Street in coordination with the Capitol Blvd and X St Roundabout transportation improvement project. Designs are complete.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2015 General Sewer Plan PAGE# 8-7 GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 50,000	$ -								$ 50,000
Land & R-O-W		$ -								$ -
Construction		$ 300,000		$ 300,000						$ 300,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 50,000**	**$ 300,000**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 350,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ 25,000	$ 150,000		$ 150,000						$ 175,000
Connections	$ 25,000	$ 150,000		$ 150,000						$ 175,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 50,000**	**$ 300,000**	**$ -**	**$ 300,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 350,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT: Water Resources and Sustainability
PROJECT NO.
NEW: YES
PRIOR:

SS-13

PROGRAM TITLE: Seismic Resiliency Plan

PROGRAM DESCRIPTION:
Conduct a moderate seismic resiliency study to establish Level of Service goals for utility operation after a major seismic event, update geotechnical hazard maps, develop processes for facility structural resilience evaluations on critical structures and distribution systems, and prepare a critical interdependencies assessment. This project will result in the development of an implementation strategy, identifying all the recommendations for reducing vulnerabilities and mitigating risk for both water and sewer utilities. This is the Sanirtary Sewer Fund portion.

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 250,000		$ 250,000						$ 250,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 250,000**	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 250,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ -	$ 125,000	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ 125,000
Connections	$ -	$ 125,000	$ -	$ 125,000	$ -	$ -	$ -	$ -	$ -	$ 125,000
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 250,000**	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 250,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Sanitary Sewer
DEPT.: Water Resources and Sustainability
PROJECT NO.
NEW: YES
PRIOR:

SS-14

PROGRAM TITLE: Kimmie Street Lift Station

PROGRAM DESCRIPTION:
Project will complete an engineering evaluation and upgrade the Kimmee Street lift station to account for modeled deficiences to accommodate growth in the system. Upgrades may include wet well oversizing, new pumps, valves, piping, generator, control panel, automatic transfer switch, and associated equipment. Right-of-way acquisition for new generator and control panel is included.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2015 Sewer System Plan PAGE# GROWTH: 50%

FINANCIAL DATA

EXPENSES	PRIOR YRS	6-YR. TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 187,500	$ 62,500	$ 125,000						$ 187,500
Land & R-O-W		$ 30,000		$ 30,000						$ 30,000
Construction		$ 500,000			$ 500,000					$ 500,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 717,500**	**$ 62,500**	**$ 155,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 717,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Operating Income	$ -	$ 358,750	$ 31,250	$ 77,500	$ 250,000	$ -	$ -	$ -	$ -	$ 358,750
Connections	$ -	$ 358,750	$ 31,250	$ 77,500	$ 250,000	$ -	$ -	$ -	$ -	$ 358,750
Revenue Bonds		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 717,500**	**$ 62,500**	**$ 155,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 717,500**

FINANCIAL PLAN FOR THE STORM DRAIN FUND

	Project	PROJECTS	LEAD	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YRS	GRAND TOTAL
NEW	1	Land Acquisition - Wetland / Habitat Conservation	WRS	$ 3,375,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 125,000	$ -	$ 3,375,000
	2	Tumwater Valley Regional Facility	WRS	$ 3,915,000	$ -	$ 65,000	$ 350,000	$ 1,625,000	$ 1,875,000	$ -	$ -	$ 3,915,000
	3	Deschutes Habitat Restoration Projects	WRS	$ 980,000	$ 125,000	$ 575,000	$ 85,000	$ 65,000	$ 65,000	$ 65,000	$ -	$ 980,000
	4	Emerging Projects	WRS	$ 300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ -	$ 300,000
	5	East Linwood Basin Outfall Retrofit	WRS	$ 2,170,000	$ -	$ 45,000	$ 975,000	$ 1,150,000	$ -	$ -	$ -	$ 2,170,000
	6	Sapp Road Culvert Replacement	WRS	$ 2,408,000	$ 2,408,000	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,408,000
	7	Kirsop Road Stormwater Improvements	TED	$ 642,750	$ -	$ -	$ 62,500	$ 167,750	$ 412,500	$ -	$ -	$ 642,750
	8	54th & Kirsop Road Flooding Reduction	TED	$ 287,500	$ 37,500	$ 250,000	$ -	$ -	$ -	$ -	$ -	$ 287,500
	9	66th Ave Culvert Replacement	TED	$ 3,000,000	$ -	$ -	$ -	$ 150,000	$ 350,000	$ 2,500,000	$ -	$ 3,000,000
	10	North Custer Way Stormdrain Redirection	TED	$ 112,500	$ -	$ -	$ -	$ -	$ -	$ 112,500	$ 300,000	$ 412,500
	11	Beehive Industrial Area Stormwater Improvements	WRS	$ 900,000	$ 150,000	$ 750,000	$ -	$ -	$ -	$ -	$ -	$ 900,000
	12	City Operations and Maintenance Facility Relocation	TED	$ 7,870,904	$ 951,500	$ 5,240,441	$ 419,741	$ 419,741	$ 419,741	$ 419,741	$ -	$ 7,870,904
	13	Golf Course Drainage System Repairs	WRS	$ 510,000	$ 60,000	$ 450,000	$ -	$ -	$ -	$ -	$ -	$ 510,000
	14	Enterprise Resource Planning Business System	FIN	$ 200,000	$ 66,667	$ 66,667	$ 66,667	$ -	$ -	$ -	$ -	$ 200,000
	15	Capitol Blvd Storm Upsizing	TED	$ 650,000	$ -	$ -	$ 650,000	$ -	$ -	$ -	$ -	$ 650,000
	16	Crites Stormwater Pond Improvements	TED	$ 1,150,000	$ -	$ -	$ 250,000	$ 400,000	$ 500,000	$ -	$ -	$ 1,150,000
	17	29th Avenue SW Stormwater Improvements	TED	$ 765,000	$ -	$ -	$ 165,000	$ 600,000	$ -	$ -	$ -	$ 765,000
	18	Tumwater Hill Basin Assessment	TED	$ 150,000	$ 75,000	$ 75,000	$ -	$ -	$ -	$ -	$ -	$ 150,000
	19	Resource Conservation & Sustainability	WRS	$ 130,000	$ 65,000	$ 65,000	$ -	$ -	$ -	$ -	$ -	$ 130,000
NEW	20	2028 Comprehensive Stormwater Management Plan Update	WRS	$ 250,000	$ -	$ -	$ -	$ 75,000	$ 175,000	$ -	$ -	$ 250,000
NEW	21	E Dennis Street Outfall Retrofit	WRS	$ 363,000	$ -	$ -	$ -	$ -	$ 75,000	$ 288,000	$ -	$ 363,000
		TOTAL EXPENSES:		**$ 30,129,654**	**$ 4,638,667**	**$ 8,282,107**	**$ 3,723,907**	**$ 5,352,491**	**$ 4,572,241**	**$ 3,560,241**	**$ 300,000**	**$ 30,066,654**
		SOURCES OF FUNDS:										
		General Government		**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Grants		**$ 15,132,000**	$ 2,776,750	$ 1,845,000	$ 1,647,500	$ 3,332,750	$ 2,677,500	$ 2,852,500	$ -	$ 15,132,000
		Storm		**$ 9,225,454**	$ 910,417	$ 1,616,407	$ 2,076,407	$ 2,019,741	$ 1,894,741	$ 707,741	$ 300,000	$ 9,525,454
		Bonds, Misc. Debt		**$ 5,772,200**	$ 5,772,200	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,772,200
		TOTAL SOURCES:		**$ 30,129,654**	**$ 9,459,367**	**$ 3,461,407**	**$ 3,723,907**	**$ 5,352,491**	**$ 4,572,241**	**$ 3,560,241**	**$ 300,000**	**$ 30,429,654**

SIX YEAR FORECAST

STORM DRAINAGE	2023	2024	2025	2026	2027	2028	2029		2024-2029
REVENUES:									
Beginning Fund Balance	$ 9,931,268	$ 10,054,525	$ 13,692,208	$ 6,804,329	$ 4,549,963	$ 2,613,552	$ 1,093,104		$ 10,054,525
Charges for Services (Rates & Utility Tax)	$ 3,425,919	$ 3,772,879	$ 4,135,830	$ 4,533,697	$ 4,923,821	$ 5,347,516	$ 5,780,531		$ 28,494,274
Misc. Revenues	$ 148,750	$ 151,725	$ 154,760	$ 157,855	$ 161,012	$ 164,232	$ 167,517		$ 957,100
Grants	$ 575,000	$ 2,776,750	$ 1,845,000	$ 1,647,500	$ 3,332,750	$ 2,677,500	$ 2,852,500		$ 15,132,000
Debt Proceeds	$ -	$ 5,772,200	$ -	$ -	$ -	$ -	$ -		$ 5,772,200
TOTAL REVENUES	**$ 14,080,937**	**$ 22,528,079**	**$ 19,827,797**	**$ 13,143,380**	**$ 12,967,546**	**$ 10,802,800**	**$ 9,893,651**		**$ 60,410,099**
EXPENDITURES:									
O & M (including Admin.)	$ 4,026,412	$ 4,147,204	$ 4,271,620	$ 4,399,769	$ 4,531,762	$ 4,667,715	$ 4,807,746		$ 26,825,818
Debt Service	$ -	$ -	$ 419,741	$ 419,741	$ 419,741	$ 419,741	$ 419,741		$ 2,098,704
Capital	$ -	$ 4,688,667	$ 8,332,107	$ 3,773,907	$ 5,402,491	$ 4,622,241	$ 3,610,241		$ 30,429,654
TOTAL EXPENSES	**$ 4,026,412**	**$ 8,835,871**	**$ 13,023,469**	**$ 8,593,417**	**$ 10,353,994**	**$ 9,709,697**	**$ 8,837,728**		**$ 59,354,176**
ENDING FUND BALANCE	**$ 10,054,525**	**$ 13,692,208**	**$ 6,804,329**	**$ 4,549,963**	**$ 2,613,552**	**$ 1,093,104**	**$ 1,055,923**		**$ 1,055,923**
UTILITY RESERVE POLICY (20% O&M + Debt Service)	*$ 829,441*	*$ 938,272*	*$ 963,902*	*$ 990,301*	*$ 1,017,491*	*$ 1,045,497*			
Rate Increases	8.5%	8.5%	8.0%	8.0%	7.0%	7.0%	6.5%		

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR:

SD-01

PROGRAM TITLE: **Land Acquisition - Wetland / Habitat Conservation**

PROGRAM DESCRIPTION:
Reserve funds for the acquisition of lands for stormwater-related projects requiring wetland mitigation, preservation, or enhancement, and general habitat conservation. Considered projects include former Brewery properties (60% present value), Kirsop-area wetlands, and Deschutes/WRIA 13 wetlands.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: E Linwood / M Street Outfall Projects PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -								$ -
Land & R-O-W		$ 3,375,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 650,000	$ 125,000		$ 3,375,000
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 3,375,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 125,000**	**$ -**	**$ 3,375,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 1,687,500	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 62,500		$ 1,687,500
Water/Sewer/Storm		$ 1,687,500	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 325,000	$ 62,500		$ 1,687,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 3,375,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 650,000**	**$ 125,000**	**$ -**	**$ 3,375,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-03

SD-02

PROGRAM TITLE: **Tumwater Valley Regional Facility**

PROGRAM DESCRIPTION:
Project includes the construction of a regional facility for treatment and detention of discharge from 2 major outfalls - M Street Basin and Littlerock/2nd Avenue, with a drainage area of approximately 200 acres. Project includes outfall retrofit as a constructed wetland, walking trail, educational signage, wetland mitigation, and electrical realignment to treat stormwater discharges to the Deschutes River. Planning and design is largely complete; completion of permitting, mitigation, and construction are dependent on grant funding.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 368,000	$ 390,000		$ 65,000	$ 125,000	$ 125,000	$ 75,000			$ 758,000
Land & R-O-W	$ 202,000	$ 225,000			$ 225,000					$ 427,000
Construction		$ 3,300,000				$ 1,500,000	$ 1,800,000			$ 3,300,000
Equipment		$ -			.					$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 570,000**	**$ 3,915,000**	**$ -**	**$ 65,000**	**$ 350,000**	**$ 1,625,000**	**$ 1,875,000**	**$ -**	**$ -**	**$ 4,485,000**
Sources of Funds:										
General Government		$ -								$ -
Grants	$ 55,000	$ 3,762,500			$ 262,500	$ 1,625,000	$ 1,875,000			$ 3,817,500
Water/Sewer/Storm	$ 515,000	$ 152,500		$ 65,000	$ 87,500	$ -	$ -			$ 667,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 570,000**	**$ 3,915,000**	**$ -**	**$ 65,000**	**$ 350,000**	**$ 1,625,000**	**$ 1,875,000**	**$ -**	**$ -**	**$ 4,485,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-05 / SD-06

SD-03

PROGRAM TITLE: **Deschutes Habitat Restoration Projects**

PROGRAM DESCRIPTION:
Project will design and implement habitat enhancement and sediment reduction projects in support of Total Maximum Daily Load (TMDL) compliance actions relating to shade coverage and riparian habitat and water quality enhancements along the Descutes River and its tributaries, as outlined in the City's Shoreline Management Plan and Deschutes Habitat Restoration Plan. Projects include evaluation and restoration of riverbank erosion along Tumwater Valley Drive, Pioneer Park, and Desoto Canyon.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: NPDES Permit / Shoreline Management Plan PAGE# Multiple

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 270,000	$ 125,000	$ 125,000	$ 20,000					$ 270,000
Land & R-O-W		$ -								$ -
Construction		$ 710,000		$ 450,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000		$ 710,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 980,000**	**$ 125,000**	**$ 575,000**	**$ 85,000**	**$ 65,000**	**$ 65,000**	**$ 65,000**	**$ -**	**$ 980,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 948,750	$ 93,750	$ 575,000	$ 85,000	$ 65,000	$ 65,000	$ 65,000		$ 948,750
Water/Sewer/Storm		$ 31,250	$ 31,250	$ -	$ -	$ -	$ -	$ -		$ 31,250
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 980,000**	**$ 125,000**	**$ 575,000**	**$ 85,000**	**$ 65,000**	**$ 65,000**	**$ 65,000**	**$ -**	**$ 980,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-06

SD-04

PROGRAM TITLE: **Emerging Projects**

PROGRAM DESCRIPTION:
This funding would be used to deal with unanticipated capital facilities needs that arise throughout the year. Typically, they would be used for construction or modification of City facilities in conjunction with construction by private development, or to deal with problems that may occur.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ -		$ -						$ -
Land & R-O-W		$ -								$ -
Construction		$ 300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000		$ 300,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 300,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ -**	**$ 300,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm		$ 300,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000		$ 300,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 300,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ -**	**$ 300,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-07

SD-05

PROGRAM TITLE: **East Linwood Basin Outfall Retrofit**

PROGRAM DESCRIPTION:
Project will re-evaluate conceptual design previously prepapred to retrofit a stormwater drainage outfall from the East Linwood basin. Initial evaluations of flow and water quality impacts to the Deschutes River were completed during an initial grant-funded design phase in 2014-2015; 2022 Ecology funding for a second alternatives analysis to avoid wetland impacts did not result in a feasible alternative. Other funding sources will be pursued for design completion, permitting, mitigation, and construction. The project aims to address stormwater impacts including discharge velocity, shoreline erosion, and water quality.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 120,000	$ 420,000		$ 45,000	$ 225,000	$ 150,000				$ 540,000
Land & R-O-W		$ 250,000			$ 250,000					$ 250,000
Construction		$ 1,500,000			$ 500,000	$ 1,000,000				$ 1,500,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 120,000**	**$ 2,170,000**	**$ -**	**$ 45,000**	**$ 975,000**	**$ 1,150,000**	**$ -**	**$ -**	**$ -**	**$ 2,290,000**
Sources of Funds:										
General Government		$ -								$ -
Grants	$ 120,000	$ 2,170,000		$ 45,000	$ 975,000	$ 1,150,000				$ 2,290,000
Water/Sewer/Storm		$ -								$ -
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 120,000**	**$ 2,170,000**	**$ -**	**$ 45,000**	**$ 975,000**	**$ 1,150,000**	**$ -**	**$ -**	**$ -**	**$ 2,290,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO. 2020033
NEW: No
PRIOR: SD-11

SD-06

PROGRAM TITLE: **Sapp Road Culvert Replacement**

PROGRAM DESCRIPTION:
This project will replace the existing culvert at Sapp Road, which, due to its size, gradient and elevation, has become a fish passage barrier to upstream and downstream migration. The City will work with local salmon experts and the Washington State Department of Fish and Wildlife to complete design; construction to be funded in future years when grants are available. This project is dependent on receiving grant funding.

IS PROJECT RECOMMENDED BY PLAN/PC YES PLAN: Shoreline Master Plan, Restoration program PAGE# 31

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 265,000	$ -								$ 265,000
Land & R-O-W		$ 125,000	$ 125,000							$ 125,000
Construction		$ 2,283,000	$ 2,283,000							$ 2,283,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 265,000**	**$ 2,408,000**	**$ 2,408,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,673,000**
Sources of Funds:										
General Government		$ -								$ -
Grants	$ 80,000	$ 2,358,000	$ 2,358,000							$ 2,438,000
Water/Sewer/Storm	$ 185,000	$ 50,000	$ 50,000							$ 235,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 265,000**	**$ 2,408,000**	**$ 2,408,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,673,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-11

SD-07

PROGRAM TITLE: **Kirsop Road Stormwater Improvements**

PROGRAM DESCRIPTION:
To address flooding along the north/south segment of Kirsop Road SW adjacent to Fish Trap Creek; project will replace existing undersized culvert with 8' x 2' box culvert, install and/or regrade existing swales along the west half of this segment adjacent to the Fish Trap Creek crossing, and install a water quality treatment facility to treat stormwater runoff from the paved surface.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: Annexation Area Drainage Study, #7.4 PAGE# 48

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 155,250			$ 62,500	$ 92,750				$ 155,250
Land & R-O-W		$ 75,000				$ 75,000				$ 75,000
Construction		$ 412,500					$ 412,500			$ 412,500
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 642,750**	**$ -**	**$ -**	**$ 62,500**	**$ 167,750**	**$ 412,500**	**$ -**	**$ -**	**$ 642,750**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 580,250				$ 167,750	$ 412,500			$ 580,250
Water/Sewer/Storm		$ 62,500			$ 62,500	$ -	$ -			$ 62,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 642,750**	**$ -**	**$ -**	**$ 62,500**	**$ 167,750**	**$ 412,500**	**$ -**	**$ -**	**$ 642,750**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-12

SD-08

PROGRAM TITLE: **54th & Kirsop Road Flooding Reduction**

PROGRAM DESCRIPTION:
An undersized drainage ditch flowing east toward Percival Creek on the north side of 54th Avenue (Trosper) has led to localized flooding issues. Natural topography suggests this flow was redirected toward Percival Creek from Fish Pond Creek prior to the construction of 54th Avenue. This project will divert stormwater flows to the natural drainage course through the installation of a cross culvert along the west side of Kirsop Road at its intersection with 54th. Flows will continue south through existing ditches along the west side of Kirsop Road.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: Annexation Area Drainage Study #7.6 PAGE# 49

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 37,500	$ 37,500							$ 37,500
Land & R-O-W		$ -								$ -
Construction		$ 250,000		$ 250,000						$ 250,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 287,500**	**$ 37,500**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 287,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm		$ 287,500	$ 37,500	$ 250,000						$ 287,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 287,500**	**$ 37,500**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 287,500**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-13

SD-09

PROGRAM TITLE: **66th Ave Culvert Replacement**

PROGRAM DESCRIPTION:
Culvert #26 has been identified as undersized in the Annexation Area Drainage Study, in project #7.2. The existing 46" x 72" CMP Arch Pipe culvert conveys Fish Pond Creek at 66th Avenue. The culvert is recommended to be replaced with two 48" diameter culvert pipes.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Annexation Area Drainage Study PAGE# 47

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 500,000				$ 150,000	$ 350,000			$ 500,000
Land & R-O-W		$ -								$ -
Construction		$ 2,500,000						$ 2,500,000		$ 2,500,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 3,000,000**	**$ -**	**$ -**	**$ -**	**$ 150,000**	**$ 350,000**	**$ 2,500,000**	**$ -**	**$ 3,000,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 2,500,000						$ 2,500,000		$ 2,500,000
Water/Sewer/Storm		$ 500,000				$ 150,000	$ 350,000			$ 500,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 3,000,000**	**$ -**	**$ -**	**$ -**	**$ 150,000**	**$ 350,000**	**$ 2,500,000**	**$ -**	**$ 3,000,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-15

SD-10

PROGRAM TITLE: **North Custer Way Stormdrain Redirection**

PROGRAM DESCRIPTION:
Stormwater flows in the vicintiy of Capitol Boulevard and Custer Way enter an inadequate system under the Capitol Boulevard Bridge that surcharges due to its configuration. This project is being phased to better align with utility and transportation projects. Phase 1, Complete: Upsizing and treatment for Custer Way from Boston Street to east of Capitol Blvd; Phase 2 - Extend Phase 1 improvements along the Brewhouse Tower access road from Custer Way to the existing discharge area allowing for planned stromwater redirection. This project will increase the volume of stormwater that is treated and ease potential problems associated with erosion due to stormwater under the bridge on the former brewery property.

IS PROJECT RECOMMENDED BY PLAN/POLICY? No PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 45,000	$ 75,000						$ 75,000		$ 120,000
Land & R-O-W	$ -	$ 37,500						$ 37,500		$ 37,500
Construction	$ 630,000	$ -							$ 300,000	$ 930,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 675,000**	**$ 112,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 112,500**	**$ 300,000**	**$ 1,087,500**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm		$ 112,500						$ 112,500	$ 300,000	$ 412,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 112,500**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 112,500**	**$ 300,000**	**$ 412,500**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-18

SD-11

PROGRAM TITLE: **Beehive Industrial Area Stormwater Improvements**

PROGRAM DESCRIPTION:
Stormwater improvements are needed in the Beehive Industrial Area to address poor conveyance, reduce flooding and improve water quality in stormwater runoff. Improvements include ditch rehabilitation, driveway culvert replacement and installation, and new bioretention and conveyance structures along Joppa St. and Lambskin Rd.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 150,000	$ 150,000							$ 150,000
Land & R-O-W		$ -								$ -
Construction		$ 750,000		$ 750,000						$ 750,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 900,000**	**$ 150,000**	**$ 750,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 900,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 562,500		$ 562,500						$ 562,500
Water/Sewer/Storm		$ 337,500	$ 150,000	$ 187,500						$ 337,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 900,000**	**$ 150,000**	**$ 750,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 900,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources and Sustainability
PROJECT NO. 2016025
NEW: No
PRIOR: SD-13

SD-12

PROGRAM TITLE: **City Operations and Maintenance Facility Relocation**

PROGRAM DESCRIPTION:
This project includes the demolition, master planning, design and construction for a new Water Resources & Sustainability Operations and Maintenance Facility at the City's Trails End Drive property. Site costs are distributed 34% General Fund, 33% Water, 17% Sewer, and 17% Storm. Offsite mitigation costs are distributed 50% General Fund and Transportation CFP, 24% Water, 13% Sewer, and 13% Storm. Construction will use debt financing either revenue bond or PWTF loan. Debt payments are included in expenditures on cover sheet.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: City Campus Master Plan PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 184,900	$ 359,100	$ 359,100							$ 544,000
Land & R-O-W		$ -								$ -
Construction		$ 4,571,100	$ 507,900	$ 4,063,200						$ 4,571,100
Equipment		$ 257,000		$ 257,000						$ 257,000
Other (incl. 1% for Arts)		$ 2,683,704	$ 84,500	$ 920,241	$ 419,741	$ 419,741	$ 419,741	$ 419,741		$ 2,683,704
TOTAL EXPENSES	**$ 184,900**	**$ 7,870,904**	**$ 951,500**	**$ 5,240,441**	**$ 419,741**	**$ 419,741**	**$ 419,741**	**$ 419,741**	**$ -**	**$ 8,055,804**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ 184,900	$ 2,098,704		$ 419,741	$ 419,741	$ 419,741	$ 419,741	$ 419,741		$ 2,283,604
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ 5,772,200	$ 5,772,200							$ 5,772,200
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 184,900**	**$ 7,870,904**	**$ 5,772,200**	**$ 419,741**	**$ 419,741**	**$ 419,741**	**$ 419,741**	**$ 419,741**	**$ -**	**$ 8,055,804**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: GG-25 / SD-20

SD-13

PROGRAM TITLE: **Golf Course Drainage System Repairs**

PROGRAM DESCRIPTION:
The original drainage system designed to convey storm water from Henderson Blvd through the golf course is failing and creating sink holes on fairways #3 and #18. The large galvanized pipe installed in 1969 needs to be replaced. This project will include an engineering assesment to evaluate drainage impacts on sanitary sewer lines, integration of conveyance with MS4, and compliance with TMDL water quality regulations.

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 60,000	$ 60,000							$ 60,000
Land & R-O-W		$ -								$ -
Construction		$ 450,000		$ 450,000						$ 450,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 510,000**	**$ 60,000**	**$ 450,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 510,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 337,500		$ 337,500						$ 337,500
Water/Sewer/Storm	$ -	$ 172,500	$ 60,000	$ 112,500	$ -	$ -	$ -	$ -	$ -	$ 172,500
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 510,000**	**$ 60,000**	**$ 450,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 510,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-16

SD-14

PROGRAM TITLE: **Enterprise Resource Planning Business System**

PROGRAM DESCRIPTION:
Replacement and implementation of the current ERP System (Tyler Eden), currently estimated at approximately $2.5 million. The City currently uses Tyler Technology's Eden program, which is no longer supported or upgraded. This system manages the billing and financial programs for the utilities, among other critical functions for the City, like payroll and permitting. The cost for both vendor fees, technology, and City staff time to implement is split between General Fund (50%) and the Water, Sewer and Storm utilities (50%).

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ -								$ -
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other (Software, etc.))	$ 200,008	$ 200,000	$ 66,667	$ 66,667	$ 66,667					$ 400,008
TOTAL EXPENSES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ 200,008	$ 200,000	$ 66,667	$ 66,667	$ 66,667					$ 400,008
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 200,008**	**$ 200,000**	**$ 66,667**	**$ 66,667**	**$ 66,667**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 400,008**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR:

SD-15

PROGRAM TITLE: **Capitol Blvd Storm Upsizing**

PROGRAM DESCRIPTION:
Replace undersized and deteriorating infrastructure on Capitol Blvd. This project will be completed in several phases and often in conjunction with transportation improvement projects. Construction work prior to 2024 completed in the vicinity of Capitol Blvd and Trosper Rd. Construction work in 2026 will include the vicinity of Capitol Blvd and X St.

IS PROJECT RECOMMENDED BY PLAN/PC YES PLAN: Tumwater Valley Regional Facility Hydraulics Report PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ 200,000	$ -								$ 200,000
Land & R-O-W		$ -								$ -
Construction	$ 675,000	$ 650,000			$ 650,000					$ 1,325,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ 875,000**	**$ 650,000**	**$ -**	**$ -**	**$ 650,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,525,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ 875,000	$ 650,000			$ 650,000					$ 1,525,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ 875,000**	**$ 650,000**	**$ -**	**$ -**	**$ 650,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,525,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR:

SD-16

PROGRAM TITLE: **Crites Stormwater Pond Improvements**

PROGRAM DESCRIPTION:
Improvements are needed in the Mottman Industrial Area to improve conveyance to Crites Pond and increase capacity of the pond. Improvements are also needed to the pond to increase treatment and infiltration rates to effectivley reduce local flooding during rain events.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: Mottman Drainage Evaluation PAGE# 15

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 250,000			$ 250,000					$ 250,000
Land & R-O-W		$ -								$ -
Construction		$ 900,000				$ 400,000	$ 500,000			$ 900,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 1,150,000**	**$ -**	**$ -**	**$ 250,000**	**$ 400,000**	**$ 500,000**	**$ -**	**$ -**	**$ 1,150,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ -	$ 1,150,000	$ -	$ -	$ 250,000	$ 400,000	$ 500,000	$ -	$ -	$ 1,150,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 1,150,000**	**$ -**	**$ -**	**$ 250,000**	**$ 400,000**	**$ 500,000**	**$ -**	**$ -**	**$ 1,150,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: Yes
PRIOR:

SD-17

PROGRAM TITLE: **29th Avenue SW Stormwater Improvements**

PROGRAM DESCRIPTION:
This project intends to help alleviate flooding issues identified along Crites Steet and RW Johnson Blvd SW. The project includes regrading right-of-ways along 29th Ave SW, and improving storage and conveyance of stormwater by re-grading swales and installing driveway culverts.

IS PROJECT RECOMMENDED BY PLAN/POLICY? Yes PLAN: Mottman Drainage Evaluation PAGE# 22

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 165,000			$ 165,000					$ 165,000
Land & R-O-W		$ -								$ -
Construction		$ 600,000				$ 600,000				$ 600,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 765,000**	**$ -**	**$ -**	**$ 165,000**	**$ 600,000**	**$ -**	**$ -**	**$ -**	**$ 765,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ -	$ 765,000			$ 165,000	$ 600,000				$ 765,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 765,000**	**$ -**	**$ -**	**$ 165,000**	**$ 600,000**	**$ -**	**$ -**	**$ -**	**$ 765,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-19

SD-18

PROGRAM TITLE: **Tumwater Hill Basin Assessment**

PROGRAM DESCRIPTION:
Widespread conveyance infrastructure is failing in the Tumwater Hill neighborhood. Flow control and water quality BMPs are largely absent from area, which drains directly to the DeSoto Canyon. City has performed some spot repairs on failing infrastructure, but need a more comprehensive approach. Project will perform detailed study to inventory and assess infrastructure throughout neighborhood and develop recommendations for repair and improvement.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: 2017 Stormwater Comprehensive Management Plan PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design		$ 150,000	$ 75,000	$ 75,000						$ 150,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 150,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 150,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm		$ 150,000	$ 75,000	$ 75,000						$ 150,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 150,000**	**$ 75,000**	**$ 75,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 150,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: No
PRIOR: SD-22

SD-19

PROGRAM TITLE: **Resource Conservation & Sustainability**

PROGRAM DESCRIPTION:
Funding to support the implementation of City Green Team and Urban Forestry Plan initiatives and recommendations identified in the Thurston Climate Mitigation Plan.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: UMFP / TCMP / Green Team Annual Report PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 130,000	$ 65,000	$ 65,000						$ 130,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 130,000**	**$ 65,000**	**$ 65,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 130,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ -	$ 130,000	$ 65,000	$ 65,000						$ 130,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 130,000**	**$ 65,000**	**$ 65,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 130,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: YES
PRIOR:

SD-20

PROGRAM TITLE: **2028 Comprehensive Stormwater Management Plan Update**

PROGRAM DESCRIPTION:
Project will update the 2018 Comprehensive Stormwater Management Plan, intending to review and update program capacities for NPDES-related programs, technical assistance programs, operations and maintenance, funding sources and staffing levels. Regular updates to the Comprehensive Stormwater Management Plan are required through the City's NPDES permit. Project is due to growth and will integrate findings and recommendations of basin assessments completed in previous years.

IS PROJECT RECOMMENDED BY PLAN/POLICY? YES PLAN: NPDES Permit PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 250,000				$ 75,000	$ 175,000			$ 250,000
Land & R-O-W		$ -								$ -
Construction		$ -								$ -
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ 175,000**	**$ -**	**$ -**	**$ 250,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ -								$ -
Water/Sewer/Storm	$ -	$ 250,000				$ 75,000	$ 175,000			$ 250,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ 175,000**	**$ -**	**$ -**	**$ 250,000**

CITY OF TUMWATER CAPITAL FACILITIES PLAN WORKSHEET

CONTACT: Dan Smith
FUND: Storm Drain
DEPT: Water Resources & Sustainability
PROJECT NO.
NEW: YES
PRIOR:

SD-21

PROGRAM TITLE: **E Dennis Street Outfall Retrofit**

PROGRAM DESCRIPTION:
Runoff from E Dennis Street and upstream roadways currently discharges untreated to unnamed surface waters tributary to the Deschutes River. Project includes evaluation of upstream drainage structures, treatment and erosion control retrofit of outfall and structures upstream of MH#10275.

IS PROJECT RECOMMENDED BY PLAN/POLICY? PLAN: PAGE#

FINANCIAL DATA

EXPENSES	PRIOR YRS	6YR TOTAL	2024	2025	2026	2027	2028	2029	FUTURE YEARS	GRAND TOTAL
Capital Costs:										
Planning & Design	$ -	$ 75,000					$ 75,000			$ 75,000
Land & R-O-W		$ -								$ -
Construction		$ 288,000						$ 288,000		$ 288,000
Equipment		$ -								$ -
Other		$ -								$ -
TOTAL EXPENSES	**$ -**	**$ 363,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ 288,000**	**$ -**	**$ 363,000**
Sources of Funds:										
General Government		$ -								$ -
Grants		$ 225,000						$ 225,000		$ 225,000
Water/Sewer/Storm	$ -	$ 138,000					$ 75,000	$ 63,000		$ 138,000
G.O. Bonds: NonVtd		$ -								$ -
G.O. Bonds: Voted		$ -								$ -
Revenue Bonds		$ -								$ -
L.I.D.'s		$ -								$ -
Other		$ -								$ -
TOTAL SOURCES	**$ -**	**$ 363,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 75,000**	**$ 288,000**	**$ -**	**$ 363,000**

APPENDIX "A"

CITY OF TUMWATER
PUBLIC FACILITIES INVENTORY

CITY OF TUMWATER PUBLIC FACILITIES INVENTORY

Updated June 2021

ASSET DESCRIPTION					ASSET STATUS				
Facility	Location	Date Acquired / Constructed	Cost to Acquire / Construct	Estimated Present Value	Size / Capacity	Present Condition	Improvements Required	Year Needed	Estimated Cost
PARKS									
Community Parks									
Historical Park	777 Simmons Road SW	1980	$60,000		17 Acres	Active Park			
Pioneer Park	5801 Henderson Boulevard SE	1987 / 1994	$2,769,923		85 Acres	Active Park			
Neighborhood Parks									
Deschutes Valley Park	"T" Street	August 1998	$320,000		16 Acres	Undeveloped			
Tumwater Hill Park	3115 Ridgeview Court SW	2014	$35,000		31.5 Acres	Active Park			
Isabella Bush	1436 Linwood Avenue SW	Oct-89	$225,000		19.28 Acres	Active Park			
Isabella Bush Parcel 33204000208	1414 Linwood Avenue SW	November 2017	$187,700	$100,000	0.25 Acres	Active Park			
Kindred Park	9168 Aster St SE	2022/23	$1,337,000		3.44 Acres	Active Park			
Pocket Parks									
Overlook Park	1205 Barnes Boulevard SW	1991	Mitigation		1.27 Acres	Active Park			
5th & Grant Park	515 Hayes Street SW				0.3 Acres	Active Park			
Palermo Park	303 "O" Street SE				0.3 Acres	Active Park			
"V" Street Park	415 "V" Street SE				0.6 Acres	Active Park			
Jim Brown Park	535 Bates Street SW	2003	$216,731		1.32 Acres	Active Park			
Barclift Park	690 Barclift Lane SE	1998 / 2007	$427,000		3 Acres	Active Park			
Coralie Carlyon Park	Sunset Way and Fairfield Road SE	1953			.13 Acres	Active Park			
Golf Courses									
Tumwater Valley Municipal Golf Course	4611 Tumwater Valley Drive SE	May 1996	$2,700,000		200 Acres	Golf Course			
Open Space / Trails									
BPA Powerlines					6 Acres	Undeveloped			
SW Neighborhood Park	6725 Littlerock Road SW	August 1995	$554,200		17.6 Acres	Undeveloped			
Sapp Road Park	2332 Sapp Road SW	1999	Mitigation		11.8 Acres	Undeveloped			
Percival Creek Open Space	Mottman Road / 2 Parcels					Undeveloped			
Barnes Blvd Trail		2014	$100,000		6.6 Acres				
Tumwater Hills Trails Parcel(s) 75320299900	Somerset Hill	December 2018	Donation		5.73 Acres	Active Park			
WATER SYSTEM									
Water Sources									
Well #1 - Palermo	303 "O" Street SE	1931				Out of Service			
Well #2 - Palermo	303 "O" Street SE	1939				Decommissioned 2012			
Well #3 - Palermo	303 "O" Street SE	1944			260 gpm	In Service			
Well #4 - Palermo	303 "O" Street SE	1949			350 gpm	In Service			
Well #5 - Palermo	303 "O" Street SE	1965				Decommissioned 2013			
Well #6 - Palermo	303 "O" Street SE	1967			350 gpm	In Service	Well Rehab /	2005	$60,000
Well #7 - Israel Road	211 Israel Road SW	1968				Removed, Replaced by #11			
Well #8 - Palermo	303 "O" Street SE	1982			480 gpm	In Service			
Well #9 - Airport 1	700 76th Avenue SW	1986 / 1943			330 gpm	In Service			
Well #10 - Airport 2	655 Tumwater Boulevard SW	1986 / 1972			440 gpm	In Service			
Well #11 - Israel Road	211 Israel Road SW	1993			310 gpm	In Service			
Well #12 - Bush Middle Sch.	8260 Kimmie Street SW (Port)	1995			675 gpm	In Service			
Well #13 - South of Airport		1995				Decommissioned 2005			
Well #14 - Bush Middle Sch.	8262 Kimmie Street SW (Port)	1995			2350 gpm	In Service			
Well #15 - Tumwater Blvd.	451 - 73rd Avenue SW	1992			650 gpm	In Service			
Well #16 - Palermo	303 "O" Street SE	2012	$100,000	$100,000	400 gpm	Under Development			
Well #17 - Palermo	303 "O" Street SE	2013	$100,000	$100,000	400 gpm	Under Development			
Well #20 - Trails End	7738 Arab Drive SE	1991				Decommissioned			
Well #21 - Trails Arena		1991				Decommissioned			
Well #23 - Trails State Svc.		1991				Decommissioned			
Lakeland Manor Water System	4322 60th Ave SW	2010 / 1970			125 gpm	In Service			
Lathrop Industrial Water System		2009			100 gpm	In Service			
Water Reservoirs									
350 Zone (Barnes)	215 Barnes Boulevard SW	1995			4 Mill. Gallon	In Service			
454 Zone (Mottman)	3288 Vista Verde Lane SW	1985			1.08 Mill. Gallon	In Service			
549 Zone (Tree Tank)	1215 Barnes Boulevard SW	1991			1 Mill. Gallon	In Service			
Airport	700 - 76th Avenue SW	1986 / 1972			0.2 Mill. Gallon	Out of Service			
Booster Stations									
"C" Street 454 Zone	602 "C" Street SW	1985			850 gpm	In Service			
"C" Street #2	Individual Pump, Not a Station					In Service			
"C" Street #3	Individual Pump, Not a Station					In Service			
"C" Street #4	Individual Pump, Not a Station					In Service			
"C" Street 549 Zone	604 "C" Street SW	1991			450 gpm	In Service			
"C" Street #6	Individual Pump, Not a Station					In Service			
"C" Street #7	Individual Pump, Not a Station					In Service			
Palermo Clearwell #1	Part of the Treatment Plant					In Service			
Palermo Clearwell #2	Part of the Treatment Plant					In Service			
Palermo Clearwell #3	Part of the Treatment Plant					In Service			
Palermo Clearwell #4	Part of the Treatment Plant					In Service			
Bush Clearwell #1	Part of the Treatment Plant					In Service			
Bush Clearwell #2	Part of the Treatment Plant					In Service			
Bush Mountain	4000 Bush Mountain Drive SW	1999			200 gpm	In Service			
Bush Mountain #2	Individual Pump, Not a Station					In Service			
Water Treatment Facilities									
Palermo Aeration Tower	303 "O" Street SE	1998			2000 gpm	In Service			

CITY OF TUMWATER PUBLIC FACILITIES INVENTORY

Updated June 2021

ASSET DESCRIPTION					ASSET STATUS				
Facility	Location	Date Acquired / Constructed	Cost to Acquire / Construct	Estimated Present Value	Size / Capacity	Present Condition	Improvements Required	Year Needed	Estimated Cost
Bush Aeration Tower	8260 Kimmie Street SW	1999			3000 gpm	In Service			
Pressure Reducing Valves (PRVs)									
Irving Street	1116 Irving Street SW					In Service			
R.W. Johnson	3725 RW Johnson Blvd. SW	1999				Removed 2013			
Somerset Hill Drive	3135 Somerset Hill Drive SW	1999				In Service			
Crosby Boulevard	2002 Sapp Road SW	2013	$88,000	$88,000	8-inch	In Service			
Generators									
#1 - "C" Street Booster Station	600 "C" Street SW	1990			100 kw	In Service			
#2 - Palermo Well Field	303 "O" Street SE					Removed from Service			
#3 - Palermo Well Field	303 "O" Street SE	1991			200 kw	In Service	Replacement	2014	$150,000
#4 - Mottman Reservoir	1215 Barnes Boulevard SW	2002			8.5 kw	In Service			
#5 - Bush Well Field	8260 Kimmie Street SW	2002			500 kw	In Service			
Water Meters					**7458**	**Total**			
3/4" Meters	UGA wide		$6,352		6711	In Service			
1" Meters	UGA wide		$330		297	In Service			
1-1/2" Meters	UGA wide		$229		218	In Service			
2" Meters	UGA wide		$233		187	In Service			
3" Meters	UGA wide		$5		39	In Service			
4" Meters	UGA wide		$3		2	In Service			
6" Meters	UGA wide		$2		2	In Service			
Hydrants	UGA wide				1,580	In Service			
Telemetry System	All Wells & Boosters					In Service	Upgrade	2014	$35,000
SANITARY SEWER SYSTEM									
Lift Stations									
#1 - Lake Park Drive	1021 Linwood Avenue SW	1965			100 gpm	Out of Service			
#2 - Lana Lane	1670 Lana Lane SW	1968			250 gpm	In Service			
#3 - Terminal (Airport)	7581 Terminal Street SW	1980			750 gpm	In Service			
#4 - Trosper Road	2401 Trosper Road SW	1995				In Service			
#5 - Palermo	564 "M" Street SE	1975			400 gpm	In Service			
#6 - Lloyd	4151 Lloyd Street SE	1965			100 gpm	In Service			
#7 - Metalcraft	210 Custer Way SW	1956 / 1976; Replcd 2008			400 gpm	In Service			
#8 - Gold Creek #1	2326 Miner Drive SW	1975			130 gpm	Removed 2008			
#9 - Belmore	6924 Belmore Court SW	1979			90 gpm	In Service			
#10 - Gold Creek #2	6200 Miner Drive SW	1986			100 gpm	In Service			
#11 - The Farm	1015 Surrey Trace SE	1996				In Service			
#12 - Kimmie Street	2120 83rd Avenue SW	1993			100 gpm	In Service			
#13 - Silver Oaks	691 "V" Street SE	1993			100 gpm	In Service			
#14 - Silver Ridge	725 Dennis Street SE	1994			100 gpm	In Service			
#15 - Pioneer Park	5800 Henderson Boulevard SE	1998				In Service			
#16 - The Vistas	3840 Crosby Boulevard SW	1995				Removed			
#17 - Deschutes Ridge (Used to be DS community septic)	1940 79th Avenue SW	2003				In Service			
#18 - A.G. West High School	7242 Littlerock Road SW	2000			350 gpm	Removed 2008			
#19 - Tumwater Heights	899 Anthony Court SW				250 gpm	In Service			
#20 - Camp Kennydell Community Septic (County Owned; City Maintained)						In Service			
#21 - Streamland Estates	2352 Sapp Road SW	2000	$200,000			In Service			
#22 - Bridlewood	8125 Belmonte Drive SE	2002				In Service			
#23 - Kirsop	6502 Belmore Street SW	2004	$367,500		750 gpm	In Service			
#24 - 88th Avenue	799 - 88th Avenue SW					In Service			
#25 - Suncrest (Linwood)	1008 Linwood Avenue SW	2007	$681,210			In Service			
#26 - Tumwater Boulevard	926 Tumwater Boulevard SE	2007	$271,232		520 gpm	In Service			
#27 - Deschutes River Highlands	2131 - 69th Court SE	2007	$269,413		257 gpm	In Service			
#28 - Historical Park	709 Simmons Street SW	2008				In Service			
#29 - Schmidt Place	300 Schmidt Place SW	2008				In Service			
Black Lake Terrace	6135 Black Lake Belmore Road SW	2008				In Service			
Siphon Structures									
#1 - Capitol Siphon Station	102 Boston Street SE					Removed from Service			
#2 - Hixon Drive	408 Hixon Drive SE	1984 / 1992				In Service			
Generators									
#3 - Terminal Lift Station	7100 Cleanwater Lane SW	1993			20 kw	In Service			
#4 - Trosper Lift Station	2401 Trosper Road SW	1995			80 kw	In Service			
#5 - Palermo Lift Station	564 "M" Street SE	1981			30 kw	In Service - Obsolete	Replacement	2020	$25,000
#6 - The Farm Lift Station	801 Silo Court SE	1996			80 kw	In Service			
#7 - Metalcraft Lift Station	210 Custer Way SW	1981; Replcd 2008			45 kw	In Service			
#8 - Portable		1981			30 kw	Obsolete (Retained for Emergency)			
#9 - Pioneer Park Lift Station	5800 Henderson Boulevard SE	1998			35 kw	In Service			
#10 - A.G. West Lift Station		2000			60 kw	Relocated to Kimmie			
#11 - Streamland Lift Station	2311 Sapp Road SW	2000			40 kw	In Service			
#12 - Deschutes Ridge Lift Station	1940 79th Avenue SW	2003			50 kw	In Service			
#13 - Bridlewood Lift Station	8125 Belmonte Drive SW	2002			35 kw	In Service			

CITY OF TUMWATER PUBLIC FACILITIES INVENTORY

Updated June 2021

ASSET DESCRIPTION					ASSET STATUS				
Facility	Location	Date Acquired / Constructed	Cost to Acquire / Construct	Estimated Present Value	Size / Capacity	Present Condition	Improvements Required	Year Needed	Estimated Cost
#14 - Kirsop Lift Station	6402 Belmore Street SW	2004			150 kw	In Service			
#16 - 88th Avenue Lift Station	799 - 88th Avenue SW	2006			62 kw	In Service			
#17 - Kimmie Lift Station	2120 - 83rd Avenue SW	2008			60 k2	In Service			
Suncrest	1008 Linwood Avenue SW	2007			150 kw	In Service			
Tumwater Boulevard	926 Tumwater Boulevard SE	2007			80 kw	In Service			
Deschutes River Highlands	2131 - 69th Court SE	2007			60 kw	In Service			
Silver Oaks	691 "V" Street SE	2007	$44,663		25 kw	In Service			
Black Lake Terrace	6135 Black Lake Belmore Road SW				80 kw	In Service / Not Accepted			
Portable (Baldor)		2009	$33,030						
Community Septic Systems									
Camp Kennydell						In Service			
Telemetry System	Lift Stations					In Service	Upgrade	2014-15	$300,000
STORM DRAINAGE SYSTEM									
Detention Ponds									
Linwood Pond	1436 Linwood Avenue SW	2005	$927,174		19.28 Acres	In Service			
Parkwood South	Hoadly Loop & Middle Street				0.17 Acres	In Service			
Stephens Industrial Tract	25th & Crites				0.87 Acres	In Service	Rehabilitate	2014-15	$60,000
Tumwater Boulevard	Tumwater Boulevard @ Airport	2008				In Service			
Tilley Road	Tilley Road @ 88th					In Service			
Case Road	Case Road @ 88th					In Service			
Tumwater Boulevard East	Tumwater Blvd. East of Bonniewood					In Service			
Irving Street	SW Corner of Irving & Crosby					In Service			
Library	7023 New Market Street SW	1995				In Service			
Fire Station Headquarters	311 Israel Road SW	2000				In Service			
North End Fire Station	405 Linwood Avenue SW					In Service			
Pioneer Park Constructed Wetlands	5801 Henderson Boulevard SW	1987 / 1994				In Service			
Palermo Aeration Lagoon	564 "M" Street SE					In Service			
Mottman Pond	Mottman Road				5.0 Acres	In Service			
Somerset Hill Drive Rain Gardens	Somerset Hill Drive	2015				In Service			
Cleveland Ave Outfall Swale	Tumwater Valley MGC	2015				In Service			
E Street Outfall	E Street	2015				In Service			
Tumwater Regional Stormwater Facility	M Street					Under Development			
STREET SYSTEM									
Bridges									
Boston Street Bridge	SID #08545200	Const. 1915; Rebuilt 2004				In Service			
Capitol Boulevard Bridge	SID #08545300	1937				In Service			
Bishop Pedestrian Crossing	State-Owned, City Maintains	1987				In Service			
Henderson Boulevard Bridge	SID #7970300	1961				In Service			
Traffic Signals									
Capitol / Carlyon	LED Heads, Audible Pedestrian, Video Detection & New Controller in 2013	1976; 2013				In Service	New Poles, Arms, & Cabinet		$120,000
Capitol / Custer		1970				In Service	New Poles, Arms, & Cabinet		$120,000
Custer / 2nd Avenue		1999				In Service	Video Detection		$30,000
Custer / Cleveland / North		1996; 2013				In Service			
Capitol / "E" Street		2015				In Service			
Capitol / Linwood		2015				In Service			
Capitol / Trosper		1975				In Service	Finish Video Detection		$5,000
Trosper / I-5 On-Ramps	State-Owned					In Service			
Trosper / Tyee	State-Owned					In Service			
Trosper / 2nd / Littlerock	Upgraded in 2011	1985; 2011	$35,457			In Service			
Trosper / Lake Park Drive	All New Equipment, inc. Video & Audible	2012	$201,285			In Service			
Capitol / Lee		1983				In Service	Relocate Pole, Video Detection	Now	$50,000
Capitol / "X" Street		1996				In Service	Video Detection		$30,000
Capitol / Dennis		1973; 2013				In Service			
Capitol / Israel		1986				In Service			
Israel / Linderson Way		2001				In Service	Video Detection		$30,000
Capitol / Tumwater Boulevard		1995				In Service			
Tumwater / Linderson Way		1992; R 2008				In Service			
Tumwater / Henderson Blvd.	Retrofit Signal Heads from Littlerock/Israel;Video Detection & Audible	2012	$110,000			In Service			
Littlerock / A.G. West High Schl.		Const. 1999; Acq. 2008				In Service			
Littlerock @ Fred Meyer		2001	$125,000			In Service			
Littlerock @ Costco/Walmart		2011	$174,097			In Service			
Crosby / Mottman	City- Owned; Olympia Maintains	1999				In Service	Video Detection		$30,000
Crosby / Irving	City- Owned; Olympia Maintains	1999				In Service	Video Detection		$30,000
Henderson / Yelm Highway		2002				In Service			
Henderson / Old 99		2005				In Service	Upgrade Video Detection		$30,000
Henderson / 65th Avenue SE	Annexed in 2016	2012				In Service			

CITY OF TUMWATER PUBLIC FACILITIES INVENTORY

Updated June 2021

ASSET DESCRIPTION					ASSET STATUS				
Facility	Location	Date Acquired / Constructed	Cost to Acquire / Construct	Estimated Present Value	Size / Capacity	Present Condition	Improvements Required	Year Needed	Estimated Cost
Old 99 / 88th Avenue	Annexed in 2016	2002				In Service			
Street Lights									
City-Owned, Metered	City-Wide				1,180	In Service			
City-Owned, Unmetered	City-Wide				280	In Service			
Leased from PSE	City-Wide				418	PSE Maintained			
BUILDINGS & LAND									
Buildings									
City Hall	555 Israel Road SW	1988		$2,298,446	4.13 Acres	In Service			
Public Works Maintenance Bldg.	7200 New Market Street SW	1987		$388,279	4.60 Acres	In Service			
Facilities Building	7007 Capitol Boulevard SW					In Service			
Fire Station Headquarters (T1)	311 Israel Road SW	2000				In Service			
Fire Station T2 (North End)	405 Linwood Avenue SW					In Service			
Old Town Center	215 N 2nd Avenue SW			$863,258	0.71 Acres	In Service			
TVGC Club House	4611 Tumwater Valley Drive	1996				In Service			
TVGC Driving Range Shed	4611 Tumwater Valley Drive	1996				In Service			
TVGC Cart Shed	4611 Tumwater Valley Drive	1996				In Service			
TVGC Maintenance Building	4611 Tumwater Valley Drive	1996			0.72 Acres	In Service			
Timberland Library	7023 New Market Street SW	1995				In Service			
Brew Master's House Museum	602 Deschutes Way				0.29 Acres	In Service			
Crosby House Museum	703 Deschutes Way				0.30 Acres	In Service			
Water Resources Storage Shed	555 Israel Road SW	2008	$4,920			In Service			
Barn	1500 79th Ave SE	2014		$25,000		Vacant			
Barn	7842 Trails End Drive	2014		$25,000		Vacant			
Land									
Parcel #128-21-430400	21st Avenue SW								
Parcel #128-21-430100	Mottman/Percival Creek				1.93 Acres	Undeveloped			
NW Corner - Capitol / Custer	Capitol & Custer								
Palermo Well Field	5200 Palermo Street SW								
Mottman Storm Pond	Mottman Road				5 Acres				
Linwood Property	1436 Linwood Avenue		$191,600		19.28 Acres	Undeveloped			
Black Lake Blvd. Gravel Pit	Black Lake Boulevard				1.0 Acres	Undeveloped			
Parcels #59330100000 & #60910100000	Narrow Strip off Maplewood/ Loete Court				0.06 Acres	Waterline Easement			
Parcel #127-03-320901	Israel Road Overpass				1.42 Acres	Undeveloped			
Carlyon Park	"M" Street & Carlyon				0.13 Acres	Undeveloped			
"C" Street Water Tank Site	"C" Street (4 Parcels)				0.91 Acres				
Mottman Tank Site	1215 Barnes Boulevard				0.78 Acres	Active Reservoir			
Union Cemetery	5925 Littlerock Road				1.65 Acres	In Service			
Calvary Cemetery	Littlerock Road				2.3 Acres	In Service			
Franco Property	516 Simmons Road (2 Parcels)				0.32 Acres	Vacant, Demolished 2004			
Parcel 806-01-900300 & 806-01-400500	DeSoto Canyon					Undeveloped			
Parcel 806-01-400301	SW Corner, 2nd & DeSoto								
Parcel #09250069000	8th & Bates				0.52 Acres	Undeveloped			
Parcel #128-34-442201 & 3401	South 6th Street				0.14 Acres	Undeveloped			
Parcel #09470036001	Delta & Cleveland SE				0.03 Acres	Undeveloped			
Parcel #127-03-240303	Linderson & Dennis				0.23 Acres	Undeveloped			
Parcel #127-03-310101	Dennis / 11th / Linderson				0.35 Acres	Undeveloped			
Parcel #094-70-029000	Cleveland Ave (E Street Extension)	2011	$275,000		3.333 Acres	Undeveloped			
338-70-000300; Lot 3 Bellatorre Binding SP #12-0034TW	4800 Capitol Boulevard - Tumwater Valley Sorm Facility & Open Space	2012	$429,000		27.48 Acres	Undeveloped			
Parcel #791-60-100000	Tract A Teri Del, Div. Two	2012	$9,800			Undeveloped			
Parcel #127-24-120100	2221 93rd Ave. SE, SE Reservoir Sit	2013	$269,000		20 Acres	Undeveloped			
Parcel #127-03-140100	Capitol Blvd - BPA Property					Undeveloped			
Parcel #791-60-100000	300 65th Court SW (Schrader Purchase)					Undeveloped			
Parcel 127-16-310200 & 300	93rd Avenue - SW Wellfield	2010	$301,000		7.07 Acres	Undeveloped			
Parcel 094-70-045000; 094-70-019000; 094-70-020000; 094-70-029000; & 094-70-050000	Tumwater Valley - Brewery Partnership Wellfield - Co-owned with Olympia & Lacey	2008	5,300,000			Undeveloped			
Parcel 127-12-320300	1500 79th Avenue SE	7/18/2014	$800,919	$1,447,500	17 Acres	Arena, Barns, Office			
Parcel 127-12-320400	7842 Trails End Drive SE	7/18/2014	" " "	$599,950	5.4 Acres	Barn			

APPENDIX "B"

TUMWATER SCHOOL DISTRICT No. 33
CAPITAL FACILITIES PLAN

CAPITAL FACILITIES PLAN

2023 – 2029

Tumwater School District

Tumwater, Washington

October 2023

Please contact the

Capital Projects Department with any questions

360-709-7005

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RESOLUTION 02-23-24

A RESOLUTION ADOPTING THE TUMWATER SCHOOL DISTRICT CAPITAL FACILITIES PLAN 2023-2029

WHEREAS, the Tumwater School District No. 33 (hereinafter referred to as "the District") is responsible for providing public educational services at the elementary, middle, and high school levels to students now residing or who will reside in the District; and

WHEREAS, new residential developments have major impacts on the public school facilities in the District; and

WHEREAS, the Growth Management Act (GMA) authorizes a local government to collect impact fees to ensure that adequate facilities are available to serve new growth and development; and

WHEREAS, the State Subdivision Act requires that subdivisions make adequate provisions for schools and school grounds; and

WHEREAS, the District desires to cooperate with the City of Tumwater and Thurston County in implementation of the State Subdivision Act in imposing appropriate mitigating conditions upon development; and

WHEREAS, the District has studied the need for additional school facilities to serve new developments and has developed a Six-Year Capital Facilities Plan for the years 2023-2029; and

WHEREAS, the District has reviewed the cost of providing school facilities needed to serve new development and evaluated the need for new revenues to finance additional facilities; and

WHEREAS, the District has determined there is not sufficient capacity at many of the existing school facilities to accommodate additional students that will be generated by new development unless additional land is acquired and new schools are built; and

WHEREAS, the cumulative effect of additional development is to create additional demand and need for school facilities which cannot be met without the imposition of school impact fees; and

WHEREAS, the impact fee calculations are consistent with methodologies meeting the conditions and tests of RCW 82.02 and the City of Tumwater and Thurston County school impact fee ordinances; and

WHEREAS, the District has determined that the District's Capital Facilities Plan provides for a schedule of impact fees for each type of development activity set forth in the Capital Facilities Plan;

NOW, THEREFORE, IT IS RESOLVED by the Board of Directors of the Tumwater School District No. 33, Thurston County, Washington, as follows:

1. The Board of Directors of Tumwater School District No. 33 hereby adopts the Tumwater School District Capital Facilities Plan 2023-2029 which sets forth, among other things, the need for additional school facilities to serve new development, the cost of providing school facilities, the need for new revenues to finance additional facilities, the methodology for calculating impact fees pursuant to the GMA, and a schedule of GMA impact fees for a number of types of development activity.

2. The Board of Directors of the Tumwater School District No. 33 requests the City of Tumwater and Thurston County to adopt the Capital Facilities Plan 2023-2029 as a part of their capital facilities plan elements and that the Plan be used as a basis for imposition impact fees under the GMA.

NOW, THEREFORE BE IT RESOLVED, that the Board of Directors of Tumwater School District No. 33, Thurston County, Washington, adopts the Capital Facilities Plan 2023-2029 for said purposes stated herein.

ADOPTED this 26th day of October, 2023.

BOARD OF DIRECTORS

ATTEST:

Secretary to the Board

CHAPTER ONE
INTRODUCTION

The six-year Capital Facilities Plan is an annual evaluation of the Tumwater School District capital facilities with a focus on its schools, their capacity and ability to accommodate population growth. The Plan assesses the impact of school enrollment growth, including new students from new residential development on schools and plans accordingly to ensure that adequate school facilities can be provided to meet the additional demand in a timely manner.

Residential development and school construction typically do not occur in an orderly and coordinated manner. While the selection of school sites may precede the construction of new housing, the actual construction of school buildings usually follows the growth in residential home construction by a number of years. This lag in providing school facilities is due to a number of limiting factors. These factors are discussed at length within this document.

Home building in Tumwater School District remains robust. There are 2,375 new single-family house lots and 4,871 new multi-family units that are either undergoing City and County review or being built. This new housing is expected to generate 7,606 new K-12 students in Tumwater School district. The tracking log is included as **Attachment E - New Single- and Multi-Family Housing Developments.**

Tumwater School District retains its reputation as desirable place to live and raise children.

CHAPTER TWO
BACKGROUND-GROWTH LEGISLATION

The Tumwater School District serves residents in the City of Tumwater and portions of Thurston County. The City of Tumwater has adopted a school impact fee ordinance pursuant to the Growth Management Act (GMA). Until 2013, Thurston County provided for school mitigation under the State Environmental Policy Act (SEPA). In 2013, the County adopted a GMA-based Impact Fee Ordinance that includes school impact fees and replaces mitigation under SEPA. The basis for both of these programs is discussed below.

State Environmental Policy Act (SEPA)

In an effort to acknowledge the effect of growth and mitigate those conditions, RCW 43.21C, the State Environmental Policy Act, authorizes local governmental jurisdictions to impose conditions on the approval of development projects subject to SEPA review. In addition, RCW 58.17.110 requires local jurisdictions, in their review of subdivision applications, to determine and make findings that the particular subdivision makes adequate provisions for, among other things, schools and school grounds. The subdivision statute allows for dedication of land, provision of public improvements to serve the subdivision and/or the imposition of mitigation fees as a condition of subdivision approval. Absent a specific finding of appropriate provisions for schools and school grounds, a plat must be denied. There are no avenues for securing school mitigation from projects exempt from SEPA review and not subject to the subdivision statute.

RCW 82.02.020 specifically prohibits imposition of fees on construction of buildings or subdivision of land except for impact fees as defined by statutes (RCW 82.02.050-.090) and except for voluntary agreements. Dedications of land within a proposed plat are not precluded if such dedications are reasonably necessary as a direct result of the proposed development.

RCW 82.02.020 allows voluntary agreements in lieu of a dedication of land or to mitigate an impact as a consequence of development. The voluntary agreements have specific qualifying provisions.

The State Environmental Policy Act prohibits a jurisdiction from requiring a person to pay for a system improvement where that person is otherwise required to pay an impact fee pursuant to RCW 82.02.050 - .090 for those same system improvements. WAC 392-343-032 states that "mitigation payments as provided for in RCW 43.21C.060 of the State Environmental Policy Act may be used by the district as local match funding and may not be substituted for the amount of state assistance that would otherwise be provided for school capital projects."

Growth Management Act

The Growth Management Act (GMA) provides an opportunity for school districts to broaden the source of funds to meet the needs to provide additional school facilities as a

result of growth in residential housing. The Act, originally passed in 1990 and amended in subsequent years, includes elements addressing the impacts of development on municipal corporations, such as school districts.

RCW 58.17.110, the State Subdivision Act, requires denial of any plat unless the county legislative body makes written findings that appropriate provisions are made for schools and school grounds. Dedication of land, provision of public improvements to serve the subdivision, and/or impact fees imposed under the act may be required as a condition of subdivision approval.

RCW 82.02.050 through RCW 82.020.090 set forth the legislative intent and authority to use growth impact fees to assist in capital construction projects.

The intent of the legislation is to ensure adequate public facilities are available to serve new growth, to establish standards which growth pays a proportionate share of the cost of those facilities, and that the fees are not arbitrary or duplicative. In addition, the fees are to be included as part of a capital financing plan which balances impact fees with other sources of public funds. The fees are to reasonably relate to and benefit new growth.

GMA impact fees are imposed through local ordinances which include a schedule adopted for each type of development activity. The schedule is based upon a formula designed to determine the proportionate share of the costs of public facilities necessitated by new development. In the case of school districts, the local city and/or county must adopt the district's plan by reference as a part of the jurisdiction's comprehensive plan.

The fees collected must be earmarked specifically and retained in special interest-bearing accounts and spent only in conformance with the capital facilities plan element of the comprehensive plan. The fees must be expended or encumbered within ten years of receipt, except for extraordinary reasons, or they are to be refunded to the then current property owner.

Finally, fees cannot be collected for system improvements under the GMA if fees are collected under RCW 43.21C.060 (SEPA) for those same improvements.

WAC 362-343-032 addresses the use of impact or mitigation fees by the school district as it relates to OSPI State Funding. Districts are able to use impact fees and/or mitigation fees to assist in capital construction projects as part of the local share for those projects receiving state financial assistance.

Thus, the statutory scheme for school mitigation may involve:

1. Imposition of mitigating conditions under SEPA, based upon adopted policies, to correct specific adverse environmental impacts identified in the environmental documents. RCW 43.21C.060.

2. Satisfaction of mitigating conditions under SEPA, or the State Subdivision Act through a voluntary agreement in lieu of dedication of land or to mitigate a direct impact of a development. RCW 82.02.020.

3. A finding of adequate provision for schools under the State Subdivision Act based upon dedication of land or provision of improvements for a subdivision of land. RCW 58.17.110.

4. Imposition of impact fees for system improvements reasonably related and beneficial to new development, and identified in the capital facilitates element of a comprehensive plan. RCW 82.02.050-.090.

CHAPTER THREE
SCHOOL DISTRICT DESCRIPTION

Tumwater School District is located in the north central portion of Thurston County. It encompasses 117 square miles and is bordered on the north by the City of Olympia (served by the Olympia School District), on the east by the City of Lacey (served by North Thurston Public Schools), the south by the Rochester and Tenino School Districts and on the west by the Capital Forest. **Attachment-A** is the map of the current District boundaries and attendance areas. The District includes the City of Tumwater and its urban growth area and unincorporated Thurston County. Development occurs principally within the urban growth area of Tumwater and in scattered locations throughout the remaining District boundaries. Within the urban growth boundaries, there is area for both short-term and long-term residential development. The residential population of the Tumwater School District is currently almost 45,000. This is expected to grow to 49,000 by 2025 and 53,000 by 2030.

The District operates six elementary schools, two middle schools, two comprehensive high schools and one alternative high school. The District is the host district of New Market Skills Center, which serves eleven school districts and provides specialized career and technical education (CTE) and science, technology, engineering and math (STEM) for area high school students. Most of the District schools are located in the City of Tumwater, with only East Olympia and Littlerock Elementary schools located in un-incorporated rural Thurston County. **Table 1** contains a list of the existing schools, student capacity, current enrollment, and modular classroom information.

The State began funding smaller class sizes in elementary schools beginning with the 2019-20 school year. At grade levels K-3, the class size is seventeen students. While headcount numbers larger than seventeen are allowed in individual classrooms, the district-wide average must be seventeen or less. This has affected the capacity of existing and future facilities, as new classrooms spread over the District's six elementary schools may be required even without further enrollment growth. Because of this, elementary school level of service has been adjusted to a blended average of 22 students per classroom. Middle and high school classroom level of service remains at 25 students.

As of September 2023, there are forty-two portable classrooms in the Tumwater School District. These are used for temporary capacity for the enrollment growth in certain areas. Pending funding and construction of new schools, the District's policy is to increase interim capacity at its schools with the use of portable facilities. However, portables are used only as interim solutions and are not considered as long-term capacity or as meeting the District's standard of service.

In June 2019, the Tumwater School District Board of Directors adopted new elementary school attendance boundaries for five of the six elementary schools to balance enrollment with capacity at those schools. This was at the recommendation of a Boundary Review Committee that met from October 2018 through April 2019. The boundaries of Peter G. Schmidt Elementary boundaries were not affected and the school will continue to require

temporary capacity in modular classrooms until a new elementary can open as planned in 2026.

Attachment-A is the map of attendance areas that took effect for the 2020-21 school year and beyond.

CHAPTER FOUR
ENROLLMENT FORECAST

The Office of the Superintendent of Public Instruction (OSPI) provides enrollment projections for funding purposes only, based on the "Cohort Survival Method". Basically, this method of enrollment projection uses historic patterns of student progression by grade level to measure the portion of students moving from one grade level up to the next higher cohort or grade. This ratio or survival rate is used in conjunction with current live birth rates as a base for state-wide enrollment projections. The OSPI system is useful but has obvious inadequacies in representing the unique growth conditions of individual school districts. Historically, OSPI projections in growing school districts tend to underestimate the actual student enrollment growth. Furthermore, the OSPI projections do not anticipate new student enrollment as a result of residential development.

To account for growth within Tumwater School District, the District has developed a modified forecast of enrollment. This forecast relies upon growth projections from Thurston Regional Planning, consultants, and past enrollment trends within the District. Two factors that cause these projections to be updated yearly are varying kindergarten enrollment and unpredictable student transfers ether into or out of the District. The current six-year enrollment forecast is shown in **Table 2**.

As part of the elementary boundary review process, an enrollment forecast was commissioned that showed that the current enrollment decrease is an anomaly and enrollment will continue to grow. This forecast is included as **Attachment-D**. This forecast is for the schools before the attendance areas are changed.

The number of students per household is the factor that the District uses to plan for new schools to service the enrollment growth from new development. This factor, known as the “Student Generation Rate” (SGR), is calculated separately for single-family and multi-family housing units. Usually single-family units will generate more students than multi-family units. Also, more elementary students are generated per unit because they have six grade levels while middle schools have three and high schools have four grade levels. The SGR study was last updated in August 2020.

The results of the latest study are included as **Attachment C**. The following is a summary of the rate study:

Housing Type	TSD Study SGR
Single Family	
Elementary	0.301
Middle School	0.172
High School	0.089
Total	0.561
(Total does not add due to rounding)	
Multifamily	
Elementary	0.050
Middle School	0.050
High School	0.058
Total	0.158

The Tumwater School District SGR multipliers produced as a result of this study and adopted by the District are also shown on **Table 8** and used in **Appendix B** to calculate the school impact fee.

Proposed new housing is shown in **Attachment E - New Single- and Multi-Family Housing Developments.** There is a total of 7,386 units of unbuilt housing composed of 2,603 single-family and 4,783 multi-family homes. Using the Student Generation Rates above, this results in the following numbers of new students:

Elementary School Students	1,101
Middle School Students	710
High School Students	528
Total number of new students	2,340
(Total does not add due to rounding)	

CHAPTER FIVE
LEVEL OF SERVICE CAPACITY

Adequate instructional space is generally based on the educational program adopted by the District. Instructional capacity is the classroom space required for the educational program in each building. The number of students a building can serve adequately is determined by the type and number of programs placed in each building, and the number of regular classrooms it contains. Generally, instructional capacity is determined by examining the number of regular teaching stations in the buildings and the adopted class sizes of the educational program. The instructional capacity of two buildings with the same number of teaching stations or similar square footage may be different as a result of differences in the design of the school as well as its educational program.

OSPI uses formulae based on square footage of school buildings (see WAC 362-343) for providing state assistance for school facilities. Those formulae, which are for funding purposes only, do not represent the amount of space for current program needs. The purpose of the formulae is to specifically identify the maximum amount of state assistance to be provided for a project. WAC 362-343-035 sets space allocations for funding assistance. The allocations have been subject to question for years by school districts and, although they have been recently adjusted somewhat, they do not represent actual new construction in this State. Furthermore, even if the District receives State funding assistance on eligible projects, the District must take into account the timing and amount of those funds in its capital facility planning process. However, in planning new schools, the educational program needs must be the driver of the design and capacity of those facilities.

Level of service capacity is defined as the number of students a school is designed to accommodate. The capacity standard includes only permanent regular classrooms and is based solely on the District's calculations. Some districts use a square footage standard to determine the level of service capacity for a facility. Other districts have adopted a standard utilizing a given number of students per classroom. This method fits well with agreements negotiated with teacher organizations relating to the number of students a teacher is expected to supervise in a classroom. In this District, an average of 25 students per regular classroom for every grade level has been a standard used for planning purposes for many years. However, with the change in class sizes at grades K-3, elementary schools now use a blended average for K-5 of 22 students per regular classroom.

Based upon the enrollment forecasts and level of service capacities, the demand vs. supply of existing schools and projected new classrooms is shown on **Table 3**.
Table 3 projects the need for a new elementary school during the six-year planning period to address growth-related capacity needs.
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CHAPTER SIX
FINANCING

The Washington State Constitution mandates educational opportunity for all children in Article IX Section 1:

> "*It is the paramount duty of the State to make ample provision for the education of all children residing within its borders, without distinction or preference on account of race, color, caste or sex."*

Court cases have subsequently determined that the legislature is responsible for "full funding of basic education" and the Office of Superintendent of Public Instruction has been assigned overall responsibility for assuring the operations of public education for grades kindergarten through 12. The state provides the funds for the basic education through a formula based on student enrollment and special student needs. The districts, through use of a local levy which is not to exceed 28 percent of the state authorized support, may "enrich" the educational program from local property tax sources. Capital needs are addressed separately.

School districts utilize budgets consisting of a number of discrete funds, including a general fund for district operations and building and debt service funds for meeting capital needs.

SOURCES

General Fund

The General Fund constitutes the main operational budget source for the district, utilizing state apportionment, categorical, and local levy enrichment funds to pay for the educational program. Salaries, benefits, purchases of goods and services and the like are the responsibility of the general fund.

Building Fund

The Building Fund is used for capital purposes: to finance the purchase and improvement of school sites; the construction of new facilities and remodeling or modernization of existing facilities; and the purchase of initial equipment, library books, and text books for those new facilities. Revenues accruing to the Building Fund may come from the General Fund apportionment, sale of properties, contributions, bond sale proceeds, capital levy collections, impact fees and earmarked state revenues.

Debt Service Fund

The Debt Service Fund is established as the mechanism to pay for bonds. When a bond issue is passed, the district issues bonds which have a face value and an interest rate. Property taxes are adjusted to provide the funds necessary to meet the approved periodic payments of interest and principal. The proceeds from the taxes collected for this purpose are deposited in the Debt Service Fund and then drawn out for payments at the appropriate times.

Bonds
Bonds are financial instruments having a face value and an interest rate which is determined at the time and by the conditions of sale. Bonds are backed by the "full faith and credit" of the issuing government and must be paid from proceeds derived from a specific increase in the property taxes for that purpose. The increase in the taxes results in an "excess levy" of taxes beyond the constitutional limit, so the bonds must be approved by a vote of the people in the jurisdiction issuing them. The total of outstanding bonds issued by the jurisdiction may not exceed five percent of the assessed value of property within that jurisdiction at the time of issuance.

Bonds are multiyear financial instruments, generally issued for 10, 20, 25, or 30 years. Because of their long-lasting impact, they require both a sixty percent super-majority of votes and a specific minimum number of voters for ratification. The positive votes must equal or exceed 60 percent of the total votes cast. The total number of voters must equal or exceed 40 percent of the total number of voters in the last general election.

Proceeds from bond sales are limited by bond covenants and must be used for the purposes for which the bonds are issued. They cannot be converted to a non-capital or operating purpose. The life of the improvement resulting from the bonds must meet or exceed the term of the bonds themselves.

Levies
School Boards can submit levy requests to the voters of the district. They too are measures which will raise the property tax rate beyond the constitutional limits. Levy approval differs from the approval requirements for bonds in that a levy measure is approved with a simple majority of the votes cast.

The Secretary of State issues a schedule of approved election dates each year. The school board must place its proposed measures on one of those dates. If the measure fails at the first election, the board can re-submit it to the voters after a minimum period of 45 days. If the measure fails for a second time during a calendar year (a double levy loss) it cannot be submitted again during that year.

Capital Levies differ from bonds in that they do not result in the issuance of a financial instrument and therefore does not affect the "bonded indebtedness" of the district. The method of financing is an increase in property tax rates to produce a voter-approved dollar amount. The amount generated from the capital levy is then available to the district in the approved year. The actual levy rate itself is determined by dividing the number of dollars approved into the assessed valuation of the total school district at the time the taxes are set by the County Council.

Capital levies can be approved for a one to six year period at one election. The amounts to be collected are identified for each year separately and the tax rates set for each individual year. Like bond issues, capital levies must be used for the specified purpose. They may not be transferred to operating cost needs.

Operating levies are used to supplement the district's educational program offerings. Note, due to legislative changes, the entire "operating" levy structure has undergone radical change. These levies are now called "enhancement" levies used to supplement district education beyond the State definition of "basic education". Levies generally will support athletics, art, physical education and other programs not addressed by the state apportionment for basic education. They also support special categorical funded programs for disabled, bilingual, early childhood and others. Funds can be transferred from operating levy sources to help pay for capital needs, although it is very rarely done.

Operating levies are limited in size by the total of approved state apportionment and categorical funds (a calculation involving not only State funds but some federal pass-through funds as well). Future "enrichment" levies will be limited by a revised set of formulas. Operating levies may be approved for one to four years at a single election.

Miscellaneous Sources
Other minor sources of funding include grants, bequests, proceeds from sales of property and the like. They are usually a small part of the total financing package.

State School Construction Assistance Program (SCAP) Funding
The State of Washington has a Common School Capital Construction Fund. The Office of Superintendent of Public Instruction (OSPI) administers the funds.
The Tumwater School District assistance percentage as of July 2023 was set at 62.23% for eligible project costs.
The construction cost allowance for school construction costs for July 1, 2023 funded projects is $271.61 per square foot.
The calculation for determining state matching support is:

ELIGIBLE AREA: Square footage of instructional space for which the state will provide funding assistance. It compares the district's current inventory of instructional space to its projected enrollment multiplied by the Student Space Allocation (SSA), the amount of square feet per student established by the legislature to determine funding allocation level and may not reflect what is adequate to meet district's educational program requirements.

CONSTRUCTION COST ALLOCATION (CCA): The State's recognized costs per square foot of new construction. Not to be confused with actual costs per square foot, which is usually higher.

STATE FUNDING ASSISTANCE PERCENTAGE: A unique number calculated for each district, used to determine the amount of state assistance. Calculated annually, it is a ratio of a district's assessed land value per student compared to the statewide average of assessed land value per student. Minimum percentage is 20% up to a maximum percentage of 100% of recognized project costs. Additional points are provided for district-anticipated growth.

The construction cost allowance is only an index for funding and must not be used to estimate or set construction costs. Typically, actual construction costs for schools are significantly higher than the construction cost allowance. Current construction costs are almost double those used for SCAP. Furthermore, State assistance funding does not apply toward many of the costs necessary to complete a project. State assistance typically accounts for less than 25% of the total project cost.

Qualifying for SCAP funding involves an application process that has six rounds of District applications and OSPI approvals. Districts submit information for consideration to the State Board. If approved, the district project is given a priority ranking number based upon information provided in the application. The project is then placed on the funding list along with all other projects submitted. OSPI funds projects each July at the beginning of the State fiscal year starting at the top of the list with those projects having the highest priority number and proceeding down the list until the funds allotted for that year are committed. In short, the higher the priority ranking, the better prospect the district has in receiving stating matching funds. Failure by the district to proceed with a project in a timely manner can result in loss of the district's state funding assistance.

Funds for the state funding assistance come from the Common School Construction Funds. Bonds are sold on behalf of the fund and then retired from revenues accruing from the sale of renewable resources, primarily timber, from state school lands set aside by the Enabling Act of 1889. If these sources are insufficient to meet needs, the legislature can appropriate additional funds, or OSPI can prioritize projects for funding (Chapter 392, Sections 341-347 of the Washington Administrative Code).

Supply and market conditions affecting timber and wood products has changed over the past decade or so, resulting in a substantial decrease in state revenue. Efforts in the State Legislature to supplement timber-generated revenues with general fund moneys have been only partially successful. School districts have had to wait for assistance funds because there were more projects on the funding list than money available during the fiscal year.

RESIDENTIAL CONSTRUCTION DEVELOPMENT MITIGATION

Impact Fees

According to RCW 82.02.050, the definition of impact fee is *" a payment of money imposed upon development as a condition of development approval to pay for public facilities needed to serve new growth and development, and that is reasonably related to the new development that creates additional demand and need for public facilities, that is a proportionate share of the cost of the public facilities, and that is used for facilities that reasonably benefit the new development. 'Impact fee' does not include a reasonable permit or application fee."*

Impact fees can be calculated on the basis of "un-housed student need" which is related to new residential construction. A determination projected student enrollment growth within the six year planning period and insufficient permanent school space to serve that growth allows the district to seek imposition of the fees. The amounts to be charged are then calculated based on the costs for providing the space and the projected average number of students in each residential unit as based on the student generation rate analysis. The School Board must first approve the calculation of the impact fees as a part of the Board's adoption of this Capital Facilities Plan and in turn, approval must then be granted by the other general government jurisdictions having responsibility within the district -- counties, cities and towns. In the Tumwater School District, those general government jurisdictions include the City of Tumwater and Thurston County. Both the City of Tumwater and Thurston County have adopted school impact fee ordinances.

SEPA Mitigation

Prior to the City of Tumwater and Thurston County, adopting Growth Management Act school impact fee ordinances, the District had requested that mitigation requirements apply to all residential developments throughout the District subject to SEPA to mitigate the direct impacts of the development on schools. Because all jurisdictions within the District's boundaries are now collecting impact fees for schools, the District will generally no longer request mitigation for new housing developments located in the unincorporated areas in the District.

The Capital Facilities Plan is designed to support the use of fees as provided for under the Growth Management Act. It consists of: (a) an inventory of existing educational facilities owned by Tumwater School District, showing the locations and capacities of these facilities: (b) a forecast of the future needs for school facilities; (c) the proposed capacities of new school facilities; and (d) a plan that will finance proposed new school facilities within projected funding capacities and clearly identifies sources of public money for such purposes.

Where necessary, the Six Year Capital Facilities Plan provides for acquisition and development of new school sites and, in some cases, modernization of existing school facilities in addition to new construction.

CHAPTER SEVEN
CONSTRUCTION PROGRAM

The gap between available space and need increases when residential growth accelerates while the planning, financing, permitting and construction period for school construction has lengthened. As a result, school capacities typically lag behind the increase in housing. Schools are categorized as Elementary, Middle, and High Schools. There will be variations from district to district of grade configurations, class size, and curriculum based needs depending on the district's educational program. Adjustments to the construction cost can be managed according to the choices made by the district and the effects of inflation.

The first element of project costs consists of the cost of acquiring the site and the developing of the site. The cost of the site usually consists of the price paid for the land, costs of the purchase, and cost of easements required for roads and utilities. Development costs consist of the costs to provide roads, utilities, and other necessary on-site and off-site improvements to the site in order that a school facility may be built thereon. These costs are not eligible for State funding assistance and must be paid for by local funds exclusively. Site costs will vary widely depending on the real estate market and on the circumstances of the site such as location and availability of utility services. OSPI has recommended minimum site sizes of five acres for an elementary school plus one acre for every 100 students and ten acres for grades 7 and above plus one acre per 100 students. This acreage is supposed to provide for the buildings and the appropriate support facilities such as play fields, athletic facilities, parking, and storage. The District uses the following as the practical acreage needed for school sites:

Elementary: 10-15 acres
Middle Level: 20-25 acres
High: 45-55 acres

Site sizes above and below these are evaluated and considered based on available land.

The second element is the construction cost that includes the building, site (parking lots, play fields, site furnishings and on-site utilities.) and off-site costs (public utilities and public street improvements) The third part includes the other costs associated with a construction project which include planning, design, engineering, construction management, furniture, equipment, agency fees, and sales taxes. The project cost estimate for the new elementary school and a typical double-classroom modular unit are shown in **Table 4.**

The District anticipates using a mixture of funding sources to meet the costs of building the schools, including local bond issues, capital levies, State funding assistance and impact fees. The bond issues are the primary source of local funding, and are dependent on voter approval. State funding assistance provides the secondary source of school construction funds. Those funds are available from the State based upon specific project eligibility, priority ranking by the State and available funds. If the sale of bonds is not approved by the public or State funding assistance is not available, the District will not be able to implement the Capital Facilities program as planned. The District may then

utilize other means to house the students including purchase of modular classrooms or any other means available to the district. If the District experiences accelerated growth above and beyond that expected and/or funds are not available, then the district may not be able to provide housing for students. This may require a moratorium on any new housing until funding becomes available.

The District has identified three areas for new elementary schools. These are in the southeast near the Olympia Airport (where a 12-acre site was purchased in 2008 and a 10-acre site in 2020), one and possibly two sites near Black Hills High School (where one 15-acre site was purchased in 2011), and potentially elsewhere as need is identified. Schools in these areas will be used to accommodate planned growth. New middle and high school sites may be needed in the next twenty years as new elementary schools are built. The District purchased a 21-acre site near Black Hills High School in 2011 for a future middle school. The District includes in its long-range plan an element that provides funds for the acquisition of school lands for future capacity needs.

The District also owns 2.2 acres of vacant land adjacent to Peter G. Schmidt Elementary School and 6.9 acres of vacant land adjacent to New Market Skills Center. Both of these parcels are deemed too small for a stand-alone school.

Attachment-B is a map locating the vacant properties the District owns as well as conceptual site plans for the new schools on each.

The District recognizes the need to move forward in a timely manner to identify potential school sites and conduct the studies necessary to determine which sites meet District criteria for schools. Over the years, many criteria have been added to the already long list which must be studied to determine whether a site can support a particular school facility. A feasibility period of one to three years is not unexpected in the District's experience. Urban growth boundaries, land use, zoning, storm water, availability of utilities, critical areas ordinances and a willing seller are just some of the factors to be considered. Additionally, the size of property needed for a school ranging from 10 to 55 acres within the urban growth boundary is a big issue. Available sites are becoming more scarce, especially those which have the potential for sewer and water service.

After an approved site has been secured, other factors influence the timeline for producing a school facility ready for occupancy. First, the District must pass a local bond issue for its portion of the funds necessary to complete the project. Second, the District must house excess students within the existing facilities and/or housing students in modular classrooms for a period of up to five years. Third, the District must qualify for and receive State funding assistance. Finally, the planning and construction process may range from three years for an elementary school to as much as five years for a secondary school from start to occupancy.

Therefore, it is incumbent on the District to move forward in a timely manner with its Capital Facilities Plan to acquire and develop needed sites and facilities. As such,

multiple sources of funding are required including existing capital funds, bond issue funds, mitigation/impact fees, and State funding assistance.

Construction projects that are planned to increase capacity within the six-year planning period are:

1. Building a new elementary school for added capacity to serve growth at the K-5 level to open in 2027. requires future approval of bonds by voters. The project costs of $60,856,000 are detailed on **Table 4**.
2. Adding modular classrooms to elementary schools until a new school is built along with the potential addition of modular classrooms at the middle and high school as needed to provide for interim capacity solutions.

Construction projects planned to update existing facilities are:

1. New Market Skills Center – minor capital improvements funded primarily with State grants. Two projects were funded in the 2021-23 biennium that were completed in 2023. Two more projects were funded for the 2023-25 biennium. A $48 million full renovation of the facilities with additions has been applied for but yet funded by the State.
2. Tumwater and Black Hills High Schools – unspecified renovations in a future bond.
3. Bush and Tumwater Middle Schools – the parts of the original buildings not included in the additions and renovations to accommodate sixth grade will be eligible for State construction grants for major renovations beginning in 2024 (BMS) and 2025 (TMS). The majority of funds will come from bonds approved in a future election. The project costs for Bush Middle School are estimated at $36 million and for Tumwater Middle School they are $48 million.

Tumwater School District has begun using capital levies to pay for major maintenance projects, such as roof and boiler replacements, technology upgrades and health, safety and security improvements:

1. A 2-year capital facilities levy of $10 million was approved by voters in 2020. All projects funded by this levy have been completed.
2. A renewal 4-year capital levy of $24.1 million was approved in February 2022.
3. A renewal 4-year capital levy may be put before the District voters in 2026.

CHAPTER EIGHT
FINANCIAL PLAN

The planned project expenditures and revenues are detailed in **Table 5**. Tumwater School District needs approximately $222,836,000 to finance its facility needs for the fiscal years 2022-23 through 2027-28.

The capital projects fund balance at the end of the 2021-22 fiscal year is estimated to be $8,000,000.

In a February 2014 bond referendum, district voters approved the sale of bonds worth $136,000,000 to fund the 2014-2020 capital facilities plan. The last of these bonds were sold in 2017. The remaining proceeds from these bonds and State construction grants are used to complete miscellaneous small works projects as allowed by the bond resolution.

The majority of the funding for the current six-year plan, $115,000,000, would come from a future bond referendum that requires voter approval.

The District passed a four-year capital levy in February 2022. This is funding technology upgrades, major maintenance projects and safety and security projects over four calendar years (five fiscal years).

State grants are estimated to amount to approximately $70,800,000, including $35,800,000 solely for New Market Skills Center projects.

The impact fee and mitigation fee portion for the six-year period is $3,000,000.

Miscellaneous revenue from a variety of other sources is estimated to be $600,000 over the next six years.

2022-23 Ending fund Balance	$ 8,800,000
+ Capital Levy (current and future)	38,987,000
+ Bond Sales (future, requires voter approval)	125,000,000
+ State Grants	71,000,000
+ Impact Fees	2,750,000
+ Misc. Revenue	600,000
= Total Revenue	$ 238,337,000
= Anticipated Available Funds	**$ 247,137,000**

These funds are anticipated to be available to finance the capital projects in the plan. The planned project expenditures and revenues are detailed in **Table 5**.

CHAPTER NINE
ASSESSED VALUATION

The assessed valuation of the school district is the total value of the real property--land and improvements, including buildings -- within the district boundaries. The assessed value is set by the Thurston County Assessor and is as the base to which property tax rates are applied. The increase in value of the total assessment for the County cannot exceed an amount equal to 106 percent of the prior year's total value plus the value of new construction during that period. The total is increased by inflation or increased market value for existing properties.

The constitutionally approved taxes, which amount to 20 mills or two cents on the dollar, are applied to the full assessed value and produce funds for a variety of governmental purposes. Excess levy rates, those beyond the constitutional limits, are imposed to generate a specific dollar amount, so they may vary from year to year. The higher the assessed valuation, the lower the rate needed to generate the necessary dollar amount.

School districts which have a high assessed valuation, such as those with large, intensive commercial developments (i.e. shopping and auto malls, etc.) or waterfront homes are able to generate very substantial bond dollars with very modest tax levy rates. On the other hand, districts with low assessed valuation are hampered with high tax levy rates to raise even modest bond funds. The Tumwater School District, while the urban core is growing, is still largely a rural district with a modest assessed valuation. As such, care must be taken in managing the bond issue process to maintain voter confidence and modest tax levy rates.

The district’s total assessed valuation as of January 1, 2023, set by the County Assessor, was $9,539,342,382, which is an increase of 27.6% over the 2022 assessed value.

CHAPTER TEN
EXISTING DEBT

The Tumwater School District's current debt is $76,775,000 as shown in **Table 6.** This debt consists of four bond sales from the 2014 election. Current bond debt will be paid off in 2032. **Table 6** also shows the projected annual payments.

There is a five percent ceiling on outstanding indebtedness, which means that the bonded indebtedness of the district cannot exceed five percent of the assessed value of the district at the time of issuance of the bonds. The existing debt therefore reduces the bonding capacity of the district.

For Tumwater School District, the current availability of bonding capacity is calculated as:

Total Assessed Value	$9,539,342,382
Five Percent of Assessed Value	$ 476,967,119
Existing Bonded Indebtedness (Principal Only)	$ 76,775,000
Available Bonding Capacity	$ 400,192,119

Table 7 compares the debt limit with the outstanding debt. The information contained in therein indicates that the District as the District pays off existing debt; it also has adequate debt capacity for timed bond sales for the planned construction projects.

CHAPTER ELEVEN
IMPACT FEE CALCULATIONS

The school impact fee formula ensures that new development only pays for the cost of facilities necessitated by new development. The Growth Management Act (GMA) school impact fee calculations (**Appendix B**) examine the costs of housing the students generated by each new single family dwelling unit and each new multi-family dwelling unit and then reduce that amount by the anticipated state match and future tax payments. The calculations are driven by the facilities costs identified in **Table 4** for the District's new planned growth-related capacity projects (as identified in **Table 3**). By applying the student generation factor (as shown in **Table 8**) to the school project costs, the fee formula only calculates the costs of providing capacity to serve each new dwelling unit. The resulting impact fee may be discounted by an additional amount at the discretion of the District Board of Directors. Importantly, the GMA does not require new development to contribute toward the costs of providing capacity to address existing needs.

APPENDIX A

TABLES 1-8

TABLE 1

TUMWATER SCHOOL DISTRICT NO. 33
CAPACITY OF EXISTING SCHOOL FACILITIES
2023 - 2029 Capital Facilities Plan

FACILITY NAME:	Number of Regular Classrooms	Capacity*	Oct. 2023 Headcount	Surplus(+) or Deficit(-)	Existing Modular Classrooms*	Agency-permitted Number of Modulars*
Black Lake Elementary	20	440	387	53	6	8
East Olympia Elementary	20	440	603	-163	8	8
Littlerock Elementary	17	374	344	30	0	8
Michael T. Simmons Elem.	20	440	422	18	13	13
Peter G. Schmidt Elem.	25	550	577	-27	8	8
Tumwater Hill Elementary	20	440	365	75	2	2
Tumwater Virtual Academy	*0*	*0*	*0*	*0*	*0*	*0*
Total Elementary	***122***	***2,684***	***2,698***	***-14***	***37***	***47***
Bush Middle School	34	850	761	89	0	8
Tumwater Middle School	33	825	634	191	0	8
Tumwater Virtual Academy	*0*	*0*	*0*	*0*	*0*	*0*
Total Middle School	***67***	***1,675***	***1,395***	***280***	***0***	***16***
Black Hills High School	45	1125	756	369	0	12
Cascadia High School	8	128	115	13	0	0
New Market High School	1	37	56	-19	0	10
Tumwater High School	43	1075	1,109	-34	5	10
Tumwater Virtual Academy	*0*	*0*	*0*	*0*	*0*	*0*
Total High School	***140***	***2,365***	***2,036***	***329***	***5***	***32***
Grand Total	***329***	***6,724***	***6,129***	***595***	***42***	***95***
TWEST			16			
TWEST ("T West") provides education services to youths in the Thurston County Juvenile Detention Center. It is located in Tumwater School District and the students come from across Thurston County. TWEST students are not included in capacity calculations.						
New Market Skills Center	20	520		445	0	0
The Skills Center is a stand-alone facility that serves a consortium of eleven school districts and is not included in capacity calculations.						
*Capacity figures do not include modulars.						

TABLE 2

TUMWATER SCHOOL DISTRICT NO. 33
DISTRICT ENROLLMENT FORECAST
2023 - 2029 Capital Facilities Plan

	Oct.	Projected						
	2023	2024	2025	2026	2027	2028	2029	2030
Kindergarten	423	432	441	450	468	487	506	525
Grade One	456	475	495	516	537	560	583	607
Grade Two	483	496	509	522	536	550	564	579
Grade Three	428	442	456	470	485	501	517	533
Grade Four	454	461	468	476	483	491	498	506
Grade Five	454	469	485	501	518	536	554	573
Grade Six	461	476	492	508	525	543	560	579
Grade Seven	492	500	507	515	523	532	540	548
Grade Eight	442	449	456	464	471	479	487	495
Grade Nine	499	541	588	638	692	751	815	884
Grade Ten	561	564	568	571	575	578	582	585
Grade Eleven	493	473	453	435	417	400	383	367
Grade Twelve	483	491	499	507	515	523	532	541
K-5 HEADCOUNT	**2,698**	**2,774**	**2,853**	**2,934**	**3,027**	**3,123**	**3,221**	**3,323**
6-8 HEADCOUNT	**1,395**	**1,425**	**1,456**	**1,488**	**1,520**	**1,553**	**1,587**	**1,622**
9-12 HEADCOUNT	**2,036**	**2,069**	**2,107**	**2,150**	**2,198**	**2,252**	**2,312**	**2,377**
TOTAL K-12	**6,129**	**6,269**	**6,417**	**6,572**	**6,746**	**6,928**	**7,120**	**7,322**

TABLE 3

TUMWATER SCHOOL DISTRICT NO. 33
DEMAND VS. SUPPLY OF SCHOOL FACILITIES
2023 - 2029 Capital Facilities Plan

YEAR	DEMAND	LEVEL OF SERVICE CAPACITY	PERCENT	CAPACITY INCREASE	SURPLUS OR DEFICIT	CAPACITY CHANGES
ELEMENTARY SCHOOL						
2023	2,698	2,684	101%	0	-14	
2024	2,774	2,684	103%	0	-90	
2025	2,853	2,684	106%	0	-169	
2026	2,934	2,684	109%	0	-250	
2027	3,027	3,284	92%	600	257	New Elem. School
2028	3,123	3,284	95%	0	161	
2029	3,221	3,284	98%	0	63	
MIDDLE SCHOOL						
2023	1,395	1,675	83%	0	280	
2024	1,425	1,675	85%	0	250	
2025	1,456	1,675	87%	0	219	
2026	1,488	1,675	89%	0	187	
2027	1,520	1,675	91%	0	155	
2028	1,553	1,675	93%	0	122	
2029	1,587	1,675	95%	0	88	
HIGH SCHOOL						
2023	2,036	2,365	86%	0	329	
2024	2,069	2,365	88%	0	296	
2025	2,107	2,365	89%	0	258	
2026	2,150	2,365	91%	0	215	
2027	2,198	2,365	93%	0	167	
2028	2,252	2,365	95%	0	113	
2029	2,312	2,365	98%	0	53	

TABLE 4

TUMWATER SCHOOL DISTRICT NO. 33
SCHOOL FACILITY BUDGETS
2023 - 2029 Capital Facilities Plan

PROJECT	ESTIMATED TOTAL COST
New Elementary School	
Architect & Engineer Fees	$4,330,000
Other Consultant Fees	$722,000
Fees, Permits & Req'd. Studies	$1,800,000
Off-site Development Construction	$1,800,000
On-Site Development Construction	$4,331,000
Building Construction	$36,100,000
Furniture & Equipment	$2,165,000
Technology & Security Systems	$1,100,000
Contingency (8%)	$4,188,000
WSST (9.5%) on Const., Furn., Eqpt. & Sys.	$4,320,000
Sub-total Cost	**$60,856,000**
Site Acquisition (TSD owns two elementary sites)	$0
Total Cost	**$60,856,000**
Modular Classrooms for temporary capacity	
Architect & Engineering	$40,000
Agency Permits & Fees	$20,000
Utilities & Site Work	$85,000
28 X 64 Double Classroom Unit	$244,000
Furniture & Equipment	$40,000
Technology & Security Systems	$20,000
Contingency(8%)	$24,000
WSST (9.5%) on Const., Furn., Eqpt. & Sys.	$38,000
Total Cost for Double Classroom	$511,000
Total Cost per classroom	**$255,500**

TABLE 5
TUMWATER SCHOOL DISTRICT NO. 33
SIX-YEAR CAPITAL FACILITY PLAN
2023 - 2029 Capital Facilities Plan

EXPENDITURES							
Major Projects	**2023-2024**	**2024-2025**	**2025-2026**	**2026-2027**	**2027-2028**	**2028-2029**	**6-yr Total**
Black Hills HS Renovations	$500,000	$800,000	$1,800,000	$800,000	$1,800,000		**$5,700,000**
Tumwater HS Renovations	$500,000	$800,000	$1,800,000	$800,000	$1,800,000		**$5,700,000**
Bush Middle School Renovations		$1,000,000	$16,000,000	$17,000,000	$2,000,000		**$36,000,000**
Tumwater Middle School Renovations			$1,000,000	$18,000,000	$20,000,000	$6,000,000	**$45,000,000**
New Elementary School #7	$1,000,000	$26,000,000	$30,000,000	$3,356,000	$500,000		**$60,856,000**
New Market SC Major Renovations			$500,000	$1,000,000	$12,500,000	$20,000,000	**$34,000,000**
TOTAL MAJOR PROJECTS	**$2,000,000**	**$28,600,000**	**$51,100,000**	**$40,956,000**	**$38,600,000**	**$26,000,000**	**$187,256,000**
Small Projects	**2023-2024**	**2024-2025**	**2025-2026**	**2026-2027**	**2027-2028**	**2028-2029**	**6-yr Total**
Site Acquisition		$2,000,000	$1,000,000				**$3,000,000**
Technology Capital Expenses	$2,000,000	$2,000,000	$2,000,000	$2,500,000	$2,500,000	$2,500,000	**$13,500,000**
New Market SC Minor Capital Projects	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	**$3,000,000**
Modular classrooms	$720,000	$720,000	$720,000	$400,000			**$2,560,000**
Health, Safety & Security Projects	$800,000	$1,700,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	**$10,500,000**
Small Works Projects	$800,000	$1,700,000	$3,000,000	$3,000,000	$3,000,000	$3,000,000	**$14,500,000**
Capital Operations & Bond Costs	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	**$4,500,000**
TOTAL SMALL PROJECTS	**$5,570,000**	**$9,370,000**	**$9,970,000**	**$9,150,000**	**$8,750,000**	**$8,750,000**	**$51,560,000**
TOTAL EXPENDITURE	**$7,570,000**	**$37,970,000**	**$61,070,000**	**$50,106,000**	**$47,350,000**	**$34,750,000**	**$238,816,000**
REVENUE SOURCE	**2023-2024**	**2024-2025**	**2025-2026**	**2026-2027**	**2027-2028**	**2028-2029**	**6-yr Total**
Capital Levy (approved Feb. 2022)	$5,825,000	$6,025,000	$6,225,000	$3,162,000			**$21,237,000**
2026 Capital Levy (requires approval)				$3,500,000	$7,000,000	$7,250,000	**$17,750,000**
Future Bond Sales (requires voter approval)		$40,000,000	$40,000,000		$45,000,000		**$125,000,000**
State Grant - New Elementary School		$2,500,000	$2,500,000	$2,500,000	$2,500,000		**$10,000,000**
State Grant - Bush & Tumwater Middle Schools		$1,000,000	$5,000,000	$6,000,000	$6,000,000	$6,000,000	**$24,000,000**
State Grant - New Market SC Minor Capita	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	**$3,000,000**
State Grant - New Market Major Renovation			$500,000	$1,000,000	$12,500,000	$20,000,000	**$34,000,000**
Impact Fees for capacity projects	$750,000	$750,000	$750,000	$500,000			**$2,750,000**
Other Miscellaneous Revenue	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	**$600,000**
TOTAL REVENUE	**$7,175,000**	**$50,875,000**	**$55,575,000**	**$17,262,000**	**$73,600,000**	**$33,850,000**	**$238,337,000**
Ending Fund Balance 2022-23 = $8,800,000	**$8,405,000**	**$21,310,000**	**$15,815,000**	**-$17,029,000**	**$9,221,000**	**$8,321,000**	**$8,321,000**
Note: Bond sales may vary based upon market conditions, cash flow needs and other variables.							
							$204,487,000

TABLE 6

TUMWATER SCHOOL DISTRICT NO. 33
CURRENT CAPITAL DEBT
2023- 2029 Capital Facilities Plan

	2014	2015	2016	2017	
Year	**Issue**	**Issue**	**Issue**	**Issue**	**TOTAL**
2023	$5,305,000	$0	$2,250,000	$595,000	$8,150,000
2024	$4,750,000	$2,590,000	$740,000	$825,000	$8,905,000
2025	$2,120,000	$4,940,000	$1,490,000	$1,080,000	$9,630,000
2026	$2,305,000	$5,190,000	$1,550,000	$1,360,000	$10,405,000
2027	$2,510,000	$2,000,000	$5,010,000	$1,665,000	$11,185,000
2028	$2,725,000	$1,915,000	$5,435,000	$2,015,000	$12,090,000
2029		$2,755,000	$3,775,000	$0	$6,530,000
2030		$2,900,000	$2,785,000	$0	$5,685,000
2031				$2,025,000	$2,025,000
2032				$2,170,000	$2,170,000
					$0
Total	**$19,715,000**	**$22,290,000**	**$23,035,000**	**$11,735,000**	**$76,775,000**

TABLE 7

TUMWATER SCHOOL DISTRICT NO. 33
DEBT CAPACITY
2023 - 2029 Capital Facilities Plan

Year	Total Principal	Cumulative Debt	Assessed Valuation	5% of Assessed Valuation	Debt Capacity
2022			$7,478,519,707		
2023	$8,150,000	$76,775,000	**$9,539,342,382**	$476,967,119	$400,192,119
2024	$8,905,000	$68,625,000	**$9,713,549,261**	$485,677,463	$417,052,463
2025	$9,630,000	$59,720,000	**$10,004,955,739**	$500,247,787	$440,527,787
2026	$10,405,000	$50,090,000	**$10,305,104,411**	$515,255,221	$465,165,221
2027	$11,185,000	$39,685,000	**$10,614,257,543**	$530,712,877	$491,027,877
2028	$12,090,000	$28,500,000	**$10,932,685,270**	$546,634,263	$518,134,263
2029	$6,530,000	$16,410,000	**$11,260,665,828**	$563,033,291	$546,623,291
2030	$5,685,000	$9,880,000	**$11,598,485,803**	$579,924,290	$570,044,290
2031	$2,025,000	$4,195,000	**$11,946,440,377**	$597,322,019	$593,127,019
2032	$2,170,000	$2,170,000	**$12,304,833,588**	$615,241,679	$613,071,679
2033	$0	$0	**$12,673,978,596**	$633,698,930	$633,698,930
Assessed Valuation Growth Rate Projections:					
2023	**Actual**	**27.6%**			
2024	**Estimated**	**1.8%**			
2023 & beyond	**Estimated**	**3.0%**			

TABLE 8
TUMWATER SCHOOL DISTRICT
STUDENT GENERATION RATE
2023 - 2029 Capital Facilities Plan

STUDY DATE - SPRING 2020	
Single Family	**Multiplier**
Elementary School - Grades K-5	0.3010
Middle School - Grades 6-8	0.1720
High School - Grades 9-12	0.0890
TOTAL*	**0.5610**
Multifamily	**Multiplier**
Elementary School - Grades K-5	0.0500
Middle School - Grades 6-8	0.0500
High School - Grades 9-12	0.0580
TOTAL	**0.1580**
** Total does not add due to rounding*	

APPENDIX B

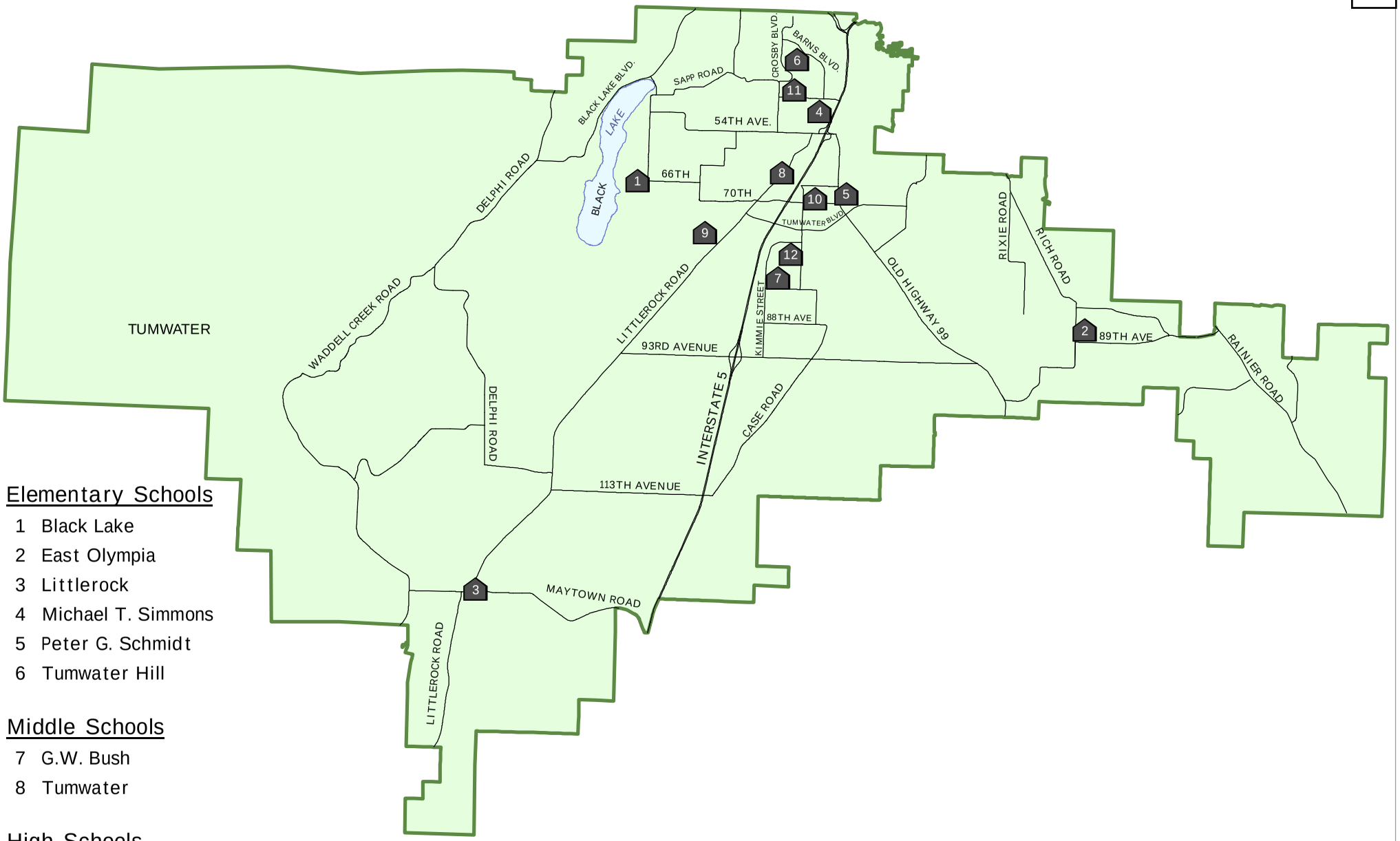
SCHOOL IMPACT FEE CALCULATION

SCHOOL IMPACT FEE CALCULATIONS							
Tumwater School District							
October 12, 2023							
School Site Acquisition Cost:							
((Acres x Cost per Acre)/Facility Capacity)xStudent Generation Factor							
				Student	Student		
	Facility	Cost/	Facility	Factor	Factor	Cost/	Cost/
	Acreage	Acre	Capacity	SFR	MFR	SFR	MFR
Elementary	15.00		600	0.301	0.050	$0	$0
Middle	25.00		750	0.172	0.050	$0	$0
High	55.00		150	0.089	0.058	$0	$0
					TOTAL	$0	$0
School Construction Cost:							
((Facility Cost/Facility Capacity)xStudent Generation Factor)x(permanent/Total Sq Ft)							
				Student	Student		
	%Perm/	Facility	Facility	Factor	Factor	Cost/	Cost/
	Total Sq. Ft.	Cost	Capacity	SFR	MFR	SFR	MFR
Elementary	94.50%	$ 60,856,000	600	0.301	0.050	$28,850	$4,792
Middle	94.50%	$0.00	750	0.172	0.050	$0	$0
High	94.50%	$0.00	150	0.089	0.058	$0	$0
					TOTAL	$28,850	$4,792
Temporary Facility Cost:							
((Facility Cost/Facility Capacity)xStudent Generation Factor)x(Temporary/Total Square Feet)							
				Student	Student	Cost/	Cost/
	%Temp/	Facility	Facility	Factor	Factor	SFR	MFR
	Total Sq. Ft.	Cost	Size	SFR	MFR		
Elementary	5.50%	$ 255,500	22	0.301	0.050	$192	$32
Middle	5.50%	$0.00	25	0.172	0.050	$0	$0
High	5.50%	$0.00	25	0.089	0.058	$0	$0
						$192	$32
State Funding Assistance Credit:							
Const. Cost Allocation X OSPI Square Footage X Funding Assistance% X Student Factor							
				Student	Student		
	Area Cost	OSPI	District	Factor	Factor	Cost/	Cost/
	Allowance	Footage	Match %	SFR	MFR	SFR	MFR
Elementary	$271.61	90	62.23%	0.301	0.050	$4,578	$761
Middle	$271.61	117	62.23%	0.172	0.050		
High	$271.61	130	62.23%	0.089	0.058		
						$4,578	$761
Tax Payment Credit:						SFR	MFR
Average Assessed Value						$391,147	$121,457
Capital Bond Interest Rate						3.85%	3.85%
Net Present Value of Average Dwelling						$3,196,376	$992,523
Years Amortized						10	10
Property Tax Levy Rate						$1.8500	$1.8500
	Present Value of Revenue Stream					$5,913	$1,836
	Fee Summary:			Single		Multi-	
				Family		Family	
	Site Acquisition Costs			$0		$0	
	Permanent Facility Cost			$28,850		$4,792	
	Temporary Facility Cost			$192		$32	
	State Match Credit			($4,578)		($761)	
	Tax Payment Credit			($5,913)		($1,836)	
	FEE (AS CALCULATED)			$18,551		$2,228	
			Discount		Discount		
	Fee with discount applied		**70%**	**$5,565**	**50%**	**$1,114**	

ATTACHMENT A

DISTRICT SCHOOL LOCATIONS & ATTENDANCE AREAS MAPS

Tumwater School District



Elementary Schools

1 Black Lake
2 East Olympia
3 Littlerock
4 Michael T. Simmons
5 Peter G. Schmidt
6 Tumwater Hill

Middle Schools

7 G.W. Bush
8 Tumwater

High Schools

9 Black Hills
10 Tumwater

11 District Office
12 Transportation Center

Tumwater School District

Elementary School Attendance Boundaries

Tumwater Middle School & Black Hills High School
- Black Lake Elementary
- Littlerock Elementary
- Michael T Simmons Elementary
- Tumwater Hill Elementary

G.W. Bush Middle School & Tumwater High School
- East Olympia Elementary
- Littlerock Elementary
- Michael T Simmons Elementary
- Peter G. Schmidt Elementary

Reference
- School
- School District Boundary
- Parcel

0 1 Mile

DISCLAIMER: The information included on this map has been compiled by Thurston County staff from a variety of sources and is subject to change without notice. Additional elements may be present in reality that are not represented on the map. Ortho-photos and other data may not align. The boundaries depicted by these datasets are approximate. This document is not intended for use as a survey product.

ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. Thurston County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. In no event shall Thurston County be liable for direct, indirect, incidental, consequential, special, or tort damages of any kind, including, but not limited to, lost revenues or lost profits, real or anticipated, resulting from the use, misuse or reliance of the information contained on this map. If any portion of this map or disclaimer is missing or altered, Thurston County removes itself from all responsibility from the map and the data contained within. The burden for determining fitness for use lies entirely with the user and the user is solely responsible for understanding the accuracy limitation of the information contained in this map.

MAP CREATED BY SLS ON 2/18/2020

NORTH

OLYMPIA SCHOOL DISTRICT

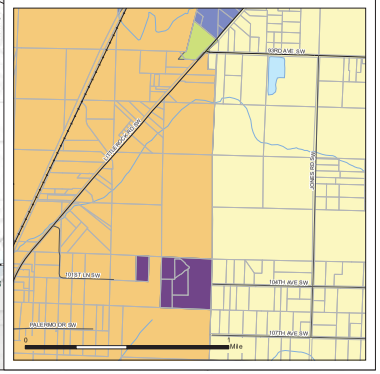
SEE INSET MAP

RAINIER SCHOOL DISTRICT

ROCHESTER SCHOOL DISTRICT

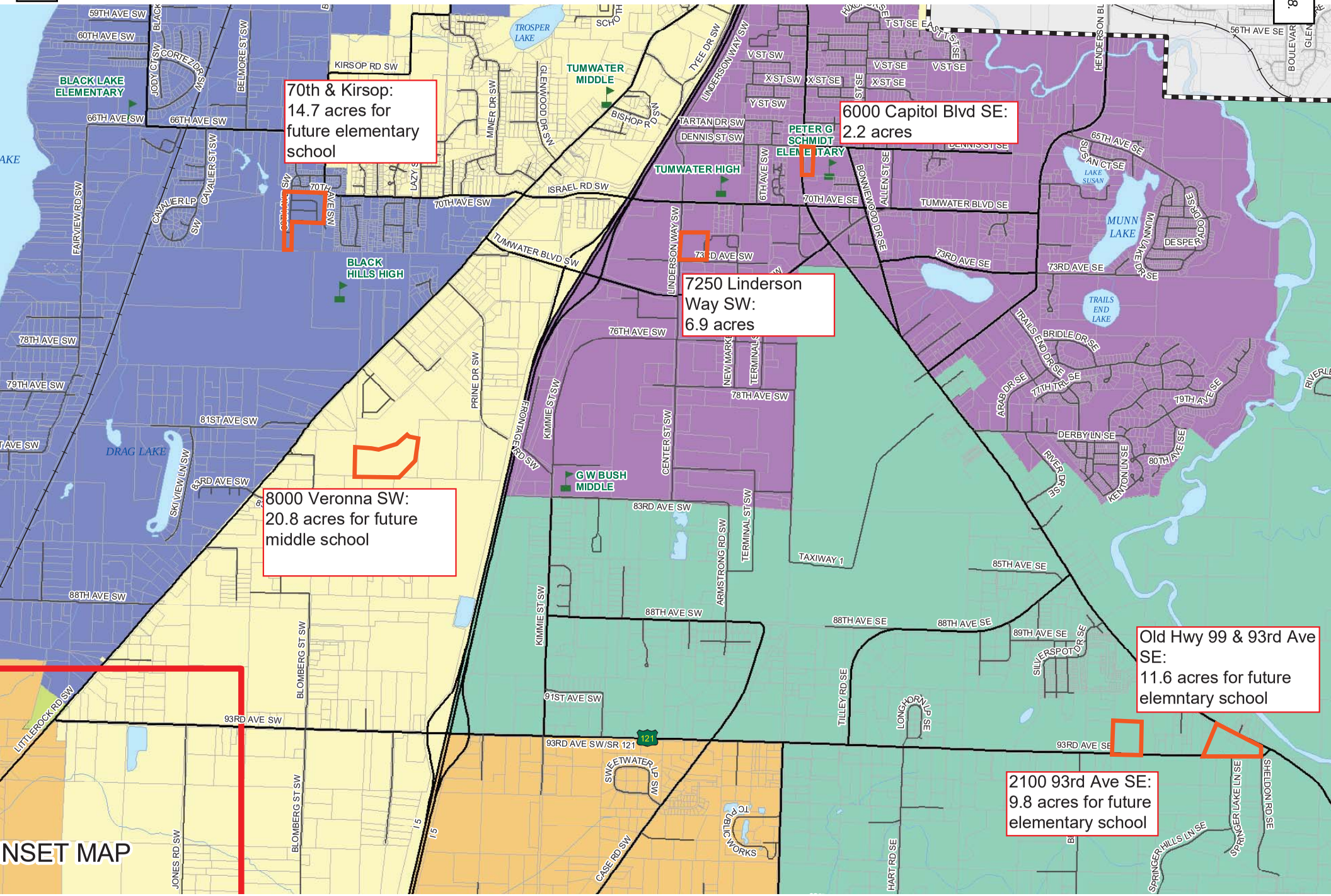
TENINO SCHOOL DISTRICT

INSET MAP



ATTACHMENT B

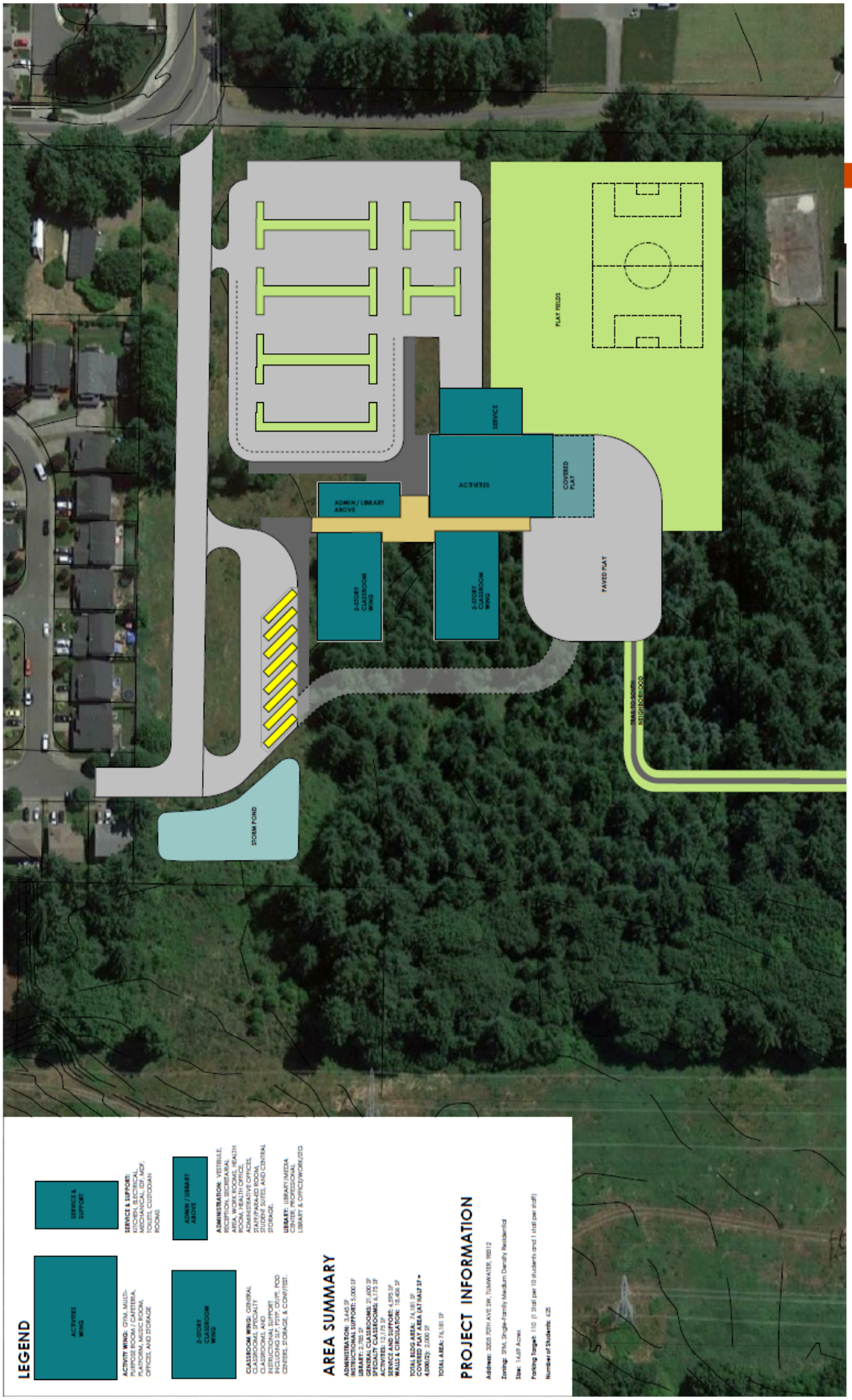
DISTRICT FUTURE SCHOOL SITES & CONCEPTUAL SITE PLANS



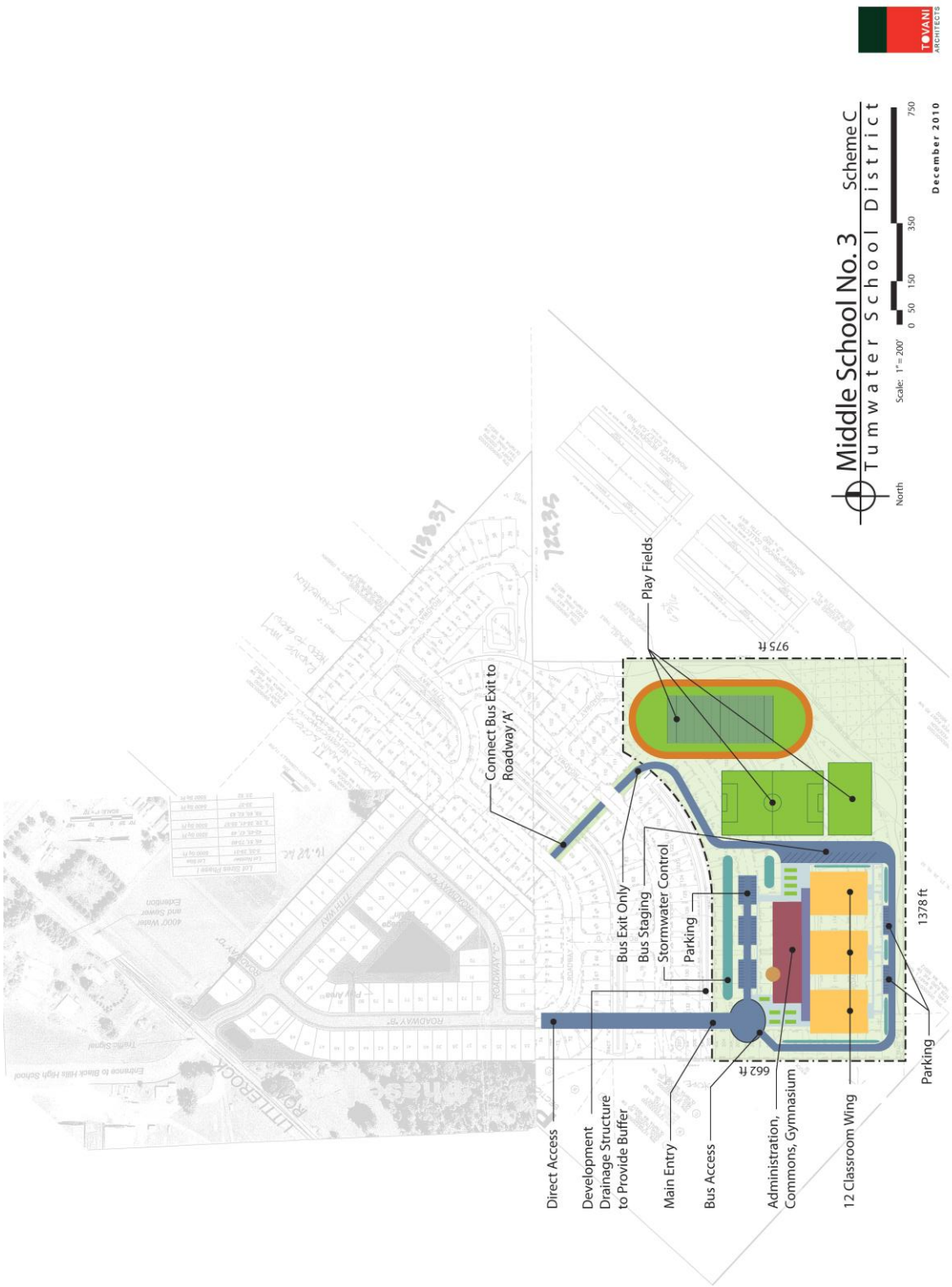
Tumwater School District Future School Sites & Vacant Land

Elementary School Site at Old 99 & 93rd

Elementary School Site at 93rd Avenue



Elementary School Site at 70th & Kirsop



Middle School Site at Littlerock Road & Veronna

ATTACHMENT C

TUMWATER SCHOOL DISTRICT
STUDENT GENERATION RATE STUDY

BERK

Phone: (206) 324-8760
2200 Sixth Avenue, Suite 1000
Seattle, WA 98121
www.berkconsulting.com

MEMORANDUM

DATE: August 26, 2020

TO: Mel Murray, Director of Facilities, Tumwater School District

FROM: Rebecca Fornaby, Associate, BERK Consulting
Kevin Gifford, Senior Associate, BERK Consulting
Bryce Anderson, Associate, BERK Consulting

RE: Tumwater School Distinct Findings for Student Generation Rates 2020

Findings for Student Generation Rates

This memorandum contains findings for the Tumwater School District's 2020 student generation rates (SGR).

To calculate the SGR, BERK used current student address data provided by the District[1] and current land use and property records available from the Thurston County Assessor. BERK geocoded student addresses using GIS software and matched address points to County property records; each matched address was as single-family or multifamily, based on County property records.

The SGR was calculated based upon (1) housing units inside the District boundaries and constructed within the last 5 years (2015 – 2019) and (2) the number of enrolled students currently living at those addresses. Based on Thurston County Assessor records, the District contains 722 single-family homes and 240 multifamily housing units constructed in the last five years. An estimated 443 students live in these housing units (405 in single-family homes and 38 in multifamily units).

The resulting findings are presented in the summary tables on the following page.

[1] Some provided student addresses either could not be accurately geolocated or corresponded to parcels with no verifiable residential uses present. Addresses corresponding to temporary lodgings (hotels, motels, etc.) were also excluded.128 records were excluded based on these criteria.

Exhibit 1. 2020 Tumwater School District Student Generation Rates

2020 Tumwater School District Student Generation Rates		
	Single Family	**Multifamily**
Elementary (K through 5)	0.301	0.050
Middle School (6 through 9)	0.172	0.050
High School (10 through 12)	0.089	0.058
Total	**0.561**	**0.158**

Exhibit 2. Tumwater School District Student Generation Rates by Grade Level

2020 Tumwater School District Student Generation Rates by Grade Level		
	Single Family	**Multifamily**
Kindergarten	0.043	0.008
Grade 1	0.046	0.004
Grade 2	0.062	0.013
Grade 3*	0.055	-
Grade 4	0.047	0.021
Grade 5	0.047	0.004
Grade 6	0.051	0.021
Grade 7	0.037	0.008
Grade 8	0.043	0.013
Grade 9	0.040	0.008
Grade 10	0.037	0.013
Grade 11	0.030	0.038
Grade 12	0.021	0.008
Total (All Grades)	**0.561**	**0.158**

* *No addresses for 3rd Grade students matched multifamily housing units constructed in the previous 5-year period. As such, a grade-level student generation rate could not be calculated for this group.*

ATTACHMENT D

TUMWATER SCHOOL DISTRICT
2018 ENROLLMENT FORECAST

TUMWATER SCHOOL DISTRICT ENROLLMENT FORECAST
PREPARED BY GREENE GASAWAY PLLC
DECEMBER 18, 2018

This report is prepared by Greene Gasaway PLLC under subcontract with Parametrix. The contract is to provide a projection of enrollment on a school-by-school basis in order to support boundary revisions within the district.

Greene Gasaway PLLC (GGA) starts with district-wide projections; district-wide projections are more common and are more reliable than school-by-school projections since they utilize larger data sets. Once GGA selects the most likely district-wide projection, school-by-school projections are made utilizing the same formulas used for the district-wide projections. Finally, the school-by-school projections are modified to eliminate distortions and to adjust the total of the school-by-school projections to approximate the district-wide projections.

Analysis of enrollment data in the State of Washington is based on October headcount data. OSPI established October headcount as the monthly count most likely to represent the maximum headcount for a school year. Greene Gasaway PLLC (GGA) uses two methods to project district-wide enrollment; both utilize October headcount. First, a six-year cohort projection is used to make a six-year enrollment projection. This method approximates the method utilized by OSPI in projecting enrollment on Form 1049. The method is normally reliable for the near future, and since OSPI uses Form 1049 in determining eligibility for state assistance funding, it is an important reference projection. Second, GGA uses a proprietary model that uses residential construction to generate students in a ratio that is consistent with Thurston Regional Planning Council's (TRPC's) twenty-year projection of housing and population. These long-term projections are only accurate if the underlying demographic assumptions utilized by the TRPC demographers are accurate, and only if the anticipated rate of residential construction is close to what developers eventually construct. The model is adjusted to project near-term enrollment consistent with near-term cohort projections; twenty-year projections are consistent with TRPC's county-wide housing and population ratios. This model is then applied to the data for each school to generate a school-by-school projection. The total of the school-by school projections is tracked and the projection of each school is adjusted as required to maintain the total in the range established by the district-wide projection.

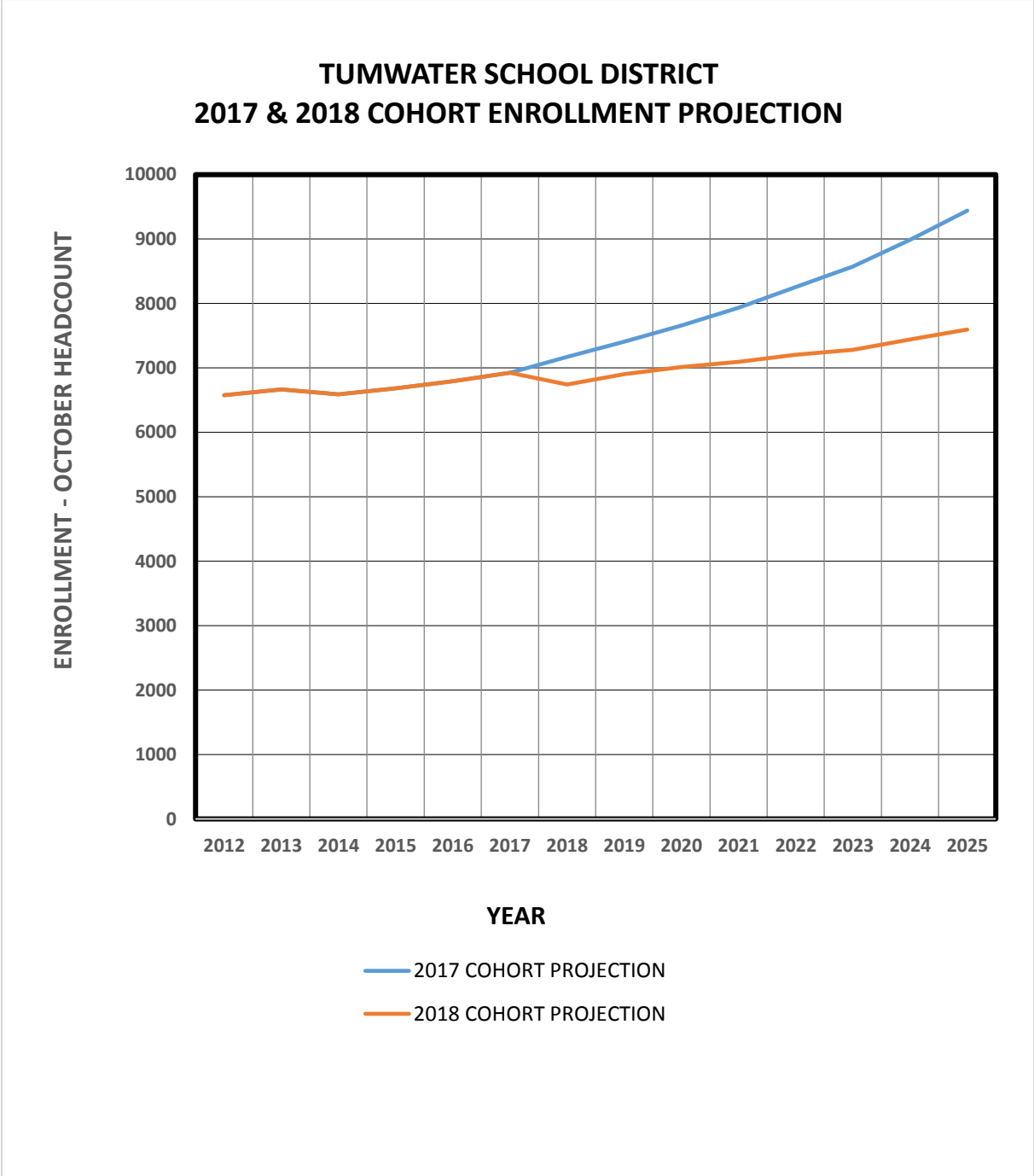
This report analyzes trends in October headcount. It does not seek to project other significant enrollment information (FTE trends, for example) which provide the basis of state funding of operations, nor does it seek to analyze capacity nor to analyze the impact of class-size initiatives.

Projecting enrollment depends on analyzing consistent historical data in order to develop trends which are assumed to remain consistent for a limited time in the future. Unusual events, known as anomalies, limit our ability to develop historical trends. The economic collapse in the fall of 2008 disrupted most trends that were based on the previous six years. That anomaly has slowly worked its way out of the data base; but the rate of residential construction has probably been

higher than normal since 2015 as pent up demand and historically low mortgage rates have supported high rates of construction of residential units in recent years. Between 2000 and 2040 Thurston Regional Planning Council (TRPC) projects that an average of 370 residential units (houses and apartments) will be constructed in Tumwater School District annually. The rate is projected to be above average between 2016 and 2030 and below average the remainder of the period. To the extent that the rate of growth in student enrollment corresponds to the rate of occupancy of new residential units, we would expect faster growth in enrollment between 2016 and 2030 than during other periods between 2000 and 2040. There is a second trend which influences our thinking about the rate of growth in school enrollment in Tumwater School District, TRPC believes that the county is experiencing a baby-boom echo, or really a second echo. We believe that the peak of this echo occurred between 2010 and 2015 which means that enrollment between 2015 and 2030 would reflect larger classes in lower grades driving enrollment growth initially in elementary grades, then progressively through middle school grades and high school grades. The back side of the echo would be perceived as decreasing birth rates and slower enrollment gains even with strong rates of construction.

In September 2018 Tumwater School District experienced another anomaly which significantly impacted enrollment. The October 2018 enrollments do not follow the previous trends. It may be that the nine-day teacher's strike changed the decisions that parents and students made regarding which school they chose to attend; it may be other events which have not yet been identified created an anomaly. It is too early to tell how this anomaly will play out longer term, but in the October 2018 headcount, the enrollment is significantly below what was anticipated based on the October 2017 headcount. In the fall of 2017, OSPI projected (or would have projected) Tumwater School District enrollment for 2018 at 7,172 students and for 2025 at 9,441 students. In October 2018, OSPI actually recorded 6,924 students and projected enrollment for 2025 at 7,596 students; 248 students fewer in 2018, and 1,845 students fewer in 2025.

GRAPH OF OCTOBER HEADCOUNT ENROLLMENT AS PROJECTED BY COHORT METHODOLOGY BASED ON 2017 AND 2018 COUNTS



For the purposes of this report, Greene Gasaway assumes that the trends established in the years 2000 through 2017 will remain in place through 2040, and that the enrollment of October 2018 was, in fact, a one year anomaly which will gradually be overwhelmed by the underlying trends.

Since 1995 Greene Gasaway PLLC (GGA) has prepared enrollment projections for Thurston County school districts. Over that time span, GGA has developed proprietary programs to project school age populations that are consistent with TRPC's housing and population projections and that are based on the number of housing units constructed. This "model" generally projects a continuation of the baby-boom echo over generations, and fewer students per residential unit over time. It is generally consistent with a stable birth rate. GGA's opinion of future enrollment from 4 years to 20 years in the future is heavily influenced by the results of our "modeling".

Thurston Regional Planning Council provides demographic data not readily available in other counties. TRPC provides county-wide population projections by five-year age cohort; the cohorts from 0 to 20 provide an approximation of the school-age population in the county. TRPC also provides projections of population and number of residential units by smaller geographic areas. Upon request of a member organization, TRPC provides this data by geographic areas requested by the member; TRPC provided population and housing data by current elementary school boundary for Tumwater School District as part of this study.

GGA "modeling" is calibrated to roughly correspond to projections of population and number of residential units projected by TRPC.

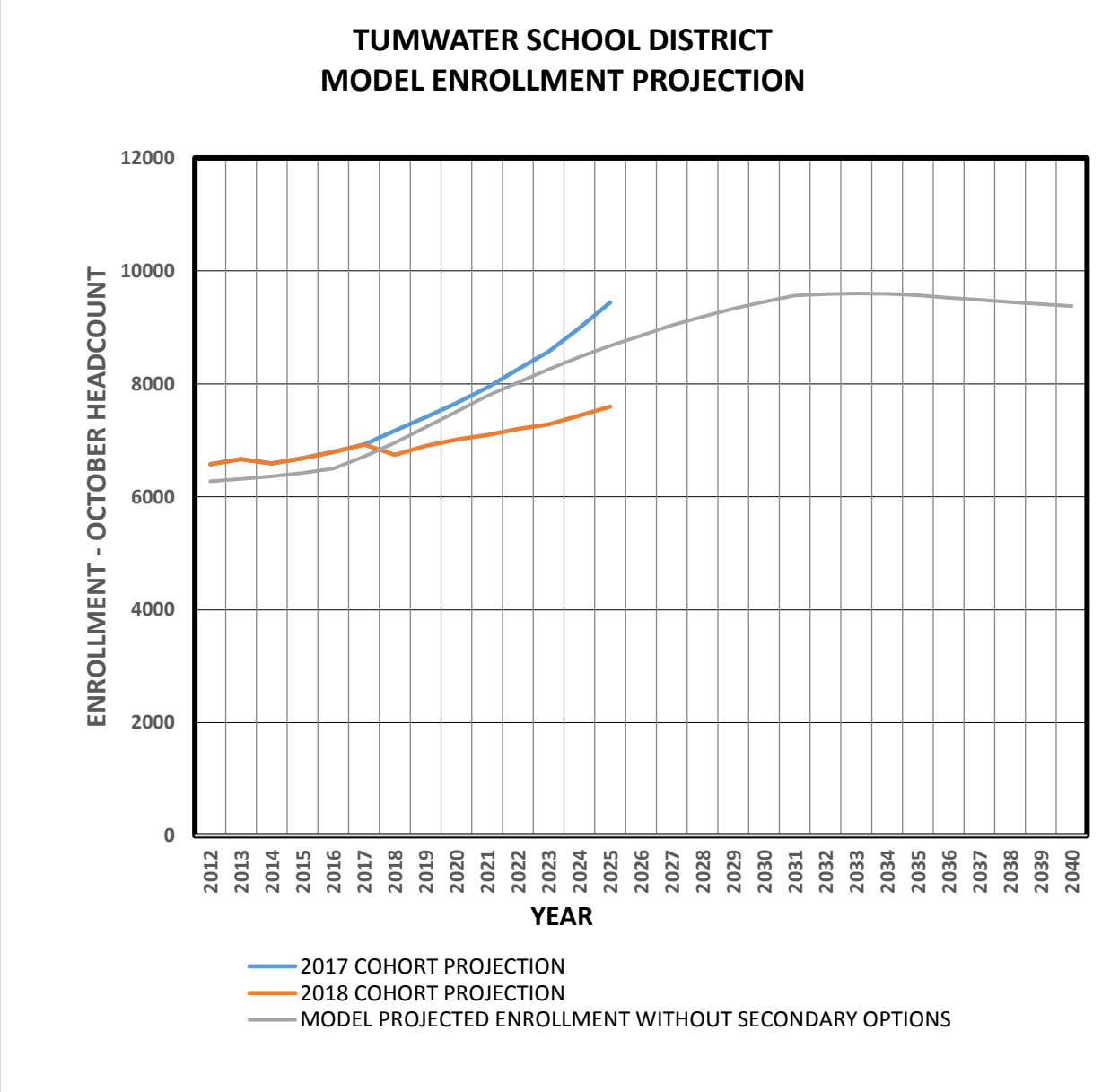
Current TRPC projections indicate an increase in the school-age population of approximately 22% between 2015 and 2040. The increase will be driven by both a baby-boom echo and by increasing population due to-migration from outside of the county. The school districts will experience this increase by a more rapid increase in elementary enrollment, followed by a more rapid increase in middle school enrollment, followed by a more rapid increase in high school enrollment. Enrollment growth at each grade grouping will slow as the effects of the baby-boom growth moves through the system into older grades.

TRPC is projecting a decrease in the percent of the population that will be of school age; in other words, the population will increase faster than the number of children of school age. Currently TRPC estimates that nearly 16% of the population is of school age. By 2040, TRPC estimates that this percent will fall to slightly below 14% of the county's population. TRPC is projecting a 38% increase in county population, but only a 22% increase in school-age population. By comparison, in 1980, TRPC estimates that the percent of the county population of school age was approximately 21% of the population.

Translating the data to Tumwater School District (TSD), TRPC projects that population of TSD will grow much faster than the county average; TRPC projects an increase in the population of Tumwater School District of nearly 62% between 2015 and 2040. If TSD has the same percent of the population of school-age as the county as a whole, approximately 15%, the school-age population of the district would increase to approximately 9,500 students by 2040.

This report will provide district-wide and school-by-school projections for each of the schools whose enrollments are geographically based. Secondary Options and Skills Center will not be projected since enrollment at these facilities are not based on their service area. Over time, however, as the school-age population increases, demand for services at these facilities are likely to increase in proportion to the increase in the county's school-aged population.

GRAPH OF OCTOBER HEADCOUNT ENROLLMENT AS PROJECTED BY TRPC DATA (GGA METHODOLOGY)



Greene Gasaway PLLC has reviewed the school-by-school enrollment data provided by Tumwater School District and begun to correlate that data with the data provided by the Thurston Regional Planning Council. Enrollment data reflects not only the underlying geographic data of where people choose to live, often because of educational services available, but also choices that students and parents make regarding where to obtain those services. Students can choose to attend public school, or any one of a number of other options. Students can choose to attend their local school, or any other school to which they can obtain admittance. Discrepancy in cohorts or divergence of enrollment data from population data often has an explanation in rational decision-making by students or their parents.

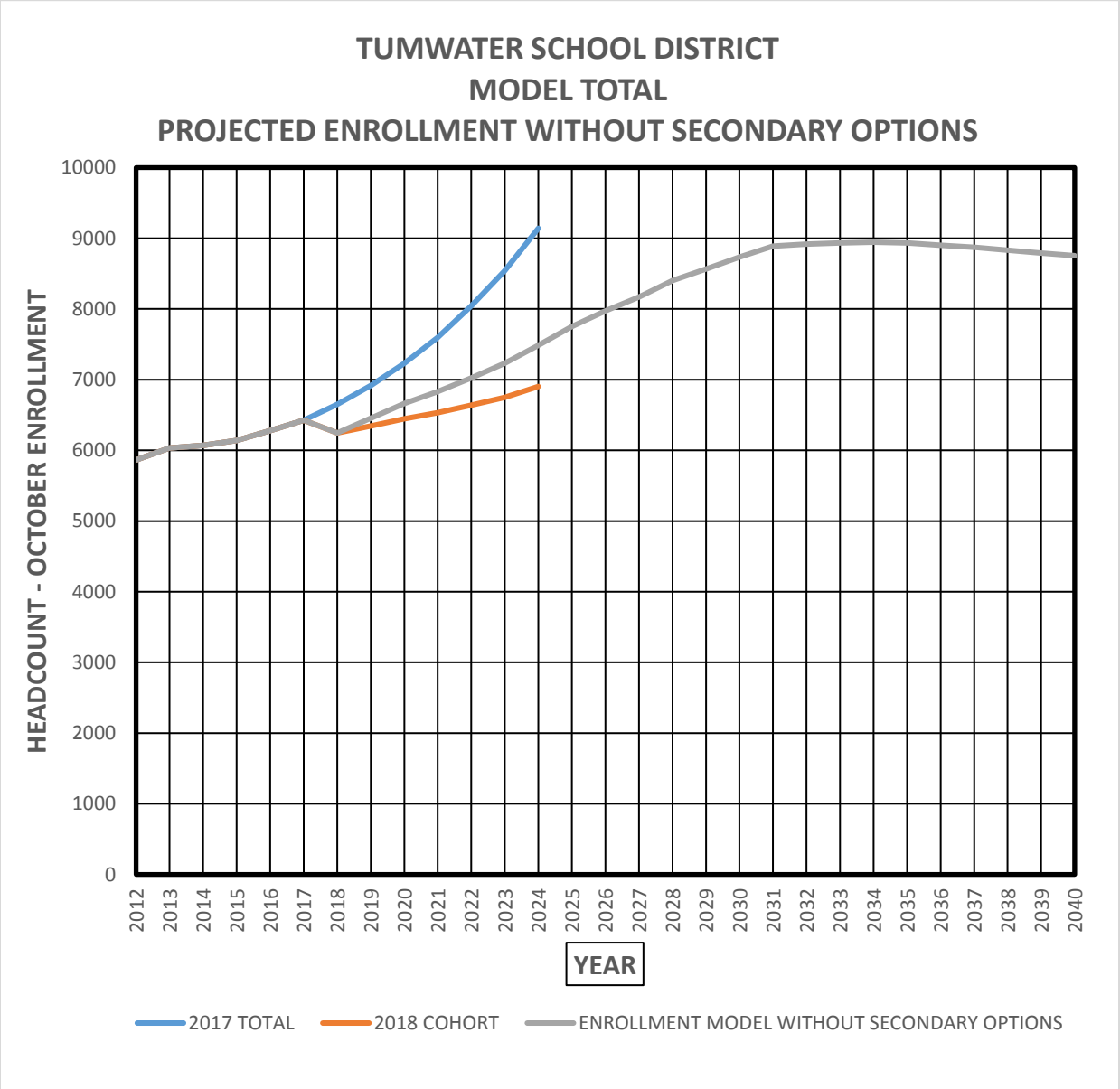
Following are some of our initial observations of the TRPC data:

- TRPC projects that the annual construction of residential units over the next 20 years will exceed the annual rate of construction of the last 15 years by over 20%.
- TRPC projects that the annual construction of residential units will be highest in the Michael T. Simmons Elementary School (MTS) service area, but the construction of residential units in the Black Lake Elementary School (BL), East Olympia Elementary School (EO), Tumwater Middle School (TMS), and Black Hills High School (BHHS) service areas will also be above the district average.
- TRPC projects that the annual construction of residential units in the Littlerock Elementary School (LR) service area will slow significantly, and that the annual construction in the Peter G. Schmidt Elementary School (PGS), Bush Middle School (BMS) and Tumwater High School (THS) service areas will slow slightly.
- TRPC anticipates that the number of students per residential unit will decrease over time. The percent increase in enrollment is, therefore, expected to be less than the percent increase in the number of residential units.
- TRPC projects that the portion of multifamily units with decrease slightly by 2040.

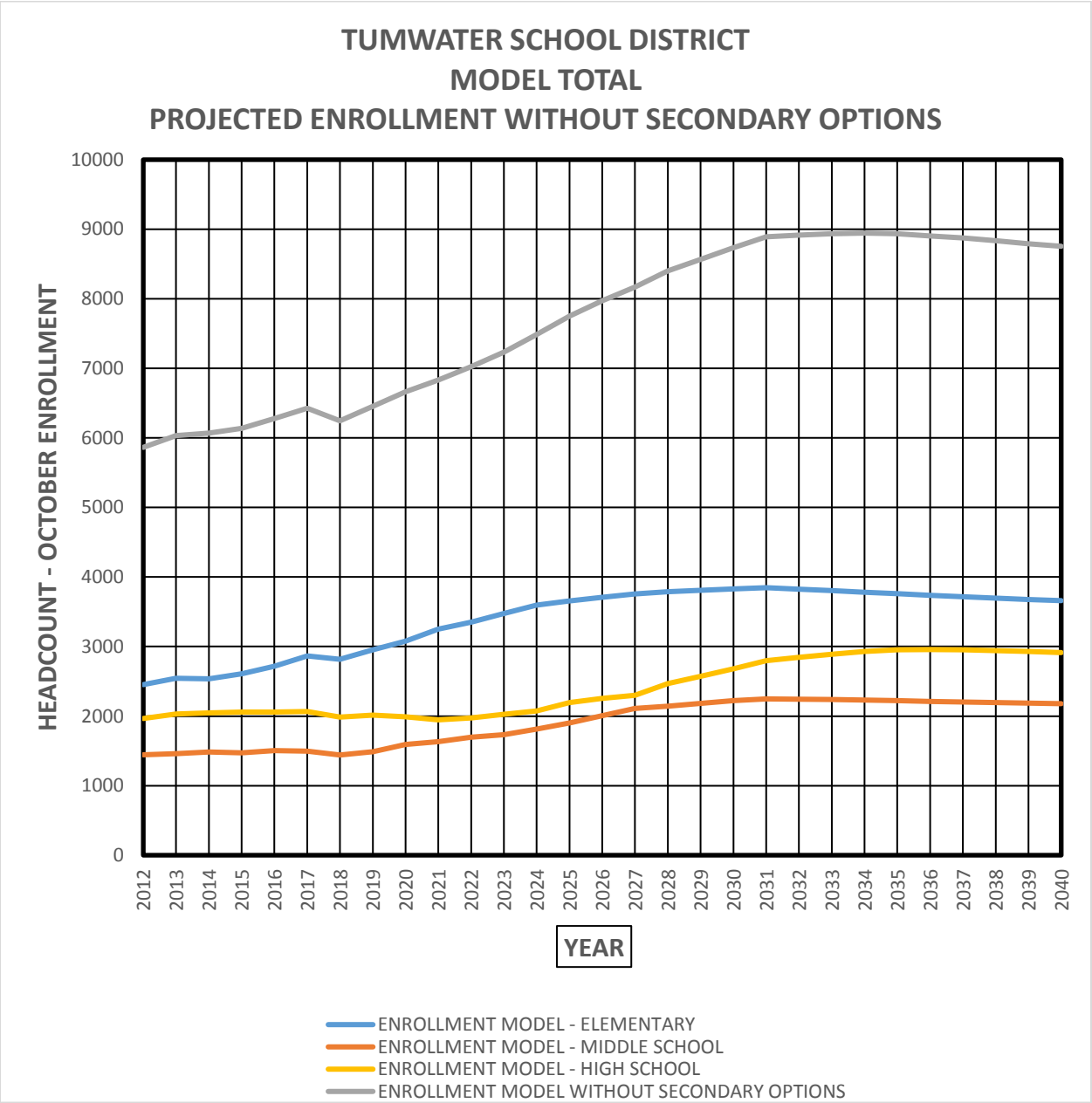
Following are some of our initial observations of the Tumwater School District enrollment data: data:

- BL and THE have fewer students than what would be expected based on the number of residential units in their service areas. We have maintained that expectation in our projections
- PGS has a higher enrollments than what would be expected based on the number of residential units in their service areas. We have maintained that expectation in our projections
- BMS and THS have higher enrollments than what would be expected based on the number of residential units in their service areas. We have maintained that expectation in our projection.
- TMS and BHHS have higher enrollments than what would be expected based on the number of residential units in their service areas. We have maintained that expectation in our projections.

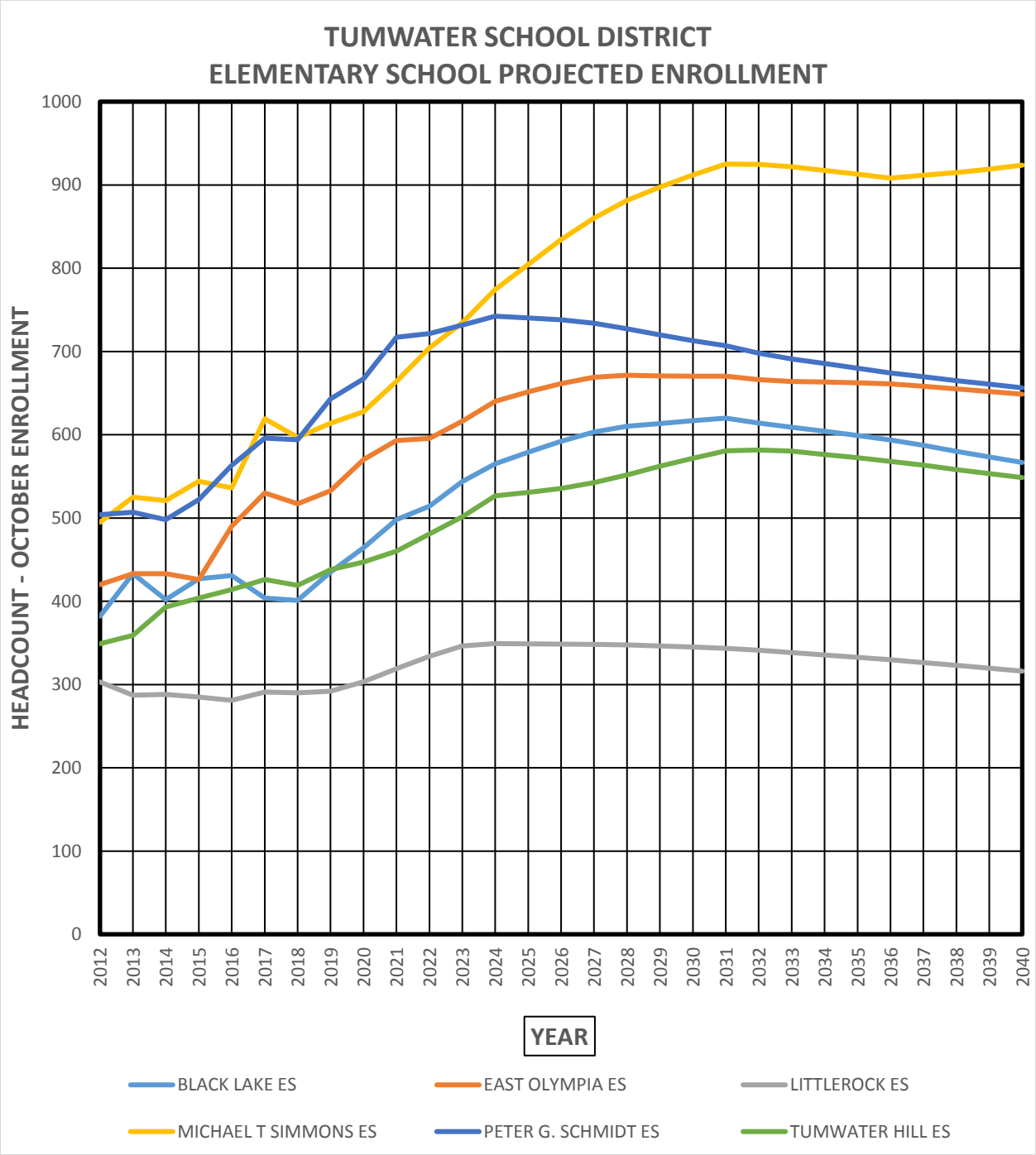
Greene Gasaway PLLC has modeled the enrollment for the district and for each of the schools in the district that have a geographical service area. We have not studied the Secondary Options or Skills Center enrollments. We have plotted the anticipated enrollment for each facility on a graph that also plots the 2017 and the 2018 cohort projection for that facility. In most cases the model projects an enrollment between the 2017 cohort and the 2018 cohort. In service areas with little projected residential development, the model projection flattens or dips. In service areas with a great deal of projected residential development, the model shows large increases in projected enrollment through the early 2030's. The characteristics of the Thurston Regional Planning Council's population projection is such that little growth in enrollment is expected between 2030 and 2040. The increase in population in that time period will be largely driven by a larger proportion of older citizens living longer.

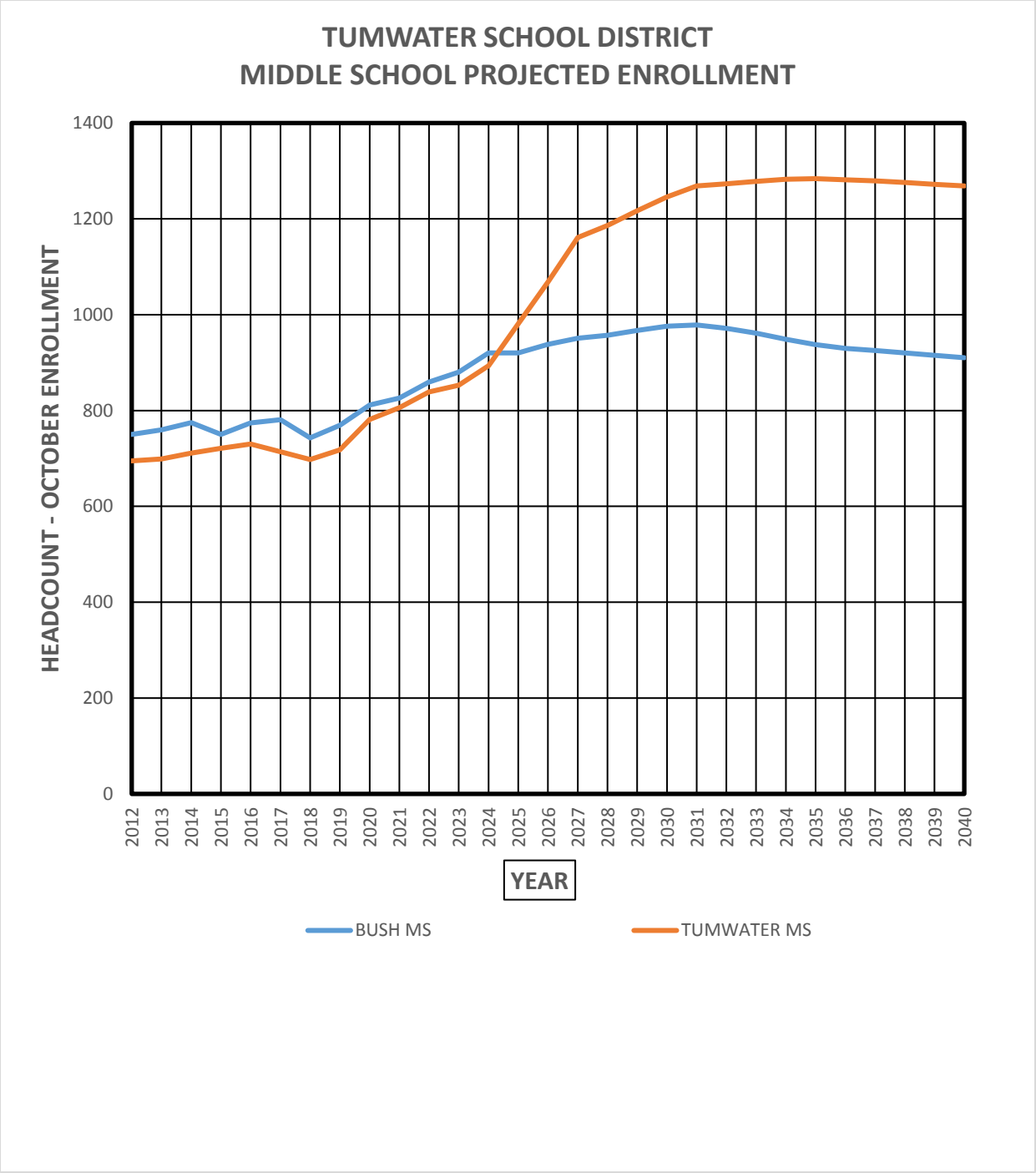


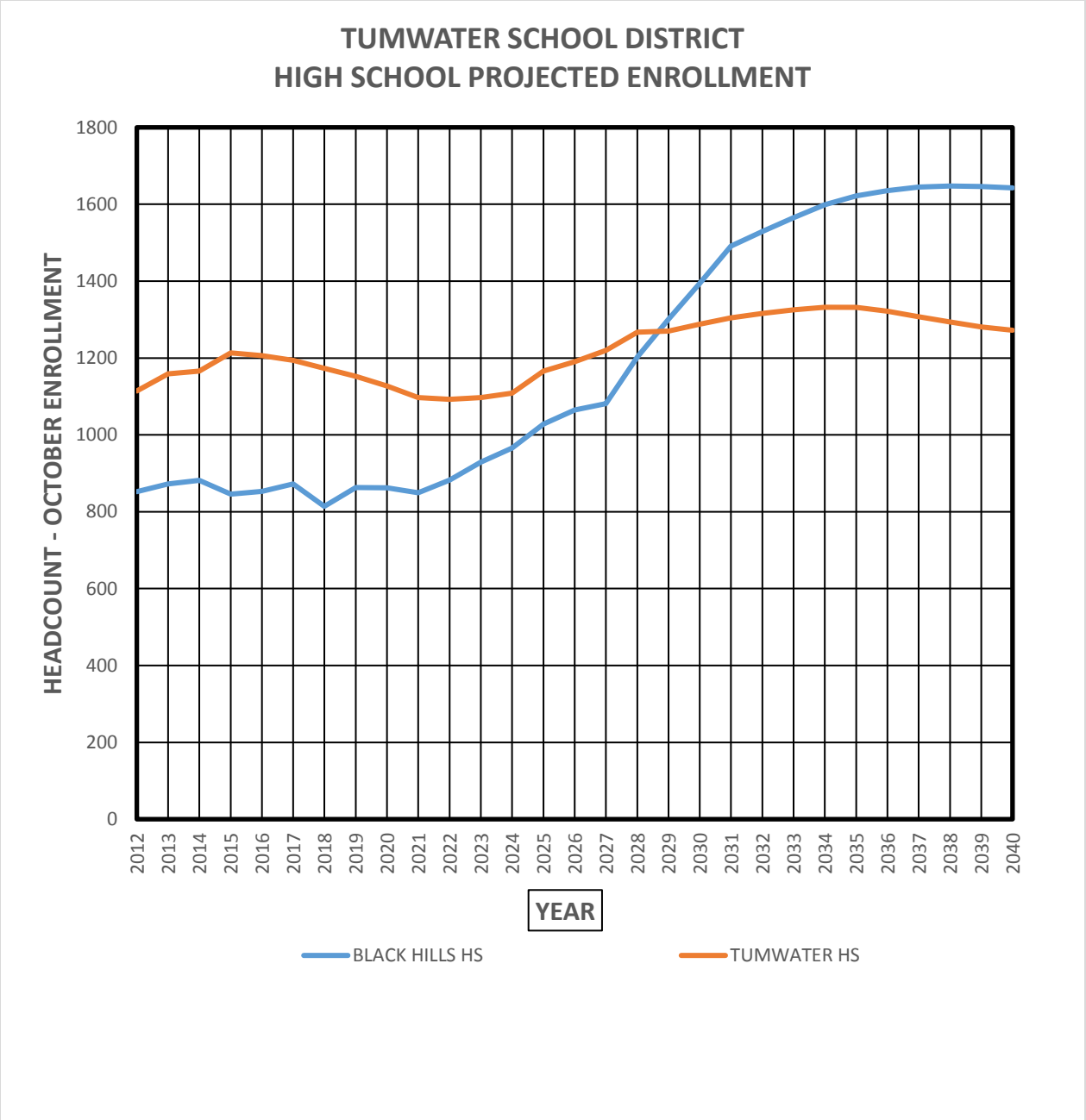
Graphing the model projection by grade-grouping; K-5, 6-8, 9-12; shows a diminishing baby-boom echo structure with elementary enrollment increasing more rapidly initially, followed by growth in the middle school grades and the high school grades.



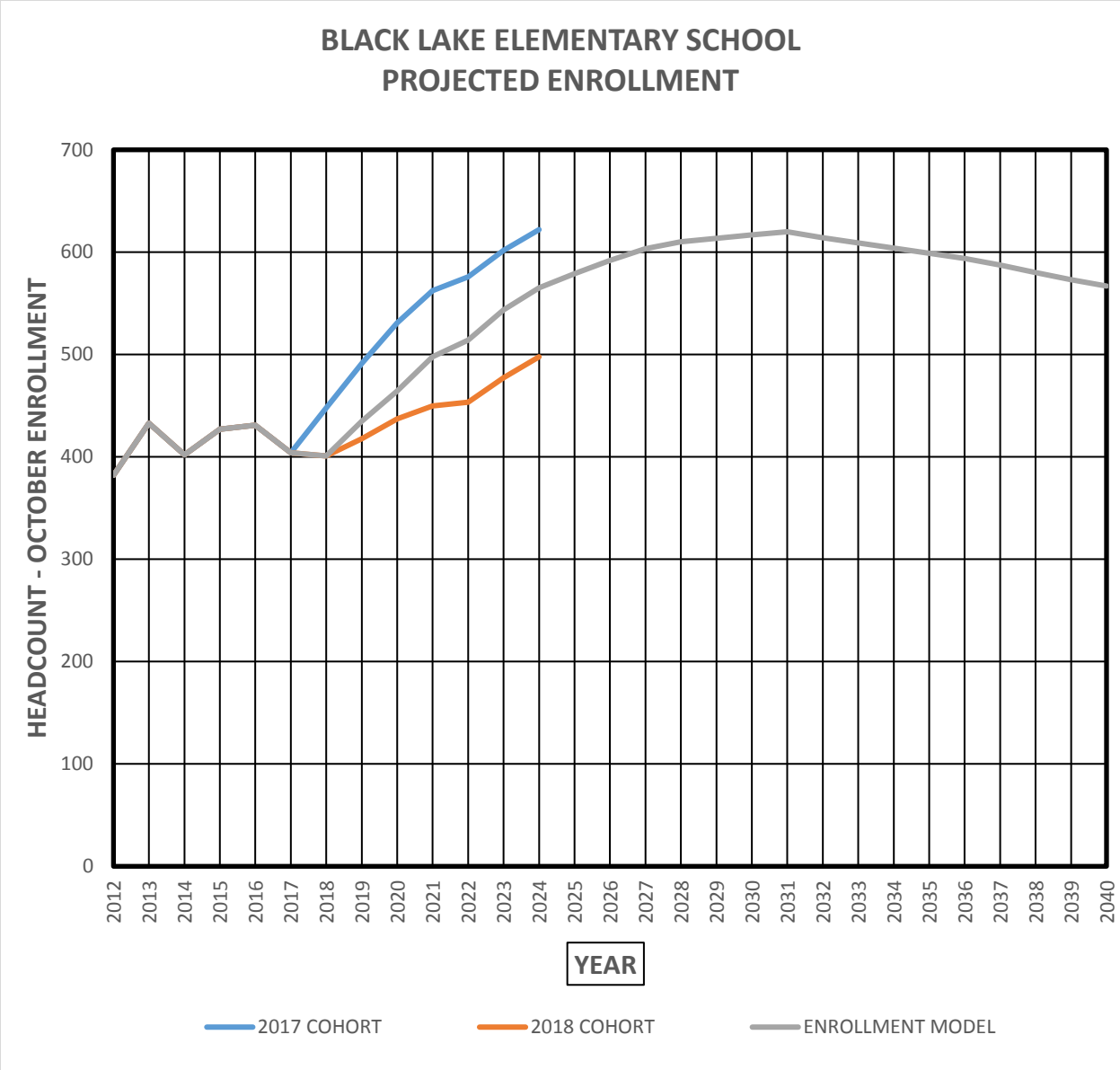
Greene Gasaway PLLC has projected the enrollment of each facility using the 2017 cohort, the 2018 cohort and the enrollment model. The enrollment model generally falls between the 2017 cohort and the 2018 cohort. Graphing only the model projection for each facility by grade-grouping provides a visualization of the relative growth anticipated in each service area. Elementary school, middle school and high school graphs follow.




TUMWATER SCHOOL DISTRICT
MIDDLE SCHOOL PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
1400
1200
1000
800
600
400
200
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
YEAR
BUSH MS
TUMWATER MS



The graphs for each facility show the 2017 cohort, the 2018 cohort and the model projection. The cohort projections only extend to 2025. Cohort projections are only used to project about six years into the future. The model projections extend to 2040. Thurston Regional Planning Council provides population and residential unit projections to 2040. Model projections are only accurate to the extent that the underlying assumptions are accurate.


BLACK LAKE ELEMENTARY SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
700
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YEAR
2017 COHORT
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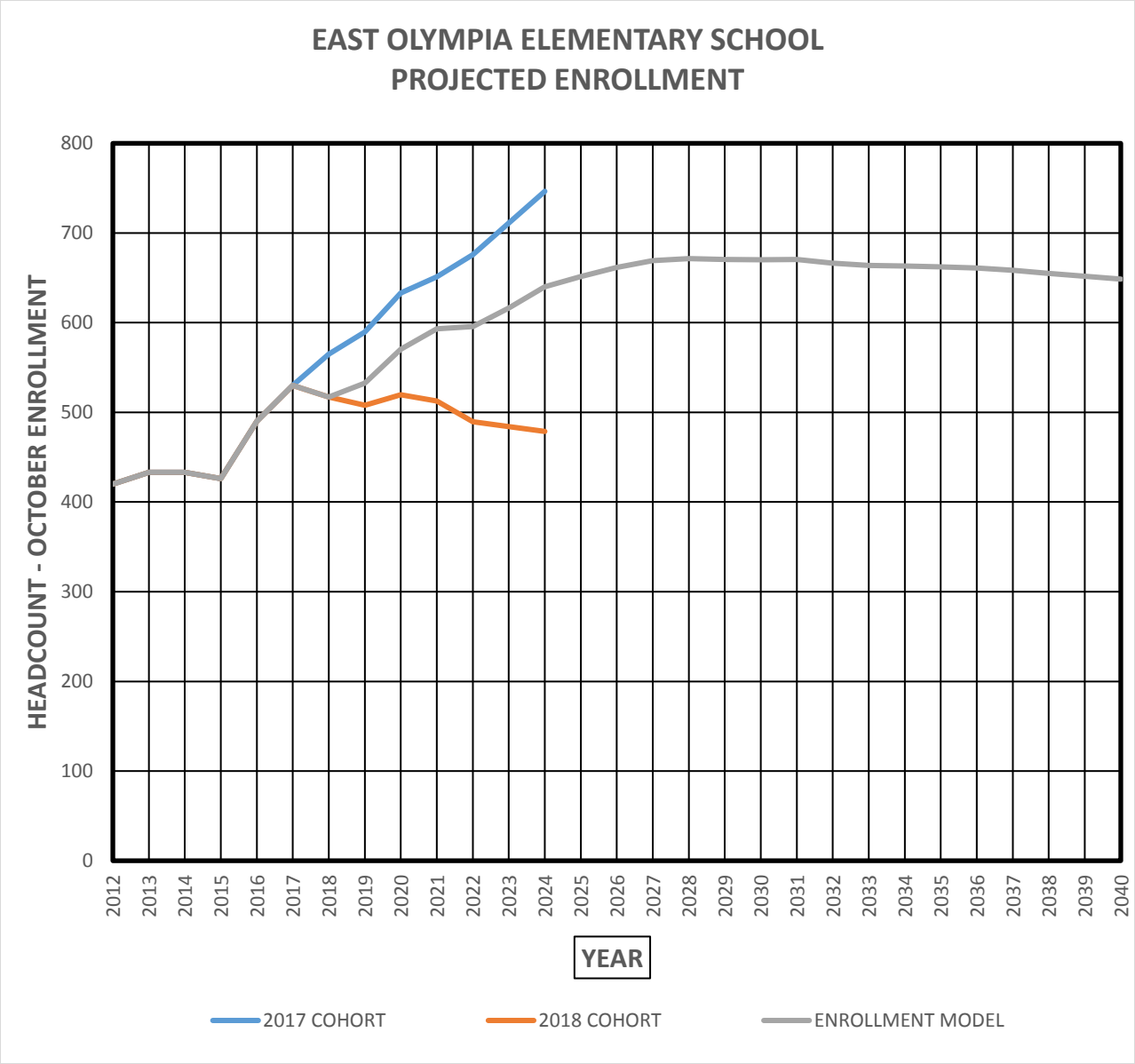
ENROLLMENT MODEL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PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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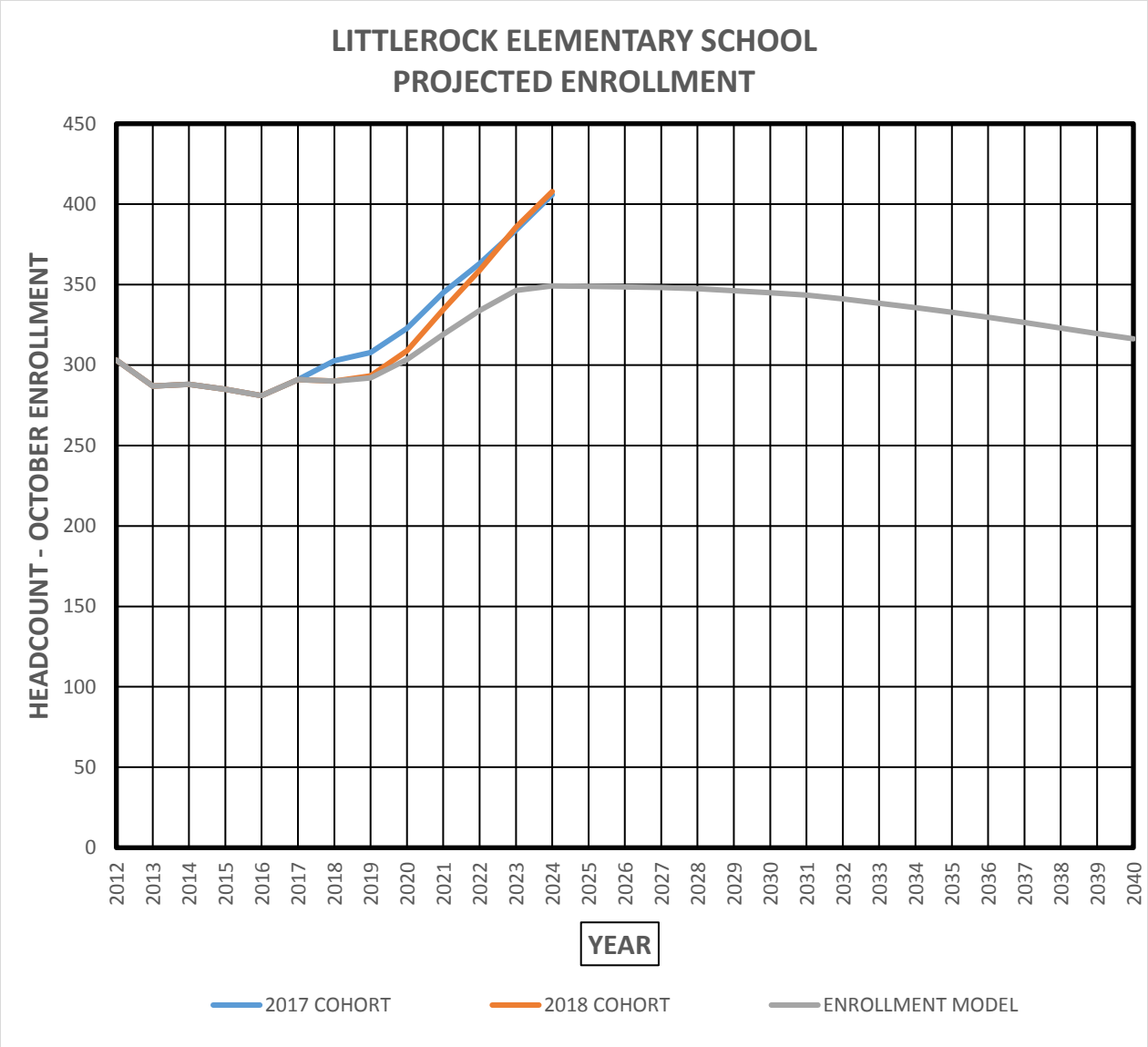
ENROLLMENT MODEL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PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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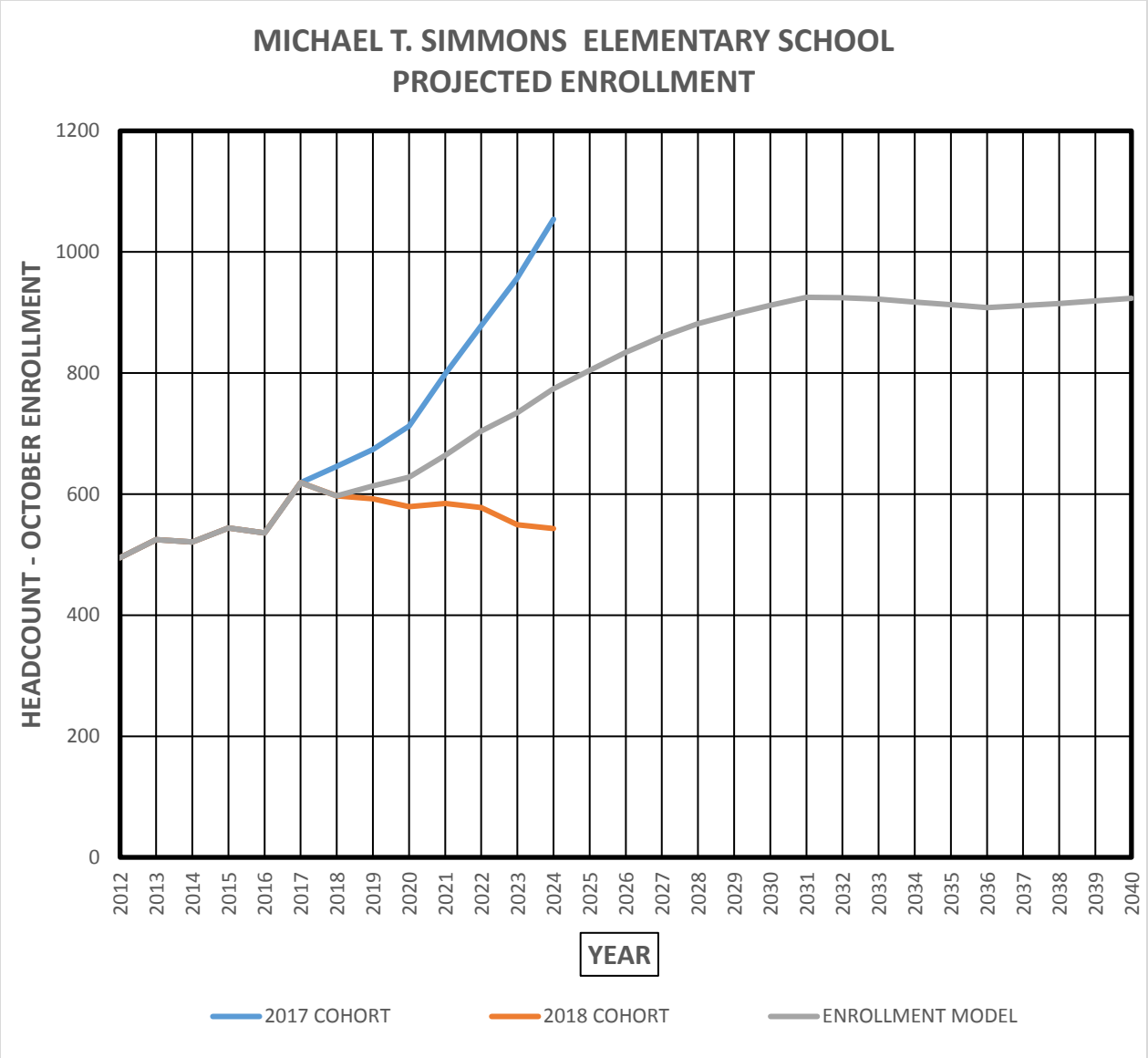
ENROLLMENT MODEL


MICHAEL T. SIMMONS ELEMENTARY SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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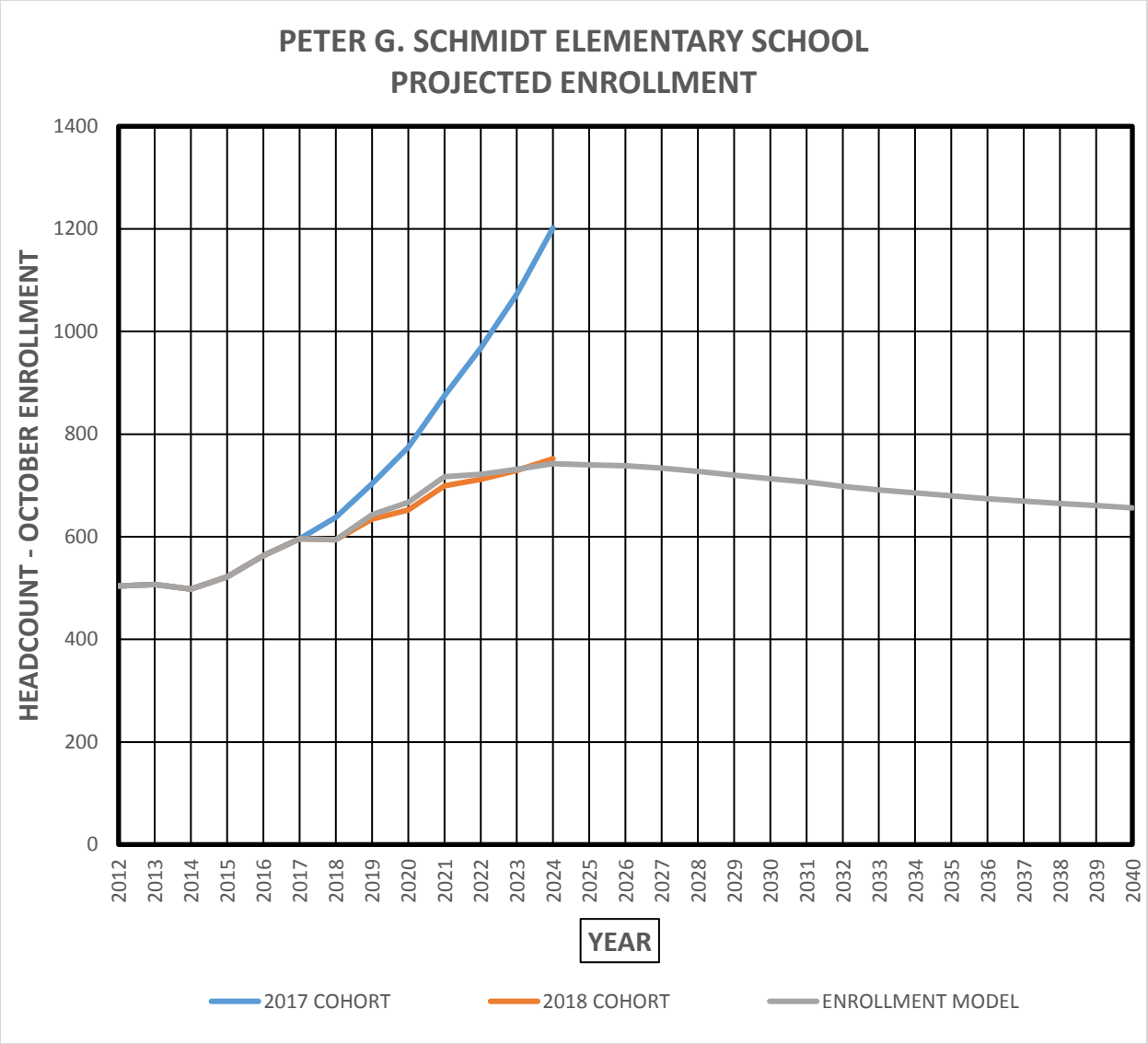
ENROLLMENT MODEL


PETER G. SCHMIDT ELEMENTARY SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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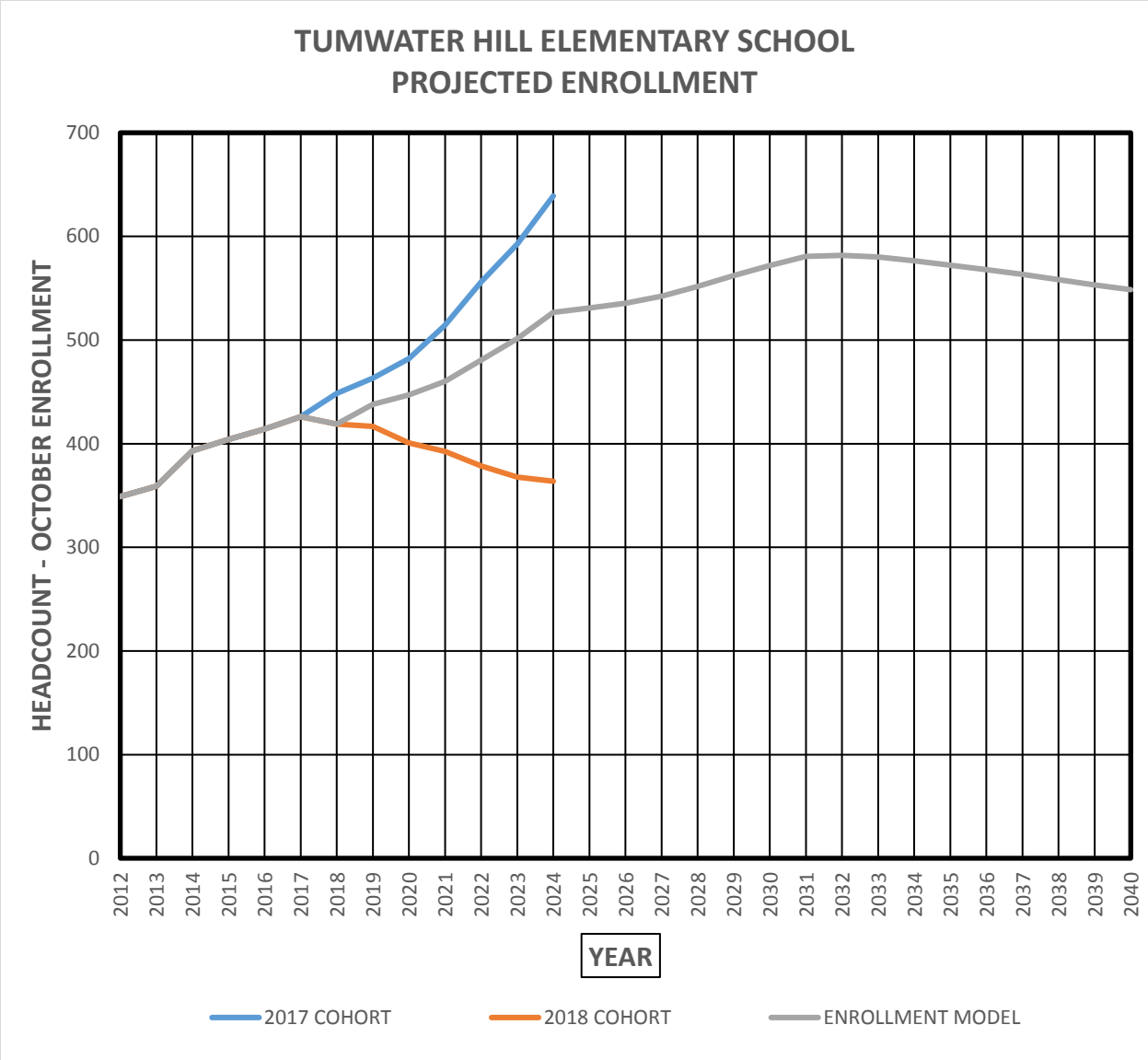
ENROLLMENT MODEL


TUMWATER HILL ELEMENTARY SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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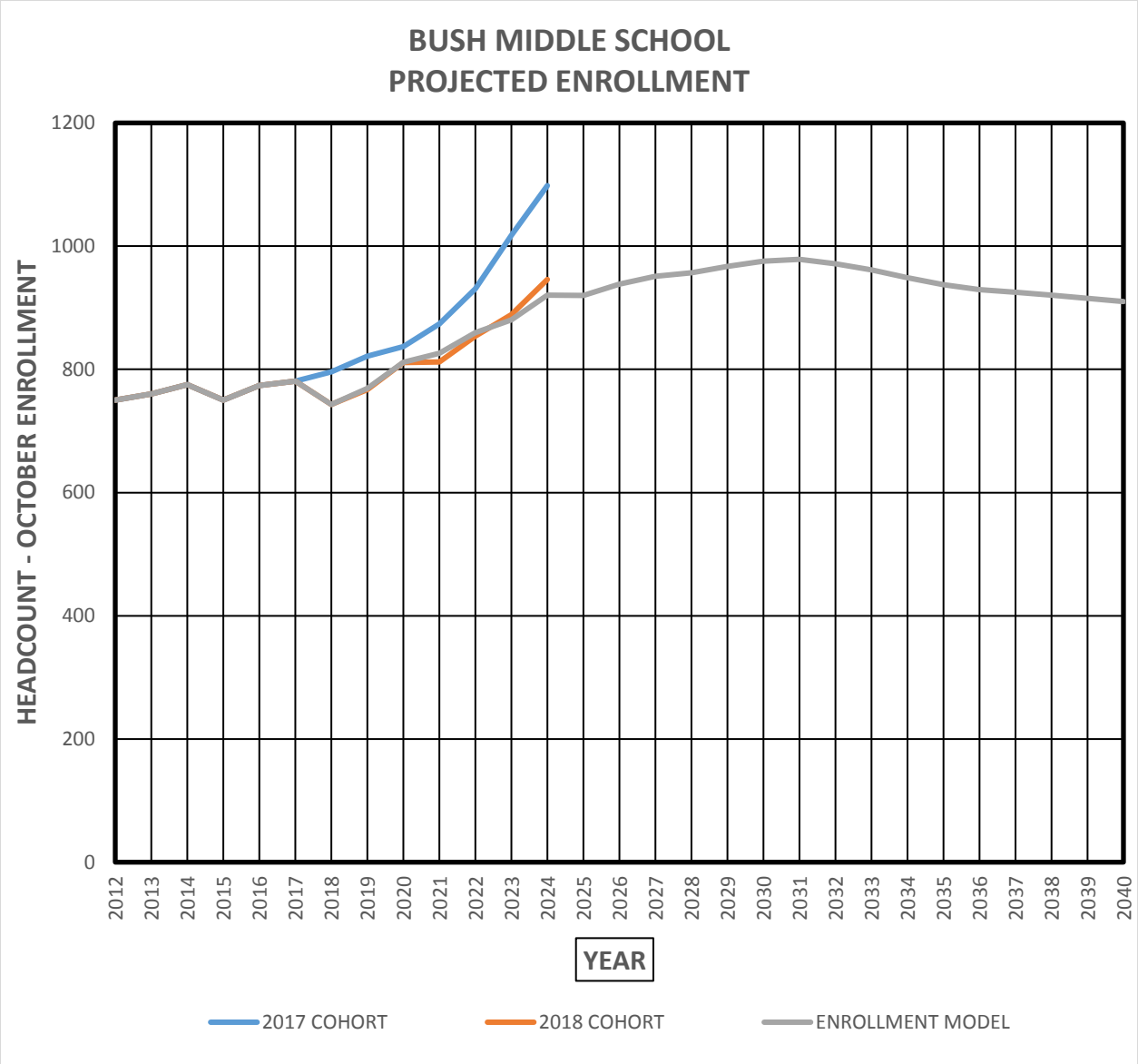
ENROLLMENT MODEL


BUSH MIDDLE SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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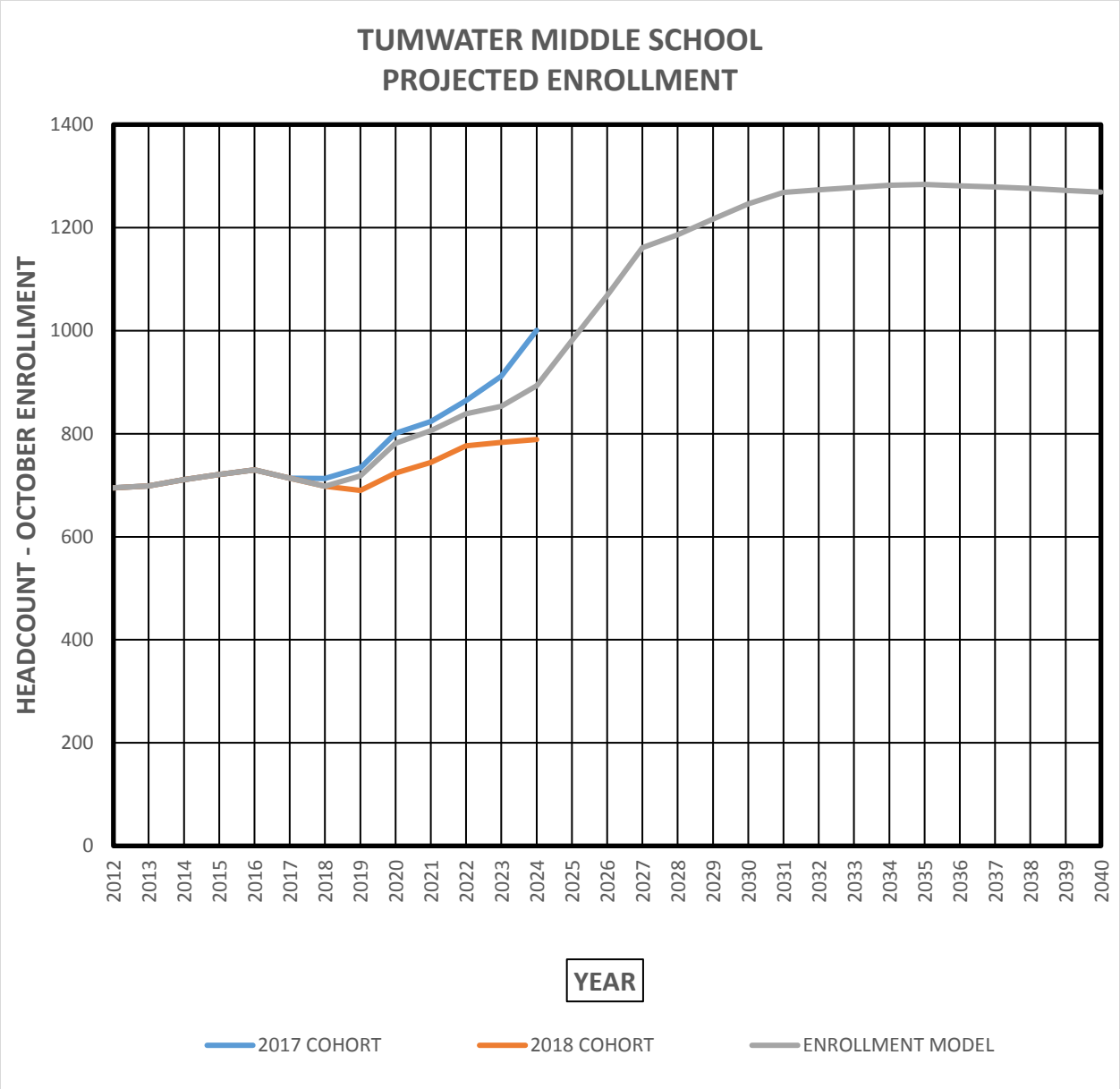
ENROLLMENT MODEL


TUMWATER MIDDLE SCHOOL
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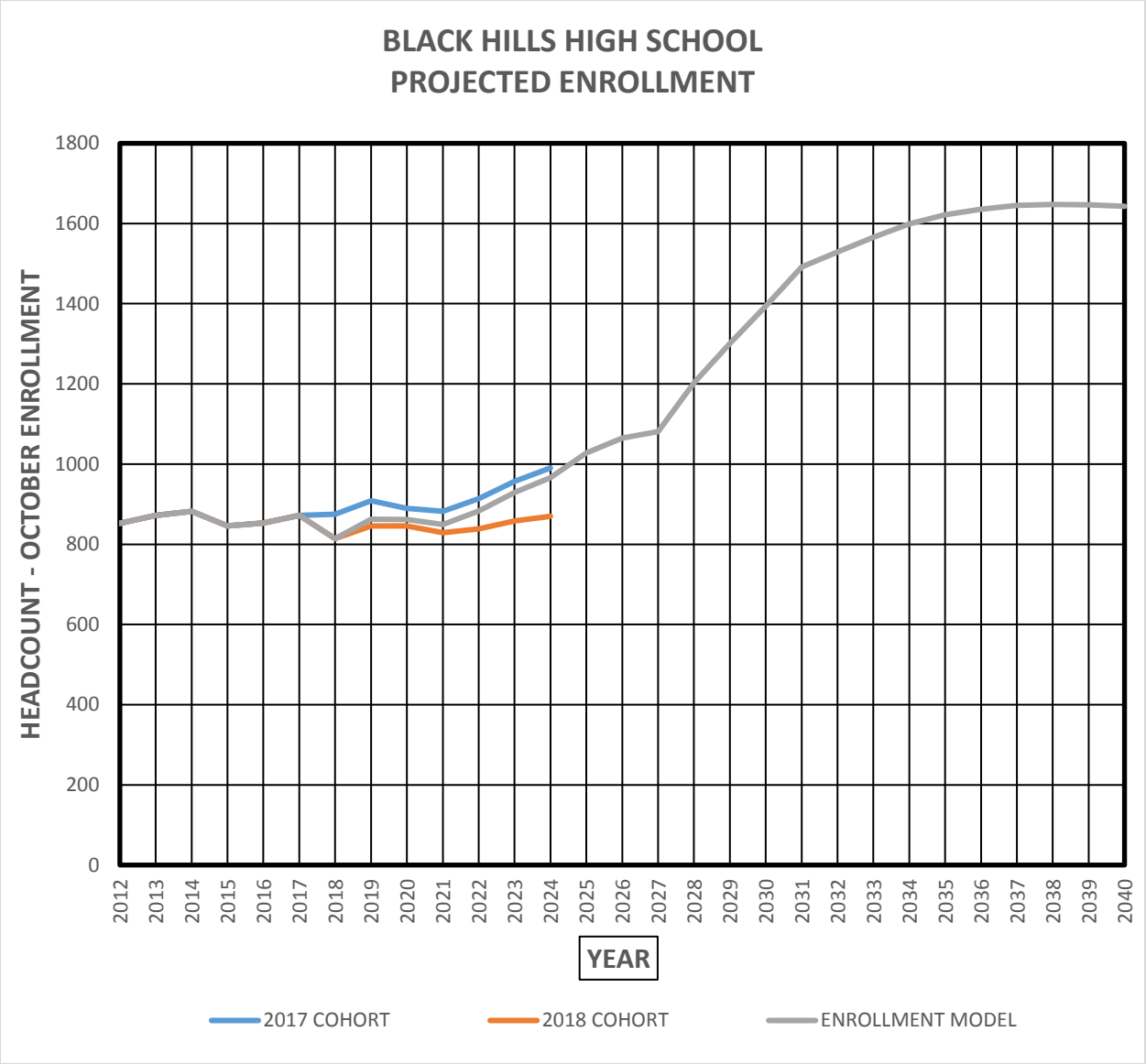
BLACK HILLS HIGH SCHOOL
PROJECTED ENROLLMENT
HEADCOUNT - OCTOBER ENROLLMENT
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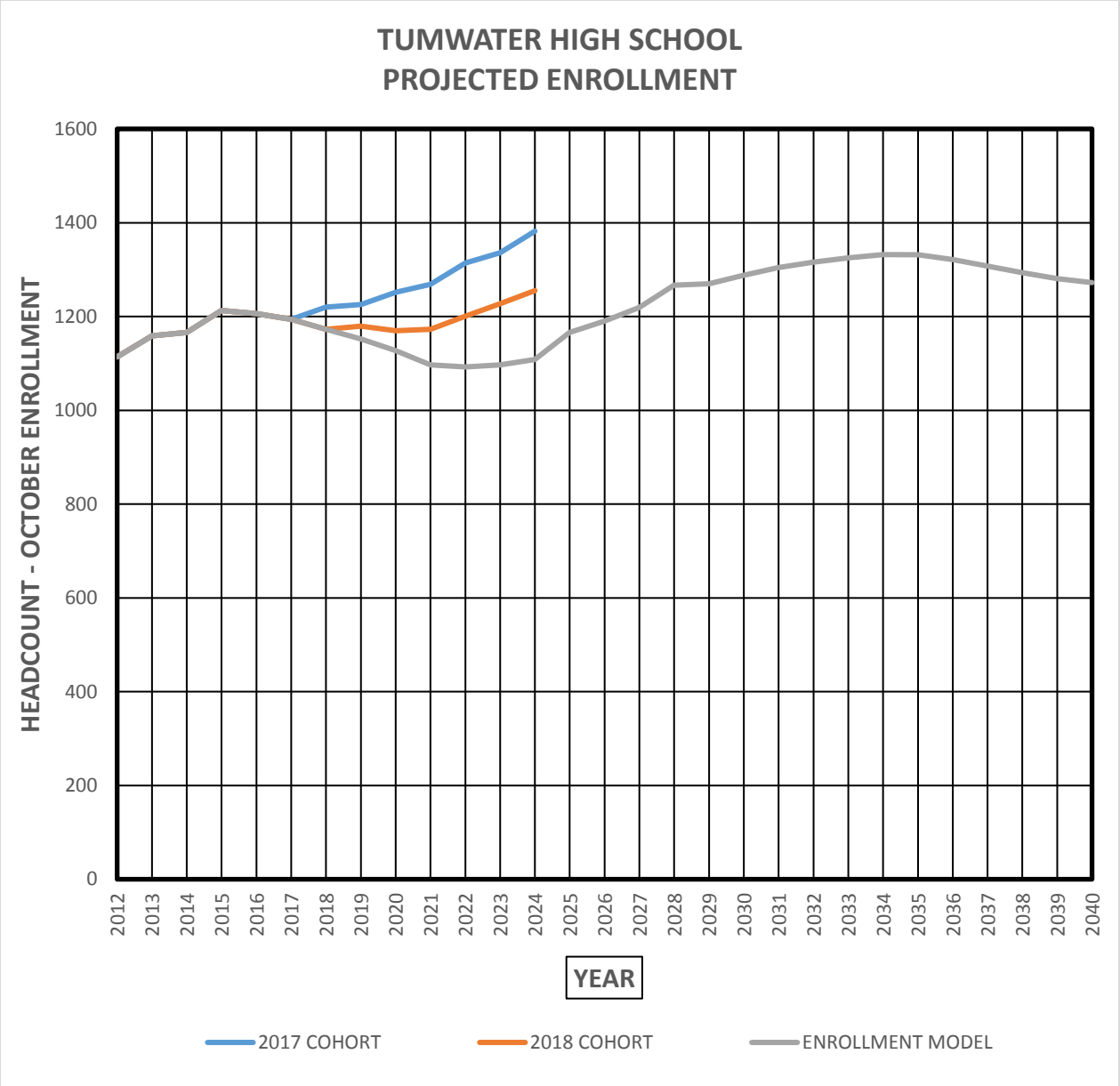
TUMWATER HIGH SCHOOL
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2018 COHORT
ENROLLMENT MODEL

****END****

Tumwater School District
New Single- and Multi-Family Housing Developments
As of 9/15/2023

							Student Generation Rates		
							Multi-Fam	0.05	0.05	0.058
							Single-Fam	**0.301**	**0.172**	**0.089**
ACTIVE/ PENDING	**NAME OF DEVELOPMENT**	**LOCATION**	**LOT TYPE**	**NO. Units**	**Units Unbuilt**	**SCHOOL**	**PROJECTED STUDENTS**		
							ELEM.	**MIDDLE**	**HIGH**
Under Construction 2022	Skyview Estates	Littlerock Rd SW / Mirasett St. SW	SF	66	63	BLE	19	11	6
Under Construction 2022	Kirsop Crossing	Kirsop Rd. SW	SF	64	13	BLE	4	2	1
Prelim Plat 6/24/22	Kirsop Crossing Div. 3	Kirsop Rd. SW	SF	41	41	BLE	12	7	4
Prelim Plat 2008	Kirsop Village 2	Kirsop Rd. SW	SF	114	114	BLE	34	20	10
Feasibility Review 8/25/22	Velkommen Expansion	2535 70th Ave SW	SF	15	15	BLE	5	3	1
Feasibility Review 7/28/22	Vista Views at Black Lake	3717 49th Ave SW	SF	192	192	BLE	58	33	17
Feasibility Review 1/6/22	Littlerock Meadows	7339 Littlerock Rd SW	SF	51	51	BLE	15	9	5
App Complete 11/23/21 - Formal Review 10/14/21	Tickner Farm	7747 Littlerock Road SW /Div 1-3	SF	365	365	BLE	110	63	32
App Complete 11/23/21 - Formal Review 10/14/21	Tickner Farm	Future Divisions	SF	1000	1000	BLE	301	172	89
Formal Review 5/25/23	Velkommen Apartments	7125 Littlerock Rd SW	MF	19	19	BLE	1	1	1
Prelim Review 12/23/21	Stella Apartments (Part of Tickner)	7747 Littlerock Road SW,	MF	250	250	BLE	13	13	15
Feasibility Review 7/13/2023	Littlerock Townhouse Village (repl. Littlerock Apts)	Tumwater Blvd and Littlerock Rd.	MF	56	56	BLE	3	3	3
BLE Sub-Total (TMS & BHHS)				**2233**	**2179**		**574**	**335**	**184**
PENDING	Bradbury Estates Division 3	West of Old 99 & North of 83rd (north & east of Tumwater Highlands)	SF	166	96	EOE	50	29	15
App Complete 10-7-22	Enclave at Deschutes river	8940 Old Highway 99 SE	SF	25	25	EOE	8	4	2
Under Construction 2022	Kimmie Court	Off Kimmie Street	SF	28	28	EOE	8	5	2
Not started yet	Bradbury Division 4	93rd Ave. SE	SF	54	54	EOE	16	9	5
Pre-Sub Meeting 8/5/23	83rd Avenue Townhomes	1923 83rd (south of BMS)	MF	46	46	EOE	0	0	0
County Land Use App 7-7-202	Aspen Apartments	1635 83rd (south of BMS)	MF	132	132	EOE	7	7	8
EOE Sub-Total (BMS & THS)				**451**	**381**		**89**	**54**	**32**
ACTIVE	Trosper Woods	Kirsop Rd. SW/56th Ave SW	SF	42	42	MTS	13	7	4
PENDING	Tumwater Ridge	East side of 7th/Barnes	SF	18	18	MTS	5	3	2
App Complete 12/30/21 - Prelim Review 8/26/21	Kirsop Crossing Div. 3	6139 Kirsop Road SW	SF	41	41	MTS	12	7	4
App Complete 10-7-22	Sienna #1	Littlerock Rd across from BHHS	SF	78	78	MTS	23	13	7
(43) Building permits 7/2023	Sienna #2	Littlerock Rd across from BHHS	SF	82	82	MTS	25	14	7
Formal Site Plan 3/9/23	Belmont Flats	1589 Old Israel Rd SW	MF	614	614	MTS	31	31	36
Under construction	Kingswood Apartments	2.9 acre parcel at the east end of Bishop and Odegard Roads adjacent to Tyee Drive	MF	183	183	MTS	9	9	11
Preliminary Review 5/11/23	Tyee Landing	Tyee Drive south of Toyota	MF	144	144	MTS	7	7	8
Formal Review 9/22/22	Yorkshire Apartments	Tumwater Blvd. SW & Israel Rd. SW	MF	1150	1150	MTS	58	58	67
NOA 3-24-2023	Littlerock Road Mixed Use	5945 Littlerock Rd SW	MF	114	114	MTS	6	6	7
Feasibility Review 7/21/22	Rural Road Apartments	5012 Rural Rd SW	MF	29	29	MTS	1	1	2
Feasibility Review 11/4/21	Tyee Landing	XX69 Tyee Dr. SW	MF	146	146	MTS	7	7	8
Formal Review 10/7/21	Craft District II Apartments	4300 Capitol Bv SE	MF	96	96	MTS	5	5	6
Formal Review 9/16/21	Littlerock Rd Multi-Family	6820 Littlerock Rd SW	MF	8	8	MTS	0.4	0.4	0
Built 2022	Rockwell Place Apts.	Odegard & Bishop Rd. SW	MF	141	0	MTS	7	7	8
Under construction	Kingswood Apartments	1450 Odegard SW	MF	181	53	MTS	9	9	10
Pre-Sub Meeting 2/16/23	Trestlewood Tumwater LLC	8114 Littlerock Rd SW	MF	128	128	MTS	6	6	7
MTS Sub-Total (TMS & BHHS)				**3195**	**2926**		**225**	**192**	**193**

New Single- and Multi-Family Housing Developments
As of 9/15/2023

							Student Generation Rates		
							Multi-Fam	0.05	0.05	0.058
							Single-Fam	0.301	0.172	0.089
ACTIVE/ PENDING	NAME OF DEVELOPMENT	LOCATION	LOT TYPE	NO. Units	Units Unbuilt	SCHOOL	PROJECTED STUDENTS		
							ELEM.	MIDDLE	HIGH
Under construction	Three Lakes Crossing	6609 Henderson Blvd SE	SF	45	45	PGS	14	8	4
Building permits 7/2023	Elm Street Plat	Elm St. SE and Gilbertson Ln SE	SF	23	23	PGS	7	4	2
Under Construction 2022	Percy Lane SE - Susan Lake	Henderson Blvd & Percy Lane	SF	16	8	PGS	2	1	1
Not started yet	Henderson Park	Henderson Blvd. & 71st Ave SE	SF	22	22	PGS	7	4	2
Not started yet	Stanton Court	Dennis St. SW and Stanton Ct SW	SF	7	7	PGS	2	1	1
Not started yet	Tumwater Blvd Plat	Tumwater Blvd SW & Road A.	SF	26	26	PGS	8	4	2
PENDING	Michael O'Neil Multi-Family	7515 Trails End Drive	MF	16	16	PGS	1	1	1
Feasibility Review 8/18/22	Thompson-Demaris	7732 Arab Dr SE	MF	8	8	PGS	0	0	0
Feasibility Review 8/18/22	Henderson Apartments	7321 Henderson Blvd SE	MF	15	15	PGS	1	1	1
Prelim Review 8/4/22	6501 Mixed-Use Project	6501 Capitol Blvd SW	MF	123	123	PGS	6	6	7
Feasibility Review 4/21/22	Capital Blvd. Apartments	6333 Capitol Blvd	MF	48	48	PGS	2	2	3
Feasibility Review 3/9/23	Point Plaza East 4, 5, 6 - office to apartments	6333 Capitol Blvd	MF	185	185	PGS	56	9	11
Feasibility Review 5/4/23	Henderson Blvd MF	7501 Henderson Blvd SE	MF	96	96	PGS	5	5	6
Feasibility Review 7/29/21	The Rookery	6504 Capitol Blvd SE	MF	6	6	PGS	0.3	0.3	0.3
Formal Review 5/18/23	New Market Apartments	New Market St SW & 71st & 73rd	MF	410	410	PGS	21	21	24
NOA 8/21/23	Tumwater 30	723, 725 & 727 Israel Rd. SW	MF	42	42	PGS	2	2	2
Under construction 2023	HFH - 11507 73rd Ave SE	1150 73rd Ave. SE	MF	28	28	PGS	1	1	2
Feasibility Review 3/2/23	Four Lakes Village	1111 73rd Ave SE	MF	44	44	PGS	2	2	3
Feasibility Site Plan 3/9/23	Point Plaza East 4,5 & 6	290 & 310 Israel Rd.	MF	185	185	PGS	9	9	11
Prelim Review 3/23/23	Tumwater 30	723 Israel Rd. SW	MF	44	44	PGS	2	2	3
PGS Sub-Total (BMS & THS)				**1389**	**1381**		**148**	**85**	**84**
Feasibility Review 2/10/22	Belmore Ridge	Vacant land near 54th Ave SW	SF	100	100	THE	30	17	9
Under Construction 2022	Eaglewood	Hansen St. SE	SF	18	18	THE	5	3	2
Hearing 5/24/23 for PP approv	Sunrise Hill Plat	Sapp Rd. NW & Crosby Blvd.	SF	36	36	THE	11	6	3
Formal Review 8/25/22	Mottman Village	2800 RW Johnson Blvd SW	MF	200	200	THE	10	10	12
App Complete 4/29/22 - Formal Review 1/13/22	Forest Park II (Sky Vista)	Corner of Barnes Blvd, and Crosby Blvd., SW,	MF	60	60	THE	3	3	3
Under Construction 2022	North Street Apartments	340 & 350 North St SE	MF	24	24	THE	1	1	1
Formal Review	5th Ave. Townhomes	585 5th Ave SW	MF	14	14	THE	1	1	1
Under Construction 2022	Forest Park Townhomes	Ridgeview Loop SW & Starlight Lane SW	MF	67	67	THE	3	3	4
THE Sub-Total (TMS & BHHS)				**519**	**519**		**65**	**45**	**35**
			35%	SF	2,735	2,603			
			65%	MF	5,052	4,783			
	Total # of New Students 2,340	**Grand Total**		**7,787**	**7,386**		**1101**	**710**	**528**
		TOTAL BY SCHOOL							
	Total ES Students = 1,101	**BLE (Black Lake Elementary)**					**574**		
		EOE (East Olympia Elementary					**89**		
		MTS (Michael T. Simmons Elementary)					**225**		
		PGS (Peter G. Schmidt Elementary)					**148**		
		THE (Tumwater Hill Elementary)					**65**		
	Total MS Students = 710	**BMS (Bush Middle School)**						**139**	
		TMS (Tumwater Middle School)						**571**	
	Total HS Students = 528	**THS (Tumwater High School)**							**116**
		BHHS (Black Hills High School)							**412**

APPENDIX "C"

OLYMPIA SCHOOL DISTRICT No. 111
CAPITAL FACILITIES PLAN

Olympia School District
Capital Facilities Plan
2024-29

OCTOBER 2023

Executive Summary

The Olympia School District's 2024-2029 Capital Facilities Plan (CFP) has been prepared as the district's principal six-year facility planning document in compliance with the requirements of the Washington State Growth Management Act. This plan is developed based on the district's long -range facilities master plan work, which looked at conditions of the district facilities, projected enrollment growth, utilization of current schools and the capacity of the district to meet these needs from 2010 to 2030. This Report is the result of a volunteer Facilities Advisory Committee (FAC) who worked with the district and a consulting team for nearly six months. In addition to this 2011 Master Plan and any subsequent updates that are underway, the district may prepare other facility planning documents consistent with board policies, to consider other needs of the district as may be required.

This CFP consists of four elements:

1. An inventory of existing capital facilities owned by the Olympia School District including the location and student capacity of each facility.
2. A forecast of future needs comparing student enrollment projections against permanent facility student capacities.
3. The proposed locations and capacities of newly and expanded facilities anticipated to be constructed or remodeled over the next six years and beyond.
4. A financing plan for the new and expanded facilities anticipated to be constructed or remodeled over the next six years. This plan outlines the source of funding for these projects including state revenues, local bond revenue, local levy revenue, impact fees, mitigation fees, and other revenues.

The 2011 Master Plan and subsequent updates contained multiple projects to expand the district's facility capacity and major modernizations. Specifically, the plan included major modernization for Garfield (with expanded capacity), Centennial, McLane, and Roosevelt Elementary Schools; limited modernization for Jefferson Middle School; and modernizations for Capital High School. The plan called for the construction of a new building, with expanded capacity, for the Olympia Regional Learning Academy. The plan called for the construction of a new elementary/intermediate school (serving grades 5-8) on the eastside of the district. In the 2015 Master Plan update to the 2011 Master Plan, this new intermediate school project will not move forward. The district expanded capacity at five elementary schools via mini-buildings of permanent construction consisting of 10 classrooms each. A sixth mini-building is anticipated in the six year horizon. In addition, in order to nearly double Avanti High School enrollment, Avanti modernization is underway to expand to use the entire Knox building and would increase student capacity; the administration would move to a different building. At Olympia High School, the district has reduced reliance on 10 portables by building a new permanent building of 22 classrooms. Finally, the plan includes a substantial investment in systems modernizations and major repairs at facilities across the district.

This 2024-2029 Capital Facilities Plan (CFP) is intended to guide the district in providing capital facilities appropriate to student enrollment as well as assisting the district to identify the need

and time frame for significant facility repair and modernization projects. The CFP will be reviewed on an annual basis and revised accordingly based on the updated enrollment and project financing information available.

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I. School Capacity, Methodology and Levels of Service

The primary function of calculating school capacities is to allow observations and comparisons of the amount of space in schools across the Olympia School District (OSD) and plan for growth in the number of students anticipated at each school. This information is used to make decisions on issues such as locations of specialty program offerings, enrollment boundaries, portable classroom units, new construction and the like.
School capacities are a general function of the number of classroom spaces, the number of students assigned to each classroom, how often classrooms are used, and the extent of support facilities available for students, staff, parents and the community. The first two parameters listed above provide a relatively straightforward calculation, the third parameter listed is relevant only to middle and high schools, and the fourth parameter is often a more general series of checks and balances.
The district's historical guideline for the maximum number of students in elementary school classrooms is as follows. The table below also identifies the guideline of the new initiative and the square footage guideline used for costing construction:

Class Size Guidelines	OSD Historical Guidelines	2014 I-1351 Voter Approved (Not funded by Legislature):	Square Footage Guideline:	ESHB 2242 Enacted in 2017:
Kindergarten	23 students	17 students	25-28 students	17 students
Grades 1-2	23 students	17 students	25-28 students	17 students
Grades 3	25 students	17 students	28 students	17 students
Grades 4-5	27 students	25 students	28 students	27 students

As the district constructs new classrooms, the class size square footage guideline is tentatively set to accommodate 25-28 students. Occasionally, class sizes must exceed the guideline, and be in overload status. The district funds extra staffing support for these classrooms when they are in overload status. In most cases, the district needs to retain flexibility to a) place a 4th or 5th grade into any physical classroom; and b) size the classroom square footage to contain a classroom in overload status where needed. In addition, there is the possibility that class sizes would be amended at a later time to increase. There is an exception to the class size guideline used for Avanti High School. Due to the historical nature of the building the typical classroom square footage is smaller than the modern school classrooms in the district. Avanti spaces generally allow for a maximum of 25 students.

For these reasons, the district is maintaining its past practice of constructing classrooms to hold 28 students comfortably. This is consistent with the state's finance system for K-12 public education, in that the 2017 Legislature has retained the class size for 4th and 5th grade at 27 students.

Typically, OSD schools include a combination of general education classrooms, special education classrooms, and classrooms dedicated to supportive activities, as well as classrooms dedicated to enrichment programs such as art, music, language and physical education.

Some programs, such as special education serve fewer students but require regular-sized classrooms. An increased need for these programs at a given school can reduce that school's total capacity. In other words, the more regular sized classrooms that are occupied by smaller numbers of students, the lower the school capacity calculation will be. Any school's capacity, primarily at elementary level, is directly related to the programs offered at any given time.

Special education classroom use at elementary level includes supporting the Infant/Toddler Preschool Program, Integrated Kindergarten Program, DLC Program (Developmental Learning Classroom, which serves students with moderate cognitive delays), Life Skills Program (students with significant cognitive delays), GROW Program (Grow with Respect, Opportunity and Wonder program for students with significant behavior disabilities) and the ASD Program (Students with Autism Spectrum Disorders.) The State of Washington has recently created a new program for 4yr old children who would benefit from additional preparation - Transitional Kindergarten. At middle and/ or high level, special education classroom use includes supporting the DLC Program, Life skills Program, HOPE Program (Help Our People Excel for students with significant behavior disabilities) and the ASD Program.

Classrooms dedicated to specific supportive activities include serving IEP's (Individual Education Plan), OT/PT services (Occupational and Physical Therapy), speech and language services, ELL services (English Language Learner), ALPS services (the district's program for highly capable 4th and 5th graders), as well as non-specific academic support for struggling students (primarily Title I of the No Child Left Behind Act.)

Generally, the district limits school size to create appropriately-sized learning communities by limiting elementary school size to about 500 students, middle school size to about 800 students, and high school size about 1,800 students. These limits represent the guide, but not an absolute policy limit. The district's 2015 review and update of the 2011 Master Plan included the FAC's recommendation that exceeding these sizes was desirable if the school still functioned well, and that a guideline should be exceeded when it made sense to do so. Therefore, the plans for future enrollment growth are based on this advice and some schools are intended to grow past these sizes.

Methodology for Calculating Building Capacity

Elementary School

For the purpose of creating an annual CFP, student capacity at individual elementary schools is calculated by using each school's current room assignments. (E.g. How many general education classrooms are being used, and what grade level is being taught? How many different special

education classrooms are being used? How many classrooms are dedicated to supportive activities like the ALPS Program, ELL students, etc.?)
Throughout the district's elementary schools, special programs are located according to a combination of criteria including the proximity of students who access these special programs, the efficiency of staffing resources, and available space in individual schools.

Since the location of special programs can shift from year to year, the student capacities can also grow or retract depending on where the programs are housed. This fluctuation is captured in what is termed the "Program Capacity" of each school. That is to say that "Program Capacity" is calculated based on the programs offered at a given school each year, instead of a simple accounting of the number of classroom spaces (See Table 1.).

Of note is a new district initiative to expand student access to Art, Music and Physical Education (PE) (AMP). The district has invested in a total of about 23 teachers to provide a consistent schedule of 2 sessions of music, 2 sessions of PE, and 1 session of art per week for each classroom of students. Beginning with the 2021-22 SY, all traditional elementary schools had the opportunity to implement this program. The fidelity to the schedule of 2/2/1 sessions is impacted occasionally by school facilities, and may occasionally include a rotation of Library or more frequent art instruction. Future facilities investments will be focused on ensuring implementation of the AMP opportunity. Finally, the district has continued its investment in orchestra instruction for 4th and 5th grade students and band instruction for 5th grade students.

Middle and High Schools

Capacity at middle school and high school levels are based on the number of "teaching stations" that include general-use classrooms and specialized spaces, such as music rooms, computer rooms, physical education space, industrial arts space, and special education and/ or classrooms dedicated to supportive activities. In contrast to elementary schools, secondary students simultaneously occupy these spaces to receive instruction. As a result, the district measures the secondary school level of service based on a desired average class size and the total number of teaching stations per building. The capacities of each secondary school are shown on Table 2.

Building capacity is also governed by a number of factors including guidelines for maximum class size, student demands for specialized classrooms (which draw fewer students than the guidelines allow), scheduling conflicts for student programs, number of workstations in laboratory settings, and the need for teachers to have a work space during their planning period. Together these limitations affect the overall utilization rate for the district's secondary schools.

This rate, in terms of a percentage, is applied to the number of teaching stations multiplied by the average number of students per classroom in calculating the effective capacity of each building. The levels of service for both middle and high school equates to an average class loading of 28 students based upon an 83% utilization factor. The only exception is Avanti High School, the district's alternative high school program, which has relatively small enrollment, so a full 100% utilization factor was used to calculate this school's capacity. The capacity displayed

for Avanti is not yet realized, as in 2022 and 2023 the phase 1 of the school modernization is near completion. Additionally there are 10 classrooms on the 3rd floor that will not receive a full remodel until a future bond. Table 2 reflects the upcoming capacity, available in the 2023-24 school year.

The master plan includes estimates for both current and maximum utilization. In this CFP we have used the current utilization capacity level because it represents the ideal OSD configurations of programs and services at this time. It is important to note that there is very little added capacity generated by employing the maximum utilization standard.

Level of Service Variables

Several factors may impact the district's standard Level of Service (LOS) in the future including program demands, state and federal funding, collective bargaining agreements, legislative actions, and available local funding. These factors will be reviewed annually to determine if adjustments to the district's LOS are warranted.

Alternative Learning

The district hosts the Olympia Regional Learning Academy (ORLA), which serves students from both within and outside of the district's boundaries. The program, which began in 2006, now serves approximately 470 full time equivalent students (about 600 headcount students). Each year since 2006 the proportion of students from within the Olympia School District has increased. Over time, the program has had a growing positive impact on the available capacity within traditional district schools. As more students from within district schools migrate to ORLA, they free up capacity to absorb projected growth. ORLA programs help retain and attract students who prefer non-traditional and on-line learning options.

The Olympia School District is also committed to serving as a regional hub for alternative education and services to families for non-traditional education. The program is providing education via on-line learning, home-school connect (education for students that are home-schooled), and Montessori elementary education.

Finally, Olympia School District is committed to providing families with alternatives to the traditional public education, keeping up with the growing demand for these alternatives, and to providing ORLA students and families with a safe facility conducive to learning.

Elementary School Technology

In capacity analyses, the district has assumed that schools will no longer need a separate computer lab. The ease of use, price, and industry trend regarding mobile computing afford the district the opportunity to continue to assume that computers are ubiquitous to the classroom and do not require separate computer labs.

Preschool Facilities

The district houses 12 special needs preschool classrooms across the district. 2 of those classrooms are dedicated to the Infant/Toddler Program.

Special Services

The district provides specialized facilities intended to mirror a house with the Dee House in East Olympia. The program serves students in the Transitions Program. These students also use leased space from a church. As of the 2023-24 school year, the Transitions Program now occupies 3 newly renovated classrooms on the ground floor of Avanti High School, and no longer utilizes space at the Dee House, or the Church..

Table 1: Elementary School Capacities

Olympia School District 2023 Capacity; 2015 Master Plan with Selected Updates

	Headcount OCT 2023	Max Building Capacity	Portable Capacity	Actual Capacity w/ Special programs	
Elementary Schools					
Boston Harbor	171	200	50	250	2 of 4 portables used for music and art
Brown, LP	269	450	25	450	1 of 2 portables is used for Art
Centennial	447	600	125	570	Past practice of limiting elementary school capacity to 500
Garfield	305	450	25	420	2 preschool classrooms not included.
Hansen	410	625	150	595	1 preschool portable and main building classroom not included.
Lincoln	281	325	0	325	
Madison	185	300	0	300	
McKenny	271	400	25	400	2 preschool portables not included; 2 infant-toddler not included.
McLane	389	575	25	545	1 preschool classroom; past practice of limiting elementary school capacity to 500
Pioneer	365	625	0	595	
Roosevelt	354	550	0	520	2 preschool classrooms not included.
ORLA	357	---	---	438	
Totals	**3,804**	**5,100**	**425**	**5,408**	
Excess/(Deficit) Capacity				1,296	Portables not included in Capacity calculation.

Table 2: Secondary Schools Capacities

Olympia School District 2023 Capacity; 2015 Master Plan with Selected Updates

	Headcount OCT 2023	Building Capacity	Portable Capacity	Actual Capacity w/ Special programs	
Middle Schools*					*Utilization Factor for middle schools = 83%.
Jefferson	**433**	767	23	731	Portable is devoted to Boys/Girls Club; theater room not included in capacity.
Thurgood Marshall	**495**	674	46	601	
Reeves	**397**	539	21	601	
Washington	**747**	883	46	870	
ORLA	**124**	---	---	80	
Totals	**2,196**	2,863	136	2,883	
Excess/(Deficit) Capacity				667	Portables not included in Capacity calculation.
High Schools*					*Utilization Factor for comp. high schools = 83%.
Avanti	**192**	425	0	300	Remodel and increased capacity near completion.
Capital	**1,274**	2,156	46	1,697	
Olympia	**1,809**	2,576	0	2,098	Capacity is 1,945 and adjustment should be considered
ORLA	**104**	---	---	107	
High School Totals	**3,379**	5,157	46	4,202	
Excess/(Deficit) Capacity				1,778	Portables not included in Capacity calculation.

Olympia School District Building Locations

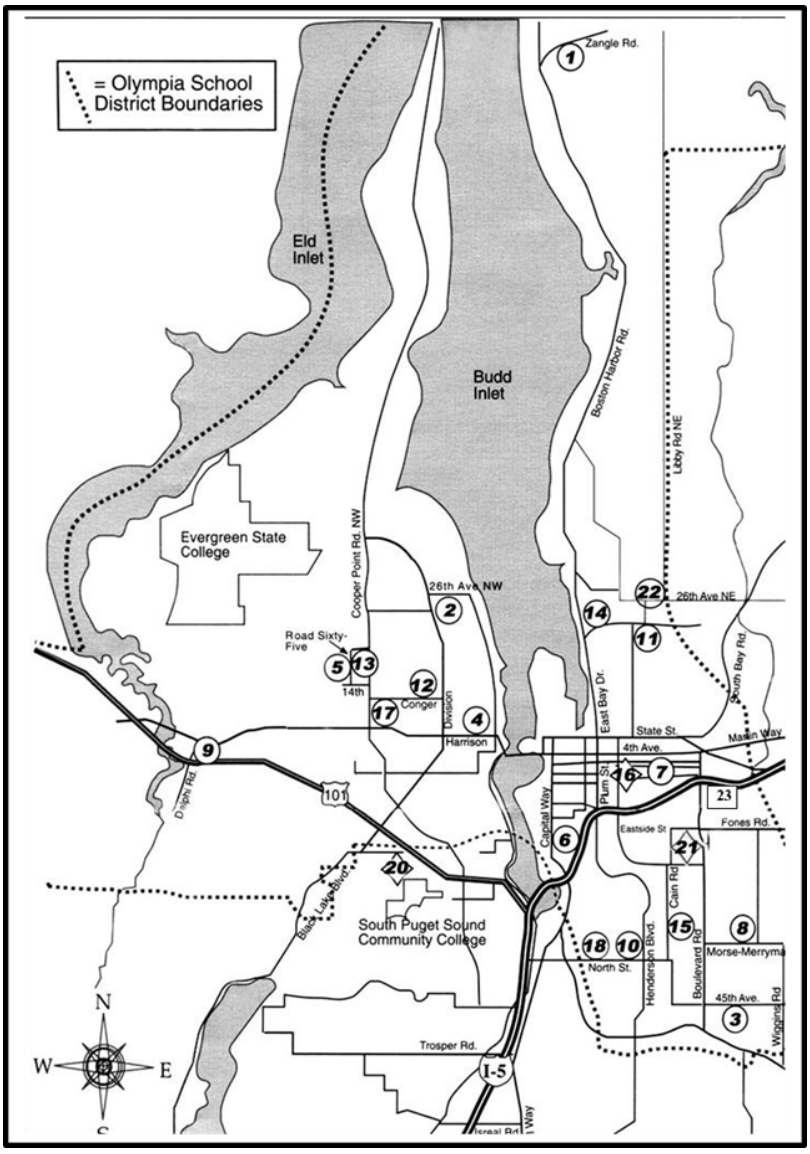

Figure 1: Map of School District Building Locations

Key

Elementary Schools

1. Boston Harbor
2. L.P. Brown
3. Centennial
4. Garfield
5. Hansen
6. Lincoln
7. Madison
8. McKenny
9. McLane
10. Pioneer
11. Roosevelt

Middle Schools

12. Jefferson
13. Marshall
14. Reeves
15. Washington

High Schools

16. Avanti
17. Capital
18. Olympia

Other Facilities

19. New Market Skills Center
20. Transportation
21. Support Service Center
22. John Rogers (Demolition completed 2022)
23. Olympia Regional Learning Academy
24. Knox 111 Administrative Building

Figure 2: OSD buildings referenced on map in Figure 1.

II. Forecast of Future Facility Needs

Olympia School District Enrollment Projections

The following enrollment assessment summary was prepared by FLO Analytics. The district updates enrollment projections every five years; below are excerpts from the summary prepared in 2023.

- FLO analyzed historical enrollment (October 2016–17 to 2022–23 headcount) based on the enrollment reports and student information system extracts provided by the District.
- District-wide enrollment increased by 54 students between 2017–18 and 2019–20 then decreased considerably in 2020–21 (421 fewer students), largely due to the impacts of COVID-
  19. Enrollment remained consistent in 2021–22 (9 fewer students) before decreasing again in 2022–23 (105 fewer students).
- Elementary school enrollment increased between 2017–18 and 2019–20 (59 more students), followed by a significant decrease in 2020–21, largely due to impacts associated with COVID-19. Elementary school enrollment declined further in 2021–22 before an increase in 2022–23.
- Middle school enrollment increased between 2017–18 and 2019–20 (26 more students). Middle school enrollment decreased between 2020–21 and 2022–23 (96 fewer students), with 2022–23 having the lowest middle school enrollment over the entire period.
- High school enrollment decreased between 2017–18 and 2019–20 (31 fewer students). High school enrollment increased between 2020–21 and 2022–23 (29 more students).

Grade	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23	2017–18 to 2022–23
K	700	706	753	571	612	576	-124
1	664	738	700	693	609	635	-29
2	696	677	757	669	684	630	-66
3	780	706	679	742	659	692	-88
4	726	771	720	645	736	674	-52
5	773	751	789	704	639	770	-3
6	711	769	752	753	712	652	-59
7	752	736	764	728	763	731	-21
8	760	766	733	755	730	757	-3
9	890	921	914	855	935	865	-25
10	848	891	911	907	845	912	64
11	870	766	802	808	837	798	-72
12	790	814	740	763	823	787	-3
District-wide Total	**9,960**	**10,012**	**10,014**	**9,593**	**9,584**	**9,479**	**-481**

Note: Olympia School District October 2017-18 to 2022-23 enrollment (headcount) by grade. Enrollment values omit students enrolled in full-time Running Start, transitional kindergarten, and preschool. The lowest and highest enrollment values per grade are highlighted in blue and orange, respectively.

School Forecasts

The following enrollment forecast summary was prepared by FLO Analytics. The district updates enrollment projections every five years; below is the summary prepared in 2023.

- District births between 2011–12 and 2017–18 aligned with historical kindergarten enrollment from 2017-18 to 2022-23 averaged 635 per year. Kindergarten enrollment averaged 653 students per year from 2017–18 to 2022–23, including a low of 571 in 2021–22, a recovery to 612 in 2021–22, and then a decrease to 576 in 2022–23.
- Kindergarten-to-birth ratios for the District were consistently at or above 1.07 from 2017–18- to 2019–20, indicating that many more families with young children moved into the District than out of it during that time. Ratios for the District have been below 0.97 from 2020–21 to 2022–23. A decrease in births has also contributed to decreased kindergarten enrollment.
- Student cohort sizes changes over time were assessed by calculating grade progression ratios (GPRs)—the ratio of enrollment in a specific grade in a given year to the enrollment of the same age cohort in the previous year.
- In each year, except 2020–21, GPRs for most grades have consistently been above 1.00, indicating that the District sees a net gain of students by cohort. During the three years prior to the COVID-19 pandemic, cohorts progressing from 8th to 9th grade had the highest average GPR (1.20), due in part to students enrolling from Griffin School District for high school. Elementary and middle school grades GPRs ranged between 0.99 and 1.03.
- After the enrollment loss in 2020–21 characterized by GPRs below 1.00, GPRs returned to pre- COVID levels in the two most recent years, 2021–22 and 2022–23.
- District-wide enrollment is forecasted to decrease from 9,479 in 2022–23 to 8,496 in 2032–33. District-wide enrollment is expected to decrease through 2032–33 (an average of 100 fewer students per year) in response to less current enrollment in lower grades and declining births.
- The middle scenario total of 8,496 students in 2032–33 depicts a K–12 decrease of 983 students (10.4 percent), from the 2022–23 total of 9,479. The high forecast anticipates a decrease of 203 students (2.1 percent) over the 10-year horizon, while the low forecast anticipates a decrease of 1,679 (17.7 percent).
- Annual district-wide forecasts by grade group for the middle scenario show the following 10-year decline from 2022–23 to 2032–33:
  - K–5 enrollment from 3,977 to 3,494 (12.1 percent decrease)
  - 6–8 enrollment from 2,140 to 1,917 (10.4 percent decrease)
  - 9–12 enrollment from 3,362 to 3,085 (8.2 percent decrease)
- Smaller cohorts will lead to 350 fewer elementary students between 2022–23 and 2027–28 followed by 133 fewer ES students over the latter half of the forecast period.
- While there will be some year-to-year variation, a 50-student decline in middle school enrollment is anticipated by 2027–28 followed by 173 fewer students over the remainder of the forecast period.
- High school enrollment is expected to follow a similar trajectory to that of middle school enrollment with 38 fewer students over the first half of the forecast period, followed by 239 fewer students between 2027–28 and 2032–33. FLO anticipates 983 fewer K–12 students over the 10-year forecast horizon.

Table 3: FLO Analytics Enrollment Forecast by School/Program (October Headcount 2023-2033) Medium Range Forecast

School Name	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2032–33
Boston Harbor ES	179	174	174	165	172	165	159
Centennial ES	482	473	446	429	414	394	381
Garfield ES	300	290	279	263	261	258	243
Hansen ES	456	440	431	430	430	432	410
Lincoln ES	270	275	285	284	273	271	257
LP Brown ES	317	301	291	290	286	292	294
Madison ES	199	195	198	185	178	173	164
McKenny ES	275	272	271	280	289	287	270
McLane ES	413	407	403	386	395	384	377
Pioneer ES	385	358	366	353	349	334	315
Roosevelt ES	386	363	351	332	326	322	309
ORLA	315	315	315	315	315	315	315
K–5 Total	**3,977**	**3,863**	**3,810**	**3,712**	**3,688**	**3,627**	**3,494**
Jefferson MS	448	454	454	461	432	398	380
Marshall MS	443	468	466	506	482	494	451
Reeves MS	395	424	436	444	404	405	360
Washington MS	749	718	678	693	680	688	621
ORLA	105	105	105	105	105	105	105
6–8 Total	**2,140**	**2,169**	**2,139**	**2,209**	**2,103**	**2,090**	**1,917**
Capital HS	1,276	1,345	1,381	1,365	1,454	1,465	1,337
Olympia HS	1,811	1,762	1,749	1,656	1,643	1,584	1,473
Avanti HS	178	178	178	178	178	178	178
ORLA	97	97	97	97	97	97	97
9–12 Total	**3,362**	**3,382**	**3,405**	**3,296**	**3,372**	**3,324**	**3,085**
District-wide Total	**9,479**	**9,414**	**9,354**	**9,217**	**9,163**	**9,041**	**8,496**

Projected Seating Capacity by Level

This section takes the district's review of school capacity, updated for 2023 placement of programs, and compares this capacity to the school-by-school enrollment projection of FLO Analytics. Total excess capacity does not guarantee sufficient capacity at every school. Instead it indicates a system-wide sufficiency which may still require adjustment of special programs, portable capacity, or a change in boundaries as new developments are completed. Tables 4, 5 and 6 assume the medium range projection.

Note: in the capacity tables below, totals may not add due to rounding of original projection data.

Table 4 displays the estimated excess capacity of all elementary schools if growth occurs at the medium range projection. Seventy percent of ORLA capacity is distributed to elementary age students.

Table 4: Elementary Excess Capacity

Elementary Schools	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	32-Oct
Boston Harbor	177	191	184	206	216	172	174	165	172	165	159
Centennial	516	530	486	526	542	449	446	429	414	394	381
Garfield	366	372	328	339	344	304	279	263	261	258	243
Hansen	468	493	457	476	472	402	431	430	430	432	410
Lincoln	291	286	273	293	291	282	285	284	273	271	257
LP Brown	372	373	346	374	416	310	291	290	286	292	294
Madison	230	257	248	262	259	189	198	185	178	173	164
McKenny	350	342	318	344	350	274	271	280	289	287	270
McLane	341	364	327	364	386	393	403	386	395	384	377
Pioneer	457	454	393	410	415	367	366	353	349	334	315
Roosevelt	404	394	361	393	387	362	351	332	326	322	309
ORLA	374	405	373	441	433	373	315	315	315	315	315
Total	4,346	4,461	4,094	4,428	4,511	3,877	3,810	3,712	3,688	3,627	3,494
2023 Capacity	5,408	5,408	5,408	5,408	5,408	5,408	5,408	5,408	5,408	5,408	5,408
Excess	**1,062**	**947**	**1,314**	**980**	**897**	**1,531**	**1,598**	**1,696**	**1,720**	**1,781**	**1,914**

Table 5 displays the estimated capacity of all middle schools if growth occurs at the medium range projection.

Table 5: Middle School Excess Capacity

Middle Schools	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	32-Oct
Jefferson	471	481	468	458	448	433	454	461	432	398	380
Thurgood Marshall	416	423	416	447	443	495	466	506	482	494	451
Reeves	438	398	414	373	395	397	436	444	404	405	360
Washington	799	798	792	759	749	747	678	693	680	688	621
ORLA	150	148	146	168	105	124	105	105	105	105	105
Total	2,218	2,188	2,170	2,205	2,193	2,196	2,207	2,288	2,310	2,339	2,448
2023 Capacity	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883	2,883
Excess	**665**	**695**	**713**	**678**	**690**	**687**	**676**	**595**	**573**	**544**	**435**

Table 6 displays the estimated capacity of all high schools if growth occurs at the medium range projection.

Table 6: High School Excess Capacity

High Schools	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	32-Oct
Avanti	169	157	162	177	183	192	178	178	178	178	178
Capital	1,336	1,305	1,298	1,281	1,345	1,274	1,381	1,365	1,454	1,465	1,337
Olympia	1,782	1,817	1,790	1,746	1,811	1,809	1,749	1,656	1,643	1,584	1,473
ORLA	94	87	80	94	93	104	97	97	97	97	97
Total	3,381	3,366	3,330	3,298	3,333	3,442	3,463	3,449	3,485	3,622	3,659
2023 Capacity	4,202	4,202	4,202	4,202	4,202	4,202	4,202	4,202	4,202	4,202	4,202
Excess	**821**	**836**	**872**	**904**	**869**	**760**	**739**	**753**	**717**	**580**	**543**

In 2015, the Facilities Advisory Committee recommended that schools be generally capped in order to support smaller, more personalized schools. The high school limit was identified as about 1,800 students. Also, while the Olympia High School classroom capacity may hold slightly higher than this number, the cafeteria, administrative spaces, fields, and congregate spaces are constricted.

Student Generation Rates Used to Generate School Forecasts and Calculate Impact Fees

Enrollment forecasts for each school, detailed in the previous section, involved allocating the district medium projection to schools based on assumptions of differing growth rates in different service areas. Two sources of information were used for this forecast of student data. First, housing development information by service area, provided by the City and County. Second,

student generation rates are based on City and County permits and OSD in-district enrollment data. The student generation rates are applied to future housing development information to identify where the growth will occur.

The process of creating the student generation rates involved comparing the addresses of all students with the addresses of each residential development. Those which matched were aggregated to show the number of students in each of the grade groupings for each type of residential development.

Table 7: District K–12 Students per Housing Unit Built 2017–2021

Housing Type	Kindergarten	1–5	6–8	9–12	K–12 Total
Single-family	0.037	0.189	0.118	0.177	0.537
Multi-family[1]	0.060	0.167	0.060	0.095	0.382
Multi-family Downtown[2]	Same	0.023	0.015	0.038	0.075

Table 7 Student Generation Rate data for Single-family and Multi-family done by BERK Consulting.
1. Multi-family includes the following building styles: condo, duplex, triplex, fourplex, and townhouse.
2. Downtown Student generation rate study was conducted by Rebecca Fornaby, 3 Square Blocks, October 2019.

III. Six-Year Facilities and Construction Plan

History and Background

In September of 2010 Olympia School District initiated a Long-Range Facilities Master Planning endeavor to look 15 years ahead at trends in education for the 21st century. Conditions of district facilities, projected enrollment growth, utilization of current schools and the capacity of the district to meet these future needs were considered. The 15-year planning horizon enabled the district to take a broad view of the needs of the community, what the district is doing well, the challenges the district should anticipate and some solutions to get started on.

The Planning Advisory Committee (PAC), consisting of parents and interested community citizens, was convened in October of 2010 and met regularly through July 2011. They made their presentation of development recommendations to the Olympia School Board on August 8, 2011.

Master Plan Recommendations

The following master plan development recommendations were identified to best meet needs over the first half of the 15-year planning horizon:

- Build a New Centennial Elementary/ Intermediate School on the Muirhead Property. (On Hold)
- Renovate Garfield ES and build a new gym due to deteriorating conditions. (Completed)
- Full Modernization of three “Prototype” Schools; Centennial, McLane & Roosevelt ES. (Completed)
- Build a New Facility for Olympia Regional Learning Academy (ORLA). (Completed)
- Expand Avanti High School into the entire Knox Building, relocate District Administration.
- Replace 10 portables at Olympia HS with a Permanent Building. (Completed)
- Capital HS renovation of components not remodeled to date and Improvements to support Advanced Programs. (Nearly Completed)
- Remodel a portion of Jefferson MS to support the new advanced math and science programing. (Completed)
- Small works and minor repairs for remaining schools. (Ongoing)

Each of these development recommendations represent single or multiple projects that bundled together would constitute a capital bond package. In 2012, voters approved a capital bond package for the first Phase of the Master Plan.

In 2015, the district undertook an update to the 2011 Master Plan in order to more thoroughly plan for Phase II.

2015 Planning for Phase II of Master Plan

The district formed a citizen’s Facilities Advisory Committee (FAC). Sixteen members of the community devoted time over 6 months to review enrollment projections and plan for enrollment growth, review field condition studies, review and score small works project requests, and ultimately make recommendations for the next phase of construction and small works.

The district contracted with experts for several updates:

- An analysis of play field conditions to determine how to ensure safe play by students and the community.
- Enrollment projections (discussed previously).
- Seismic analysis of each school to ensure that any needed seismic upgrades were built into the construction plan.
- A Site Study and Survey update for each school, a state-required analysis of major mechanical systems.

District staff analyzed space utilization and readiness for class size reduction.

In addition, school administrators generated a Facilities Condition Assessment which comprised items that each administrator felt must be addressed at their school. These items were analyzed to eliminate duplicates, identify items that were maintenance requirements (not new construction), and bundle items that were associated with a major remodel of the facility. Remaining items totaled about 120 small works items. These items were analyzed for scope and cost, and were then scored using a rubric to rank urgency for investment. (The scoring rubric rates the condition, consequence of not addressing, educational impact of not addressing, and impact on capacity of the facility.) Finally, the Facilities Advisory Committee ranked each item on a 1-3 scale (1- most important for investment).

The following describes the administrative recommendations which are largely based on the recommendations of the FAC. Where the administration recommendation varies from the FAC recommendation, this variation is noted.

Overview of Phase II Master Plan Update Recommendations (2015)

(Recommendations are updated for 2016 changes to mini-building plans.)

1. Do not construct an Intermediate School adjacent to Centennial Elementary School.
2. Complete renovation of the remaining 26-year-old Prototype Schools: Centennial, McLane and Roosevelt Elementary Schools. (Completed)
3. Reduce class size and accommodate enrollment growth by expanding the number of elementary classrooms across the school district with six permanently constructed mini-buildings on the grounds of current schools (sometimes referred to as pods of classrooms). (5 of these mini-buildings were constructed at CES, HES, McL, PES, and RES.)
4. Build a new building on the Olympia High School grounds to reduce reliance on portables and accommodate enrollment growth. (Completed)
5. Renovate portions of Capital High School. (Completed)
6. Build a sufficient theater for Capital High School. (Completed)
7. Expand Avanti High School to create an alternative arts-based school and relieve enrollment pressure from Olympia and Capital High Schools. This requires moving the district administration office to another site.(Substantially Complete)
8. Renovate playfields to improve safety and playability hours. (Ongoing)
9. Invest in electronic key systems to limit access to schools and to instigate lockdowns. (Ongoing)
10. Address critical small works and HVAC or energy-improvement projects. (Ongoing)

Do Not Construct an Intermediate School Adjacent to Centennial ES

In 2011 the Master Plan included a new school built on the Muirhead property. The recommendation was based on projected enrollment on the Eastside that would compromise the education quality. At this time, the school is not recommended for construction. Two factors contribute to the updated recommendation. First, enrollment growth has proceeded more slowly than projected. Two housing developments on the Eastside are delayed for construction, one is scaled down in size, and one may not proceed at all. Second, based on a species being listed as Endangered by the U.S. Fish and Wildlife Department, the district must develop a Habitat Conservation Plan (HCP) to mitigate the negative impact on the pocket gopher as a result of construction. The HCP is reliant on a larger county-wide effort to identify mitigation options. The district continues to make progress to gain approval by the U.S. Fish and Wildlife Department to levy construct on the site.

The delay due to a need for an HCP is fortuitous, as enrollment patterns do not warrant building of the school at this time.

The Muirhead land must likely be used for a school in the upcoming decades, and will be preserved for this purpose. However, in the meantime, the land can be used for its original purpose- agriculture. The district's farm-to-table program is housed on this site and will remain here for the near future.

Voters approved the resources for this construction in 2012. The resources have been retained and set-aside. The district will request voter approval on an updated construction request, and if approved, will devote the resources to Phase II of the Master Plan accordingly.

Complete the Remodel of Prototype Schools: Centennial, Garfield, McLane & Roosevelt Elementary Schools (Garfield was completed in 2014, and Centennial, McLane & Roosevelt were completed in 2020))

The four "prototype" schools built in the late 1980's have some of the worst building condition ratings in the District. The 2009 facility condition survey and interviews with leaders of the schools identified problems with heating and cooling, inconsistent technology, poor air quality, parking and drop off/ pick up issues, poor drainage in the playfields, security at the front door and the multiple other entries, movable walls between classrooms that do not work, a shortage of office space for specialists, teacher meeting space that is used for instruction, security at the perimeter of the site, storage and crowded circulation through the school. We have also learned about the frequent use of the pod's shared area outside the classrooms; while it's heavily used, there isn't quiet space for small group or individual activities. These schools also lack a stage in the multipurpose room. The 2010 Capital levy made improvements to some of these conditions, but a comprehensive modernization of these schools is required to extend their useful life another 20-30 years and make improvements to meet contemporary educational needs.

The 2011 Master Plan proposed a comprehensive modernization of Garfield, Centennial, McLane and Roosevelt Elementary Schools to improve all of these conditions. These renovations are now complete. The intent of the remaining projects is to do so as much as is feasible within the footprint of the school; the buildings are not well configured for additions. The

exterior finishes of the schools have been refurbished; exterior windows and doors were replaced as needed. Interior spaces have been reconfigured to enhance security, efficiency and meet a greater range of diverse needs than when the schools were first designed. Major building systems have been replaced and updated. Site improvements have also been made.

The modernization and replacement projects also incorporated aspects of the future educational vision outlined in the master plan, such as these:

- Accommodate more collaborative hands on projects, so children learn how to work in teams and respect others
- Work with personal mobile technology that individualizes their learning
- Create settings for students to work independently
- Meet the needs of a diverse range of learning styles and abilities
- Create places for students to make presentations and display their work
- Ensure teacher planning and collaboration
- Foster media literacy among students and teachers
- Make the building more conducive to community use, while reducing the impact on education and security
- Support music, art and science

Invest in New Classrooms to Reduce Class Size and Respond to Enrollment Growth
Beginning in 2017, the Washington State Legislature reduced K-3 class size by about 30% from 23 students to 17 students. Class sizes of other grade levels have not been decreased, but some special programs have been decreased: Career and Technical Education (CTE) courses and laboratory sciences. The largest impact will be on elementary schools of course; but middle and high schools will have increased need for classrooms (science laboratories and CTE) as a result of the changes.

As the FAC considered options to respond to the deficit driven by Initiative 1351 and expressed Legislative intent, there were three main options: 1) Add portables to school grounds; 2) Build a new elementary school and change all boundaries to pull students into the new school and reduce enrollment at all other schools (only Boston Harbor boundaries would be unchanged); or 3) Add mini buildings of classrooms at schools across the school district.

The administration concurred with the FAC: the district should be less reliant on portables, build mini-buildings instead of portables, and add mini-buildings to conserve resources and largely retain current boundaries.

Table 8, displays the original recommendations for elementary construction given the above observations, the combination of enrollment growth, need for classrooms to respond to 2017 class size reductions, and available space on the school grounds to build a mini-building. While much has changed about the outlook and need for classroom space, the table is included to identify the basis for construction decisions.

Table 8: Classroom Construction Recommendations

School	# Classrooms Needed by 2025	# Built	Classrooms/ Mini-building	Potential Cost
Lincoln, Mini- building Not Recommended	3	0	Building complexities and high cost; pursue policy options and team teaching	$0
Madison, Mini- building Not Recommended	3	0	Building complexities and high cost; pursue policy options and team teaching	$0
LP Brown, Mini- building Not Recommended	2	0	Building complexities and high cost; pursue policy options and team teaching	$0
McKenny, Mini- building On Hold	9+1 SN (special needs)	10 New	1 Mini of 11 On Hold for Housing Development Changes	$6.5 M On Hold
McLane, Recommended Mini-building	3+1M (music) + 1 SN	5 New + 2 PR (replace portable)	1 Mini of 10	$6.5 M
Hansen, Recommended Mini-building	3+ 1 M	4 New + 4 PR	1 Mini of 10	$6.5 M
Pioneer, Recommended Mini-building	5 + 1 M + 1 SN	7 New + 2 PR	1 Mini of 10	$6.5 M
Roosevelt, Recommended Mini-building	4 +1 M +1 SN	6 New + 2 PR	1 Mini of 10	$6.5 M
Centennial, Recommended Mini-building	5 + 1 M + 1 SN	7 New + 2 PR	1 Mini of 10	$6.5 M
Subtotal, Recommended Mini-building	25 + 4 SN =29	29 + 12 PR=41	50	$32.5M
McKenny, Washington, Reeves I, Mini-building On Hold	9 + 1 SN	10 New	1 Mini of 10	$7.7 M
Total Construction Financing Request	----	---	---	$40.2 M

In addition, the administration recommended financing for one additional mini-building that can be deployed at McKenny or Washington, or Reeves, or another site, if needed to address the construction of two housing developments or to build a early learning, which frees-up classrooms through-out the district. Originally the cost was estimated to be $7.7 million; due to escalation, the new estimated cost is $12 million. For a total investment in classrooms via the mini-building or option of $45 million, in 2023 dollars.

The mini-building structure that is identified for five or six elementary schools, accomplishes several improvements: portables are replaced with a permanent structure and can therefore better control the environment (heating/ cooling), are footprint efficient, and are more appealing.

At the time of the committee study, the structures cost about $6.5 million for construction and provide classroom space for about 960 students assuming 8 classrooms, two large-group work-spaces between classrooms, 1 small office area, and 1 large music room and 1 art room (and stairs and an elevator). The mini-building includes restrooms to code, of course.

Importantly, the classrooms are expected to accommodate a class size of 25-28 in designing the mini- buildings (about 900 square feet). This is the appropriate size for 4th and 5th grade classrooms. The district needs to ensure that 4th and 5th grade classes can be placed in most classrooms, the building would likely serve 4th and 5th grade classes, and the building is a 30-year structure that must be designed to accommodate future state policy decisions regarding class size. (21-22 students per classroom is assumed to calculate classroom capacity of a school overall, as some classrooms will serve fewer than 28 students.
However, building occupancy standards typically exceeds this number and a larger number for calculating capacity is possible.)[5]

Also, the original recommendation of the FAC was to build mini-buildings of 7 classrooms each at Pioneer and Centennial. The district ultimately built larger buildings at Pioneer and Centennial (10 classrooms instead of 7) based on new information that the building site can accommodate a larger building. Based on original class size estimates (I-1351) both Centennial and Pioneer need 8 and 9 classrooms respectively; a 7-classroom building was always smaller than was needed. At Centennial we originally anticipated needing to remove two portables in order to build the mini-building. At this time, the district must only remove 1 portable. Ultimately, the district can remove more, but as a policy decision, not as a requirement to build.

The new larger buildings ultimately cost $1.3 million more than was budgeted. The district absorbed this cost via savings in the 3 elementary remodel projects.

Olympia High School: Reduce Reliance on Portables with a Permanent Building

While there are still many physical improvements that need to be made at Olympia High School (HS), one of the greatest needs that the Planning Advisory Committee (PAC) identified in 2010 is the replacement of 10 portables with permanent space. District informal guidelines target 1,800 students as the desired maximum enrollment that Olympia HS should serve. These 10 portables, while temporary capacity, are part of the high school's capacity for that many students. The PAC's recommendation was that these portables should be replaced with a new permanent building. They considered some options with respect to the kinds of spaces that new permanent area should include:

1. Replicate the uses of the current portables in new permanent space.

2. Build new area that operates somewhat separate from the comprehensive HS to offer a new model.
3. Build new area that is complementary to the comprehensive high school, but a distinction from current educational model (if the current educational model has a high proportion of classrooms to specialized spaces), build new area with primarily specialized space following some of the themes the PAC considered for future learning environments, including:
    a. Demonstrate a place for 21st century learning.
    b. Retain students who are leaving for alternative programs at college or skills centers.
    c. Partner with colleges to deliver advanced services.
    d. Create a culture that equalizes the disparity between advanced students and those still needing remediation without holding either group back.
    e. Create a social, networked and collaborative learning environment, assisted by assisted by personal mobile technology.
    f. A place where students spend less of their time in classes, the remainder in small group and individual project work that contributes to earning course credits.
    g. All grades, multi grade classes.
    h. Art and science blend.
    i. Convert traditional shops to more contemporary educational programs, environmental science, CAD/CNC manufacturing, health careers, biotechnology, material science, green economy/ energy & waste, etc.
    j. More informal learning space for work done on computers by small teams and individuals.
    k. Collaborative planning spaces, small conference rooms with smart boards.
    l. A higher percentage of specialized spaces to classroom/ seminar spaces.
    m. Focus on labs (research), studios (create) and shops (build) learn core subjects through projects in these spaces. (cross-credit for core subjects).
    n. Blend with the tech center building and curriculum.
    o. Consider the integration of specialized “elective” spaces with general education. All teachers contribute to an integrated curriculum.
    p. Provide a greater proportion of area in the school for individual and small group project work.
    q. Support deep exploration of subjects and crafting rich material and media, support inquiry and creativity.

Music and science Programs are strong draws to Olympia High School, which also offers an Advanced Placement curriculum. Conversation with school leaders found support for the idea of including more specialized spaces in the new building. Some of the suggested programs include:

- More science, green building, energy systems, environmental sciences.
- Material sciences and engineering.
- Art/ technology integration, music, dance, recording.
- Stage theater, digital entertainment.

- Need place for workshops, presentations, poetry out loud.

An idea that garnered support was to combine the development of a new building with the spaces in the school's Tech Building, a relatively new building on campus, detached from the rest of the school. The Tech Building serves sports medicine, health career technician, biotechnology and microbiology. It also has a wood shop that is used only two periods per day and an auto shop that is not used all day so alternative uses of those spaces should be considered.

Enrollment projections show that Olympia High School will exceed 1,800 students by more than 400 students later in the 15-year planning horizon. A new building could serve alternative schedules. Morning and afternoon sessions would double the number of students served by the building. A hybrid online arrangement could serve more students in the Olympia HS enrollment are without needing to serve more than 1,800 students on site at any given time.

If the combination of the Tech Building and this new addition was operated somewhat autonomously from the comprehensive high school, alternative education models could be implemented that would draw disaffected students back into learning in ways that engage them through more "hands on" experiential education.

2020 Update: The district has ultimately designed the addition of 21 classrooms at OHS distributed in 3 areas of the campus: a classroom addition in the space between Hall 4 and the cafeteria; a classroom addition in between Hall 2 and the Industrial Arts building; and, a classroom addition adjacent to the cafeteria and commons. This series of additions will give the campus more security by eliminating "walk-throughs" of the campus, house the new science labs near the current science wing, locate a new music classroom near the other music classrooms, and add classrooms near the commons permitting a restructuring of access to the school by incorporating a vestibule.

Capital High School Modernization and STEM Pathway

Capital High School has received three major phases of improvements over the last 15 years, but more improvements remain, particularly on the exterior of the building. The majority of the finishes on the exterior are from the original construction in 1975, 40 years ago. Most of the interior spaces and systems have seen improvements made, but some changes for contemporary educational considerations can still bring improvement.

One of the primary educational considerations the Planning Advisory Committee (PAC) explored is driven by the creation of the new Jefferson Advanced Math and Science (JAMS) program, which is centered around Science, Technology, Engineering and Math (STEM) programs, and the need to provide a continuing pathway for STEM students in that program who will later attend Capital HS. Relatively small improvements can be made to Capital HS that relate to STEM education and also support Capital High School's International Baccalaureate (IB) focus as well.

The conversations with the PAC and leaders in the school focused on 21st century skills like creative problem solving, teamwork and communication. Proficiency with ever changing computer networking and communication/ media technologies were also discussed.

Offering an advanced program at the middle school was the impetus for the new JAMS program. Career and Technical Education (CTE) is changing at Capital HS to support STEM education and accommodate the students coming from Jefferson. Math and science at Capital HS would benefit from more integration. Contemporary CTE programs are transforming traditional shop programs like wood and metal shop into engineering, manufacturing and green building technologies. Employers are looking for graduates who can think critically and problem solve; mapping out the steps in a process and knowing how to receive a part, make their contribution and hand it off to the next step in fabrication. Employers want good people skills; collaborating and communicating well with others. Increasingly these skills will be applied working with colleagues in other countries and cultures. Global awareness will be important. JAMS at the middle school level, and STEM and IB at high school can be a good fit in this way.

The JAMS curriculum is a pathway into IB. The school is adjusting existing programs to accommodate IB programs. The JAMS program supports the Capital HS IB program through the advanced nature of the curriculum. 60 students are currently enrolled in IB and it was recently affirmed as a program the district would continue to support. The advanced nature of the JAMS program could increase enrollment in the Capital HS IB program. Leaders in the school intend that all students need to be part of this science/ math focus.

Capital High School is intentional about connecting to employers and to people from other cultures through distance learning. The district is working with Intel as a partner, bringing engineers in and having students move out to their site for visits and internships. Currently there is video conferencing in the Video Production Studio space. College courses can be brought into high school, concentrating on courses that are a pathway to higher education. The district is already partnering with universities on their engineering and humanities programs to provide university credits.

The development recommendation for Capital High School is to remodel the classroom pods to recreate the learning purpose in the center of each pod. The more mobile learning assistive technologies like laptops and tablet computers, with full time access to a network of information and people to collaborate with are changing the way students can engage with the course material, their teachers and their peers. Further development is also recommended in the shops and adjacent media/ technology studios. The building area of these interior renovations is estimated to be 10% of the total building area.

Extensive renovation of the original exterior walls, windows, doors and roof areas that have not been recently improved is the other major component of this development recommendation.

Build a Theater sized for the Student-body of Capital High School

In 2000 when Capital High School was partially remodeled, construction costs were escalating and a decision had to be made to address a too-small cafeteria and commons area. At the time, the available solution was to reduce the theater by 200 seats. As the school has grown, and will grow further in the next 10 years, the reduced-size theater is now too small for the school. The theater cannot hold even one class of CHS students, and can barely hold an evening performance for the Jefferson or Thurgood Marshall Middle School orchestras, choirs or bands.

Remodeling the current theater was designed and priced. The cost of the remodel is as much as building a new theater and the remodeled theater would have several deficiencies. In order to remodel the theater, the roof would need to be raised and the commons reduced.)

Therefore, the administration is recommending the construction of a new theater on the south side of the gyms. The new theater will have 500 seats, 200 more than the current theater.

As of 2023 this project is complete.

Avanti High School

Through the master plan process in 2010 and 2015, the district affirmed the importance of Avanti High School and directed that the master plan includes options for the future of the school. Avanti has changed its intent in recent years to provide arts-based curriculum delivery with an entrepreneurial focus. Enrollment will be increased to 300 students with greater outreach to middle school students in the district who may choose Avanti as an alternative to the comprehensive high schools, Olympia and Capital High Schools. The school appreciates its current location, close proximity to the arts and business community downtown and the partnership with Madison Elementary School.

The six main classrooms in the building are not well suited to the Avanti curriculum as it is developing, and hinder the growth of the school. The settings in the school should better reflect the disciplines being taught through “hands on” learning. The school integrates the arts as a way to learn academic basics. Avanti creates a different learning culture through personalizing education, focuses on depth over breadth, and teaches good habits of the heart and mind.

Students come together in seminars, so space is needed for “town hall” communication sessions. The auditorium does not work well for the town hall sessions as it is designed for presentations of information to an audience and the seating impedes audience participation—the school needs more options.

Recently Avanti has expanded by two classrooms and Knox Administrative space has been reduced.

To implement the Avanti expansion, the administration offices and warehouse have moved to the Knox 111 building on 111 Bethel Street SE.

Ten learning settings were identified as an appropriate compliment of spaces with the intent for them all to support teaching visual and performing arts:

1. Drama (writing plays, production)
2. Music/ recording studio (writing songs)
3. Dance (math/ rhythm)
4. Painting/ drawing
5. Three-dimensional art (physical & digital media, game design)
6. Photography/ video/ digital media (also support science & humanities)
7. Language Arts
8. Humanities
9. Math
10. Science

Additional support spaces: special needs, library, independent study, food service, collaborative study areas, administration/ counselors, community partnerships.

This development recommendation proposes that Avanti High School move into the entire old Knox Building, including the district warehouse space. Light renovation of the buildings would create appropriate space of the kind and quality that the curriculum and culture of the school need.

The long-term growth of Avanti High School is seen as a way, over time, to relieve the pressure of projected enrollment growth at Olympia High School.

The 2015 Facility Advisory Committee also supported the expansion of Avanti, regardless of whether or not the school would ultimately reduce enrollment pressure at Olympia or Capital High Schools.

The 2015 Master Plan assumption is to budget $9.9 million to remodel the 2nd floor of the Avanti building, expanding Avanti by about 12 classrooms, with light improvements to the warehouse. As of 2022, construction costs have escalated, and the need for abatement, window repairs, solar ready rooftop, and temporary classrooms are higher than anticipated. The total cost of the project is $13.9 million.

Renovate Playfields to Improve Safety and Playability

Based on FAC support for improved fields and playgrounds, the district will install 2 turf fields and renovate an additional 8 fields. The cost is estimated at $6.9 million. Specifically, the district recommends the following improvements:

a. North Street field at OHS: renovate the field with installation of new sod. [As of 2019, the district is proceeding with plans to install a turf field (with low level lighting and minor fencing, instead of sod. As of 2021 this field is complete.]
b. Henderson Street field at OHS: install a synthetic turf field, low level lighting and minor fencing. [As of 2019, the district is proceeding with no plans to install turf.]
c. Football/ soccer field at CHS: install a synthetic turf field, low level lighting and minor fencing.[7] [Completed in 2018.]
d. Jefferson, Thurgood Marshall and Reeves field: renovate the field with sod.[Ongoing]
e. Lincoln: renovate the playfield with seed and improve the playground. [Completed.]
f. Centennial, McLane and Roosevelt: renovate the fields with seed (after remodel of the buildings). [Roosevelt was completed in 2018] [McLane was completed in 2022] [Centennial was completed in 2019]

Invest in Electronic Key Systems to Limit Access to Schools and Instigate Lockdowns

The district is recommending the investment of $2 million in key systems across the district, targeting schools that have not been upgraded as part of a remodel.

Address Critical Small Works and HVAC or Energy- Improvement Projects

The district will pursue state of Washington energy grants for a portion of a total investment of $8.5 million.

In addition, the small works roster is summarized below. The roster represents the facilities projects that must be undertaken in the near future. While we have attempted to plan for a six-year small- works list, new items may be identified during the life of the CFP.

Improve and upgrade:

- Parking lots and paving at five schools.
- Drainage controls, and/ or repair foundations at five schools/ sites.
- Electrical service and new fire or intrusion alarm systems at four schools, security cameras at multiple schools, access controls at multiple schools and perimeter fencing at five schools.
- Roofing at three schools, install roof tie-off safety equipment at multiple sites, and caulk and or paint and renovate siding at four sites.
- Gutter systems at two schools.
- Interior and classroom capital improvements at twelve sites.
- Wiring and electrical systems at two sites.

Utilization of Portables as Necessary

The CFP continues to include expenditures for portables, as these represent a foundation investment where enrollment is faster than expected. Portables are considered to be a last-resort and are utilized where other options are not possible.

Cost of Converting Portables to Permanent Construction

Further, the value of converting a portable into permanent construction is included in full in the calculation of the impact fee. This bears further explanation. The impact fee calculation is based on construction costs (costs that are within the timeframe of the CFP) associated with growth, divided by the number of growth/ seats/ students. So, if the CFP includes a plan to construct a $10 million structure to house 100 students, and 90 students are generated by new housing/ developments, then the per student cost of construction to accommodate growth is $90,000 (($10,000,000/ 100) *(90/100) = $90,000). This is the amount that is included in the calculation of the impact fee. Even if the new building replaces 50 portable seats, the calculation is the same: what is the cost of planned construction, and what proportion is associated with seats needed to accommodate growth, and therefore, what is the per growth seat cost of construction regardless of prior use of portables?

The number of students expected to be driven by growth is the key factor (90 in this example). The student growth must be based on upcoming growth and cannot be based on prior growth (from the example above, it could not be based on 50 + 90). It is important to note that, regardless of the number of portables being converted, a proportional cost of a $6.5 million mini-building is included based on expected growth; portable conversion is not deducted from the calculation.

IV. Finance Plan

Impact Fees

Impact fees are utilized to assist in funding capital improvement projects required to serve new development. For example, local bond monies from the 1990 authority and impact fees were used to plan, design, and construct Hansen Elementary School and Thurgood Marshall Middle School.

The district paid part of the costs of these new schools with a portion of the impact fees collected. Using impact fees in this manner delays the need for future bond issues and/ or reduces debt service on outstanding bonds. Thurston County, the City of Olympia and the City of Tumwater all collect school impact fees on behalf of the district.

Impact fees must be reasonably related to new development and the need for public facilities. While some public services use service areas or zones to demonstrate benefit to development, there are four reasons why the use of zones is inappropriate for school impact fees: 1) the construction of a new school benefits residential developments outside the immediate service

area because the new school relieves overcrowding in other schools; 2) some facilities and programs of the district are used by students throughout the district (Special Education, Options and ALPS programs); 3) school busing is provide for a variety of reasons including special education students traveling to centralized facilities and transportation of students for safety or due to distance from schools; 4) a uniform system of free public schools throughout the district is a desirable public policy objective.

The use of zones of any kind, whether municipal, school attendance boundaries, or some other method, conflict with the ability of the school board to provide reasonable comparability in public school facilities. Based on this analysis, the district impact fee policy shall be adopted and administered on a district-wide basis.

Current impact fee rates, current student generation rates, and the number of additional single and multi-family housing units projected over the next six-year period are sources of information the district uses to project the fees to be collected.

These fees are then allocated for capacity-related projects as recommended by a citizens' facilities advisory committee and approved by the Board of Directors.

Capital Facilities Plan (CFP) Inclusions into Impact Fee Calculation

Table 9 below describes several components of the CFP analysis. First, the table describes the recommended construction built into the district's facilities plan. The second column identifies if the project is included in the Impact Fee Calculation. The third column identifies the reason the project is included or not.

Table 9: CFP Considerations

Project	Included in 2023 Impact Fee?	Reason
Centennial Elementary	No	This project is complete.
Roosevelt Elementary	No	This project is complete.
McLane Elementary	No	This project is complete.
Hansen Elementary	No	This project is complete.
Pioneer Elementary	No	This project is complete.
#6th Mini-Building	Yes	This project is planned within the 6-year horizon of the Capital Facilities Plan.
Olympia High School	No	This project is complete.
Portables	No	The plan includes the cost of 5 portables but these are a second priority to mini-buildings
Capital High School	No	This project is complete.
Avanti High School	Yes	This project adds capacity for a total of 300 students.

The fee calculation is prescribed by law:

- The calculation is designed to identify the cost of the new classroom space for new students associated with new development.
- The cost of constructing classrooms for current students is not included in the impact fee calculation.
- The calculation includes site acquisition costs, school construction costs, and any costs for temporary facilities.
    - Facility Cost / Facility Capacity = Cost per Seat / Student Generation Rate = Cost per Single Family Home (or Cost Per Multi-Family Home).
    - The Cost per Single Family home is then discounted for 1) any state construction funding the district receives and 2) a credit for the taxes that the home will generate for the upcoming 10 years.
    - As an example, a $15,000,000 facility, and a .20 single-family home student generation rate is calculated as such: $15,000,000/ 500 = $30,000 *.20= $6,000. This $6,000 is then reduced by state construction funds ($9 per home in 2015) and a 10-year tax credit ($1,912 in 2015). This leaves a single-family home rate of
    - $4,079 (example amount only).
    - The Olympia School District Board of Directors would then reduce the $4,079 by a “discount rate”. This is the margin that districts use to ensure that they do not collect too much impact fee (and possibly pay back part of the fees if construction costs are reduced or state construction funding is increased.) The Olympia School District has typically used a discount rate of 15%, which would leave a single-family home impact fee of $3,467 or ($4079 * .85).

The prescribed calculation, the district’s construction plan in the CFP planning horizon, expected state revenue and expected taxes credited to new housing developments, and the district’s decision with regard to the discount applied, yield an impact fee as follows:

- Beginning January 1, 2024 Single Family residences: $6,812 (Includes Downtown Area Single Family) (58% Discount)
- Beginning January 1, 2024, Non-Downtown Area Multi-family: $2,606 (52% Discount)
- Beginning January 1, 2024, Downtown Area Multi-family: $2,146 (60% Discount)

Table 10 identifies the impact fee history. (See next page.)

Table 10: Historical Impact Fees

Year	Discount Percentage	Single Family Home Fee	Multi- Family Home Fee	Downtown Residence Fee	Manufactured Home Fee
1995	70	$1,754	$661	---	$1,033
1996	52	$1,725	$661	---	$1,176
1997	51	$1,729	$558	---	---
1998	56	$1,718	$532	---	---
1999	50 & 70	$2,949	$1,874	---	---
2000	50 & 70	$2,949	$1,874	---	---
2001	50 & 70	$2,949	$1,874	$841	---
2002	50 & 70	$2,949	$1,874	$841	---
2003	50 & 70	$2,949	$1,874	$841	---
2004	50 & 70	$2,949	$1,874	$841	---
2005	40 & 60	$4,336	$3,183	$957	---
2006	45 & 60	$4,336	$3,183	$957	---
2007	15	$5,042	$1,833	$874	---
2008	15	$5,042	$1,833	$0	---
2009	15	$4,193	$1,770	$0	---
2010	15	$2,735	$1,156	$0	---
2011	15	$659	$1,152	$0	---
2012	15	$2,969	$235	$0	---
2013	15	$5,179	$0	$0	---
2014	15	$5,895	$1,749	$0	---
2015	15	$4,978	$1,676	$0	---
2016	15	$5,240	$2,498	$0	---
2017	15	$5,298	$2,520	$0	---
2018	15	$5,350	$2,621	$0	---
2019	15	$4,972	$2,575	$0	---
1-Jan-20*	15	$5,177	$2,033	$0	---
1-Jul-20*	15 / 15 / 32	$5,177	$2,033	$1,627	---
2021	15 / 15 / 30	$5,448	$2,133	$1,756	---
2022	15 / 15 / 30	$6,029	$2,477	$2,040	---
2023	33 / 5 / 22	$6,475	$2,477	$2,040	---
2024	58/52/60	$6,812	$2,606	$2,146	—
Prior 10-Yr Avg	---	$5,356	$2,232	$308	---
10-Yr Avg Incl 2022	---	$5,414	$2,304	$746	---

*In 2020, this is the fee for multi-family homes in the Downtown Area, which begins July 1, 2020. Single family homes are levied the same impact fee districtwide; $5,177 for the 2020 calendar year, beginning January 1, 2020.

Eligibility for State Funding Assistance

The district will always apply to the state for state construction funding assistance and attempt to maximize this support. However, currently, the district is not eligible for many projects.

Bond Revenue

The primary source of school construction funding is voter-approved bonds. Bonds are typically used for site acquisition, construction of new schools, modernization of existing facilities and other capital improvement projects. A 60% super-majority voter approval is required to pass a bond. Bonds are then retired through the collection of local property taxes. Proceeds from bond sales are limited by bond covenants and must be used for the purposes for which bonds are issued. They cannot be converted to a non-capital or operating use. As described earlier, the vast majority of the funding for all district capital improvements since 2003 has been local bonds.

The projects contained in this plan exceed available resources in the capital fund, and anticipated School Impact and Mitigation Fee revenue. The Board of Directors sold bonds in June 2012 allowing an additional $82 million in available revenue for construction projects.

Voters have approved $161 million in bond sales to finance Phase II of the Master Plan. Of this amount, all bonds have been sold.

Finance Plan Summary

Table 11 represents preliminary estimates of revenue associated with each group of projects.

Table 11: Financial Summary

Item Description	Project Amount
1. New Classrooms (Minis at Pioneer, Hansen, Centennial, Roosevelt, McLane, and one additional	$37,063,000
2. Phase II of 2011 Master Plan (Multiple Items Above)	$136,559,394
3. Capital High School Theater	$12,665,000
4. Small Works Projects, Categorized as Immediate Need	$10,733,848
5. John Rogers Demolition and Re-seed	$520,000
6. Security- Access Control Systems	$2,000,000
7. Heating/ Ventilation Improvements and Energy Savings	$8,484,000
8. Field and Playground Renovations	$6,873,845
Subtotal of Planned Investments	$214,899,087
Existing Resources (Capital Fund Balance)	Minus $42,200,000

Estimated New State Construction Funding	Minus $12,000,000
New Construction Bond Authority Approved by Voters in 2016	Equals$ 160,699,087

V. Appendix A – Inventory of Unused District Property

Future School Sites

The following is a list of potential future school sites currently owned by the district. Construction of school facilities on these sites is not included in the six-year planning and construction plan

- Mud Bay Road Site

  This site is a 16.0-acre parcel adjacent to Mud Bay Road and Highway 101 interchange. The site is currently undeveloped. Future plans include the construction of a new school depending on growth in the student enrollment of adjoining school service areas. In the interim, the district has partnered with the City of Olympia to develop an off-leash dog park.

- Muirhead Site

  This is a 14.92-acre undeveloped site directly adjacent to Centennial Elementary School, purchased in 2006. The district currently utilizes this property for an Olympia High School farm and science program. Further development of this property involves approval of a formal plan to mitigate negative impact on an endangered species, the prairie Pocket Gopher.

- Harrison Avenue Site

  This is a 27-acre undeveloped site on Harrison Avenue and Kaiser Road. The district purchased this land in 2020 as a potential future school site.

Other District Owned Property

- Henderson Street and North Street (Tree Farm) Site

  This site is a 2.25-acre parcel across Henderson Street from Pioneer Elementary School and Ingersoll Stadium. The site is currently undeveloped. Previously, the site was used as a tree farm by Olympia High School's vocational program.
- Lot at the intersection of 26th Ave. NW and French Rd NW. This .28 acre lot was purchased in 2023 from the County for future development, and is adjacent to LP Brown.

Future Site Acquisition

The district is seeking additional properties for use as future school sites. Construction of school facilities for these sites is not included in the six-year planning and construction plan. The district has identified the following priorities for acquisition:

- New west side elementary school site – approximately 10-acres
- New east side elementary school site – approximately 10-acres

- The district is actively seeking partnership to build a high school on the east side of the district collocated on a park property. The City Council has agreed to this partnership and it is under planning phase as of fall 2023.

VI. Appendix B – Detail of Capital Facilities Projects

Elementary School Modernization Grades K-5

Project Name: Centennial Elementary School Modernization
Location: 2637 45th Ave SE, Olympia
Site: 11.8-acres
Capacity: 602 student capacity
Square Footage: 45,345 sq ft
Cost: Total project $27.9 million, including a $6.3 million mini-building of 10 classrooms and $800,000 field renovation.
Project Description: Major modernization of existing school facilities. Modernization work will include all new interior finishes and fixtures, furniture and equipment, as well as exterior finishes.
Status: Project is completed.

Elementary School Modernization Grades K-5

Project Name: McLane Elementary School Modernization
Location: 200 Delphi Road SW, Olympia
Site: 8.2-acres
Capacity: 538 student capacity
Square Footage: 45,715 sqft
Cost: Total project: $23.5 million, including a $6.3 million mini-building of 10 classrooms and a $700,000 field renovation.
Project Description: Major modernization of existing school facility. Modernization work will include all new interior finishes and fixtures, furniture and equipment, as well as exterior finishes.
Status: Project is completed.

Elementary School Modernization Grades K-5

Project Name: Roosevelt Elementary School Modernization
Location: 1417 San Francisco Ave NE, Olympia
Site: 6.4 acres
Capacity: 622 student capacity
Square Footage: 47,616 sqft
Cost: Total project: $22.4 million, including a $6.3 million mini-building of 10 classrooms and $800,000 field renovation.

Project Description: Major modernization of existing school facility. Modernization work will include all new interior finishes and fixtures, furniture and equipment, as well as exterior finishes.
Status: Project is completed.

High School Modernization Grades 9-12

Project Name: Capital High School modernization
Location: 2707 Conger Ave NW, Olympia
Site: 40-acres
Capacity: 1802 student capacity
Square Footage: 254,772 sq ft
Cost: Total project: $20.6 million
Project Description:
Modify classroom pod areas and other portions of the existing school in order to support educational trends and students matriculating from the Jefferson Advanced Math and Science program. Replace older failing exterior finishes and roofing.
Status: Project is completed.

High School Addition Grades 9-12

Project Name: Olympia High School Addition/ portable replacement
Location: 1302 North Street SE, Olympia
Site: 40-acres
Capacity: 2,200 student capacity
Square Footage: 233,960 sq ft
Cost: Total project: $24.3 million
Project Description: Provide additional permanent building area to replace ten portable classrooms. Support educational trends with these new spaces.
Status: Project is completed

Elementary School Expansion Grades K-5

Project Name: Pioneer and Hansen Elementary Schools Capacity: Add 176 student capacity by building a 2-story mini-building, 10 classrooms each
Cost: Each structure will cost $6.3 million. Pioneer costs associated with growth and therefore, impact fees total $2.1 million; Hansen growth costs total $700,000.
Status: Projects are complete, with the exception of the 6th mini building.

High School Addition/ Admin. Center Grades 9-12

Project Name: Avanti High School Addition and Modernization & Re-location of district Administrative Center
Location:

Avanti HS: 1113 Legion Way SE, Olympia (Currently located on 1st floor of district Administrative Center.)
District Administrative Center: Newly purchased The Olympian Building.

Site:
Avanti HS: 7.5-acres
District Administrative Center: 3.35-acres

Capacity:
Avanti HS: will limit to 300 students (current Utilization Standard)
District Administrative Center: To be determined

Square Footage: Avanti HS: 78,000 sqft

Status: Project is substantially completed.

District Administrative Center: 111 Bethel Street

Cost:
Avanti HS: Total project: $15.4 million
District Administrative Center: Estimated $7.8 million

Project Descriptions:
Avanti HS: Expand Avanti High School by allowing the school to occupy all three floors of the District Administrative Center. Expanding the school will allow additional programs and teaching and learning options that might not be available at the comprehensive high schools.
District Administrative Center: Provide a new location for administrative offices somewhere in the downtown vicinity.

Status: Project is nearly completed.

APPENDIX "D"

THURSTON COUNTY
CAPITAL FACILITY PROJECTS
WITHIN TUMWATER BOUNDARIES

Thurston County Capital Projects in the Tumwater UGA

Project Number (Accounting System)	Project Title	Project Phase*	Location	Funding Source	Prior Years Expenses**	2024	2025	2026	2027	2028	2029	6-Yr. Total	Future Years	Total Estimated Project Cost
77175	Black Lake Belmore RD Bridge Approach Repair	Closeout	Tumwater UGA	REET/CRF	$3,755,000	$10,000						**$10,000**		$3,765,000
				TOTAL	**$3,755,000**	**$10,000**						**$10,000**		**$3,765,000**

County Roads Fund CRF
Real Estate Excise Tax (REET) REET

Attachment D

Exhibit B

Old Highway 99 Corridor Study

City of Tumwater

November 2022

SCJ ALLIANCE
CONSULTING SERVICES

Old Highway 99 Corridor Study

Project Information

Project:	**Old Highway 99 Corridor Study**
Prepared for:	**City of Tumwater** Brandon Hicks, PE Mary Heather Ames, PE 555 Israel Road SW Tumwater, WA 98501

Reviewing Agency

Jurisdiction:	City of Tumwater555 Israel Road SW Tumwater, WA 98501

Project Representative

Prepared by:	**SCJ Alliance** 8730 Tallon Lane NE, Suite 200 Lacey, WA 98516 360.352.1465 scjalliance.com
Contact:	Patrick Holm, PE / David Rowland, PE
Project Reference:	SCJ #0625.29 Path: N:\Projects\0625 City of Tumwater\0625.29 Tumwater Old Hwy 99 and 79th Ave Corridor Study\Phase 05 - Preliminary Design\0625.29 - Old Hwy 99 and 79th Ave Corridor Study - 2022-0811.docx

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1 PURPOSE

The objective of this *Old Highway 99 Corridor Study* (Project) is to validate and build on recommendations from the *Tumwater City Plan 2036, Transportation Master Plan November 2016* (TMP), and to recommend changes resulting from the process and prepare preliminary design for the Old Highway 99 corridor improvements from approximately 73rd Avenue SE to 93rd Avenue SE. This Project also seeks to create proposed project phases to guide future budgeting and funding pursuits. This report presents an overview of the findings and recommendations for the Project. The study consists of the following elements:

- Corridor Traffic Validation:
  - Validation of operational analysis of the corridor with the proposed and recommended alternatives to validate implementation.

- Alternatives Analysis and Public Involvement
  - Evaluation of alternatives and recommendation for selection.
  - Recommendations for access management and neighborhood traffic calming solutions throughout the corridor.
  - Presentation of the public engagement process.
  - Recommendations of alternatives.

- Preliminary Corridor Concept
  - Conceptual plans defining the recommended improvements that include intersection improvements, key improvements along the corridor, access modifications, stormwater management, and utility undergrounding.
  - Preliminary geotechnical investigation for stormwater design.

- Environmental Strategy
  - Environmental considerations based on existing and known conditions and potential permit requirements.

- Right of Way Plans:
  - Preliminary right of way plans between 73rd Avenue SE and 93rd Avenue SE.

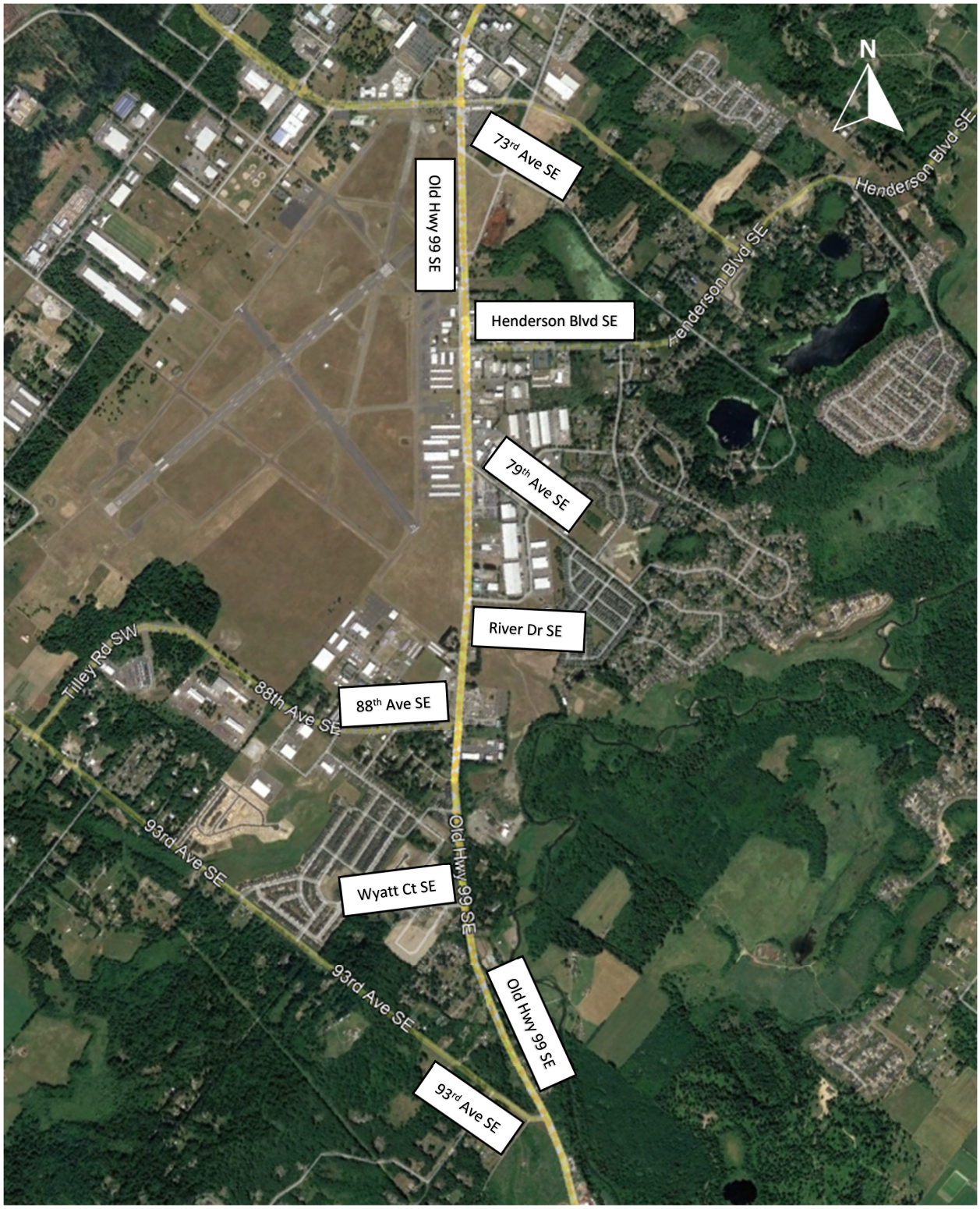
- Project Phasing and Cost Estimates
  - Estimated project costs and recommend phasing of the improvements based on traffic analysis.

Each of these study elements informed a preliminary design that considers traffic, public input, and environmental considerations. With the proposed improvements to the corridor comes larger right of way needs and associated construction costs for each phase of the Project.

The Summary section of the report provides an overview of each element.

Figure 1.1 – Vicinity Map shows the Project limits of the Old Highway 99 Corridor Study.

Figure 1.1 Vicinity Map



2 BACKGROUND

2.1 EXISTING CONDITIONS

Old Highway 99 from 73rd Avenue to 93rd Avenue is a two-lane National Highway System (NHS) arterial from 73rd Avenue to 88th Avenue and connecter from 88th Avenue to 93rd Avenue with a general right of way width varying from 60 to 88 feet. The existing street width varies from 32 to 44 feet from pavement edge to pavement edge. There are 11-foot travel lanes with 5-foot shoulders located along the corridor on each side of the edge of travel way. 12-foot turn lanes are introduced at the following intersections:

- 73rd Avenue
- Henderson Boulevard
- 79th Avenue
- River Drive
- 88th Avenue
- Silver Spot Drive
- 93rd Avenue

The *Tumwater City Plan 2036* future zoning map identifies the properties adjacent to Old Highway 99 for light industrial uses along the east side of the corridor and a mix of general commercial, airport, mixed use, and residential uses along the west side.

Capitol Boulevard provides the primary north-south link for traffic, transit, pedestrians, and bicyclists within the city of Tumwater east of Interstate 5. The corridor currently carries approximately 16,000 vehicles per day and is projected to carry 24,000 vehicles per day by 2040. Old Highway 99 also provides connections to residential developments along the corridor, such as the Bush Prairie, Sterling Crossing, The Preserve, and Melody Pines Estates neighborhoods.

Currently, traffic on Old Highway 99 is heavy and congested, especially in morning and evening peak hours. The 79th Avenue intersection currently fails the city of Tumwater level of service (LOS) standards. Intersections at Henderson Avenue, 88th Avenue, and 93rd Avenue currently operate at an acceptable level of service but fail to maintain an acceptable LOS in 20 years for peak-hour traffic.

2.2 PREVIOUS WORK

In November 2016, the city of Tumwater published the *2036 Transportation Master Plan* (TMP) and laid out plans for the improvement from 73rd Avenue to 93rd Avenue on Old Highway 99. This document acknowledges that 79th Avenue fails to provide an acceptable LOS for existing traffic in 2016 and needs to be upgraded. It also evaluates the intersections at Henderson Avenue, 88th Avenue, and 93rd Avenue and marks these as intersections for improvement to handle projected traffic increase. Old Highway 99 also is projected to need widening to five lanes (two travel lanes in both directions and a middle turn lane) from 73rd Avenue to 88th Avenue and three lanes (one travel lane in each direction and a middle turn lane) from 88th to 93rd Avenue according to the TMP.

3 CORRIDOR TRAFFIC VALIDATION

The Traffic Operational Analysis in **Appendix A** describes the traffic count collection, traffic forecasting, and operational analysis for the Old Highway 99 Corridor. The traffic volumes and analysis were used to determine the intersection and roadway design and provide the baseline future conditions for a value engineering alternatives analysis for the Old Highway 99 intersections at 73rd Avenue, Henderson Boulevard, 88th Avenue, and 93rd Avenue. In support of this study, traffic volume data was collected pre-pandemic in early 2020 at the following locations:

- Old Highway 99/Henderson Boulevard
- Old Highway 99/79th Avenue
- Old Highway 99/88th Avenue
- Old Highway 99/93rd Avenue

Based on the traffic count surveys, the morning and evening peak hours are between 7:15-8:15 AM and 4:30-5:30 PM respectively. These periods represent the highest level of traffic in a single hour and informed the study's determination of LOS for each intersection.

Traffic analysis was conducted for the 2036 Corridor Plan Improvements using the projected 2040 AM and PM peak hour volumes with cycle lengths and phase lengths optimized. The following improvements were included in the 2036 Corridor Plan Improvements:

- Old Highway 99 / 73rd to 88th Avenue widening to five lanes including two-lane roundabouts at Henderson Boulevard and 88th Avenue.
- Old Highway 99 / 79th Avenue widening to five lanes including two-lane roundabout.
- Old Highway 99 / 93rd Avenue installation of a single lane roundabout.

The AM and PM peak hour operations results for the existing 2020, 2040 Baseline, and 2040 Corridor Plan Improvement analysis scenarios are summarized below in Tables 3.1 and 3.2.

Table 3.1 AM Peak Hour Intersection LOS Summary

Intersection	Control Type	Existing 2020 Intersection LOS and Delay	2040 Baseline Intersection LOS and Delay	2040 – Corridor Plan Improvements[1] Intersection LOS and Delay
Old Highway 99 / Henderson Boulevard	Signal	C (22.4)	F (192.7)	A (5.6)
Old Highway 99 / 79th Avenue	Stop	F (59.0)	F (300+)	A (5.2)
Old Highway 99 / 88th Avenue	Signal	A (9.0)	F (120.7)	B (11.5)
Old Highway 99 / 93rd Avenue	Stop	C (23.9)	D (34.0)	A (5.6)

1 Reflects conversion to RAB

Table 3.2 PM Peak Hour Intersection LOS Summary

Intersection	Control Type	Existing 2020 Intersection LOS and Delay	2040 Baseline Intersection LOS and Delay	2040 – Corridor Plan Improvements[1] Intersection LOS and Delay
Old Highway 99 / Henderson Boulevard	Signal	B (13.0)	D (40.7)	A (6.1)
Old Highway 99 / 79th Avenue	Stop	F (115.0)	F (300+)	A (5.4)
Old Highway 99 / 88th Avenue	Signal	A (9.6)	B (12.8)	A (4.8)
Old Highway 99 / 93rd Avenue	Stop	C (21.5)	E (37.7)	A (7.3)

1 Reflects conversion to RAB

Evaluation of the traffic present at these intersections verified the city's assessment of the corridor capacity needs and the immediate need for improvement at the intersection of Old Highway 99 and 79th Avenue. The 79th Avenue intersection currently fails the city's LOS standards and needs improvement to better handle the current traffic. Also, the traffic operational analysis found given the 20-year projection of the intersections at Henderson Avenue and 88th Avenue intersections with Old Highway 99, they will not meet the city LOS standards and will need to be upgraded as well.

4 ALTERNATIVES ANALYSIS AND PUBLIC INVOLVEMENT

4.1 ALTERNATIVES ANALYSIS

This study included an alternatives analysis to determine and recommend roadway cross sections and intersection improvements along the corridor from 73rd Avenue through 88th Avenue in context with the overall corridor improvements. Each alternative evaluated met the requirements laid out in the *2036 Tumwater TMP*. The future section from 88th Avenue to 93rd Avenue will follow the proposed improved section from the TMP and did not undergo an alternatives analysis.

Alternatives for Old Highway 99 from 73rd Avenue to 88th Avenue were evaluated based on the following criteria:

- Bicycle Function/Usability
- Pedestrian Function/Usability
- Emergency Access
- Aesthetics
- Environmental Impact (Mazama Pocket Gopher Habitat)

Through discussion with the city and stakeholders these criteria were ranked from highest to lowest priority. Each criterion was weighed using pair-wise comparisons. Environmental Impact and Emergency Access were prioritized the highest, followed by Bicycle and Pedestrian Function, and Aesthetic received the lowest priority. Table 4.1 shows the performance priorities based on these criteria with input from stakeholders and the city:

Table 4.1 Performance Priorities

Performance Attributes	*Priorities*
Bike Function	**0.167**
Ped Function	**0.167**
EMS Function	**0.300**
Aesthetic	**0.067**
Enviro Impact	**0.300**
TOTAL	**1.00**

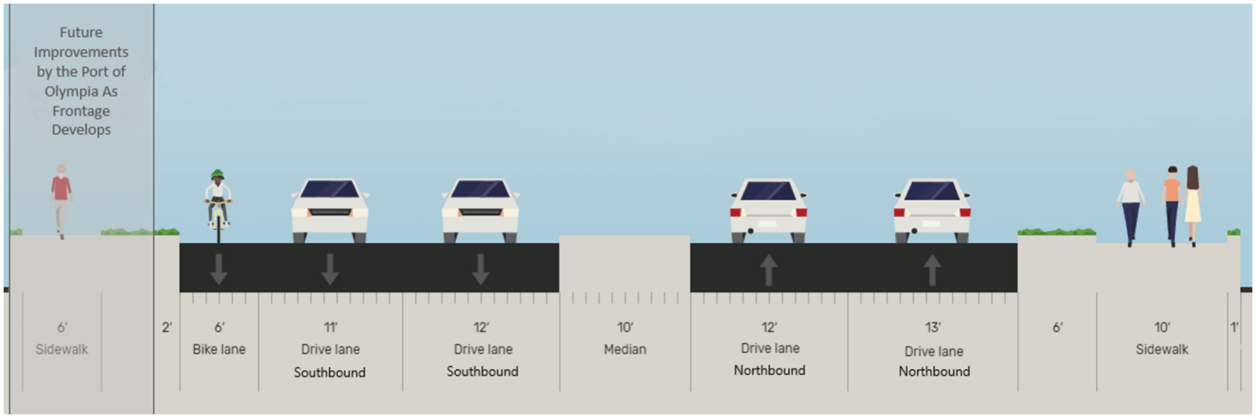
Once the performance attributes rankings were developed, six roadway section alternatives were created to be evaluated and modified through public involvement and stakeholder review. Section 4.2 describes public involvement and how it informed the revised roadway section.

Through the analysis of six alternatives using the performance attributes rankings and public input, Alternative 3B was selected because it provided the highest cost to value ratio. The recommended alternative differed from the TMP by shifting pedestrian facilities to the east side of Old Highway 99 with a 10-foot sidewalk for shared use with bicycles. A 6-foot bicycle lane would be provided for bicycles on the west side of the corridor and provision made for a 10-foot median in place of the two-way left turn

lane. The northbound outer lane would have a width of 13 feet and inner lanes a width of 12 feet to provide shy distance from the median. The total width of the recommended alternative is 83 feet.

Because a substantial portion of the west side of Old Highway 99 is bordered by the Olympia Airport, it was determined that sidewalks on the west side will not be heavily used and do not need to be included in the section. To better fit the future section within right of way, the bike lane on the east side of the roadway was removed and the east side sidewalk was widened to provide a shared path for pedestrians and bicyclists. On the east side of the project are businesses which can be linked by a proposed shared used path. Figure 4.1 shows the recommended section below. As the frontage develops for the west side of the corridor bordering the Port of Olympia, the Port of Olympia will undertake frontage improvements.

Figure 4.1 Alternative 3B - Recommended Section for Old Highway 99



As laid out in the TMP, the section from 88th Avenue to 93rd Avenue will include three lanes (one travel lane in both directions and one middle left turn lane), 6-foot northbound and southbound bike lanes, and 5-foot sidewalks on both sides of the roadway. Sidewalks and bike lanes for this portion of the project will allow residents of the nearby neighborhoods to connect to pedestrian and bicycle accommodations more easily and safely. The west sidewalk will terminate at the 88th Avenue roundabout and have crosswalks to connect to the west sidewalk to continue north. For alternative scoring and results see **Appendix B** - Alternatives Analysis Memo.

4.2 Public Involvement/Stakeholder Engagement

To inform the alternatives analysis, public input was gathered through a Maptionnaire survey that assessed the perceived safety and functionality of the current Old Highway 99 Corridor. The survey allowed respondents to pinpoint locations that they believed have issues. The results revealed safety and visibility concerns, sidewalk and bicycle needs, transit access insight, and ideas for improving the corridor.

Afterwards, to gather further input on the plan for Old Highway 99, workshops were held for stakeholders from Thurston Emergency Medical Services (EMS), Intercity Transit, Tumwater Unified School District (TUSD), Thurston County, Port of Olympia, Tumwater Fire, Thurston Regional Planning Council (TRPC), and Tumwater Police. Table 4.2 shows a list of the stakeholders:

Table 4.2 Stakeholders

Stakeholder	Agency
Kurt Hardin	Thurston EMS
Eric Phillips	Intercity Transit
Mel Murray	TUSD
Matt Unzelman	Thurston County
Becky Conn	Thurston County
Rudy Rudolph	Port of Olympia
Rachael Jamison	Port of Olympia
Brian Hurley	Tumwater Fire
Scott Carte	TRPC
Bruce Brenna	Tumwater Police

Two workshops were conducted to accommodate public involvement and stakeholder engagement. The first workshop was used to evaluate performance attributes and rank them by importance, providing a basis to weigh the scoring. Six alternative sections were then developed and analyzed. The second workshop was held for the city and stakeholders to assess and rank the alternates. Next, the alternatives were modified based on the second workshop. The modified alternatives were then analyzed to determine a recommended alternative with the best cost to value ratio. This recommended alternative was then presented at a virtual open house. For alternative scoring and results see **Appendix B** - Alternatives Analysis Memo.

5 PRELIMINARY DESIGN LAYOUTS

The preliminary design defines the improvements for the Old Highway 99 Corridor. The intent of this task is to define the improvements listed below in sufficient detail to estimate construction costs at a conceptual design level (30% contingency) and identify right of way needs.

5.1 ROADWAY LAYOUT

Through the process of alternatives analysis and public involvement the following design elements were determined for the preliminary roadway layout design of the Old Highway 99 improvements:

Old Highway 99 will have two main roadway sections:

1. 79th Avenue to 88th Avenue – Two travel lanes in both directions, a median dividing both directions of travel, 6-foot bike lanes on the west side, 10-foot sidewalks on the east side.
2. 88th Avenue to 93rd Avenue – One travel lane in each direction, a median dividing both directions of travel, 6-foot bike lanes on both sides, 6-foot sidewalks on both sides.

In **Appendix F** preliminary plan sheets show the recommended channelization of Old Highway 99.

5.2 ROUNDABOUT LAYOUTS

At the intersections at 79th Avenue, Henderson Avenue, 88th Avenue, and 93rd Avenue, roundabouts are the preferred alternative for improving the intersection.

Appendix F contains layouts, sight distance, and fastest path for the intersections at 79th Avenue, Henderson Avenue, 88th Avenue, and 93rd Avenue.

5.3 STORMWATER

Stormwater studies were conducted based on the *2022 Drainage Design and Erosion Control Manual for Tumwater.* Ongoing evaluation is currently taking place to determine the local water tables and the infiltration rates anticipated for the project. Prior to final design, Geotech must conduct a more comprehensive study of the soils on the project site and perform pit tests to determine final design infiltration rates. Two methods were used for modeling the stormwater along both sides of the roadway: 1) Bioretention for roadway edges with curb and gutter and 2) Compost Amended Vegetated Filter Strips (CAFVS) for roadway edges without curb and gutter. For each of the proposed roundabouts, infiltrations basins can be used to capture the roundabout stormwater runoff and receive any overflow from the bioretention swales and CAVFS.

Full design of all facilities will have to be based on infiltration rates found through Geotech test pits and evaluation of the water table at each specific roundabout location.

Information for stormwater was gathered and summarized to create a stormwater technical memorandum describing the anticipated stormwater design, to document major design decisions, and to serve as a concept for flow control at this preliminary stage. See the Stormwater Tech Memo within **Appendix F**.

5.4 UTILITIES

As a part of the utility coordination, we collected as-built plans for public and private utilities to create an exhibit that shows all the known utilities on the project site. From this a *Utility Tech Memo* was created to identify any utility conflicts for the project. Due to the expanded section for Old Highway 99 and the introduction of roundabouts at four intersections, certain utilities will need to be relocated, including but not limited to junction boxes, sewer maintenance holes, and water valves. New illumination, signage, and stormwater will have to be coordinated with current utility locations. All aboveground franchise utilities will be required to be relocated underground for the corridor.

As a part of the phases, the utility work will need to be coordinated with utility purveyors to determine where relocations and coordination need to take place.

Appendix F contains the Utility Tech Memo showing all horizontal crossings for the project as identified from the as-built plans.

5.5 LANDSCAPING AND STREETSCAPE

Through the process of developing a plan for the Old Highway 99 Corridor Improvements, it was determined that landscaping would consist of grass planting in the planter strips between the street curbs and the sidewalks. Cross sections were created for the corridor from 73rd Avenue to 88th Avenue, and a section from 88th Avenue to 93rd Avenue.

For the entire corridor, there were six visual streetscape and landscape renderings that were evaluated, and a section was determined for the proposed improvements. For alternatives evaluation, see information in **Appendix B.**

6 ENVIRONMENTAL STRATEGIES

6.1 ENVIRONMENTAL CONSIDERATIONS

Our environmental assessment follows the premise laid out in Part 4 – Environmental Considerations from the NEPA CE Categorical Exclusion Documentation Form. Considerations include thirteen elements to identify impacts and the plan for mitigation when needed. **Appendix G** contains a tech memo that addresses the following environmental considerations:

- Air Quality
- Critical Areas
- Cultural Resources/Historic Structures
- Floodplains and Floodways
- Hazardous and Problem Waste
- Noise
- 4(f)/6(f) Resources
- Agricultural Lands
- Rivers, Streams, or Tidal Waters
- Tribal Lands
- Water Quality/Stormwater
- Previous Environmental Commitments
- Environmental Justice

Each of these elements were evaluated at a preliminary level to inform where potential considerations may impact design and identify potential mitigation. Specific aspects of the project will need to be evaluated as outlined below:

1. Air Quality evaluation since the improvements will increase corridor capacity.
2. Mazama Pocket Gopher (MPG) habitat which will impact the considerations for design. MPG habitat is adjacent to the corridor along the east and west side of Old Highway 99.
3. Historic sites including a historic oak tree and the George Washington Bush Interpretive site.
4. Hazardous waste material which may be located on property acquired at the gas station and Pick-n-Pull automobile salvage yard, both which overlap the project site.
5. Noise impacts and whether the widening moves traffic closer to noise receptors.
6. An environmental justice assessment for the right of way acquisition and relocation.

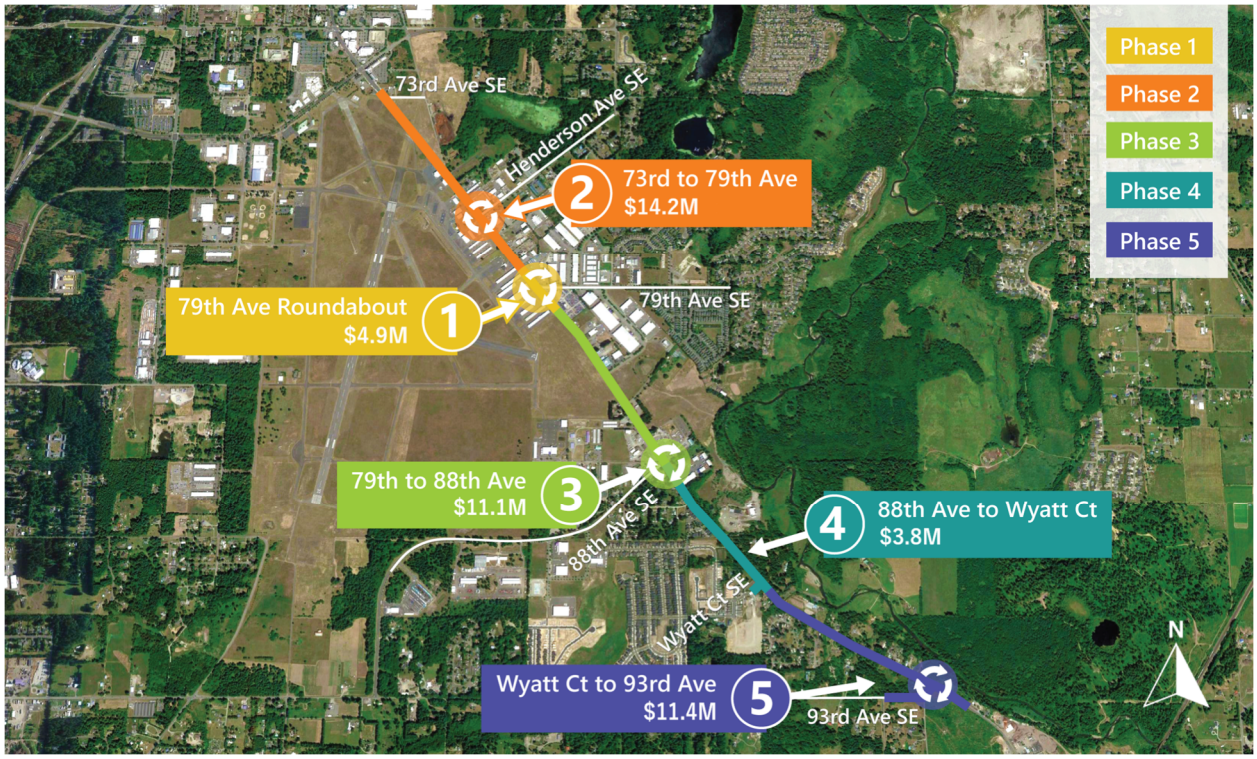
For additional information and supporting reports, see **Appendix G** containing the Environmental Tech Memo.

7 PHASING PLAN AND COST ESTIMATES

7.1 PROJECT PHASING

We evaluated the corridor and phasing options for improvements along Old Highway 99. We based the phasing options on operational benefit, funding opportunities, and practical project size. First, we gave priority to phases providing more operational benefit. Second, we defined phases based on funding opportunities. Third, we sought to keep the cost for individual phases between $4M and $15M (in 2022 dollars). With these considerations in mind, the following phases were determined for the project and their anticipated costs determined.

Figure 7.1 Old Highway 99 Project Phases



7.1.1 Phase 1 – 79th Avenue Roundabout ($4.9 Million)

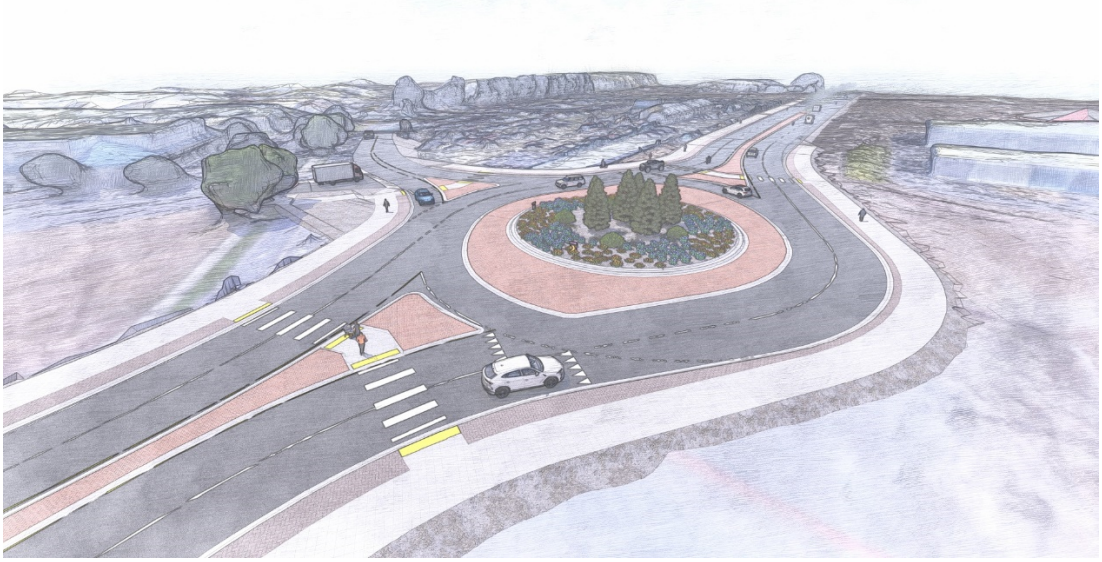
For the Project, 79th Avenue fails to provide an acceptable LOS for existing traffic base on the 2020 traffic counts. The construction of a roundabout would alleviate the congestion at this location and raise it to LOS A. Because it is the only intersection that currently has a failing LOS, it is a critical improvement.

The constructed roundabout would have two circulating lanes through the roundabout on Old Highway 99 and then taper to one lane to match the roadway section on both sides of the proposed roundabout. 79th Avenue would tie into the roundabout with one lane going in both directions. A 10-foot sidewalk would be constructed on the east side of the roadway and a 10-foot sidewalk would be constructed on the west side, providing opportunities for bicycles to exit

the roadway before reaching the roundabout or allow bicyclists who are comfortable with merging with vehicle traffic to travel through the roundabout.

Construction of new stormwater facilities, signage, and illumination would also be included in Phase 1. Right of way property acquisition will be required for the construction of this phase**.**

Figure 7.2 Future 79th Avenue Roundabout



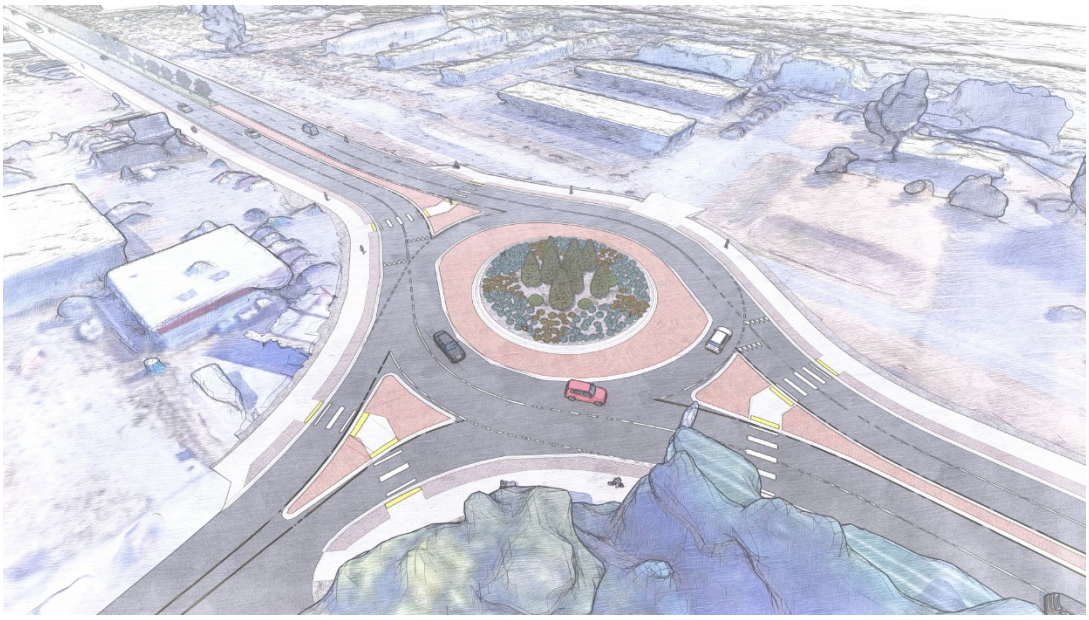
7.1.2 Phase 2 – 73rd Avenue to 79th Avenue ($14.2 Million)

Henderson is projected to have a failing LOS in 2040 and is the next highest priority after 79th Avenue improvements. Widening from 73rd Avenue to 79th Avenue would provide continuity with two lanes of travel and a section that accommodates pedestrians and bicyclists connecting to the recent improvements of Capitol Boulevard.

Starting on the north side and working our way south after the 79th Avenue Roundabout, work would include the construction of a roundabout at Henderson Avenue and the widening of Old Highway 99 to two lanes of travel in both directions and a median that ties into the 79th Avenue roundabout improvements. 10-foot sidewalks would be constructed on the east side of the roadway providing pedestrian and bicycle access and bike lanes would be constructed on the west side to tie into the bike lanes constructed for the 79th avenue roundabout. On the west side of the Henderson roundabout, a 10-foot sidewalk would be constructed to provide an exit for bicyclists who are not comfortable merging with traffic to travel through the roundabout.

Construction of new stormwater facilities, signage, and illumination would also be included in Phase 2. Right of way property acquisition will be required for the construction of this phase.

Figure 7.3 Future Henderson Avenue Roundabout



7.1.3 Phase 3 – 79th Avenue to 88th Avenue Roundabout ($11.1 Million)

After 73rd to 79th Avenue improvements, the next phase would include widening to two lanes in both directions and a median between 79th Avenue and 88th Avenue and the construction of a roundabout at 88th Avenue. 10-foot sidewalks would be provided on both the west side and east side of the roundabout to provide both bicycle and pedestrian access. The sidewalk on the west side serves as an exit for bicycles before and after the roundabout at 88th Avenue. The sidewalk on the east side would continue all the way from 79th Avenue to 88th Avenue. From 88th Avenue two lanes of travel in both directions would taper down to one lane of travel in each direction.

Construction of new stormwater facilities, signage, and illumination would also be included in Phase 3. Right of way property acquisition will be required for the construction of this phase.

7.1.4 Phase 4 – 88th Avenue Roundabout to Wyatt Court ($3.8 Million)

Following the 79th Avenue and 88th Avenue Roundabout improvements, would be 88th Avenue to Wyatt Court improvements, including widening for a median dividing the two opposing lanes of travel, 6-foot sidewalks on both sides, and 6-foot bike lanes continuing from the previous phase.

Construction of new stormwater facilities, signage, and illumination would also be included in Phase 4. Right of way property acquisition will be required for the construction of this phase.

7.1.5 Phase 5 – Wyatt Court to 93rd Avenue Roundabout ($11.4 Million)

To conclude the Old Highway 99 improvements, Wyatt Court to 93rd Avenue improvements would include widening for a median dividing the two opposing lanes of travel, 6-foot sidewalks on both sides that taper out to 10-foot sidewalks at 93rd Avenue Roundabout, and bike lanes continuing from the previous phase. A roundabout at 93rd Avenue will be constructed to terminate the project with a sidewalk on both south and north sides of the roundabout to give access to both pedestrians and bicyclists travelling through the roundabout.

Construction of new stormwater facilities, signage, and illumination would also be included in Phase 5. Right of way property acquisition will be required for the construction of this phase.

7.2 PHASE COST ESTIMATES

Each phase was evaluated, and a cost estimated for their completion. Table 7.1 shows the five proposed phases and the combined cost for construction, right of way acquisition, and engineering services.

Table 7.1 Phase Costs

Phase	Description	Cost*
Phase 1	79th Avenue Roundabout	$4,920,000*
Phase 2	73rd Avenue to 79th Avenue	$14,220,000*
Phase 3	79th Avenue to 88th Avenue Roundabout	$11,100,000*
Phase 4	88th Avenue Roundabout to Wyatt Court	$3,780,000*
Phase 5	Wyatt Court to 93rd Avenue Roundabout	$11,400,000*

*Cost includes construction, right of way acquisition, and engineering. See *Section 8 – Right of Way Plan*.

The total phase costs in Table 7.1 are preliminary and represented in 2022 dollars. Over the last three to five years, we have experienced a 15-20% increase in construction costs and continue to see increases on a yearly basis. These cost increases are unprecedented and difficult to predict. Due to these increases and general inflation, we recommend doing a cost analysis to account for inflation and increased construction costs prior to submitting grant applications. **Appendix D** includes copies of the conceptual cost estimates for each phase of the project.

If the city wants to further break down the phases due to cost, the roundabouts can be constructed separate from the section widening. These phases however follow an order that reflects the needs and continuity of the corridor improvements moving forward.

Table 7.2 summarizes the estimated right of way acquisition and relocation cost for each phase listed in the Phasing Plan. **Appendix E** includes a copy of the conceptual right of way plans and estimates.

Table 7.2 Right of Way Costs

Project	Description	Property Acquisitions	Relocations	Cost
Phase 1	79th Avenue Roundabout	4	1	$900,000
Phase 2	73rd Avenue to 79th Avenue	18	1	$3,750,000
Phase 3	79th Avenue to 88th Avenue Roundabout	24	0	$1,990,000
Phase 4	88th Roundabout to Wyatt Court	8	0	$580,000
Phase 5	Wyatt Court to 93rd Avenue Roundabout	25	1	$2,220,000

*Cost includes right of way acquisition and engineering.

Project funding estimates (PFE) for each phase should be completed during the preliminary engineering (PE) phase. Project funding estimates should consider loss of parking and circulation impacts to each parcel. We also recommend establishing contact with each affected property owner early in the PE phase to setup expectations and understand their needs.

See **Appendix E** for concept right of way plans and cost estimates.

APPENDIX A
- TRAFFIC OPPERATIONAL ANALYSIS

Traffic Operational Analysis

Old Highway 99 Corridor Study
City of Tumwater

Prepared For:
City of Tumwater

Prepared By:
SCJ Alliance
Ryan Shea, PTP, Senior Transportation Planner
8730 Tallon Lane NE, Suite 200
Lacey, WA 98516
360.352.1465

August 2022

SCJ ALLIANCE
CONSULTING SERVICES

Operational Analysis

Project Information

Project:	Old Highway 99 Corridor Study
Prepared for:	City of Tumwater
	Mary Heather Ames

Reviewing Agency

Jurisdiction:	City of Tumwater

Project Representative

Prepared by:	SCJ Alliance 8730 Tallon Lane NE, Suite 200 Lacey, WA 98516 360.352.1465 scjalliance.com
Contact:	Ryan Shea, PTP, Senior Transportation Planner
	Patrick Hold, PE, Project Manager

Project Reference:	SCJ #0625.29
	Path: N:\Projects\0625 City of Tumwater\0625.29 Tumwater Old Hwy 99 and 79th Ave Corridor Study\Phase 02 - Corridor Traffic Validation\Report\2020-0622 Traffic Operations.docx

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1 Introduction

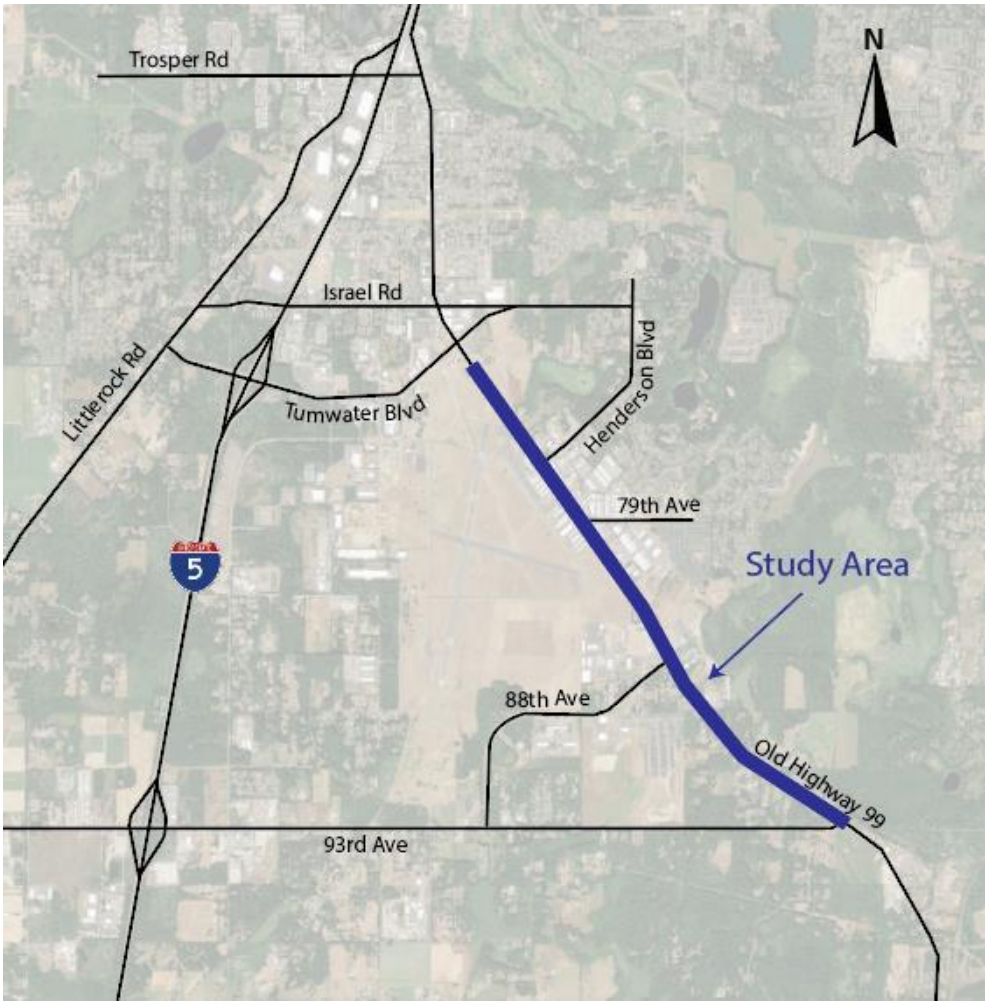
1.1 Project Overview

The City of Tumwater is conducting the *Old Highway 99 Corridor Study* (Corridor Study) to validate the transportation recommendations included in the *Tumwater City Plan 2036, Transportation Master Plan November 2016* (Transportation Plan) to identify and prioritize future projects and to develop strategies for future funding. The Transportation Plan recommends widening the Old Highway 99 corridor to 5 lanes from 73rd Avenue to 88th Avenue and widen to 3 lanes from 88th Avenue to 93rd Avenue. Included in the corridor improvement project was conversion of the two existing traffic signals, at Henderson Boulevard and 88th Avenue, to roundabouts. The Transportation Plan also identified intersection improvements at 79th Avenue and 93rd Avenue, recommending roundabouts at both locations.

The Corridor Study will identify necessary or recommended changes to these recommendations as a result of the validation process and identify preliminary design improvements. The Corridor Study extends from approximately 73rd Avenue SE to 93rd Avenue SE in Tumwater, Washington.

Figure 1 illustrates the Corridor Study area.

Figure 1. Site Vicinity Map



1.2 Study Context

The Corridor Study validation process includes conducting a transportation operational analysis for potential roadway and intersection alternatives. This report describes the traffic count collection, traffic volume forecasting, and operational analysis performed to determine/confirm the recommended roadway and intersection design concepts. The operational analysis has been prepared for existing 2020 AM and PM peak hour conditions, forecasted 2025 AM and PM peak hour conditions and forecasted 2040 AM and PM peak hour conditions at the following intersections:

- Old Highway 99/Henderson Boulevard
- Old Highway 99/79th Avenue
- Old Highway 99/88th Avenue
- Old Highway 99/93rd Avenue

2 Existing Conditions

2.1 Area Land Uses

The Corridor Study extends from 73rd Avenue SE to 93rd Avenue SE. The surrounding land uses along the corridor includes a mix of industrial, commercial and undeveloped land. The Olympia Regional Airport and airport related uses are located along the west side of Old Highway 99 for a large majority of the study area. Old Highway 99 also provides connections to residential developments along the corridor.

The *Tumwater City Plan 2036* future zoning map identifies the properties adjacent to Old Highway 99 to be light industrial uses along the east side of the corridor and a mix of general commercial, airport, mixed use, and residential uses along the west side.

2.2 Roadway Inventory

2.2.1 Old Highway 99

Old Highway 99 is classified as an arterial from 73rd Avenue to south of 88th Avenue, and as a collector from south of 88th Avenue to 93rd Avenue. In the study area, Old Highway 99 has one lane in each direction. The roadway has a paved shoulder with intermittent sidewalks and has a posted speed limit of 50 mph from 93rd Avenue to 79th Avenue where the speed limit drops to 40 mph. The speed limit drops again to 35 mph north of the study area. Old Highway 99 extends from the City of Tenino north to the City of Tumwater. North of the study area, Old Highway 99 transitions to Capitol Boulevard serving as the city's primary north-south transportation route.

2.2.2 Henderson Boulevard

In the study area, Henderson Boulevard is classified as a collector roadway and has one lane in each direction. This roadway has intermittent paved shoulders with no sidewalks and has a posted speed limit of 35 mph. Henderson Boulevard serves as a link between Old Highway 99 and Yelm Highway.

2.2.3 79th Avenue

79th Avenue is classified as a collector roadway and has one lane in each direction. This roadway provides sidewalks along portions of each side of the road and has a posted speed limit of 35 mph. 79th Avenue provides access to residential developments located on the east side of the corridor.

2.2.4 88th Avenue

88th Avenue is classified as a collector roadway and has one lane in each direction. As 88th Avenue transitions to Tilley Road it provides one lane in each direction with a two-way-center-left-turn-lane. This roadway provides paved shoulders and sidewalks and has a posted speed limit of 50 mph. Bike lanes are provided at the transition to Tilley Road. 88th Avenue serves as a link between Old Highway 99 and Tilley Road, which provides access to rural Thurston County.

2.2.5 93rd Avenue

93rd Avenue transitions through several roadway classifications, near Old Highway 99 it is classified as a collector roadway and near I-5 the roadway is an arterial. Between 88th Avenue and I-5, 93rd Avenue changes between collector and arterial as it travels through City and UGA limits. 93rd Avenue provides one lane in each direction and has a posted speed limit of 50 mph between Old Highway 99 and Tilley Road, before reducing to a posted speed limit of 40 mph west of Tilley Road. This roadway serves as a connection to the south and west portions of the City of Tumwater and provides access to and from I-5.

A summary of the existing intersection channelization and control type for each of the study intersections is provided in **Figure 2.**

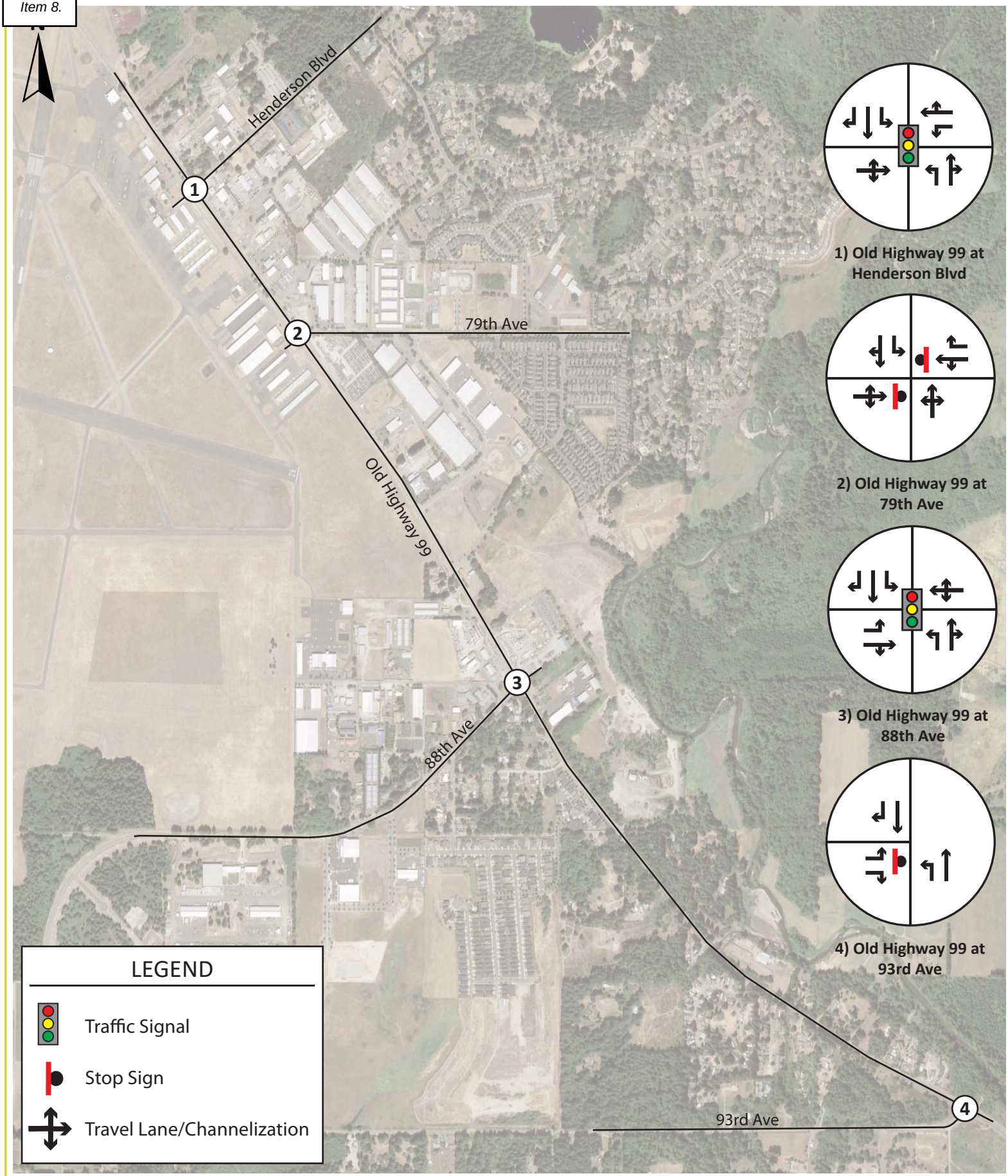
2.3 Traffic Volume Data

Traffic Count Consultants, Inc (TC2), a transportation data collection service, provided peak period turning movement counts for the study intersections. The counts were conducted between 7:00 am - 9:00 am and between 4:00 pm - 6:00 pm on Wednesday, March 04, 2020 at the following locations:

- Old Highway 99/Henderson Boulevard
- Old Highway 99/79th Avenue
- Old Highway 99/88th Avenue
- Old Highway 99/93rd Avenue

The morning and evening peak traffic periods were selected as the appropriate time periods because they represent the peak commute hours and create the highest level of activity at the study intersections.

Figure 3 shows the existing 2020 AM and PM peak hour traffic volumes for the study intersections. The turning movement count diagrams are provided in **Appendix A**.



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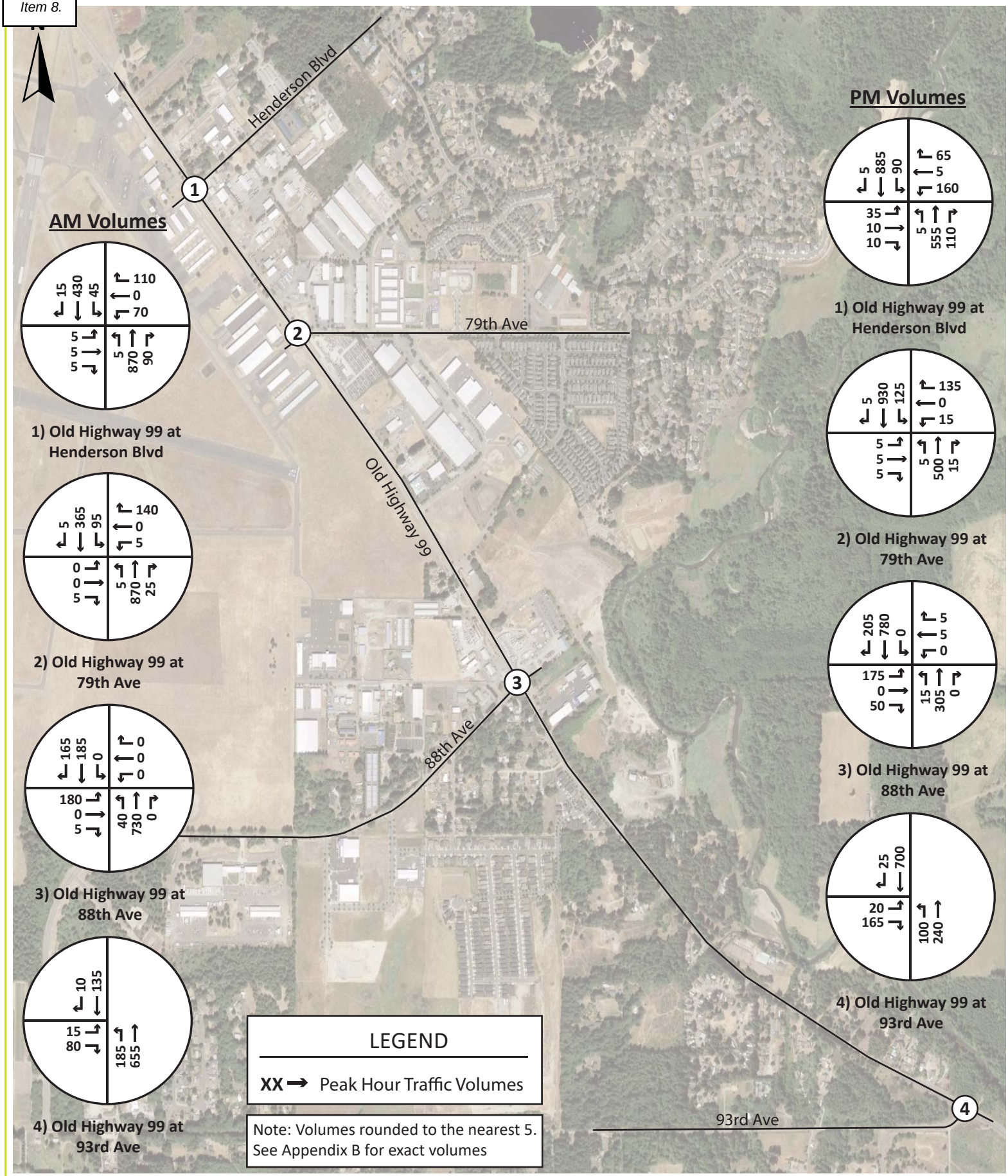
Old Highway 99 Corridor Study
Tumwater, Washington

Figure 2
Existing Channelization



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Tumwater, Washington

Figure 3
Existing 2020 AM & PM Peak Hour Traffic Volumes

3 Future Conditions

3.1 Travel Demand Model

The traffic volume projections used in this analysis were calculated using the Thurston Regional Planning Council (TRPC) Emme/4 transportation demand model. The model, prepared by TRPC, has been most recently updated to represent 2015 traffic conditions. The model provides AM and PM peak hour traffic assignments.

TRPC has prepared a 2040 model scenario that includes the regionally adopted household and employment projections for the region. The 2040 scenario also includes all roadway improvements identified in the current Thurston County Regional Transportation Plan (RTP).

3.2 Traffic Volume Forecasts

Using the outputs from the TRPC travel demand models, baseline 2025 and 2040 volume forecasts were prepared. These forecasts were calculated using the annual model volume growth added to the existing turning movement counts at each study intersection. The projected 2025 AM and PM peak hour volumes are provided on **Figure 4**.

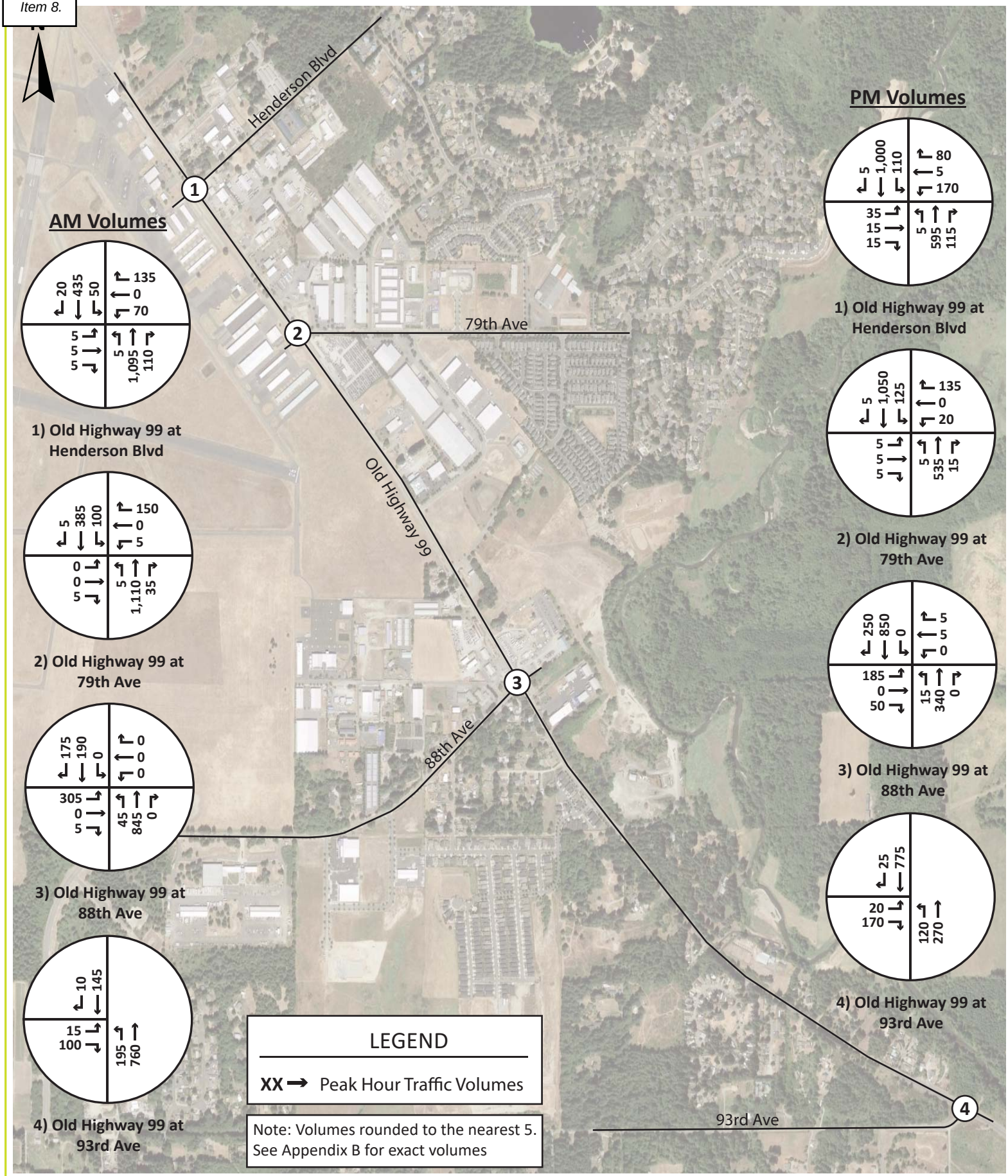
The growth contained in the 2040 demand model for the area along the study corridor was evaluated and found to be minimal. To provide a more conservative long-range forecast, an evaluation of the vacant properties along the study corridor was performed. Based on the amount of available land and the current zoning, additional development was assumed and incorporated into the long-range traffic forecast.

3.2.1 Adjustment to the 2040 Baseline Traffic Volume Forecast

To calculate a more conservative 2040 volume forecast an assessment of the vacant property along the study corridor was performed. With the Olympia Regional Airport located on much of the western side of the corridor, the vacant land assessment was primarily performed on the east side of the corridor. Between Henderson Boulevard and 88th Avenue there is approximately 46.25 of vacant land. In discussions with the City it was determined that 80% of this land would be considered built out for the 2040 horizon, resulting in approximately 37 acres of additional development. The current zoning for this entire area is light industrial. An assessment of other developments in the vicinity suggest approximately 40% of the total property contains buildings, with the rest dedicated to access, parking and stormwater treatment. Using 40% for the building coverage, approximately 14.8 acres, or 650,000 square feet, was determined as the amount of additional development.

The vehicle trip generation for the additional development potentialwas estimated using the trip generation rates contained in the 10th edition of the Trip Generation Manual by the *Institute of Transportation Engineers (ITE)*. The land-use category “Warehousing” (land-use code 150) and “General Light Industrial” (land-use code 110) were used.

Table 1 shows the trip generation characteristics for Warehousing and General Light Industrial for the AM and PM peak periods.



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Tumwater, Washington

Figure 4
2025 Baseline AM & PM Peak Hour Traffic Volumes

Table 1. AM and PM Peak Hour Trip Generation Characteristics – Baseline

ITE Land Use (LU)	Unit	Trip Rate	Enter %	Exit %
AM Peak Period				
Warehousing	1,000-sq ft	0.17	77%	23%
General Light Industrial	1,000-sq ft	0.70	88%	12%
PM Peak Period				
Warehousing	1,000-sq ft	0.19	27%	73%
General Light Industrial	1,000-sq ft	0.63	13%	87%

The total trip generation is calculated by applying the unit measure for each land use category to the appropriate trip generation rate. The trip generation is shown in **Table 2** for AM and PM peak periods.

Table 2. AM and PM Peak Period Trip Generation

Land Use	Unit	Total Trips	Enter	Exit
AM Peak Period				
Warehousing	325.00	55	43	12
General Light Industrial	325.00	228	200	28
Total Trips	-	***283***	***243***	***40***
PM Peak Period				
Warehousing	325.00	62	17	45
General Light Industrial	325.00	205	27	178
Total Trips	-	***267***	***44***	***223***

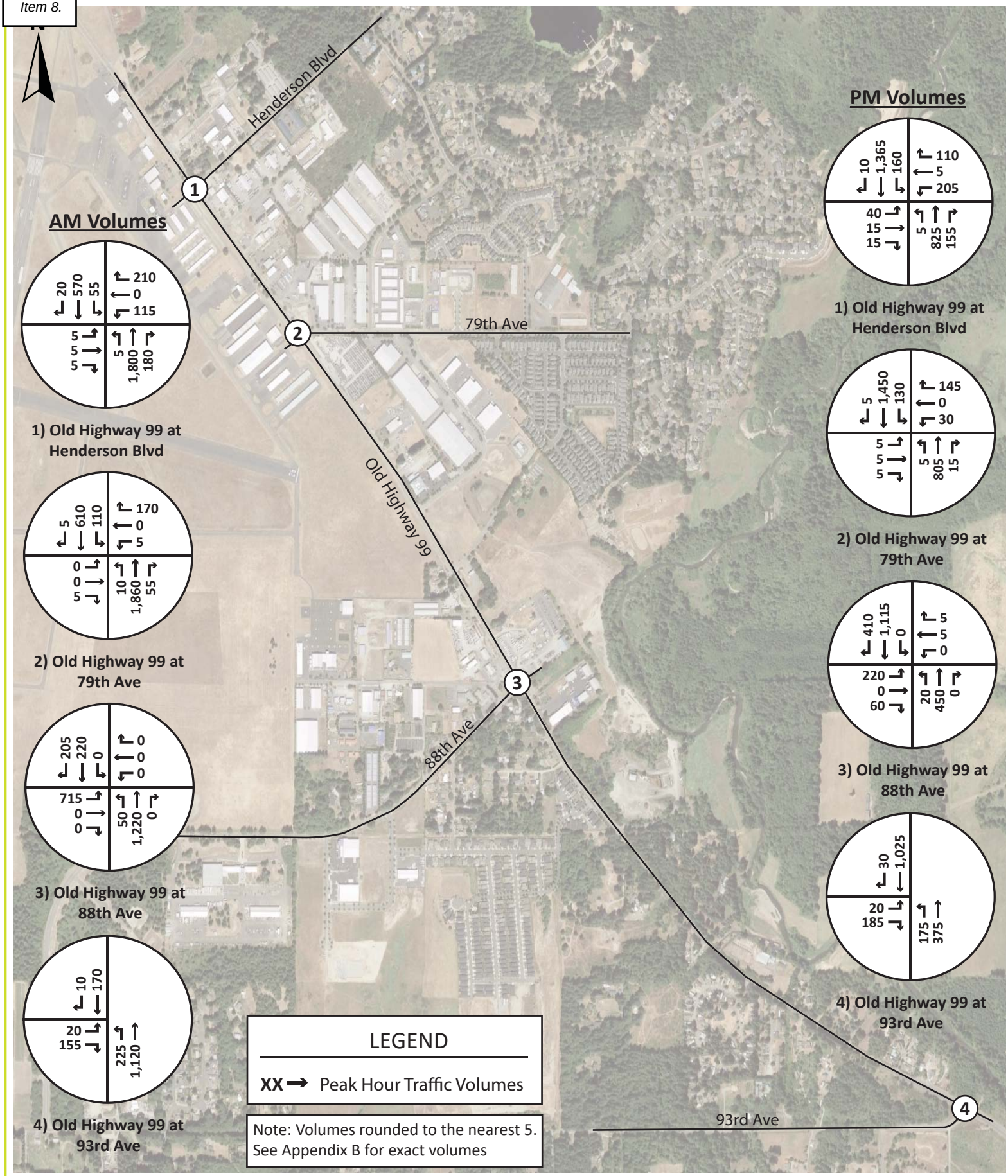
This volume was assigned to the study area using the following distribution patterns from the TRPC travel demand model:

- 15% to/from 88th Avenue
- 15% to/from Henderson Boulevard
- 15% to/from the south on Old Highway 99
- 55% to/from the north on Old Highway 99

These volumes were added to the 2040 baseline forecast volumes described above to produce the modified baseline volumes used in the operational analysis. The 2040 AM and PM peak hour baseline volumes are provided on **Figure 5**.

3.3 Comparison to Tumwater Transportation Plan

The City of Tumwater's Transportation Plan, published in 2016, recommended Old Highway 99 from 73rd Avenue to 88th Avenue be widened to five lanes. An initial step to validate that recommendation is to compare the current PM peak hour volume forecasts to the volume forecasts prepared in the Transportation Plan. The total entering volumes for each of the study intersections were compared to determine if the current 2040 volume forecasts are consistent with the previous volume forecast. These volumes are provided in **Table 3**.



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Old Highway 99 Corridor Study
Tumwater, Washington

Figure 5
2040 Baseline AM & PM Peak Hour Traffic Volumes

Table 3. PM Peak Hour 2040 Volume Comparison

Intersection	Master Plan Volume	Current Volumes	Volume Delta
Old Hwy 99/Henderson Blvd	2,725	2,910	+185
Old Hwy 99/79th Ave	2,415	2,580	+165
Old Hwy 99/88th Ave	2,125	2,275	+150
Old Hwy 99/93rd Ave	1,670	1,810	+140

At each of the study intersections the current 2040 traffic volume forecast is similar to but higher than the traffic volume forecasts from the 2016 Transportation Plan. This indicates that the recommendations from the Transportation Plan are still valid.

3.4 Sensitivity Analysis Scenario

In addition to calculating some of the additional growth potential along the study corridor, the City recognizes the potential for property along the corridor to be rezoned in the future, allowing for higher trip generation potential. Given the potential attractiveness of the adjacent properties once the corridor improvement project is constructed, it is anticipated that the property located at each of the controlled intersections could redevelop to commercial/retail uses and generate much higher traffic volumes at the intersections. To ensure that the study intersections are designed to accommodate this higher growth potential an additional 2040 volume forecast scenario was prepared.

All of the growth in this sensitivity scenario is assumed to be commercial/retail. An estimate of the total acreage that could develop/redevelop at each intersection was prepared. A building coverage factor of 25% was then applied to the total acreage to determine the amount of square footage. Below is a description of each study intersection.

3.4.1 Old Highway 99/Henderson Boulevard

The property in each corner of the intersection was evaluated for redevelopment potential. As part of this sensitivity analysis the property in the north and east corners of the intersection (east of Old Highway 99) were both assumed to redevelop. West of Old Highway 99 is the Olympia Regional Airport. This portion of the airport property has some vacant property and office buildings. The west corner of the intersection was also assumed to redevelop to a commercial/retail use. In total, this redevelopment potential amounted to 5.5 acres, which equates to approximately 60,000 sqft.

3.4.2 Old Highway 99/79th Avenue

For this intersection the property on the west side of Old Highway 99, which is the Olympia Regional Airport, contains airplane hangars. None of this property was assumed to redevelop. On the east side of Old Highway 99 the northeast corner has recently been developed. For this scenario only the property to the southeast was assumed to redevelop. The existing pick-a-part business in this property will be impacted by the proposed reconfiguration of the intersection (assumed roundabout project) and half of the property was assumed to redevelop for this scenario (2 acres) which equates to approximately 25,000 sqft.

3.4.3 Old Highway 99/88th Avenue

At this intersection the property to the northwest, which contains the Kiperts retail store, was assumed to remain as is. The existing auto pawn property on the east side of Old Highway 99 was assumed to redevelop. The existing single-family homes southwest of the intersection are currently zones as mixed use. Given this zoning half of the neighborhood was assumed to redevelop as well. Together this equates to roughly 13 acres and 145,000 sqft.

3.4.4 Old Highway 99/93rd Avenue

This intersection is located at the end of the study corridor and was considered too far away from the City to redevelop with commercial/retail activity. No additional growth was added at this location.

3.4.5 Sensitivity Analysis Volume Calculations

Based on the development/redevelopment potential at the different study intersections, the sensitivity analysis includes 230,000 square feet. The vehicle trip generation was estimated using the land-use category "Shopping Center" (land-use code 820). This land use category includes a wide range of commercial and retail uses and should represent the variety of development that could occur if these areas were rezoned.

Table 4 shows the trip generation characteristics for Shopping Center for the AM and PM peak periods.

Table 4. AM and PM Peak Hour Shopping Center (LU 820) Trip Generation – Sensitivity Scenario

Shopping Center (LU 820)	Unit	Trip Rate	Enter %	Exit %
AM Peak Period	1,000-sq ft	0.94	62%	38%
PM Peak Period	1,000-sq ft	Equation[1]	48%	52%

1. See appendix B for equation rates

For the PM peak period the ITE Trip Generation Manual has a fitted curve equation for the shopping center land use. This equation adjusts the trip rate based on the size of the development. The trip generation calculations were done for the square footages at each intersection. The detailed trip calculations are included in **Appendix B.**

The total trip generation is calculated by applying the unit measure for each land use category to the appropriate trip generation rate. The trip generation is shown in **Table 5** for AM and PM peak periods.

Table 5. AM and PM Peak Hour Shopping Center (LU 820) Trip Generation – Sensitivity Scenario

Shopping Center (LU 820)	Unit	Total Trips	Enter	Exit
AM Peak Period	230.00	216	134	82
PM Peak Period	230.00	1,411	678	733

These trips were assigned to the study corridor using the same distribution outlined above in section 3.2.1. This assignment was then added to the 2040 baseline volumes to produce the 2040 sensitivity analysis scenario volumes. The total entering volumes for each of the study intersections with and without the additional sensitivity volumes are provided in **Table 6** to help illustrate the amount of additional traffic with the sensitivity scenario.

Table 6. 2040 Volume Comparison With Sensitivity Scenario

Intersection	AM Peak Hour			PM Peak Hour		
	Baseline	Sensitivity	Volume Delta	Baseline	Sensitivity	Volume Delta
Old Hwy 99/Henderson Blvd	2,960	3,125	+165	2,910	3,670	+760
Old Hwy 99/79th Ave	2,825	2,960	+135	2,580	3,205	+625
Old Hwy 99/88th Ave	2,410	2,560	+150	2,275	3,005	+730
Old Hwy 99/93rd Ave	1,700	1,730	+30	1,810	1,950	+140

The AM and PM peak hour 2040 sensitivity scenario volumes are provided in **Figure 6**. The land included in the modified baseline trip generation and sensitivity scenario trip generation is shown on **Figure 7**.

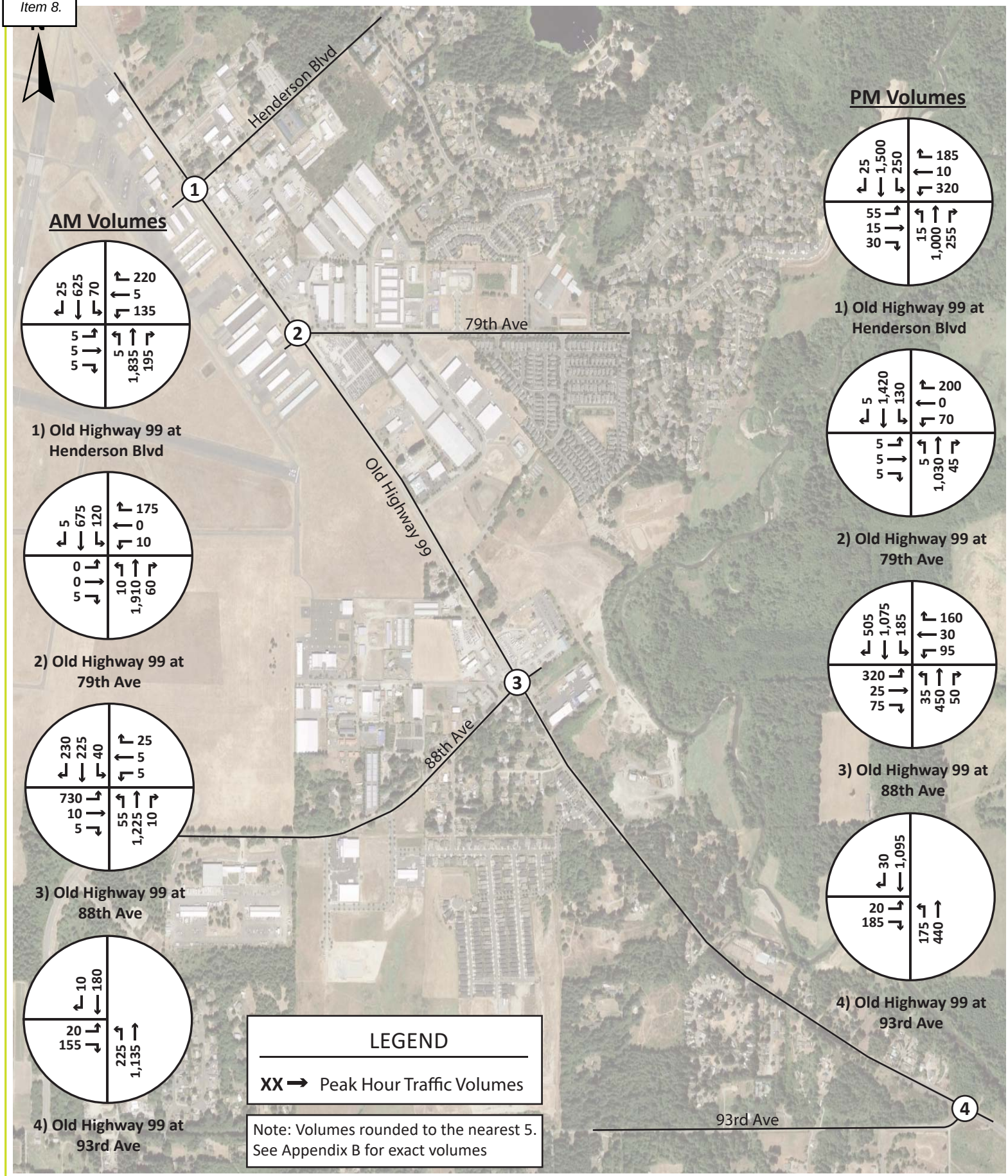

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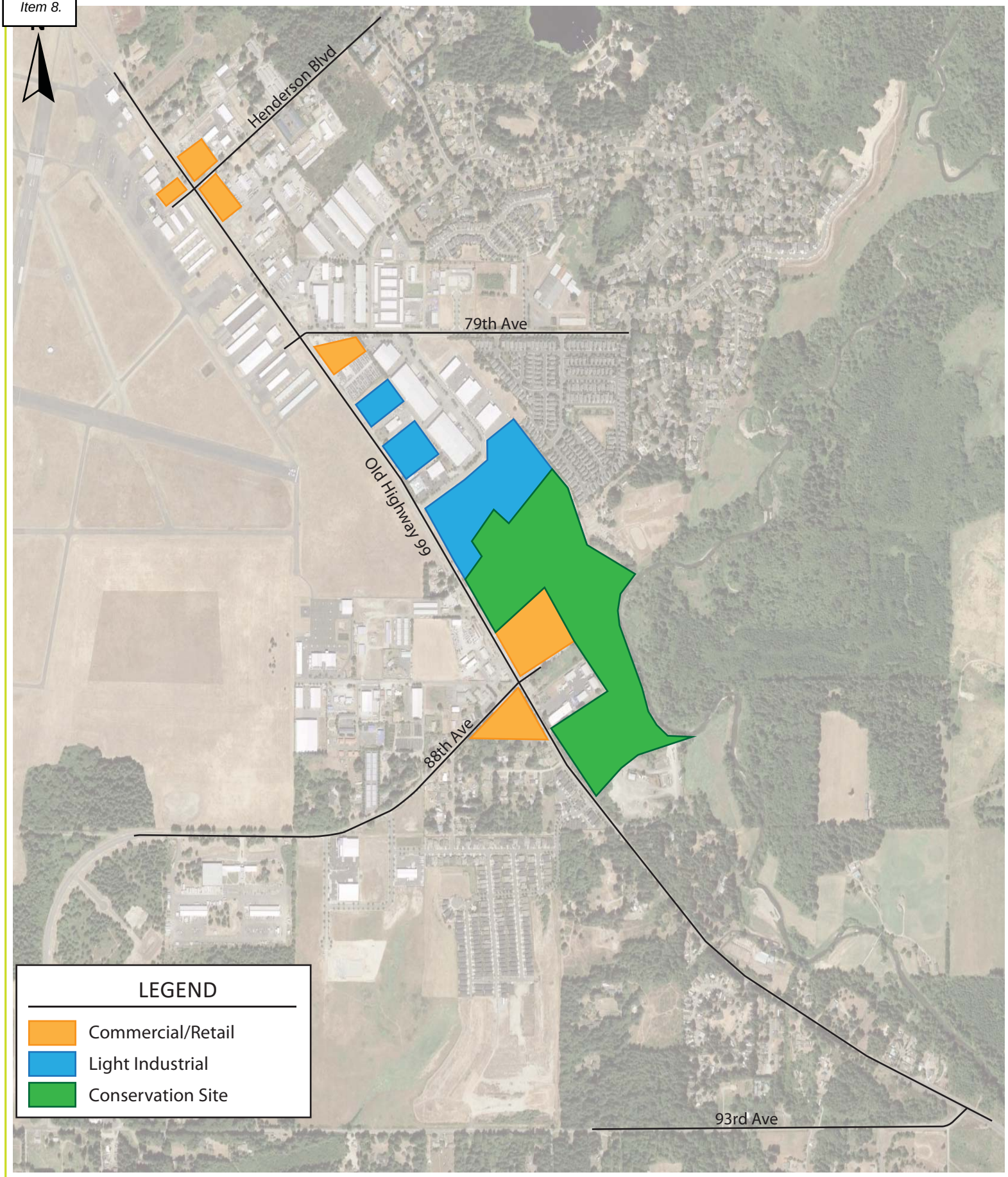
Figure 6
2040 Projected Sensitivity Scenario
AM & PM Peak Hour Traffic Volumes



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Old Highway 99 Corridor Study
Tumwater, Washington

Figure 7
Locations of Additional Growth

4 Traffic Operations Analysis

Traffic analyses were conducted to identify any deficiencies within the study area for the AM peak hour and PM peak hour for the 2020 base year and the 2025 and 2040 project opening year.

4.1 Level of Service

The acknowledged source for determining overall capacity for arterial segments and independent intersections is the current edition of the *Highway Capacity Manual* (HCM) published by the Transportation Research Board (TRB).

Intersection analysis for stop control and traffic signal intersections was performed using the Synchro software package. This software implements the methods of the 6th Edition HCM. For the roundabout intersection alternatives, the Sidra software package was used. Capacity analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a street or highway during a specific time interval. LOS ranges from A (very little delay) to F (long delays and congestion).

The Tumwater 2016 Transportation Plans identifies a LOS D standard for intersections within city limits.

4.1.1 Intersection Operations

For signalized intersections, the overall LOS grade represents the weighted average of all movements at the intersection. For intersections under minor street stop-sign control, the LOS of the most difficult movement (typically the minor street left turn) represents the intersection level of service. The LOS/delay criteria for stop sign-controlled intersections are different than for signalized intersections because driver expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay. The following table shows the Level of Service criteria for stop-controlled intersections and signalized intersections

Table 7. Level of Service Criteria for Intersections

Level of Service	Signalized Intersection Average Control Delay (seconds/vehicle)	Stop-Controlled Intersection Average Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

4.2 2040 Intersection Analysis

The analysis was conducted for the following scenarios:

- Existing 2020 traffic volumes
- Projected 2040 baseline traffic volumes without the corridor widening
- Projected 2040 baseline traffic volumes with the corridor widening
- Projected 2040 baseline traffic volumes with the corridor widening and intersection improvements
- Projected 2040 sensitivity scenario traffic volumes with the corridor widening and intersection improvements.

The operational analysis results of the study intersections for the projected 2040 scenarios are provided in **Table 8** for the AM peak hour and **Table 9** for the PM peak hour. The LOS analysis worksheets are included in **Appendix C.** Existing intersection channelization is provided in Figure 2.

Table 8. Existing and 2040 AM Peak Hour Intersection Level of Service

				Projected 2040							
				Existing Channelization				Roundabout Control			
		Existing 2020		No Widening		With Widening		With Widening		With Sensitivity Scenario	
	Intersection	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)
1	Old Highway 99/ Henderson Boulevard	C (22.4)	0.96 (NB)	F (192.7)	1.55 (NB)	C (22.2)	0.91 (NB)	A (5.6)	0.55 (WB)	A (6.0)	0.69 (NB)
2	Old Highway 99/ 79th Avenue	F (59.0)	0.51 (WB)	F (300+)	1.98 (WB)	F (300+)	0.68 (WB)	A (5.2)	0.66 (NB)	A (5.4)	0.68 (NB)
3	Old Highway 99/ 88th Avenue	A (9.0)	0.82 (NB)	F (120.7))	1.25 (NB)	D (35.6)	0.92 (NB)	B (11.5)	0.71 (NB)	B (14.3)	0.79 (NB)
4	Old Highway 99/ 93rd Avenue	C (23.9)	0.16 (NB)	D (34.0)	0.18 (EB)	D (34.0)	0.18 (EB)	A (5.6)	0.94 (NB)	A (4.8)	0.66 (NB)

Table 9. Existing and 2040 PM Peak Hour Intersection Level of Service

				Projected 2040							
				Existing Channelization				Roundabout Control			
		Existing 2020		No Widening		With Widening		With Widening		With Sensitivity Scenario	
	Intersection	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)
1	Old Highway 99/ Henderson Boulevard	B (13.0)	0.84 (NB)	D (40.7)	0.98 (SB)	B (11.9)	0.78 (SB)	A (6.1)	0.56 (SB)	A (8.4)	0.73 (SB)
2	Old Highway 99/ 79th Avenue	F (115.0)	0.36 (WB)	F (300+)	6.20 (WB)	F (300+)	4.43 (WB)	A (5.4)	0.51 (SB)	A (5.3)	0.61 (SB)
3	Old Highway 99/ 88th Avenue	A (9.6)	0.83 (SB)	B (12.8)	0.89 (SB)	A (7.4)	0.63 (SB)	A (4.8)	0.54 (SB)	A (8.9)	0.77 (EB)
4	Old Highway 99/ 93rd Avenue	C (21.5)	0.46 (EB)	E (37.7)	0.65 (EB)	E (37.7)	0.65 (EB)	A (7.3)	0.82 (SB)	A (5.5)	0.60 (SB)

4.2.1 Old Highway 99/Henderson Boulevard

This intersection operates under traffic signal control. In the 2040 horizon with no intersection or corridor improvements the intersection is projected to operate at LOS F in the AM peak hour and LOS D in the PM peak hour. The AM peak hour is projected to have a very high volume of traffic traveling northbound into the City (1,800) which cannot be accommodated by a single travel lane. The PM peak hour volumes are more balanced between northbound and southbound, but the volume to capacity ratios for the southbound direction are approaching 1.0, indicating likely queue and congestion issues with a single travel lane.

With the corridor widening to provide two through lanes in each direction of Old Highway 99 the existing traffic signal is projected to operate within the LOS D standard during both peak periods. Roundabout control for the 2040 baseline volumes was also analyzed, resulting in LOS A during both peak periods. The roundabout geometry included two travel lanes in each direction of Old Highway 99 and single-lane approaches for Henderson Boulevard. This roundabout layout was assessed with the sensitivity scenario and is projected to remain at LOS A.

4.2.2 Old Highway 99/79th Avenue

This intersection operates under stop-sign control for the eastbound and westbound approaches. The intersection currently operates at LOS F for both peak periods and is projected to worsen significantly in 2040, with and without the corridor widening improvement. With construction of a roundabout the intersection is projected to operate at LOS A for both peak periods. The roundabout geometry included two travel lanes in each direction of Old Highway 99 and single-lane approaches for Henderson Boulevard. This roundabout layout was assessed with the sensitivity scenario and is projected to remain at LOS A.

4.2.3 Old Highway 99/88th Avenue

This intersection operates under traffic signal-control, with the southbound approach, which serves the existing auto pawn business, often gated. This intersection currently operates at LOS A during both peak periods. In the 2040 horizon with no corridor widening the intersection is projected to operate at LOS F in the AM peak hour and LOS B in the PM peak hour. As with the Henderson Boulevard intersection, the AM peak hour has a large volume of traffic traveling north on Old Highway 99, coming from further south on Old Highway 99 and from 88th Avenue. During the PM peak hour, the southbound v/c ratio is approaching 0.90, suggesting that approach will experience some queue and congestion issues.

With the corridor widening to provide two through lanes in each direction of Old Highway 99 the existing traffic signal is projected to operate at LOS D for the AM peak hour and LOS A for the PM peak hour. Roundabout control for the 2040 baseline volumes was also analyzed. A single-lane roundabout was evaluated, to determine if roundabout control would remove the need for corridor widening at the intersection. However, given the high volume of northbound traffic during the AM peak hour a multi-lane roundabout will be necessary. This roundabout layout assumed single lane approaches for both 88th Avenue approaches. Additionally, the analysis included short approach and departure lanes for the south leg, as Old Highway 99 transitions to a 2/3 lane corridor. This layout results in a LOS B during the AM peak hour and a LOS A in the PM peak hour. This roundabout layout was assessed with the sensitivity scenario and is projected to maintain the same level of service results.

4.2.4 Old Highway 99/93rd Avenue

This is a tee intersection which operates under stop-sign control for the eastbound approach. To maximize the existing control the intersection has been improved over the years to include acceleration lanes for both directions of Old Highway 99, providing a northbound acceleration lane for the 93rd Ave eastbound left-turns and a southbound acceleration lane for the 93rd Ave eastbound right-turns.

This intersection currently operates at LOS C during the AM peak hour and LOS D during the PM peak hour. In the 2040 baseline the intersection is projected to operate at LOS D for the AM peak hour and LOS E during the PM peak hour. The corridor widening is not planned to extend down to 93rd Avenue and had no impact on the intersection operational analysis. With a LOS E result in the PM peak hour this intersection falls below the City's LOS standard. A single-lane roundabout was analyzed for both peak hours and was found to operate within the City of Tumwater's LOS standard, but with directional v/c ratios (NB in the AM and SB in the PM) that are approaching 1.0. For the sensitivity scenario analysis, the NB approach during the AM peak hour and the SB approach during the PM peak hour both experienced v/c ratios that produced significant queues. To accommodate this, additional entry lanes for both Old Highway 99 approaches were assessed. The south leg contains a through lane and left-turn lane and two exit lanes, the north leg provides two through lanes and a single exit lane and the 93rd Avenue leg provides a single approach and departure lane. This configuration is projected to operate at LOS A in 2040 for the baseline and the sensitivity scenarios.

The roundabout layouts for each of the study intersections are provided in **Appendix C**.

4.3 2025 Opening Year Intersection Analysis

The 2040 operational analysis has validated the Transportation Plan improvements and have provided the long-term needs of each study intersection. The project has identified a 2025 opening year and this analysis has been performed to identify which improvements are anticipated to be needed during the opening year. The study intersections have been analyzed for the following scenarios:

- Existing 2020 traffic volumes
- Projected 2025 baseline traffic volumes without the corridor widening
- Projected 2025 baseline traffic volumes with the corridor widening
- Projected 2025 baseline traffic volumes with the corridor widening and intersection improvements

The operational analysis results of the study intersections for the projected 2025 scenarios are provided in **Table 10** for the AM peak hour and **Table 11** for the PM peak hour. The LOS analysis worksheets are included in **Appendix C.** Existing intersection channelization is provided in Figure 2.

Table 10. 2025 AM Peak Hour Intersection Level of Service

				Projected 2025					
		Existing 2020		No Widening		With Widening		Roundabout Control	
	Intersection	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)
1	Old Highway 99/ Henderson Boulevard	C (22.4)	0.96 (NB)	C (28.7)	0.96 (NB)	B (11.6)	0.76 (NB)	A (5.0)	0.43 (NB)
2	Old Highway 99/ 79th Avenue	F (59.0)	0.51 (WB)	F (121.5)	0.70 (WB)	F (75.9)	0.36 (WB)	A (5.0)	0.39 (NB)
3	Old Highway 99/ 88th Avenue	A (9.0)	0.82 (NB)	B (13.0)	0.85 (NB)	A (8.5)	0.60 (NB)	A (6.4)	0.38 (NB)
4	Old Highway 99/ 93rd Avenue	C (23.9)	0.16 (NB)	C (22.4)	0.14 (NB)	C (22.4)	0.14 (NB)	A (5.2)	0.77 (NB)

Table 11. 2025 PM Peak Hour Intersection Level of Service

	Intersection	Existing 2020		Projected 2025					
				No Widening		With Widening		Roundabout Control	
		LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)	LOS (delay)	Worst v/c (dir)
1	Old Highway 99/ Henderson Boulevard	C (13.0)	0.84 (NB)	B (15.8)	0.86 (NB)	B (10.1)	0.71 (SB)	A (5.9)	0.43 (SB)
2	Old Highway 99/ 79th Avenue	F (115.0)	0.36 (WB)	F (156.4)	0.51 (WB)	F (60.8)	0.26 (WB)	A (4.8)	0.40 (SB)
3	Old Highway 99/ 88th Avenue	A (9.6)	0.83 (SB)	A (8.4)	0.80 (SB)	A (6.4)	0.52 (SB)	A (5.3)	0.42 (SB)
4	Old Highway 99/ 93rd Avenue	C (21.5)	0.46 (EB)	C (22.8)	0.47 (EB)	C (22.8)	0.47 (EB)	A (5.7)	0.63 (SB)

4.3.1 Old Highway 99/Henderson Boulevard

This intersection is projected to operate at LOS C for the AM peak hour and LOS B for the PM peak hour. However, given the high northbound v/c ratio during the AM peak hour it is anticipated that widening of Old Highway 99 through this intersection will be needed for the 2025 horizon. The southbound v/c ratio during the PM peak hour (0.84) is also fairly high but may be accommodated with a single travel lane.

4.3.2 Old Highway 99/79th Avenue

Given the existing operational failure at this location during both peak periods, intersection improvements are warranted for the 2025 horizon. With the ultimate configuration roundabout, with two travel lanes in each direction of Old Highway 99, the intersection is projected to operate at LOS A for both peak periods, with no v/c ratio above 0.40. This suggests a single-lane roundabout may be sufficient as an opening condition. A single-lane roundabout is projected to also operate at LOS A for both peak periods, although the NB v/c ratio during the AM peak hour is projected to be 0.88, suggesting it would soon need to provide additional capacity.

4.3.3 Old Highway 99/88th Avenue

This intersection is currently operating at LOS A during each peak hour and is projected to operate at LOS B or better during both peak hours for the 2025 horizon without any corridor widening. This suggests that the southern portion of the Old Highway 99 study corridor may not require widening as soon as the northern portion.

4.3.4 Old Highway 99/93rd Avenue

This intersection currently provides acceleration lanes for both minor street stop-controlled movements, with those elements it is currently operating at LOS C for each peak hour. In the 2025 horizon this intersection is projected to remain at LOS C. This suggests that corridor or intersection improvements near 93rd Avenue will not be needed in the short term.

5 Summary/Conclusion

The City of Tumwater is conducting the *Old Highway 99 Corridor Study* to validate the transportation recommendations included in the *Tumwater City Plan 2036, Transportation Master Plan November 2016*. The plan recommends widening Old Highway 99 to 5 lanes from 73rd Avenue to 88th Avenue and widen to 3 lanes from 88th Avenue to 93rd Avenue. Included in the corridor improvement project was conversion of the two existing traffic signals, at Henderson Boulevard and 8th Avenue, to roundabouts. Additional projects in the Transportation Plan identified intersection improvements at 79th Avenue and 93rd Avenue, recommending roundabouts at both locations.

A summary of the key conclusions reached from this analysis includes:

- Based on the updated volume forecast and 2040 baseline operational analysis, each of the improvements identified in the Transportation Master Plan are still warranted.
- Based on the 2040 operational analysis, the existing study intersections operating under traffic signal control, Henderson Boulevard and 88th Avenue, are projected to operate within the City of Tumwater's LOS standard under traffic signal or roundabout control with the widened Old Highway 99 corridor improvement.
- The 79th Avenue intersection operates below the City's LOS standard today. With a widened corridor roundabout control is projected to operate at LOS A.
- The 93rd Avenue intersection currently operates at LOS C or better for both peak periods. In the 2040 horizon the PM peak hour is projected to operate at LOS E. Installation of a single lane roundabout is projected to operate at LOS A for both peak periods.
- Based on the 2025 opening year analysis the corridor widening will be needed for the northern portion of the study corridor.
- A sensitivity analysis should be performed to determine how far the widening will be needed for the opening year horizon.
- Additional sensitivity analysis should be conducted to determine when the roundabout improvements need to provide additional throughput on Old Highway 99.

Appendix A
Traffic Volume Counts

Prepared for: **SCJ Alliance**

Traffic Count Consultants, Inc.

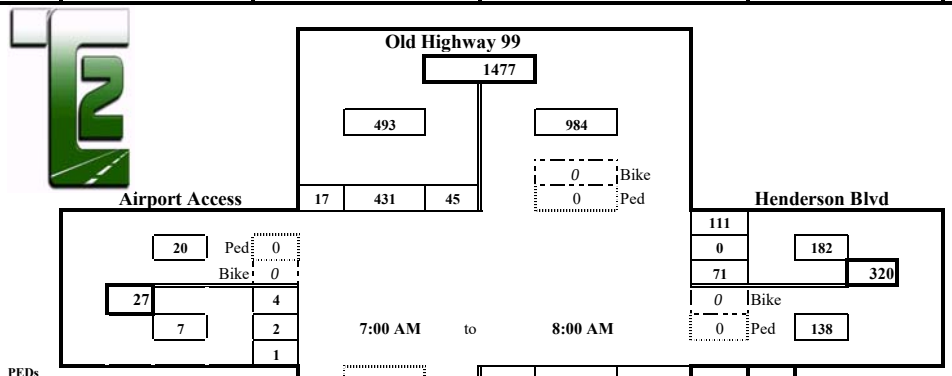
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & Henderson Blvd **Date of Count:** Wed 03/04/2020

Location: Tumwater, WA **Checked By:** Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) Henderson Blvd				From West on (EB) Airport Access				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	10	7	68	4	8	0	194	22	3	15	0	30	0	2	2	1	345
7:30 A	3	14	119	3	6	0	214	28	0	18	0	27	0	0	0	0	423
7:45 A	5	14	121	3	7	1	240	19	0	21	0	24	0	0	0	0	443
8:00 A	6	10	123	7	7	2	221	22	1	17	0	30	0	2	0	0	434
8:15 A	7	6	78	0	1	0	160	13	1	7	2	17	0	4	2	0	289
8:30 A	5	5	81	3	10	1	195	20	0	12	0	13	0	1	0	1	332
8:45 A	2	9	75	4	3	0	128	13	3	12	0	19	0	1	0	0	261
9:00 A	12	8	85	3	6	1	122	21	0	11	3	14	0	1	0	0	269
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	50	73	750	27	48	5	1474	158	8	113	5	174	0	11	4	2	2796
Peak Hour: 7:00 AM to 8:00 AM																	
Total	24	45	431	17	28	3	869	91	4	71	0	111	0	4	2	1	1645
Approach	493				963				182				7				1645
%HV	4.9%				2.9%				2.2%				n/a				3.4%
PHF	0.88				0.93				0.97				0.35				0.93



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	2	0	0	2
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	2	0	0	2

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

1772 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.35	n/a
Check	WB	0.97	2.2%
In: 1645	NB	0.93	2.9%
Out: 1645	SB	0.88	4.9%
	T Int.	0.93	3.4%

Conditions:

Special Notes

SCJ20029M_01A

Prepared for: **SCJ Alliance**

Traffic Count Consultants, Inc.

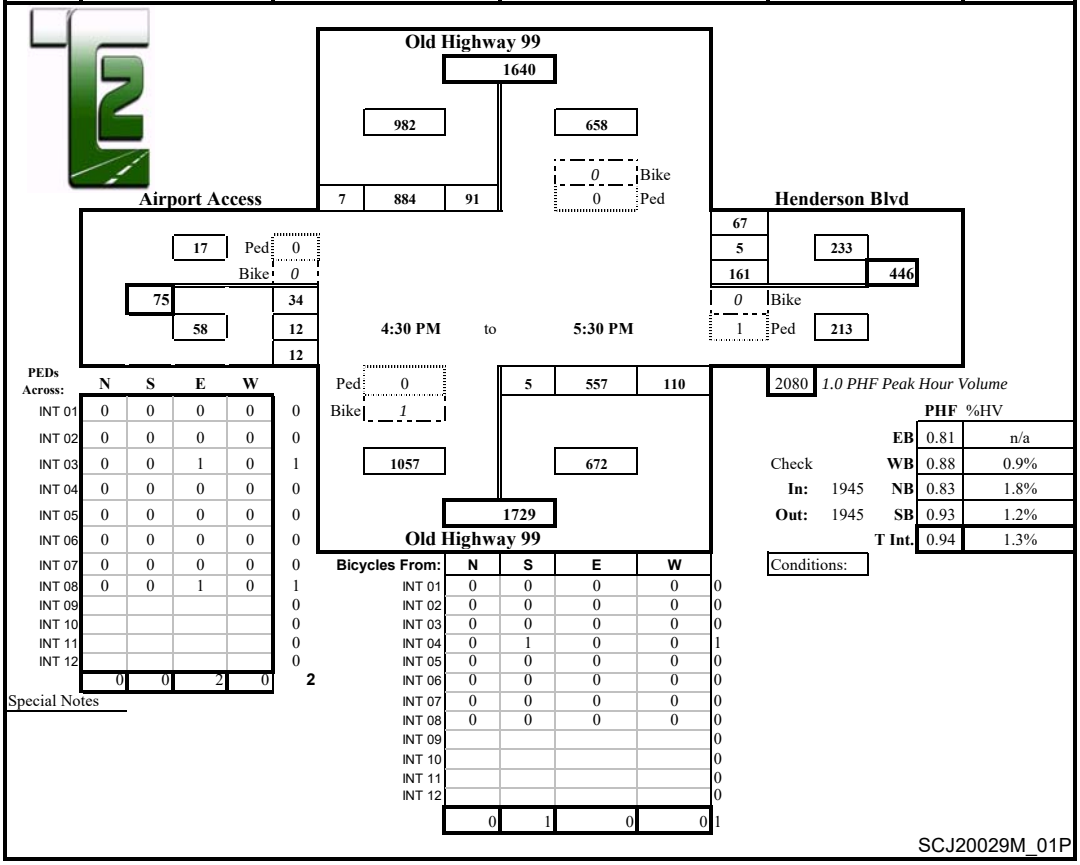
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & Henderson Blvd **Date of Count:** Wed 03/04/2020

Location: Tumwater, WA **Checked By:** Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) Henderson Blvd				From West on (EB) Airport Access				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	8	25	223	2	4	0	148	14	0	32	0	21	0	8	3	3	479
4:30 P	5	20	198	0	5	0	106	27	0	33	2	14	0	2	5	2	409
4:45 P	4	17	210	2	5	2	170	30	0	30	0	14	0	9	4	2	490
5:00 P	0	25	229	4	3	1	133	27	1	40	3	23	0	6	2	3	496
5:15 P	4	26	238	1	4	1	140	31	1	41	1	23	0	10	5	3	520
5:30 P	4	23	207	0	0	1	114	22	0	50	1	7	0	9	1	4	439
5:45 P	4	23	183	0	3	1	95	15	1	34	0	14	0	2	1	1	369
6:00 P	2	14	169	2	4	0	100	15	0	40	1	19	0	3	2	2	367
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	31	173	1657	11	28	6	1006	181	3	300	8	135	0	49	23	20	3569
Peak Hour: 4:30 PM to 5:30 PM																	
Total	12	91	884	7	12	5	557	110	2	161	5	67	0	34	12	12	1945
Approach	982				672				233				58				1945
%HV	1.2%				1.8%				0.9%				n/a				1.3%
PHF	0.93				0.83				0.88				0.81				0.94



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	1	0	1
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	1	0	1
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	2	0	2

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	1	0	0	1
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	1	0	0	1

	PHF	%HV
EB	0.81	n/a
Check WB	0.88	0.9%
In: 1945 NB	0.83	1.8%
Out: 1945 SB	0.93	1.2%
T Int.	0.94	1.3%

Conditions:

Special Notes

SCJ20029M_01P

Prepared for: **SCJ Alliance**

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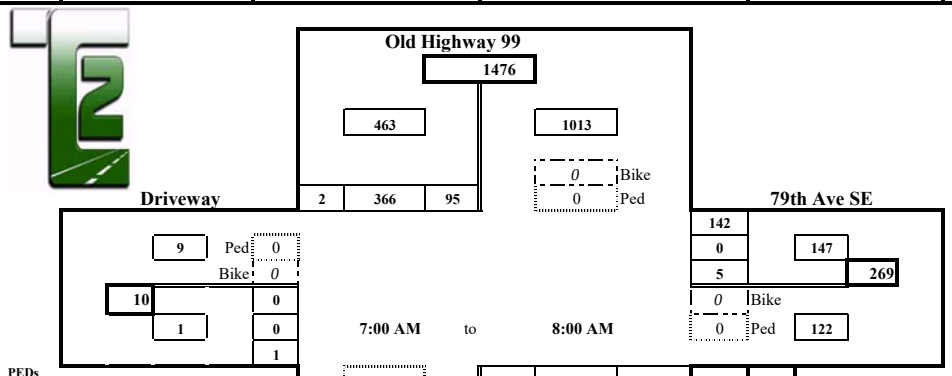
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 79th Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) 79th Ave SE				From West on (EB) Driveway				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	10	20	60	1	10	3	191	8	1	0	0	40	0	0	0	0	323
7:30 A	3	24	103	0	4	0	214	6	5	2	0	33	0	0	0	0	382
7:45 A	5	20	106	0	5	1	254	7	1	2	0	43	0	0	0	0	433
8:00 A	5	31	97	1	7	3	212	6	1	1	0	26	0	0	0	1	378
8:15 A	6	25	62	3	0	0	139	4	0	1	0	29	0	0	0	0	263
8:30 A	6	17	73	1	6	0	180	5	3	4	0	34	0	0	0	2	316
8:45 A	5	12	76	1	2	1	118	4	1	1	0	24	0	0	0	1	238
9:00 A	10	22	62	0	7	0	121	8	0	4	0	23	0	0	0	0	240
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	50	171	639	7	41	8	1429	48	12	15	0	252	0	0	0	4	2573
Peak Hour: 7:00 AM to 8:00 AM																	
Total	23	95	366	2	26	7	871	27	8	5	0	142	0	0	0	1	1516
Approach	463				905				147				1				1516
%HV	5.0%				2.9%				5.4%				n/a				3.8%
PHF	0.90				0.86				0.82				0.25				0.88



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	**0**

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

1732 *1.0 PHF Peak Hour Volume*

		PHF	%HV
		EB	0.25	n/a
Check		WB	0.82	5.4%
In:	1516	NB	0.86	2.9%
Out:	1516	SB	0.90	5.0%
		T Int.	0.88	3.8%

Conditions:

Special Notes

SCJ20029M_02A

Prepared for: **SCJ Alliance**

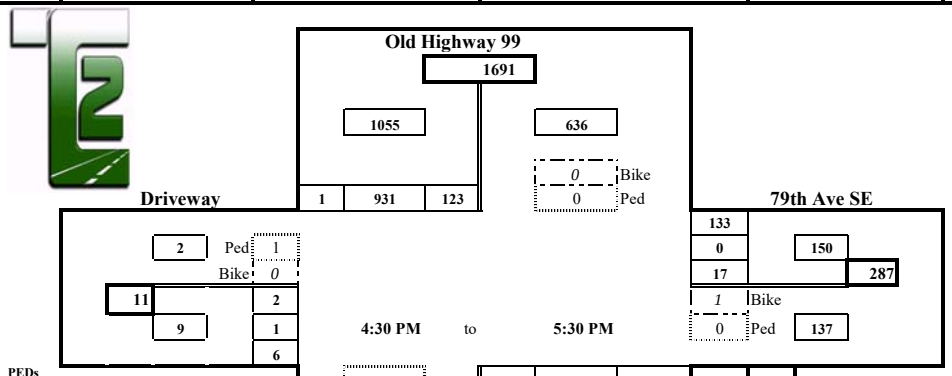
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 79th Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) 79th Ave SE				From West on (EB) Driveway				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	41	212	1	6	0	118	3	1	5	0	39	0	0	0	4	423
4:30 P	5	33	196	0	2	0	112	4	0	5	0	23	0	2	0	5	380
4:45 P	2	27	209	0	5	0	140	4	1	3	0	41	0	0	1	3	428
5:00 P	1	29	233	0	2	1	107	2	1	5	0	45	0	1	0	2	425
5:15 P	3	35	263	1	5	0	138	4	1	6	0	27	0	0	0	1	475
5:30 P	3	32	226	0	1	0	116	3	0	3	0	20	0	1	0	0	401
5:45 P	2	26	194	0	2	0	82	2	1	4	0	15	0	1	0	2	326
6:00 P	1	28	195	1	2	1	94	3	1	8	0	25	0	1	0	1	357
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	18	251	1728	3	25	2	907	25	6	39	0	235	0	6	1	18	3215
Peak Hour: 4:30 PM to 5:30 PM																	
Total	9	123	931	1	13	1	501	13	3	17	0	133	0	2	1	6	1729
Approach	1055				515				150				9				1729
%HV	0.9%				2.5%				2.0%				n/a				1.4%
PHF	0.88				0.89				0.75				0.56				0.91



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	1	1
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	1	1

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	1	0	1
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	1	0	1

1900 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.56	n/a
Check	WB	0.75	2.0%
In: 1729	NB	0.89	2.5%
Out: 1729	SB	0.88	0.9%
	T Int.	0.91	1.4%

Conditions:

Special Notes

SCJ20029M_02P

Prepared for: **SCJ Alliance**

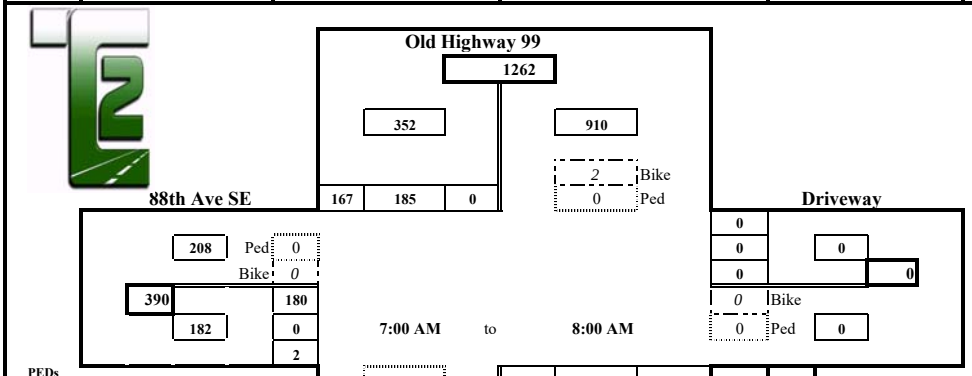
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 88th Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) Driveway				From West on (EB) 88th Ave SE				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	3	0	26	34	3	7	165	0	0	0	0	0	3	33	0	1	266
7:30 A	2	0	49	44	2	6	178	0	0	0	0	0	0	49	0	0	326
7:45 A	3	0	48	47	1	13	217	0	0	0	0	0	2	52	0	0	377
8:00 A	2	0	62	42	1	15	170	0	0	0	0	0	2	46	0	1	336
8:15 A	4	0	36	20	2	4	124	0	0	0	0	0	1	29	0	3	216
8:30 A	5	0	39	38	0	2	140	0	0	0	0	0	1	35	0	1	255
8:45 A	5	1	44	33	1	2	96	0	0	0	0	0	1	25	1	2	204
9:00 A	2	2	37	23	1	2	91	1	0	0	0	0	4	33	0	1	190
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	26	3	341	281	11	51	1181	1	0	0	0	0	14	302	1	9	2170
Peak Hour: 7:00 AM to 8:00 AM																	
Total	10	0	185	167	7	41	730	0	0	0	0	0	7	180	0	2	1305
Approach	352				771				0				182				1305
%HV	2.8%				0.9%				n/a				3.8%				1.8%
PHF	0.85				0.84				n/a				0.88				0.87



1508 *1.0 PHF Peak Hour Volume*

		PHF	%HV
		EB	0.88	3.8%
Check		WB	n/a	n/a
In:	1305	NB	0.84	0.9%
Out:	1305	SB	0.85	2.8%
		T Int.	0.87	1.8%

Conditions:

PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	**0**

Bicycles From:	N	S	E	W	
INT 01	1	0	0	0	1
INT 02	1	1	0	0	2
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	2	1	0	0	3

Special Notes

SCJ20029M_03A

Prepared for: **SCJ Alliance**

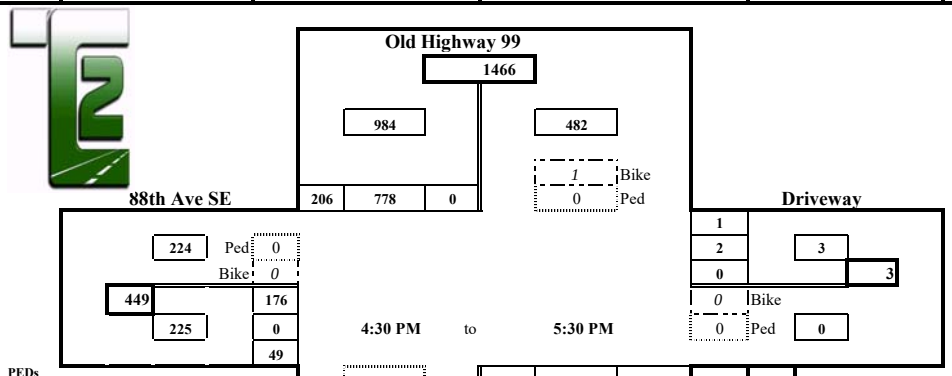
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 88th Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) Driveway				From West on (EB) 88th Ave SE				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	157	43	2	4	66	0	0	0	0	0	1	49	0	11	330
4:30 P	1	0	161	46	0	1	63	0	0	0	0	0	2	38	0	2	311
4:45 P	1	0	182	54	0	6	82	0	0	0	0	0	1	50	0	11	385
5:00 P	0	0	181	60	0	3	67	0	0	0	0	1	2	32	0	9	353
5:15 P	3	0	223	40	2	5	79	0	0	0	2	0	1	60	0	21	430
5:30 P	2	0	192	52	0	2	77	0	0	0	0	0	0	34	0	8	365
5:45 P	1	0	170	32	1	4	51	0	0	0	0	0	1	29	0	2	288
6:00 P	0	0	163	45	0	0	65	0	0	1	0	0	0	28	0	3	305
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	8	0	1429	372	5	25	550	0	0	1	2	1	8	320	0	67	2767
Peak Hour: 4:30 PM to 5:30 PM																	
Total	6	0	778	206	2	16	305	0	0	0	2	1	4	176	0	49	1533
Approach	984				321				3				225				1533
%HV	0.6%				0.6%				n/a				1.8%				0.8%
PHF	0.94				0.91				0.38				0.69				0.89



1720 *1.0 PHF Peak Hour Volume*

	PHF	%HV
EB	0.69	1.8%
WB	0.38	n/a
NB	0.91	0.6%
SB	0.94	0.6%
T Int.	0.89	0.8%

Check In: 1533 Out: 1533

PEDs Across:

	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	1	1
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	1	1

Bicycles From:

	N	S	E	W	
INT 01	1	0	0	1	2
INT 02	0	0	0	1	1
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	1	0	0	0	1
INT 06	0	0	0	0	0
INT 07	0	0	0	1	1
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	2	0	0	3	5

	N U's	S U's	E U's	W U's
	1			
	1	0	0	0

Special Notes

SCJ20029M_03P

Prepared for: **SCJ Alliance**

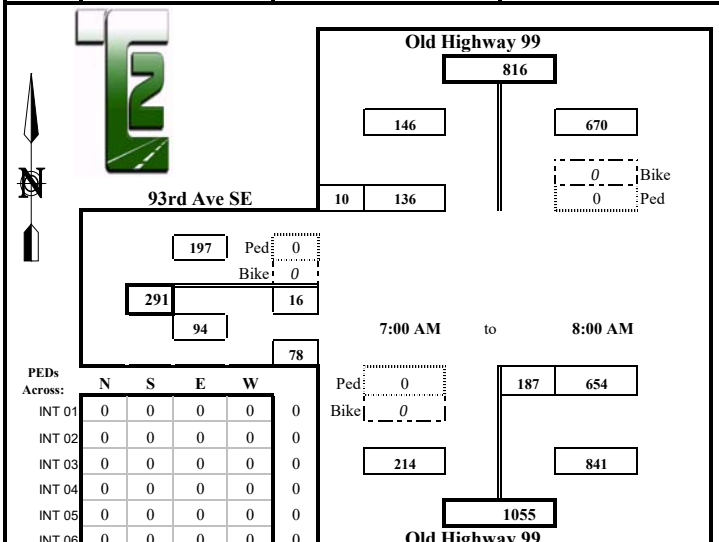
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 93rd Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) 0				From West on (EB) 93rd Ave SE				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	1	0	22	1	5	32	153	0	0	0	0	0	2	4	0	14	226
7:30 A	1	0	34	4	4	57	154	0	0	0	0	0	1	6	0	13	268
7:45 A	2	0	33	3	2	71	196	0	0	0	0	0	2	3	0	25	331
8:00 A	2	0	47	2	1	27	151	0	0	0	0	0	1	3	0	26	256
8:15 A	2	0	30	1	2	32	116	0	0	0	0	0	2	2	0	19	200
8:30 A	4	0	21	4	2	27	108	0	0	0	0	0	2	3	0	18	181
8:45 A	2	0	48	3	4	18	83	0	0	0	0	0	2	2	0	36	190
9:00 A	0	0	26	3	5	38	83	0	0	0	0	0	1	4	0	18	172
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	14	0	261	21	25	302	1044	0	0	0	0	0	13	27	0	169	1824
Peak Hour: 7:00 AM to 8:00 AM																	
Total	6	0	136	10	12	187	654	0	0	0	0	0	6	16	0	78	1081
Approach	146				841				0				94				1081
%HV	4.1%				1.4%				n/a				6.4%				2.2%
PHF	0.74				0.79				n/a				0.81				0.82



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	**0**

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

1324 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.81	6.4%
Check	WB	n/a	n/a
In: 1081	NB	0.79	1.4%
Out: 1081	SB	0.74	4.1%
	T Int.	0.82	2.2%

Conditions:

SCJ20029M_04A

Prepared for: **SCJ Alliance**

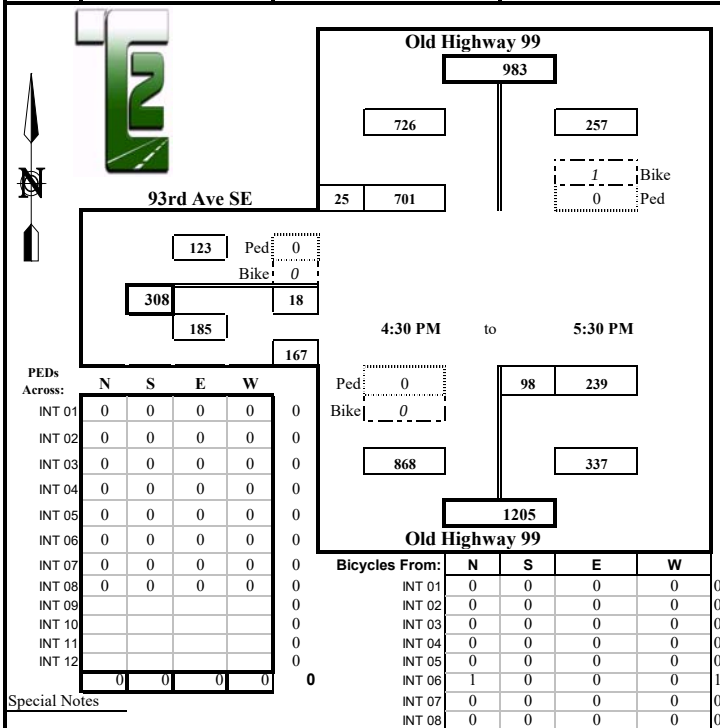
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Old Highway 99 & 93rd Ave SE
Location: Tumwater, WA
Date of Count: Wed 03/04/2020
Checked By: Cameron

Time Interval Ending at	From North on (SB) Old Highway 99				From South on (NB) Old Highway 99				From East on (WB) 0				From West on (EB) 93rd Ave SE				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	136	6	2	21	45	0	0	0	0	0	2	2	0	29	239
4:30 P	0	0	143	4	1	23	58	0	0	0	0	0	1	7	0	24	259
4:45 P	0	0	164	6	2	17	70	0	0	0	0	0	1	2	0	50	309
5:00 P	0	0	154	8	1	18	49	0	0	0	0	0	0	11	0	35	275
5:15 P	2	0	207	3	2	36	60	0	0	0	0	0	0	4	0	37	347
5:30 P	2	0	176	8	0	27	60	0	0	0	0	0	0	1	0	45	317
5:45 P	1	0	149	2	0	25	38	0	0	0	0	0	0	3	0	36	253
6:00 P	0	0	146	6	0	13	49	0	0	0	0	0	0	2	0	23	239
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	5	0	1275	43	8	180	429	0	0	0	0	0	4	32	0	279	2238
Peak Hour: 4:30 PM to 5:30 PM																	
Total	4	0	701	25	5	98	239	0	0	0	0	0	1	18	0	167	1248
Approach			726				337				0				185		1248
%HV			0.6%				1.5%				n/a				0.5%		0.8%
PHF			0.86				0.88				n/a				0.89		0.90



PEDs Across:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	0	0	0	0	0
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	**0**

Bicycles From:	N	S	E	W	
INT 01	0	0	0	0	0
INT 02	0	0	0	0	0
INT 03	0	0	0	0	0
INT 04	0	0	0	0	0
INT 05	0	0	0	0	0
INT 06	1	0	0	0	1
INT 07	0	0	0	0	0
INT 08	0	0	0	0	0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	1	0	0	0	1

Special Notes

1388 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.89	0.5%
Check	WB	n/a	n/a
In: 1248	NB	0.88	1.5%
Out: 1248	SB	0.86	0.6%
	T Int.	0.90	0.8%

Conditions:

SCJ20029M_04P

Appendix B

Traffic Volume Calculations Worksheets

SCJ ALLIANCE
ENGINEERING AND PLANNING SERVICES

Old Highway 99

Trip Generation Summary - Baseline Modification

Tumwater, WA

AM Peak Hour Trip Generation

Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	In	Out	Total
Warehousing	150	Warehousing	ksqft	325.000	0.17	77%	23%	43	12	55	0.0%	0	43	12	55
Light Industrial	110	General Light Industrial	ksqft	325.000	0.70	88%	12%	200	28	228	0.0%	0	200	28	228
Total								**243**	**40**	**283**		**0**	**243**	**40**	**283**

PM Peak Hour Trip Generation

Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	In	Out	Total
Warehousing	150	Warehousing	ksqft	325.000	0.19	27%	73%	17	45	62	0.0%	0	17	45	62
Light Industrial	110	General Light Industrial	ksqft	325.000	0.63	13%	87%	27	178	205	0.0%	0	27	178	205
Total								**44**	**223**	**267**		**0**	**44**	**223**	**267**

SCJ ALLIANCE
ENGINEERING AND PLANNING SERVICES

Old Highway 99

Trip Generation Summary - Sensitivity Scenario

Tumwater, WA

AM Peak Hour Trip Generation

Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	In	Out	Total
Mixed-Use Commercial - Henderson	820	Shopping Center	ksqft	60.000	0.94	62%	38%	35	21	56	0.0%	0	35	21	56
Mixed-Use Commercial - 79th	820	Shopping Center	ksqft	25.000	0.94	62%	38%	15	9	24	0.0%	0	15	9	24
Mixed-Use Commercial - 88th North	820	Shopping Center	ksqft	100.000	0.94	62%	38%	58	36	94	0.0%	0	58	36	94
Mixed-Use Commercial - 88th South	820	Shopping Center	ksqft	45.000	0.94	62%	38%	26	16	42	0.0%	0	26	16	42
Total								**134**	**82**	**216**		**0**	**134**	**82**	**216**

PM Peak Hour Trip Generation

Site Plan Description	LUC	ITE Description	Variable	Value	ITE Rate	Distribution		Total Trips			Pass-By Trips		Net New Trips		
						In	Out	In	Out	Total	%	Total	In	Out	Total
Mixed-Use Commercial - Henderson	820	Shopping Center	ksqft	60.000	6.21	48%	52%	179	193	372	34.0%	127	118	127	245
Mixed-Use Commercial - 79th	820	Shopping Center	ksqft	25.000	7.79	48%	52%	94	101	195	34.0%	66	62	67	129
Mixed-Use Commercial - 88th North	820	Shopping Center	ksqft	100.000	5.43	48%	52%	261	282	543	34.0%	185	172	186	358
Mixed-Use Commercial - 88th South	820	Shopping Center	ksqft	45.000	6.69	48%	52%	144	157	301	34.0%	102	95	104	199
Total								**678**	**733**	**1,411**		**480**	**447**	**484**	**931**

820 Fitted Curve Equation - Henderson: **6.21**

820 Fitted Curve Equation - 79th: **7.79**

820 Fitted Curve Equation - 88th North: **5.43**

820 Fitted Curve Equation - 88th South: **6.69**

SCJ ALLIANCE
CONSULTING SERVICES

Old Highway 99 Corridor

AM Peak Hour Volumes

Global Growth Rate: annual 1.00%

				Baseline										Sensitivity Scenario		
Intersection	Movement		EXISTING 2020 VOLUMES	Existing Model	Future Model	Model 2040 Growth	Background 2040 Growth	Annual Growth Rate	Background 2025 Growth	Interim 2025 Volumes	Baseline 2040	Baseline Modificaton	Modified 2040 Baseline	Sensitivity Scenario Primary	Sensitivity Scenario Pass-By	Sensitivity Scenario 2040
		L	4	-	-	0	1	0	0	4	5	0	5	2	0	7
	EB	T	2	-	-	0	0	0	0	2	2	0	2	0	0	2
		R	1	-	-	0	0	0	0	1	1	0	1	1	0	2
1		L	71	146	152	6	0	0	1	72	77	37	114	21	0	135
Old Highway 99	WB	T	0	-	-	0	0	0	0	0	0	0	0	1	0	1
Henderson Blvd		R	111	164	264	100	0	0	25	136	211	0	211	10	0	221
		L	3	-	-	0	1	0	0	3	4	0	4	2	0	6
TMC Date: 03/04/2020	NB	T	869	1,139	2,047	908	0	0	226	1,095	1,777	22	1,799	34	0	1,833
		R	91	120	201	81	0	0	20	111	172	6	178	19	0	197
7:00-8:00		L	45	43	54	11	0	0	3	48	56	0	56	16	0	72
PHF: 0.93	SB	T	431	575	582	7	0	0	2	433	438	134	572	54	0	626
		R	17	-	-	0	3	0	1	18	20	0	20	3	0	23
											0		0	163		163
		L	0	-	-	0	0	0	0	0	0	0	0	0	0	0
	EB	T	0	-	-	0	0	0	0	0	0	0	0	0	0	0
		R	1	-	-	0	0	0	0	1	1	0	1	0	0	1
2		L	5	47	44	-3	1	0	0	5	6	0	6	2	0	8
Old Highway 99	WB	T	0	-	-	0	0	0	0	0	0	0	0	0	0	0
79th Ave		R	142	80	108	28	0	0	7	149	170	0	170	7	0	177
		L	7	-	-	0	1	0	0	7	8	0	8	0	0	8
TMC Date: 03/04/2020	NB	T	871	1,179	2,140	961	0	0	240	1,111	1,832	28	1,860	48	0	1,908
		R	27	92	120	28	0	0	7	34	55	0	55	4	0	59
7:00-8:00		L	95	94	110	16	0	0	4	99	111	0	111	11	0	122
PHF: 0.88	SB	T	366	627	625	-2	73	0	18	384	439	171	610	65	0	675
		R	2	-	-	0	0	0	0	2	2	0	2	0	0	2
											0		0	137		137
		L	180	266	763	497	0	0	124	304	677	36	713	19	0	732
	EB	T	0	-	-	0	0	0	0	0	0	0	0	9	0	9
		R	2	8	6	-2	0	0	0	2	2	0	2	2	0	4
3		L	0	-	-	0	0	0	0	0	0	0	0	5	0	5
Old Highway 99	WB	T	0	-	-	0	0	0	0	0	0	0	0	5	0	5
88th Ave		R	0	-	-	0	0	0	0	0	0	0	0	26	0	26
		L	41	60	33	-27	8	0	2	43	49	0	49	4	0	53
TMC Date: 03/04/2020	NB	T	730	906	1,358	452	0	0	113	843	1,182	36	1,218	7	0	1,225
		R	0	-	-	0	0	0	0	0	0	0	0	8	0	8
7:00-8:00		L	0	-	-	0	0	0	0	0	0	0	0	41	0	41
PHF: 0.87	SB	T	185	249	278	29	0	0	7	192	214	6	220	4	0	224
		R	167	328	264	-64	33	0	8	175	200	6	206	22	0	228
											0		0	152		152
		L	16	3	0	-3	3	0	1	17	19	0	19	0	0	19
	EB	T	0	-	-	0	0	0	0	0	0	0	0	0	0	0
		R	78	105	184	79	0	0	20	98	157	0	157	0	0	157
4		L	0	-	-	0	0	0	0	0	0	0	0	0	0	0
Old Highway 99	WB	T	0	-	-	0	0	0	0	0	0	0	0	0	0	0
93rd Ave		R	0	-	-	0	0	0	0	0	0	0	0	0	0	0
		L	187	366	238	-128	37	0	9	196	224	0	224	0	0	224
TMC Date: 03/04/2020	NB	T	654	963	1,391	428	0	0	108	762	1,082	36	1,118	19	0	1,137
		R	0	-	-	0	0	0	0	0	0	0	0	0	0	0
7:00-8:00		L	0	-	-	0	0	0	0	0	0	0	0	0	0	0
PHF: 0.82	SB	T	136	256	282	26	0	0	7	143	162	6	168	11	0	179
		R	10	1	1	0	2	0	1	11	12	0	12	0	0	12
													0	30		1,728

SCJ ALLIANCE
CONSULTING SERVICES

Old Highway 99 Corridor

PM Peak Hour Volumes

Global Growth Rate: annual 1.00%

				Baseline										Sensitivity Scenario		
Intersection	**Movement**		**EXISTING 2020 VOLUMES**	Existing Model	Future Model	Model 2040 Growth	Background 2040 Growth	Annual Growth Rate	Background 2025 Growth	**Interim 2025 Volumes**	Baseline 2040 Volumes	Baseline Modificaton	**Modified 2040 Baseline**	Sensitivity Scenario Primary	Sensitivity Scenario Pass-By	**Sensitivity Scenario 2040**
		L	**34**	-	-	0	7	1.0%	2	**36**	41	0	**41**	12	4	**57**
	EB	T	**12**	-	-	0	2	1.0%	1	**13**	14	0	**14**	3		**17**
		R	**12**	-	-	0	2	1.0%	1	**13**	14	0	**14**	7	7	**28**
1		L	**161**	79	118	39	0	1.2%	10	**171**	200	7	**207**	80	34	**321**
Old Highway 99	WB	T	**5**	-	-	0	1	1.0%	0	**5**	6	0	**6**	3		**9**
Henderson Blvd		R	**67**	37	80	43	0	3.2%	11	**78**	110	0	**110**	58	18	**186**
		L	**5**	-	-	0	1	1.0%	0	**5**	6	0	**6**	6	4	**16**
TMC Date: 03/04/2020	NB	T	**557**	587	732	145	0	1.3%	36	**593**	702	123	**825**	196	-22	**999**
		R	**110**	80	91	11	0	0.5%	3	**113**	121	34	**155**	83	18	**256**
4:30-5:30		L	**91**	49	120	71	0	3.9%	18	**109**	162	0	**162**	54	35	**251**
PHF: 0.94	SB	T	**884**	688	1,143	455	0	2.6%	115	**999**	1,339	24	**1,363**	181	-42	**1502**
		R	**7**	-	-	0	1	1.0%	0	**7**	8	0	**8**	11	7	**26**
											0		**0**	694		**694**
		L	**2**	-	-	0	0	1.0%	0	**2**	2	0	**2**	0	0	**2**
	EB	T	**1**	-	-	0	0	1.0%	0	**1**	1	0	**1**	0	0	**1**
		R	**6**	-	-	0	1	1.0%	0	**6**	7	0	**7**	0	0	**7**
2		L	**17**	56	69	13	0	3.8%	3	**20**	30	0	**30**	20	22	**72**
Old Highway 99	WB	T	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
79th Ave		R	**133**	68	79	11	0	0.4%	3	**136**	144	0	**144**	47	11	**202**
		L	**1**	-	-	0	0	1.0%	0	**1**	1	0	**1**	0	0	**1**
TMC Date: 03/04/2020	NB	T	**501**	599	744	145	0	1.4%	35	**536**	646	157	**803**	238	-11	**1,030**
		R	**13**	47	48	1	0	0.4%	0	**13**	14	0	**14**	19	11	**44**
4:30-5:30		L	**123**	66	71	5	0	0.2%	1	**124**	128	0	**128**	43	22	**193**
PHF: 0.91	SB	T	**931**	702	1,190	488	0	2.6%	121	**1,052**	1,419	31	**1,450**	225	-22	**1653**
		R	**1**	-	-	0	0	1.0%	0	**1**	1	0	**1**	0	0	**1**
											0		**0**	592		**592**
		L	**176**	213	195	-18	35	1.0%	9	**185**	211	7	**218**	100	0	**318**
	EB	T	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	26	0	**26**
		R	**49**	28	17	-11	10	1.0%	2	**51**	59	0	**59**	15	0	**74**
3		L	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	28	65	**93**
Old Highway 99	WB	T	**2**	-	-	0	0	1.0%	0	**2**	2	0	**2**	28	0	**30**
88th Ave		R	**1**	-	-	0	0	1.0%	0	**1**	1	0	**1**	130	27	**158**
		L	**16**	18	13	-5	3	1.0%	1	**17**	19	0	**19**	14	0	**33**
TMC Date: 03/04/2020	NB	T	**305**	361	500	139	0	2.3%	35	**340**	444	6	**450**	27	-27	**450**
		R	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	25	27	**52**
4:30-5:30		L	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	121	66	**187**
PHF: 0.89	SB	T	**778**	466	768	302	0	1.9%	74	**852**	1,080	33	**1,113**	29	-66	**1076**
		R	**206**	213	385	172	0	4.2%	43	**249**	378	33	**411**	95	0	**506**
											0		**0**	638		**638**
		L	**18**	2	4	2	0	0.6%	1	**19**	20	0	**20**	0	0	**20**
	EB	T	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
		R	**167**	175	193	18	0	0.5%	4	**171**	185	0	**185**	0	0	**185**
4		L	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
Old Highway 99	WB	T	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
93rd Ave		R	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
		L	**98**	93	171	78	0	4.0%	20	**118**	176	0	**176**	0	0	**176**
TMC Date: 03/04/2020	NB	T	**239**	378	509	131	0	2.7%	32	**271**	370	6	**376**	66	0	**442**
		R	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
4:30-5:30		L	**0**	-	-	0	0	0.0%	0	**0**	0	0	**0**	0	0	**0**
PHF: 0.90	SB	T	**701**	492	782	290	0	2.1%	74	**775**	991	33	**1,024**	72	0	**1096**
		R	**25**	3	3	0	5	1.0%	1	**26**	30	0	**30**	0	0	**30**
													0	138		**1,949**

Appendix C
Capacity Analysis Worksheets

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Existing 2020
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	45	430	15	5	870	90	5	2	1	70	1	110
Future Volume (vph)	45	430	15	5	870	90	5	2	1	70	1	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	12.0	56.5	56.5	44.5	44.5		33.5	33.5		33.5	33.5	
Total Split (%)	13.3%	62.8%	62.8%	49.4%	49.4%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	6.5	51.0	51.0	39.0	39.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 65.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Existing 2020
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	45	430	15	5	870	90	5	2	1	70	1	110
Future Volume (veh/h)	45	430	15	5	870	90	5	2	1	70	1	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	48	462	16	5	935	97	5	2	1	75	1	118
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	5	5	5	3	3	3	0	0	0	2	2	2
Cap, veh/h	78	1318	1117	650	978	101	122	42	10	278	1	168
Arrive On Green	0.04	0.72	0.72	0.59	0.59	0.59	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1739	1826	1547	909	1653	172	289	391	97	1414	13	1574
Grp Volume(v), veh/h	48	462	16	5	0	1032	8	0	0	75	0	119
Grp Sat Flow(s),veh/h/ln	1739	1826	1547	909	0	1825	777	0	0	1414	0	1587
Q Serve(g_s), s	1.7	6.0	0.2	0.1	0.0	34.1	0.0	0.0	0.0	0.0	0.0	4.6
Cycle Q Clear(g_c), s	1.7	6.0	0.2	0.1	0.0	34.1	4.7	0.0	0.0	2.8	0.0	4.6
Prop In Lane	1.00		1.00	1.00		0.09	0.62		0.12	1.00		0.99
Lane Grp Cap(c), veh/h	78	1318	1117	650	0	1079	174	0	0	278	0	169
V/C Ratio(X)	0.62	0.35	0.01	0.01	0.00	0.96	0.05	0.00	0.00	0.27	0.00	0.70
Avail Cap(c_a), veh/h	176	1451	1230	665	0	1109	650	0	0	744	0	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	3.3	2.5	5.4	0.0	12.3	25.8	0.0	0.0	26.9	0.0	27.7
Incr Delay (d2), s/veh	2.9	0.2	0.0	0.0	0.0	17.3	0.0	0.0	0.0	0.2	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.0	0.0	0.0	13.5	0.1	0.0	0.0	1.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	3.5	2.5	5.4	0.0	29.6	25.9	0.0	0.0	27.0	0.0	29.7
LnGrp LOS	C	A	A	A	A	C	C	A	A	C	A	C
Approach Vol, veh/h		526			1037			8			194	
Approach Delay, s/veh		6.1			29.5			25.9			28.7	
Approach LOS		A			C			C			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.4	43.5		12.3		51.8		12.3				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	6.5	39.0		28.0		51.0		28.0				
Max Q Clear Time (g_c+I1), s	3.7	36.1		6.7		8.0		6.6				
Green Ext Time (p_c), s	0.0	1.8		0.0		2.8		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		22.4	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	5	1	140	95	365	5	5	870	25
Future Vol, veh/h	1	1	1	5	1	140	95	365	5	5	870	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	5	5	5	5	5	5	3	3	3
Mvmt Flow	1	1	1	5	1	154	104	401	5	5	956	27

Major/Minor	Minor1			Minor2				Major1			Major2	
Conflicting Flow All	1669	1605	404	1593	1594	970	983	0	0	406	0	0
Stage 1	612	612	-	980	980	-	-	-	-	-	-	-
Stage 2	1057	993	-	613	614	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.55	6.25	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4.045	3.345	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	77	106	651	85	105	303	691	-	-	1147	-	-
Stage 1	484	487	-	297	324	-	-	-	-	-	-	-
Stage 2	275	326	-	475	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	89	651	74	88	303	691	-	-	1147	-	-
Mov Cap-2 Maneuver	33	89	-	74	88	-	-	-	-	-	-	-
Stage 1	411	413	-	252	321	-	-	-	-	-	-	-
Stage 2	134	323	-	402	406	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	59	29.7	2.3	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	1147	-	-	70	76	303	691	-	-
HCM Lane V/C Ratio	0.005	-	-	0.047	0.087	0.508	0.151	-	-
HCM Control Delay (s)	8.2	0	-	59	56.8	28.5	11.1	-	-
HCM Lane LOS	A	A	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	2.7	0.5	-	-

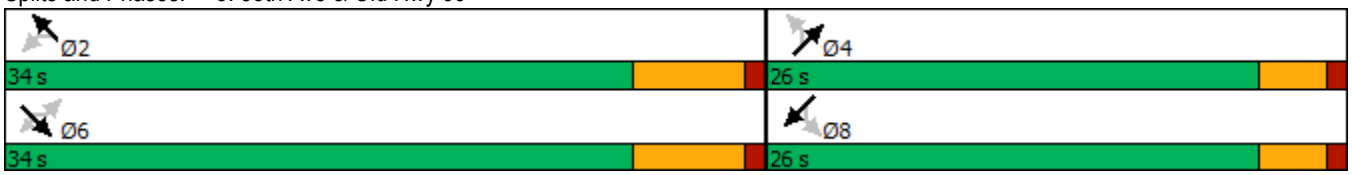
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Existing 2020
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	185	165	40	730	1	180	1	5	1	1	1
Future Volume (vph)	1	185	165	40	730	1	180	1	5	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0		26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	28.0	28.0	28.0	28.0	28.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 54.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Existing 2020
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	185	165	40	730	1	180	1	5	1	1	1
Future Volume (veh/h)	1	185	165	40	730	1	180	1	5	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	213	190	46	839	1	207	1	6	1	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	0	0	0
Cap, veh/h	308	1008	854	673	1022	1	455	43	256	187	155	106
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	650	1856	1572	990	1883	2	1393	228	1367	306	826	566
Grp Volume(v), veh/h	1	213	190	46	0	840	207	0	7	3	0	0
Grp Sat Flow(s),veh/h/ln	650	1856	1572	990	0	1885	1393	0	1595	1698	0	0
Q Serve(g_s), s	0.0	2.2	2.3	0.9	0.0	13.6	5.2	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.7	2.2	2.3	3.1	0.0	13.6	5.2	0.0	0.1	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.86	0.33		0.33
Lane Grp Cap(c), veh/h	308	1008	854	673	0	1024	455	0	298	447	0	0
V/C Ratio(X)	0.00	0.21	0.22	0.07	0.00	0.82	0.45	0.00	0.02	0.01	0.00	0.00
Avail Cap(c_a), veh/h	446	1402	1188	883	0	1424	1021	0	947	1108	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	4.4	4.4	5.2	0.0	7.0	14.4	0.0	12.3	12.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.0	2.8	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.1	0.0	2.2	1.4	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	4.5	4.5	5.2	0.0	9.8	15.1	0.0	12.3	12.3	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		404			886			214			3	
Approach Delay, s/veh		4.5			9.5			15.0			12.3	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.1		10.9		26.1		10.9				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		28.0		22.0		28.0		22.0				
Max Q Clear Time (g_c+I1), s		15.6		7.2		15.7		2.1				
Green Ext Time (p_c), s		4.5		0.5		1.3		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			9.0									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	135	10	185	655	15	80
Future Vol, veh/h	135	10	185	655	15	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	4	4	1	1	6	6
Mvmt Flow	165	12	226	799	18	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	177	0	1416	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	1251	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1405	-	148	869
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	265	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1405	-	124	869
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	222	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.8	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	209	869	-	-	1405	-
HCM Lane V/C Ratio	0.088	0.112	-	-	0.161	-
HCM Control Delay (s)	23.9	9.7	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.6	-

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2025
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	435	20	5	1095	110	5	2	1	70	1	135
Future Volume (vph)	50	435	20	5	1095	110	5	2	1	70	1	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	11.2	116.4	116.4	105.2	105.2		33.6	33.6		33.6	33.6	
Total Split (%)	7.5%	77.6%	77.6%	70.1%	70.1%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	5.7	110.9	110.9	99.7	99.7		28.1	28.1		28.1	28.1	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 132.9	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2025
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	50	435	20	5	1095	110	5	2	1	70	1	135
Future Volume (veh/h)	50	435	20	5	1095	110	5	2	1	70	1	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	53	458	21	5	1153	116	5	2	1	74	1	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	0	0	0	2	2	2
Cap, veh/h	68	1472	1248	714	1201	121	63	22	6	191	1	169
Arrive On Green	0.04	0.81	0.81	0.72	0.72	0.72	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1739	1826	1547	908	1659	167	156	205	52	1414	11	1576
Grp Volume(v), veh/h	53	458	21	5	0	1269	8	0	0	74	0	143
Grp Sat Flow(s),veh/h/ln	1739	1826	1547	908	0	1826	413	0	0	1414	0	1587
Q Serve(g_s), s	3.8	8.3	0.3	0.2	0.0	80.1	0.1	0.0	0.0	0.0	0.0	11.3
Cycle Q Clear(g_c), s	3.8	8.3	0.3	0.2	0.0	80.1	11.3	0.0	0.0	7.3	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.09	0.62		0.12	1.00		0.99
Lane Grp Cap(c), veh/h	68	1472	1248	714	0	1322	90	0	0	191	0	170
V/C Ratio(X)	0.78	0.31	0.02	0.01	0.00	0.96	0.09	0.00	0.00	0.39	0.00	0.84
Avail Cap(c_a), veh/h	78	1590	1347	768	0	1429	251	0	0	352	0	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.7	3.2	2.4	4.9	0.0	15.9	51.4	0.0	0.0	54.0	0.0	55.8
Incr Delay (d2), s/veh	30.4	0.1	0.0	0.0	0.0	14.8	0.2	0.0	0.0	0.5	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.9	0.1	0.0	0.0	30.3	0.2	0.0	0.0	2.3	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.1	3.3	2.4	4.9	0.0	30.6	51.5	0.0	0.0	54.5	0.0	60.0
LnGrp LOS	F	A	A	A	A	C	D	A	A	D	A	E
Approach Vol, veh/h		532			1274			8			217	
Approach Delay, s/veh		12.0			30.5			51.5			58.1	
Approach LOS		B			C			D			E	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.5	97.7		19.2		108.2		19.2				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	5.7	99.7		28.1		110.9		28.1				
Max Q Clear Time (g_c+I1), s	5.8	82.1		13.3		10.3		13.3				
Green Ext Time (p_c), s	0.0	10.2		0.0		2.8		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		28.7	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	5	1	150	100	385	5	5	1110	35
Future Vol, veh/h	1	1	1	5	1	150	100	385	5	5	1110	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	5	5	5	5	5	5	3	3	3
Mvmt Flow	1	1	1	5	1	158	105	405	5	5	1168	37

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1894	1833	408	1816	1817	1187	1205	0	0	410	0	0
Stage 1	618	618	-	1197	1197	-	-	-	-	-	-	-
Stage 2	1276	1215	-	619	620	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.55	6.25	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4.045	3.345	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	54	77	648	59	77	226	569	-	-	1143	-	-
Stage 1	480	484	-	224	256	-	-	-	-	-	-	-
Stage 2	207	256	-	471	475	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	14	62	648	49	62	226	569	-	-	1143	-	-
Mov Cap-2 Maneuver	14	62	-	49	62	-	-	-	-	-	-	-
Stage 1	391	394	-	183	253	-	-	-	-	-	-	-
Stage 2	61	253	-	382	387	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	121.5	52.4	2.6	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	1143	-	-	34	51	226	569	-	-
HCM Lane V/C Ratio	0.005	-	-	0.093	0.124	0.699	0.185	-	-
HCM Control Delay (s)	8.2	0	-	121.5	85.3	51.1	12.8	-	-
HCM Lane LOS	A	A	-	F	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	4.5	0.7	-	-

Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2025
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	190	175	45	845	1	305	1	5	1	1	1
Future Volume (vph)	1	190	175	45	845	1	305	1	5	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	53.0	53.0	53.0	53.0	53.0		27.0	27.0		27.0	27.0	
Total Split (%)	66.3%	66.3%	66.3%	66.3%	66.3%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 68.2	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99

HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2025
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	190	175	45	845	1	305	1	5	1	1	1
Future Volume (veh/h)	1	190	175	45	845	1	305	1	5	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	200	184	47	889	1	321	1	5	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	0	0	0
Cap, veh/h	225	1026	870	633	1041	1	501	71	355	194	189	148
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	620	1856	1572	1007	1883	2	1393	267	1334	402	710	556
Grp Volume(v), veh/h	1	200	184	47	0	890	321	0	6	3	0	0
Grp Sat Flow(s),veh/h/ln	620	1856	1572	1007	0	1885	1393	0	1601	1669	0	0
Q Serve(g_s), s	0.1	3.0	3.3	1.4	0.0	22.1	12.1	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	22.2	3.0	3.3	4.3	0.0	22.1	12.1	0.0	0.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.83	0.33		0.33
Lane Grp Cap(c), veh/h	225	1026	870	633	0	1042	501	0	426	531	0	0
V/C Ratio(X)	0.00	0.19	0.21	0.07	0.00	0.85	0.64	0.00	0.01	0.01	0.00	0.00
Avail Cap(c_a), veh/h	408	1575	1335	931	0	1600	709	0	665	774	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.9	6.2	6.3	7.3	0.0	10.5	19.3	0.0	15.0	14.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.0	2.9	1.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.7	0.2	0.0	6.1	3.7	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	6.3	6.4	7.3	0.0	13.4	20.7	0.0	15.0	14.9	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	C	A	B	B	A	A
Approach Vol, veh/h		385			937			327			3	
Approach Delay, s/veh		6.4			13.1			20.6			14.9	
Approach LOS		A			B			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.6		18.7		36.6		18.7				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		47.0		23.0		47.0		23.0				
Max Q Clear Time (g_c+I1), s		24.1		14.1		24.2		2.1				
Green Ext Time (p_c), s		6.5		0.7		1.5		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	145	10	195	760	15	100
Future Vol, veh/h	145	10	195	760	15	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	1	1	6	6
Mvmt Flow	153	11	205	800	16	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	1363	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	1210	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1421	-	160	883
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	277	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1421	-	137	883
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	237	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.6	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	883	-	-	1421	-
HCM Lane V/C Ratio	0.071	0.119	-	-	0.144	-
HCM Control Delay (s)	22.4	9.6	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.5	-

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2025 with 5 lanes
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	435	20	5	1095	110	5	2	1	70	1	135
Future Volume (vph)	50	435	20	5	1095	110	5	2	1	70	1	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	10.8	46.4	46.4	35.6	35.6		33.6	33.6		33.6	33.6	
Total Split (%)	13.5%	58.0%	58.0%	44.5%	44.5%		42.0%	42.0%		42.0%	42.0%	
Maximum Green (s)	5.3	40.9	40.9	30.1	30.1		28.1	28.1		28.1	28.1	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 51.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2025 with 5 lanes
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	50	435	20	5	1095	110	5	2	1	70	1	135
Future Volume (veh/h)	50	435	20	5	1095	110	5	2	1	70	1	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	53	458	21	5	1153	116	5	2	1	74	1	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	0	0	0	2	2	2
Cap, veh/h	92	2218	989	579	1525	153	162	55	13	363	1	206
Arrive On Green	0.05	0.64	0.64	0.47	0.47	0.47	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1739	3469	1547	908	3235	325	303	419	103	1414	11	1576
Grp Volume(v), veh/h	53	458	21	5	627	642	8	0	0	74	0	143
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	908	1763	1797	826	0	0	1414	0	1587
Q Serve(g_s), s	1.4	2.6	0.2	0.1	14.0	14.0	0.0	0.0	0.0	0.0	0.0	4.1
Cycle Q Clear(g_c), s	1.4	2.6	0.2	0.1	14.0	14.0	4.1	0.0	0.0	1.9	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.18	0.62		0.12	1.00		0.99
Lane Grp Cap(c), veh/h	92	2218	989	579	831	847	230	0	0	363	0	207
V/C Ratio(X)	0.58	0.21	0.02	0.01	0.76	0.76	0.03	0.00	0.00	0.20	0.00	0.69
Avail Cap(c_a), veh/h	193	2968	1324	722	1110	1131	880	0	0	1009	0	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	3.6	3.2	6.7	10.4	10.4	18.2	0.0	0.0	18.9	0.0	19.9
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.0	2.1	2.1	0.0	0.0	0.0	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.0	0.0	3.6	3.7	0.1	0.0	0.0	0.7	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	3.6	3.2	6.7	12.5	12.5	18.3	0.0	0.0	19.0	0.0	21.4
LnGrp LOS	C	A	A	A	B	B	B	A	A	B	A	C
Approach Vol, veh/h		532			1274			8			217	
Approach Delay, s/veh		5.7			12.5			18.3			20.6	
Approach LOS		A			B			B			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.0	28.0		11.8		36.1		11.8				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	5.3	30.1		28.1		40.9		28.1				
Max Q Clear Time (g_c+I1), s	3.4	16.0		6.1		4.6		6.1				
Green Ext Time (p_c), s	0.0	6.5		0.0		2.9		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.6	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	5	1	150	100	385	5	5	1110	35
Future Vol, veh/h	1	1	1	5	1	150	100	385	5	5	1110	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	5	5	5	5	5	5	3	3	3
Mvmt Flow	1	1	1	5	1	158	105	405	5	5	1168	37

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1213	1833	205	1610	1817	603	1205	0	0	410	0	0
Stage 1	618	618	-	1197	1197	-	-	-	-	-	-	-
Stage 2	595	1215	-	413	620	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.6	6.6	7	4.2	-	-	4.16	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.6	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.6	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.55	4.05	3.35	2.25	-	-	2.23	-	-
Pot Cap-1 Maneuver	140	77	808	68	75	435	558	-	-	1138	-	-
Stage 1	448	484	-	192	251	-	-	-	-	-	-	-
Stage 2	463	256	-	579	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	75	62	808	57	60	435	558	-	-	1138	-	-
Mov Cap-2 Maneuver	75	62	-	57	60	-	-	-	-	-	-	-
Stage 1	364	393	-	156	248	-	-	-	-	-	-	-
Stage 2	290	253	-	468	382	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	43	20.1	2.6	0.1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	1138	-	-	98	57	435	558	-	-
HCM Lane V/C Ratio	0.005	-	-	0.032	0.111	0.363	0.189	-	-
HCM Control Delay (s)	8.2	0.1	-	43	75.9	17.9	12.9	-	-
HCM Lane LOS	A	A	-	E	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	1.6	0.7	-	-

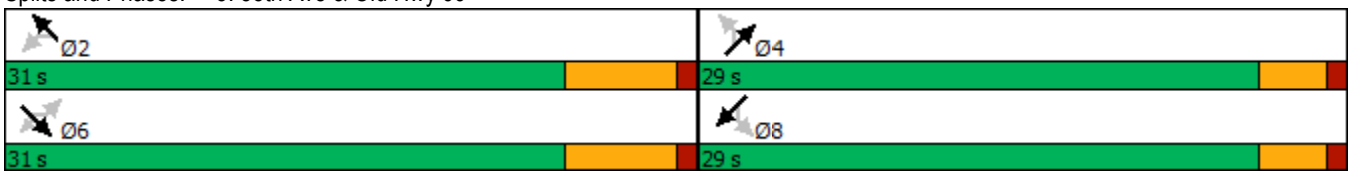
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2025 with 5 lanes
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	190	175	45	845	1	305	1	5	1	1	1
Future Volume (vph)	1	190	175	45	845	1	305	1	5	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			487			1160			265	
Travel Time (s)		52.5			6.6			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 45.5	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2025 with 5 lanes
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	190	175	45	845	1	305	1	5	1	1	1
Future Volume (veh/h)	1	190	175	45	845	1	305	1	5	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	200	184	47	889	1	321	1	5	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	0	0	0
Cap, veh/h	354	1416	631	592	1474	2	625	77	383	248	224	162
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	620	3526	1572	1007	3671	4	1393	267	1334	343	781	562
Grp Volume(v), veh/h	1	200	184	47	434	456	321	0	6	3	0	0
Grp Sat Flow(s),veh/h/ln	620	1763	1572	1007	1791	1884	1393	0	1601	1687	0	0
Q Serve(g_s), s	0.0	1.2	2.5	1.0	6.1	6.1	6.8	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	1.2	2.5	2.2	6.1	6.1	6.8	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.83	0.33		0.33
Lane Grp Cap(c), veh/h	354	1416	631	592	719	757	625	0	460	634	0	0
V/C Ratio(X)	0.00	0.14	0.29	0.08	0.60	0.60	0.51	0.00	0.01	0.00	0.00	0.00
Avail Cap(c_a), veh/h	587	2742	1223	971	1393	1465	1307	0	1245	1431	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	6.1	6.5	6.8	7.6	7.6	10.6	0.0	8.2	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.1	0.8	0.8	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.4	0.1	1.1	1.1	1.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	6.1	6.8	6.8	8.4	8.4	11.3	0.0	8.2	8.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	B	A	A	A	A	A
Approach Vol, veh/h		385			937			327			3	
Approach Delay, s/veh		6.5			8.3			11.2			8.2	
Approach LOS		A			A			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.9		13.2		18.9		13.2				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		25.0		25.0		25.0		25.0				
Max Q Clear Time (g_c+I1), s		8.1		8.8		8.2		2.0				
Green Ext Time (p_c), s		4.8		0.9		1.5		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	145	10	195	760	15	100
Future Vol, veh/h	145	10	195	760	15	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	1	1	6	6
Mvmt Flow	153	11	205	800	16	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	1363	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	1210	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1421	-	160	883
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	277	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1421	-	137	883
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	237	-

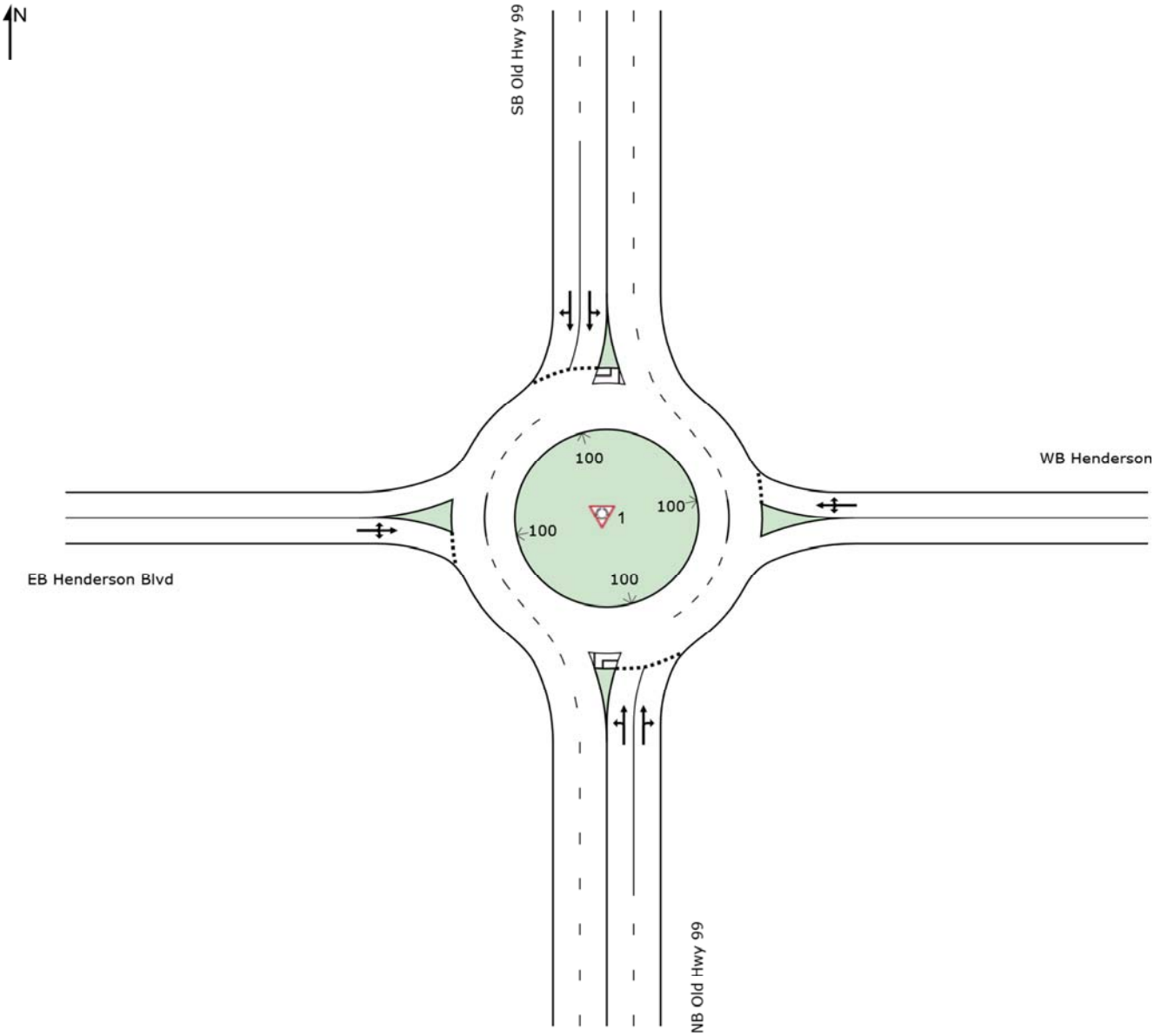
Approach	EB	WB	NE
HCM Control Delay, s	0	1.6	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	883	-	-	1421	-
HCM Lane V/C Ratio	0.071	0.119	-	-	0.144	-
HCM Control Delay (s)	22.4	9.6	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.5	-

SITE LAYOUT

Site: 1 [AM 2025 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 1 [AM 2025 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2025
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.432	10.2	LOS B	2.8	72.5	0.25	0.40	0.25	37.2
8	T1	1095	3.0	0.432	4.3	LOS A	2.8	72.6	0.24	0.40	0.24	37.2
18	R2	110	3.0	0.432	4.4	LOS A	2.8	72.6	0.24	0.40	0.24	35.9
Approach		1210	3.0	0.432	4.3	LOS A	2.8	72.6	0.24	0.40	0.24	37.1
East: WB Henderson Blvd												
1	L2	70	2.0	0.299	13.3	LOS B	1.1	28.9	0.61	0.82	0.62	35.2
6	T1	5	2.0	0.299	7.4	LOS A	1.1	28.9	0.61	0.82	0.62	35.0
16	R2	135	2.0	0.299	7.3	LOS A	1.1	28.9	0.61	0.82	0.62	34.0
Approach		210	2.0	0.299	9.3	LOS A	1.1	28.9	0.61	0.82	0.62	34.4
North: SB Old Hwy 99												
7	L2	50	5.0	0.188	10.2	LOS B	1.0	26.7	0.25	0.46	0.25	36.6
4	T1	435	5.0	0.188	4.3	LOS A	1.0	27.1	0.24	0.42	0.24	36.9
14	R2	20	5.0	0.188	4.4	LOS A	1.0	27.1	0.24	0.40	0.24	35.9
Approach		505	5.0	0.188	4.9	LOS A	1.0	27.1	0.24	0.43	0.24	36.9
West: EB Henderson Blvd												
5	L2	5	0.0	0.017	11.3	LOS B	0.1	1.3	0.40	0.61	0.40	36.1
2	T1	5	0.0	0.017	5.4	LOS A	0.1	1.3	0.40	0.61	0.40	35.9
12	R2	5	0.0	0.017	5.3	LOS A	0.1	1.3	0.40	0.61	0.40	34.9
Approach		15	0.0	0.017	7.3	LOS A	0.1	1.3	0.40	0.61	0.40	35.6
All Vehicles		1940	3.4	0.432	5.0	LOS A	2.8	72.6	0.28	0.45	0.28	36.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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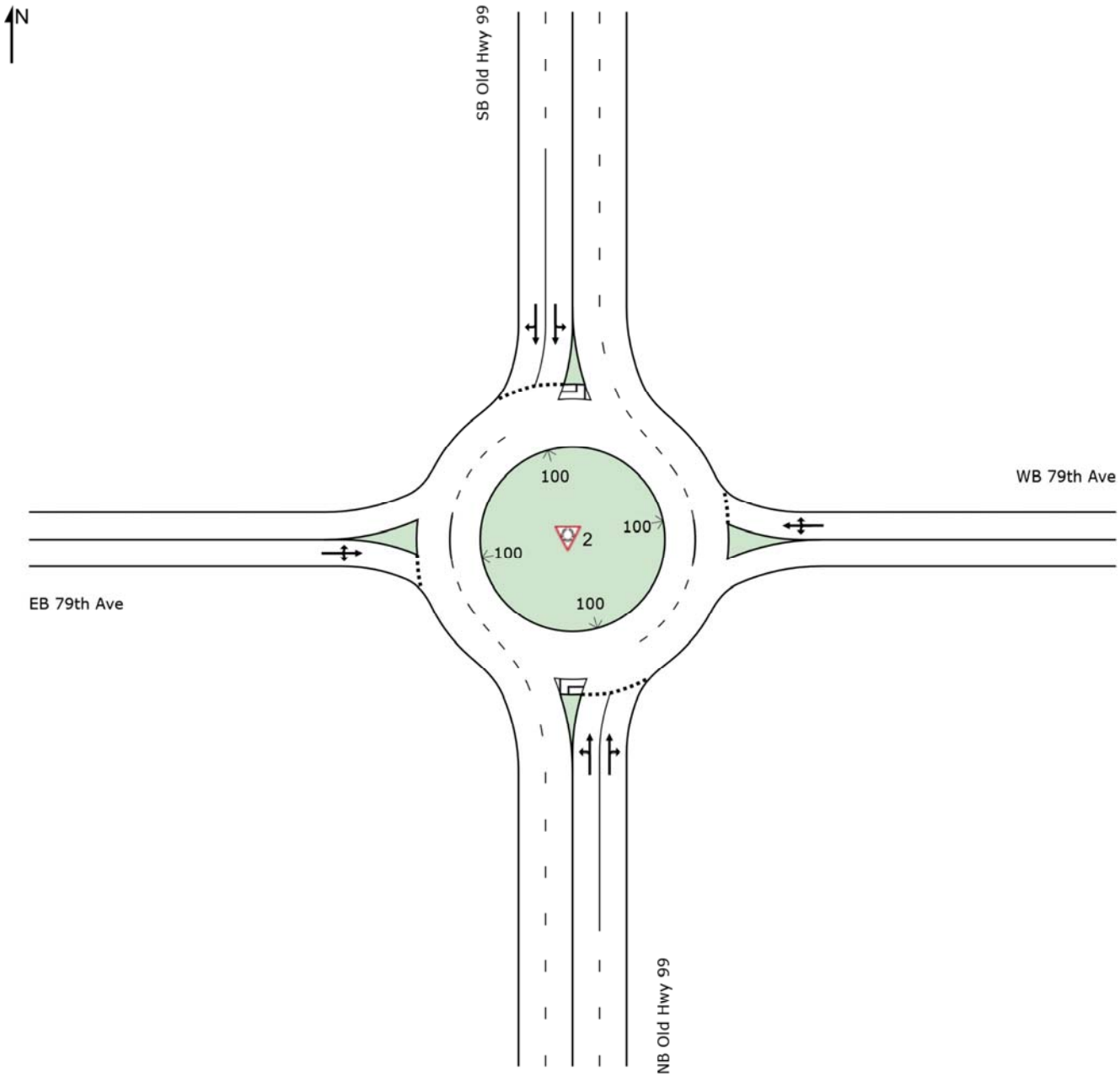
SITE LAYOUT

Site: 2 [AM 2040 Old Hwy 99-79th Ave - Land Use 2]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [AM 2025 Old Hwy 99-79th Ave - Baseline]

Projected 2025
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.386	10.4	LOS B	2.3	57.6	0.30	0.43	0.30	37.0
8	T1	1010	3.0	0.386	4.5	LOS A	2.3	57.8	0.29	0.42	0.29	37.0
18	R2	35	3.0	0.386	4.6	LOS A	2.3	57.8	0.29	0.42	0.29	35.7
Approach		1050	3.0	0.386	4.5	LOS A	2.3	57.8	0.29	0.42	0.29	37.0
East: WB 79th Ave												
1	L2	5	5.0	0.227	12.9	LOS B	0.8	21.1	0.58	0.77	0.58	36.2
6	T1	1	5.0	0.227	7.1	LOS A	0.8	21.1	0.58	0.77	0.58	36.1
16	R2	150	5.0	0.227	7.0	LOS A	0.8	21.1	0.58	0.77	0.58	35.0
Approach		156	5.0	0.227	7.2	LOS A	0.8	21.1	0.58	0.77	0.58	35.1
North: SB Old Hwy 99												
7	L2	100	5.0	0.172	9.9	LOS A	0.9	22.5	0.07	0.51	0.07	36.5
4	T1	385	5.0	0.172	4.0	LOS A	0.9	22.6	0.07	0.42	0.07	37.4
14	R2	5	5.0	0.172	4.2	LOS A	0.9	22.6	0.07	0.37	0.07	36.5
Approach		490	5.0	0.172	5.2	LOS A	0.9	22.6	0.07	0.44	0.07	37.2
West: EB 79th Ave												
5	L2	1	0.0	0.003	11.1	LOS B	0.0	0.2	0.36	0.55	0.36	36.2
2	T1	1	0.0	0.003	5.2	LOS A	0.0	0.2	0.36	0.55	0.36	36.0
12	R2	1	0.0	0.003	5.1	LOS A	0.0	0.2	0.36	0.55	0.36	35.0
Approach		3	0.0	0.003	7.1	LOS A	0.0	0.2	0.36	0.55	0.36	35.8
All Vehicles		1699	3.8	0.386	5.0	LOS A	2.3	57.8	0.25	0.46	0.25	36.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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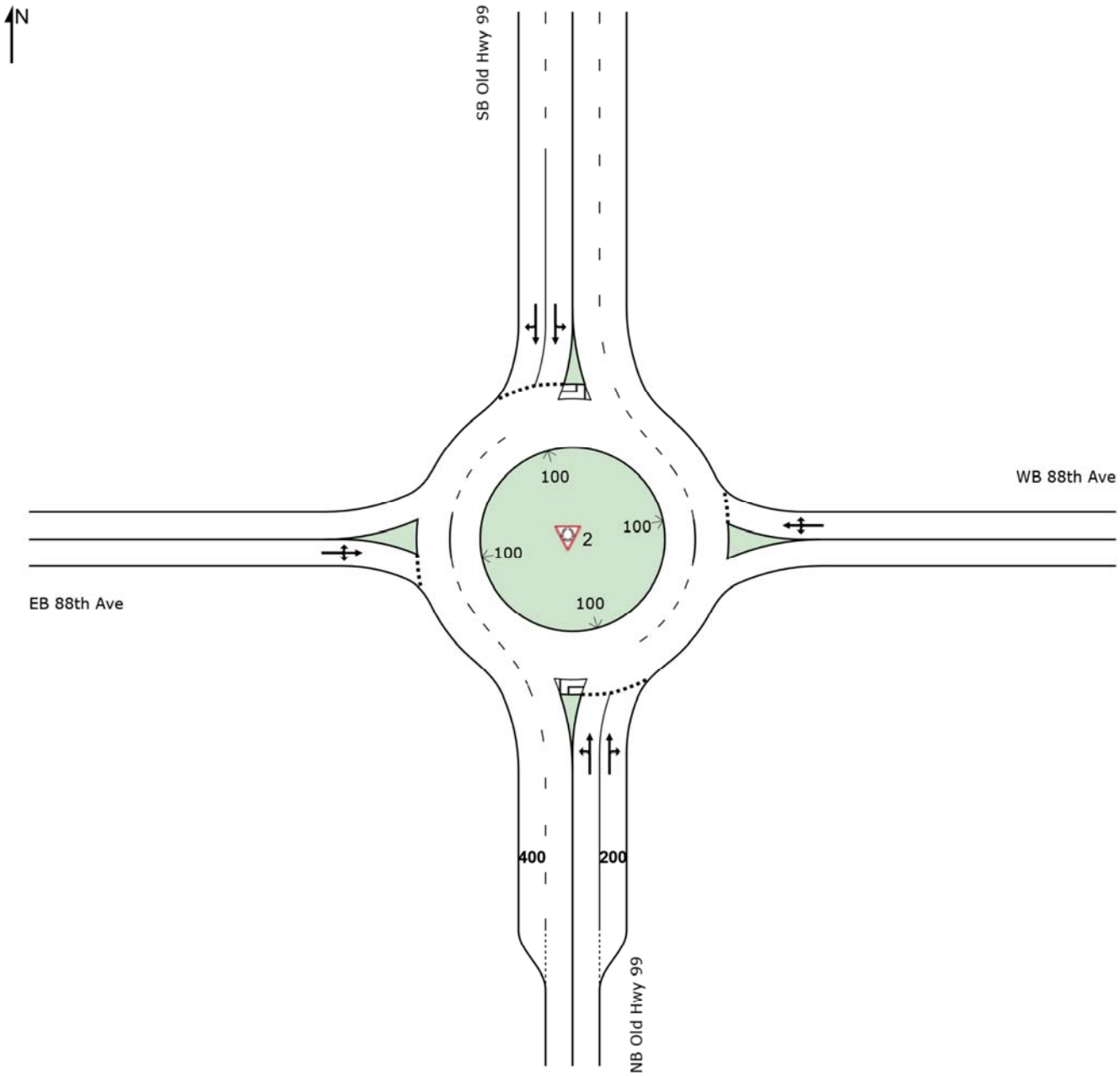
SITE LAYOUT

Site: 2 [PM 2040 Old Hwy 99-88th Ave - Land Use 2]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [AM 2025 Old Hwy 99-88th Ave - Baseline]

Projected 2025
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	45	1.0	0.376	11.5	LOS B	2.3	57.6	0.53	0.57	0.53	36.0
8	T1	845	1.0	0.376	5.5	LOS A	2.4	59.5	0.52	0.54	0.52	36.1
18	R2	1	1.0	0.376	5.5	LOS A	2.4	59.5	0.52	0.51	0.52	35.0
Approach		891	1.0	0.376	5.8	LOS A	2.4	59.5	0.52	0.54	0.52	36.1
East: WB 88th Ave												
1	L2	1	0.0	0.005	12.8	LOS B	0.0	0.4	0.60	0.65	0.60	35.4
6	T1	1	0.0	0.005	6.9	LOS A	0.0	0.4	0.60	0.65	0.60	35.2
16	R2	1	0.0	0.005	6.9	LOS A	0.0	0.4	0.60	0.65	0.60	34.2
Approach		3	0.0	0.005	8.9	LOS A	0.0	0.4	0.60	0.65	0.60	34.9
North: SB Old Hwy 99												
7	L2	1	3.0	0.130	10.0	LOS A	0.7	17.3	0.16	0.37	0.16	37.6
4	T1	190	3.0	0.130	4.1	LOS A	0.7	17.3	0.16	0.37	0.16	37.5
14	R2	175	3.0	0.130	4.3	LOS A	0.7	17.0	0.17	0.46	0.17	36.2
Approach		366	3.0	0.130	4.2	LOS A	0.7	17.3	0.17	0.41	0.17	36.9
West: EB 88th Ave												
5	L2	305	4.0	0.309	10.8	LOS B	1.3	34.7	0.34	0.67	0.34	34.2
2	T1	1	4.0	0.309	5.0	LOS A	1.3	34.7	0.34	0.67	0.34	34.1
12	R2	5	4.0	0.309	4.9	LOS A	1.3	34.7	0.34	0.67	0.34	33.2
Approach		311	4.0	0.309	10.7	LOS B	1.3	34.7	0.34	0.67	0.34	34.2
All Vehicles		1571	2.1	0.376	6.4	LOS A	2.4	59.5	0.40	0.54	0.40	35.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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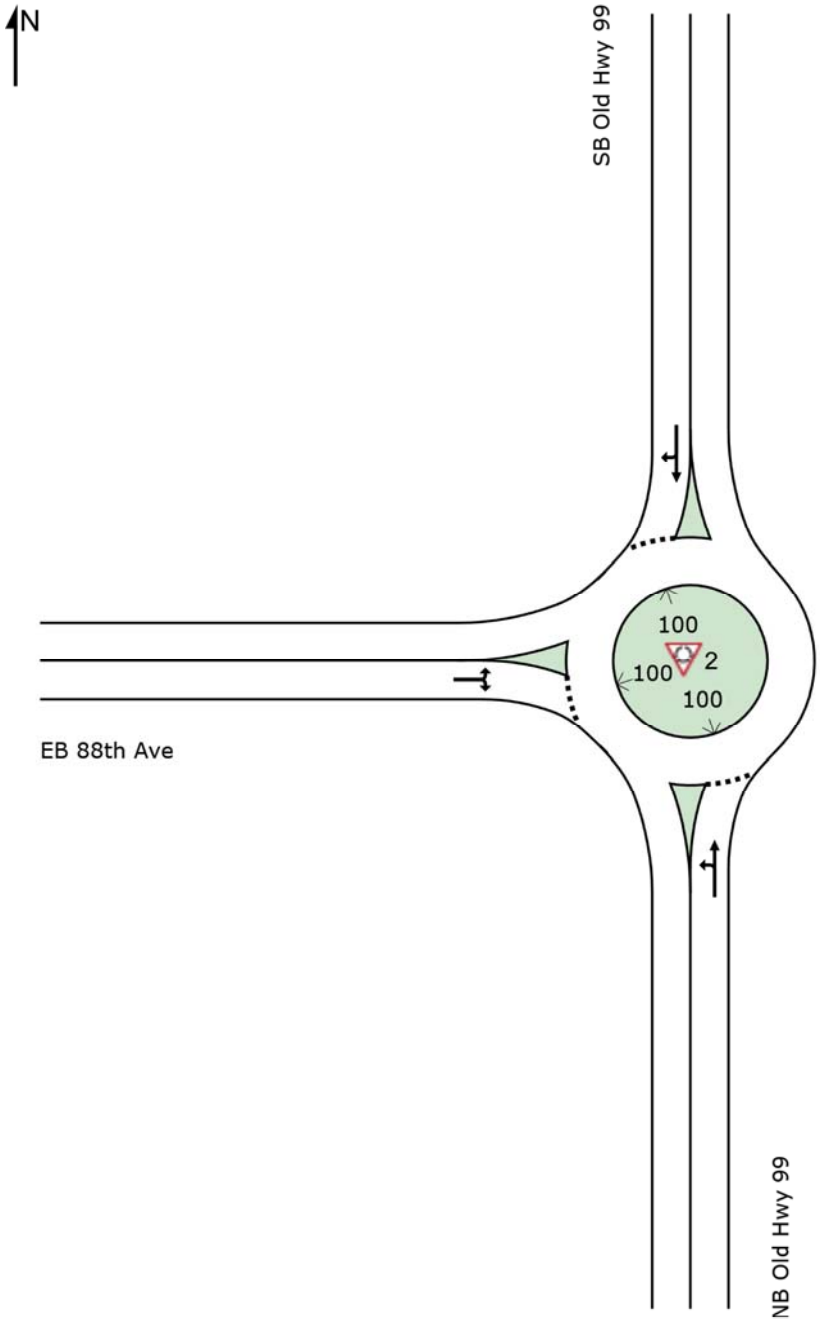
SITE LAYOUT

Site: 2 [PM 2025 Old Hwy 99-93rd Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [AM 2025 Old Hwy 99-93rd Ave - Baseline]

Projected 2025
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	205	1.0	0.770	10.0	LOS B	11.5	290.0	0.27	0.41	0.27	36.7
8	T1	800	1.0	0.770	4.1	LOS A	11.5	290.0	0.27	0.41	0.27	36.6
Approach		1005	1.0	0.770	5.3	LOS A	11.5	290.0	0.27	0.41	0.27	36.6
North: SB Old Hwy 99												
4	T1	153	4.0	0.150	4.8	LOS A	0.7	18.4	0.36	0.47	0.36	36.8
14	R2	11	4.0	0.150	4.9	LOS A	0.7	18.4	0.36	0.47	0.36	35.7
Approach		163	4.0	0.150	4.8	LOS A	0.7	18.4	0.36	0.47	0.36	36.7
West: EB 88th Ave												
5	L2	16	6.0	0.110	10.5	LOS B	0.5	13.5	0.31	0.52	0.31	36.8
12	R2	105	6.0	0.110	4.6	LOS A	0.5	13.5	0.31	0.52	0.31	35.6
Approach		121	6.0	0.110	5.4	LOS A	0.5	13.5	0.31	0.52	0.31	35.7
All Vehicles		1289	1.8	0.770	5.2	LOS A	11.5	290.0	0.29	0.43	0.29	36.6

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

2040 Baseline
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	55	570	20	5	1800	180	5	2	1	115	1	210
Future Volume (vph)	55	570	20	5	1800	180	5	2	1	115	1	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	10.5	116.5	116.5	106.0	106.0		33.5	33.5		33.5	33.5	
Total Split (%)	7.0%	77.7%	77.7%	70.7%	70.7%		22.3%	22.3%		22.3%	22.3%	
Maximum Green (s)	5.0	111.0	111.0	100.5	100.5		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 138.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

2040 Baseline
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	55	570	20	5	1800	180	5	2	1	115	1	210
Future Volume (veh/h)	55	570	20	5	1800	180	5	2	1	115	1	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	55	570	20	5	1800	180	5	2	1	115	1	210
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	3	3	3	0	0	0	2	2	2
Cap, veh/h	61	1415	1199	602	1165	116	56	20	5	228	1	234
Arrive On Green	0.03	0.78	0.78	0.70	0.70	0.70	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1739	1826	1547	820	1660	166	99	132	33	1414	8	1579
Grp Volume(v), veh/h	55	570	20	5	0	1980	8	0	0	115	0	211
Grp Sat Flow(s),veh/h/ln	1739	1826	1547	820	0	1826	264	0	0	1414	0	1586
Q Serve(g_s), s	4.5	14.6	0.4	0.3	0.0	100.5	0.1	0.0	0.0	0.0	0.0	18.7
Cycle Q Clear(g_c), s	4.5	14.6	0.4	4.4	0.0	100.5	18.8	0.0	0.0	13.2	0.0	18.7
Prop In Lane	1.00		1.00	1.00		0.09	0.62		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	61	1415	1199	602	0	1281	80	0	0	228	0	235
V/C Ratio(X)	0.91	0.40	0.02	0.01	0.00	1.55	0.10	0.00	0.00	0.50	0.00	0.90
Avail Cap(c_a), veh/h	61	1415	1199	602	0	1281	145	0	0	295	0	310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.9	5.3	3.7	7.7	0.0	21.3	53.3	0.0	0.0	57.6	0.0	59.9
Incr Delay (d2), s/veh	81.0	0.2	0.0	0.0	0.0	249.3	0.2	0.0	0.0	0.6	0.0	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	4.3	0.1	0.0	0.0	123.5	0.3	0.0	0.0	4.0	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	149.8	5.4	3.7	7.7	0.0	270.6	53.5	0.0	0.0	58.2	0.0	79.5
LnGrp LOS	F	A	A	A	A	F	D	A	A	E	A	E
Approach Vol, veh/h		645			1985			8			326	
Approach Delay, s/veh		17.7			270.0			53.5			72.0	
Approach LOS		B			F			D			E	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.5	106.0		26.7		116.5		26.7				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	5.0	100.5		28.0		111.0		28.0				
Max Q Clear Time (g_c+I1), s	6.5	102.5		20.8		16.6		20.7				
Green Ext Time (p_c), s	0.0	0.0		0.0		3.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		192.7	
HCM 6th LOS		F	

Intersection	
Int Delay, s/veh	36

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	5	1	170	110	610	5	10	1860	55
Future Vol, veh/h	1	1	1	5	1	170	110	610	5	10	1860	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	5	5	5	5	5	5	3	3	3
Mvmt Flow	1	1	1	5	1	170	110	610	5	10	1860	55

Major/Minor	Minor1			Minor2				Major1			Major2	
Conflicting Flow All	2826	2768	613	2742	2743	1888	1915	0	0	615	0	0
Stage 1	833	833	-	1908	1908	-	-	-	-	-	-	-
Stage 2	1993	1935	-	834	835	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.55	6.25	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4.045	3.345	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	11	20	496	13	20	~ 86	302	-	-	960	-	-
Stage 1	366	386	-	86	114	-	-	-	-	-	-	-
Stage 2	80	114	-	358	379	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	13	496	9	13	~ 86	302	-	-	960	-	-
Mov Cap-2 Maneuver	-	13	-	9	13	-	-	-	-	-	-	-
Stage 1	233	245	-	55	114	-	-	-	-	-	-	-
Stage 2	-	114	-	226	241	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s		$ 563.4	3.6	0
HCM LOS	-	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	960	-	-	-	9	86	302	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.667	1.977	0.364	-	-
HCM Control Delay (s)	8.8	0	-	-	$ 684.4	$ 559.1	23.6	-	-
HCM Lane LOS	A	A	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	-	1.3	14.8	1.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

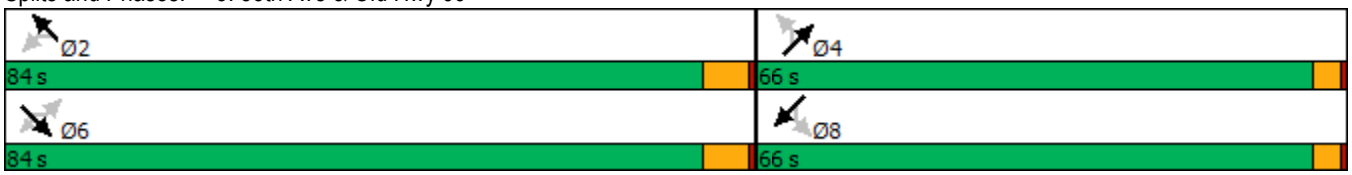
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

2040 Baseline
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	220	205	50	1220	1	715	1	5	1	1	1
Future Volume (vph)	1	220	205	50	1220	1	715	1	5	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	84.0	84.0	84.0	84.0	84.0		66.0	66.0		66.0	66.0	
Total Split (%)	56.0%	56.0%	56.0%	56.0%	56.0%		44.0%	44.0%		44.0%	44.0%	
Maximum Green (s)	78.0	78.0	78.0	78.0	78.0		62.0	62.0		62.0	62.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

2040 Baseline
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	220	205	50	1220	1	715	1	5	1	1	1
Future Volume (veh/h)	1	220	205	50	1220	1	715	1	5	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	220	205	50	1220	1	715	1	5	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	0	0	0
Cap, veh/h	48	965	818	490	979	1	624	110	551	242	241	225
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	453	1856	1572	970	1883	2	1393	267	1334	507	584	545
Grp Volume(v), veh/h	1	220	205	50	0	1221	715	0	6	3	0	0
Grp Sat Flow(s),veh/h/ln	453	1856	1572	970	0	1885	1393	0	1601	1636	0	0
Q Serve(g_s), s	0.0	9.7	10.8	4.4	0.0	78.0	61.9	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	78.0	9.7	10.8	14.1	0.0	78.0	62.0	0.0	0.3	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.83	0.33		0.33
Lane Grp Cap(c), veh/h	48	965	818	490	0	980	624	0	662	708	0	0
V/C Ratio(X)	0.02	0.23	0.25	0.10	0.00	1.25	1.15	0.00	0.01	0.00	0.00	0.00
Avail Cap(c_a), veh/h	48	965	818	490	0	980	624	0	662	708	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	75.0	19.6	19.9	23.5	0.0	36.0	46.4	0.0	25.9	25.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.2	0.1	0.0	119.2	83.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	3.9	1.0	0.0	65.5	38.7	0.0	0.1	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.2	19.7	20.0	23.5	0.0	155.2	129.9	0.0	25.9	25.9	0.0	0.0
LnGrp LOS	E	B	C	C	A	F	F	A	C	C	A	A
Approach Vol, veh/h		426			1271			721			3	
Approach Delay, s/veh		20.0			150.0			129.0			25.9	
Approach LOS		C			F			F			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.0		66.0		84.0		66.0				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		78.0		62.0		78.0		62.0				
Max Q Clear Time (g_c+I1), s		80.0		64.0		80.0		2.1				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			120.7									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	180	10	225	1135	20	155
Future Vol, veh/h	180	10	225	1135	20	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	1	1	6	6
Mvmt Flow	180	10	225	1135	20	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	190	0	1765	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	1585	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1390	-	90	853
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	181	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1390	-	75	853
Mov Cap-2 Maneuver	-	-	-	-	144	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	152	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.3	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	144	853	-	-	1390	-
HCM Lane V/C Ratio	0.139	0.182	-	-	0.162	-
HCM Control Delay (s)	34	10.2	-	-	8.1	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0.6	-

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

2040 Baseline
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	55	570	20	5	1800	180	5	2	1	115	1	210
Future Volume (vph)	55	570	20	5	1800	180	5	2	1	115	1	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	11.0	76.4	76.4	65.4	65.4		33.6	33.6		33.6	33.6	
Total Split (%)	10.0%	69.5%	69.5%	59.5%	59.5%		30.5%	30.5%		30.5%	30.5%	
Maximum Green (s)	5.5	70.9	70.9	59.9	59.9		28.1	28.1		28.1	28.1	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 91.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

2040 Baseline
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	55	570	20	5	1800	180	5	2	1	115	1	210
Future Volume (veh/h)	55	570	20	5	1800	180	5	2	1	115	1	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	55	570	20	5	1800	180	5	2	1	115	1	210
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	3	3	3	0	0	0	2	2	2
Cap, veh/h	71	2504	1117	588	2013	198	88	31	8	276	1	250
Arrive On Green	0.04	0.72	0.72	0.62	0.62	0.62	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1739	3469	1547	820	3242	319	156	197	50	1414	8	1579
Grp Volume(v), veh/h	55	570	20	5	965	1015	8	0	0	115	0	211
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	820	1763	1798	403	0	0	1414	0	1586
Q Serve(g_s), s	2.9	5.0	0.3	0.2	42.0	45.1	0.1	0.0	0.0	0.0	0.0	11.8
Cycle Q Clear(g_c), s	2.9	5.0	0.3	0.2	42.0	45.1	11.9	0.0	0.0	8.1	0.0	11.8
Prop In Lane	1.00		1.00	1.00		0.18	0.62		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	71	2504	1117	588	1094	1116	127	0	0	276	0	251
V/C Ratio(X)	0.77	0.23	0.02	0.01	0.88	0.91	0.06	0.00	0.00	0.42	0.00	0.84
Avail Cap(c_a), veh/h	104	2683	1197	614	1152	1175	329	0	0	486	0	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	4.2	3.6	6.6	14.6	15.1	33.3	0.0	0.0	35.9	0.0	37.5
Incr Delay (d2), s/veh	10.0	0.0	0.0	0.0	7.9	10.2	0.1	0.0	0.0	0.4	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.1	0.1	0.0	14.9	16.9	0.2	0.0	0.0	2.4	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	4.3	3.6	6.6	22.5	25.3	33.3	0.0	0.0	36.3	0.0	40.4
LnGrp LOS	D	A	A	A	C	C	C	A	A	D	A	D
Approach Vol, veh/h		645			1985			8			326	
Approach Delay, s/veh		8.5			23.9			33.3			38.9	
Approach LOS		A			C			C			D	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.3	62.4		20.0		71.7		20.0				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	5.5	59.9		28.1		70.9		28.1				
Max Q Clear Time (g_c+I1), s	4.9	47.1		13.9		7.0		13.8				
Green Ext Time (p_c), s	0.0	9.8		0.0		3.8		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		22.2	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	5	1	170	110	610	5	10	1860	55
Future Vol, veh/h	1	1	1	5	1	170	110	610	5	10	1860	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	5	5	5	5	5	5	3	3	3
Mvmt Flow	1	1	1	5	1	170	110	610	5	10	1860	55

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1784	2768	308	2434	2743	958	1915	0	0	615	0	0
Stage 1	833	833	-	1908	1908	-	-	-	-	-	-	-
Stage 2	951	1935	-	526	835	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.6	6.6	7	4.2	-	-	4.16	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.6	5.6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.6	5.6	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.55	4.05	3.35	2.25	-	-	2.23	-	-
Pot Cap-1 Maneuver	53	20	694	16	19	252	294	-	-	954	-	-
Stage 1	334	386	-	68	111	-	-	-	-	-	-	-
Stage 2	283	114	-	496	374	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	13	694	11	12	252	294	-	-	954	-	-
Mov Cap-2 Maneuver	12	13	-	11	12	-	-	-	-	-	-	-
Stage 1	209	242	-	43	111	-	-	-	-	-	-	-
Stage 2	91	114	-	309	234	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	227.2	61.1	3.7	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	954	-	-	19	11	252	294	-	-
HCM Lane V/C Ratio	0.01	-	-	0.158	0.545	0.675	0.374	-	-
HCM Control Delay (s)	8.8	0	-	227.2	$ 531.3	44.5	24.4	-	-
HCM Lane LOS	A	A	-	F	F	E	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	1.2	4.4	1.7	-	-

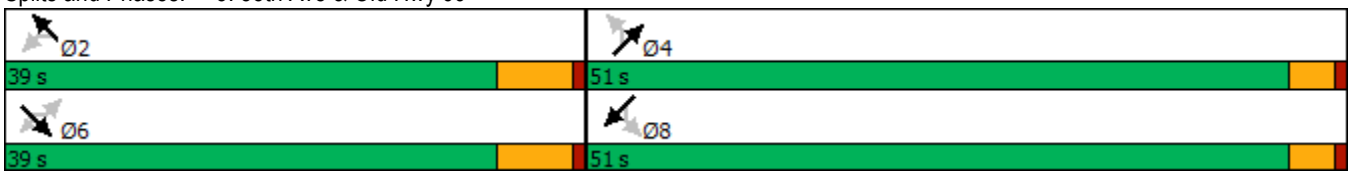
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

2040 Baseline
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	220	205	50	1220	1	715	1	5	1	1	1
Future Volume (vph)	1	220	205	50	1220	1	715	1	5	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		250	150		0	0		0
Storage Lanes	1		1	1		1	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			501			1160			265	
Travel Time (s)		52.5			6.8			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0		51.0	51.0		51.0	51.0	
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%		56.7%	56.7%		56.7%	56.7%	
Maximum Green (s)	33.0	33.0	33.0	33.0	33.0		47.0	47.0		47.0	47.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 89.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

2040 Baseline
AM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	220	205	50	1220	1	715	1	5	1	1	1
Future Volume (veh/h)	1	220	205	50	1220	1	715	1	5	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	220	205	50	1220	1	715	1	5	1	1	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	1	1	1	4	4	4	0	0	0
Cap, veh/h	101	1274	568	391	1327	1	814	140	701	315	314	287
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	453	3526	1572	970	3673	3	1393	267	1334	495	598	547
Grp Volume(v), veh/h	1	220	205	50	595	626	715	0	6	3	0	0
Grp Sat Flow(s),veh/h/ln	453	1763	1572	970	1791	1885	1393	0	1601	1640	0	0
Q Serve(g_s), s	0.2	3.8	8.5	3.3	28.1	28.1	44.2	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.3	3.8	8.5	7.0	28.1	28.1	44.3	0.0	0.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.83	0.33		0.33
Lane Grp Cap(c), veh/h	101	1274	568	391	647	681	814	0	841	916	0	0
V/C Ratio(X)	0.01	0.17	0.36	0.13	0.92	0.92	0.88	0.00	0.01	0.00	0.00	0.00
Avail Cap(c_a), veh/h	106	1314	586	402	667	702	821	0	850	925	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.6	19.3	20.8	21.6	27.0	27.0	20.5	0.0	10.0	10.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.4	0.1	17.6	17.0	10.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	2.9	0.7	13.8	14.4	15.3	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	19.3	21.1	21.8	44.7	44.0	31.2	0.0	10.0	10.0	0.0	0.0
LnGrp LOS	D	B	C	C	D	D	C	A	B	A	A	A
Approach Vol, veh/h		426			1271			721			3	
Approach Delay, s/veh		20.2			43.4			31.0			10.0	
Approach LOS		C			D			C			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.0		50.5		38.0		50.5				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		33.0		47.0		33.0		47.0				
Max Q Clear Time (g_c+I1), s		30.1		46.3		30.3		2.1				
Green Ext Time (p_c), s		1.9		0.2		0.5		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			35.6									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	180	10	225	1135	20	155
Future Vol, veh/h	180	10	225	1135	20	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	4	4	1	1	6	6
Mvmt Flow	180	10	225	1135	20	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	190	0	1765	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	1585	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1390	-	90	853
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	181	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1390	-	75	853
Mov Cap-2 Maneuver	-	-	-	-	144	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	152	-

Approach	EB	WB	NE
HCM Control Delay, s	0	1.3	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	144	853	-	-	1390	-
HCM Lane V/C Ratio	0.139	0.182	-	-	0.162	-
HCM Control Delay (s)	34	10.2	-	-	8.1	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0.6	-

MOVEMENT SUMMARY

Site: 1 [AM 2040 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.662	10.4	LOS B	6.6	168.2	0.38	0.41	0.38	36.7
8	T1	1800	3.0	0.662	4.5	LOS A	6.6	168.2	0.36	0.41	0.36	36.8
18	R2	180	3.0	0.662	4.6	LOS A	6.5	166.9	0.34	0.41	0.34	35.6
Approach		1985	3.0	0.662	4.5	LOS A	6.6	168.2	0.36	0.41	0.36	36.7
East: WB Henderson Blvd												
1	L2	115	2.0	0.549	17.4	LOS B	3.1	79.3	0.81	1.00	1.10	33.0
6	T1	5	2.0	0.549	11.6	LOS B	3.1	79.3	0.81	1.00	1.10	32.9
16	R2	210	2.0	0.549	11.5	LOS B	3.1	79.3	0.81	1.00	1.10	32.0
Approach		330	2.0	0.549	13.6	LOS B	3.1	79.3	0.81	1.00	1.10	32.4
North: SB Old Hwy 99												
7	L2	55	5.0	0.233	10.4	LOS B	1.4	36.3	0.33	0.48	0.33	36.4
4	T1	570	5.0	0.233	4.4	LOS A	1.5	37.7	0.33	0.45	0.33	36.7
14	R2	20	5.0	0.233	4.6	LOS A	1.5	37.7	0.32	0.42	0.32	35.6
Approach		645	5.0	0.233	5.0	LOS A	1.5	37.7	0.33	0.45	0.33	36.6
West: EB Henderson Blvd												
5	L2	5	0.0	0.016	11.3	LOS B	0.1	1.3	0.45	0.62	0.45	36.0
2	T1	5	0.0	0.016	5.5	LOS A	0.1	1.3	0.45	0.62	0.45	35.8
12	R2	5	0.0	0.016	5.4	LOS A	0.1	1.3	0.45	0.62	0.45	34.8
Approach		15	0.0	0.016	7.4	LOS A	0.1	1.3	0.45	0.62	0.45	35.5
All Vehicles		2975	3.3	0.662	5.6	LOS A	6.6	168.2	0.40	0.49	0.44	36.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-79th Ave - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	10	3.0	0.660	10.8	LOS B	5.9	150.2	0.46	0.47	0.46	36.4
8	T1	1860	3.0	0.660	4.8	LOS A	5.9	150.2	0.44	0.46	0.44	36.5
18	R2	55	3.0	0.660	4.9	LOS A	5.8	149.5	0.42	0.45	0.42	35.3
Approach		1925	3.0	0.660	4.9	LOS A	5.9	150.2	0.44	0.46	0.44	36.4
East: WB 79th Ave												
1	L2	5	5.0	0.333	16.0	LOS B	1.6	41.1	0.78	0.91	0.86	34.5
6	T1	1	5.0	0.333	10.1	LOS B	1.6	41.1	0.78	0.91	0.86	34.5
16	R2	170	5.0	0.333	10.0	LOS B	1.6	41.1	0.78	0.91	0.86	33.5
Approach		176	5.0	0.333	10.2	LOS B	1.6	41.1	0.78	0.91	0.86	33.5
North: SB Old Hwy 99												
7	L2	110	5.0	0.237	9.9	LOS A	1.3	33.2	0.09	0.48	0.09	36.7
4	T1	610	5.0	0.237	4.0	LOS A	1.3	33.6	0.09	0.41	0.09	37.4
14	R2	5	5.0	0.237	4.2	LOS A	1.3	33.6	0.09	0.37	0.09	36.4
Approach		725	5.0	0.237	4.9	LOS A	1.3	33.6	0.09	0.42	0.09	37.3
West: EB 79th Ave												
5	L2	1	0.0	0.003	11.2	LOS B	0.0	0.2	0.41	0.57	0.41	36.1
2	T1	1	0.0	0.003	5.4	LOS A	0.0	0.2	0.41	0.57	0.41	35.9
12	R2	1	0.0	0.003	5.3	LOS A	0.0	0.2	0.41	0.57	0.41	34.9
Approach		3	0.0	0.003	7.3	LOS A	0.0	0.2	0.41	0.57	0.41	35.6
All Vehicles		2829	3.6	0.660	5.2	LOS A	5.9	150.2	0.37	0.48	0.37	36.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-88th Ave - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	50	1.0	0.713	20.5	LOS C	8.6	216.3	0.97	1.14	1.41	32.3
8	T1	1220	1.0	0.713	13.5	LOS B	9.7	245.3	0.98	1.10	1.39	32.9
18	R2	1	1.0	0.713	12.8	LOS B	9.7	245.3	0.98	1.07	1.37	32.3
Approach		1271	1.0	0.713	13.8	LOS B	9.7	245.3	0.98	1.10	1.39	32.8
East: WB 88th Ave												
1	L2	1	0.0	0.008	17.3	LOS B	0.0	1.0	0.84	0.74	0.84	33.2
6	T1	1	0.0	0.008	11.4	LOS B	0.0	1.0	0.84	0.74	0.84	33.1
16	R2	1	0.0	0.008	11.3	LOS B	0.0	1.0	0.84	0.74	0.84	32.2
Approach		3	0.0	0.008	13.3	LOS B	0.0	1.0	0.84	0.74	0.84	32.8
North: SB Old Hwy 99												
7	L2	1	3.0	0.138	9.9	LOS A	0.8	21.6	0.19	0.37	0.19	37.5
4	T1	220	3.0	0.138	4.1	LOS A	0.8	21.6	0.19	0.37	0.19	37.4
14	R2	205	3.0	0.146	4.3	LOS A	0.9	22.3	0.20	0.46	0.20	36.1
Approach		426	3.0	0.146	4.2	LOS A	0.9	22.3	0.20	0.41	0.20	36.8
West: EB 88th Ave												
5	L2	715	4.0	0.653	11.8	LOS B	4.9	127.6	0.55	0.72	0.58	33.7
2	T1	1	4.0	0.653	6.0	LOS A	4.9	127.6	0.55	0.72	0.58	33.6
12	R2	5	4.0	0.653	5.9	LOS A	4.9	127.6	0.55	0.72	0.58	32.7
Approach		721	4.0	0.653	11.8	LOS B	4.9	127.6	0.55	0.72	0.58	33.7
All Vehicles		2421	2.2	0.713	11.5	LOS B	9.7	245.3	0.71	0.87	0.94	33.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-93rd Ave - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	225	1.0	0.939	10.7	LOS D	42.3	1065.8	0.78	0.34	0.78	35.2
8	T1	1120	1.0	0.939	4.7	LOS D	42.3	1065.8	0.78	0.34	0.78	35.1
Approach		1345	1.0	0.939	5.7	LOS A	42.3	1065.8	0.78	0.34	0.78	35.1
North: SB Old Hwy 99												
4	T1	170	4.0	0.154	4.7	LOS A	0.9	22.1	0.42	0.47	0.42	36.6
14	R2	10	4.0	0.154	4.8	LOS A	0.9	22.1	0.42	0.47	0.42	35.5
Approach		180	4.0	0.154	4.7	LOS A	0.9	22.1	0.42	0.47	0.42	36.5
West: EB 88th Ave												
5	L2	20	6.0	0.145	10.5	LOS B	0.7	19.0	0.34	0.52	0.34	36.8
12	R2	155	6.0	0.145	4.6	LOS A	0.7	19.0	0.34	0.52	0.34	35.6
Approach		175	6.0	0.145	5.3	LOS A	0.7	19.0	0.34	0.52	0.34	35.7
All Vehicles		1700	1.8	0.939	5.6	LOS A	42.3	1065.8	0.70	0.37	0.70	35.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [AM 2040 Old Hwy 99-Henderson Blvd - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.687	10.6	LOS B	7.2	183.1	0.45	0.44	0.45	36.5
8	T1	1835	3.0	0.687	4.6	LOS A	7.2	183.1	0.43	0.43	0.43	36.5
18	R2	195	3.0	0.687	4.7	LOS A	7.1	182.3	0.41	0.43	0.41	35.4
Approach		2035	3.0	0.687	4.7	LOS A	7.2	183.1	0.42	0.43	0.42	36.4
East: WB Henderson Blvd												
1	L2	135	2.0	0.633	19.1	LOS B	4.0	101.0	0.85	1.06	1.25	32.2
6	T1	5	2.0	0.633	13.2	LOS B	4.0	101.0	0.85	1.06	1.25	32.1
16	R2	220	2.0	0.633	13.1	LOS B	4.0	101.0	0.85	1.06	1.25	31.2
Approach		360	2.0	0.633	15.4	LOS B	4.0	101.0	0.85	1.06	1.25	31.6
North: SB Old Hwy 99												
7	L2	70	5.0	0.265	10.5	LOS B	1.6	42.8	0.37	0.50	0.37	36.2
4	T1	625	5.0	0.265	4.5	LOS A	1.7	44.6	0.37	0.46	0.37	36.5
14	R2	25	5.0	0.265	4.6	LOS A	1.7	44.6	0.36	0.43	0.36	35.4
Approach		720	5.0	0.265	5.1	LOS A	1.7	44.6	0.37	0.46	0.37	36.4
West: EB Henderson Blvd												
5	L2	5	0.0	0.017	11.5	LOS B	0.1	1.4	0.48	0.63	0.48	35.9
2	T1	5	0.0	0.017	5.6	LOS A	0.1	1.4	0.48	0.63	0.48	35.7
12	R2	5	0.0	0.017	5.6	LOS A	0.1	1.4	0.48	0.63	0.48	34.7
Approach		15	0.0	0.017	7.6	LOS A	0.1	1.4	0.48	0.63	0.48	35.4
All Vehicles		3130	3.3	0.687	6.0	LOS A	7.2	183.1	0.46	0.51	0.51	35.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-79th Ave - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	10	3.0	0.684	10.9	LOS B	6.4	162.8	0.50	0.49	0.50	36.3
8	T1	1910	3.0	0.684	5.0	LOS A	6.4	162.8	0.48	0.47	0.48	36.3
18	R2	60	3.0	0.684	5.0	LOS A	6.3	162.4	0.46	0.46	0.46	35.1
Approach		1980	3.0	0.684	5.0	LOS A	6.4	162.8	0.48	0.47	0.48	36.3
East: WB 79th Ave												
1	L2	10	5.0	0.373	16.7	LOS B	1.8	48.0	0.80	0.93	0.92	34.1
6	T1	1	5.0	0.373	10.8	LOS B	1.8	48.0	0.80	0.93	0.92	34.0
16	R2	175	5.0	0.373	10.8	LOS B	1.8	48.0	0.80	0.93	0.92	33.0
Approach		186	5.0	0.373	11.1	LOS B	1.8	48.0	0.80	0.93	0.92	33.1
North: SB Old Hwy 99												
7	L2	120	5.0	0.263	9.9	LOS A	1.5	39.6	0.12	0.48	0.12	36.7
4	T1	675	5.0	0.263	4.1	LOS A	1.6	40.3	0.11	0.41	0.11	37.3
14	R2	5	5.0	0.263	4.2	LOS A	1.6	40.3	0.11	0.37	0.11	36.3
Approach		800	5.0	0.263	4.9	LOS A	1.6	40.3	0.12	0.42	0.12	37.2
West: EB 79th Ave												
5	L2	1	0.0	0.003	11.4	LOS B	0.0	0.2	0.43	0.58	0.43	36.0
2	T1	1	0.0	0.003	5.5	LOS A	0.0	0.2	0.43	0.58	0.43	35.8
12	R2	1	0.0	0.003	5.4	LOS A	0.0	0.2	0.43	0.58	0.43	34.8
Approach		3	0.0	0.003	7.4	LOS A	0.0	0.2	0.43	0.58	0.43	35.5
All Vehicles		2969	3.7	0.684	5.4	LOS A	6.4	162.8	0.40	0.49	0.41	36.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-88th Ave - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	55	1.0	0.791	26.0	LOS C	11.4	287.5	1.00	1.28	1.71	29.9
8	T1	1225	1.0	0.791	18.6	LOS B	13.3	336.4	1.00	1.24	1.68	30.6
18	R2	10	1.0	0.791	17.7	LOS B	13.3	336.4	1.00	1.21	1.66	30.2
Approach		1290	1.0	0.791	18.9	LOS B	13.3	336.4	1.00	1.24	1.68	30.6
East: WB 88th Ave												
1	L2	5	2.0	0.097	18.4	LOS B	0.5	12.8	0.86	0.93	0.86	33.1
6	T1	5	2.0	0.097	12.5	LOS B	0.5	12.8	0.86	0.93	0.86	33.0
16	R2	25	2.0	0.097	12.5	LOS B	0.5	12.8	0.86	0.93	0.86	32.1
Approach		35	2.0	0.097	13.3	LOS B	0.5	12.8	0.86	0.93	0.86	32.3
North: SB Old Hwy 99												
7	L2	40	3.0	0.167	10.0	LOS A	1.0	26.0	0.22	0.43	0.22	37.0
4	T1	225	3.0	0.167	4.1	LOS A	1.0	26.0	0.22	0.43	0.22	36.9
14	R2	230	3.0	0.167	4.4	LOS A	1.0	25.1	0.23	0.46	0.23	36.0
Approach		495	3.0	0.167	4.7	LOS A	1.0	26.0	0.22	0.44	0.22	36.5
West: EB 88th Ave												
5	L2	732	4.0	0.698	12.9	LOS B	6.2	159.8	0.63	0.79	0.71	33.5
2	T1	10	4.0	0.698	7.0	LOS A	6.2	159.8	0.63	0.79	0.71	33.4
12	R2	5	4.0	0.698	7.0	LOS A	6.2	159.8	0.63	0.79	0.71	32.5
Approach		747	4.0	0.698	12.8	LOS B	6.2	159.8	0.63	0.79	0.71	33.5
All Vehicles		2567	2.3	0.791	14.3	LOS B	13.3	336.4	0.74	0.95	1.11	32.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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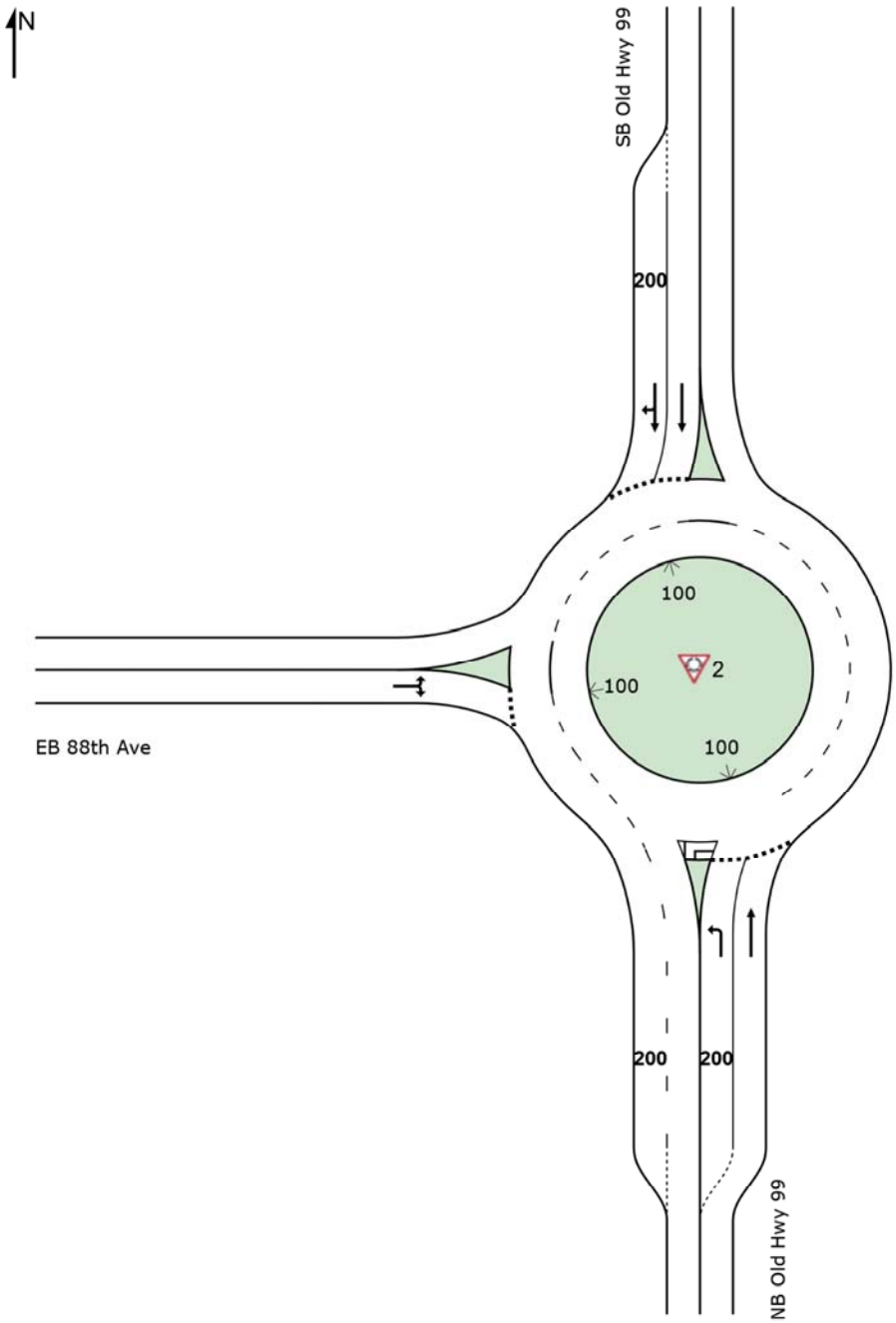
SITE LAYOUT

Site: 2 [AM 2040 Old Hwy 99-93rd Ave -Land Use 2 (2 NB lanes)]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-93rd Ave - Sensitivity Scenario multiple entry lanes]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	225	1.0	0.183	9.9	LOS A	0.9	22.9	0.11	0.62	0.11	34.8
8	T1	1135	1.0	0.659	3.7	LOS A	6.8	170.3	0.18	0.34	0.18	37.9
Approach		1360	1.0	0.659	4.8	LOS A	6.8	170.3	0.17	0.39	0.17	37.3
North: SB Old Hwy 99												
4	T1	180	4.0	0.106	4.8	LOS A	0.4	10.2	0.28	0.45	0.28	36.9
14	R2	10	4.0	0.053	5.2	LOS A	0.2	4.8	0.29	0.46	0.29	35.6
Approach		190	4.0	0.106	4.8	LOS A	0.4	10.2	0.28	0.45	0.28	36.9
West: EB 88th Ave												
5	L2	20	6.0	0.158	10.5	LOS B	0.6	15.3	0.28	0.53	0.28	37.1
12	R2	155	6.0	0.158	4.6	LOS A	0.6	15.3	0.28	0.53	0.28	35.8
Approach		175	6.0	0.158	5.2	LOS A	0.6	15.3	0.28	0.53	0.28	35.9
All Vehicles		1725	1.8	0.659	4.8	LOS A	6.8	170.3	0.19	0.41	0.19	37.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Existing 2020
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	90	885	5	5	555	110	35	10	10	160	5	65
Future Volume (vph)	90	885	5	5	555	110	35	10	10	160	5	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	12.0	56.5	56.5	44.5	44.5		33.5	33.5		33.5	33.5	
Total Split (%)	13.3%	62.8%	62.8%	49.4%	49.4%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	6.5	51.0	51.0	39.0	39.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 69.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Existing 2020
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	90	885	5	5	555	110	35	10	10	160	5	65
Future Volume (veh/h)	90	885	5	5	555	110	35	10	10	160	5	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	96	941	5	5	590	117	37	11	11	170	5	69
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	130	1211	1026	309	703	139	209	62	36	362	16	219
Arrive On Green	0.07	0.64	0.64	0.46	0.46	0.46	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1795	1885	1598	593	1516	301	662	428	250	1401	109	1505
Grp Volume(v), veh/h	96	941	5	5	0	707	59	0	0	170	0	74
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	593	0	1816	1339	0	0	1401	0	1614
Q Serve(g_s), s	2.7	18.5	0.1	0.3	0.0	17.7	0.4	0.0	0.0	2.7	0.0	2.1
Cycle Q Clear(g_c), s	2.7	18.5	0.1	9.5	0.0	17.7	2.6	0.0	0.0	5.3	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.17	0.63		0.19	1.00		0.93
Lane Grp Cap(c), veh/h	130	1211	1026	309	0	842	308	0	0	362	0	234
V/C Ratio(X)	0.74	0.78	0.00	0.02	0.00	0.84	0.19	0.00	0.00	0.47	0.00	0.32
Avail Cap(c_a), veh/h	225	1857	1574	480	0	1368	890	0	0	916	0	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.5	6.6	3.3	13.3	0.0	12.2	19.7	0.0	0.0	21.0	0.0	19.8
Incr Delay (d2), s/veh	3.1	1.2	0.0	0.0	0.0	2.6	0.1	0.0	0.0	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.0	0.0	0.0	0.0	5.1	0.6	0.0	0.0	1.8	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	7.8	3.3	13.3	0.0	14.8	19.9	0.0	0.0	21.4	0.0	20.1
LnGrp LOS	C	A	A	B	A	B	B	A	A	C	A	C
Approach Vol, veh/h		1042			712			59			244	
Approach Delay, s/veh		9.5			14.8			19.9			21.0	
Approach LOS		A			B			B			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.2	29.5		13.0		38.8		13.0				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	6.5	39.0		28.0		51.0		28.0				
Max Q Clear Time (g_c+I1), s	4.7	19.7		4.6		20.5		7.3				
Green Ext Time (p_c), s	0.0	4.3		0.1		7.5		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		13.0	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	15	1	135	125	930	15	1	500	15
Future Vol, veh/h	2	1	5	15	1	135	125	930	15	1	500	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	2	2	1	1	1	3	3	3
Mvmt Flow	2	1	5	16	1	148	137	1022	16	1	549	16

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1938	1871	1030	1866	1871	557	565	0	0	1038	0	0
Stage 1	1304	1304	-	559	559	-	-	-	-	-	-	-
Stage 2	634	567	-	1307	1312	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.11	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	50	73	286	56	72	530	1012	-	-	666	-	-
Stage 1	199	232	-	513	511	-	-	-	-	-	-	-
Stage 2	471	510	-	196	228	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	63	286	48	62	530	1012	-	-	666	-	-
Mov Cap-2 Maneuver	32	63	-	48	62	-	-	-	-	-	-	-
Stage 1	172	201	-	444	510	-	-	-	-	-	-	-
Stage 2	338	509	-	165	197	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	53.4	25.1	1.1	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	666	-	-	83	49	530	1012	-	-
HCM Lane V/C Ratio	0.002	-	-	0.106	0.359	0.28	0.136	-	-
HCM Control Delay (s)	10.4	0	-	53.4	115	14.4	9.1	-	-
HCM Lane LOS	B	A	-	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1.3	1.1	0.5	-	-

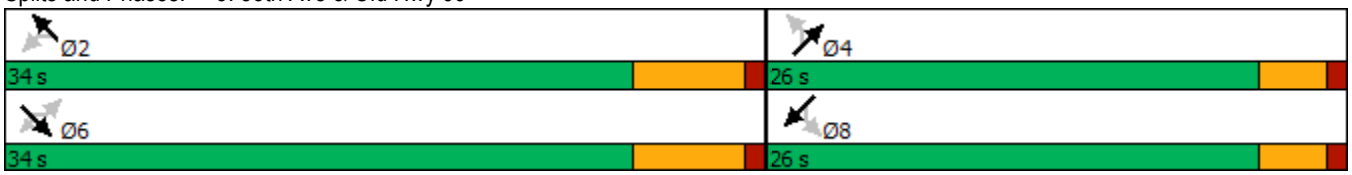
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Existing 2020
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	780	205	15	305	1	175	1	50	1	2	1
Future Volume (vph)	1	780	205	15	305	1	175	1	50	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	34.0	34.0	34.0	34.0	34.0		26.0	26.0		26.0	26.0	
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	28.0	28.0	28.0	28.0	28.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 53.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Existing 2020
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	780	205	15	305	1	175	1	50	1	2	1
Future Volume (veh/h)	1	780	205	15	305	1	175	1	50	1	2	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	1	876	230	17	343	1	197	1	56	1	2	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	0	0	0
Cap, veh/h	662	1051	891	272	1047	3	450	5	294	151	210	82
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1045	1885	1598	514	1879	5	1414	28	1561	195	1114	436
Grp Volume(v), veh/h	1	876	230	17	0	344	197	0	57	4	0	0
Grp Sat Flow(s),veh/h/ln	1045	1885	1598	514	0	1884	1414	0	1589	1745	0	0
Q Serve(g_s), s	0.0	15.1	2.9	1.1	0.0	3.9	5.1	0.0	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.9	15.1	2.9	16.2	0.0	3.9	5.2	0.0	1.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.98	0.25		0.25
Lane Grp Cap(c), veh/h	662	1051	891	272	0	1050	450	0	300	443	0	0
V/C Ratio(X)	0.00	0.83	0.26	0.06	0.00	0.33	0.44	0.00	0.19	0.01	0.00	0.00
Avail Cap(c_a), veh/h	822	1340	1136	351	0	1340	973	0	888	1059	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.8	7.2	4.5	13.9	0.0	4.7	15.0	0.0	13.4	13.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.7	0.2	0.1	0.0	0.2	0.7	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.3	0.1	0.0	0.5	1.5	0.0	0.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	10.9	4.7	14.0	0.0	4.9	15.7	0.0	13.8	13.0	0.0	0.0
LnGrp LOS	A	B	A	B	A	A	B	A	B	B	A	A
Approach Vol, veh/h		1107			361			254			4	
Approach Delay, s/veh		9.6			5.3			15.3			13.0	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.0		11.4		28.0		11.4				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		28.0		22.0		28.0		22.0				
Max Q Clear Time (g_c+I1), s		18.2		7.2		17.1		2.1				
Green Ext Time (p_c), s		1.3		0.7		4.8		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	700	25	100	240	20	165
Future Vol, veh/h	700	25	100	240	20	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	778	28	111	267	22	183

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	806	0	1267	778
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	-	-	4.12	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.218	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	819	-	187	398
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	162	398
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	535	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	398	-	-	819	-
HCM Lane V/C Ratio	0.062	0.461	-	-	0.136	-
HCM Control Delay (s)	15.7	21.5	-	-	10.1	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.2	2.4	-	-	0.5	-

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2025
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	1000	5	5	595	115	35	15	15	170	5	80
Future Volume (vph)	110	1000	5	5	595	115	35	15	15	170	5	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	12.4	56.5	56.5	44.1	44.1		33.5	33.5		33.5	33.5	
Total Split (%)	13.8%	62.8%	62.8%	49.0%	49.0%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	6.9	51.0	51.0	38.6	38.6		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 73.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2025
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	110	1000	5	5	595	115	35	15	15	170	5	80
Future Volume (veh/h)	110	1000	5	5	595	115	35	15	15	170	5	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	116	1053	5	5	626	121	37	16	16	179	5	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	149	1239	1050	246	726	140	177	75	47	356	13	226
Arrive On Green	0.08	0.66	0.66	0.48	0.48	0.48	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1795	1885	1598	533	1523	294	532	507	314	1388	91	1521
Grp Volume(v), veh/h	116	1053	5	5	0	747	69	0	0	179	0	89
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	533	0	1817	1353	0	0	1388	0	1611
Q Serve(g_s), s	3.6	24.6	0.1	0.4	0.0	20.7	0.3	0.0	0.0	2.9	0.0	2.8
Cycle Q Clear(g_c), s	3.6	24.6	0.1	14.8	0.0	20.7	3.2	0.0	0.0	6.1	0.0	2.8
Prop In Lane	1.00		1.00	1.00		0.16	0.54		0.23	1.00		0.94
Lane Grp Cap(c), veh/h	149	1239	1050	246	0	867	299	0	0	356	0	239
V/C Ratio(X)	0.78	0.85	0.00	0.02	0.00	0.86	0.23	0.00	0.00	0.50	0.00	0.37
Avail Cap(c_a), veh/h	219	1699	1440	356	0	1240	816	0	0	837	0	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.4	7.5	3.3	17.2	0.0	13.1	21.5	0.0	0.0	22.9	0.0	21.7
Incr Delay (d2), s/veh	5.4	3.2	0.0	0.0	0.0	4.6	0.1	0.0	0.0	0.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.0	0.0	0.0	0.0	6.7	0.8	0.0	0.0	2.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	10.7	3.3	17.3	0.0	17.7	21.6	0.0	0.0	23.3	0.0	22.1
LnGrp LOS	C	B	A	B	A	B	C	A	A	C	A	C
Approach Vol, veh/h		1174			752			69			268	
Approach Delay, s/veh		12.7			17.7			21.6			22.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	10.2	32.5		13.9		42.7		13.9				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	6.9	38.6		28.0		51.0		28.0				
Max Q Clear Time (g_c+I1), s	5.6	22.7		5.2		26.6		8.1				
Green Ext Time (p_c), s	0.0	4.3		0.2		8.5		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		15.8	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	20	1	135	125	1050	1	1	535	15
Future Vol, veh/h	2	1	5	20	1	135	125	1050	1	1	535	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	2	2	2	1	1	1	3	3	3
Mvmt Flow	2	1	5	21	1	142	132	1105	1	1	563	16

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	2015	1951	1106	1946	1943	571	579	0	0	1106	0	0
Stage 1	1370	1370	-	573	573	-	-	-	-	-	-	-
Stage 2	645	581	-	1373	1370	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.11	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	44	65	258	49	65	520	1000	-	-	628	-	-
Stage 1	183	216	-	505	504	-	-	-	-	-	-	-
Stage 2	464	503	-	180	214	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	56	258	42	56	520	1000	-	-	628	-	-
Mov Cap-2 Maneuver	28	56	-	42	56	-	-	-	-	-	-	-
Stage 1	159	187	-	438	503	-	-	-	-	-	-	-
Stage 2	336	502	-	152	186	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	59.8	33.6	1	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	628	-	-	74	43	520	1000	-	-
HCM Lane V/C Ratio	0.002	-	-	0.114	0.514	0.273	0.132	-	-
HCM Control Delay (s)	10.7	0	-	59.8	156.4	14.5	9.1	-	-
HCM Lane LOS	B	A	-	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.9	1.1	0.5	-	-

Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2025
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	850	250	15	340	1	185	1	50	1	2	1
Future Volume (vph)	1	850	250	15	340	1	185	1	50	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	64.0	64.0	64.0	64.0	64.0		26.0	26.0		26.0	26.0	
Total Split (%)	71.1%	71.1%	71.1%	71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	
Maximum Green (s)	58.0	58.0	58.0	58.0	58.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 66	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99

HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2025
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	850	250	15	340	1	185	1	50	1	2	1
Future Volume (veh/h)	1	850	250	15	340	1	185	1	50	1	2	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	1	895	263	16	358	1	195	1	53	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	0	0	0
Cap, veh/h	676	1123	951	272	1119	3	418	5	284	137	201	79
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1031	1885	1598	489	1879	5	1414	29	1560	205	1101	436
Grp Volume(v), veh/h	1	895	263	16	0	359	195	0	54	4	0	0
Grp Sat Flow(s),veh/h/ln	1031	1885	1598	489	0	1884	1414	0	1590	1742	0	0
Q Serve(g_s), s	0.0	16.5	3.6	1.2	0.0	4.3	5.8	0.0	1.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	16.5	3.6	17.6	0.0	4.3	5.9	0.0	1.3	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.98	0.25		0.25
Lane Grp Cap(c), veh/h	676	1123	951	272	0	1122	418	0	290	418	0	0
V/C Ratio(X)	0.00	0.80	0.28	0.06	0.00	0.32	0.47	0.00	0.19	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1390	2429	2058	611	0	2428	852	0	777	928	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.6	7.0	4.4	13.8	0.0	4.5	17.4	0.0	15.6	15.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	0.2	0.1	0.0	0.2	0.8	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.4	0.1	0.0	0.6	1.8	0.0	0.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	8.4	4.6	13.9	0.0	4.7	18.2	0.0	15.9	15.1	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	A
Approach Vol, veh/h		1159			375			249			4	
Approach Delay, s/veh		7.5			5.1			17.7			15.1	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		12.2		32.8		12.2				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		58.0		22.0		58.0		22.0				
Max Q Clear Time (g_c+I1), s		19.6		7.9		18.5		2.1				
Green Ext Time (p_c), s		2.2		0.7		8.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		8.4
HCM 6th LOS		A

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	775	25	120	270	20	170
Future Vol, veh/h	775	25	120	270	20	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	816	26	126	284	21	179

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	842	0	1352	816
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	4.12	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.218	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	794	-	166	378
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	794	-	140	378
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	495	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3.2	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	378	-	-	794	-
HCM Lane V/C Ratio	0.062	0.473	-	-	0.159	-
HCM Control Delay (s)	16.4	22.8	-	-	10.4	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.2	2.5	-	-	0.6	-

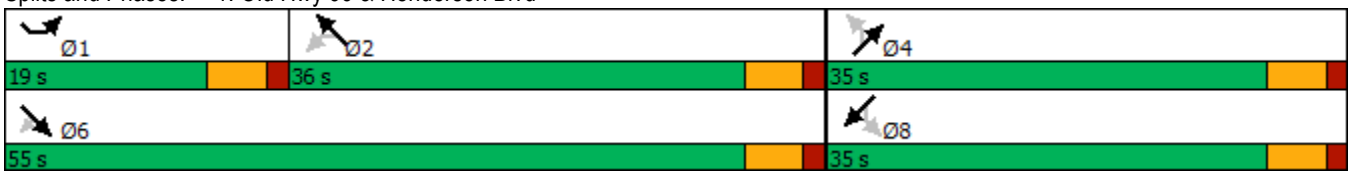
Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2025 with 5 lanes
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	110	1000	5	5	595	115	35	15	15	170	5	80
Future Volume (vph)	110	1000	5	5	595	115	35	15	15	170	5	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	19.0	55.0	55.0	36.0	36.0		35.0	35.0		35.0	35.0	
Total Split (%)	21.1%	61.1%	61.1%	40.0%	40.0%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	13.5	49.5	49.5	30.5	30.5		29.5	29.5		29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		1.5	1.5		1.5	1.5	
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		15.0	15.0	16.0	16.0		23.0	23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 56.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd



HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2025 with 5 lanes
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	110	1000	5	5	595	115	35	15	15	170	5	80
Future Volume (veh/h)	110	1000	5	5	595	115	35	15	15	170	5	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	116	1053	5	5	626	121	37	16	16	179	5	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	163	2010	896	358	988	191	230	95	56	427	15	248
Arrive On Green	0.09	0.56	0.56	0.33	0.33	0.33	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	3582	1598	533	2971	573	561	584	346	1388	91	1521
Grp Volume(v), veh/h	116	1053	5	5	374	373	69	0	0	179	0	89
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	533	1777	1767	1491	0	0	1388	0	1611
Q Serve(g_s), s	2.5	7.3	0.1	0.3	7.1	7.1	0.0	0.0	0.0	2.3	0.0	2.0
Cycle Q Clear(g_c), s	2.5	7.3	0.1	0.3	7.1	7.1	2.0	0.0	0.0	4.3	0.0	2.0
Prop In Lane	1.00		1.00	1.00		0.32	0.54		0.23	1.00		0.94
Lane Grp Cap(c), veh/h	163	2010	896	358	591	587	382	0	0	427	0	263
V/C Ratio(X)	0.71	0.52	0.01	0.01	0.63	0.63	0.18	0.00	0.00	0.42	0.00	0.34
Avail Cap(c_a), veh/h	608	4446	1983	588	1359	1352	1243	0	0	1227	0	1192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	5.4	3.9	9.0	11.3	11.3	14.5	0.0	0.0	15.6	0.0	14.8
Incr Delay (d2), s/veh	2.2	0.2	0.0	0.0	1.1	1.1	0.1	0.0	0.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.0	0.0	1.9	1.9	0.5	0.0	0.0	1.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	5.7	3.9	9.0	12.4	12.4	14.6	0.0	0.0	15.9	0.0	15.1
LnGrp LOS	B	A	A	A	B	B	B	A	A	B	A	B
Approach Vol, veh/h		1174			752			69			268	
Approach Delay, s/veh		7.0			12.4			14.6			15.6	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.1	18.8		12.0		27.9		12.0				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	13.5	30.5		29.5		49.5		29.5				
Max Q Clear Time (g_c+I1), s	4.5	9.1		4.0		9.3		6.3				
Green Ext Time (p_c), s	0.1	4.1		0.2		8.1		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		10.1	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	20	1	135	125	1050	1	1	535	15
Future Vol, veh/h	2	1	5	20	1	135	125	1050	1	1	535	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	2	2	2	1	1	1	3	3	3
Mvmt Flow	2	1	5	21	1	142	132	1105	1	1	563	16

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1654	1951	553	1390	1943	290	579	0	0	1106	0	0
Stage 1	1370	1370	-	573	573	-	-	-	-	-	-	-
Stage 2	284	581	-	817	1370	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.54	6.54	6.94	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.52	4.02	3.32	2.21	-	-	2.23	-	-
Pot Cap-1 Maneuver	66	65	482	102	64	707	998	-	-	621	-	-
Stage 1	157	216	-	472	502	-	-	-	-	-	-	-
Stage 2	705	503	-	337	212	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	47	56	482	89	55	707	998	-	-	621	-	-
Mov Cap-2 Maneuver	47	56	-	89	55	-	-	-	-	-	-	-
Stage 1	136	187	-	410	501	-	-	-	-	-	-	-
Stage 2	561	502	-	288	184	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	39.4	18.1	1	0
HCM LOS	E	C		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	621	-	-	113	86	707	998	-	-
HCM Lane V/C Ratio	0.002	-	-	0.075	0.257	0.201	0.132	-	-
HCM Control Delay (s)	10.8	0	-	39.4	60.8	11.4	9.2	-	-
HCM Lane LOS	B	A	-	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.9	0.7	0.5	-	-

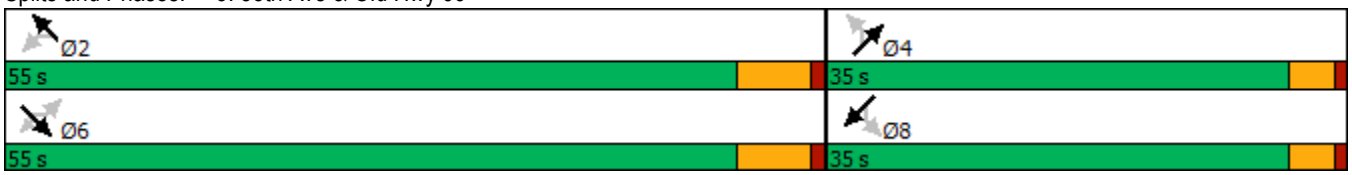
Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2025 with 5 lanes
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	850	250	15	340	1	185	1	50	1	2	1
Future Volume (vph)	1	850	250	15	340	1	185	1	50	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			489			1160			265	
Travel Time (s)		52.5			6.7			26.4			6.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	55.0	55.0	55.0	55.0	55.0		35.0	35.0		35.0	35.0	
Total Split (%)	61.1%	61.1%	61.1%	61.1%	61.1%		38.9%	38.9%		38.9%	38.9%	
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	15.0	15.0	15.0	15.0	15.0		15.0	15.0		17.0	17.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 45.7	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99



HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2025 with 5 lanes
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	850	250	15	340	1	185	1	50	1	2	1
Future Volume (veh/h)	1	850	250	15	340	1	185	1	50	1	2	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	1	895	263	16	358	1	195	1	53	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	0	0	0
Cap, veh/h	672	1732	773	384	1772	5	508	6	304	179	222	85
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1031	3582	1598	489	3664	10	1414	29	1560	177	1138	438
Grp Volume(v), veh/h	1	895	263	16	175	184	195	0	54	4	0	0
Grp Sat Flow(s),veh/h/ln	1031	1791	1598	489	1791	1883	1414	0	1590	1753	0	0
Q Serve(g_s), s	0.0	5.4	3.2	0.7	1.7	1.7	3.9	0.0	0.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	5.4	3.2	6.1	1.7	1.7	4.0	0.0	0.9	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.98	0.25		0.25
Lane Grp Cap(c), veh/h	672	1732	773	384	866	911	508	0	310	487	0	0
V/C Ratio(X)	0.00	0.52	0.34	0.04	0.20	0.20	0.38	0.00	0.17	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1796	5639	2515	917	2819	2965	1640	0	1583	1820	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	5.5	5.0	7.6	4.6	4.6	11.7	0.0	10.4	10.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.0	0.1	0.1	0.5	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.3	0.0	0.2	0.2	1.0	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	5.8	5.2	7.7	4.7	4.7	12.2	0.0	10.7	10.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		1159			375			249			4	
Approach Delay, s/veh		5.6			4.8			11.8			10.1	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.1		10.1		21.1		10.1				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		49.0		31.0		49.0		31.0				
Max Q Clear Time (g_c+I1), s		8.1		6.0		7.4		2.1				
Green Ext Time (p_c), s		2.1		0.8		7.7		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			6.4									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	775	25	120	270	20	170
Future Vol, veh/h	775	25	120	270	20	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	816	26	126	284	21	179

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	842	0	1352	816
Stage 1	-	-	-	-	816	-
Stage 2	-	-	-	-	536	-
Critical Hdwy	-	-	4.12	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.218	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	794	-	166	378
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	794	-	140	378
Mov Cap-2 Maneuver	-	-	-	-	337	-
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	495	-

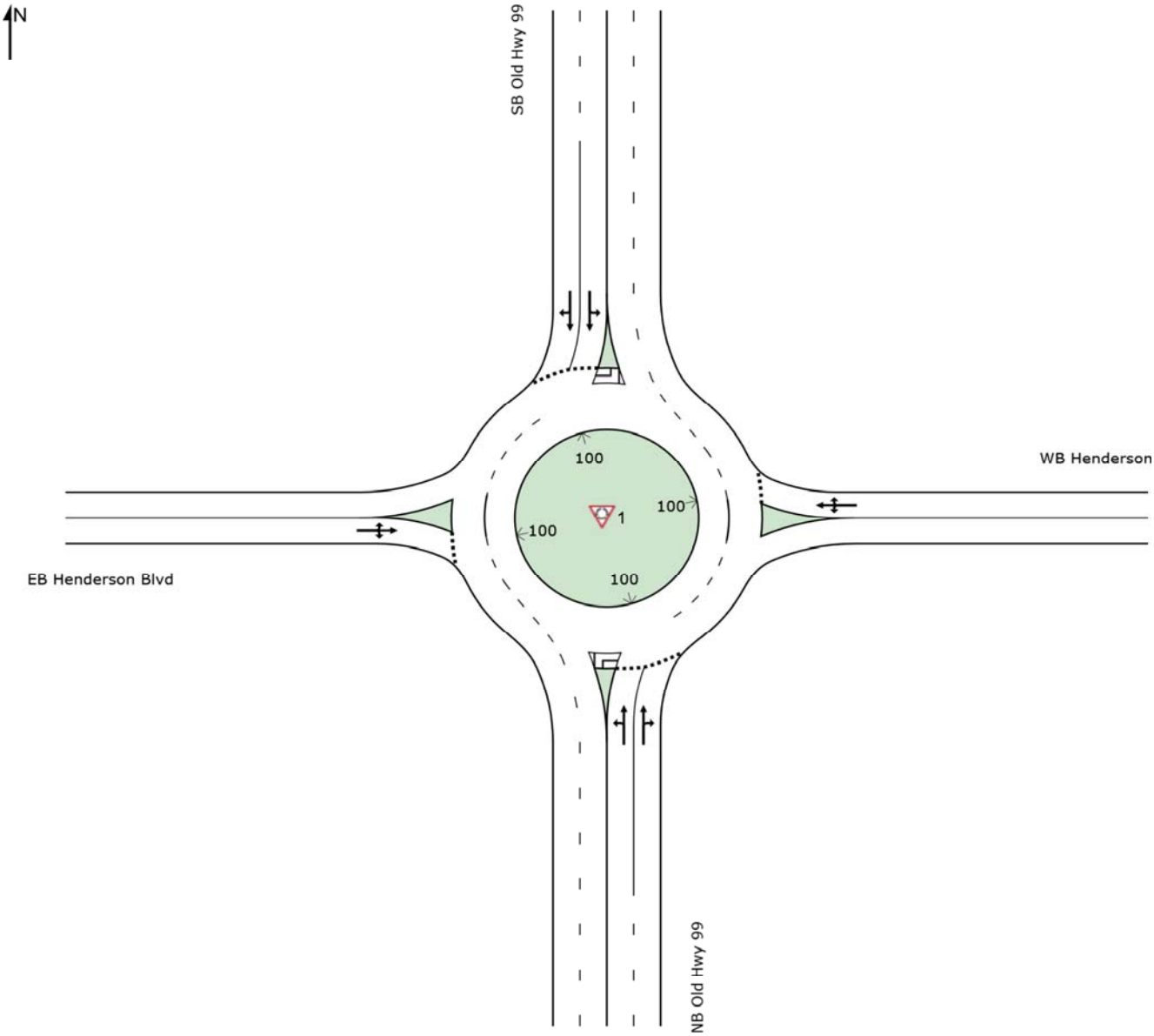
Approach	EB	WB	NE
HCM Control Delay, s	0	3.2	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	378	-	-	794	-
HCM Lane V/C Ratio	0.062	0.473	-	-	0.159	-
HCM Control Delay (s)	16.4	22.8	-	-	10.4	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.2	2.5	-	-	0.6	-

SITE LAYOUT

Site: 1 [AM 2025 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 1 [PM 2025 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2025
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	2.0	0.273	10.5	LOS B	1.5	37.9	0.35	0.45	0.35	36.9
8	T1	595	2.0	0.273	4.6	LOS A	1.5	38.6	0.34	0.46	0.34	36.9
18	R2	115	2.0	0.273	4.7	LOS A	1.5	38.6	0.34	0.46	0.34	35.6
Approach		715	2.0	0.273	4.7	LOS A	1.5	38.6	0.34	0.46	0.34	36.7
East: WB Henderson Blvd												
1	L2	170	1.0	0.306	12.0	LOS B	1.2	30.2	0.53	0.80	0.53	34.9
6	T1	5	1.0	0.306	6.2	LOS A	1.2	30.2	0.53	0.80	0.53	34.7
16	R2	80	1.0	0.306	6.1	LOS A	1.2	30.2	0.53	0.80	0.53	33.7
Approach		255	1.0	0.306	10.1	LOS B	1.2	30.2	0.53	0.80	0.53	34.5
North: SB Old Hwy 99												
7	L2	110	1.0	0.431	10.8	LOS B	2.9	73.8	0.45	0.53	0.45	36.1
4	T1	1000	1.0	0.431	4.9	LOS A	3.0	75.4	0.44	0.49	0.44	36.3
14	R2	5	1.0	0.431	5.0	LOS A	3.0	75.4	0.44	0.46	0.44	35.2
Approach		1115	1.0	0.431	5.5	LOS A	3.0	75.4	0.45	0.49	0.45	36.3
West: EB Henderson Blvd												
5	L2	35	0.0	0.103	13.1	LOS B	0.4	9.6	0.62	0.83	0.62	34.7
2	T1	15	0.0	0.103	7.2	LOS A	0.4	9.6	0.62	0.83	0.62	34.5
12	R2	15	0.0	0.103	7.2	LOS A	0.4	9.6	0.62	0.83	0.62	33.6
Approach		65	0.0	0.103	10.4	LOS B	0.4	9.6	0.62	0.83	0.62	34.4
All Vehicles		2150	1.3	0.431	5.9	LOS A	3.0	75.4	0.43	0.53	0.43	36.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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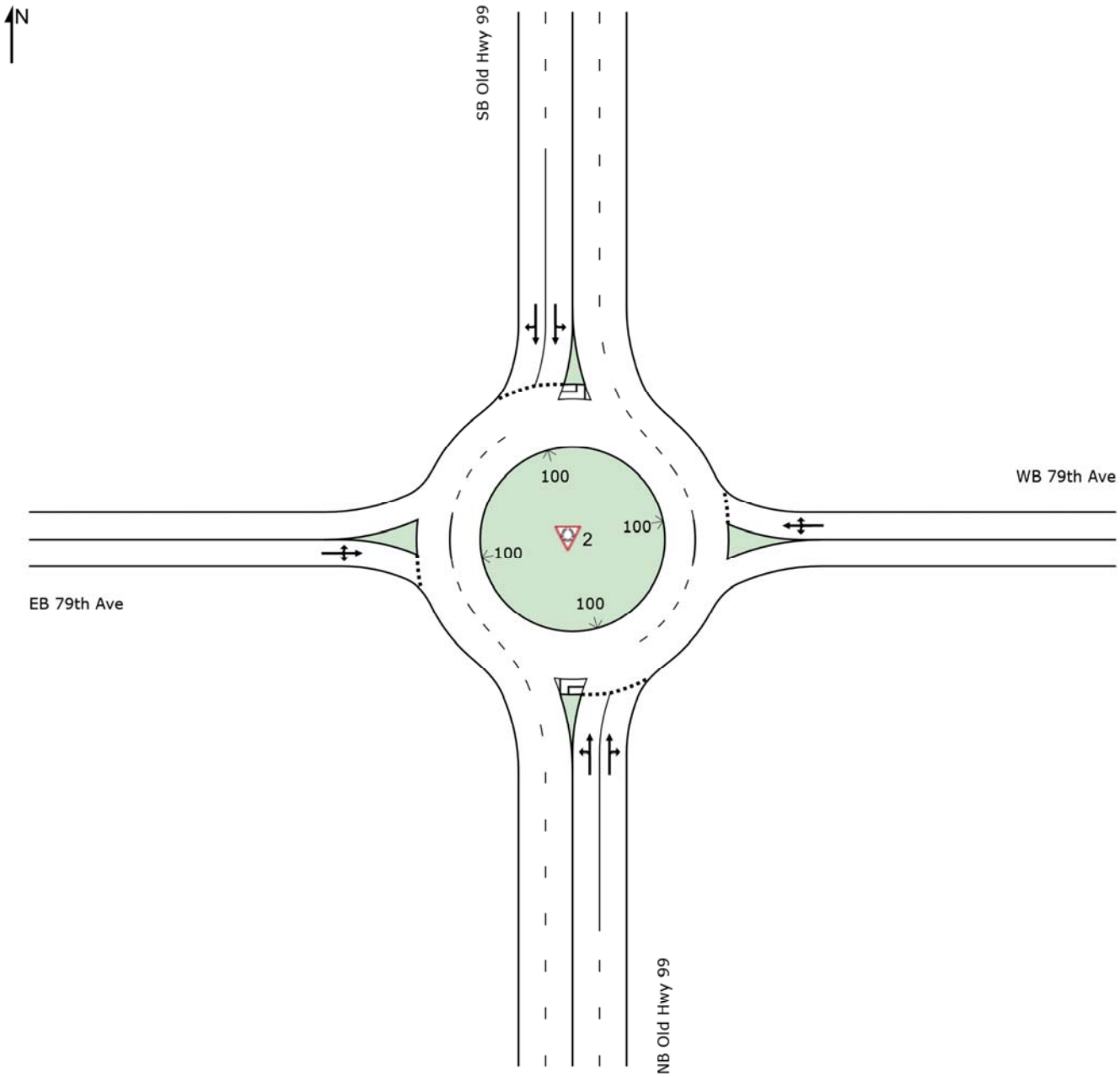
SITE LAYOUT

Site: 2 [AM 2040 Old Hwy 99-79th Ave - Land Use 2]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [PM 2025 Old Hwy 99-79th Ave - Baseline]

Projected 2025
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.209	10.4	LOS B	1.0	26.2	0.29	0.43	0.29	37.1
8	T1	535	3.0	0.209	4.5	LOS A	1.0	26.5	0.28	0.43	0.28	37.1
18	R2	15	3.0	0.209	4.6	LOS A	1.0	26.5	0.28	0.42	0.28	35.8
Approach		555	3.0	0.209	4.6	LOS A	1.0	26.5	0.28	0.43	0.28	37.0
East: WB 79th Ave												
1	L2	20	2.0	0.180	11.6	LOS B	0.6	15.9	0.45	0.68	0.45	36.6
6	T1	1	2.0	0.180	5.7	LOS A	0.6	15.9	0.45	0.68	0.45	36.5
16	R2	135	2.0	0.180	5.6	LOS A	0.6	15.9	0.45	0.68	0.45	35.4
Approach		156	2.0	0.180	6.4	LOS A	0.6	15.9	0.45	0.68	0.45	35.6
North: SB Old Hwy 99												
7	L2	125	1.0	0.402	9.9	LOS A	2.7	68.5	0.16	0.44	0.16	37.0
4	T1	1050	1.0	0.402	4.1	LOS A	2.7	68.7	0.15	0.40	0.15	37.3
14	R2	5	1.0	0.402	4.2	LOS A	2.7	68.7	0.15	0.37	0.15	36.3
Approach		1180	1.0	0.402	4.7	LOS A	2.7	68.7	0.15	0.40	0.15	37.3
West: EB 79th Ave												
5	L2	5	0.0	0.020	12.5	LOS B	0.1	1.6	0.52	0.70	0.52	35.6
2	T1	5	0.0	0.020	6.6	LOS A	0.1	1.6	0.52	0.70	0.52	35.4
12	R2	5	0.0	0.020	6.6	LOS A	0.1	1.6	0.52	0.70	0.52	34.4
Approach		15	0.0	0.020	8.6	LOS A	0.1	1.6	0.52	0.70	0.52	35.1
All Vehicles		1906	1.7	0.402	4.8	LOS A	2.7	68.7	0.22	0.44	0.22	37.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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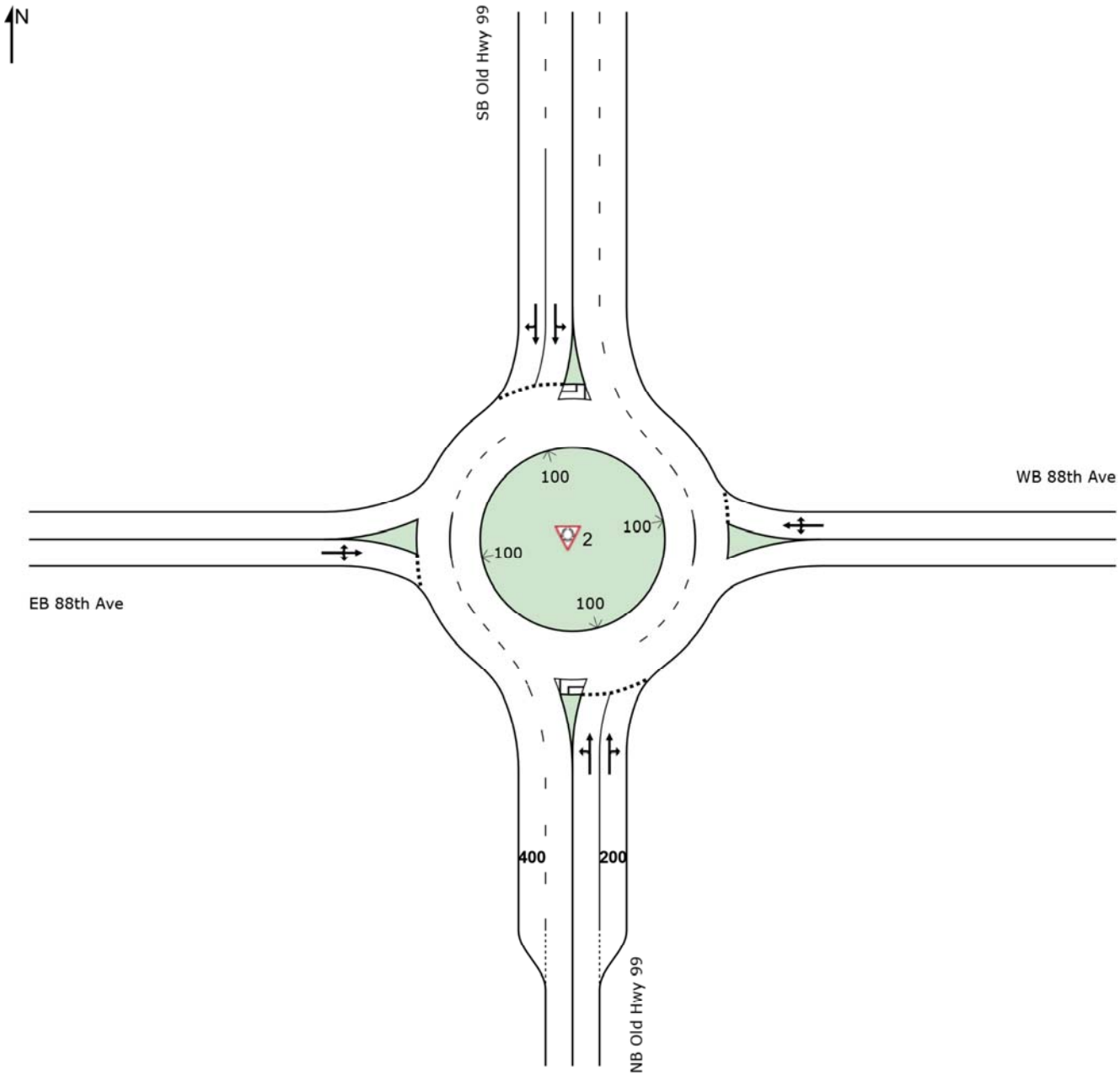
SITE LAYOUT

Site: 2 [PM 2040 Old Hwy 99-88th Ave - Land Use 2]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [PM 2025 Old Hwy 99-88th Ave - Baseline]

Projected 2025
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	15	1.0	0.138	10.5	LOS B	0.7	18.2	0.36	0.47	0.36	36.7
8	T1	340	1.0	0.138	4.6	LOS A	0.7	18.6	0.35	0.45	0.35	36.7
18	R2	1	1.0	0.138	4.7	LOS A	0.7	18.6	0.35	0.44	0.35	35.6
Approach		356	1.0	0.138	4.9	LOS A	0.7	18.6	0.35	0.45	0.35	36.7
East: WB 88th Ave												
1	L2	1	0.0	0.008	11.2	LOS B	0.0	0.6	0.40	0.53	0.40	36.5
6	T1	5	0.0	0.008	5.4	LOS A	0.0	0.6	0.40	0.53	0.40	36.3
16	R2	1	0.0	0.008	5.3	LOS A	0.0	0.6	0.40	0.53	0.40	35.3
Approach		7	0.0	0.008	6.2	LOS A	0.0	0.6	0.40	0.53	0.40	36.2
North: SB Old Hwy 99												
7	L2	1	1.0	0.418	9.9	LOS A	2.8	70.3	0.13	0.37	0.13	37.8
4	T1	850	1.0	0.418	4.0	LOS A	2.8	70.3	0.13	0.38	0.13	37.7
14	R2	250	1.0	0.336	4.2	LOS A	2.0	50.7	0.12	0.42	0.12	36.4
Approach		1101	1.0	0.418	4.1	LOS A	2.8	70.3	0.13	0.39	0.13	37.4
West: EB 88th Ave												
5	L2	185	2.0	0.307	13.1	LOS B	1.2	31.3	0.58	0.85	0.58	34.0
2	T1	1	2.0	0.307	7.2	LOS A	1.2	31.3	0.58	0.85	0.58	33.9
12	R2	50	2.0	0.307	7.2	LOS A	1.2	31.3	0.58	0.85	0.58	33.0
Approach		236	2.0	0.307	11.8	LOS B	1.2	31.3	0.58	0.85	0.58	33.8
All Vehicles		1700	1.1	0.418	5.3	LOS A	2.8	70.3	0.24	0.46	0.24	36.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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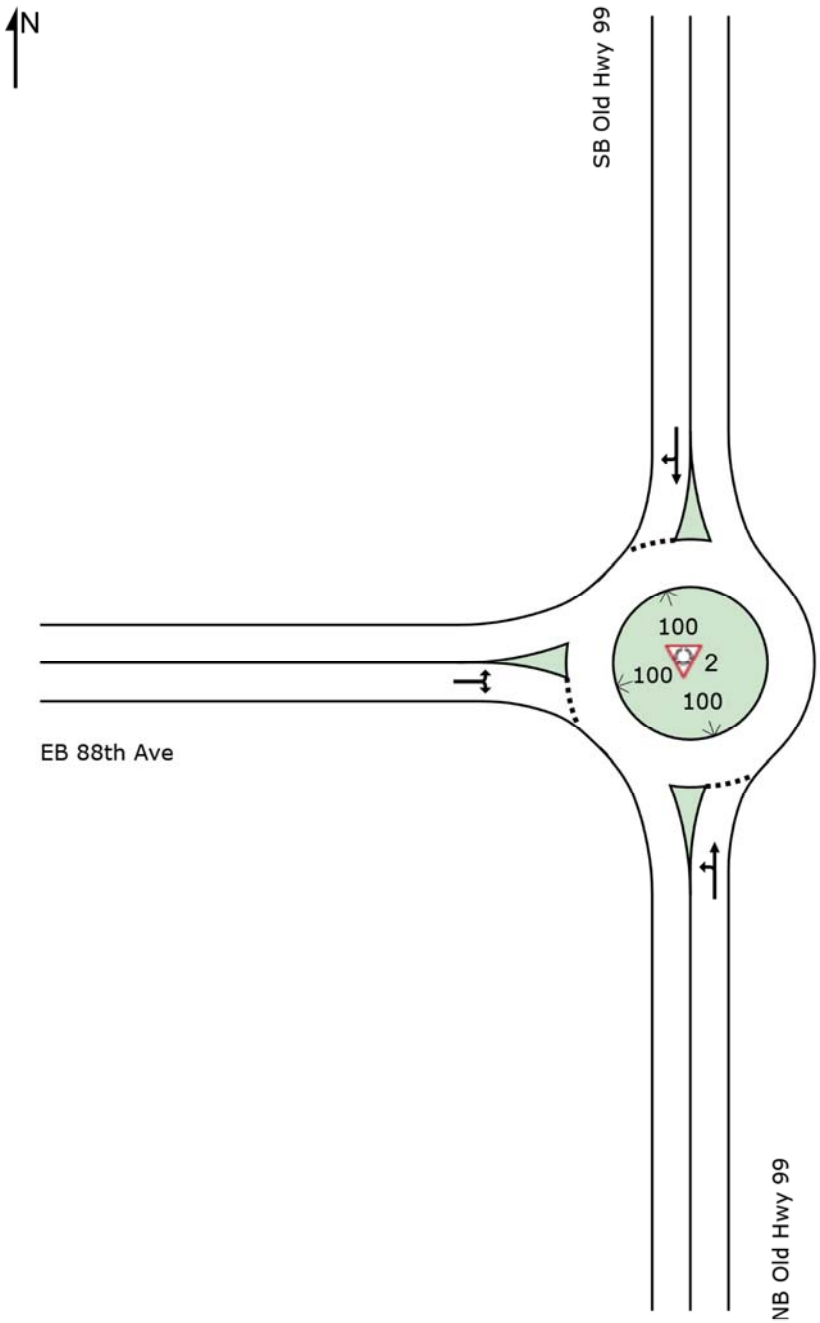
SITE LAYOUT

Site: 2 [PM 2025 Old Hwy 99-93rd Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout



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MOVEMENT SUMMARY

Site: 2 [PM 2025 Old Hwy 99-93rd Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	126	2.0	0.291	9.9	LOS A	2.0	49.8	0.14	0.47	0.14	36.8
8	T1	284	2.0	0.291	3.9	LOS A	2.0	49.8	0.14	0.47	0.14	36.7
Approach		411	2.0	0.291	5.7	LOS A	2.0	49.8	0.14	0.47	0.14	36.7
North: SB Old Hwy 99												
4	T1	816	1.0	0.633	4.8	LOS A	5.4	135.3	0.46	0.48	0.46	36.5
14	R2	26	1.0	0.633	4.9	LOS A	5.4	135.3	0.46	0.48	0.46	35.4
Approach		842	1.0	0.633	4.8	LOS A	5.4	135.3	0.46	0.48	0.46	36.5
West: EB 88th Ave												
5	L2	21	1.0	0.265	14.5	LOS B	1.8	44.7	0.80	0.82	0.80	35.1
12	R2	179	1.0	0.265	8.6	LOS A	1.8	44.7	0.80	0.82	0.80	33.9
Approach		200	1.0	0.265	9.2	LOS A	1.8	44.7	0.80	0.82	0.80	34.1
All Vehicles		1453	1.3	0.633	5.7	LOS A	5.4	135.3	0.42	0.52	0.42	36.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: SCJ ALLIANCE | Processed: Tuesday, May 5, 2020 12:34:58 PM
Project: N:\Projects\0625 City of Tumwater\0625.29 Tumwater Old Hwy 99 and 79th Ave Corridor Study\Phase 02 - Corridor Traffic Validation \Operations\Old Hwy 99-93th Ave.sip8

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2040
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	160	1365	10	5	825	155	40	15	15	205	5	110
Future Volume (vph)	160	1365	10	5	825	155	40	15	15	205	5	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	19.5	106.5	106.5	87.0	87.0		33.5	33.5		33.5	33.5	
Total Split (%)	13.9%	76.1%	76.1%	62.1%	62.1%		23.9%	23.9%		23.9%	23.9%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 135.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2040
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	160	1365	10	5	825	155	40	15	15	205	5	110
Future Volume (veh/h)	160	1365	10	5	825	155	40	15	15	205	5	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	160	1365	10	5	825	155	40	15	15	205	5	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	184	1394	1181	76	913	171	138	52	40	278	12	275
Arrive On Green	0.10	0.74	0.74	0.60	0.60	0.60	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1795	1885	1598	395	1531	288	538	292	226	1391	70	1538
Grp Volume(v), veh/h	160	1365	10	5	0	980	70	0	0	205	0	115
Grp Sat Flow(s),veh/h/ln	1795	1885	1598	395	0	1819	1055	0	0	1391	0	1608
Q Serve(g_s), s	11.8	91.8	0.2	1.6	0.0	63.4	4.0	0.0	0.0	9.2	0.0	8.5
Cycle Q Clear(g_c), s	11.8	91.8	0.2	74.2	0.0	63.4	12.5	0.0	0.0	21.8	0.0	8.5
Prop In Lane	1.00		1.00	1.00		0.16	0.57		0.21	1.00		0.96
Lane Grp Cap(c), veh/h	184	1394	1181	76	0	1084	231	0	0	278	0	287
V/C Ratio(X)	0.87	0.98	0.01	0.07	0.00	0.90	0.30	0.00	0.00	0.74	0.00	0.40
Avail Cap(c_a), veh/h	187	1418	1201	80	0	1104	274	0	0	320	0	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.4	16.5	4.6	60.6	0.0	23.8	51.5	0.0	0.0	54.8	0.0	48.8
Incr Delay (d2), s/veh	31.2	18.9	0.0	0.4	0.0	10.4	0.3	0.0	0.0	5.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	36.7	0.1	0.2	0.0	27.1	2.2	0.0	0.0	7.3	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.6	35.4	4.6	61.0	0.0	34.2	51.8	0.0	0.0	60.6	0.0	49.1
LnGrp LOS	F	D	A	E	A	C	D	A	A	E	A	D
Approach Vol, veh/h		1535			985			70			320	
Approach Delay, s/veh		41.0			34.3			51.8			56.5	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	19.3	85.6		29.5		104.8		29.5				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	14.0	81.5		28.0		101.0		28.0				
Max Q Clear Time (g_c+I1), s	13.8	76.2		14.5		93.8		23.8				
Green Ext Time (p_c), s	0.0	3.0		0.1		5.5		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		40.7	
HCM 6th LOS		D	

Intersection	
Int Delay, s/veh	51.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	30	1	145	1	805	15	130	1450	1
Future Vol, veh/h	2	1	5	30	1	145	1	805	15	130	1450	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	2	2	2	1	1	1	3	3	3
Mvmt Flow	2	1	5	30	1	145	1	805	15	130	1450	1

Major/Minor	Minor1			Minor2				Major1		Major2		
Conflicting Flow All	2599	2526	813	2529	2533	1451	1451	0	0	820	0	0
Stage 1	815	815	-	1711	1711	-	-	-	-	-	-	-
Stage 2	1784	1711	-	818	822	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.12	6.52	6.22	4.11	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.518	4.018	3.318	2.209	-	-	2.227	-	-
Pot Cap-1 Maneuver	17	28	382	~ 19	27	160	470	-	-	805	-	-
Stage 1	374	394	-	115	146	-	-	-	-	-	-	-
Stage 2	105	147	-	370	388	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	0	5	382	~ 5	5	160	470	-	-	805	-	-
Mov Cap-2 Maneuver	0	5	-	~ 5	5	-	-	-	-	-	-	-
Stage 1	373	393	-	115	24	-	-	-	-	-	-	-
Stage 2	2	25	-	363	387	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	178.7	$ 743.6	0	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	805	-	-	28	5	160	470	-	-
HCM Lane V/C Ratio	0.161	-	-	0.286	6.2	0.906	0.002	-	-
HCM Control Delay (s)	10.3	0	-	178.3	$ 3732.9	104.5	12.7	-	-
HCM Lane LOS	B	A	-	F	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.9	5.4	6.5	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2040
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	1115	410	20	450	1	220	1	60	1	2	1
Future Volume (vph)	1	1115	410	20	450	1	220	1	60	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			1410			1160			265	
Travel Time (s)		52.5			19.2			26.4			6.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	64.0	64.0	64.0	64.0	64.0		26.0	26.0		26.0	26.0	
Total Split (%)	71.1%	71.1%	71.1%	71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 82.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99

HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2040
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	1115	410	20	450	1	220	1	60	1	2	1
Future Volume (veh/h)	1	1115	410	20	450	1	220	1	60	1	2	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	1	1115	410	20	450	1	220	1	60	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	0	0	0
Cap, veh/h	638	1259	1067	169	1256	3	370	5	293	113	195	81
Arrive On Green	0.67	0.67	0.67	0.67	0.67	0.67	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	947	1885	1598	344	1880	4	1414	26	1563	253	1040	431
Grp Volume(v), veh/h	1	1115	410	20	0	451	220	0	61	4	0	0
Grp Sat Flow(s),veh/h/ln	947	1885	1598	344	0	1884	1414	0	1589	1723	0	0
Q Serve(g_s), s	0.0	33.2	7.9	3.5	0.0	7.2	10.2	0.0	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	33.2	7.9	36.6	0.0	7.2	10.3	0.0	2.2	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.98	0.25		0.25
Lane Grp Cap(c), veh/h	638	1259	1067	169	0	1258	370	0	298	388	0	0
V/C Ratio(X)	0.00	0.89	0.38	0.12	0.00	0.36	0.59	0.00	0.20	0.01	0.00	0.00
Avail Cap(c_a), veh/h	802	1585	1343	228	0	1585	556	0	507	607	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.6	9.3	5.1	24.2	0.0	5.0	26.9	0.0	23.7	22.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	5.4	0.2	0.3	0.0	0.2	1.5	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.0	1.5	0.3	0.0	1.6	3.5	0.0	0.8	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	14.7	5.3	24.5	0.0	5.2	28.5	0.0	24.0	22.8	0.0	0.0
LnGrp LOS	A	B	A	C	A	A	C	A	C	C	A	A
Approach Vol, veh/h		1526			471			281			4	
Approach Delay, s/veh		12.2			6.0			27.5			22.8	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.1		16.9		52.1		16.9				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		58.0		22.0		58.0		22.0				
Max Q Clear Time (g_c+I1), s		38.6		12.3		35.2		2.1				
Green Ext Time (p_c), s		2.7		0.7		10.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			12.8									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	1025	30	175	375	20	185
Future Vol, veh/h	1025	30	175	375	20	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	1025	30	175	375	20	185

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1055	0	1750	1025
Stage 1	-	-	-	-	1025	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.218	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	660	-	95	287
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	660	-	70	287
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3.9	36.1
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	244	287	-	-	660	-
HCM Lane V/C Ratio	0.082	0.645	-	-	0.265	-
HCM Control Delay (s)	21.1	37.7	-	-	12.4	-
HCM Lane LOS	C	E	-	-	B	-
HCM 95th %tile Q(veh)	0.3	4.1	-	-	1.1	-

Lanes, Volumes, Timings
1: Old Hwy 99 & Henderson Blvd

Baseline 2040 with 5 lanes
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	160	1365	10	5	825	155	40	15	15	205	5	110
Future Volume (vph)	160	1365	10	5	825	155	40	15	15	205	5	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	50		0	0		0	150		0
Storage Lanes	1		1	1		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1810			1652			415			1137	
Travel Time (s)		24.7			22.5			9.4			25.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			4			8	
Permitted Phases			6	2			4			8		
Detector Phase	1	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.5	25.5	25.5	26.5	26.5		33.5	33.5		33.5	33.5	
Total Split (s)	15.0	46.5	46.5	31.5	31.5		33.5	33.5		33.5	33.5	
Total Split (%)	18.8%	58.1%	58.1%	39.4%	39.4%		41.9%	41.9%		41.9%	41.9%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5			5.5		5.5	5.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Min	Min	Min	Min		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 62.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Old Hwy 99 & Henderson Blvd

HCM 6th Signalized Intersection Summary
1: Old Hwy 99 & Henderson Blvd

Baseline 2040 with 5 lanes
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	160	1365	10	5	825	155	40	15	15	205	5	110
Future Volume (veh/h)	160	1365	10	5	825	155	40	15	15	205	5	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	160	1365	10	5	825	155	40	15	15	205	5	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	1	1	1
Cap, veh/h	205	2158	963	290	1119	210	205	76	45	413	12	262
Arrive On Green	0.11	0.60	0.60	0.37	0.37	0.37	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1795	3582	1598	395	2985	561	520	449	264	1391	70	1538
Grp Volume(v), veh/h	160	1365	10	5	491	489	70	0	0	205	0	115
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	395	1777	1769	1233	0	0	1391	0	1608
Q Serve(g_s), s	4.2	11.8	0.1	0.4	11.6	11.6	0.3	0.0	0.0	2.4	0.0	3.1
Cycle Q Clear(g_c), s	4.2	11.8	0.1	1.2	11.6	11.6	3.4	0.0	0.0	5.8	0.0	3.1
Prop In Lane	1.00		1.00	1.00		0.32	0.57		0.21	1.00		0.96
Lane Grp Cap(c), veh/h	205	2158	963	290	666	663	327	0	0	413	0	274
V/C Ratio(X)	0.78	0.63	0.01	0.02	0.74	0.74	0.21	0.00	0.00	0.50	0.00	0.42
Avail Cap(c_a), veh/h	353	3035	1354	354	955	951	922	0	0	982	0	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	6.2	3.8	10.1	13.1	13.1	17.5	0.0	0.0	18.9	0.0	17.9
Incr Delay (d2), s/veh	2.4	0.3	0.0	0.0	1.8	1.8	0.1	0.0	0.0	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.8	0.0	0.0	3.5	3.5	0.6	0.0	0.0	2.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	6.5	3.8	10.1	14.9	14.9	17.6	0.0	0.0	19.2	0.0	18.3
LnGrp LOS	C	A	A	B	B	B	B	A	A	B	A	B
Approach Vol, veh/h		1535			985			70			320	
Approach Delay, s/veh		8.2			14.8			17.6			18.9	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.0	23.6		13.7		34.7		13.7				
Change Period (Y+Rc), s	5.5	5.5		5.5		5.5		5.5				
Max Green Setting (Gmax), s	9.5	26.0		28.0		41.0		28.0				
Max Q Clear Time (g_c+I1), s	6.2	13.6		5.4		13.8		7.8				
Green Ext Time (p_c), s	0.1	4.6		0.2		10.7		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.9	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	35.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Vol, veh/h	2	1	5	30	1	145	1	805	15	130	1450	1
Future Vol, veh/h	2	1	5	30	1	145	1	805	15	130	1450	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	300	275	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	2	2	2	1	1	1	3	3	3
Mvmt Flow	2	1	5	30	1	145	1	805	15	130	1450	1

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	1801	2526	410	2116	2533	726	1451	0	0	820	0	0
Stage 1	815	815	-	1711	1711	-	-	-	-	-	-	-
Stage 2	986	1711	-	405	822	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.54	6.54	6.94	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.52	4.02	3.32	2.21	-	-	2.23	-	-
Pot Cap-1 Maneuver	51	28	596	~ 29	27	367	468	-	-	798	-	-
Stage 1	342	394	-	94	144	-	-	-	-	-	-	-
Stage 2	270	147	-	593	386	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	8	4	596	~ 7	4	367	468	-	-	798	-	-
Mov Cap-2 Maneuver	8	4	-	~ 7	4	-	-	-	-	-	-	-
Stage 1	341	393	-	94	23	-	-	-	-	-	-	-
Stage 2	25	23	-	585	385	-	-	-	-	-	-	-

Approach	EB	WB	SE	NW
HCM Control Delay, s	$ 369.1	$ 468.9	0	4.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	WBLn2	SEL	SET	SER
Capacity (veh/h)	798	-	-	16	7	367	468	-	-
HCM Lane V/C Ratio	0.163	-	-	0.5	4.429	0.395	0.002	-	-
HCM Control Delay (s)	10.4	3.7	-	$ 369.9	$ 2563.5	21.1	12.7	-	-
HCM Lane LOS	B	A	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	1.3	5.2	1.8	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lanes, Volumes, Timings
3: 88th Ave & Old Hwy 99

Baseline 2040 with 5 lanes
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	1115	410	20	450	1	220	1	60	1	2	1
Future Volume (vph)	1	1115	410	20	450	1	220	1	60	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		0	150		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		3851			497			1160			265	
Travel Time (s)		52.5			6.8			26.4			6.0	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6		6	2			4			8		
Detector Phase	6	6	6	2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		26.0	26.0	
Total Split (s)	58.0	58.0	58.0	58.0	58.0		32.0	32.0		32.0	32.0	
Total Split (%)	64.4%	64.4%	64.4%	64.4%	64.4%		35.6%	35.6%		35.6%	35.6%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		4.0	4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60.1	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: 88th Ave & Old Hwy 99

HCM 6th Signalized Intersection Summary
3: 88th Ave & Old Hwy 99

Baseline 2040 with 5 lanes
PM Peak Hour

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	1115	410	20	450	1	220	1	60	1	2	1
Future Volume (veh/h)	1	1115	410	20	450	1	220	1	60	1	2	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	1	1115	410	20	450	1	220	1	60	1	2	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	0	0	0
Cap, veh/h	637	1774	884	281	2029	5	466	5	324	151	227	90
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	947	3205	1598	344	3666	8	1414	26	1563	211	1093	435
Grp Volume(v), veh/h	1	1115	410	20	220	231	220	0	61	4	0	0
Grp Sat Flow(s),veh/h/ln	947	1602	1598	344	1791	1884	1414	0	1589	1739	0	0
Q Serve(g_s), s	0.0	10.0	6.4	1.8	2.6	2.6	6.0	0.0	1.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.6	10.0	6.4	11.7	2.6	2.6	6.1	0.0	1.3	0.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.98	0.25		0.25
Lane Grp Cap(c), veh/h	637	1774	884	281	991	1043	466	0	330	468	0	0
V/C Ratio(X)	0.00	0.63	0.46	0.07	0.22	0.22	0.47	0.00	0.19	0.01	0.00	0.00
Avail Cap(c_a), veh/h	1290	3983	1985	518	2226	2341	1119	0	1063	1235	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.4	6.4	5.6	10.4	4.8	4.8	15.5	0.0	13.7	13.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	0.1	0.1	0.1	0.7	0.0	0.3	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.9	0.1	0.4	0.4	1.7	0.0	0.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	6.8	6.0	10.5	4.9	4.9	16.3	0.0	13.9	13.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	A
Approach Vol, veh/h		1526			471			281			4	
Approach Delay, s/veh		6.6			5.1			15.8			13.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.2		12.7		29.2		12.7				
Change Period (Y+Rc), s		6.0		4.0		6.0		4.0				
Max Green Setting (Gmax), s		52.0		28.0		52.0		28.0				
Max Q Clear Time (g_c+I1), s		13.7		8.1		12.0		2.1				
Green Ext Time (p_c), s		2.8		0.9		11.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			7.4									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	1025	30	175	375	20	185
Future Vol, veh/h	1025	30	175	375	20	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	450	300	-	300	0
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	1	1	2	2	1	1
Mvmt Flow	1025	30	175	375	20	185

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1055	0	1750	1025
Stage 1	-	-	-	-	1025	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	-	-	4.12	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.218	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	660	-	95	287
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	660	-	70	287
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	354	-

Approach	EB	WB	NE
HCM Control Delay, s	0	3.9	36.1
HCM LOS			E

Minor Lane/Major Mvmt	NELn1	NELn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	244	287	-	-	660	-
HCM Lane V/C Ratio	0.082	0.645	-	-	0.265	-
HCM Control Delay (s)	21.1	37.7	-	-	12.4	-
HCM Lane LOS	C	E	-	-	B	-
HCM 95th %tile Q(veh)	0.3	4.1	-	-	1.1	-

MOVEMENT SUMMARY

Site: 1 [PM 2040 Old Hwy 99-Henderson Blvd - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	2.0	0.361	10.8	LOS B	2.2	56.8	0.44	0.48	0.44	36.5
8	T1	825	2.0	0.361	4.9	LOS A	2.3	59.0	0.43	0.48	0.43	36.5
18	R2	155	2.0	0.361	4.9	LOS A	2.3	59.0	0.42	0.48	0.42	35.4
Approach		985	2.0	0.361	4.9	LOS A	2.3	59.0	0.43	0.48	0.43	36.4
East: WB Henderson Blvd												
1	L2	205	1.0	0.372	12.4	LOS B	1.7	41.8	0.61	0.85	0.64	34.7
6	T1	5	1.0	0.372	6.5	LOS A	1.7	41.8	0.61	0.85	0.64	34.6
16	R2	110	1.0	0.372	6.5	LOS A	1.7	41.8	0.61	0.85	0.64	33.6
Approach		320	1.0	0.372	10.3	LOS B	1.7	41.8	0.61	0.85	0.64	34.3
North: SB Old Hwy 99												
7	L2	160	1.0	0.562	11.1	LOS B	4.6	115.0	0.57	0.56	0.57	35.7
4	T1	1365	1.0	0.562	5.1	LOS A	4.7	119.5	0.55	0.51	0.55	35.9
14	R2	10	1.0	0.562	5.2	LOS A	4.7	119.5	0.54	0.48	0.54	34.9
Approach		1535	1.0	0.562	5.7	LOS A	4.7	119.5	0.56	0.52	0.56	35.9
West: EB Henderson Blvd												
5	L2	40	0.0	0.118	13.8	LOS B	0.5	12.8	0.72	0.87	0.72	34.2
2	T1	15	0.0	0.118	7.9	LOS A	0.5	12.8	0.72	0.87	0.72	34.1
12	R2	15	0.0	0.118	7.9	LOS A	0.5	12.8	0.72	0.87	0.72	33.1
Approach		70	0.0	0.118	11.3	LOS B	0.5	12.8	0.72	0.87	0.72	34.0
All Vehicles		2910	1.3	0.562	6.1	LOS A	4.7	119.5	0.52	0.55	0.53	35.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [PM 2040 Old Hwy 99-79th Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.288	10.4	LOS B	1.6	40.1	0.32	0.44	0.32	37.0
8	T1	805	3.0	0.288	4.5	LOS A	1.6	40.8	0.31	0.43	0.31	37.0
18	R2	15	3.0	0.288	4.6	LOS A	1.6	40.8	0.30	0.42	0.30	35.7
Approach		825	3.0	0.288	4.5	LOS A	1.6	40.8	0.30	0.43	0.30	36.9
East: WB 79th Ave												
1	L2	30	2.0	0.197	11.8	LOS B	0.7	18.3	0.52	0.72	0.52	36.3
6	T1	1	2.0	0.197	6.0	LOS A	0.7	18.3	0.52	0.72	0.52	36.2
16	R2	145	2.0	0.197	5.9	LOS A	0.7	18.3	0.52	0.72	0.52	35.1
Approach		176	2.0	0.197	6.9	LOS A	0.7	18.3	0.52	0.72	0.52	35.3
North: SB Old Hwy 99												
7	L2	130	1.0	0.507	10.0	LOS B	4.1	103.4	0.22	0.43	0.22	37.0
4	T1	1450	1.0	0.507	4.1	LOS A	4.1	104.0	0.21	0.40	0.21	37.2
14	R2	5	1.0	0.507	4.3	LOS A	4.1	104.0	0.20	0.37	0.20	36.1
Approach		1585	1.0	0.507	4.6	LOS A	4.1	104.0	0.21	0.40	0.21	37.2
West: EB 79th Ave												
5	L2	5	0.0	0.020	13.1	LOS B	0.1	1.9	0.61	0.73	0.61	35.2
2	T1	5	0.0	0.020	7.2	LOS A	0.1	1.9	0.61	0.73	0.61	35.1
12	R2	5	0.0	0.020	7.2	LOS A	0.1	1.9	0.61	0.73	0.61	34.1
Approach		15	0.0	0.020	9.2	LOS A	0.1	1.9	0.61	0.73	0.61	34.8
All Vehicles		2601	1.7	0.507	4.8	LOS A	4.1	104.0	0.26	0.43	0.26	36.9

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [PM 2040 Old Hwy 99-88th Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	20	1.0	0.174	10.6	LOS B	1.0	24.6	0.41	0.48	0.41	36.5
8	T1	450	1.0	0.174	4.7	LOS A	1.0	25.8	0.40	0.46	0.40	36.6
18	R2	1	1.0	0.174	4.8	LOS A	1.0	25.8	0.39	0.44	0.39	35.4
Approach		471	1.0	0.174	4.9	LOS A	1.0	25.8	0.40	0.46	0.40	36.6
East: WB 88th Ave												
1	L2	1	0.0	0.007	11.2	LOS B	0.0	0.6	0.44	0.54	0.44	36.4
6	T1	5	0.0	0.007	5.4	LOS A	0.0	0.6	0.44	0.54	0.44	36.2
16	R2	1	0.0	0.007	5.3	LOS A	0.0	0.6	0.44	0.54	0.44	35.2
Approach		7	0.0	0.007	6.2	LOS A	0.0	0.6	0.44	0.54	0.44	36.1
North: SB Old Hwy 99												
7	L2	1	1.0	0.538	9.9	LOS A	4.4	111.1	0.17	0.36	0.17	37.7
4	T1	1115	1.0	0.538	4.1	LOS A	4.4	111.1	0.16	0.38	0.16	37.6
14	R2	410	1.0	0.432	4.2	LOS A	3.0	75.7	0.16	0.42	0.16	36.3
Approach		1526	1.0	0.538	4.1	LOS A	4.4	111.1	0.16	0.39	0.16	37.2
West: EB 88th Ave												
5	L2	220	2.0	0.369	14.5	LOS B	1.8	46.7	0.69	0.91	0.75	33.3
2	T1	1	2.0	0.369	8.7	LOS A	1.8	46.7	0.69	0.91	0.75	33.2
12	R2	60	2.0	0.369	8.6	LOS A	1.8	46.7	0.69	0.91	0.75	32.3
Approach		281	2.0	0.369	13.2	LOS B	1.8	46.7	0.69	0.91	0.75	33.1
All Vehicles		2285	1.1	0.538	5.4	LOS A	4.4	111.1	0.28	0.47	0.28	36.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [PM 2040 Old Hwy 99-93rd Ave - Baseline]

Projected 2040
PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	175	2.0	0.389	9.9	LOS A	3.2	80.4	0.16	0.47	0.16	36.7
8	T1	375	2.0	0.389	3.9	LOS A	3.2	80.4	0.16	0.47	0.16	36.6
Approach		550	2.0	0.389	5.8	LOS A	3.2	80.4	0.16	0.47	0.16	36.6
North: SB Old Hwy 99												
4	T1	1025	1.0	0.820	7.0	LOS A	11.7	294.2	0.76	0.64	0.82	35.4
14	R2	30	1.0	0.820	7.0	LOS A	11.7	294.2	0.76	0.64	0.82	34.4
Approach		1055	1.0	0.820	7.0	LOS A	11.7	294.2	0.76	0.64	0.82	35.4
West: EB 88th Ave												
5	L2	20	1.0	0.405	18.2	LOS B	3.3	83.2	0.99	0.99	1.05	33.2
12	R2	185	1.0	0.405	12.3	LOS B	3.3	83.2	0.99	0.99	1.05	32.1
Approach		205	1.0	0.405	12.9	LOS B	3.3	83.2	0.99	0.99	1.05	32.2
All Vehicles		1810	1.3	0.820	7.3	LOS A	11.7	294.2	0.61	0.63	0.65	35.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [AM 2040 Old Hwy 99-Henderson Blvd - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	5	3.0	0.687	10.6	LOS B	7.2	183.1	0.45	0.44	0.45	36.5
8	T1	1835	3.0	0.687	4.6	LOS A	7.2	183.1	0.43	0.43	0.43	36.5
18	R2	195	3.0	0.687	4.7	LOS A	7.1	182.3	0.41	0.43	0.41	35.4
Approach		2035	3.0	0.687	4.7	LOS A	7.2	183.1	0.42	0.43	0.42	36.4
East: WB Henderson Blvd												
1	L2	135	2.0	0.633	19.1	LOS B	4.0	101.0	0.85	1.06	1.25	32.2
6	T1	5	2.0	0.633	13.2	LOS B	4.0	101.0	0.85	1.06	1.25	32.1
16	R2	220	2.0	0.633	13.1	LOS B	4.0	101.0	0.85	1.06	1.25	31.2
Approach		360	2.0	0.633	15.4	LOS B	4.0	101.0	0.85	1.06	1.25	31.6
North: SB Old Hwy 99												
7	L2	70	5.0	0.265	10.5	LOS B	1.6	42.8	0.37	0.50	0.37	36.2
4	T1	625	5.0	0.265	4.5	LOS A	1.7	44.6	0.37	0.46	0.37	36.5
14	R2	25	5.0	0.265	4.6	LOS A	1.7	44.6	0.36	0.43	0.36	35.4
Approach		720	5.0	0.265	5.1	LOS A	1.7	44.6	0.37	0.46	0.37	36.4
West: EB Henderson Blvd												
5	L2	5	0.0	0.017	11.5	LOS B	0.1	1.4	0.48	0.63	0.48	35.9
2	T1	5	0.0	0.017	5.6	LOS A	0.1	1.4	0.48	0.63	0.48	35.7
12	R2	5	0.0	0.017	5.6	LOS A	0.1	1.4	0.48	0.63	0.48	34.7
Approach		15	0.0	0.017	7.6	LOS A	0.1	1.4	0.48	0.63	0.48	35.4
All Vehicles		3130	3.3	0.687	6.0	LOS A	7.2	183.1	0.46	0.51	0.51	35.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-79th Ave - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	10	3.0	0.684	10.9	LOS B	6.4	162.8	0.50	0.49	0.50	36.3
8	T1	1910	3.0	0.684	5.0	LOS A	6.4	162.8	0.48	0.47	0.48	36.3
18	R2	60	3.0	0.684	5.0	LOS A	6.3	162.4	0.46	0.46	0.46	35.1
Approach		1980	3.0	0.684	5.0	LOS A	6.4	162.8	0.48	0.47	0.48	36.3
East: WB 79th Ave												
1	L2	10	5.0	0.373	16.7	LOS B	1.8	48.0	0.80	0.93	0.92	34.1
6	T1	1	5.0	0.373	10.8	LOS B	1.8	48.0	0.80	0.93	0.92	34.0
16	R2	175	5.0	0.373	10.8	LOS B	1.8	48.0	0.80	0.93	0.92	33.0
Approach		186	5.0	0.373	11.1	LOS B	1.8	48.0	0.80	0.93	0.92	33.1
North: SB Old Hwy 99												
7	L2	120	5.0	0.263	9.9	LOS A	1.5	39.6	0.12	0.48	0.12	36.7
4	T1	675	5.0	0.263	4.1	LOS A	1.6	40.3	0.11	0.41	0.11	37.3
14	R2	5	5.0	0.263	4.2	LOS A	1.6	40.3	0.11	0.37	0.11	36.3
Approach		800	5.0	0.263	4.9	LOS A	1.6	40.3	0.12	0.42	0.12	37.2
West: EB 79th Ave												
5	L2	1	0.0	0.003	11.4	LOS B	0.0	0.2	0.43	0.58	0.43	36.0
2	T1	1	0.0	0.003	5.5	LOS A	0.0	0.2	0.43	0.58	0.43	35.8
12	R2	1	0.0	0.003	5.4	LOS A	0.0	0.2	0.43	0.58	0.43	34.8
Approach		3	0.0	0.003	7.4	LOS A	0.0	0.2	0.43	0.58	0.43	35.5
All Vehicles		2969	3.7	0.684	5.4	LOS A	6.4	162.8	0.40	0.49	0.41	36.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-88th Ave - Sensitivity Scenario]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	55	1.0	0.791	26.0	LOS C	11.4	287.5	1.00	1.28	1.71	29.9
8	T1	1225	1.0	0.791	18.6	LOS B	13.3	336.4	1.00	1.24	1.68	30.6
18	R2	10	1.0	0.791	17.7	LOS B	13.3	336.4	1.00	1.21	1.66	30.2
Approach		1290	1.0	0.791	18.9	LOS B	13.3	336.4	1.00	1.24	1.68	30.6
East: WB 88th Ave												
1	L2	5	2.0	0.097	18.4	LOS B	0.5	12.8	0.86	0.93	0.86	33.1
6	T1	5	2.0	0.097	12.5	LOS B	0.5	12.8	0.86	0.93	0.86	33.0
16	R2	25	2.0	0.097	12.5	LOS B	0.5	12.8	0.86	0.93	0.86	32.1
Approach		35	2.0	0.097	13.3	LOS B	0.5	12.8	0.86	0.93	0.86	32.3
North: SB Old Hwy 99												
7	L2	40	3.0	0.167	10.0	LOS A	1.0	26.0	0.22	0.43	0.22	37.0
4	T1	225	3.0	0.167	4.1	LOS A	1.0	26.0	0.22	0.43	0.22	36.9
14	R2	230	3.0	0.167	4.4	LOS A	1.0	25.1	0.23	0.46	0.23	36.0
Approach		495	3.0	0.167	4.7	LOS A	1.0	26.0	0.22	0.44	0.22	36.5
West: EB 88th Ave												
5	L2	732	4.0	0.698	12.9	LOS B	6.2	159.8	0.63	0.79	0.71	33.5
2	T1	10	4.0	0.698	7.0	LOS A	6.2	159.8	0.63	0.79	0.71	33.4
12	R2	5	4.0	0.698	7.0	LOS A	6.2	159.8	0.63	0.79	0.71	32.5
Approach		747	4.0	0.698	12.8	LOS B	6.2	159.8	0.63	0.79	0.71	33.5
All Vehicles		2567	2.3	0.791	14.3	LOS B	13.3	336.4	0.74	0.95	1.11	32.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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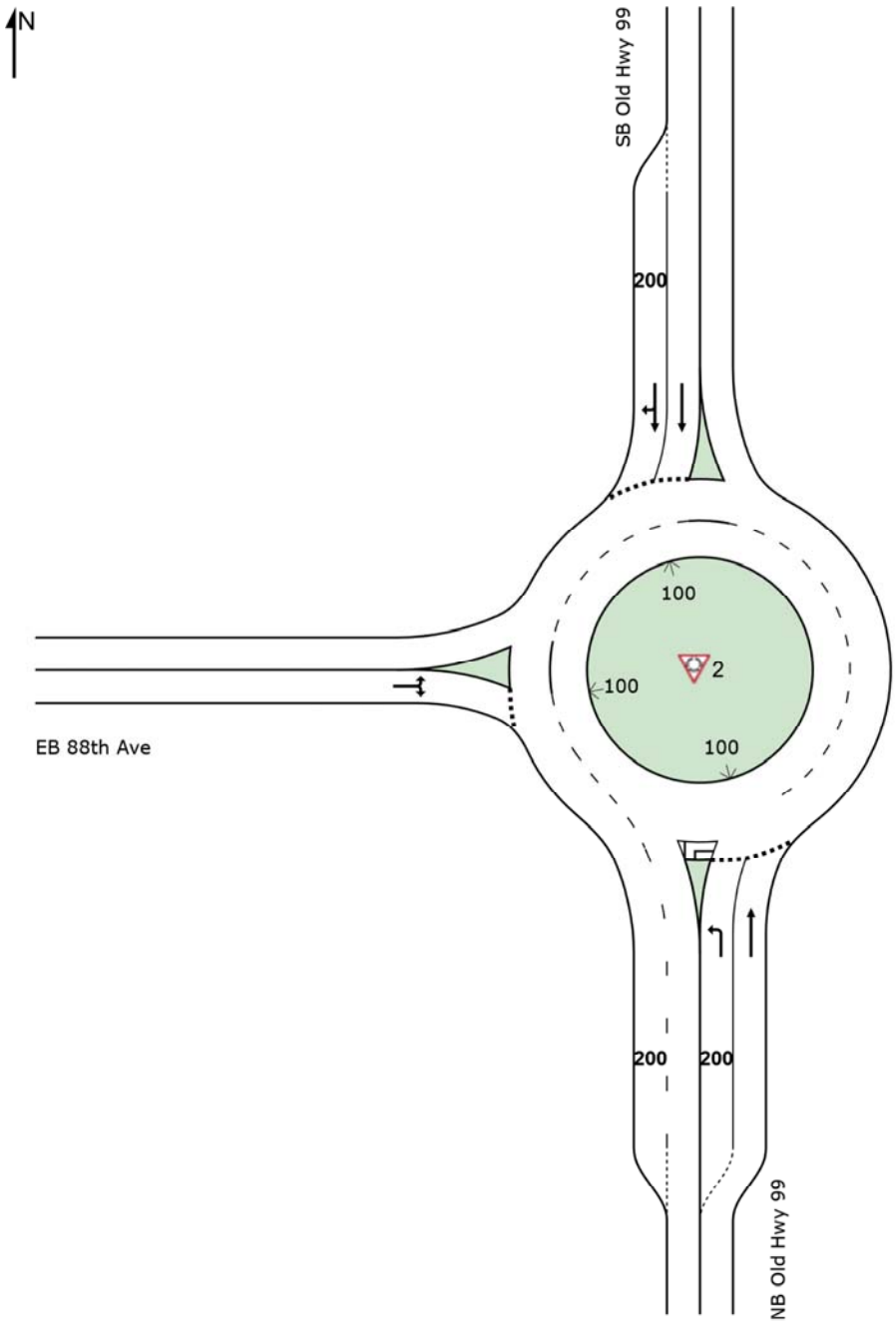
SITE LAYOUT

Site: 2 [AM 2040 Old Hwy 99-93rd Ave -Land Use 2 (2 NB lanes)]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout



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Organisation: SCJ ALLIANCE | Created: Tuesday, May 5, 2020 2:57:15 PM
Project: N:\Projects\0625 City of Tumwater\0625.29 Tumwater Old Hwy 99 and 79th Ave Corridor Study\Phase 02 - Corridor Traffic Validation

MOVEMENT SUMMARY

Site: 2 [AM 2040 Old Hwy 99-93rd Ave - Sensitivity Scenario multiple entry lanes]

Projected 2040
AM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: NB Old Hwy 99												
3	L2	225	1.0	0.183	9.9	LOS A	0.9	22.9	0.11	0.62	0.11	34.8
8	T1	1135	1.0	0.659	3.7	LOS A	6.8	170.3	0.18	0.34	0.18	37.9
Approach		1360	1.0	0.659	4.8	LOS A	6.8	170.3	0.17	0.39	0.17	37.3
North: SB Old Hwy 99												
4	T1	180	4.0	0.106	4.8	LOS A	0.4	10.2	0.28	0.45	0.28	36.9
14	R2	10	4.0	0.053	5.2	LOS A	0.2	4.8	0.29	0.46	0.29	35.6
Approach		190	4.0	0.106	4.8	LOS A	0.4	10.2	0.28	0.45	0.28	36.9
West: EB 88th Ave												
5	L2	20	6.0	0.158	10.5	LOS B	0.6	15.3	0.28	0.53	0.28	37.1
12	R2	155	6.0	0.158	4.6	LOS A	0.6	15.3	0.28	0.53	0.28	35.8
Approach		175	6.0	0.158	5.2	LOS A	0.6	15.3	0.28	0.53	0.28	35.9
All Vehicles		1725	1.8	0.659	4.8	LOS A	6.8	170.3	0.19	0.41	0.19	37.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX B
ALTERNATIVES ANALYSIS MEMO

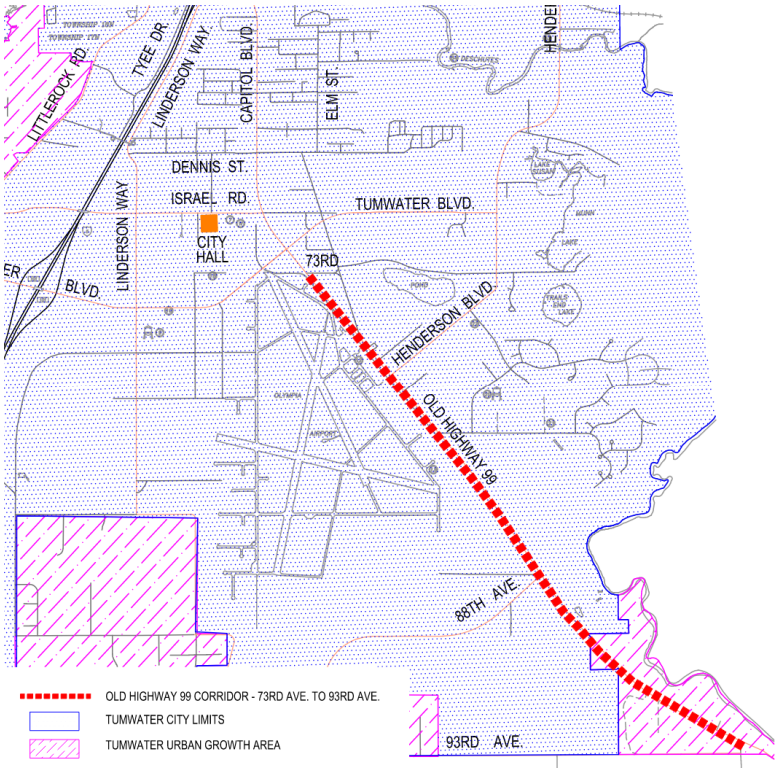
SCJ ALLIANCE
CONSULTING SERVICES

TECHNICAL MEMORANDUM

TO:	Mary Heather Ames
FROM:	Patrick Holm
DATE:	May 3, 2021
PROJECT #:	0625.29
SUBJECT:	Old Highway 99 Corridor Study – Alternatives Analysis – Methods Memo

BACKGROUND

The objective of the Old Highway 99 Corridor Study is to validate the transportation recommendations included in the Tumwater City Plan 2036, Transportation Master Plan November 2016 (Transportation Plan), manage necessary or recommended changes resulting from the validation process, and prepare preliminary design for the Old Highway 99 corridor improvements from approximately 73rd Avenue SE to 93rd Avenue SE. This project will perform transportation and alternatives analysis to determine and recommend roadway cross section and intersection improvements at Henderson Boulevard, 79th Avenue SE, 88th Avenue SE, and 93rd Avenue SE in context with the overall corridor improvements. The corridor study will build upon the Transportation Plan to ultimately define the footprint of improvements and progress a conceptual design.



Vicinity Map – Old Hwy 99 Corridor Study

PURPOSE

The purpose of this alternatives analysis is to analyze potential roadway cross sections proposed for the Old Highway 99 Corridor Study project. Each alternative will be rated based on performance and cost.

CONCEPTUAL ASSUMPTIONS/DESIGN CRITERIA

Old Highway 99 is a Minor Arterial based upon the classification of the City of Tumwater Development Guide (Development Guide). The City's Transportation Master Plan recommends a four-lane section from 73rd Avenue to 88th Avenue with roundabout intersections at Henderson Boulevard, 79th Avenue, 88th Avenue, and 93rd Avenue. All alternatives will meet these minimum requirements. Currently, the posted speed on the corridor varies from 35 mph to 50 mph.

PERFORMANCE RANKING

Criteria and Weighting

We based the following criteria (performance attributes) on the goals of the project and feedback from the first stakeholder's workshop.

The criteria follow:

- Bicycle Function/Usability
- Pedestrian Function/Usability
- Emergency Access Function/Usability
- Aesthetic
- Environmental Impact (Mazama Pocket Gopher Habitat)

Each criterion was originally weighed using pair-wise comparisons based on feedback from the stakeholder group.

PERFORMANCE ATTRIBUTE MATRIX

Old Highway 99 Corridor Study

Rate the relative importance of the attributes relative to the project's Need and Purpose.

Performance Attributes	Bike Function	Ped Function	EMS Function	Aesthetic	Enviro Impact	Total Count	PRIORITIES
Bike Function	A	A/B	C	A	A	3.5	**0.233**
Ped Function		B	C	B	B	3.5	**0.233**
EMS Function			C	C	C	5	**0.333**
Aesthetic				D	D	2	**0.133**
Enviro Impact					E	1	**0.067**
SUB-TOTALS						15.00	**1.00**

Figure 1 – Original Criteria Weighting

Scoring

Each of the six alternatives were scored against the criteria above by the stakeholder group at the second workshop. A rating of 0 to 10 was applied to each performance attribute.

Cost

We generated conceptual cost estimates for each alternative using industry standard cost breakdowns and unit cost values derived from WSDOT unit bid tabs. Each estimate was given a 20% contingency factor due to the conceptual nature. The calculated costs are based on 2021 dollars. We included the following cost-reducing ideas in the alternatives:

- Per discussion with the City, minimizing the roadway section with narrow lanes to decrease pavement.

In addition, the following opportunities may provide cost savings as design details progress:

- Integrating the stormwater mitigation into planter strips has the potential to minimize footprint for stormwater facilities.

Value Ranking

We ranked each alternative by its value. The value of each alternative is a function of the cost index and alternative score, where the cost index is the ratio of individual alternative cost divided by the sum of all alternative costs. The alternative value is determined by dividing the alternative score by the cost index. The alternative with the best value will be the recommended alternative.

$$Criteria\ Score = weight * rating$$

$$Alternative\ Score = \sum criteria\ scores$$

$$Cost\ Index = \frac{Alternative\ Cost}{\sum Alternative\ Cost}$$

$$Alternative\ Value = \frac{Alternative\ Score}{Cost\ Index}$$

Formulae for developing Value Index

ALTERNATIVES

(Exhibits of Cross Sections available in Attachment 1)

Alternative 1

Alternative 1 follows the standard City of Tumwater minor arterial prescription with the exception of lane width. The road has four 11-foot travel lanes and one 12-foot two-way left turn lane with 6-foot bike lanes on both sides. The cross section also features 6-foot sidewalks and 6-foot planter strips with a 2-foot buffer strip behind the back of walk. The total width of Alternative 1 is 96 feet.

Alternative 2

Alternative 2 shifts all pedestrian movement to the east side of Old Highway 99 with an 8-foot sidewalk and provides a 6-foot median in place of a two-way left turn lane. The bike lanes remain six feet but the inside lanes grow to 12 feet to provide shy distance for the median. The total width of Alternative 2 is 85 feet.

Alternative 3

Alternative 3 is similar to Alternative 2 but removes bikes from the northbound road and combines them with pedestrians on a 12-foot shared use path. The northbound outer lane grows to 13 feet. The total width of Alternative 3 is 85 feet.

Alternative 4

Alternative 4 builds on Alternative 3 and removes the bike lane from the southbound road and combines it with the eastside shared use path. This would require bikes to be re-routed to the shared use path at intersections bordering the study area. The total width of Alternative 4 is 81 feet.

Alternative 5

Alternative 5 removes bike lanes from the roadway and combines bicycle and pedestrian uses on their respective side with two 10-foot shared use paths. The inner travel lanes are 12 feet with the outer travel lanes at 13 feet. The total width of Alternative 5 is 92 feet.

Alternative 6

Alternative 6 provides the standard section on the northbound: two travel lanes (12-foot inner, 11-foot outer), 6-foot bike lane, 6-foot planter strip, and 6-foot sidewalk. On the southbound side, the bike and pedestrian traffic is separated from the road on a 10-foot shared use path as in Alternative 5. The total width of Alternative 6 is 92 feet

CONCLUSION

After Workshop 2, the stakeholder group completed the performance scoring and value ranking. This process yielded the following ranking:

1. Alternative 5
2. Alternative 1
3. Alternative 6
4. Alternative 3
5. Alternative 4
6. Alternative 2

The highest value alternative was Alternative 5 which has two 10-foot shared use paths and no bike lanes on the road.

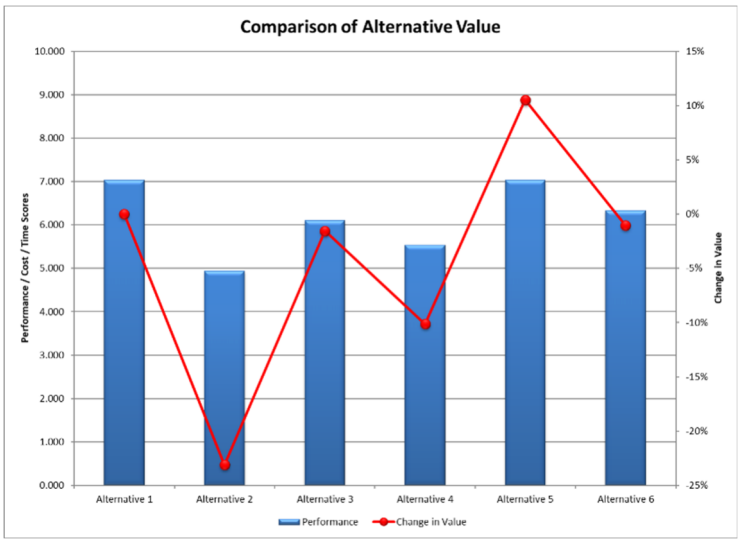


Figure 2 - Draft Ranking

After the workshop, the City reviewed the results internally and recommended revising steps of the process.

Revised Criteria

The original criteria had placed Environmental Impact as the least important criterion. The City advised to change Environmental Impact to be equally important as the highest criterion (EMS Function) because of the anticipated requirements and hard and soft costs of permitting for Federally listed endangered species. This was mentioned as a likely revision in Workshop 2.

These updated criteria ranking placed a higher value on footprint and impacted the rankings as follows:

1. Alternative 4
2. Alternative 3
3. Alternative 5
4. Alternative 2
5. Alternative 6
6. Alternative 1

The new highest value became Alternative 4 which had no bike lanes either direction and a 12-foot shared use path on the east side of Old Highway 99. The City felt bicycle users would still attempt to go southbound on the road in Alternative 4 introducing multi-modal conflict. For this reason, Alternative 4 was eliminated.

Two alternatives were modified to further reduce impact and look for the highest value:

Alternative 2B

Alternative 2B is the same as Alternative 2 with the exception of a 6-foot sidewalk instead of an 8-foot sidewalk which is more consistent with City sidewalk standards and reduces width.

Alternative 3B

Alternative 3B is the same as Alternative 3 but with a 10-ft sidewalk.

With these modified alternatives, the ranking shuffled slightly as follows:

1. Alternative 3B
2. Alternative 3
3. Alternative 2B
4. Alternative 5
5. Alternative 6
6. Alternative 1

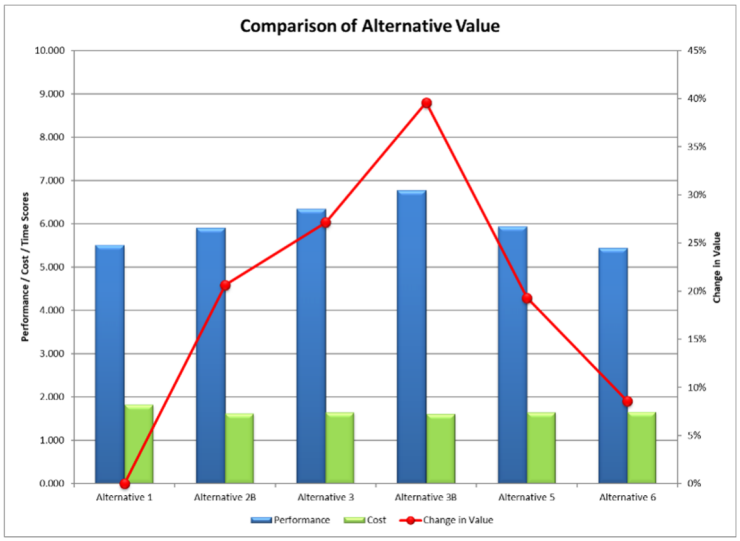


Figure 3 - Final Ranking

Recommendation

Alternative 3B has the highest value of the revised alternatives. It provides a wide shared use path for pedestrians and cyclists on the westside of Old Highway 99 while also allowing for cyclists to use a bike lane for southbound travel if they choose not to use the shared use path. This alternative will include implementation of a median along the corridor. As the design progresses, the design team will coordinate with stakeholders to coordinate appropriate breaks as needed for safety and access.

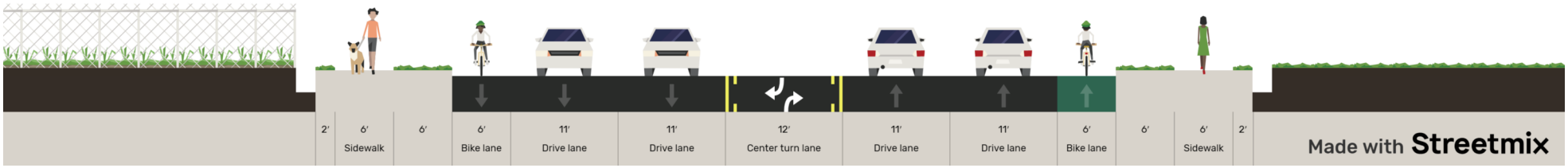
Attachment 1 – Alternative Cross Sections

Attachment 2 – Value Metrics Data

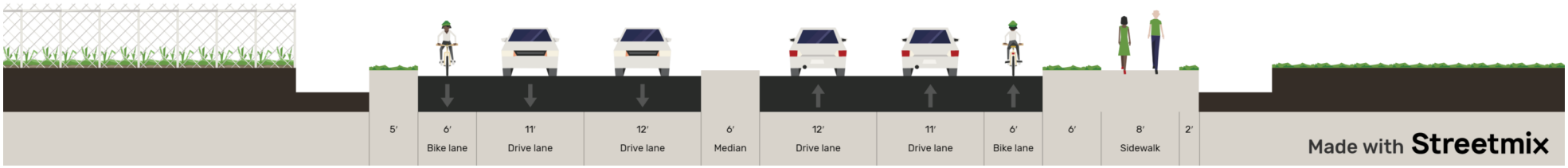
Attachment 3 – Cost Estimates

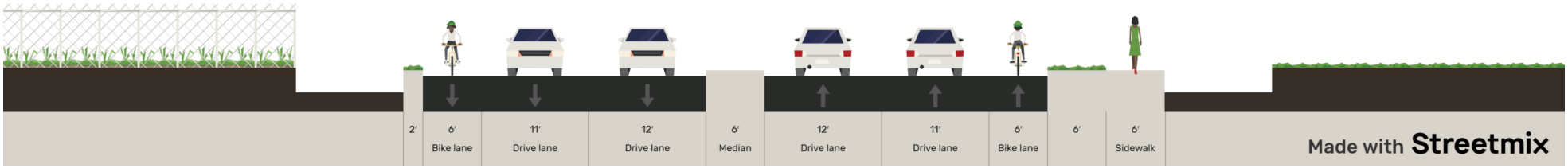
Attachment 1 – Cross Sections

Old Highway 99 - Full Section (Alt 1) – Streetmix

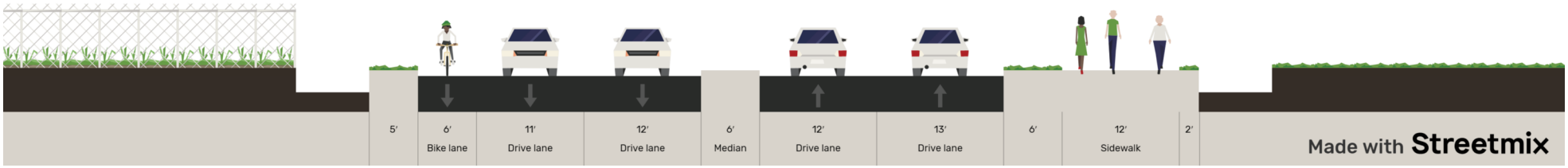


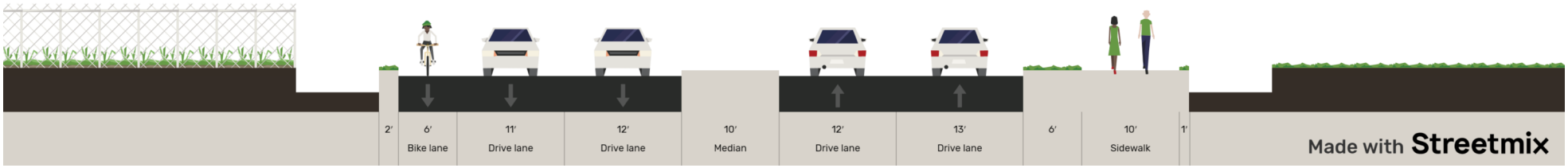
Old Highway 99 - Full Section (Alt 2) – Streetmix



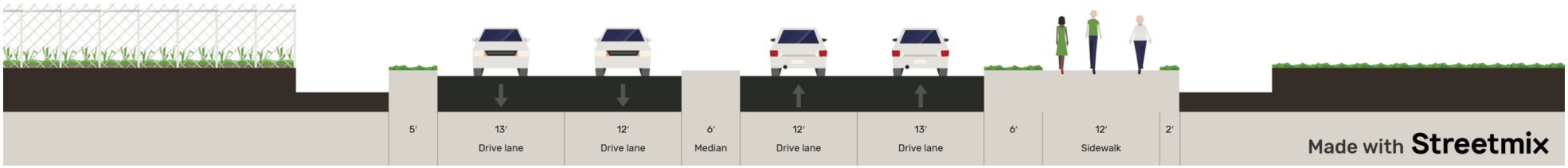

2′
6′
Bike lane
11′
Drive lane
12′
Drive lane
6′
Median
12′
Drive lane
11′
Drive lane
6′
Bike lane
6′
6′
Sidewalk
Made with Streetmix

Old Highway 99 - Full Section (Alt 3) – Streetmix

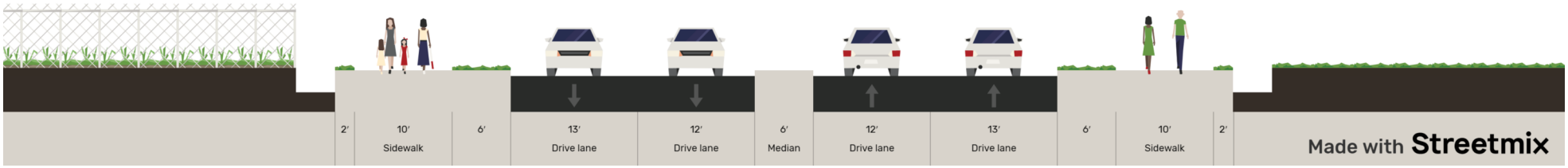



2′
6′
Bike lane
11′
Drive lane
12′
Drive lane
10′
Median
12′
Drive lane
13′
Drive lane
6′
10′
Sidewalk
1′
Made with Streetmix

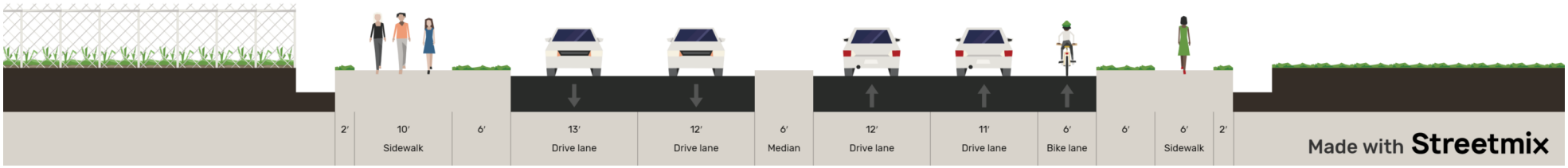
Old Highway 99 - Full Section (Alt 4) – Streetmix



Old Highway 99 - Full Section (Alt 5) – Streetmix



Old Highway 99 - Full Section (Alt 6) – Streetmix



Attachment 2 – Value Metrics Data

PERFORMANCE ATTRIBUTES

Old Hwy 99 Corridor Study

Performance Attribute	Definition	
Bike Function		
Scales		
Rating	**Rating Rationale**	**Rating**
Unacceptable	No Bike Facilities	0
	6-ft bike lanes on road	5
	Separated 12-ft shared use trail ((both directions) one side of road	5
	Separated 10-ft shared use trail one direction, 6-ft bike lane	7
	Separated 12-ft shared use trail one direction, 6-ft bike lane	8
	Separated 10-ft shared use trails on both sides of road	9
Ideal	Separated 10-ft shared use trails on both sides of road, bike lanes	10

Performance Attribute	Definition	
Ped Function		
Scales		
Rating	**Rating Rationale**	**Rating**
Unacceptable	No Pedestrian Facilities/No sidewalk	0
	8-ft sidewalk on eastside	5
	12-ft shared use path on eastside	7
	6-ft sidewalks on both sides with buffer	8
	10-ft shared use trail one side, 6-ft sidewalk other side	9
Ideal	10-ft shared use trail on both sides	10

Performance Attribute	Definition	
EMS Function		
Scales		
Rating	**Rating Rationale**	**Rating**
	No turnarounds	0
	Medians with turnarounds at intersections	3
Ideal	Two-way left turn lane for full access	10

Performance Attribute	Definition	
Aesthetic		
Scales		
Rating	**Rating Rationale**	**Rating**
	No vegetation	0
	Least vegetation	5
	Median vegetation	8
Ideal	Most vegetation	10

Performance Attribute	Definition	
Enviro Impact		
Scales		
Rating	**Rating Rationale**	**Rating**
	Most impact to west	0
	Second most impact to west	4
	Second least impact to west	8
Ideal	Least impact to west	10

PERFORMANCE ATTRIBUTE MATRIX

Old Highway 99 Corridor Study

Rate the relative importance of the attributes relative to the project's Need and Purpose.

Performance Attributes	Bike Function	Ped Function	EMS Function	Aesthetic	Enviro Impact	Total Count	PRIORITIES
Bike Function	A	A/B	C	A	E	2.5	**0.167**
Ped Function		B	C	B	E	2.5	**0.167**
EMS Function			C	C	C/E	4.5	**0.300**
Aesthetic				D	E	1	**0.067**
Enviro Impact					E	4.5	**0.300**
SUB-TOTALS						15.00	**1.00**

PERFORMANCE ASSESSMENT MATRIX

Old Hwy 99 Corridor Study

Alternative 1

Performance Attributes	Rationale	Rating
Bike Function	6-ft bike lanes	5
Ped Function	Sidewalks on both sides	8
EMS Function	TWLTL	10
Aesthetic	Least Vegetation	5
Enviro Impact	Most Impact	0

Alternative 2B Name

Performance Attributes	Rationale	Rating
Bike Function		5
Ped Function		5
EMS Function		3
Aesthetic	Least Vegetation	5
Enviro Impact	Least Impact	10

Alternative 3 Name

Performance Attributes	Rationale	Rating
Bike Function		8
Ped Function		7
EMS Function		3
Aesthetic	Middle amount of vegetation	8
Enviro Impact	Second Least	8

Alternative 3B Name

Performance Attributes	Rationale	Rating
Bike Function		7
Ped Function		7
EMS Function		3
Aesthetic	Middle amount of vegetation	8
Enviro Impact	Least Impact	10

Alternative 5 Name

Performance Attributes	Rationale	Rating
Bike Function		9
Ped Function		10
EMS Function		3
Aesthetic		10
Enviro Impact	Second to Most	4

Alternative 6 Name

Performance Attributes	Rationale	Rating
Bike Function		7

Ped Function		9
EMS Function		3
Aesthetic		10
Enviro Impact	Second to Most	4

Alternative No. 6 Name

Performance Attributes	Rationale	Rating
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

Alternative No. 7 Name

Performance Attributes	Rationale	Rating
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

Alternative No. 8 Name

Performance Attributes	Rationale	Rating
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

Alternative No. 9 Name

Performance Attributes	Rationale	Rating
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

Alternative No. 10 Name

Performance Attributes	Rationale	Rating
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

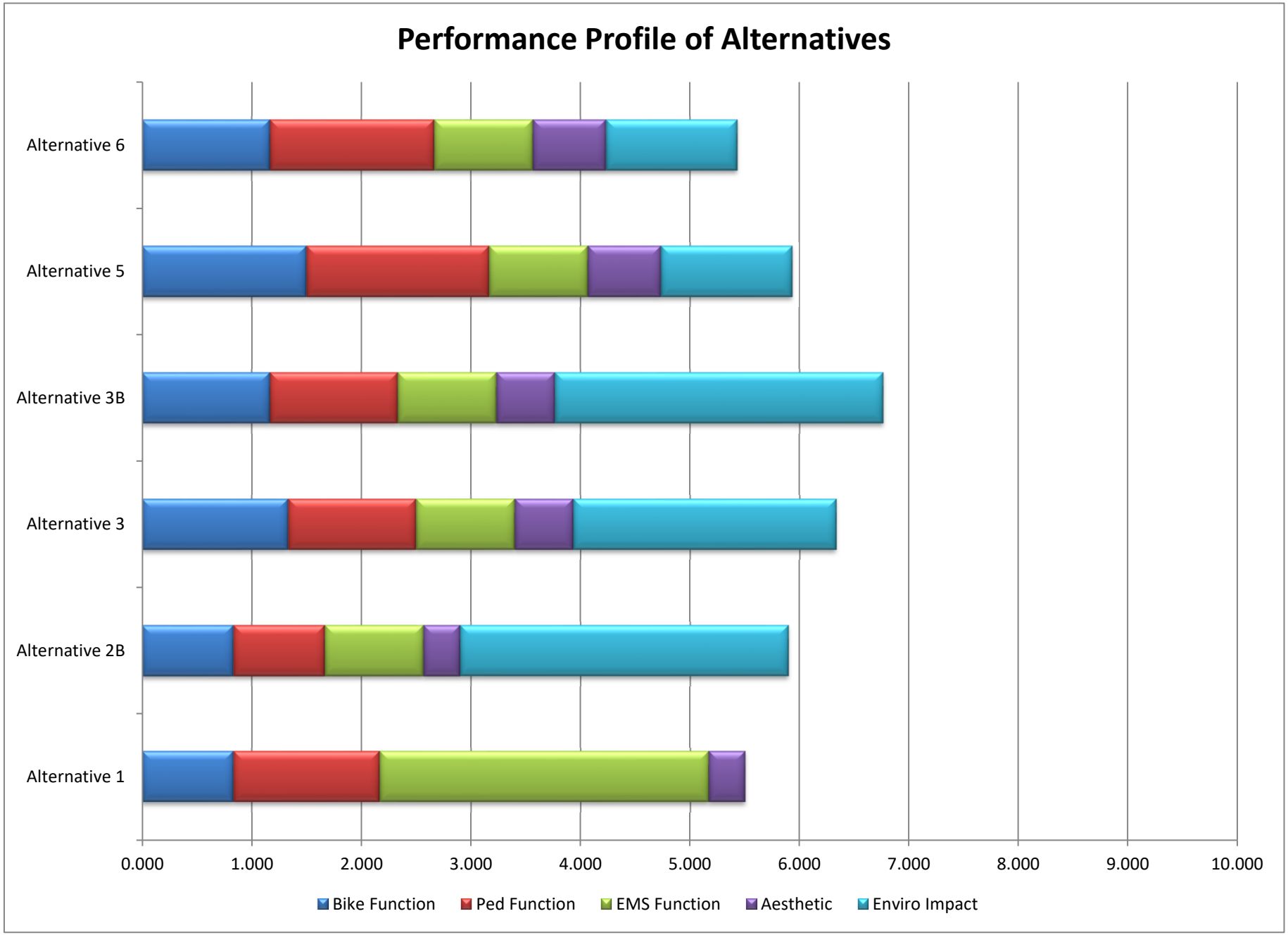
Alternative No. 11 Name

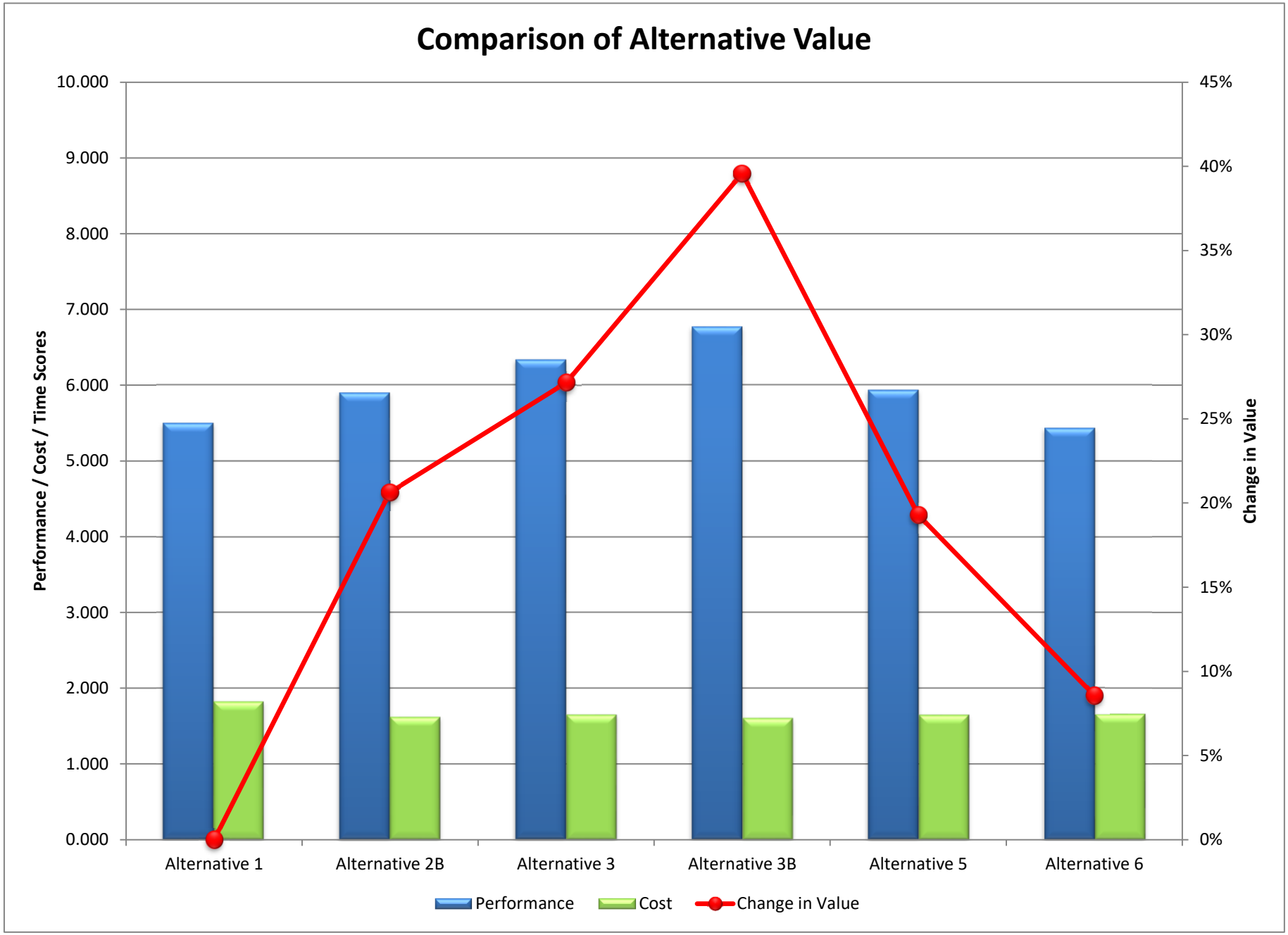
Performance Attributes	Rationale	Rating

Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		

Alternative No. 12 Name

Performance Attributes	**Rationale**	**Rating**
Bike Function		
Ped Function		
EMS Function		
Aesthetic		
Enviro Impact		


Performance Profile of Alternatives
Alternative 6
Alternative 5
Alternative 3B
Alternative 3
Alternative 2B
Alternative 1
0.000
1.000
2.000
3.000
4.000
5.000
6.000
7.000
8.000
9.000
10.000
Bike Function
Ped Function
EMS Function
Aesthetic
Enviro Impact


Comparison of Alternative Value
10.000
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Performance / Cost / Time Scores
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Change in Value
Alternative 1
Alternative 2B
Alternative 3
Alternative 3B
Alternative 5
Alternative 6
Performance
Cost
Change in Value

Attachment 3 – Cost Estimates

SCJ ALLIANCE
CONSULTING SERVICES

				ALT 1	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 13,140,445**
	Mobilization	LS	8%	1	$ 1,139,365
	Clearing and Grubbing	SF	$0.23	578,000	$ 132,691
	Roadway Excavation/Select Borrow	CY	$25.00	30,222	$ 755,556
	Roadway Section	SF	$5.13	578,000	$ 2,966,296
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	578,000	$ 1,314,950
	Sidewalk	SY	$45.83	11,333	$ 519,384
	Curb and Gutter	LF	$50.83	8,500	$ 432,038
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 4,440,000**
	Parcels	Value			$ 4,440,000
Engineering	**22%**				**$ 2,890,898**
	PE	12%			$ 1,576,853
	CN	10%			$ 1,314,045
	Subtotal				$ 20,471,344
	Conceptual Contingency/Miscellaneous (20%)				$ 2,628,089
	Total				**$ 23,100,000**

SCJ ALLIANCE
CONSULTING SERVICES

				ALT 2	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 12,242,767**
	Mobilization	LS	8%	1	$ 1,063,813
	Clearing and Grubbing	SF	$0.23	425,000	$ 97,567
	Roadway Excavation/Select Borrow	CY	$25.00	23,926	$ 598,148
	Roadway Section	SF	$5.13	493,000	$ 2,530,076
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	493,000	$ 1,121,575
	Sidewalk	SY	$45.83	11,333	$ 519,384
	Curb and Gutter	LF	$50.83	8,500	$ 432,038
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 3,152,700**
	Parcels	Value			$ 3,152,700
Engineering	**22%**				**$ 2,693,409**
	PE	12%			$ 1,469,132
	CN	10%			$ 1,224,277
	Subtotal				$ 18,088,876
	Conceptual Contingency/Miscellaneous (20%)				$ 2,448,553
	Total				**$ 20,540,000**

SCJ ALLIANCE
CONSULTING SERVICES

				ALT 3	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 12,342,668**
	Mobilization	LS	8%	1	$ 1,071,367
	Clearing and Grubbing	SF	$0.23	484,500	$ 111,226
	Roadway Excavation/Select Borrow	CY	$25.00	26,759	$ 668,981
	Roadway Section	SF	$5.13	459,000	$ 2,355,588
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	459,000	$ 1,044,225
	Sidewalk	SY	$45.83	17,000	$ 779,076
	Curb and Gutter	LF	$50.83	8,500	$ 432,038
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 3,390,000**
	Parcels	Value			$ 3,390,000
Engineering	**22%**				**$ 2,715,387**
	PE	12%			$ 1,481,120
	CN	10%			$ 1,234,267
	Subtotal				$ 18,448,054
	Conceptual Contingency/Miscellaneous (20%)				$ 2,468,534
	Total				**$ 20,920,000**

SCJ ALLIANCE
CONSULTING SERVICES

				ALT 3B	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 12,406,904**
	Mobilization	LS	8%	1	$ 1,077,336
	Clearing and Grubbing	SF	$0.23	467,500	$ 107,323
	Roadway Excavation/Select Borrow	CY	$25.00	25,815	$ 645,370
	Roadway Section	SF	$5.13	459,000	$ 2,355,588
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	459,000	$ 1,044,225
	Sidewalk	SY	$45.83	9,444	$ 432,820
	Curb and Gutter	LF	$50.83	17,000	$ 864,076
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 2,734,118**
	Parcels	Value			$ 2,734,118
Engineering	**22%**				**$ 2,729,519**
	PE	12%			$ 1,488,828
	CN	10%			$ 1,240,690
	Subtotal				$ 17,870,541
	Conceptual Contingency/Miscellaneous (20%)				$ 2,481,381
	Total				**$ 20,360,000**

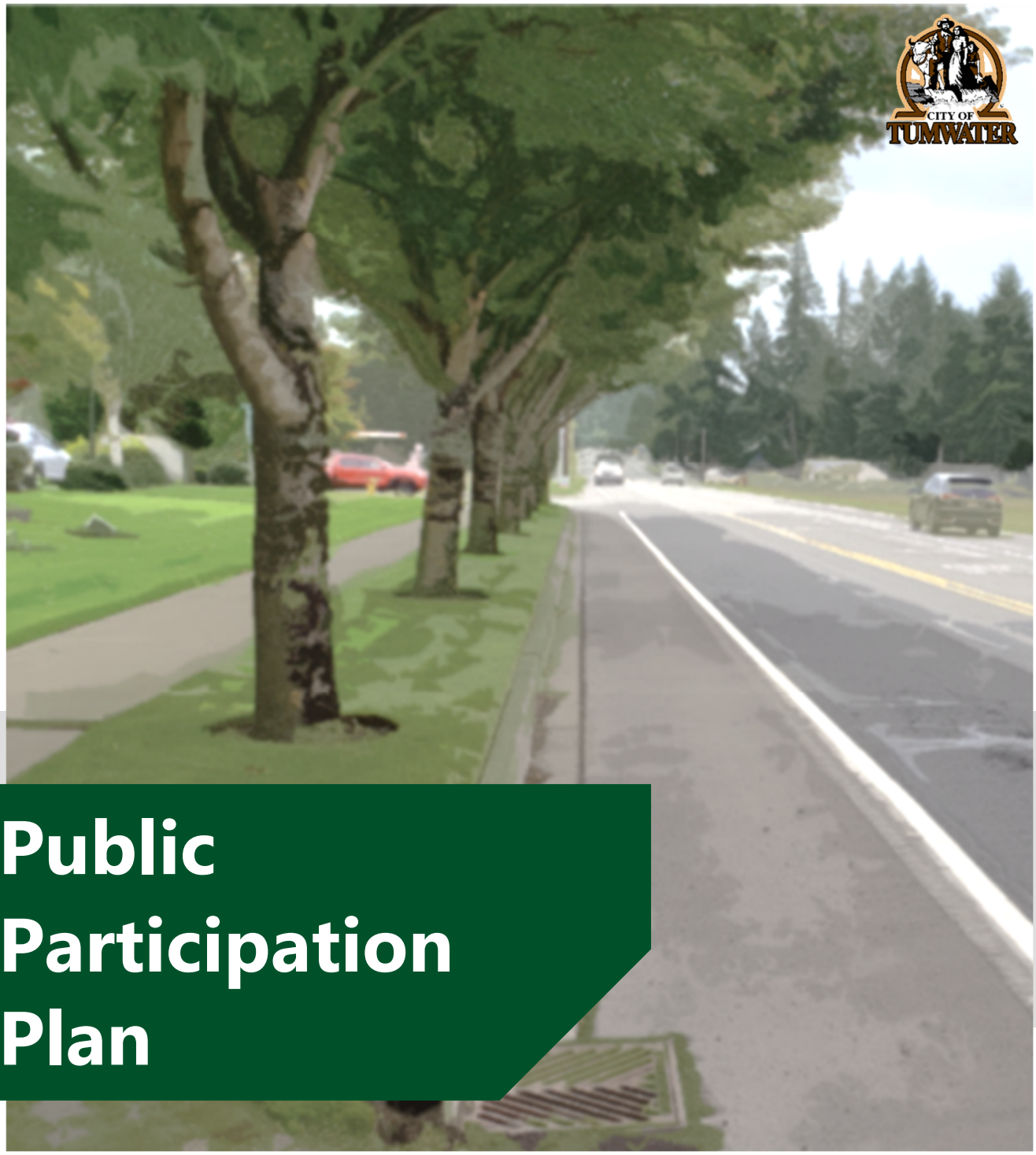
SCJ ALLIANCE
CONSULTING SERVICES

				ALT 5	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 12,520,190**
	Mobilization	LS	8%	1	$ 1,085,720
	Clearing and Grubbing	SF	$0.23	544,000	$ 124,885
	Roadway Excavation/Select Borrow	CY	$25.00	28,963	$ 724,074
	Roadway Section	SF	$5.13	425,000	$ 2,181,100
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	425,000	$ 966,875
	Sidewalk	SY	$45.83	24,556	$ 1,125,332
	Curb and Gutter	LF	$50.83	8,500	$ 432,038
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 3,110,000**
	Parcels	Value			$ 3,110,000
Engineering	**22%**				**$ 2,754,442**
	PE	12%			$ 1,502,423
	CN	10%			$ 1,252,019
	Subtotal				$ 18,384,632
	Conceptual Contingency/Miscellaneous (20%)				$ 2,504,038
	Total				**$ 20,890,000**

SCJ ALLIANCE
CONSULTING SERVICES

				ALT 6	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 12,606,457**
	Mobilization	LS	8%	1	$ 1,093,276
	Clearing and Grubbing	SF	$0.23	544,000	$ 124,885
	Roadway Excavation/Select Borrow	CY	$25.00	28,963	$ 724,074
	Roadway Section	SF	$5.13	459,000	$ 2,355,588
	Conveyance	LF	$62.30	8,500	$ 529,550
	Water Quality/Flow Control	SF	$2.28	459,000	$ 1,044,225
	Sidewalk	SY	$45.83	20,778	$ 952,204
	Curb and Gutter	LF	$50.83	8,500	$ 432,038
	Erosion Control	LF	$16.80	8,500	$ 142,800
	Roundabouts	EACH	$1,000,000	3	$ 3,000,000
	Illumination	LF	$78	8,500	$ 663,816
	Permanent Signing	LF	$4.00	8,500	$ 34,000
	Landscaping	LF	$60.00	8,500	$ 510,000
	Traffic Control	LS	$1,000,000	1	$ 1,000,000
Right-of-Way					**$ 3,110,000**
	Parcels	Value			$ 3,110,000
Engineering	**22%**				**$ 2,773,420**
	PE	12%			$ 1,512,775
	CN	10%			$ 1,260,646
	Subtotal				$ 18,489,877
	Conceptual Contingency/Miscellaneous (20%)				$ 2,521,291
	Total				**$ 21,020,000**

APPENDIX C
- PUBLIC PARTICIPATION PLAN



Public Participation Plan

City of Tumwater | Old Highway 99 Corridor Study (2020)

Introduction

Old Highway 99 was first assigned in the mid-1920s as the original north-south highway running along the West Coast of the United States. Extending from Blaine, Washington in the north to its southern terminus in Calexico, California, it ran 1,600 miles border to border.

In Washington State, this corridor spurred growth and commerce for more than 40 different communities as goods and travelers were able to quickly navigate from one city to the next. While this route has since lost many of its once daily travelers to Interstate 5 (I-5), the corridor still offers an identity that is closely linked to many of these early west coast cities. In recent years, many of these communities have invested in the revitalization of this route through main street projects, placemaking efforts and expanded boulevards.

At the local level, Old Highway 99 connects south Thurston County, Bush Prairie and the Olympia Regional Airport to the City of Tumwater and Interstate 5. Commercial and residential use levels have crept upwards in recent years, extending rush hours and lengthening vehicle queues.

Currently, there are no bike lanes along this stretch of the corridor and sidewalks are relegated to highly segmented portions connected to new construction. Pedestrians and bikes end up using the shoulder which is as narrow as 2 feet in some locations. With minimal lighting, this becomes especially challenging in the early and later hours of the day as non-motorized travel mixes with vehicle commuters and freight shipments.

Who

The City of Tumwater has received grant funding from the Federal Highway Administration (FHWA) through support from the Thurston Regional Planning Council (TRPC) and Washington State Department of Transportation (WSDOT) to develop safety and mobility strategies to fit in with the surrounding uses while providing for solutions to local and regional commuters, pedestrians, bikes, and freight.

This effort is intended to be completed in close collaboration and participation from local businesses, residents and property owners, tenants, various other stakeholders, and the general public.

What

The study will focus on validating previous traffic information to help inform decision making and strategize development. This stretch of Old Highway 99 also cuts through known Mazama Pocket gopher habitat which is a federally listed species and in close proximity to the Jack Davis Garry Oak Tree. Environmental reports will cover these topics and other environmental factors that will further inform the development of a corridor strategy.

The main goal of the study will be to advance design (intersections, cross-section, stormwater, etc.) and environmental documentation far enough to determine the following:

- Future right-of-way needs (areas and cost).
- Strategies to phase construction projects.
- Estimates for Mazama Pocket Gopher habitat credits per phased project.

Where

For the purposes of this planning effort, the project boundaries run along Old Highway 99 from 73rd Avenue to the southern boundary of the Urban Growth Area at 93rd Avenue. Neighboring parcels and street approaches will also be included within the evaluation and planning process.

When and How

Transportation touches everyone's daily life in some way. As a result, people tend to have a lot of interest, big ideas, and strong opinions when it comes to corridor development. A successful engagement process harnesses that energy and inspires community ownership, while adapting to new insights and feedback.

Stakeholders and community members supply the local knowledge, context, and information necessary to make informed project decisions. Early and often engagement of the residents and businesses who regularly use and depend on Old Highway 99 will be a key factor in the success of this project. This starts with the Public Participation Plan where we identify steps to ensure project transparency, open communication and multiple opportunities for feedback and collaboration.

1. **Virtual Public Workshop:** As a major transportation corridor within Thurston County, thousands of travelers and goods are funneled through this section of Old Highway 99 on a daily basis. It is important that experiences and expectations of these travelers are reflected in the decisions and outcomes of this project.

    - **Action:** A virtual workshop for the project corridor will be developed to offer community members an opportunity to learn about the project goals and provide location-based insights, pinpoint concerns, share ideas, upload images, and discuss topics with neighbors and other corridor users about the spaces they know and value.

    - **Format:** Opportunities to access, navigate, and participate within this virtual workshop will be distributed publicly across social media platforms, the City of Tumwater website, and other city communication channels (email, utility flyers, project website, etc.) The virtual public workshop will be accessible from any internet connected device.

    - **Timeline:** The virtual workshop will start in September 2020 and run through the end of October 2020. This timeline is intended to reduce as many barriers as possible by offering 24-hour availability and in-home access in a format that is flexible to community schedules.

    - **Outcome:** After this phase of outreach has concluded, submitted comments will be reviewed for similarities and new perspectives that can better inform and drive project tasks. Project alternatives and opportunities will then be evaluated based on community input and support.

2. **Project Specific Webpage:** In support of these outreach efforts, a project specific webpage will be developed as the primary information hub for updates, ongoing efforts, and project milestones.

    - **Action:** The webpage will provide an additional level of project transparency as project documents, contact information, opportunities for participation, and next steps will all be published and made publicly available.

- **Format:** The project webpage will be linked and accessible through the City of Tumwater website, with easy navigation and opportunities to provide comments and contact project leads.
- **Timeline:** The webpage will be released and promoted early in the project, allowing visitors to become familiar with the site, learn about the project phases, and identify opportunities for participation.
- **Outcome:** The webpage will ensure transparency throughout the project; providing timely updates; open communication channels, project milestones, and an opportunity to join the mailing list.

3. **Key Stakeholder Outreach/Informational Interviews:** Multiple agencies depend on this section of Old Highway 99 for continued operations and network access. These agencies have a unique understanding of this corridor as it represents a primary link within their daily activities and needs. Target stakeholders within this phase include Intercity Transit, Thurston Regional Planning Council, Thurston County, the Port of Olympia, Tumwater Emergency Services, Tumwater School District, and the Tumwater Traffic Team.
    - **Action:** A targeted outreach effort will be made to hear directly from each of these stakeholder groups; giving them an opportunity to identify any initial thoughts, needs, and concerns, while offering an opportunity for open dialog with the project team. One of the objectives of this phase is to identify site-specific details that may get overlooked at later stages in the process.
    - **Format:** Outreach within this phase will primarily take place via email or telephone depending on stakeholder preferences and available resources.
    - **Timeline:** This phase of outreach is intended to run concurrently with alternative development and refinement following feedback collected within previous phases of outreach. The goal is to have these informational interviews completed as early as possible to best inform project tasks and alternatives analysis.
    - **Outcome:** Once this phase of outreach has been completed, a summary document of frequently asked questions will be made available to the greater public via the project page.
4. **Virtual Project Open House:** Following the insights and ideas gathered throughout this process, a preliminary design will be developed for the corridor. To ensure these designs reflect the expectations of the community, a virtual project open house will be held in early 2021.
    - **Action:** The recommended preliminary corridor design will be shared publicly and distributed to the project webpage and mailing lists.
    - **Format:** The virtual open house will offer interested community members an opportunity to review the preliminary designs and provide feedback to the project team.
    - **Timeline:** The open house will be held in early 2021.
    - **Outcome:** The project team will use the collected input to refine the project into a final design.
5. **City Council Briefings:** To ensure the project is reflective of City goals and community insights, Councilmembers will receive updates on project findings, milestones, and alternatives.

- **Action:** City Council will receive project briefings at two public meetings to review project materials, progress, and recommendations.
- **Format:** Council briefings will take place at two regularly scheduled public meetings. Face to face video presentations from the project leads will promote clarity and open dialogue.
- **Timeline:** Two Council briefings are currently scheduled. The first will take place near the project's midpoint to update the Council on project milestones, findings, and initial renderings. The second briefing will take place near the project's conclusion with refined renderings, deliverables, insights from the community.
- **Outcome:** The intent of this phase is to ensure Councilmembers are well informed and have multiple opportunities to provide targeted guidance to the project leads.

COVID-19

Given the ongoing and variable health risks associated with in person communication, all outreach efforts have been developed for online or telephone-based communication channels. If public gatherings and in person conversations are deemed safe by licensed state health practitioners before the completion of this project, the public participation plan may be revisited.

APPENDIX D
- PROJECT PHASE ESTIMATES

SCJ ALLIANCE
CONSULTING SERVICES

				Phase 1	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 2,636,099**
	Mobilization	LS	8%	1	$ 230,899
	Roundabout	EACH	$1,890,000	1	$ 1,890,000
	Illumination	LF	$78	3,800	$ 300,000
	Permanent Signing	LF	$4.00	3,800	$ 15,200
	Traffic Control	LS	$200,000	1	$ 200,000
	Subtotal Contruction				$ 2,636,099
	Conceptual Contingency/Miscellaneous (20%)				$ 527,220
	Total Construction				$ 3,163,319
	PE		12%		$ 379,598
	CM		15%		$ 474,498
	ROW		Value		$ 900,000
	Total				**$ 4,920,000**

SCJ ALLIANCE
CONSULTING SERVICES

				Phase 2	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 6,868,160**
	Mobilization	LS	8%	1	$ 601,591
	Clearing and Grubbing	SF	$0.23	312,800	$ 71,809
	Roadway Excavation/Select Borrow	CY	$25.00	13,459	$ 336,481
	Roadway Section	SF	$5.13	294,400	$ 1,510,861
	Conveyance	LF	$62.30	4,600	$ 286,580
	Water Quality/Flow Control	SF	$2.28	294,400	$ 669,760
	Sidewalk	SY	$45.83	3,067	$ 140,539
	Curb and Gutter	LF	$101.66	4,600	$ 467,618
	Erosion Control	LF	$16.80	4,600	$ 77,280
	Roundabout	EACH	$1,890,000	1	$ 1,890,000
	Illumination	LF	$78	4,600	$ 359,242
	Permanent Signing	LF	$4.00	4,600	$ 18,400
	Landscaping	LF	$30.00	4,600	$ 138,000
	Traffic Control	LS	$300,000	1	$ 300,000
	Subtotal Contruction				$ 6,868,160
	Conceptual Contingency/Miscellaneous (20%)				$ 1,373,632
	Total Construction				$ 8,241,792
	PE		12%		$ 989,015
	CM		15%		$ 1,236,269
	ROW		Value		$ 3,750,000
	Total				**$ 14,220,000**

SCJ ALLIANCE
CONSULTING SERVICES

				Phase 3	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 5,977,245**
	Mobilization	LS	8%	1	$ 523,554
	Clearing and Grubbing	SF	$0.23	185,000	$ 42,470
	Roadway Excavation/Select Borrow	CY	$25.00	10,826	$ 270,648
	Roadway Section	SF	$5.13	236,800	$ 1,215,258
	Conveyance	LF	$62.30	3,700	$ 230,510
	Water Quality/Flow Control	SF	$2.28	236,800	$ 538,720
	Sidewalk	SY	$45.83	2,467	$ 113,042
	Curb and Gutter	LF	$101.66	3,700	$ 376,127
	Erosion Control	LF	$16.80	3,700	$ 62,160
	Roundabouts	EACH	$1,890,000	1	$ 1,890,000
	Illumination	LF	$78	3,700	$ 288,955
	Permanent Signing	LF	$4.00	3,700	$ 14,800
	Landscaping	LF	$30.00	3,700	$ 111,000
	Traffic Control	LS	$300,000	1	$ 300,000
	Subtotal Contruction				$ 5,977,245
	Conceptual Contingency/Miscellaneous (20%)				$ 1,195,449
	Total Construction				$ 7,172,694
	PE		12%		$ 860,723
	CM		15%		$ 1,075,904
	ROW		Value		$ 1,990,000
	Total				**$ 11,100,000**

SCJ ALLIANCE
CONSULTING SERVICES

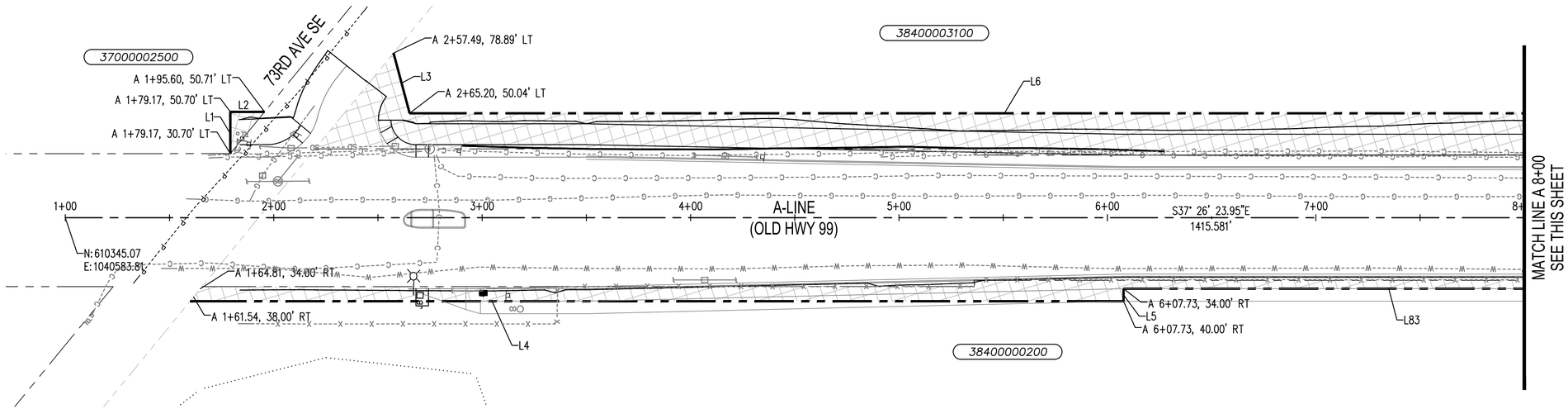
				Phase 4	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 2,096,746**
	Mobilization	LS	8%	1	$ 183,657
	Clearing and Grubbing	SF	$0.23	136,800	$ 31,405
	Roadway Excavation/Select Borrow	CY	$25.00	6,578	$ 164,444
	Roadway Section	SF	$5.13	110,400	$ 566,573
	Conveyance	LF	$62.30	2,400	$ 149,520
	Water Quality/Flow Control	SF	$2.28	110,400	$ 251,160
	Sidewalk	SY	$45.83	3,200	$ 146,650
	Curb and Gutter	LF	$50.83	2,400	$ 121,987
	Erosion Control	LF	$16.80	2,400	$ 40,320
	Illumination	LF	$78	2,400	$ 187,430
	Permanent Signing	LF	$4.00	2,400	$ 9,600
	Landscaping	LF	$60.00	2,400	$ 144,000
	Traffic Control	LS	$100,000	1	$ 100,000
	Subtotal Contruction				$ 2,096,746
	Conceptual Contingency/Miscellaneous (20%)				$ 419,349
	Total Construction				$ 2,516,095
	PE		12%		$ 301,931
	CM		15%		$ 377,414
	ROW		Value		$ 580,000
	Total				**$ 3,780,000**

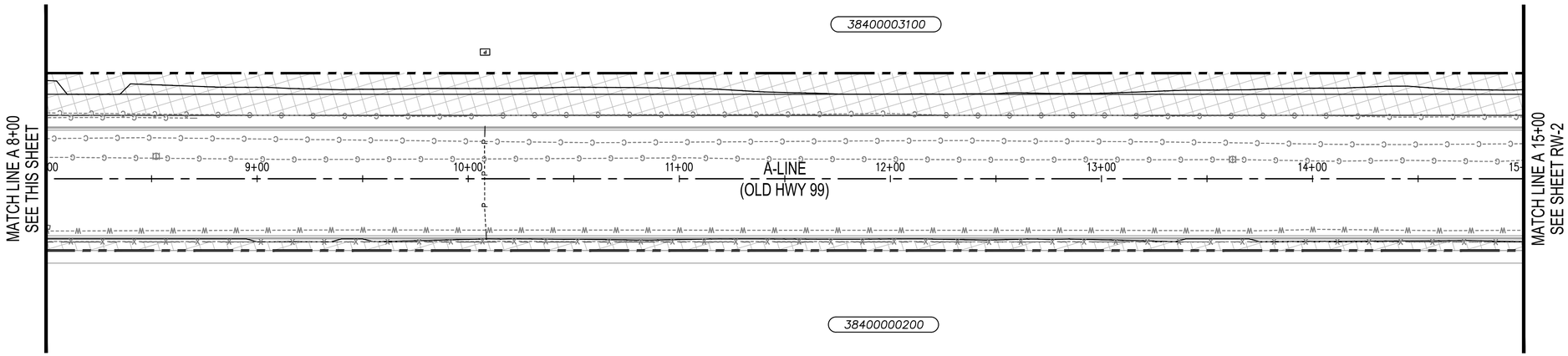
SCJ ALLIANCE
CONSULTING SERVICES

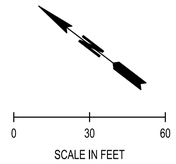
				Phase 5	
Element	**Element Based Upon**	**Unit**	**Unit Cost**	**Estimate Measurement**	
Roadwork	**Estimated Quantities**				**$ 6,021,285**
	Mobilization	LS	8%	1	$ 527,412
	Clearing and Grubbing	SF	$0.23	225,500	$ 51,768
	Roadway Excavation/Select Borrow	CY	$25.00	11,237	$ 280,926
	Roadway Section	SF	$5.13	188,600	$ 967,895
	Conveyance	LF	$62.30	4,100	$ 255,430
	Water Quality/Flow Control	SF	$2.28	188,600	$ 429,065
	Sidewalk	SY	$45.83	5,467	$ 250,526
	Curb and Gutter	LF	$50.83	8,200	$ 416,790
	Erosion Control	LF	$16.80	4,100	$ 68,880
	Roundabouts	EACH	$1,890,000	1	$ 1,890,000
	Illumination	LF	$78	4,100	$ 320,194
	Permanent Signing	LF	$4.00	4,100	$ 16,400
	Landscaping	LF	$60.00	4,100	$ 246,000
	Traffic Control	LS	$300,000	1	$ 300,000
	Subtotal Contruction				$ 6,021,285
	Conceptual Contingency/Miscellaneous (20%)				$ 1,204,257
	Total Construction				$ 7,225,542
	PE		12%		$ 867,065
	CM		15%		$ 1,083,831
	ROW		Value		$ 2,220,000
	Total				**$ 11,400,000**

APPENDIX E
- CONCEPT RIGHT OF WAY PLANS AND ESTIMATE

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M







LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE

LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L1	20.00	N52° 32' 25"E	
L2	16.43	S37° 27' 35"E	
L3	29.86	S37° 35' 03"W	
L4	447.83	S37° 26' 24"E	
L5	6.00	N52° 33' 36"E	
L6	1423.27	S37° 26' 17"E	
L83	907.85	S37° 26' 24"E	

OWNERSHIP TABLE

PARCEL NO.	R/W	TCE
37000002500	164 SF	---
38400003100	28,795 SF	---
38400000200	128,290 SF	1,508 SF

EXISTING LEGEND

- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- W W — EXISTING WATER MAIN
- OH OH — OVERHEAD POWER LINE
- P P — UNDERGROUND POWER LINE
- C C — UNDERGROUND TELECOMMUNICATIONS LINE
- SD SD — EXISTING STORM DRAIN LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2

△	REVISIONS	DATE	BY
	PRELIMINARY		

DESIGNED BY: DESIGNER NAME
DRAWN BY: DRAFTER NAME
CHECKED BY: ENGINEER NAME

ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-ROW-01

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
SCJALLIANCE.COM

CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

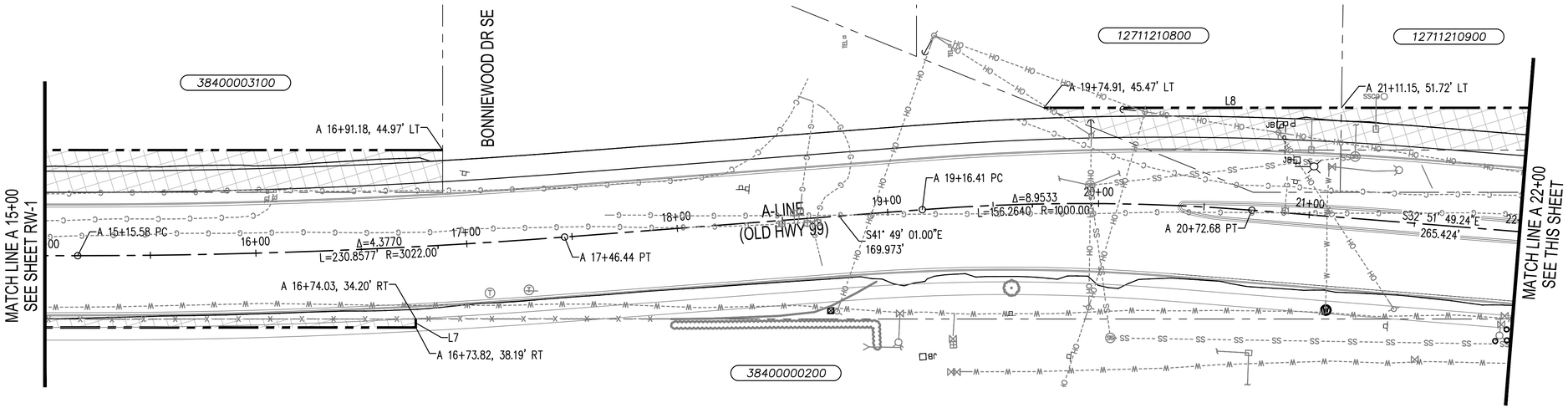
OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

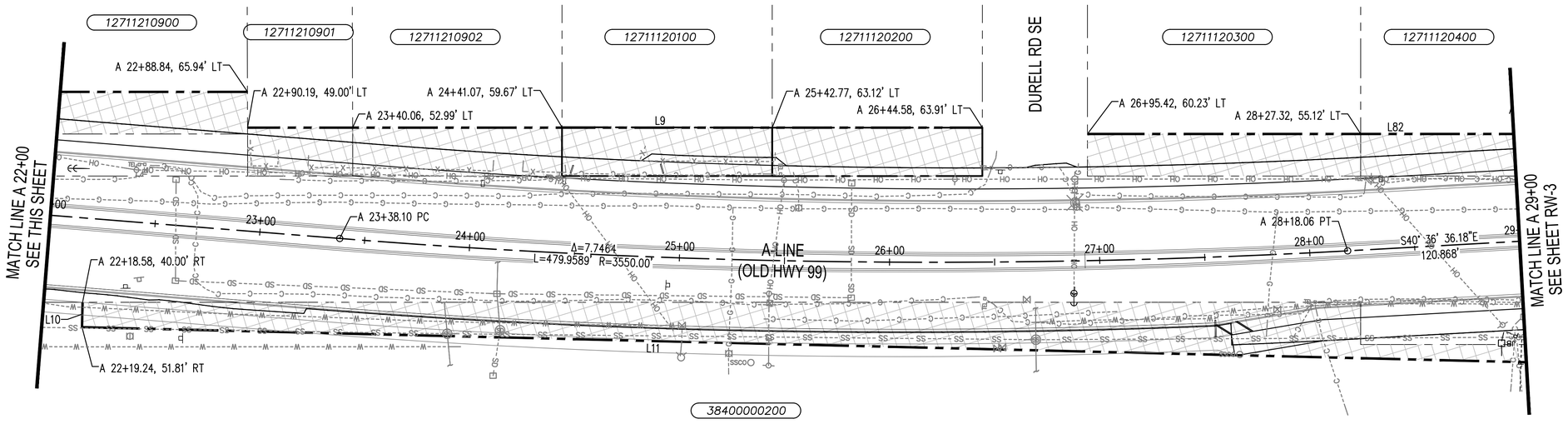
RIGHT-OF-WAY PLAN
A 1+00 - A 15+00

DRAWING No.: RW-1
SHEET No.: 1 OF 14

Oct. 28, 2022, 11:10:47am – User: davidcrawford
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79th AVE CORRIDOR STUDY\CADD\EXHIBITS\RIGHT OF WAY\0625.29-ROW-01.DWG

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M





0 30 60
SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE

LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L7	4.00	N52° 33' 36"E	
L8	319.23	S37° 26' 24"E	
L9	349.61	S37° 26' 24"E	
L10	11.83	N53° 56' 56"E	
L11	786.00	N36° 03' 04"W	
L82	260.42	S37° 26' 24"E	

OWNERSHIP TABLE

PARCEL NO.	R/W	TCE
12711210800	2,320 SF	---
12711210900	3,568 SF	---
12711210901	1,150 SF	---
12711210902	2,291 SF	---
12711120100	2,311 SF	---
12711120200	2,300 SF	---
12711120300	2,600 SF	---
12711120400	2,609 SF	---

△	REVISIONS	DATE	BY
	PRELIMINARY		

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ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-ROW-01

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PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

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CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

RIGHT-OF-WAY PLAN
A 15+00 - A 29+00

DRAWING No.: RW-2
SHEET No.: 2 OF 14

Oct 28, 2022 11:14:02am – User: dondl.rowland
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\RIGHT OF WAY\0625.29-ROW-01.DWG

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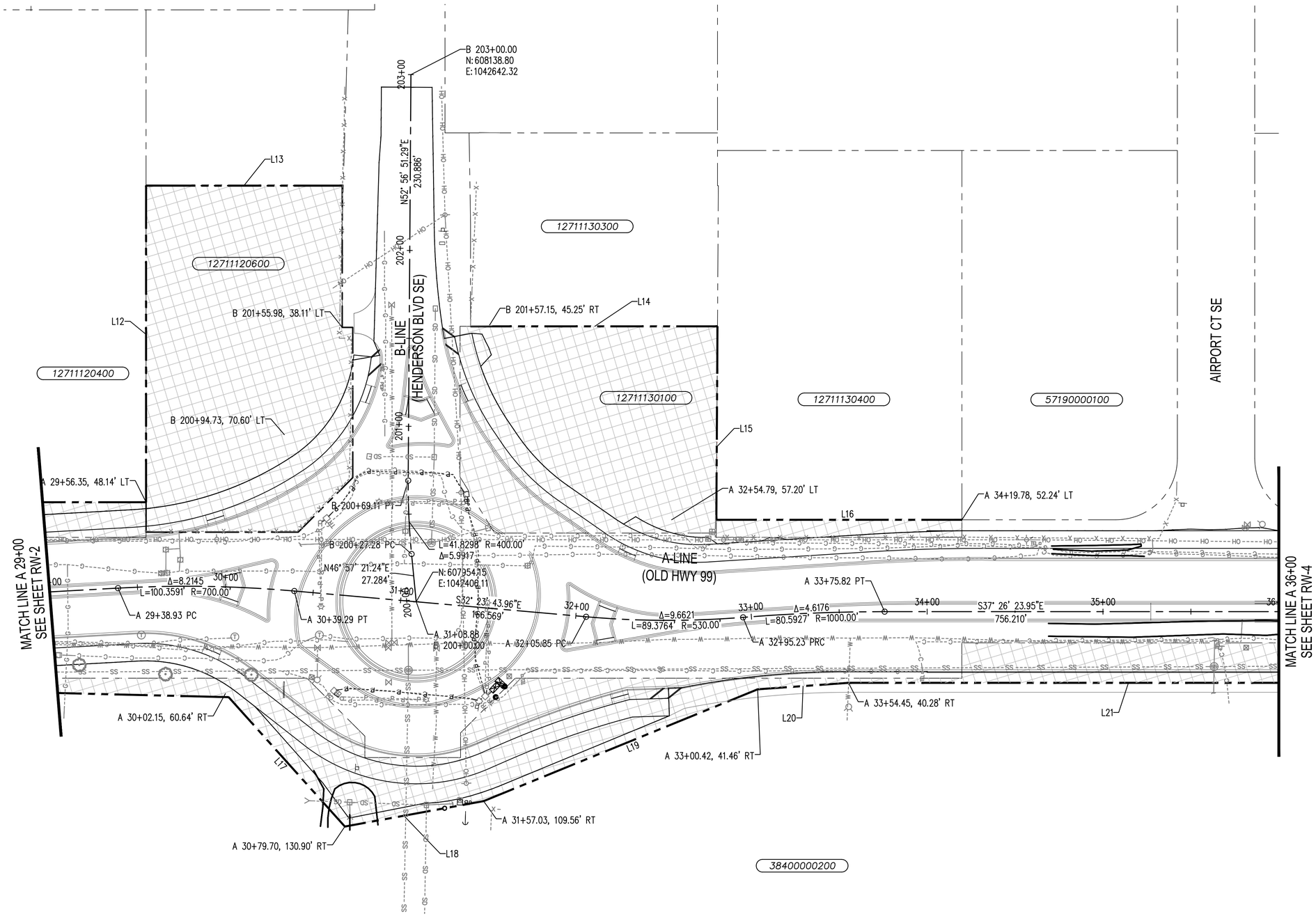

0 30 60
SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
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PARCEL LINE AND CURVE TABLE

LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L12	180.05	N52° 33' 55"E	
L13	112.15	S37° 26' 06"E	
L14	140.43	S37° 26' 24"E	
L15	110.03	S52° 54' 22"W	
L16	139.66	S37° 26' 24"E	
L17	98.90	N10° 37' 53"E	
L18	80.23	N47° 49' 30"W	
L19	168.30	N59° 38' 02"W	
L20	51.83	S41° 30' 40"E	
L21	776.72	S37° 26' 24"E	

OWNERSHIP TABLE

PARCEL NO.	R/W	TCE
12711120600	5,895 SF	---
12711130100	7,671 SF	---
12711130400	1,397 SF	---

△	REVISIONS	DATE	BY
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DRAWING FILE No.: 0625.29-ROW-01

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TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

RIGHT-OF-WAY PLAN
A 29+00 - A 36+00

DRAWING No.: RW-3
SHEET No.: 3 OF 14

Oct. 28, 2022 - 10:01:42am - User: david.rowland
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\RIGHT OF WAY\0625.29-ROW-01.DWG

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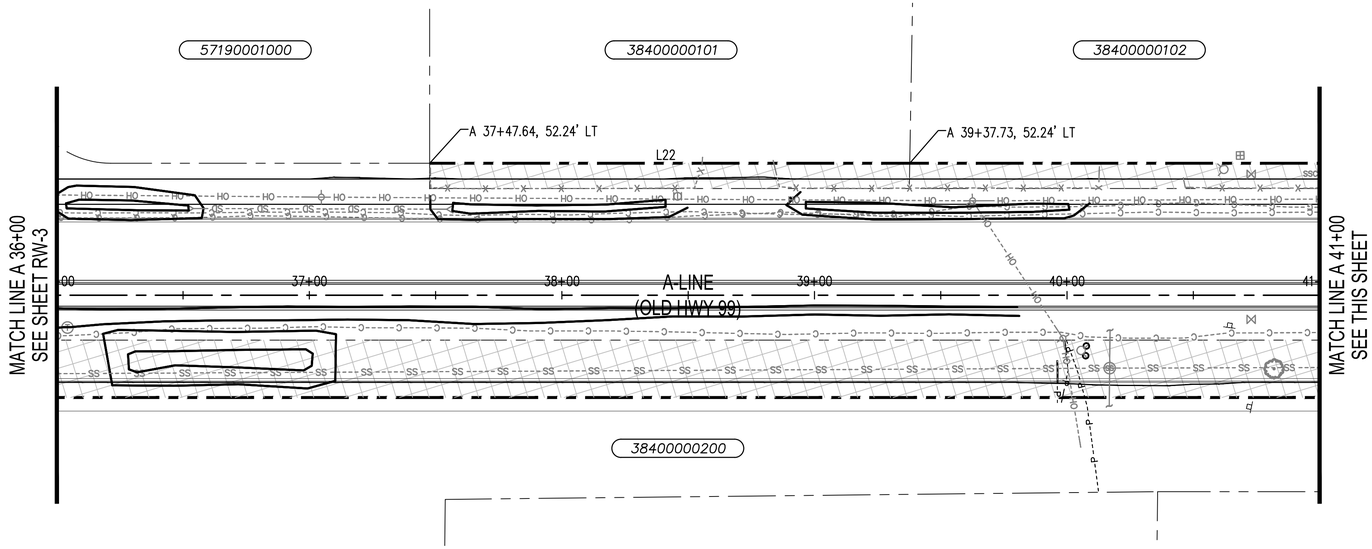

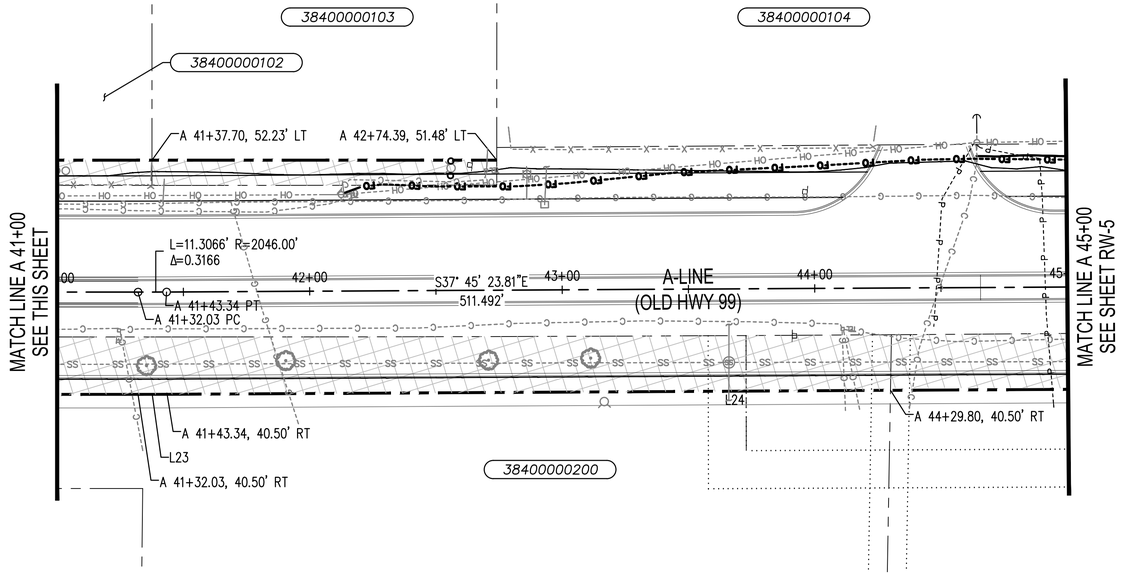

0 30 60

SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L22	526.46	S37° 26' 24"E	
L23	11.53	S37° 35' 54"E	
L24	420.86	S37° 45' 24"E	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
38400000101	1,900 SF	---
38400000102	1,999 SF	---
38400000103	1,359 SF	---
38400000104	4,078 SF	---

△	REVISIONS	DATE	BY
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SCJ ALLIANCE
CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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RIGHT-OF-WAY PLAN
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DRAWING No.: RW-4

SHEET No.: 4 OF 14

Oct 28, 2022 10:02:16am - User: dond.rowland
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\RIGHT OF WAY\0625.29-ROW-01.DWG

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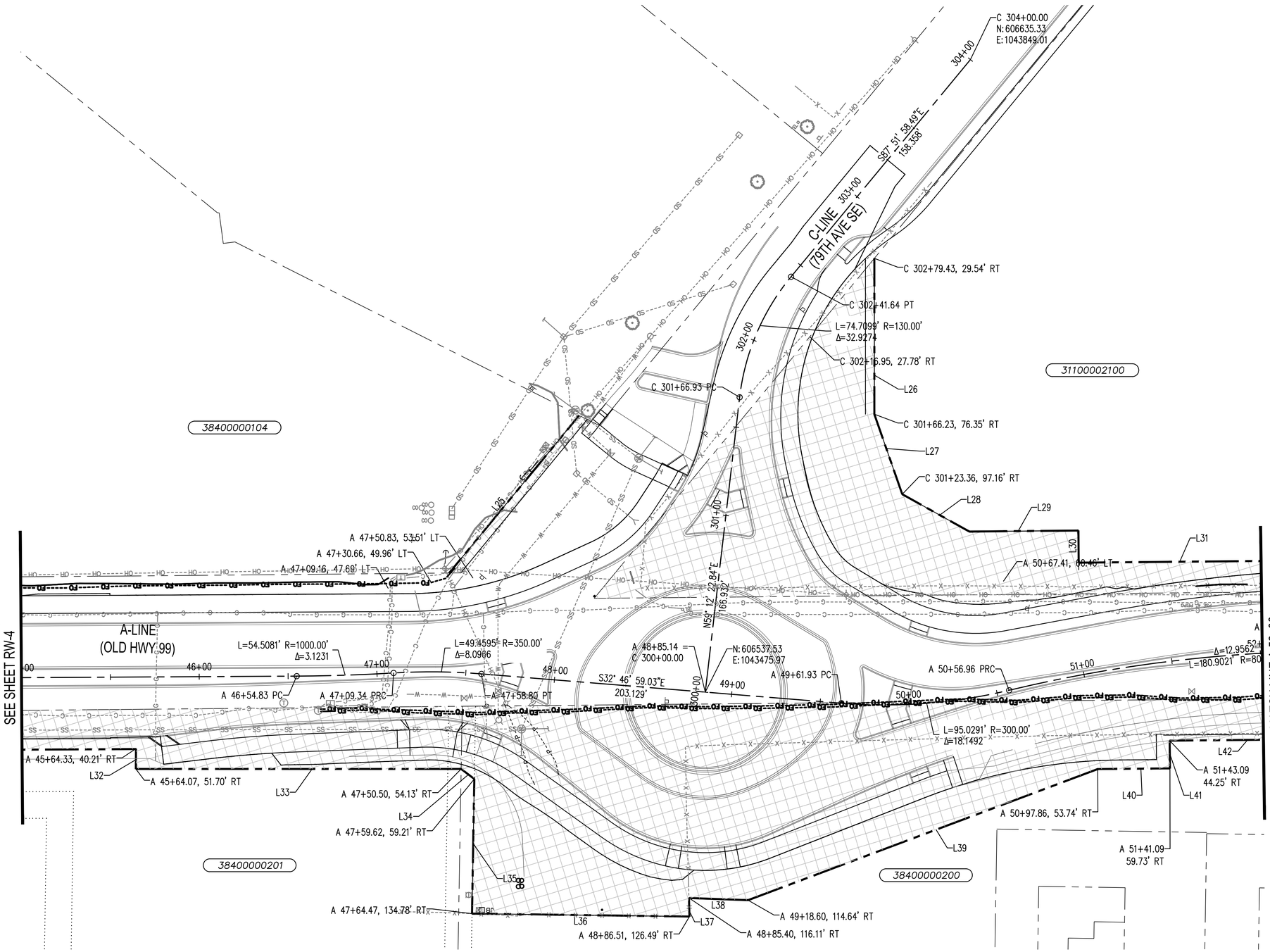

0 30 60

SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE

LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L23	11.53	S37° 35' 54"E	
L24	420.86	S37° 45' 24"E	
L25	114.88	S87° 55' 25"E	
L26	87.61	N52° 33' 36"E	
L27	47.66	N33° 19' 30"E	
L28	43.19	N8° 20' 40"W	
L29	61.34	N37° 58' 34"W	
L30	18.06	N52° 01' 25"E	
L31	573.69	N37° 58' 34"W	
L32	11.20	S52° 54' 19"W	
L33	182.97	S37° 26' 23"E	
L34	9.30	S0° 14' 10"E	
L35	75.73	S53° 32' 37"W	
L36	122.32	S36° 40' 22"E	
L37	10.44	N51° 01' 28"E	
L38	33.25	S35° 18' 38"E	
L39	210.06	S57° 59' 09"E	
L40	40.61	S37° 58' 34"E	
L41	15.59	N52° 01' 26"E	
L42	157.77	S37° 58' 34"E	

OWNERSHIP TABLE

PARCEL NO.	R/W	TCE
31100002100	16,604 SF	---
38400000201	9,182 SF	---

REVISIONS	DATE	BY
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DRAWING FILE No.: 0625.29-ROW-01

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CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
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OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

RIGHT-OF-WAY PLAN
A 45+00 - A 52+00

DRAWING No.: RW-5

SHEET No.: 5 OF 14

Oct 28, 2022 10:02:37am - User: david.rowland
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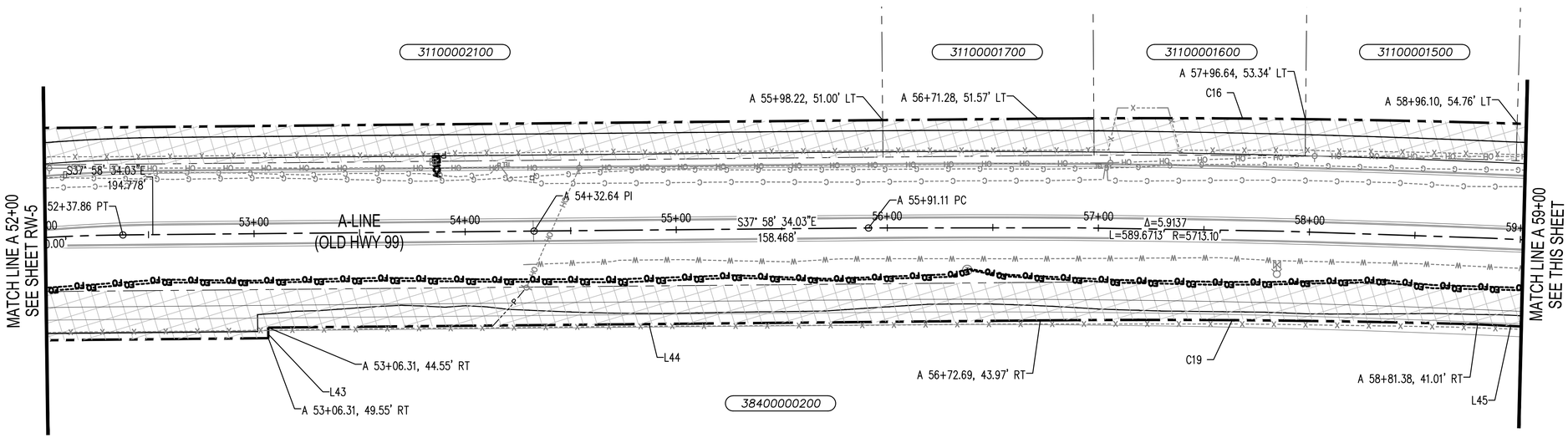

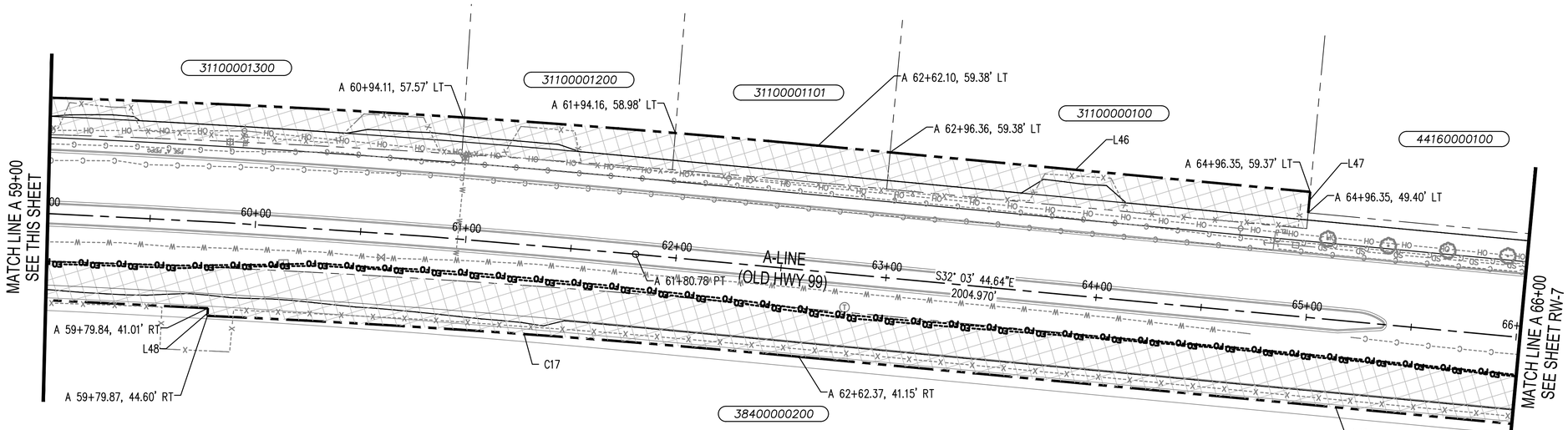

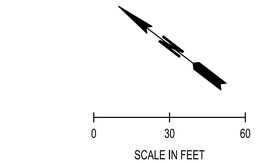

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C16	595.80	5° 54' 49"	5772.43
C17	281.00	2° 50' 15"	5673.93
C19	207.16	2° 05' 24"	5678.93
L43	5.00	N52° 01' 26"E	
L44	365.75	S37° 58' 34"E	
L45	97.75	S34° 34' 18"E	
L46	234.26	N32° 03' 44"W	
L47	240.03	N57° 56' 27"E	
L48	3.60	S55° 31' 52"W	
L49	1871.87	S32° 03' 45"E	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
31100001700	750 SF	---
31100001600	750 SF	---
31100001500	750 SF	---
31100001300	1,501 SF	---
31100001200	750	---
31100001101	765 SF	---
31100000100	1,500 SF	---

△	REVISIONS	DATE	BY
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CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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OLD HIGHWAY 99 CORRIDOR STUDY
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RIGHT-OF-WAY PLAN
A 52+00 - A 66+00

DRAWING No.: RW-6
SHEET No.: 6 OF 14

Oct 28, 2022 - 10:03:06am - User: dsid.rowland
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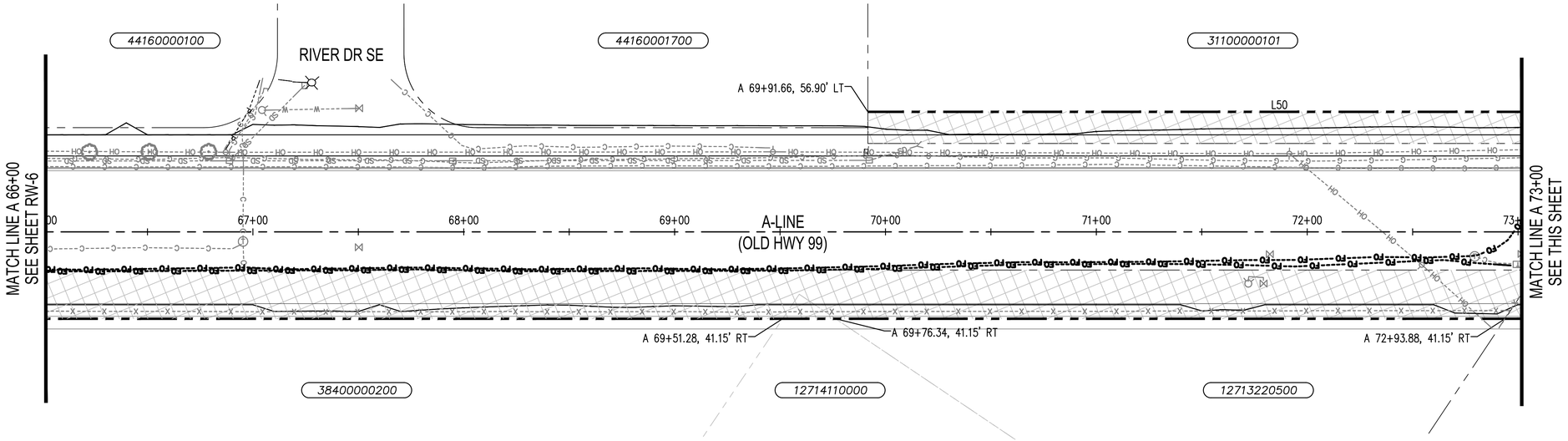

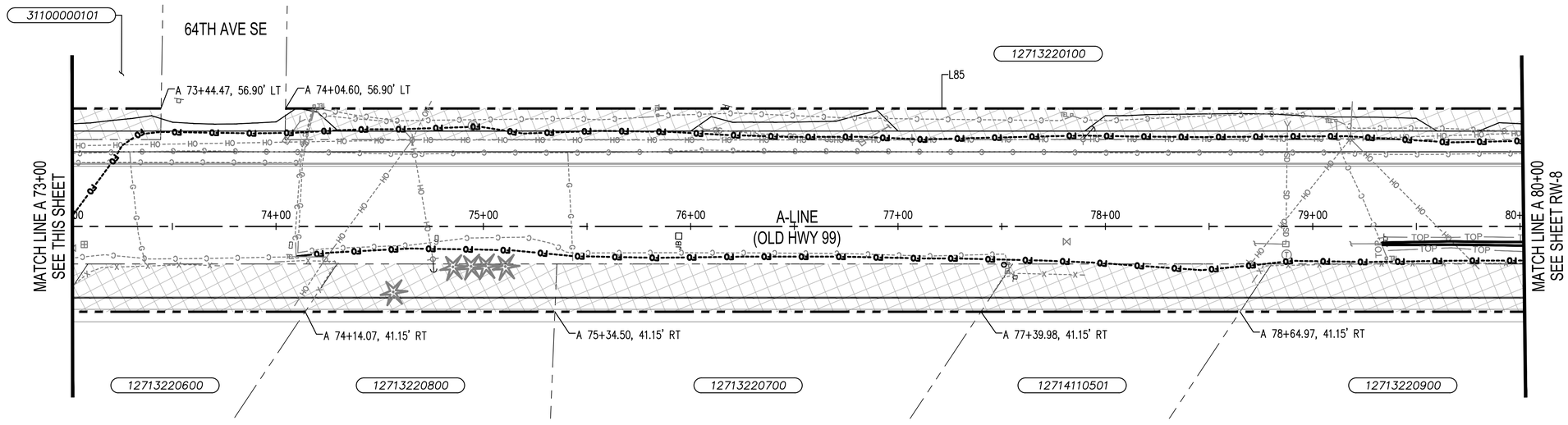

0 30 60
SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L50	352.81	N32° 03' 45"W	
L85	918.65	N32° 03' 45"W	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
31100000101	5,311 SF	---
12714110000	145 SF	---
12713220500	7,751 SF	---
12713220100	9,458 SF	---
12713220600	2,771 SF	---
12713220800	2,610 SF	---
12713220700	4,902 SF	---
12714110501	2,881 SF	---
12713220900	17,621 SF	---

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ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-ROW-01

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TUMWATER, WASHINGTON

RIGHT-OF-WAY
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DRAWING No.: RW-7
SHEET No.: 7 OF 14

Oct 28, 2022 - 10:03:36am - User: david.rowland
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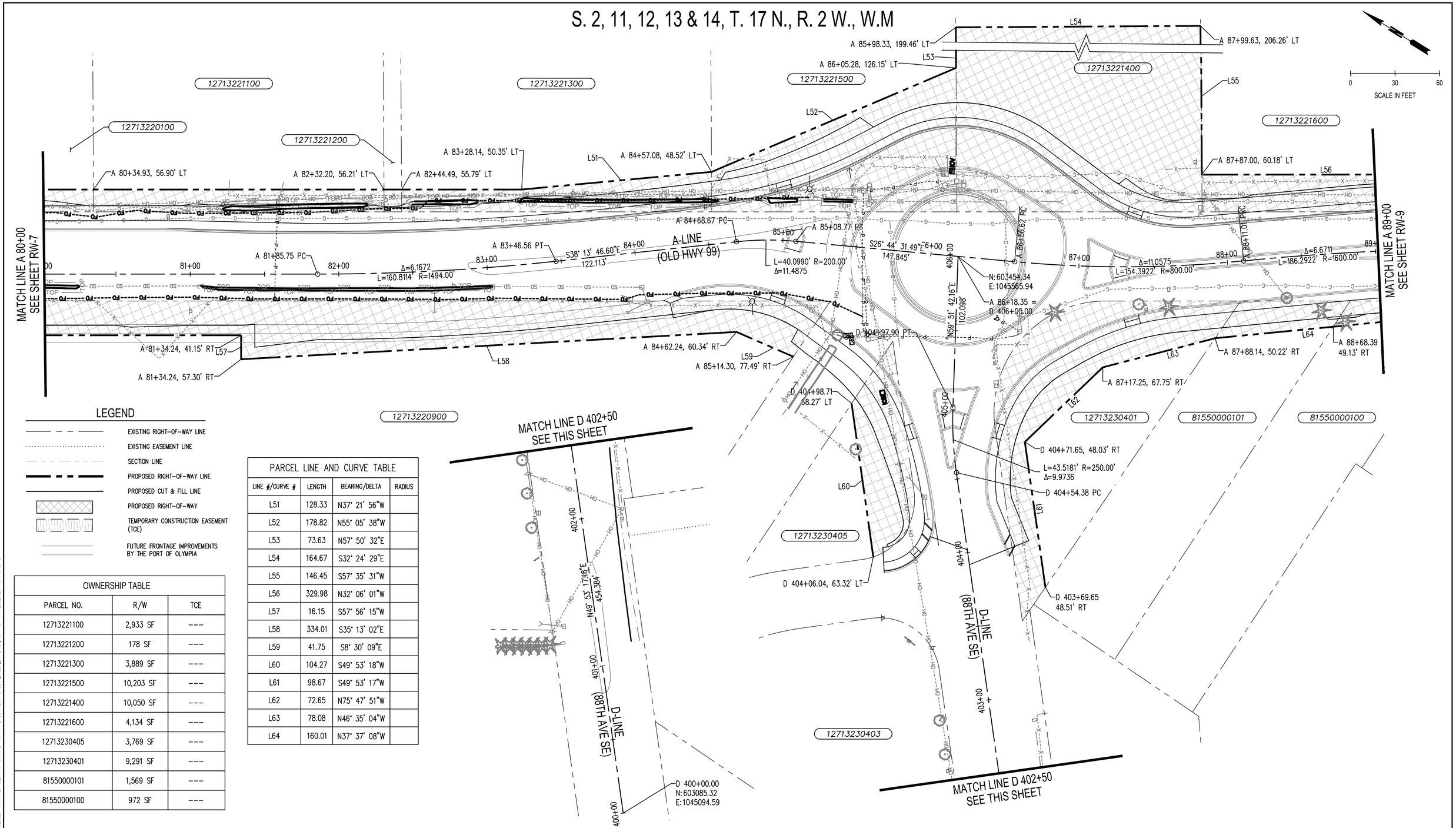

LEGEND

- EXISTING RIGHT-OF-WAY LINE
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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L51	128.33	N37° 21' 56"W	
L52	178.82	N55° 05' 38"W	
L53	73.63	N57° 50' 32"E	
L54	164.67	S32° 24' 29"E	
L55	146.45	S57° 35' 31"W	
L56	329.98	N32° 06' 01"W	
L57	16.15	S57° 56' 15"W	
L58	334.01	S35° 13' 02"E	
L59	41.75	S8° 30' 09"E	
L60	104.27	S49° 53' 18"W	
L61	98.67	S49° 53' 17"W	
L62	72.65	N75° 47' 51"W	
L63	78.08	N46° 35' 04"W	
L64	160.01	N37° 37' 08"W	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
12713221100	2,933 SF	---
12713221200	178 SF	---
12713221300	3,889 SF	---
12713221500	10,203 SF	---
12713221400	10,050 SF	---
12713221600	4,134 SF	---
12713230405	3,769 SF	---
12713230401	9,291 SF	---
81550000101	1,569 SF	---
81550000100	972 SF	---

Oct 28, 2022 11:23:02am – User: david.rowland
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ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-ROW-01

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OLD HIGHWAY 99 CORRIDOR STUDY
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DRAWING No.: RW-8
SHEET No.: 8 OF 14

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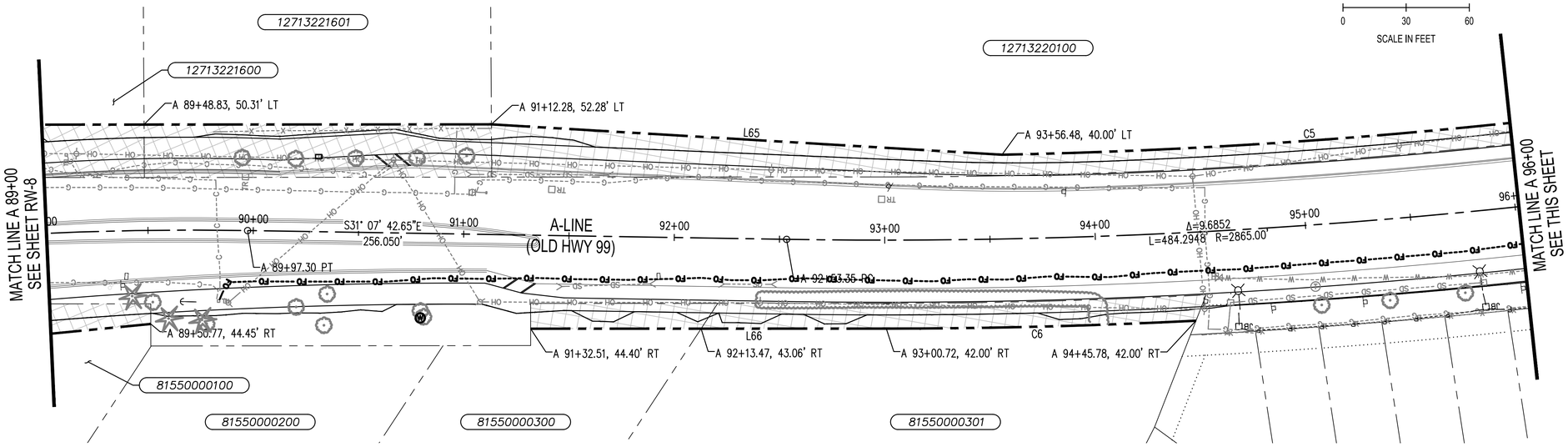

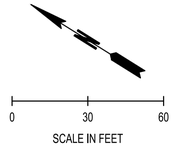

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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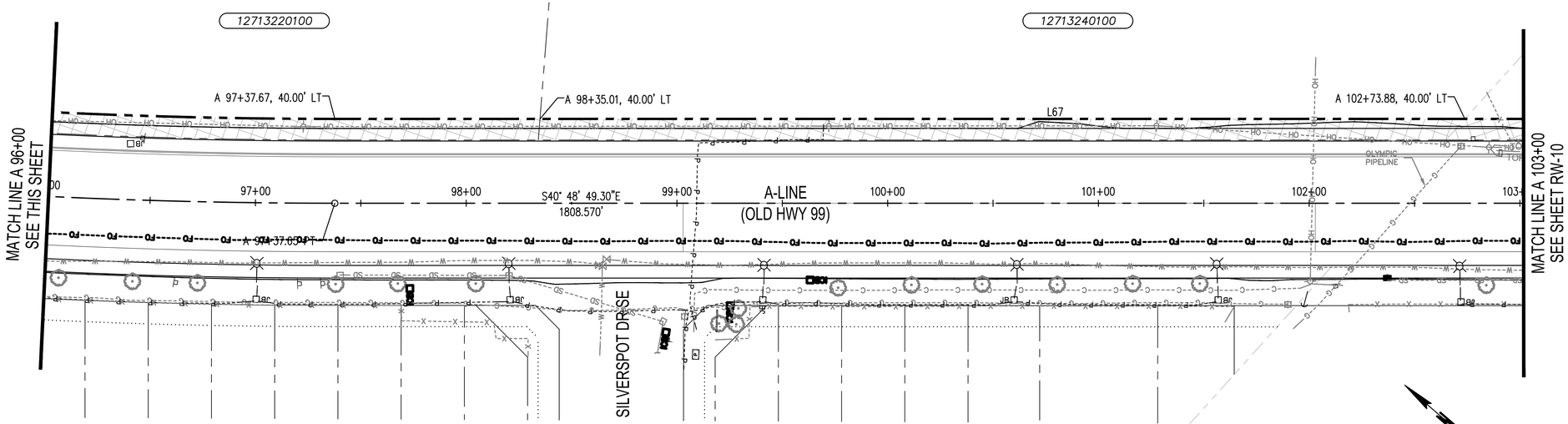
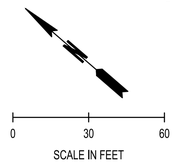
PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C5	375.87	7° 37' 25"	2824.85
C6	147.18	2° 54' 04"	2906.84
L65	242.96	N28° 39' 45"W	
L66	168.93	N32° 04' 33"W	
L67	1918.42	N40° 48' 49"W	





OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
12713221601	4,110 SF	---
12713220100	9,034 SF	---
81550000300	1,019 SF	---
81550000301	2,803 SF	---
12713240100	4,347 SF	---

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DRAWING FILE No.: 0625.29-ROW-01

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SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
SCJALLIANCE.COM

CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

RIGHT-OF-WAY PLAN
A 89+00 - A 103+00

DRAWING No.: RW-9
SHEET No.: 9 OF 14

Oct 28, 2022 10:04:58am – User: davidr.rowland
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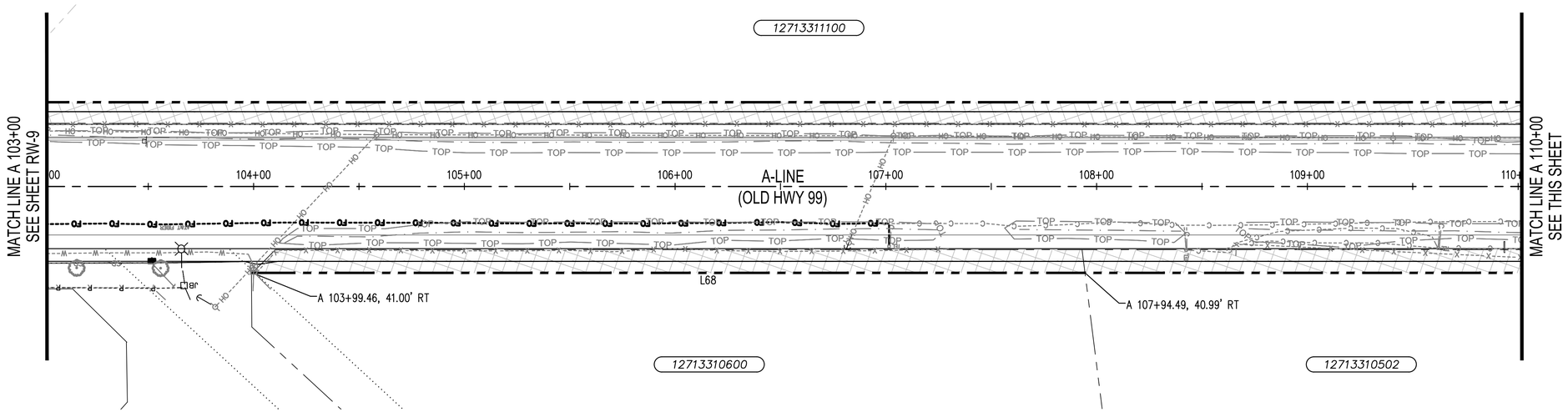

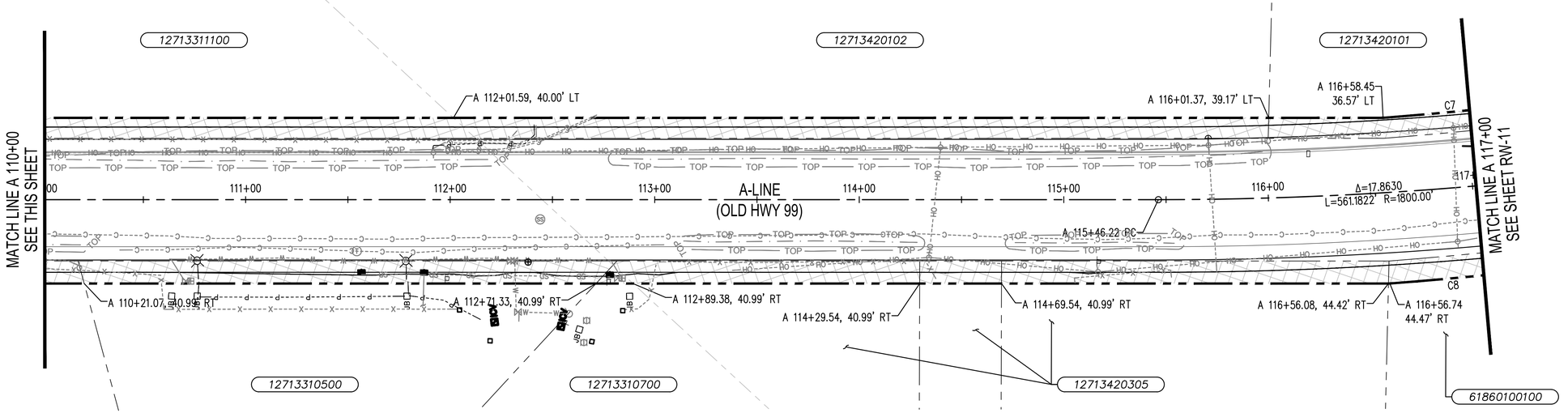

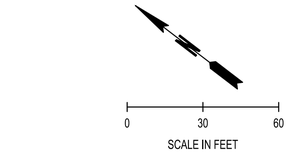

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C7	471.50	14° 26' 51"	1869.89
C8	483.04	14° 10' 58"	1951.41
L68	1260.42	N40° 48' 50"W	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
12713311100	9,376	---
12713310600	4,278 SF	---
12713310502	2,484 SF	---
12713420102	3,930 SF	---
12713420101	1,227 SF	---
12713310500	2,821 SF	---
12713310700	81 SF	---
12713420305	4,126 SF	---
61860100100	4,884 SF	---

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DRAWING FILE No.: 0625.29-ROW-01

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555 ISRAEL ROAD SW
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RIGHT-OF-WAY PLAN
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DRAWING No.: RW-10

SHEET No.: 10 OF 14

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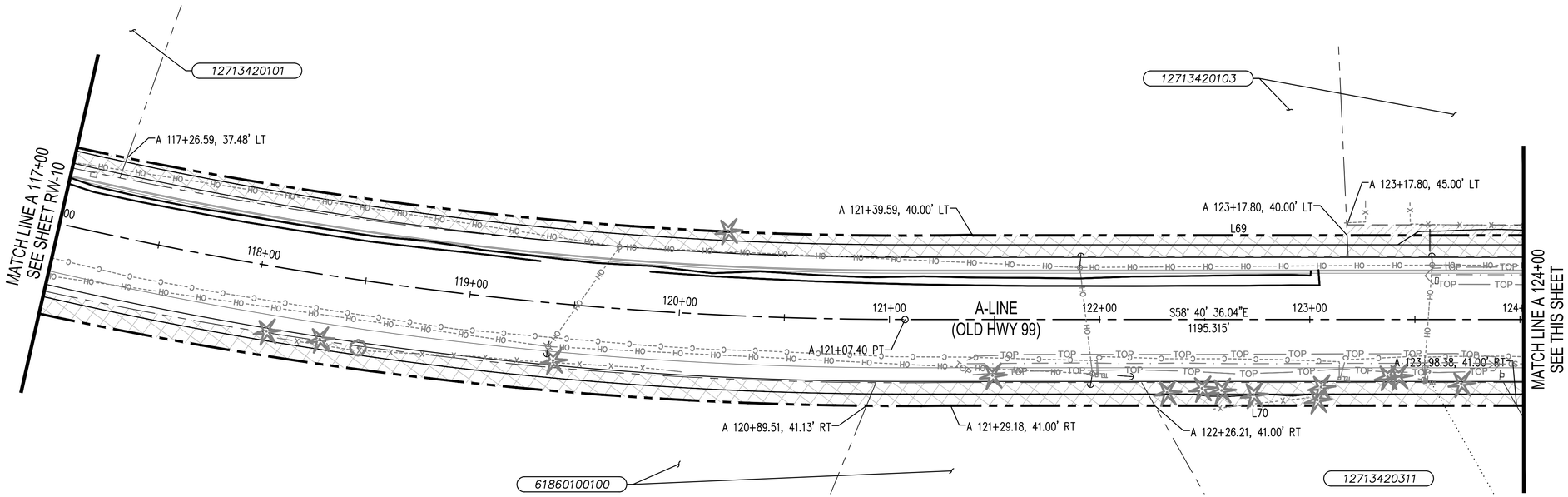

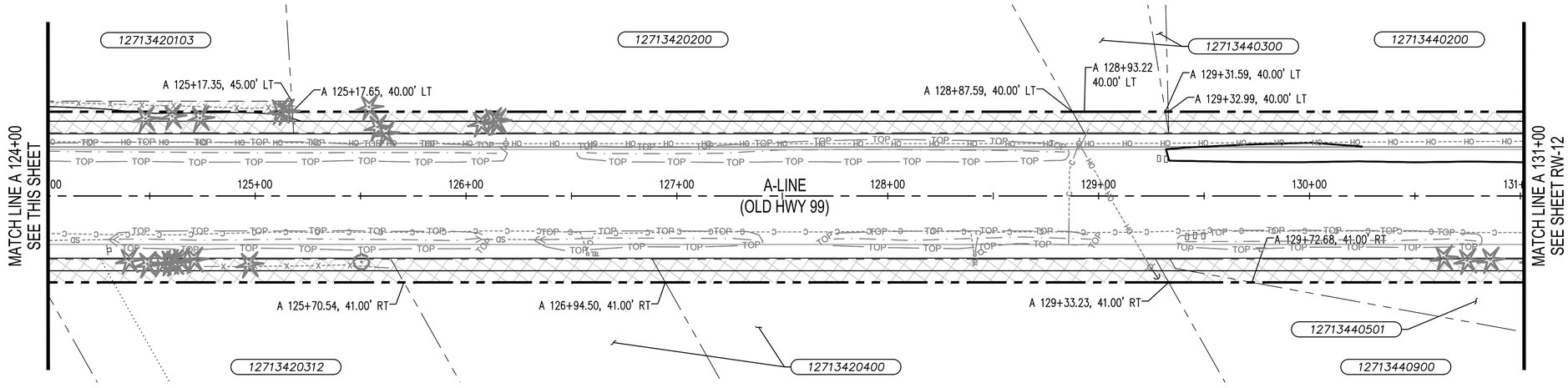

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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- FUTURE FRONTAGE IMPROVEMENTS BY THE PORT OF OLYMPIA

PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L69	753.63	N58° 40' 36"W	
L70	797.84	N58° 40' 36"W	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
12713420103	7,849 SF	999 SF
12713420311	1,894 SF	---
12713420200	3,725 SF	---
12713440300	427 SF	---
12713440200	3,633 SF	---
12713420312	1,894 SF	---
12713420400	3,990 SF	---
12713440900	184 SF	---
12713440501	4,116 SF	---

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CHECKED BY: ENGINEER NAME	DRAWING FILE No.: 0625.29-ROW-01

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SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
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DRAWING No.: RW-11

SHEET No.: 11 OF 14

Oct 28, 2022 - 10:06:02am - User: david.rowland
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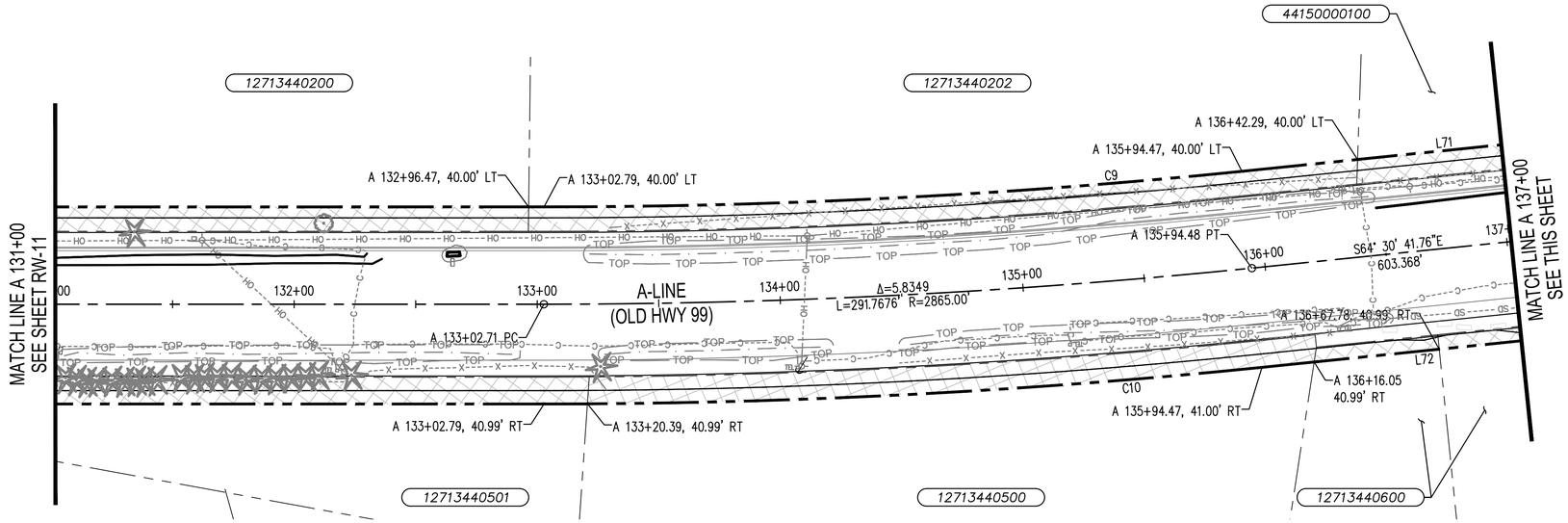

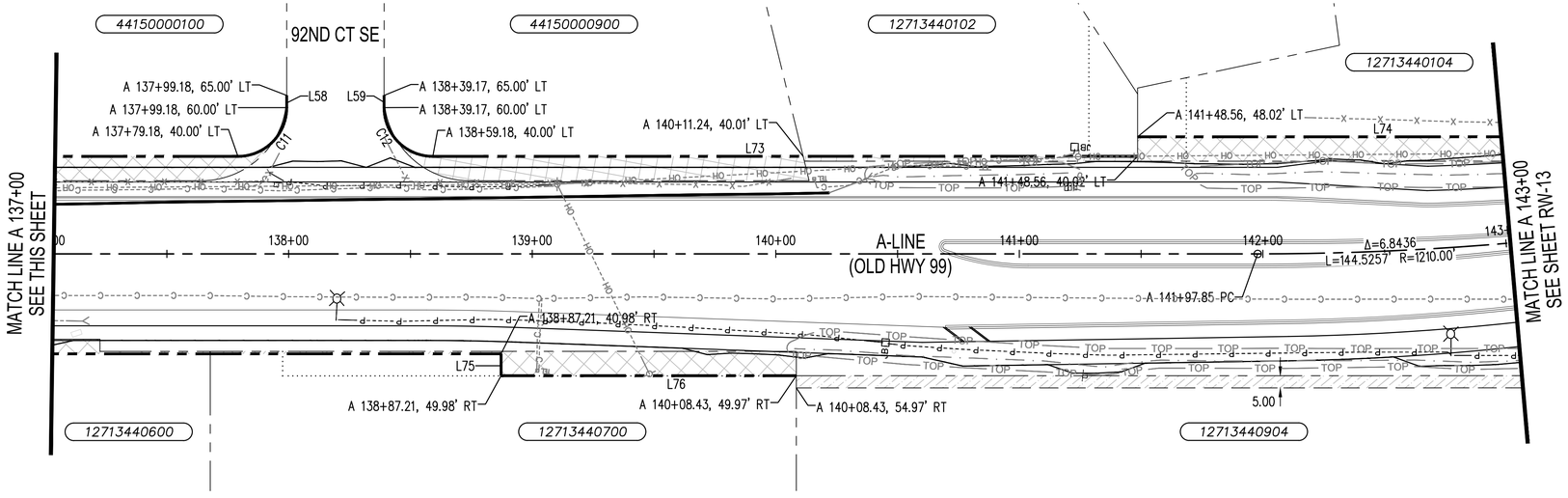

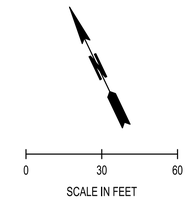

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C9	287.60	5° 50' 00"	2824.86
C10	295.85	5° 50' 00"	2905.87
C11	31.42	89° 59' 57"	20.00
C12	31.42	90° 00' 20"	20.00
L58	5.00	S25° 29' 22"W	
L59	5.00	N25° 29' 22"E	
L71	184.71	N64° 30' 42"W	
L72	269.60	S64° 30' 52"E	
L73	289.39	N64° 30' 59"W	
L74	230.08	N64° 30' 59"W	
L75	9.00	S25° 29' 08"W	
L76	121.22	S64° 30' 52"E	

OWNERSHIP TABLE		
PARCEL NO.	R/W	TCE
12713440202	3,416 SF	---
44150000100	1,408 SF	---
12713440500	3,297 SF	---
12713440600	679 SF	---
44150000900	1,565 SF	---
12713440102	274 SF	---
12713440104	2,323 SF	---
12713440700	1,332 SF	---
12713440904	---	1,988 SF

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CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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555 ISRAEL ROAD SW
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DRAWING No.: RW-12
SHEET No.: 12 OF 14

Oct 28, 2022 10:06:32am – User: davidcrawford
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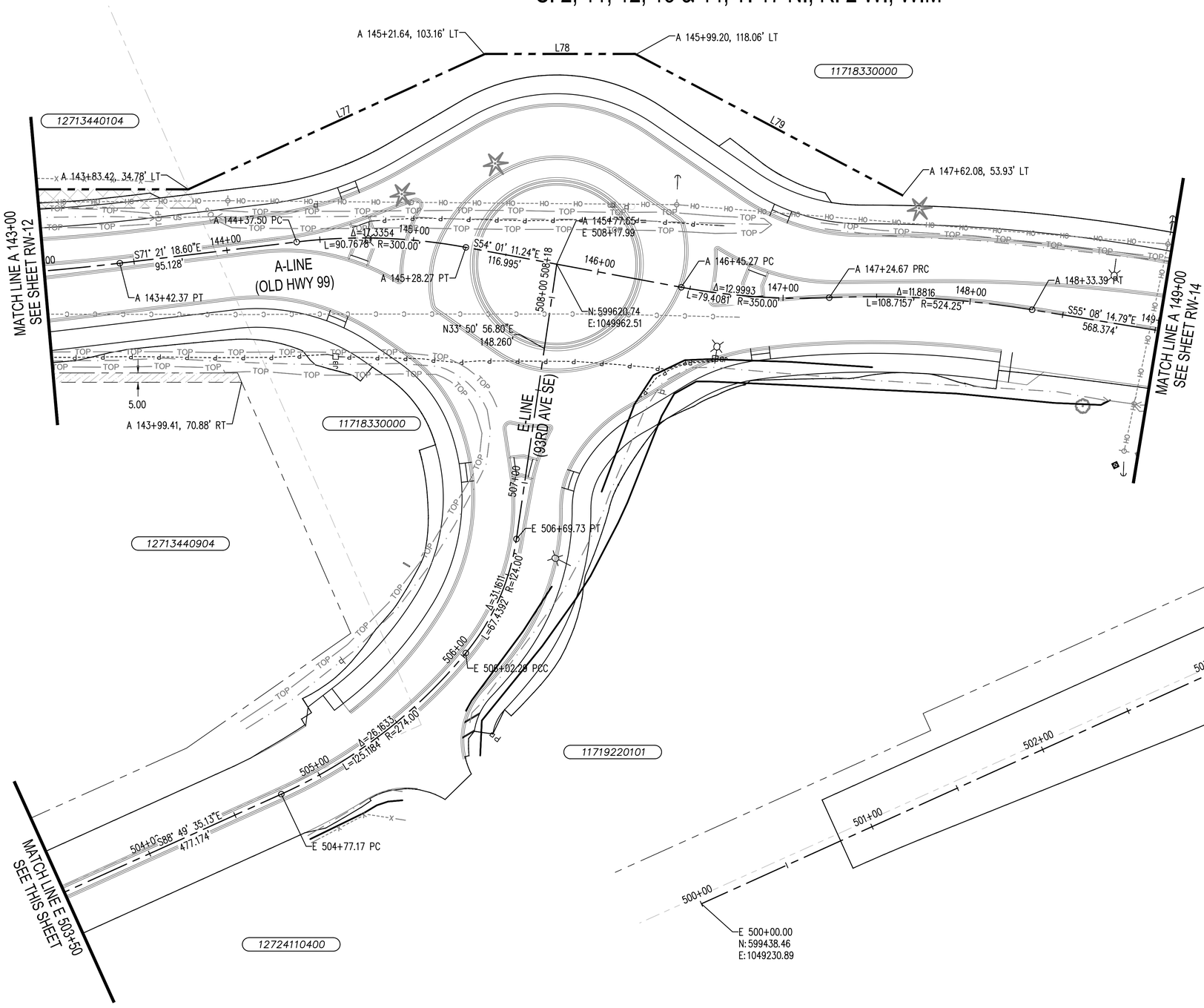

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SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
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PARCEL LINE AND CURVE TABLE

LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L77	174.19	S89° 01' 47"E	
L78	80.18	S64° 30' 42"E	
L79	161.79	S36° 38' 11"E	

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PRELIMINARY

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ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-ROW-01

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SCJ ALLIANCE
CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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CITY OF TUMWATER
555 ISRAEL ROAD SW
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DRAWING No.: RW-13

SHEET No.: 13 OF 14

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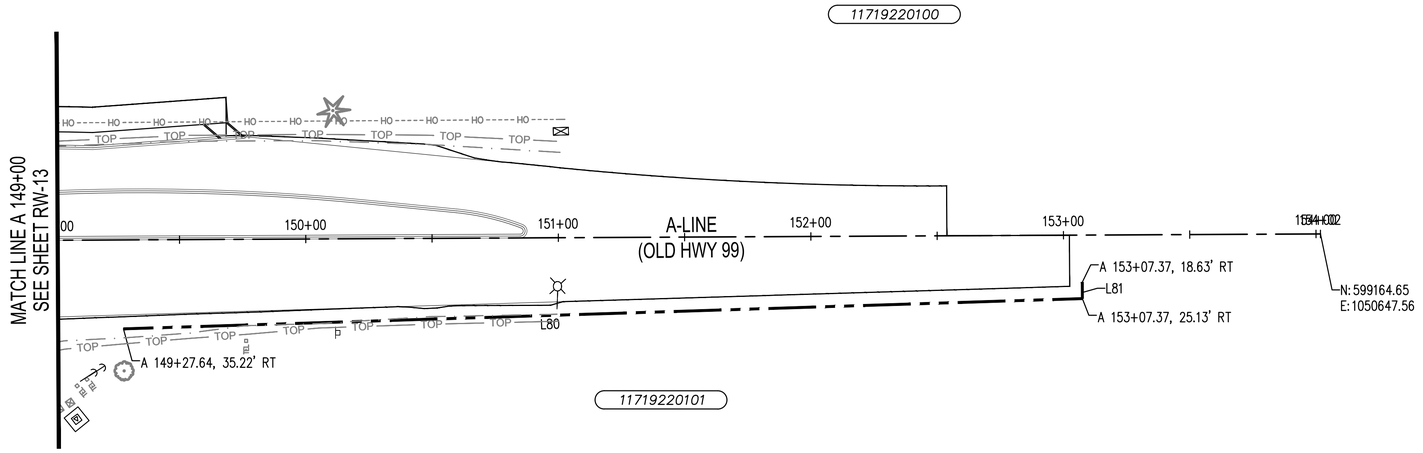

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SCALE IN FEET

LEGEND

- EXISTING RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- SECTION LINE
- PROPOSED RIGHT-OF-WAY LINE
- PROPOSED CUT & FILL LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
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PARCEL LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L80	379.87	S56° 39' 37"E	
L81	6.50	N34° 51' 45"E	

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SHEET No.: 14 OF 14

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Right-of-Way Acquistion Estimate

Phase 1 - 79th RAB

Assessor's No.	Owner	Land Rights	Improvements	Damages	Compensation (Offer)	Appraisal Costs	Review Costs	Negotiation Costs	Title, Costs	Prop. Management	Relocation Costs	Relo. Labor	Sub-Total	Condemn. Costs @20%	Statutory Allowance	Total Costs
38400000104	Kaufman Real Estate LLC	$ 33,000	$ 20,000	$ -	$ 53,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 67,100	$ 13,420	$ 750	$ 81,270
31100002100	Pick A Part Inc.	$ 231,420	$ 87,000	$ -	$ 318,420	$ 4,000	$ 1,900	$ 7,500	$ 700	-	$20,000	5,000	$ 357,520	$ 71,504	$ 750	$ 429,774
38400000200	Port of Olympia	$ 197,094	$ 16,425	$ 8,212	$ 221,731	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 235,831	$ 47,166	$ 750	$ 283,747
38400000201	Port of Olympia	$ 55,000	$ 10,000	$ -	$ 65,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 79,100	$ 15,820	$ 750	$ 95,670
															Total:	**$ 900,000**

1. Multiplier is 1.5 for full parcel acquisitions and 2.0 for strip acquistions

Right-of-Way Acquistion Estimate

Phase 2 - Project start to 79th RAB

Assessor's No.	Owner	Land Rights	Improvements	Damages	Compensation (Offer)	Appraisal Costs	Review Costs	Negotiation Costs	Title, Costs	Prop. Management	Relocation Costs	Relo. Labor	Sub-Total	Condemn. Costs @20%	Statutory Allowance	Total Costs
37000002500	DAC RE LLC	$ 1,400	$ -	$ -	$ 1,400	$ 1,000	-	$ 7,500	$ 700	-	-	-	$ 10,600	$ 2,120	$ 750	$ 13,470
38400003100	Port of Olympia	$ 144,000	$ -	$ -	$ 144,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 158,100	$ 31,620	$ 750	$ 190,470
38400000200	Port of Olympia	$ 272,208	$ 22,684	$ 11,342	$ 306,234	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 320,334	$ 64,067	$ 750	$ 385,151
12711210800	D & W Development LLC	$ 14,000	$ -	$ -	$ 14,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 28,100	$ 5,620	$ 750	$ 34,470
12711210900	J & S Old 99 LLC	$ 21,400	$ -	$ -	$ 21,400	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 35,500	$ 7,100	$ 750	$ 43,350
12711210901	Janette M. Witchey	$ 8,050	$ 5,000	$ -	$ 13,050	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 27,150	$ 5,430	$ 750	$ 33,330
12711210902	Janette M. Witchey	$ 16,000	$ 5,000	$ -	$ 21,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 35,100	$ 7,020	$ 750	$ 42,870
12711120100	Larry Skewis	$ 26,000	$ 15,000	$ -	$ 41,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 55,100	$ 11,020	$ 750	$ 66,870
12711120200	Secure Storage Holdings LLC	$ 25,000	$ 10,000	$ -	$ 35,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 49,100	$ 9,820	$ 750	$ 59,670
12711120300	Secure Storage Holdings LLC	$ 57,000	$ 20,000	$ -	$ 77,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 91,100	$ 18,220	$ 750	$ 110,070
12711120400	included with 12711120300			$ -						-	-	-	$ -	$ -		$ -
12711120600	Ken Slater & Tina Louise-total	$ 159,600	$ 95,000	$ 152,000	$ 406,600	$ 4,000	$ 1,900	$ 7,500	$ 700	$ -	$ -	$ -	$ 420,700	$ 84,140	$ 750	$ 505,590
12711130100	H24 Inc.-total	$ 230,000	$ 100,000	$ 1,170,000	$ 1,500,000	$ 7,500	$ 2,500	$ 7,500	$ 700	$ 1,000	$ 150,000	$ 30,000	$ 1,699,200	$ 339,840	$ 750	$ 2,039,790
12711130400	Kaufman Holdings Inc	$ 16,000	$ 10,000	$ -	$ 26,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 40,100	$ 8,020	$ 750	$ 48,870
38400000101	Airborne Properties Inc	$ 21,000	$ 10,000	$ -	$ 31,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 45,100	$ 9,020	$ 750	$ 54,870
38400000102	M Stream LLC	$ 22,000	$ 10,000	$ -	$ 32,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 46,100	$ 9,220	$ 750	$ 56,070
38400000103	DHB Holdings LLC	$ 15,000	$ 20,000	$ -	$ 35,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 49,100	$ 9,820	$ 750	$ 59,670
															Total:	**$3,750,000**

1. Multiplier is 1.5 for full parcel acquisitions and 2.0 for strip acquistions

Right-of-Way Acquistion Estimate

Phase 3 - 79th RAB to 88th RAB

Assessor's No.	Owner	Land Rights	Improvements	Damages	Compensation (Offer)	Appraisal Costs	Review Costs	Negotiation Costs	Title, Costs	Prop. Management	Relocation Costs	Relo. Labor	Sub-Total	Condemn. Costs @20%	Statutory Allowance	Total Costs
31100001700	Slater Enterprises Phase 1 LLC	$ 8,500	$ 5,000.00	$ -	$ 13,500	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 27,600	$ 5,520	$ 750	$ 33,870
31100001600	Slater Ent. Phase 1 LLC	$ 8,500	$ 5,000.00	$ -	$ 13,500	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 27,600	$ 5,520	$ 750	$ 33,870
31100001500	Slater Ent. Phase 1 (with 1300)												$ -	$ -		$ -
31100001300	Slater Enterprises Phase 1 LLC	$ 27,000	$ 20,000	$ -	$ 47,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 61,100	$ 12,220	$ 750	$ 74,070
31100001200	Slater Ent. Phase 1 LLC(with 1300)												$ -	$ -		$ -
31100001101	Included with 31100001300												$ -	$ -		$ -
31100000100	Gary & Glenna George	$ 17,000	$ 15,000	$ -	$ 32,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 46,100	$ 9,220	$ 750	$ 56,070
31100000101	Liberty Leasing & Const Inc.	$ 37,000	$ 5,000	$ -	$ 42,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 56,100.00	$ 11,220.00	$ 750.00	$ 68,070
38400000200	Port of Olympia	$ 172,698	$ 14,392	$ 7,196	$ 194,285	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 208,385	$ 41,677	$ 750	$ 250,812
12714110000	Port of Olympia	$ 1,000	$ -	$ -	$ 1,000	$ 1,000	$ -	$ 7,500	$ 700	-	-	-	$ 10,200.00	$ 2,040.00	$ 750.00	$ 12,990
12713220500	Port of Olympia	$ 47,000	$ -	$ -	$ 47,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 61,100.00	$ 12,220.00	$ 750.00	$ 74,070
12713220100	Petrocard Inc.	$ 76,000	$ -	$ -	$ 76,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 90,100	$ 18,020	$ 750	$ 108,870
12713220600	Pacific NW Com. Proper Ties LLC	$ 42,000	$ 5,000	$ -	$ 47,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 61,100	$ 12,220	$ 750	$ 74,070
12713220800	Pacific NW Com. Proper Ties LLC	$ 39,000	$ 5,000	$ -	$ 44,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 58,100	$ 11,620	$ 750	$ 70,470
12713220700	Seoly 8421 LLC	$ 74,000	$ 25,000	$ -	$ 99,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 113,100	$ 22,620	$ 750	$ 136,470
12714110501	Pritchett Family LLC	$ 18,000	$ 10,000	$ -	$ 28,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 42,100	$ 8,420	$ 750	$ 51,270
12713220900	Craig S. & Roxanna M. Kinnaman	$ 106,000	$ 70,000	$ 25,000	$ 201,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 215,100	$ 43,020	$ 750	$ 258,870
12713221100	Grant Enterprises LLC	$ 24,000	$ 20,000	$ -	$ 44,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 58,100	$ 11,620	$ 750	$ 70,470
12713221200	KO Capital LLC	$ 2,000	$ -	$ -	$ 2,000	$ 1,000	$ -	$ 7,500	$ 700	-	-	-	$ 11,200	$ 2,240	$ 750	$ 14,190
12713221300	KO Capital LLC	$ 31,000	$ 50,000	$ -	$ 81,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 95,100	$ 19,020	$ 750	$ 114,870
12713221400	Holiday Trust	$ 81,000	$ -	$ 25,000.00	$ 106,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 120,100	$ 24,020	$ 750	$ 144,870
12713221600	Holday Trust	$ 34,000	$ 50,000	$ -	$ 84,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 98,100	$ 19,620	$ 750	$ 118,470
12713230405	Thurston County	$ 30,000	$ -	$ -	$ 30,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 44,100	$ 8,820	$ 750	$ 53,670
12713230401	William T. & Tamara G. Walsh	$ 65,000	$ 25,000	$ -	$ 90,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 104,100	$ 20,820	$ 750	$ 125,670
81550000101	William T. & Tamara G. Walsh	$ 11,000	$ 10,000	$ -	$ 21,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 35,100	$ 7,020	$ 750	$ 42,870
															Total:	**$1,990,000**

1. Multiplier is 1.5 for full parcel acquisitions and 2.0 for strip acquistions

Right-of-Way Acquistion Estimate

Phase 4 - 88th RAB to Wyatt Intersection

Assessor's No.	Owner	Land Rights	Improvements	Damages	Compensation (Offer)	Appraisal Costs	Review Costs	Negotiation Costs	Title, Costs	Prop. Management	Relocation Costs	Relo. Labor	Sub-Total	Condemn. Costs @20%	Statutory Allowance	Total Costs
81550000100	Raymond C. Evans	$ 7,000	$ 10,000	$ -	$ 17,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 31,100	$ 6,220	$ 750	$ 38,070
12713221601	Holiday Trust	$ 33,000	$ 50,000	$ -	$ 83,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 97,100	$ 19,420	$ 750	$ 117,270
81550000300	Jackson and Jessica Ewing	$ 8,200	$ 5,000	$ 40,000	$ 53,200	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 67,300	$ 13,460	$ 750	$ 81,510
81550000301	406 Properties LLC	$ 23,000	$ 10,000	$ -	$ 33,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 47,100	$ 9,420	$ 750	$ 57,270
12713240100	Lakeside Industries	$ 26,000	$ 5,000	$ -	$ 31,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 45,100	$ 9,020	$ 750	$ 54,870
12713311100	Lenora L. & Greg A. Hansen	$ 47,000	$ 30,000	$ -	$ 77,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 91,100	$ 18,220	$ 750	$ 110,070
12713310600	Terrence N. Travis	$ 22,000	$ 20,000	$ -	$ 42,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 56,100	$ 11,220	$ 750	$ 68,070
12713310502	Debra G. Gwinn	$ 13,000	$ 10,000	$ -	$ 23,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 37,100	$ 7,420	$ 750	$ 45,270
															Total:	**$580,000**

1. Multiplier is 1.5 for full parcel acquisitions and 2.0 for strip acquistions

Right-of-Way Acquistion Estimate

Phase 5 - Wyatt Intersection to project finish

Assessor's No.	Owner	Land Rights	Improvements	Damages	Compensation (Offer)	Appraisal Costs	Review Costs	Negotiation Costs	Title, Costs	Prop. Management	Relocation Costs	Relo. Labor	Sub-Total	Condemn. Costs @20%	Statutory Allowance	Total Costs
12713420102	Evergreen Heights LLC	$ 20,000	$ 20,000	$ -	$ 40,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 54,100	$ 10,820	$ 750	$ 65,670
12713420101	Brinley George Hanson	$ 8,600	$ 10,000	$ -	$ 18,600	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 32,700	$ 6,540	$ 750	$ 39,990
36310000002	Bradbury Owners Association	$ 5,000.00	$ -	$ -	$ 5,000.00	$ 1,000	$ -	$ 7,500	$ 700	-	-	-	$ 14,200	$ 2,840	$ 750	$ 17,790
36310000004	Bradbury Owners Association	$ 5,000.00	$ -	$ -	$ 5,000.00	$ 1,000	$ -	$ 7,500	$ 700	-	-	-	$ 14,200	$ 2,840	$ 750	$ 17,790
12713420305	Villiage Freen Community LLC	$ 33,000	$ 5,000	$ -	$ 38,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 52,100	$ 10,420	$ 750	$ 63,270
61860100100	Melody Pines MHP LLC	$ 30,000	$ 10,000	$ 50,000	$ 90,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 104,100	$ 20,820	$ 750	$ 125,670
12713420103	Matthew & Tina Marie Keogh	$ 56,000	$ 10,000	$ -	$ 66,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 80,100	$ 16,020	$ 750	$ 96,870
12713420311	Adrienne Cherry-total acquistion	$ 225,000	$ 225,000	$ -	$ 450,000	$ 4,000	$ 1,900	$ 7,500	$ 700	$ 1,000	$ 150,000	$ 30,000	$ 645,100	$ 129,020	$ 750	$ 774,870
12713420200	Todd L. Bakke	$ 22,000	$ 20,000	$ -	$ 42,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 56,100	$ 11,220	$ 750	$ 68,070
12713440300	Ann Wasserman	$ 3,000	$ 5,000	$ -	$ 8,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 22,100	$ 4,420	$ 750	$ 27,270
12713440200	Marty & Jessica L. Clark	$ 22,000	$ 10,000	$ -	$ 32,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 46,100	$ 9,220	$ 750	$ 56,070
12713420312	Robert George Miller	$ 21,000	$ 10,000	$ 50,000	$ 81,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 95,100	$ 19,020	$ 750	$ 114,870
12713420400	Monty D. & Madeline C. Pfaff REVO Cable Living Trust	$ 32,000	$ 20,000	$ -	$ 52,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 66,100	$ 13,220	$ 750	$ 80,070
12713440900	Milton V. Brasher	$ 1,500	$ 3,000	$ -	$ 4,500	$ 1,000	-	$ 7,500	$ 700	-	-	-	$ 13,700	$ 2,740	$ 750	$ 17,190
12713440501	Gerald D. & Janet I. McCormick	$ 40,000	$ 5,000	$ -	$ 45,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 59,100	$ 11,820	$ 750	$ 71,670
12713440202	Airborne Properties LLC	$ 21,000	$ 20,000	$ -	$ 41,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 55,100	$ 11,020	$ 750	$ 66,870
44150000100	Melanie G. Ballejo	$ 16,000	$ 10,000	$ 30,000	$ 56,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 70,100	$ 14,020	$ 750	$ 84,870
12713440500	Tumwater School Dist. #33	$ 20,000	$ 5,000	$ -	$ 25,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 39,100	$ 7,820	$ 750	$ 47,670
12713440600	Tumwater School Dist. #33	$ 4,100	$ 5,000	$ -	$ 9,100	$ 1,000	-	$ 7,500	$ 700	-	-	-	$ 18,300	$ 3,660	$ 750	$ 22,710
44150000900	Marvin & Mary Ann Shively	$ 18,000	$ 10,000	$ -	$ 28,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 42,100	$ 8,420	$ 750	$ 51,270
12713440102	Richard G. & Sonja M. Winkelman	$ 1,500	$ 5,000	$ -	$ 6,500	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 20,600	$ 4,120	$ 750	$ 25,470
12713440104	Todd C. & Jennifer J. Feiring	$ 12,000	$ 5,000	$ -	$ 17,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 31,100	$ 6,220	$ 750	$ 38,070
12713440700	Tumwater School Dist. #33	$ 11,000	$ -	$ -	$ 11,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 25,100	$ 5,020	$ 750	$ 30,870
12713440904	Tumwater School Dist. #33	$ 2,000	$ -	$ -	$ 2,000	$ 1,000	-	$ 7,500	$ 700	-	-	-	$ 11,200	$ 2,240	$ 750	$ 14,190
12713221500	KO Capital LLC	$ 82,000	$ 20,000	$ 50,000	$ 152,000	$ 4,000	$ 1,900	$ 7,500	$ 700	-	-	-	$ 166,100	$ 33,220	$ 750	$ 200,070
															Total:	**$2,220,000**

1. Multiplier is 1.5 for full parcel acquisitions and 2.0 for strip acquistions

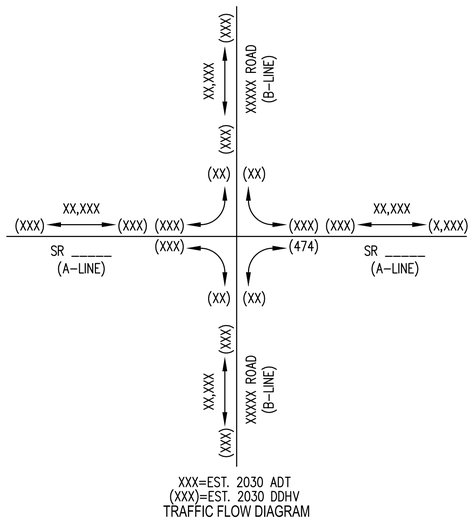
APPENDIX F
- PRELIMINARY DESIGN SUPPORTING DOCUMENTS

G1) INTERSECTION PLANS
G2) FASTEST PATH EXHIBITS
G3) TRUCK TURNING MOVEMENTS
G4) SIGHT TRIANGLE EXHIBITS
G5) UTILITY TECH MEMO
G6) STORMWATER REPORTS
G7) PRELIMINARY PLAN SET
G8) BASIS OF DESIGN

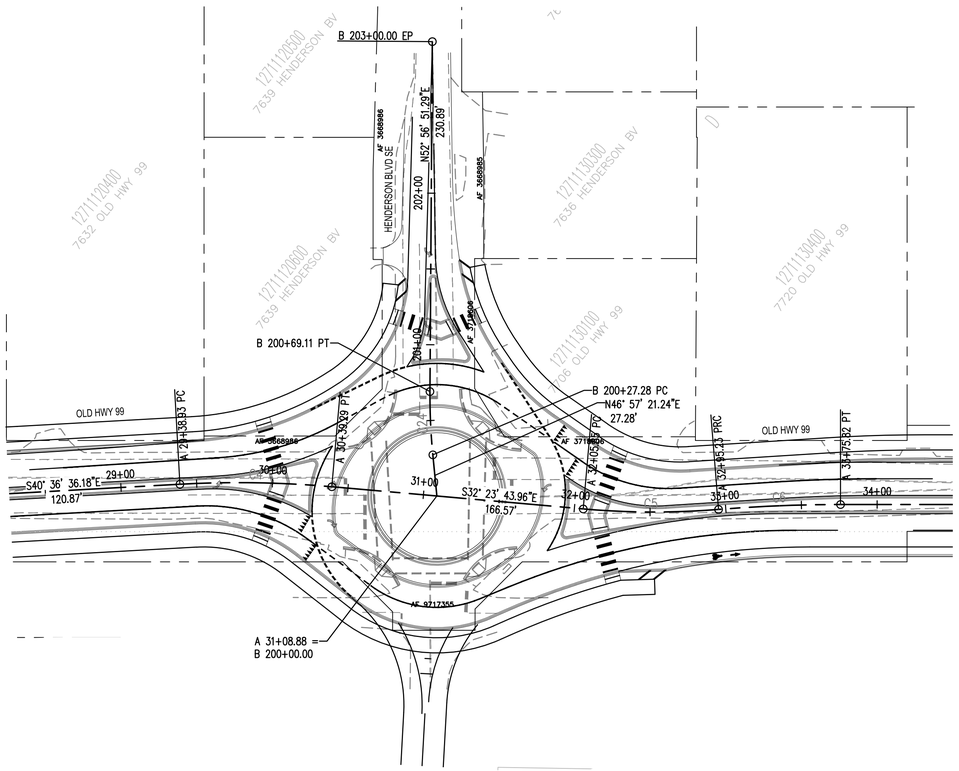
F1) INTERSECTION PLANS

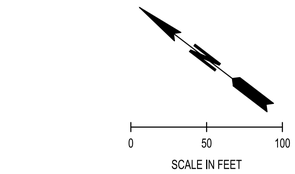
S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M

DESIGN DATA FOR NHS ROUTE, NON-INTERSTATE IMPROVEMENTS		
ROADWAY	A–LINE (SR ###)	B–LINE (ROAD NAME)
SUMMARY OF DESIGN	MM/DD/YYYY	-----
INTERSECTION CONTROL TYPE	(UN)SIGNALIZED	STOP
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	-----
ACCESS CONTROL	LIMITED ACCESS MODIFIED CONTROL	-----
TERRAIN CLASSIFICATION	ROLLING or LEVEL	-----
DESIGN SPEED	XX MPH	-----
POSTED SPEED	XX MPH	-----
DESIGN VEHICLE	WB–67	SU–30
PERCENT TRUCKS	X%	<X%



XXX=EST. 2030 ADT
(XXX)=EST. 2030 DDHV
TRAFFIC FLOW DIAGRAM





LEGEND

- RIGHT OF WAY
- PROPERTY LINE
- EASEMENT
- EXISTING EDGE OF PAVEMENT
- YIELD LINE SYMBOL
- STOP LINE
- DOUBLE CENTERLINE
- CENTER STRIPE
- SKIP STRIPE
- EDGE LINE
- WIDE LANE LINE
- WIDE DOTTED LANE LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- BARRIER
- CEMENT CONCRETE TRAFFIC CURB AND GUTTER
- TRAFFIC ARROWS

CURVE DATA						
CURVE #	ALIGNMENT	P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
C4	A	29+89.19	8°12'52"	700.00	50.27	100.36
C5	A	32+50.65	9°39'43"	530.00	44.79	89.38
C6	A	33+35.55	4°37'03"	1000.00	40.32	80.59
C24	B	200+48.22	5°59'30"	400.00	20.93	41.83

△	REVISIONS	DATE	BY
	PRELIMINARY		

DESIGNED BY: DESIGNER NAME
DRAWN BY: DRAFTER NAME
CHECKED BY: ENGINEER NAME
ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-IP-01

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
SCJALLIANCE.COM

CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

INTERSECTION PLAN @ HENDERSON BLVD
A 28+00 - A 34+50

DRAWING No.: IP-1
SHEET No.: ---- OF XX

Aug 27, 2021 2:03.35pm - User: jpdubrown
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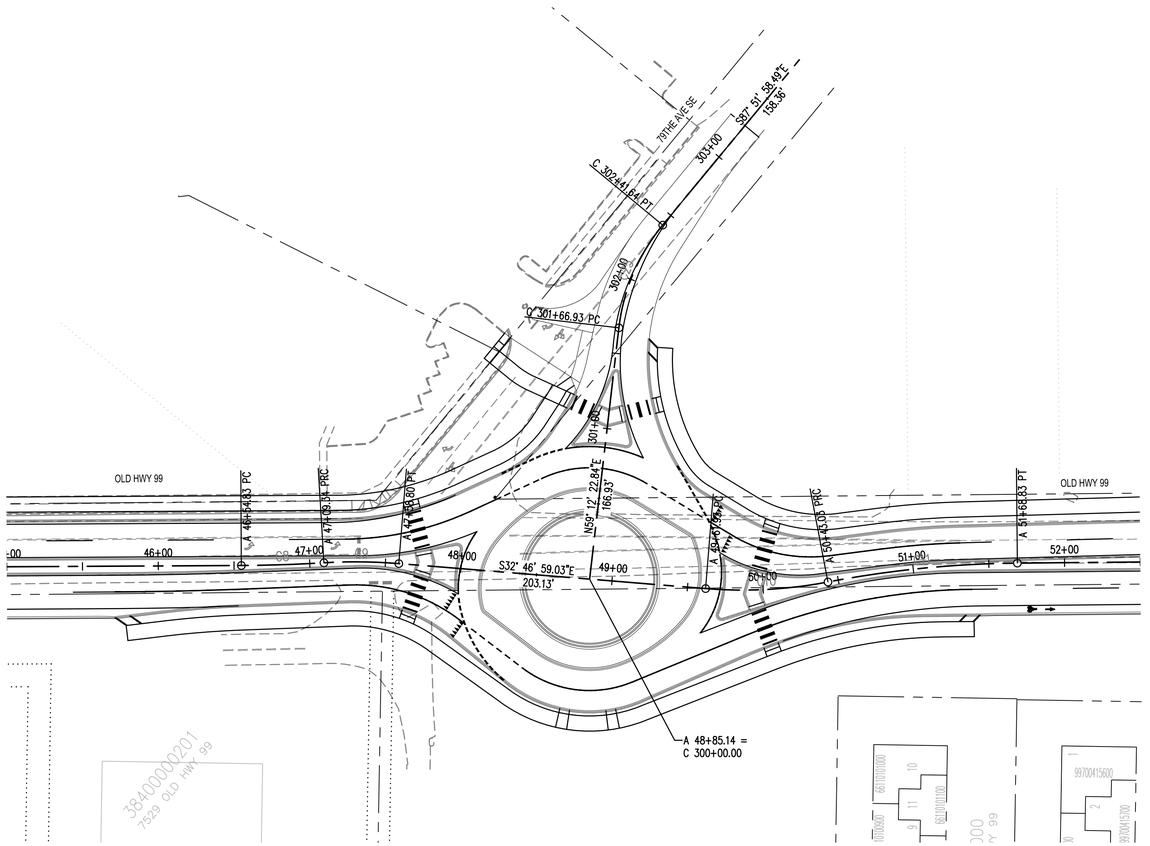
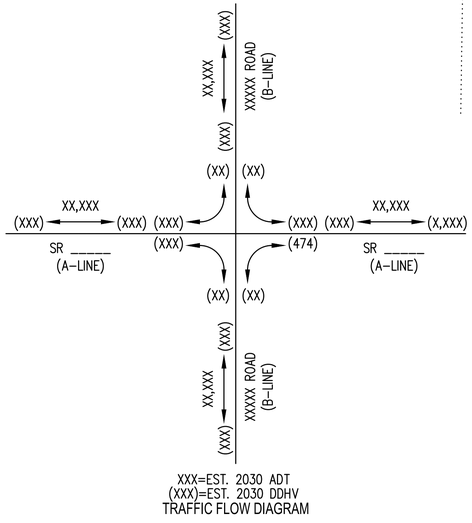


LEGEND

- RIGHT OF WAY
- PROPERTY LINE
- EASEMENT
- EXISTING EDGE OF PAVEMENT
- YIELD LINE SYMBOL
- STOP LINE
- DOUBLE CENTERLINE
- CENTER STRIPE
- SKIP STRIPE
- EDGE LINE
- WIDE LANE LINE
- WIDE DOTTED LANE LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- BARRIER
- CEMENT CONCRETE TRAFFIC CURB AND GUTTER
- TRAFFIC ARROWS

CURVE DATA

CURVE #	ALIGNMENT	P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
C8	A	46+82.09	3°07'23"	1000.00	27.26	54.51
C9	A	47+34.11	8°05'48"	350.00	24.77	49.46
C10	A	50+02.73	15°29'22"	300.00	40.80	81.10
C11	A	51+06.10	10°17'47"	700.00	63.07	125.79
C25	C	302+05.35	32°55'39"	130.00	38.42	74.71



XXX=EST. 2030 ADT
(XXX)=EST. 2030 DDHV
TRAFFIC FLOW DIAGRAM

DESIGN DATA FOR NHS ROUTE, NON-INTERSTATE IMPROVEMENTS

ROADWAY	A–LINE (SR ###)	B–LINE (ROAD NAME)
SUMMARY OF DESIGN	MM/DD/YYYY	-----
INTERSECTION CONTROL TYPE	(UN)SIGNALIZED	STOP
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	-----
ACCESS CONTROL	LIMITED ACCESS MODIFIED CONTROL	-----
TERRAIN CLASSIFICATION	ROLLING or LEVEL	-----
DESIGN SPEED	XX MPH	-----
POSTED SPEED	XX MPH	-----
DESIGN VEHICLE	WB–67	SU–30
PERCENT TRUCKS	X%	<X%

△	REVISIONS	DATE	BY

PRELIMINARY

DESIGNED BY: DESIGNER NAME
ISSUE DATE: SEPTEMBER 2020
DRAWN BY: DRAFTER NAME
JOB No.: 0625.29
CHECKED BY: ENGINEER NAME
DRAWING FILE No.: 0625.29-IP-01

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
SCJALLIANCE.COM

CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

INTERSECTION PLAN @ 79TH AVE
A 47+00 - A 42+50

DRAWING No.: IP-2
SHEET No.: ---- OF XX

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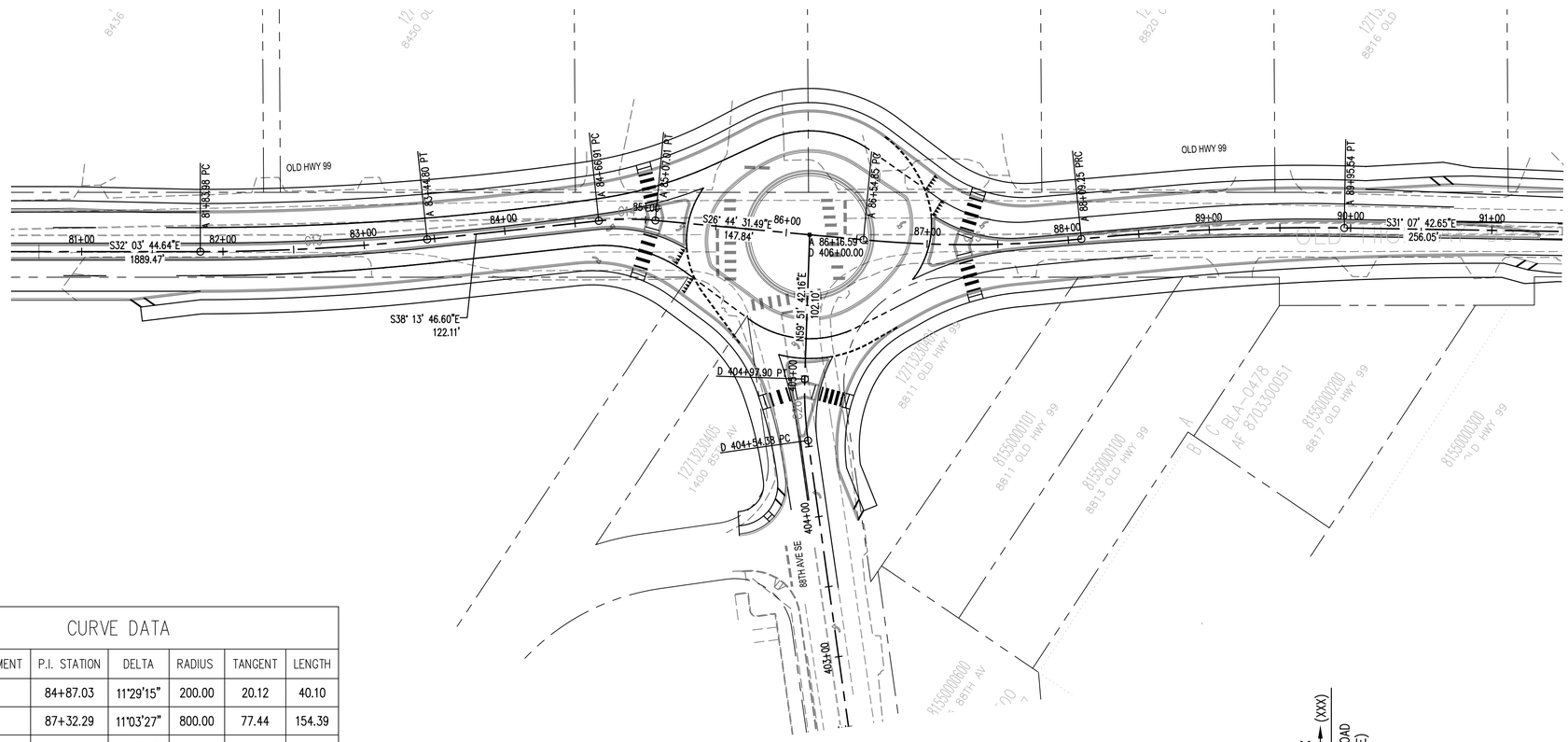

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SCALE IN FEET

LEGEND

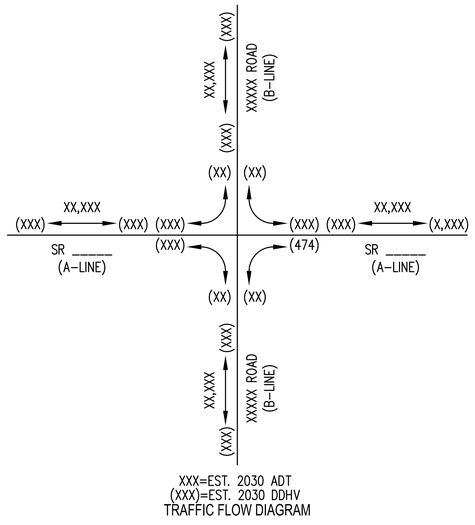
- RIGHT OF WAY
- PROPERTY LINE
- EASEMENT
- EXISTING EDGE OF PAVEMENT
- YIELD LINE SYMBOL
- STOP LINE
- DOUBLE CENTERLINE
- CENTER STRIPE
- SKIP STRIPE
- EDGE LINE
- WIDE LANE LINE
- WIDE DOTTED LANE LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- BARRIER
- CEMENT CONCRETE TRAFFIC CURB AND GUTTER
- TRAFFIC ARROWS

CURVE DATA

CURVE #	ALIGNMENT	P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
C14	A	84+87.03	11°29'15"	200.00	20.12	40.10
C15	A	87+32.29	11°03'27"	800.00	77.44	154.39
C16	A	89+02.50	6°40'16"	1600.00	93.25	186.29
C26	D	404+76.20	9°58'25"	250.00	21.81	43.52

DESIGN DATA FOR NHS ROUTE, NON-INTERSTATE IMPROVEMENTS

ROADWAY	A–LINE (SR ###)	B–LINE (ROAD NAME)
SUMMARY OF DESIGN	MM/DD/YYYY	-----
INTERSECTION CONTROL TYPE	(UN)SIGNALIZED	STOP
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	-----
ACCESS CONTROL	LIMITED ACCESS MODIFIED CONTROL	-----
TERRAIN CLASSIFICATION	ROLLING or LEVEL	-----
DESIGN SPEED	XX MPH	-----
POSTED SPEED	XX MPH	-----
DESIGN VEHICLE	WB–67	SU–30
PERCENT TRUCKS	X%	<X%



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(XXX)=EST. 2030 DDHV
TRAFFIC FLOW DIAGRAM

△	REVISIONS	DATE	BY

PRELIMINARY

DESIGNED BY: DESIGNER NAME
DRAWN BY: DRAFTER NAME
CHECKED BY: ENGINEER NAME
ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-IP-01

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

INTERSECTION PLAN @ 88TH AVE
A 80+50 - A 91+00

DRAWING No.: IP-3
SHEET No.: ---- OF XX

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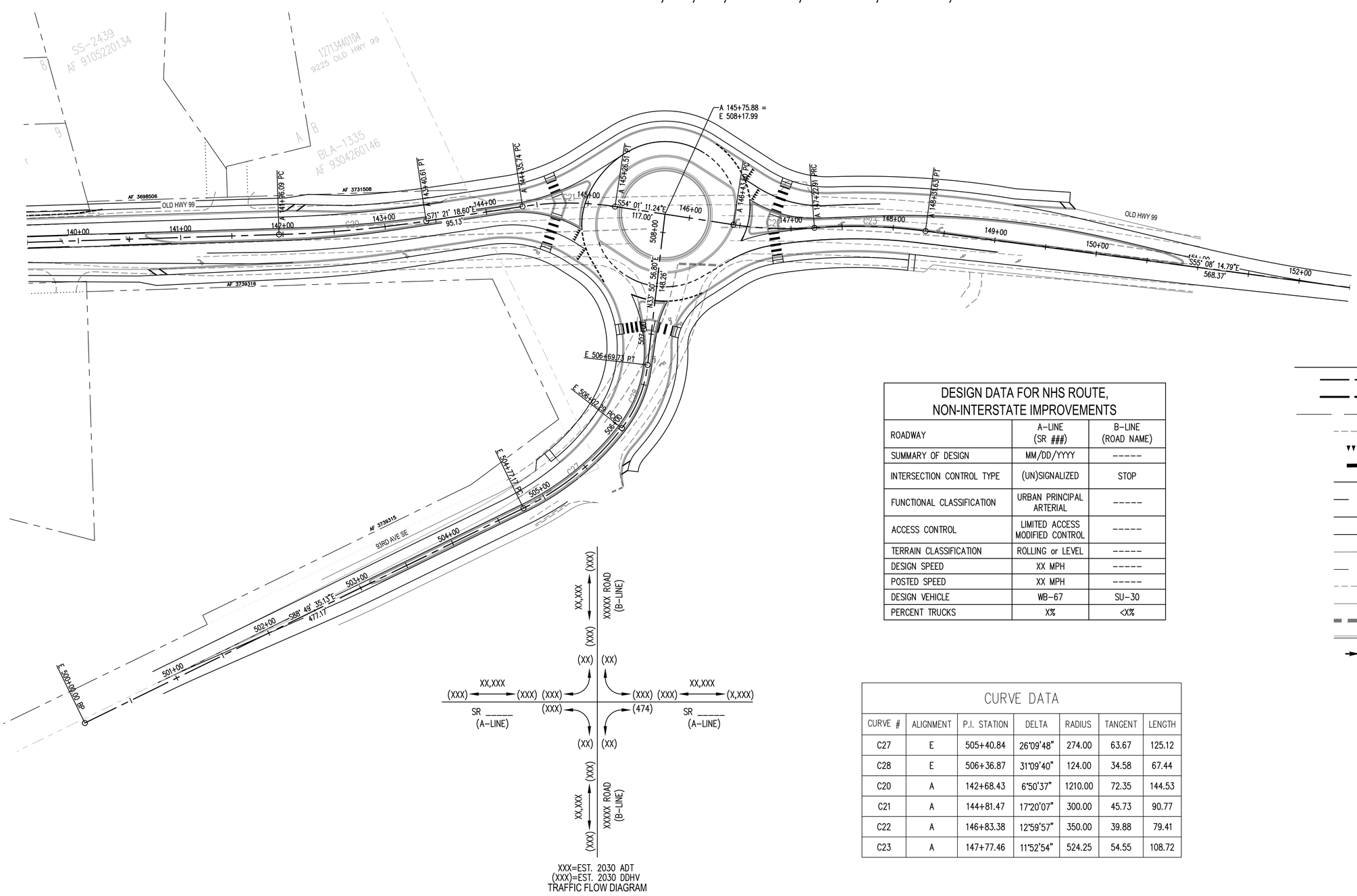

0 50 100
SCALE IN FEET

DESIGN DATA FOR NHS ROUTE, NON-INTERSTATE IMPROVEMENTS

ROADWAY	A–LINE (SR ###)	B–LINE (ROAD NAME)
SUMMARY OF DESIGN	MM/DD/YYYY	-----
INTERSECTION CONTROL TYPE	(UN)SIGNALIZED	STOP
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL	-----
ACCESS CONTROL	LIMITED ACCESS MODIFIED CONTROL	-----
TERRAIN CLASSIFICATION	ROLLING or LEVEL	-----
DESIGN SPEED	XX MPH	-----
POSTED SPEED	XX MPH	-----
DESIGN VEHICLE	WB–67	SU–30
PERCENT TRUCKS	X%	<X%

LEGEND

- RIGHT OF WAY
- PROPERTY LINE
- EASEMENT
- EXISTING EDGE OF PAVEMENT
- YIELD LINE SYMBOL
- STOP LINE
- DOUBLE CENTERLINE
- CENTER STRIPE
- SKIP STRIPE
- EDGE LINE
- WIDE LANE LINE
- WIDE DOTTED LANE LINE
- EDGE OF GRAVEL
- EDGE OF PAVEMENT
- BARRIER
- CEMENT CONCRETE TRAFFIC CURB AND GUTTER
- TRAFFIC ARROWS

CURVE DATA

CURVE #	ALIGNMENT	P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
C27	E	505+40.84	26°09'48"	274.00	63.67	125.12
C28	E	506+36.87	31°09'40"	124.00	34.58	67.44
C20	A	142+68.43	6°50'37"	1210.00	72.35	144.53
C21	A	144+81.47	17°20'07"	300.00	45.73	90.77
C22	A	146+83.38	12°59'57"	350.00	39.88	79.41
C23	A	147+77.46	11°52'54"	524.25	54.55	108.72

△	REVISIONS	DATE	BY
	PRELIMINARY		

DESIGNED BY: DESIGNER NAME
DRAWN BY: DRAFTER NAME
CHECKED BY: ENGINEER NAME
ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-IP-01

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WASHINGTON 98516
P: 360-352-1465 F: 360-352-1509
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

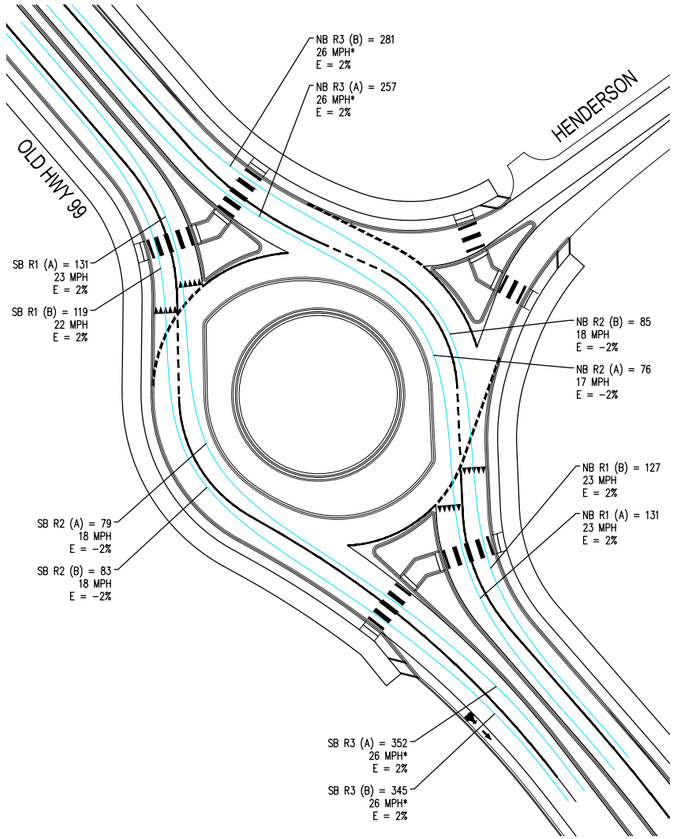
OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

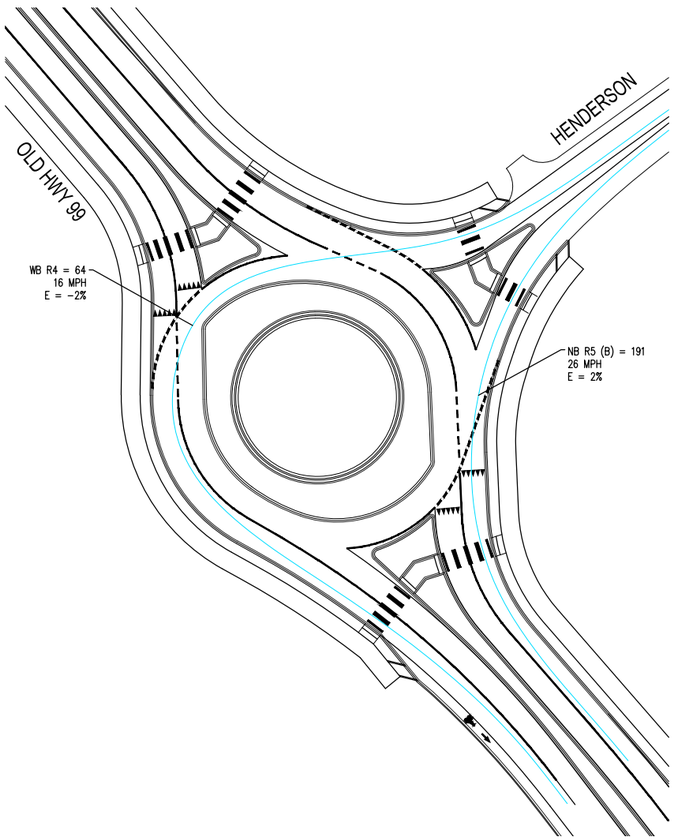
INTERSECTION PLAN @ 93TH AVE
A 139+50 - A 152+50

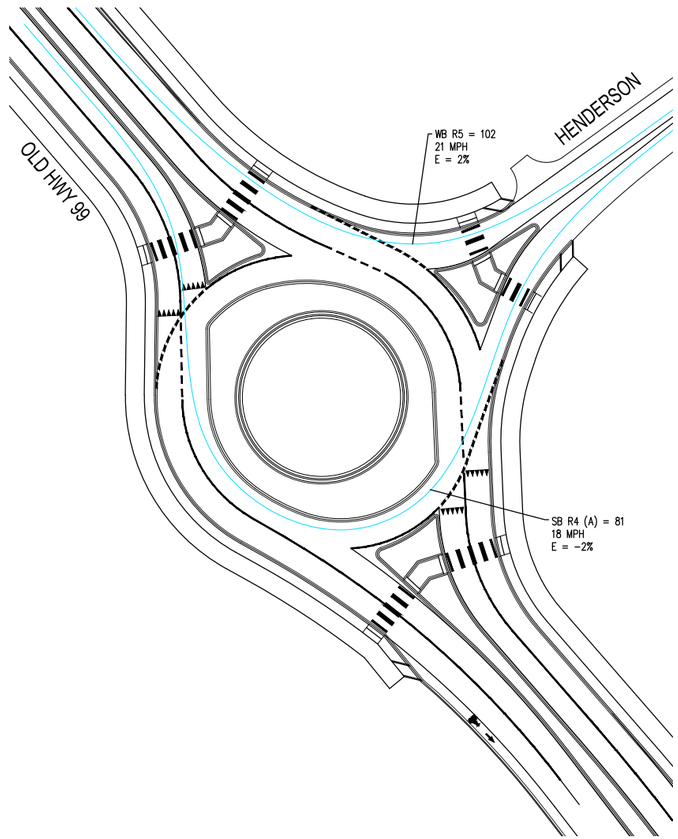
DRAWING No.: IP-4
SHEET No.: ---- OF XX

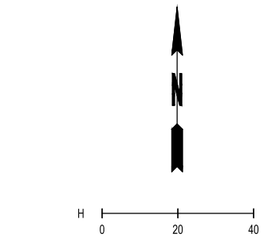
Aug 27, 2021 2:04:05pm - User: jodybrown
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\0625.29-IP-01.DWG

F2) FASTEST PATH EXHIBITS

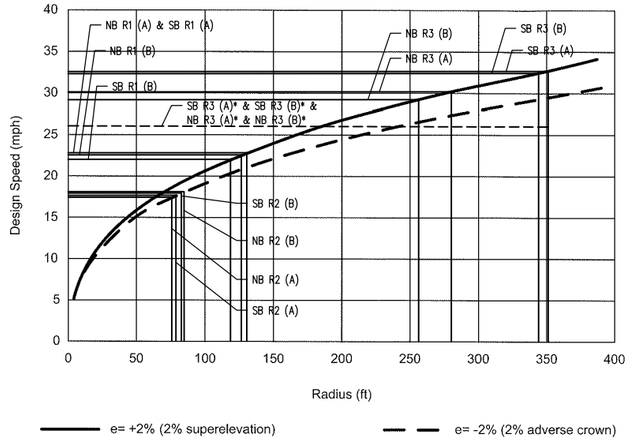




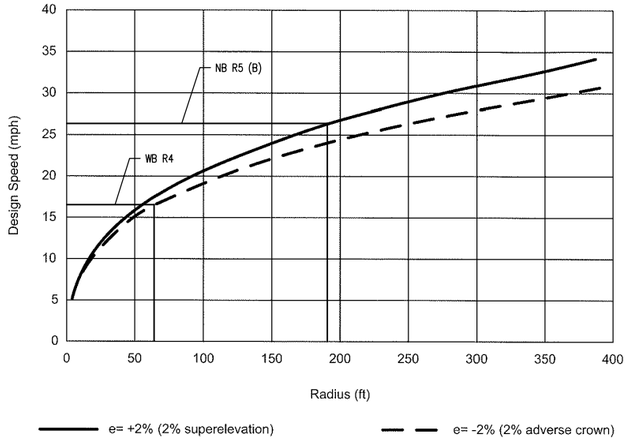




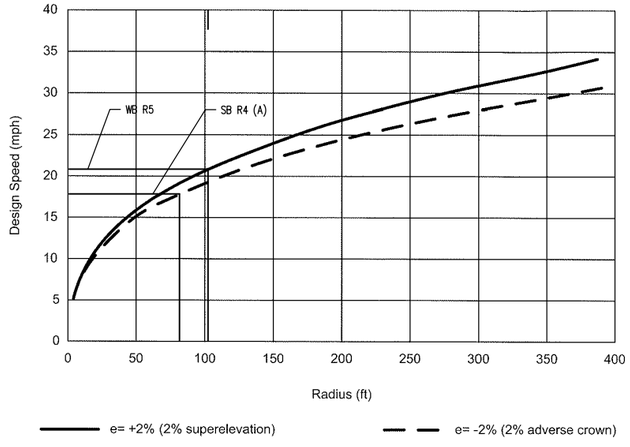
*SPEED USED IS A MAXIMUM EXIT SPEED BY ACCELERATION CALCULATED USING AASHTO GEOMETRIC DESIGN OF HIGHWAY AND STREETS EXHIBIT 2-24: ACCELERATION OF PASSENGER CARS. AND APPLYING IT OVER THE DISTANCE FROM THE MIDDLE OF R2 SPEED CURVES TO THE CONFLICT POINT.



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9

SCJ ALLIANCE
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8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
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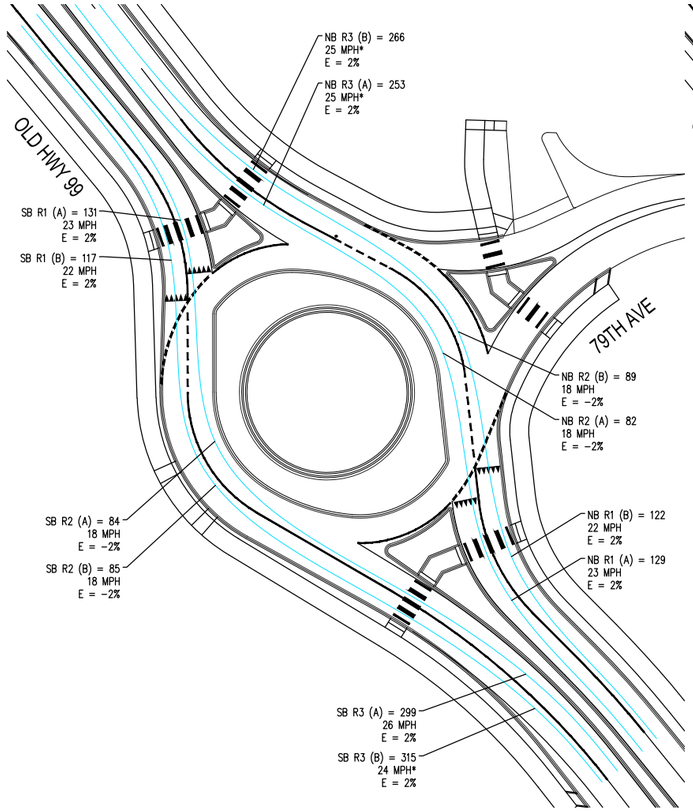
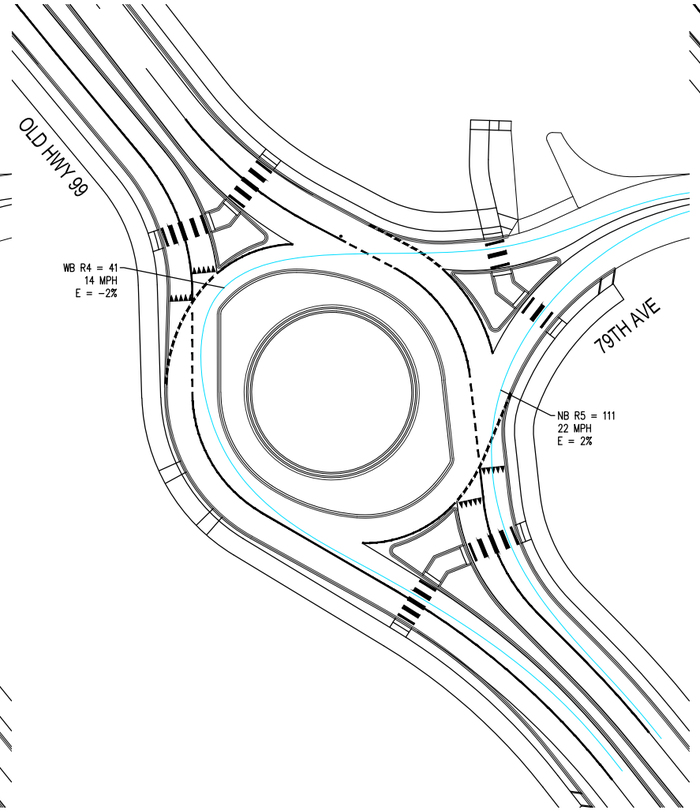
HORIZONTAL SCALE:	1"=40'
DATE:	July, 2021
JOB No.:	0625.29
DRAWING FILE No.:	

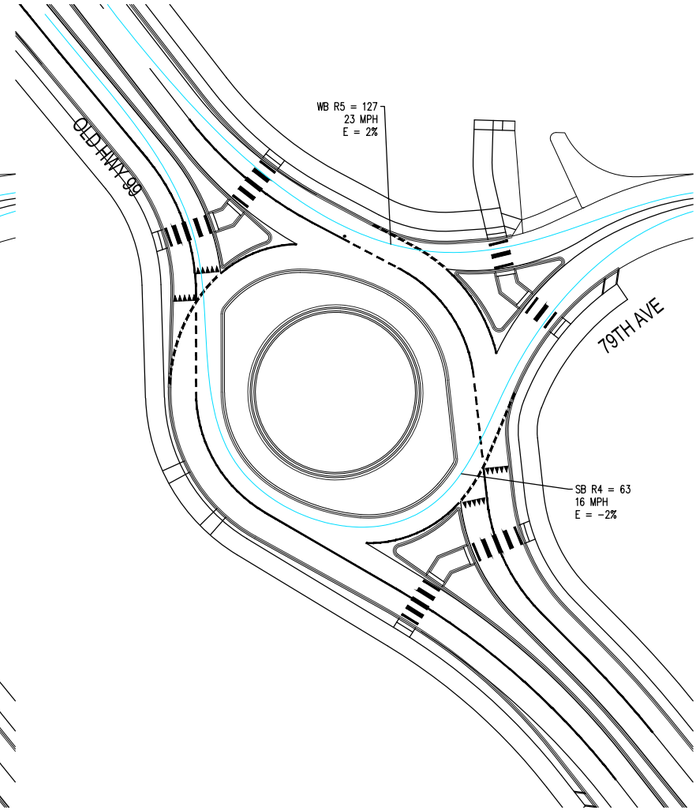
OLD HWY 99 AND 79TH AVE
FASTEST PATH EXHIBIT

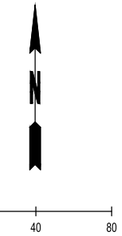
EXHIBIT No: **EX-1**
SHEET No: **1 of 4**

2021 3:11:19pm - User: kiano.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\FASTEST PATH\0625.29_FASTEST PATH.DWG

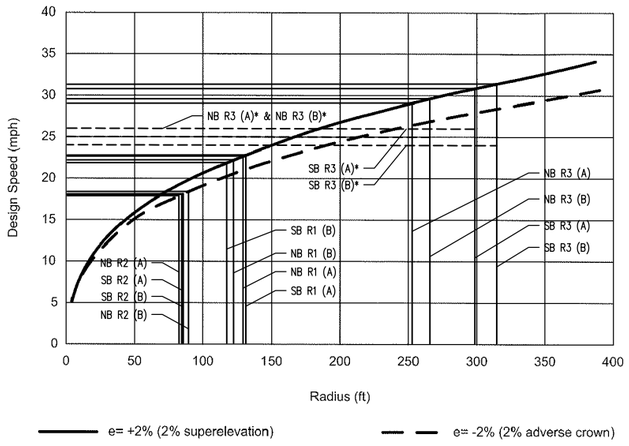




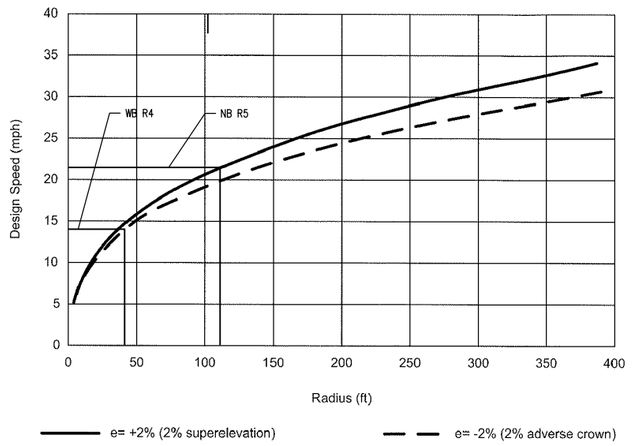




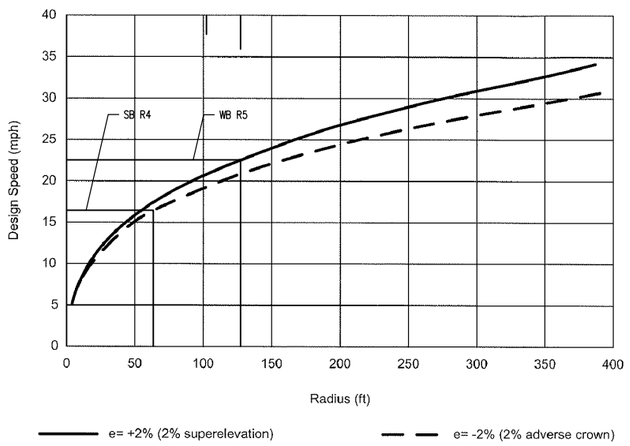
*SPEED USED IS A MAXIMUM EXIT SPEED BY ACCELERATION CALCULATED USING AASHTO GEOMETRIC DESIGN OF HIGHWAY AND STREETS EXHIBIT 2-24: ACCELERATION OF PASSENGER CARS. AND APPLYING IT OVER THE DISTANCE FROM THE MIDDLE OF R2 SPEED CURVES TO THE CONFLICT POINT.



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius

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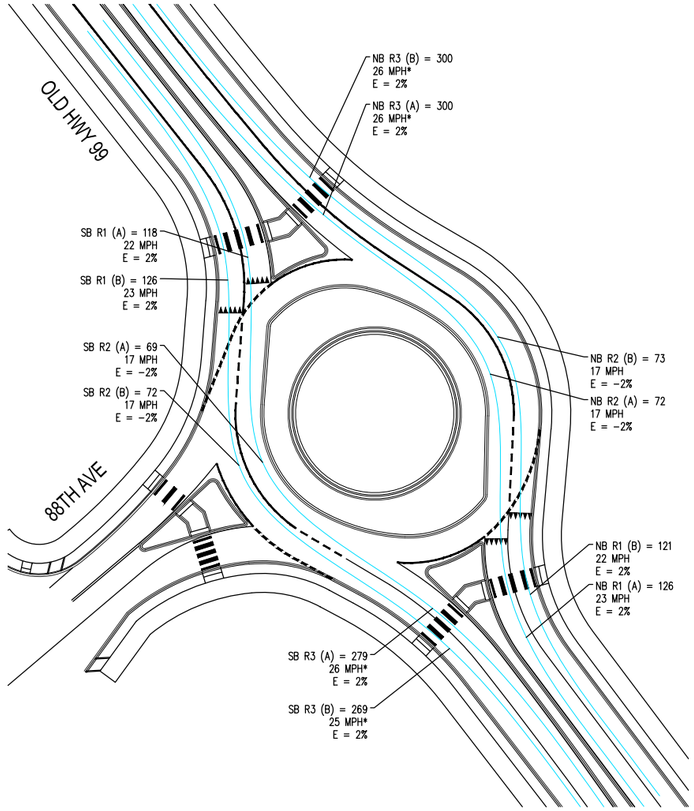
HORIZONTAL SCALE:	1"=40'
DATE:	July, 2021
JOB No.:	0625.29
DRAWING FILE No.:	-

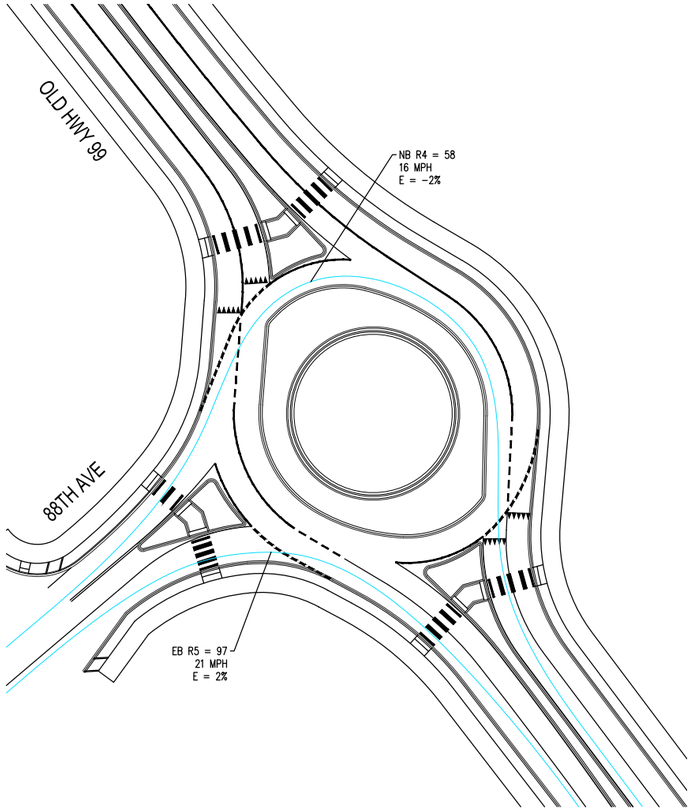
OLD HWY 99 AND 79TH AVE
FASTEST PATH EXHIBIT

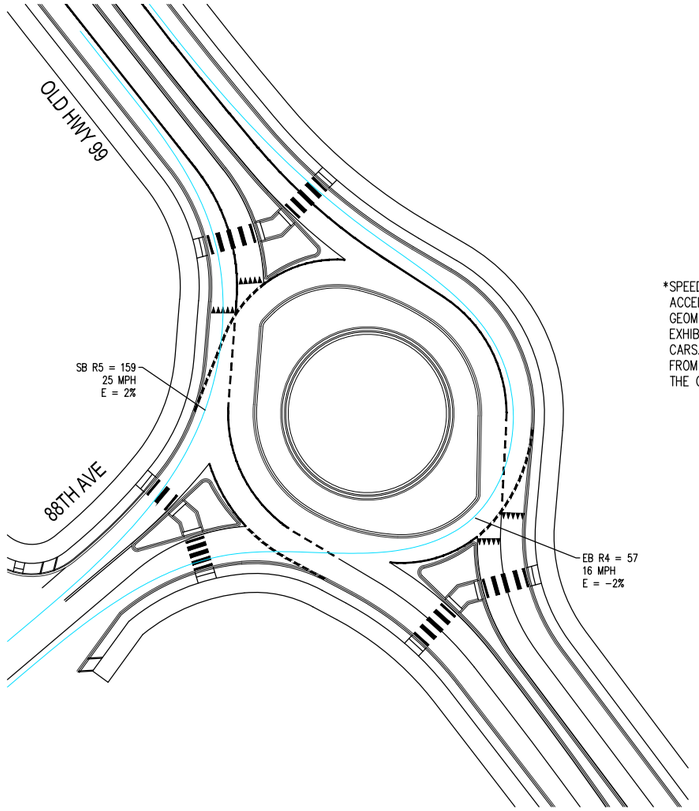
EXHIBIT No: **EX-2**

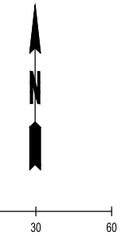
SHEET No: **2 of 4**

2021 3:11:25pm - User: kiera.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\FASTEST PATH\0625.29_FASTEST PATH.DWG

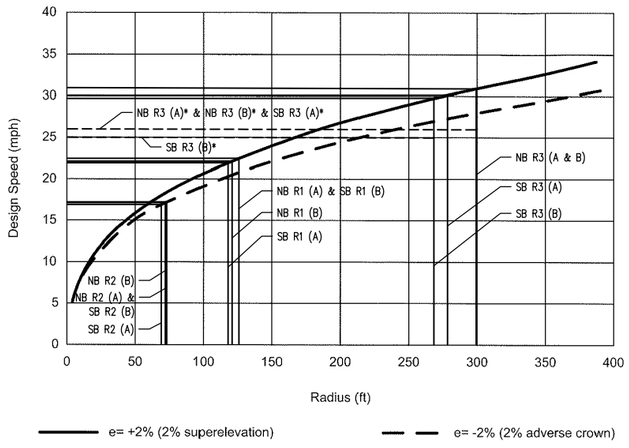




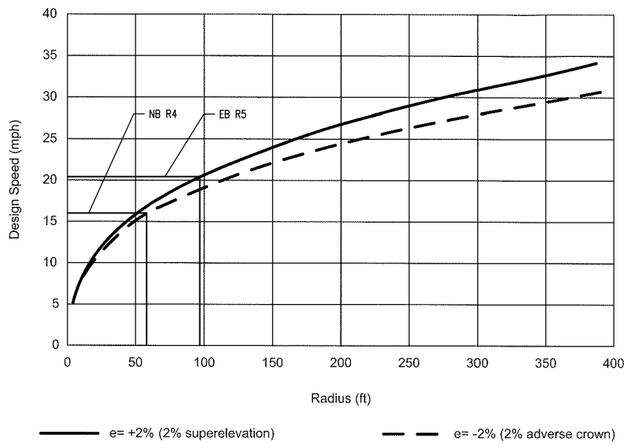




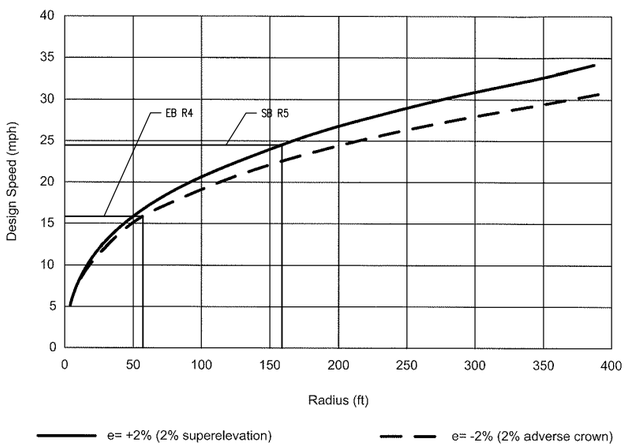
*SPEED USED IS A MAXIMUM EXIT SPEED BY ACCELERATION CALCULATED USING AASHTO GEOMETRIC DESIGN OF HIGHWAY AND STREETS EXHIBIT 2-24: ACCELERATION OF PASSENGER CARS. AND APPLYING IT OVER THE DISTANCE FROM THE MIDDLE OF R2 SPEED CURVES TO THE CONFLICT POINT.



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9

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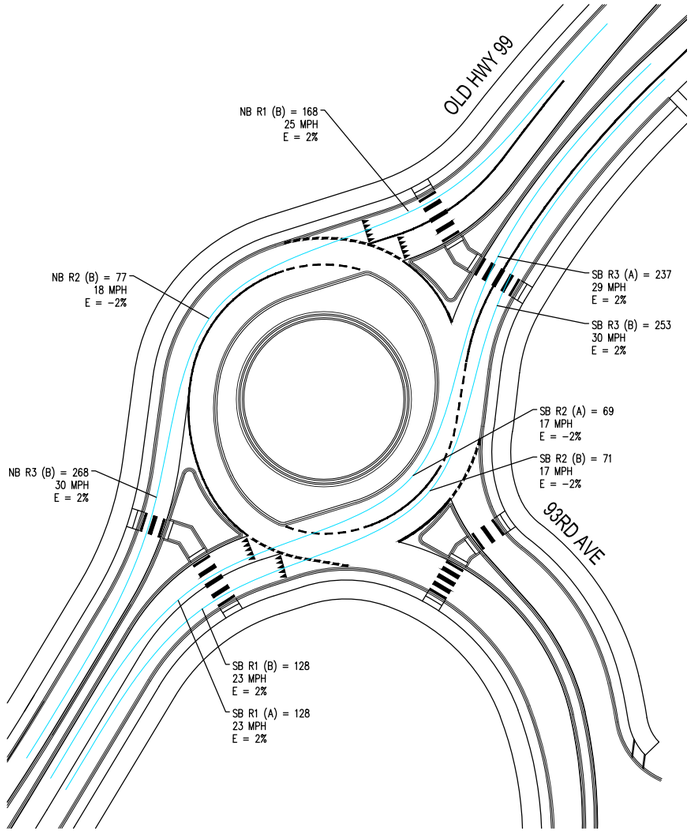
HORIZONTAL SCALE:	1"=40'
DATE:	July, 2021
JOB No.:	0625.29
DRAWING FILE No.:	-

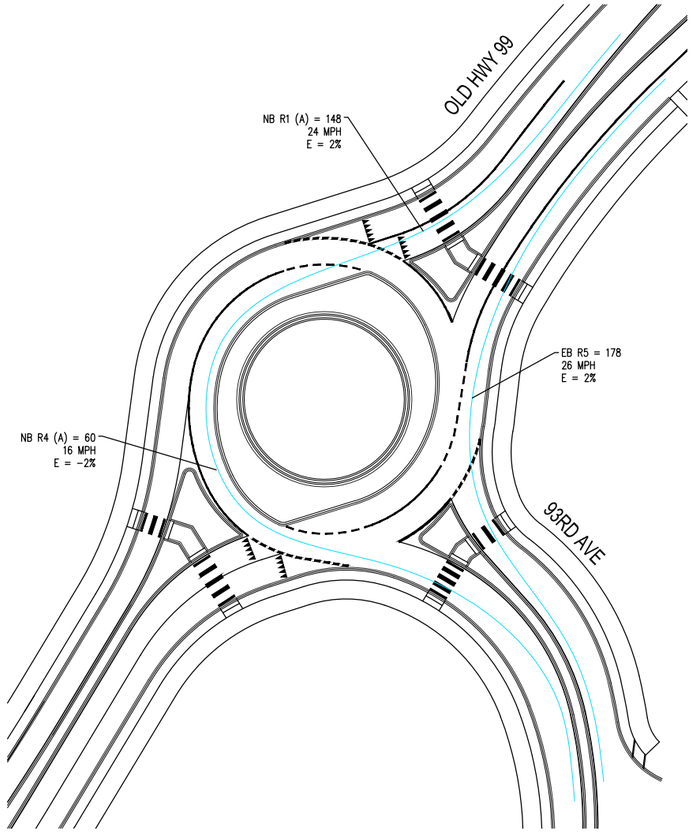
OLD HWY 99 AND 79TH AVE
FASTEST PATH EXHIBIT

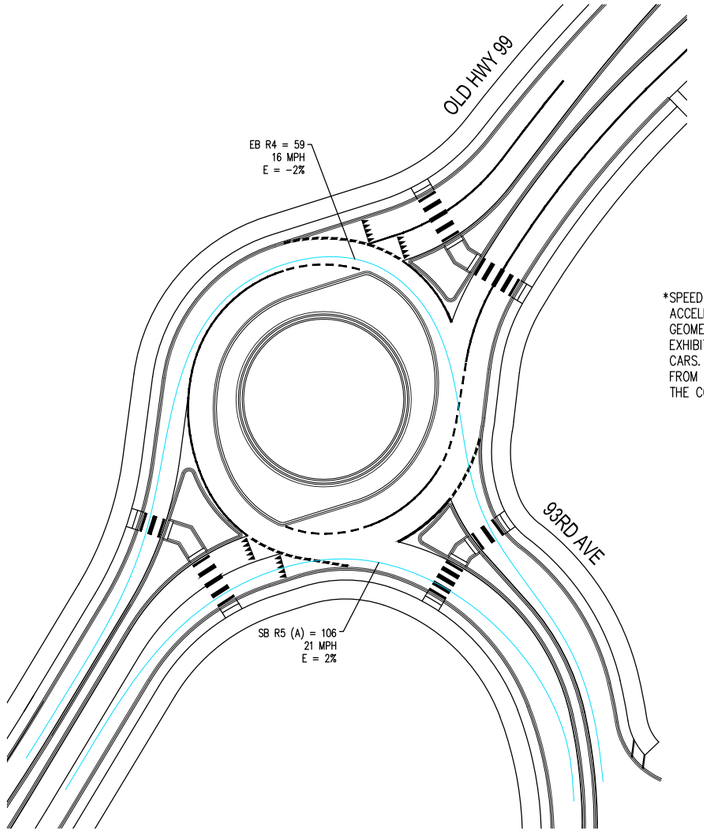
EXHIBIT No: **EX-3**

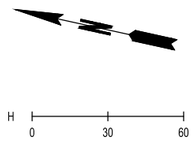
SHEET No: **3 of 4**

2021 3:11:30pm - User: kano.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\FASTEST PATH\0625.29_FASTEST PATH.DWG

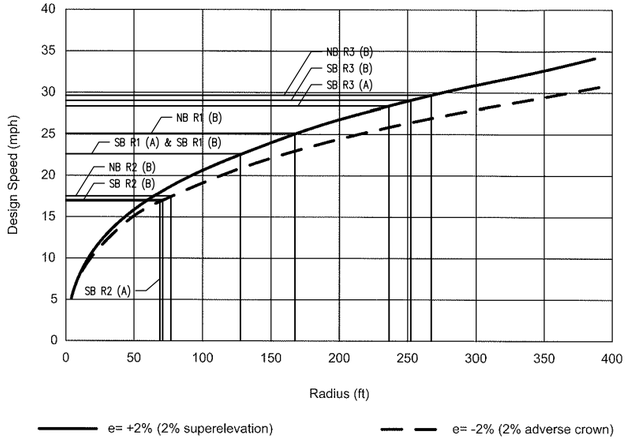




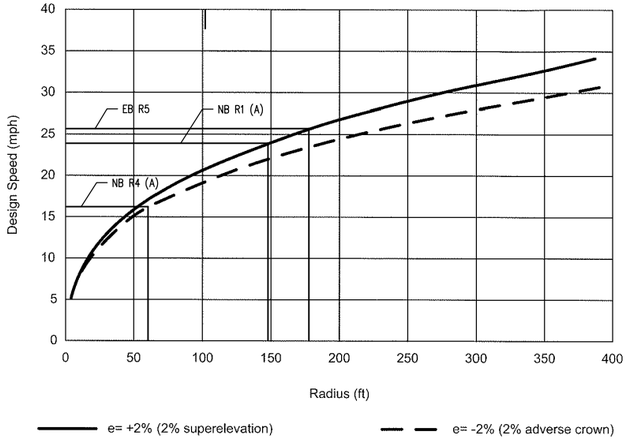




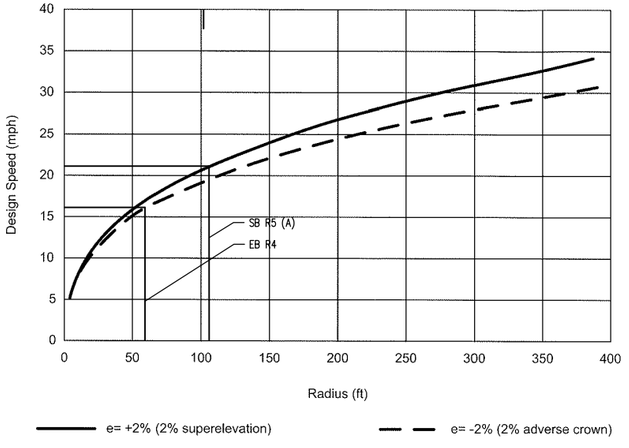
*SPEED USED IS A MAXIMUM EXIT SPEED BY ACCELERATION CALCULATED USING AASHTO GEOMETRIC DESIGN OF HIGHWAY AND STREETS EXHIBIT 2-24: ACCELERATION OF PASSENGER CARS. AND APPLYING IT OVER THE DISTANCE FROM THE MIDDLE OF R2 SPEED CURVES TO THE CONFLICT POINT.



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9



Speed vs. Radius
Exhibit 1320-9

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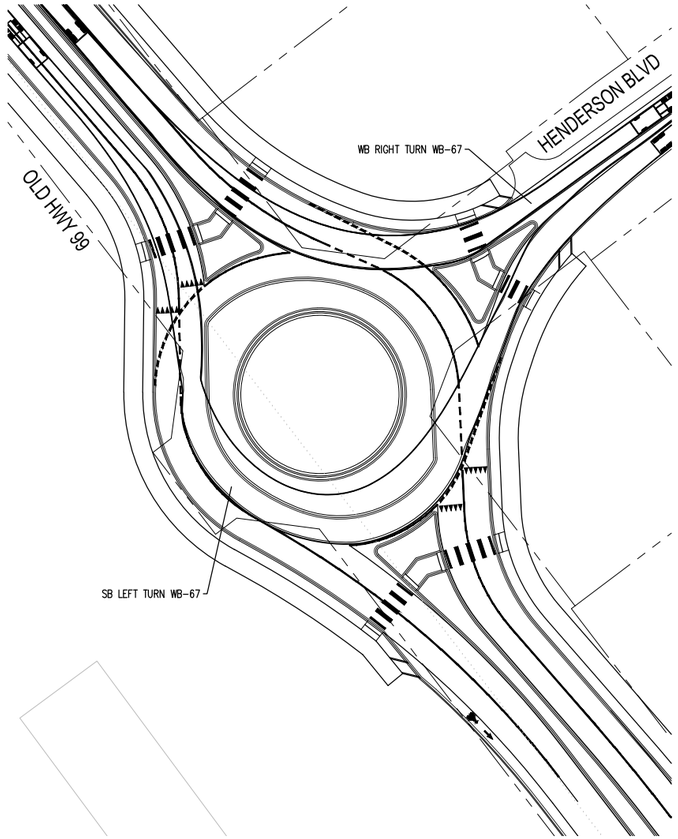
HORIZONTAL SCALE: 1"=40'
DATE: July, 2021
JOB No.: 0625.29
DRAWING FILE No.: -

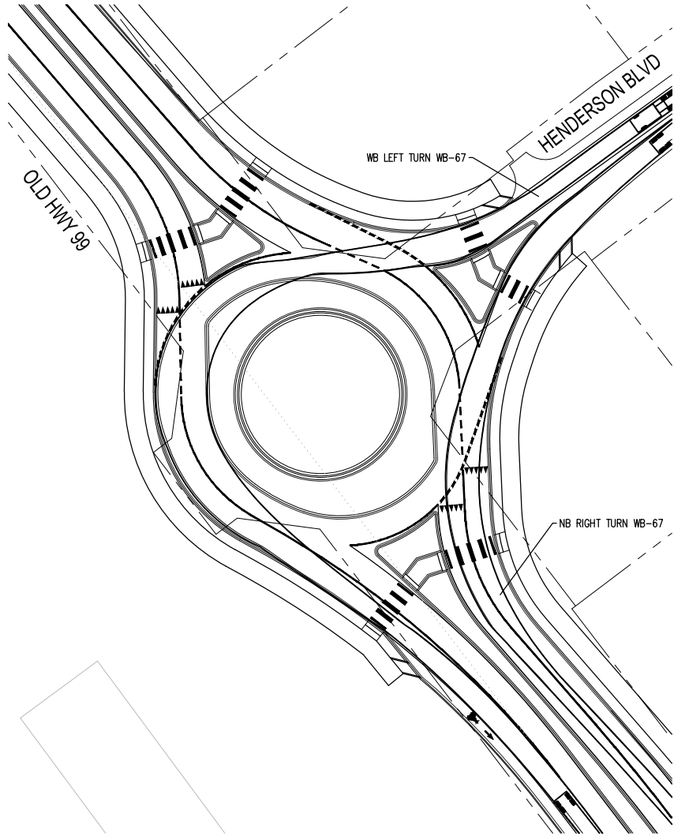
OLD HWY 99 AND 79TH AVE
FASTEST PATH EXHIBIT

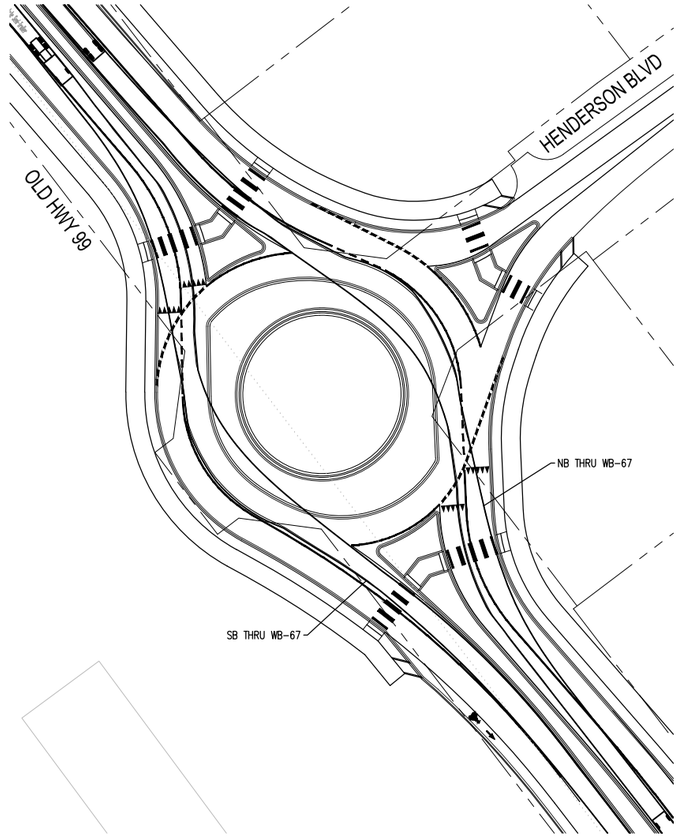
EXHIBIT No: EX-4
SHEET No: 4 of 4

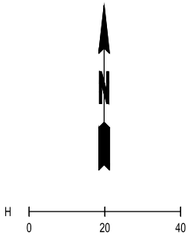
2021 3:11:35pm - User: kenn.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\FASTEST PATH\0625.29_FASTEST PATH.DWG

F3) TRUCK TURNING MOVEMENTS









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P: 360.352.1465 F: 360.352.1509
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HORIZONTAL SCALE:	1"=40'
DATE:	May, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND HENDERSON BLVD
TRUCK TURNING MOVEMENTS

EXHIBIT No: EX-1
SHEET No: 1 of 4

2021 9:13:01am – User: kono.melvin
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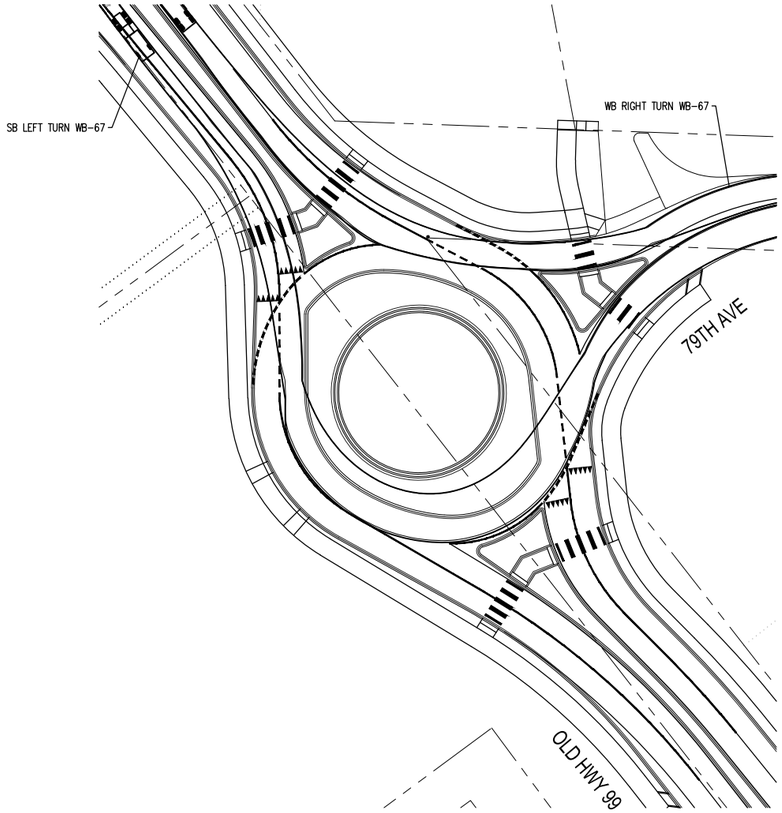

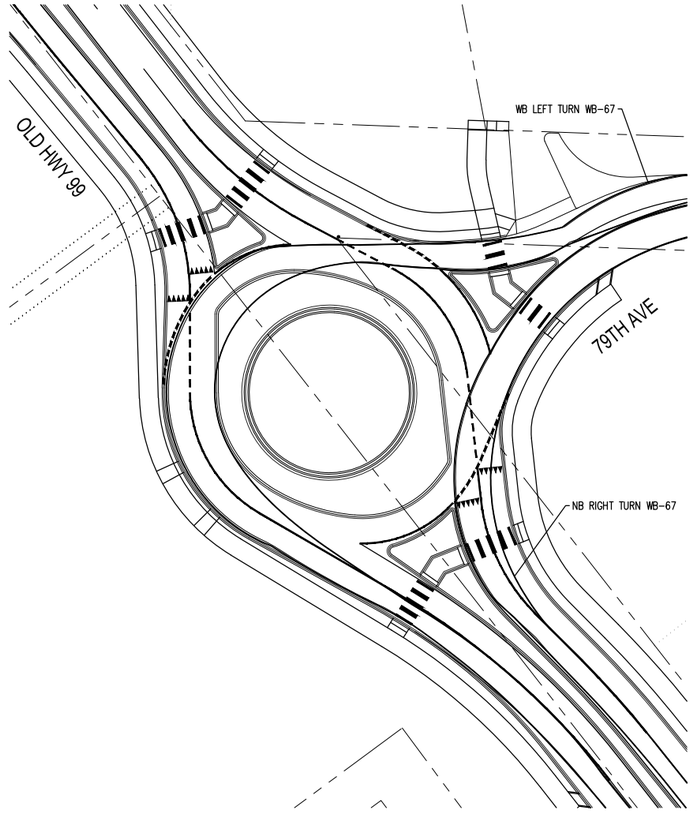

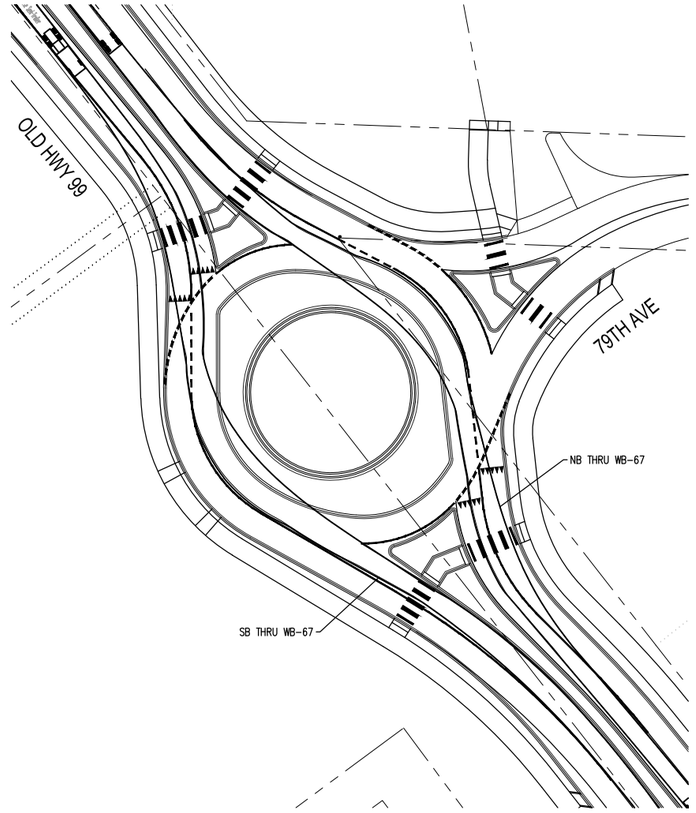

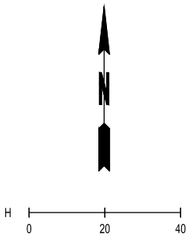

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P: 360.352.1465 F: 360.352.1509
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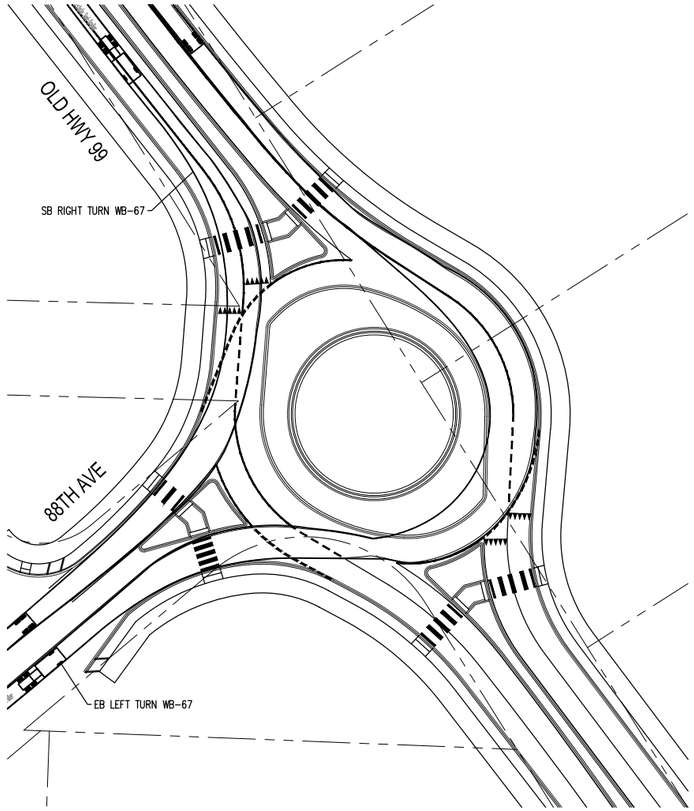
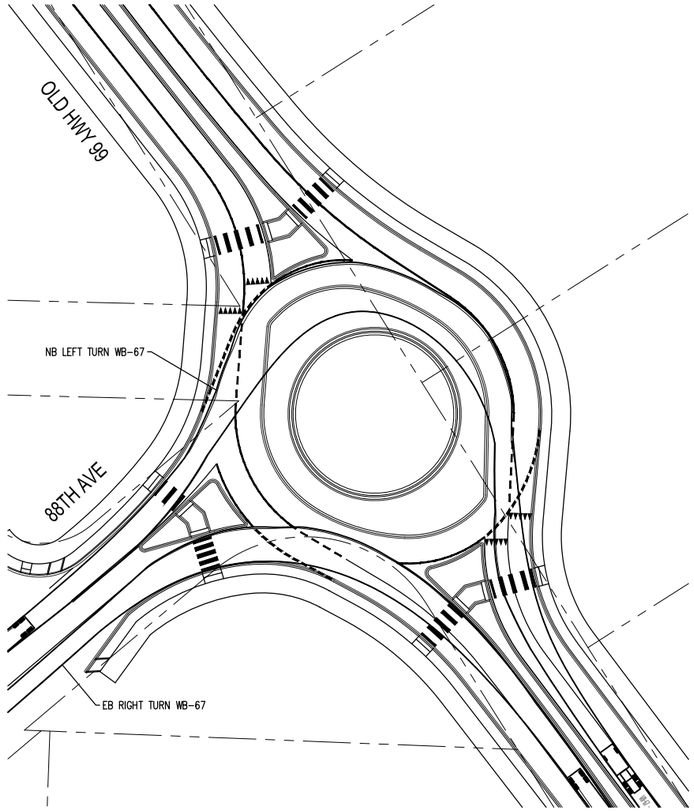
HORIZONTAL SCALE:	1"=40'
DATE:	May, 2021
JOB No.:	-
DRAWING FILE No.:	-

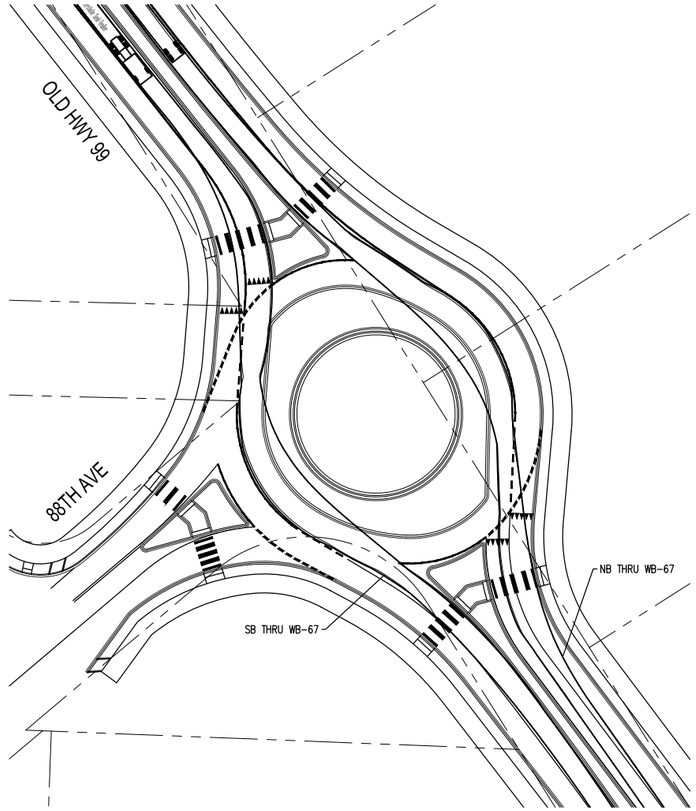
OLD HWY 99 AND 79TH AVE
TRUCK TURNING MOVEMENTS

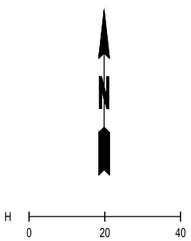
EXHIBIT No: EX-2
SHEET No: 2 of 4

2021 9:13:07am - User: kevin.melvin
I:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\TRUCK TURNS\0625.29_TRUCKTURNS.DWG









2021 9:13:12am - User: kano.melvin
I:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\TRUCK TURNS\0625.29_TRUCKTURNS.DWG

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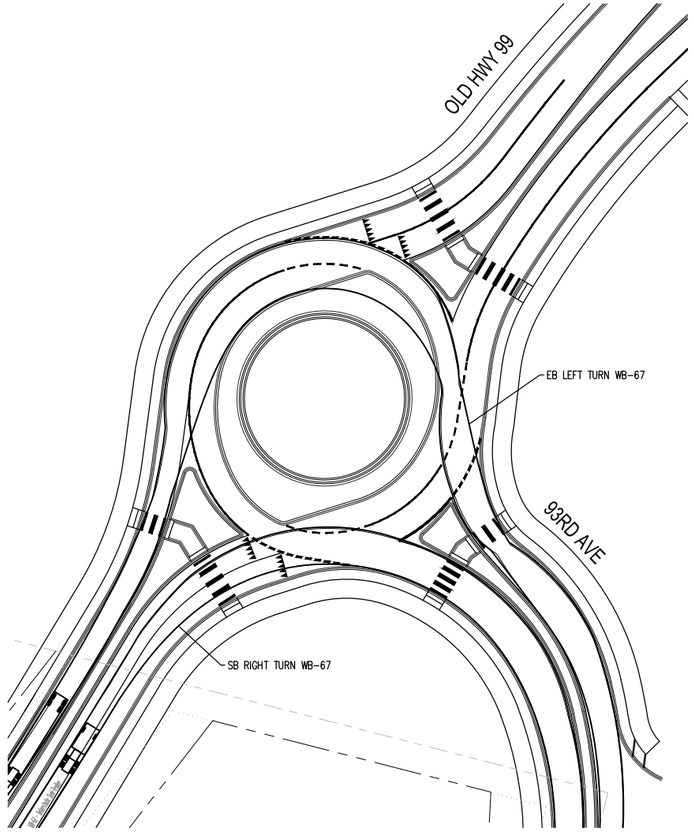
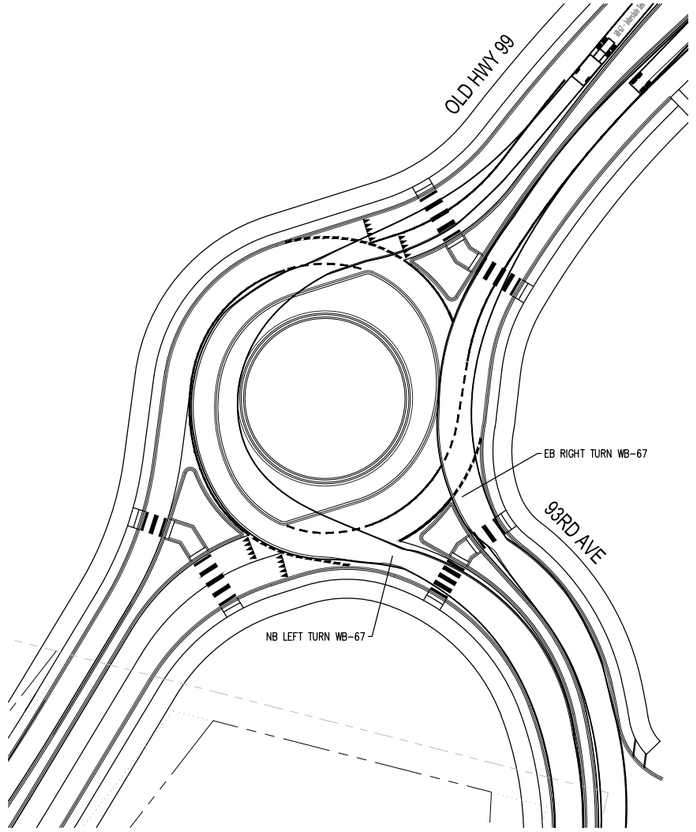
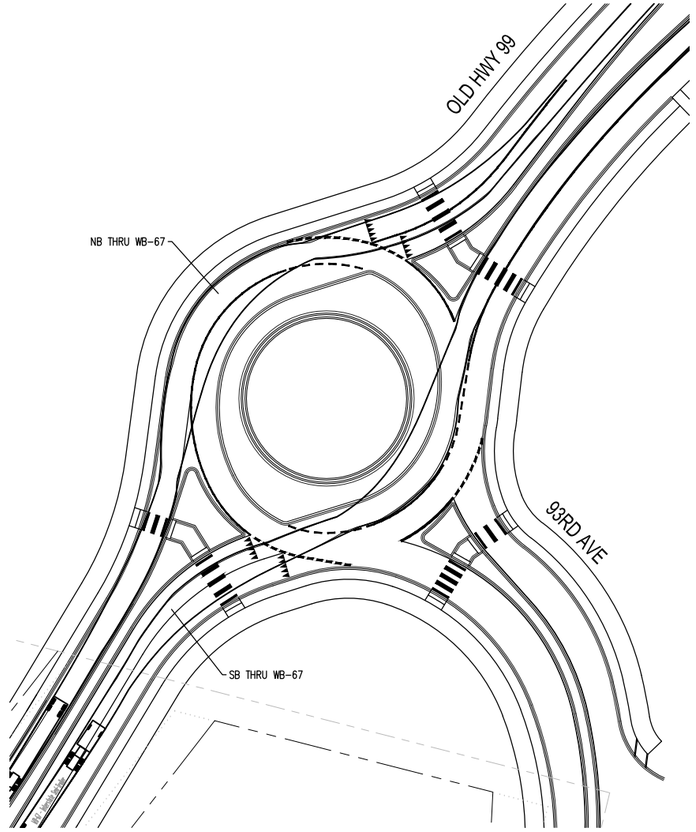
HORIZONTAL SCALE:	1"=40'
DATE:	May, 2021
JOB No.:	-
DRAWING FILE No.:	-

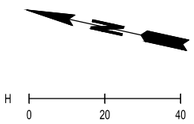
OLD HWY 99 AND 88TH AVE
TRUCK TURNING MOVEMENTS

EXHIBIT No:	EX-3
SHEET No:	3 of 4









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DATE:	May, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 93RD AVE
TRUCK TURNING MOVEMENTS

EXHIBIT No: EX-4
SHEET No: 4 of 4

2021 9-13-17pm - User: kenn.melvin
J:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\TRUCK TURNS\0625.29_TRUCKTURNS.DWG

F4) SIGHT TRIANGLE EXHIBITS

Design Speed (mph)	Design Stopping Sight Distance (ft)	K_c	K_s	VCL_m (ft)
25	155	12	26	75
30	200	19	37	90
35	250	29	49	105
40	305	44	64	120
45	360	61	79	135
50	425	84	96	150
55	495	114	115	165
60	570	151	136	180
65	645	193	157	195
70	730	247	181	210
75	820	312	206	225
80	910	384	231	240

Design Stopping Sight Distance
Exhibit 1260-1

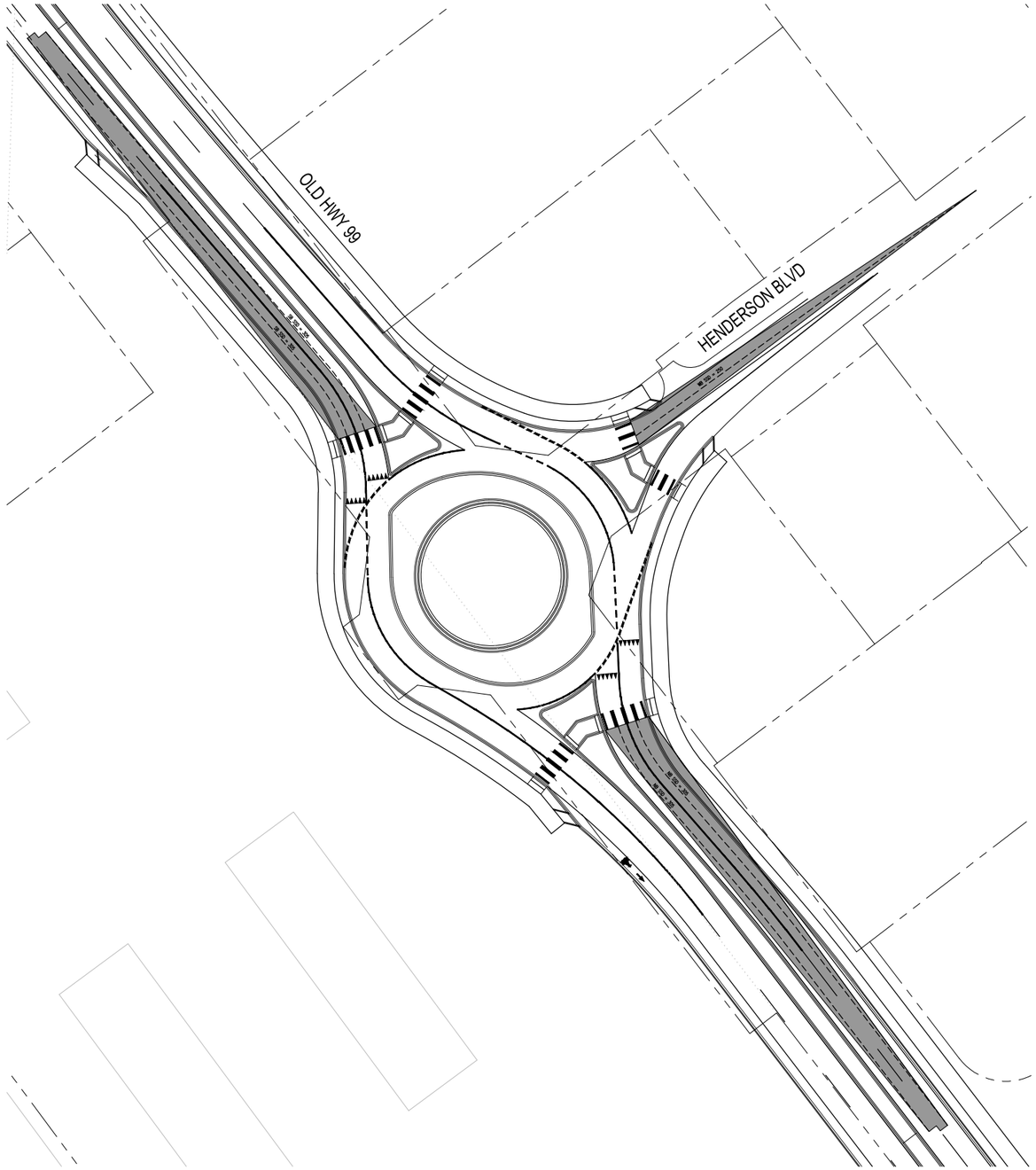
SB1 SSD = 305

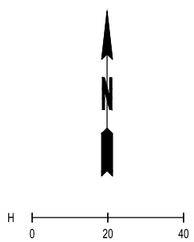
SB2 SSD = 305

WB SSD = 250

NB1 SSD = 305

NB2 SSD = 305





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HORIZONTAL SCALE: 1"=30'
DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND HENDERSON BLVD
APPROACH STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-01**
SHEET No: **1 of 16**

2021 10:09:38am – User: kano.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

Design Speed (mph)	Design Stopping Sight Distance (ft)	K_c	K_s	VCL_m (ft)
25	155	12	26	75
30	200	19	37	90
35	250	29	49	105
40	305	44	64	120
45	360	61	79	135
50	425	84	96	150
55	495	114	115	165
60	570	151	136	180
65	645	193	157	195
70	730	247	181	210
75	820	312	206	225
80	910	384	231	240

Design Stopping Sight Distance
Exhibit 1260-1

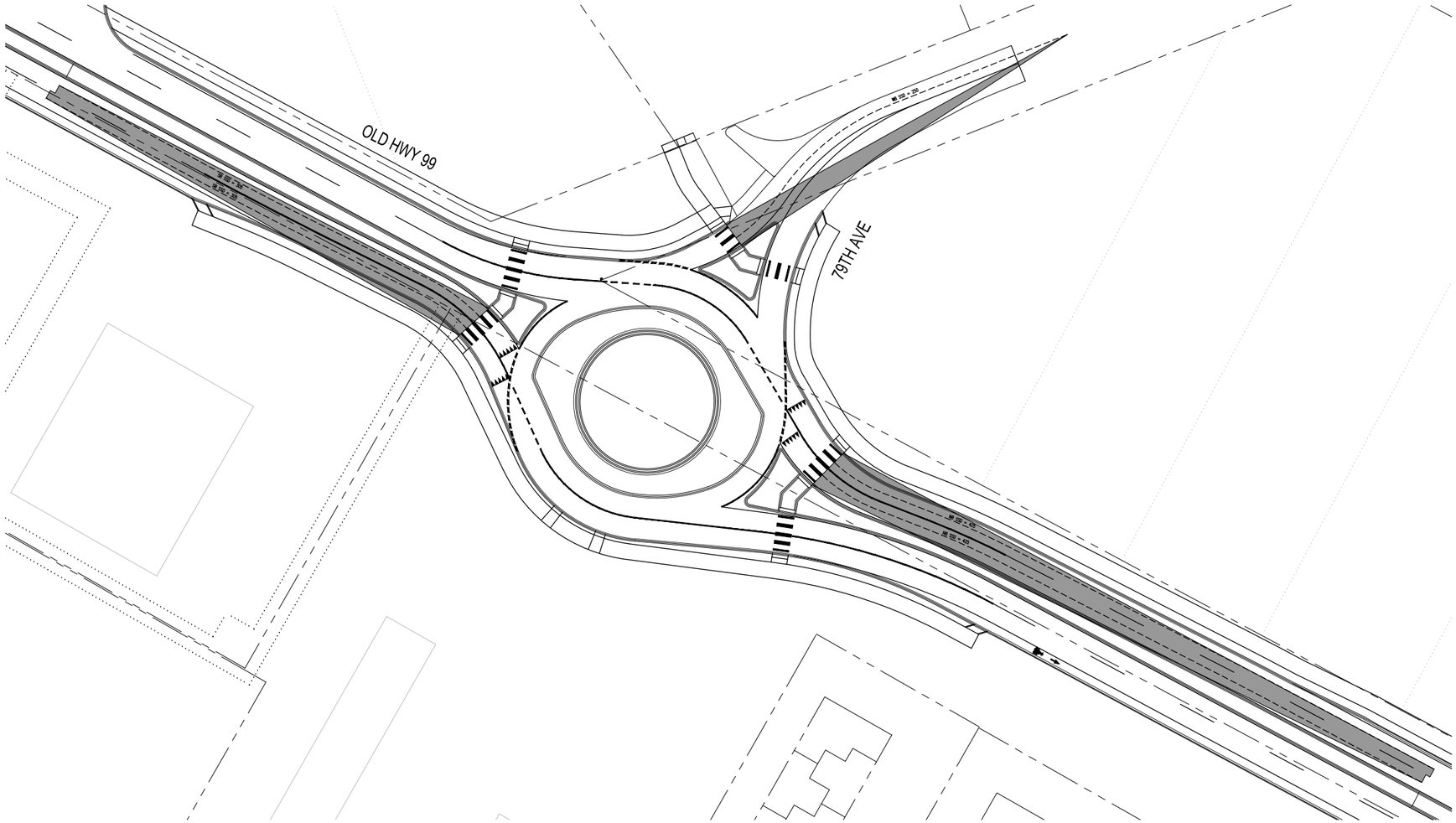
SB1 SSD = 305

SB2 SSD = 305

WB SSD = 250

NB1 SSD = 425

NB2 SSD = 425



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DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND 79TH AVE
APPROACH STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-02**
SHEET No: **2 of 16**

2021 10:09:43am – User: tomm.melvin
...LECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

Design Speed (mph)	Design Stopping Sight Distance (ft)	K_c	K_s	VCL_m (ft)
25	155	12	26	75
30	200	19	37	90
35	250	29	49	105
40	305	44	64	120
45	360	61	79	135
50	425	84	96	150
55	495	114	115	165
60	570	151	136	180
65	645	193	157	195
70	730	247	181	210
75	820	312	206	225
80	910	384	231	240

Design Stopping Sight Distance
Exhibit 1260-1

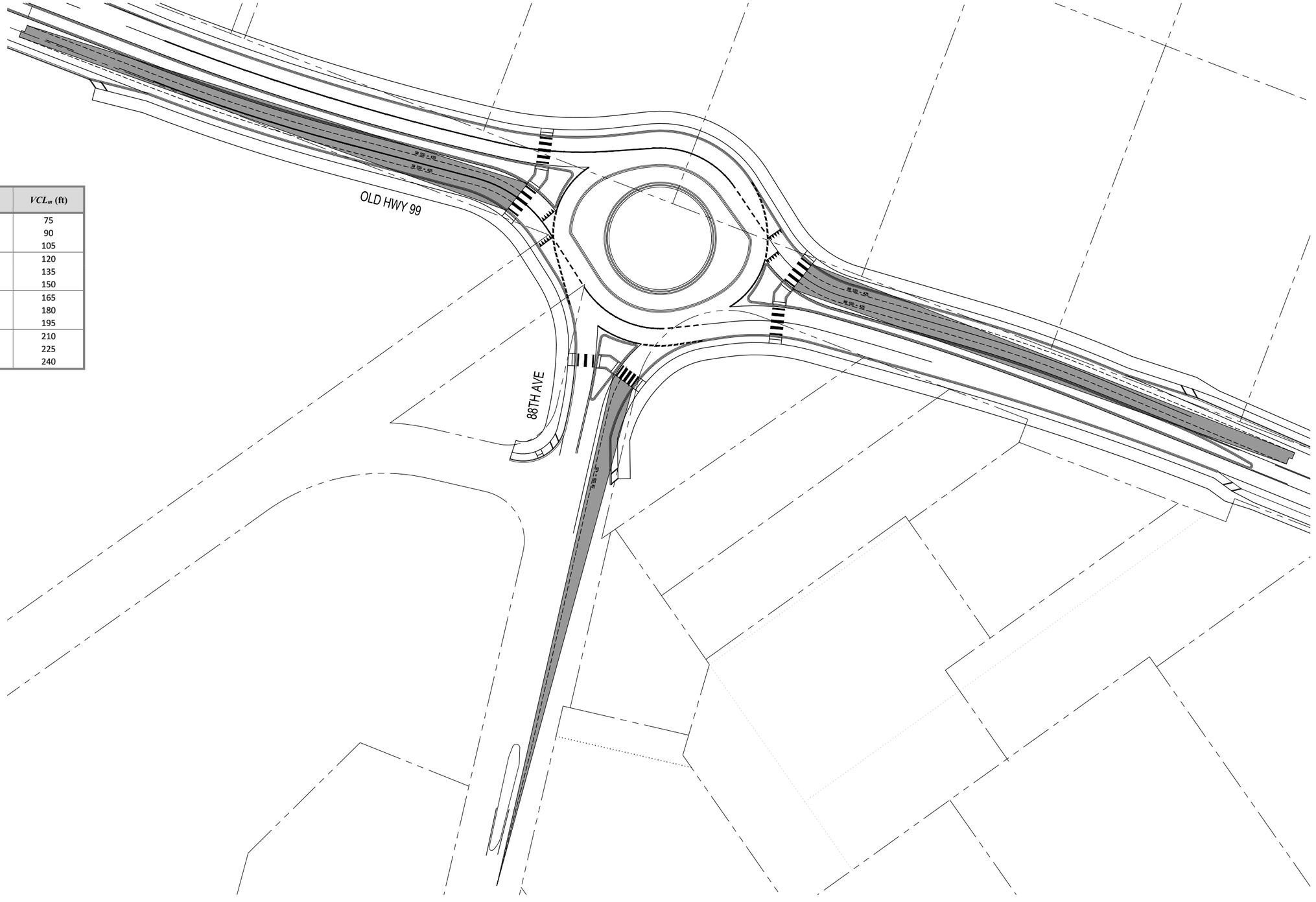
SB1 SSD = 425

SB2 SSD = 425

EB SSD = 425

NB1 SSD = 425

NB2 SSD = 425



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DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 88TH AVE
APPROACH STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-03**

SHEET No: **3 of 16**

2021 10:08:48am – User: tomm.melvin
...LECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

Design Speed (mph)	Design Stopping Sight Distance (ft)	K_c	K_s	VCL_m (ft)
25	155	12	26	75
30	200	19	37	90
35	250	29	49	105
40	305	44	64	120
45	360	61	79	135
50	425	84	96	150
55	495	114	115	165
60	570	151	136	180
65	645	193	157	195
70	730	247	181	210
75	820	312	206	225
80	910	384	231	240

Design Stopping Sight Distance
Exhibit 1260-1

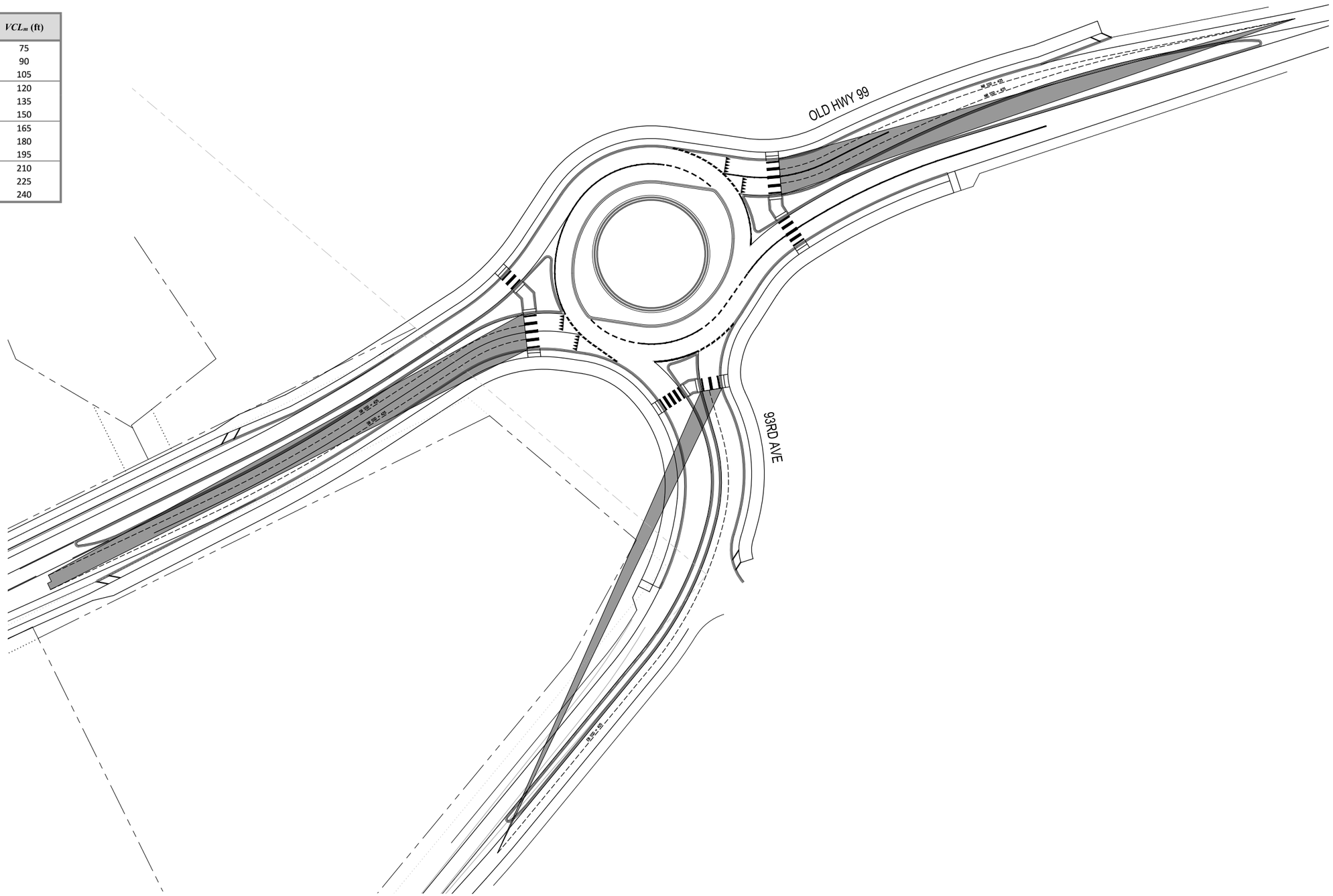
SB1 SSD = 425

SB2 SSD = 425

EB SSD = 425

NB1 SSD = 425

NB2 SSD = 425



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HORIZONTAL SCALE: 1"=30"
DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND 93TH AVE
APPROACH STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-04**
SHEET No: **4 of 16**

..._2021 10:09:53am – User: kona.melvin
...\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

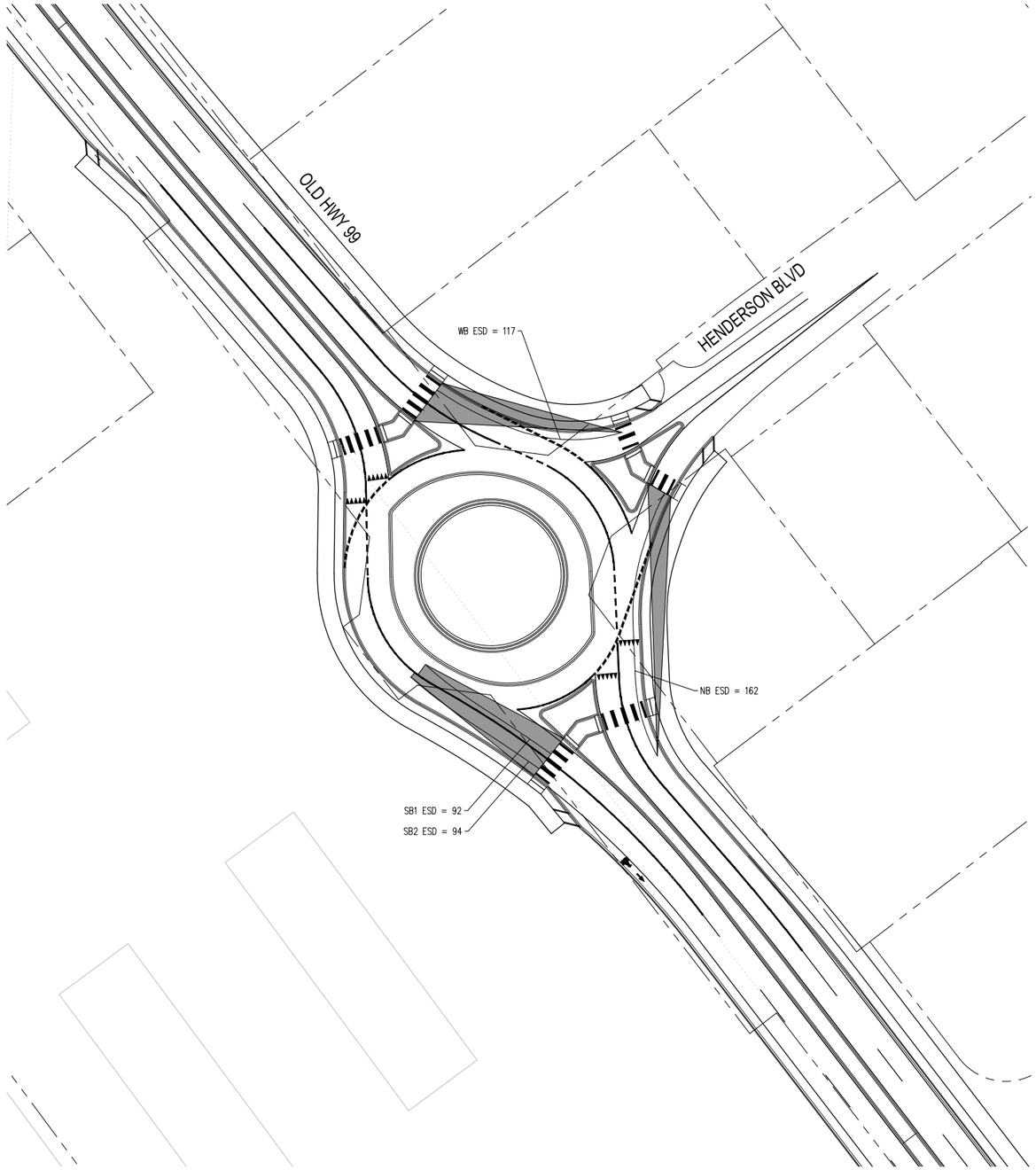
Stopping Sight Distance on Grades
Exhibit 1260-3

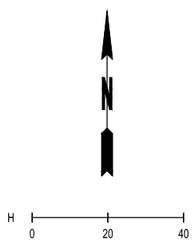
SB1 ESD = $1.47(17.2)(2.5) + \frac{(17.2)^2}{30[0.347826 \pm (0/100)]}$ = 92

SB2 ESD = $1.47(17.5)(2.5) + \frac{(17.5)^2}{30[0.347826 \pm (0/100)]}$ = 94

WB ESD = $1.47(20.5)(2.5) + \frac{(20.5)^2}{30[0.347826 \pm (0/100)]}$ = 117

NB ESD = $1.47(26.1)(2.5) + \frac{(26.1)^2}{30[0.347826 \pm (0/100)]}$ = 162





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HORIZONTAL SCALE: 1"=30'
DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND HENDERSON BLVD
EXIT STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-05**
SHEET No: **5 of 16**

2021 10:09:58am – User: kano.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

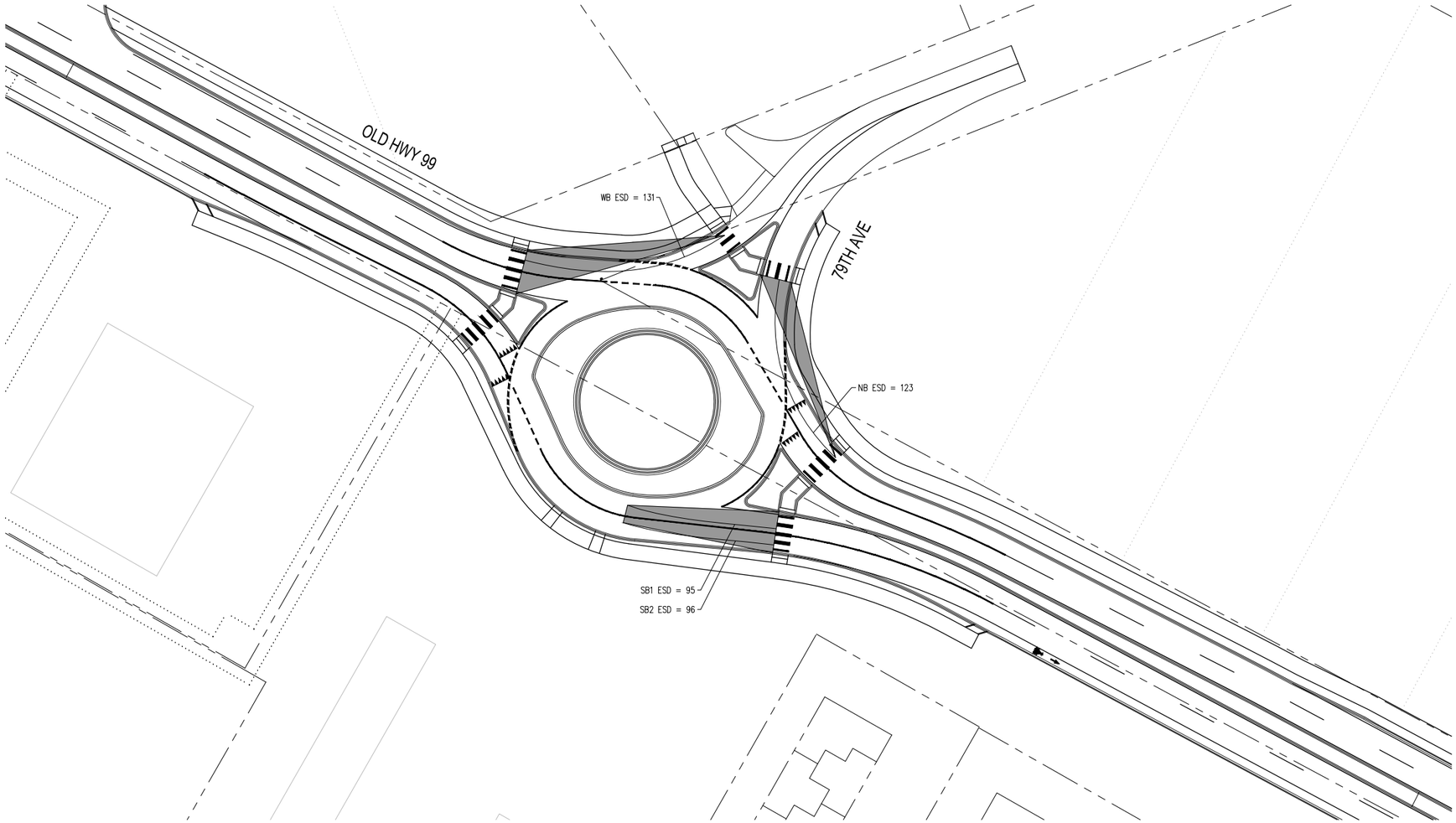
Stopping Sight Distance on Grades
Exhibit 1260-3

SB1 ESD = $1.47(17.6)(2.5) + \frac{(17.6)^2}{30[0.347826 \pm (0/100)]}$ = 95

SB2 ESD = $1.47(17.7)(2.5) + \frac{(17.7)^2}{30[0.347826 \pm (0/100)]}$ = 96

NB ESD = $1.47(21.3)(2.5) + \frac{(21.3)^2}{30[0.347826 \pm (0/100)]}$ = 123

WB ESD = $1.47(22.3)(2.5) + \frac{(22.3)^2}{30[0.347826 \pm (0/100)]}$ = 131



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DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND 79TH AVE
EXIT STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-06**
SHEET No: **6 of 16**

2021 10:10:03am – User: kenn.meleh
...LECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

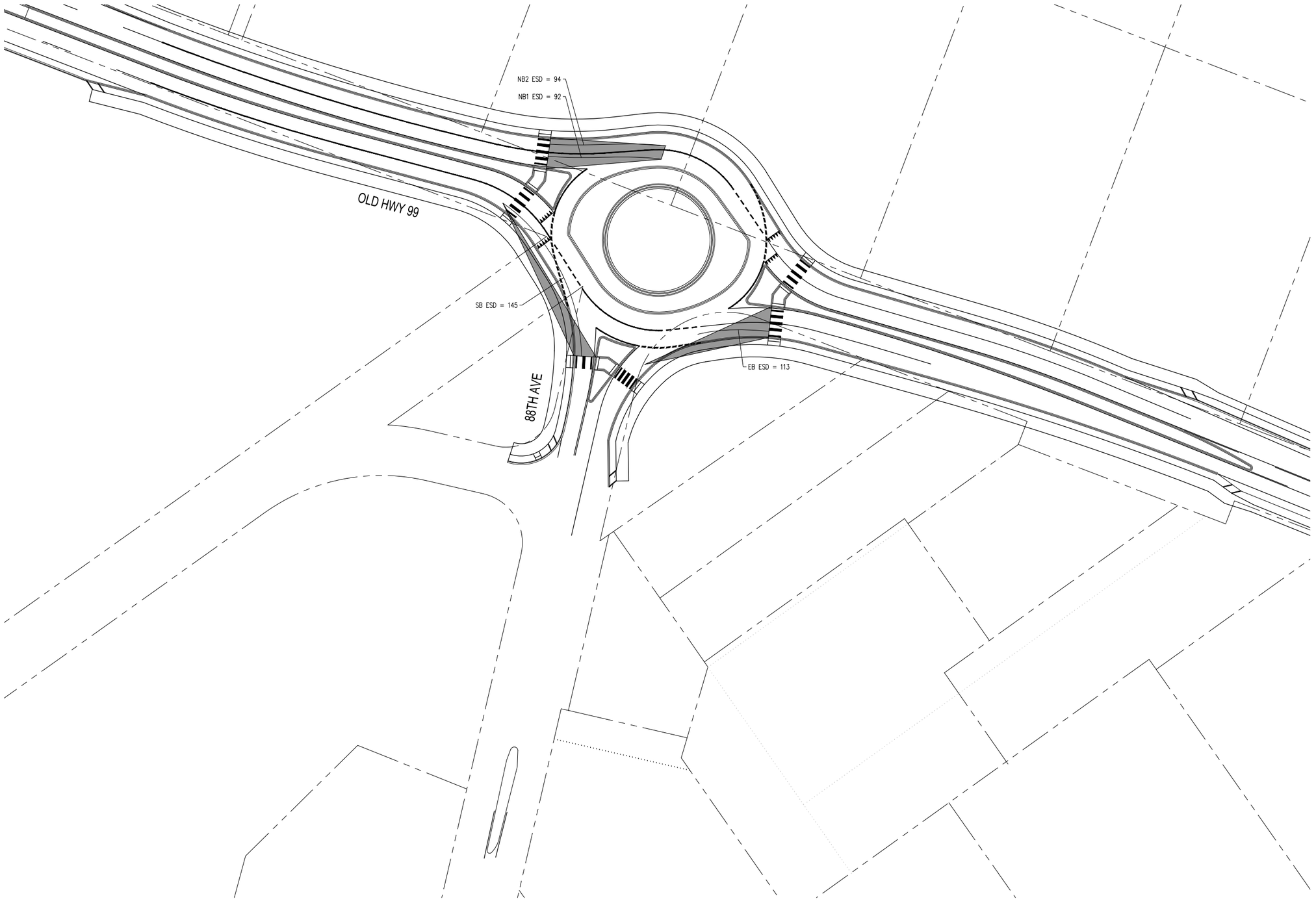
Stopping Sight Distance on Grades
Exhibit 1260-3

NB1 ESD = $1.47(17.1)(2.5) + \frac{(17.1)^2}{30[0.347826 \pm (0/100)]} = 92$

NB2 ESD = $1.47(17.4)(2.5) + \frac{(17.4)^2}{30[0.347826 \pm (0/100)]} = 94$

SB ESD = $1.47(24.1)(2.5) + \frac{(24.1)^2}{30[0.347826 \pm (0/100)]} = 145$

EB ESD = $1.47(20.1)(2.5) + \frac{(20.1)^2}{30[0.347826 \pm (0/100)]} = 113$



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DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 88TH AVE
EXIT STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-07**
SHEET No: **7 of 16**

2021 10:10:08am – User: kenn.melvin
...LECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

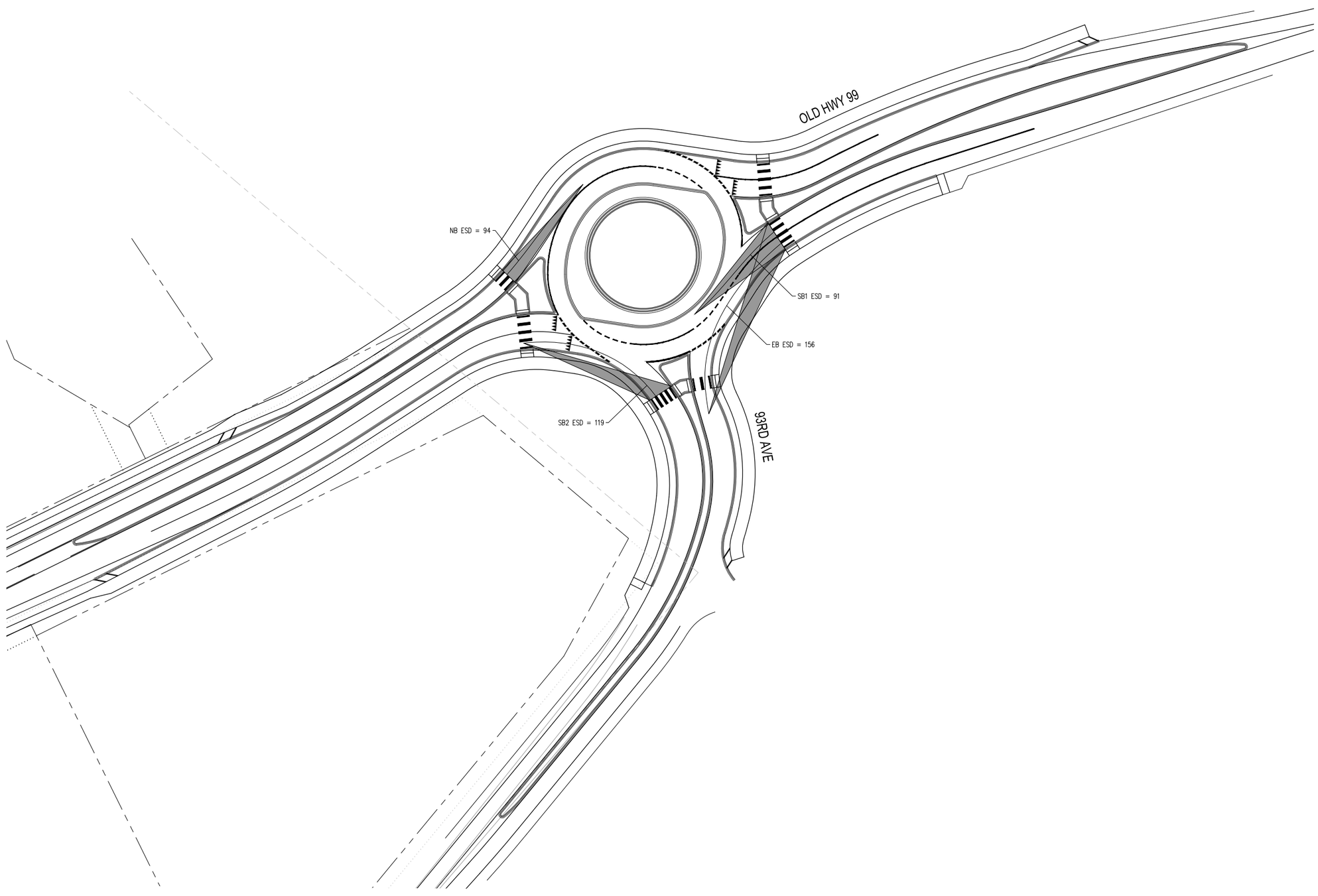
Stopping Sight Distance on Grades
Exhibit 1260-3

SB1 ESD = $1.47(17.1)(2.5) + \frac{(17.1)^2}{30[0.347826 \pm (0/100)]} = 91$

SB2 ESD = $1.47(17.4)(2.5) + \frac{(17.4)^2}{30[0.347826 \pm (0/100)]} = 119$

NB ESD = $1.47(24.1)(2.5) + \frac{(24.1)^2}{30[0.347826 \pm (0/100)]} = 94$

EB ESD = $1.47(20.1)(2.5) + \frac{(20.1)^2}{30[0.347826 \pm (0/100)]} = 156$



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DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND 93TH AVE
EXIT STOPPING SIGHT DISTANCE

EXHIBIT No: **EX-08**
SHEET No: **8 of 16**

2021 10:10:13am – User: kiona.melvin
J:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

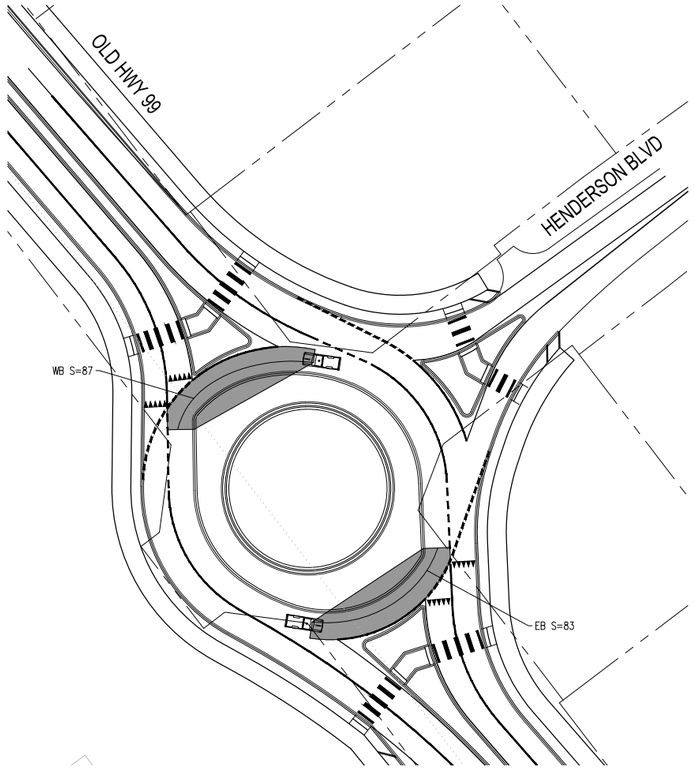
Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

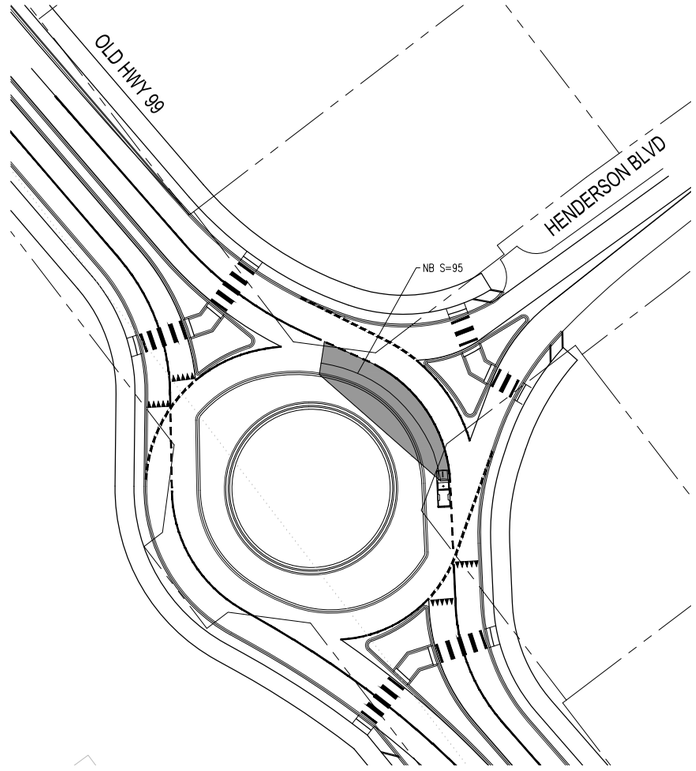
Stopping Sight Distance on Grades
Exhibit 1260-3

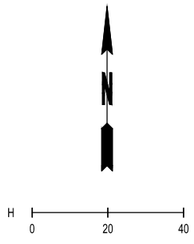
WB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 87$

SB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 95$

EB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 83$







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HORIZONTAL SCALE: 1"=30'
DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND HENDERSON BLVD
CIRCULATING SIGHT DISTANCE

EXHIBIT No: **EX-09**
SHEET No: **9 of 16**

2021 10:10:20am – User: kiona.melvin
...JECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

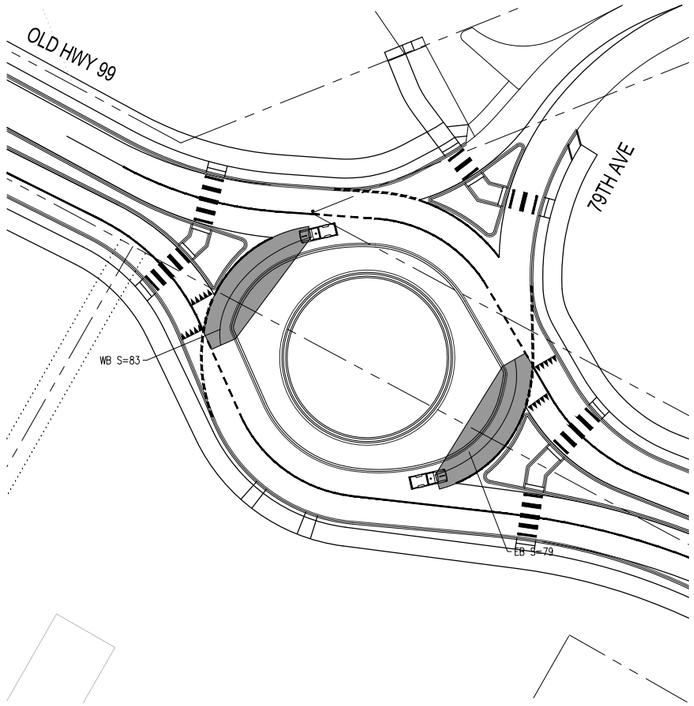
Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

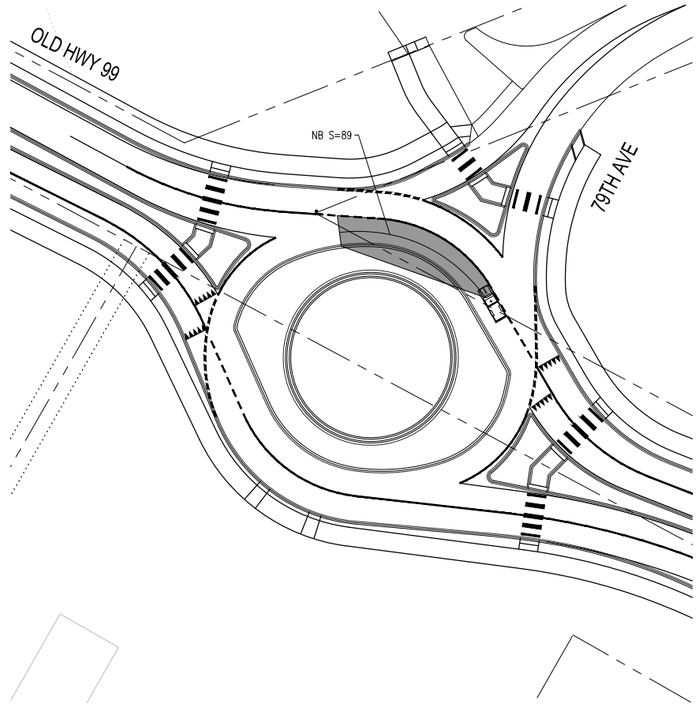
Stopping Sight Distance on Grades
Exhibit 1260-3

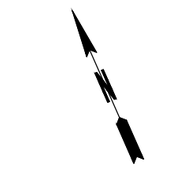
WB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 83$

NB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 89$

EB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 79$







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HORIZONTAL SCALE:	1"=30'
DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 79TH AVE
CIRCULATING SIGHT DISTANCE

EXHIBIT No: **EX-10**
SHEET No: **10 of 16**

2021 10:10:24am - User: kenn.meivin
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$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

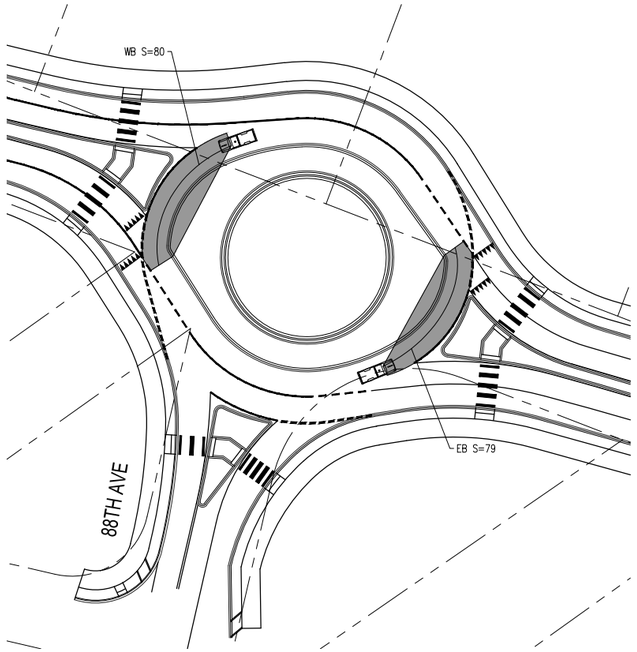
Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

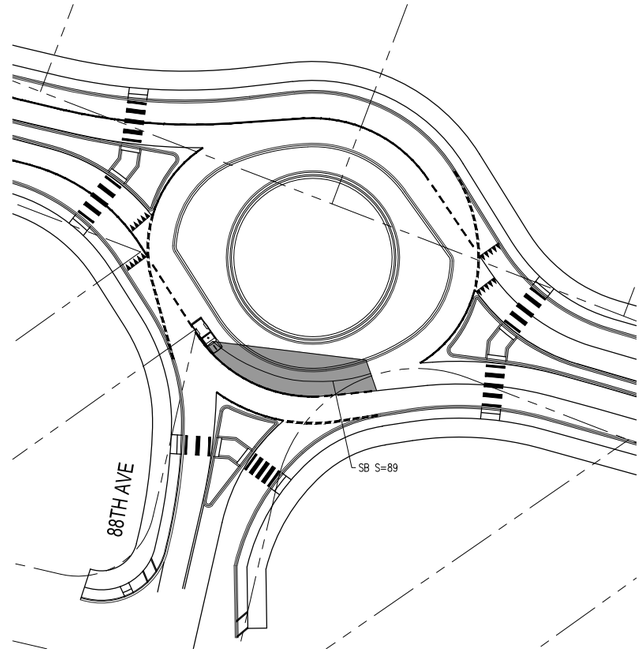
Stopping Sight Distance on Grades
Exhibit 1260-3

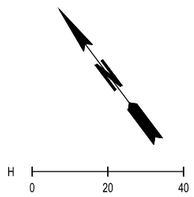
WB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 80$

SB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 89$

EB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 79$







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HORIZONTAL SCALE:	1"=30'
DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 88TH AVE
CIRCULATING SIGHT DISTANCE

EXHIBIT No: **EX-11**
SHEET No: **11 of 16**

Apr 27, 2021 10:10:30am – User: kano.melvin
K:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CAD\EXHIBITS\SIGHT TRIANGLE\0625.29_SIGHTTRIANGLES.DWG

$$S = 1.47V(2.5) + \frac{V^2}{30\left[0.347826 \pm \left(\frac{G}{100}\right)\right]}$$

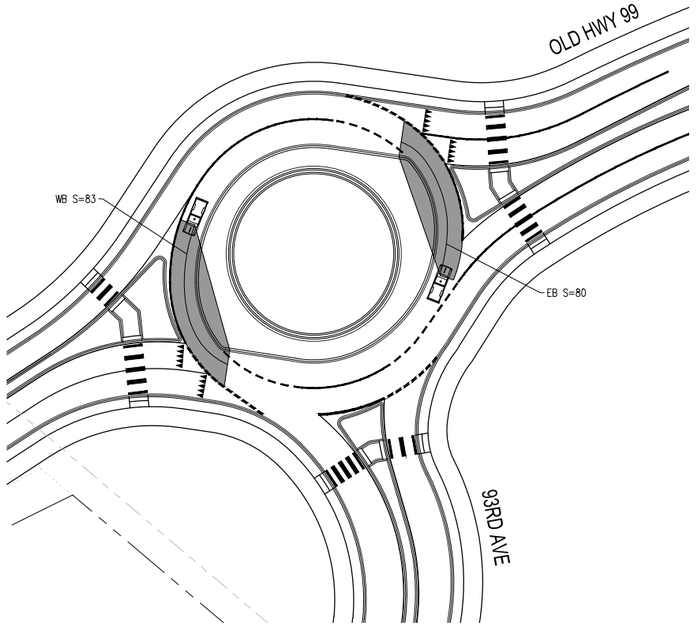
Where:
S = Stopping sight distance on grade (ft)
V = Design speed (mph)
G = Grade (%)

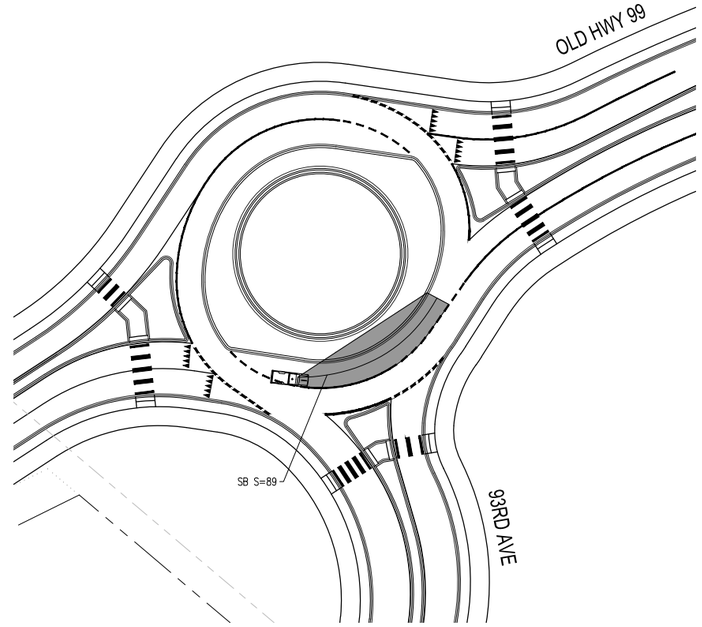
Stopping Sight Distance on Grades
Exhibit 1260-3

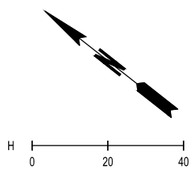
WB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 83$

SB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 89$

EB $S = 1.47(16)(2.5) + \frac{(16)^2}{30[0.347826 \pm (0/100)]} = 80$







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HORIZONTAL SCALE: 1"=30'
DATE: April, 2021
JOB No.: -
DRAWING FILE No.: -

OLD HWY 99 AND 93TH AVE
CIRCULATING SIGHT DISTANCE

EXHIBIT No: **EX-12**
SHEET No: **12 of 16**

2021 10:10:35pm - User: kano.melvin
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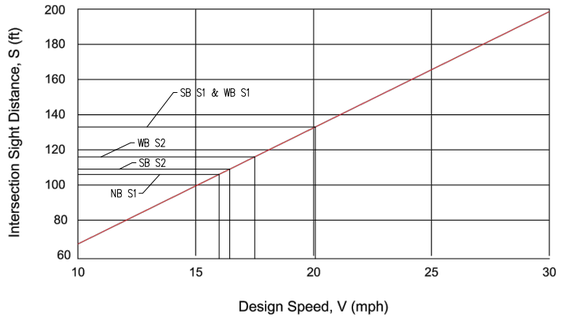

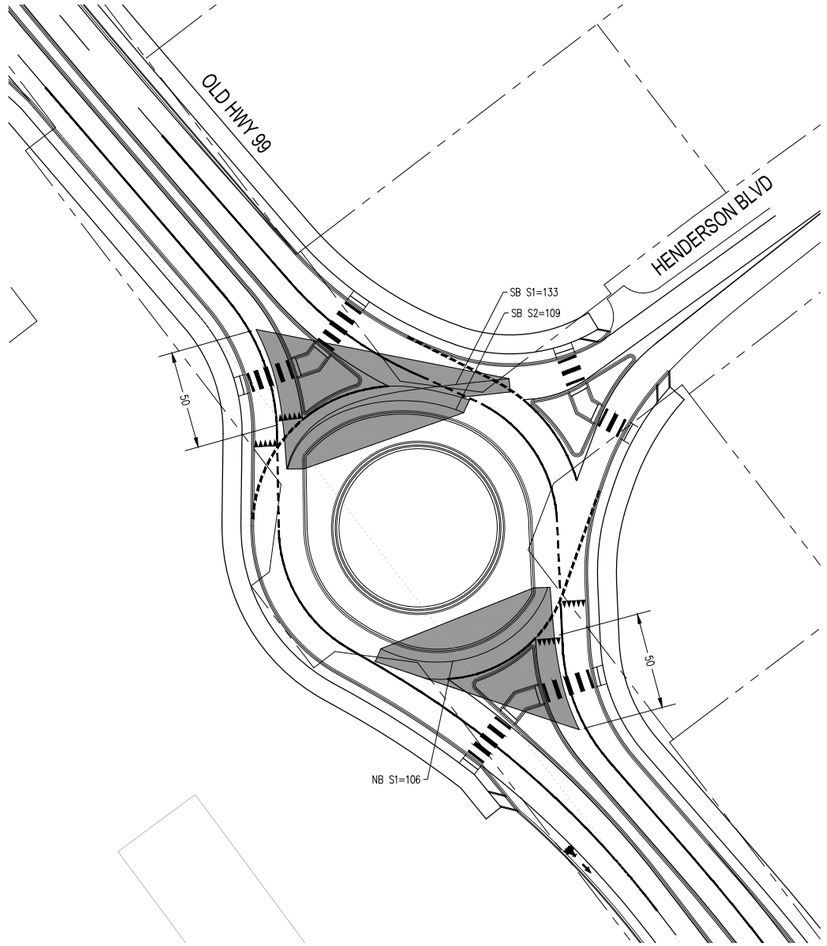

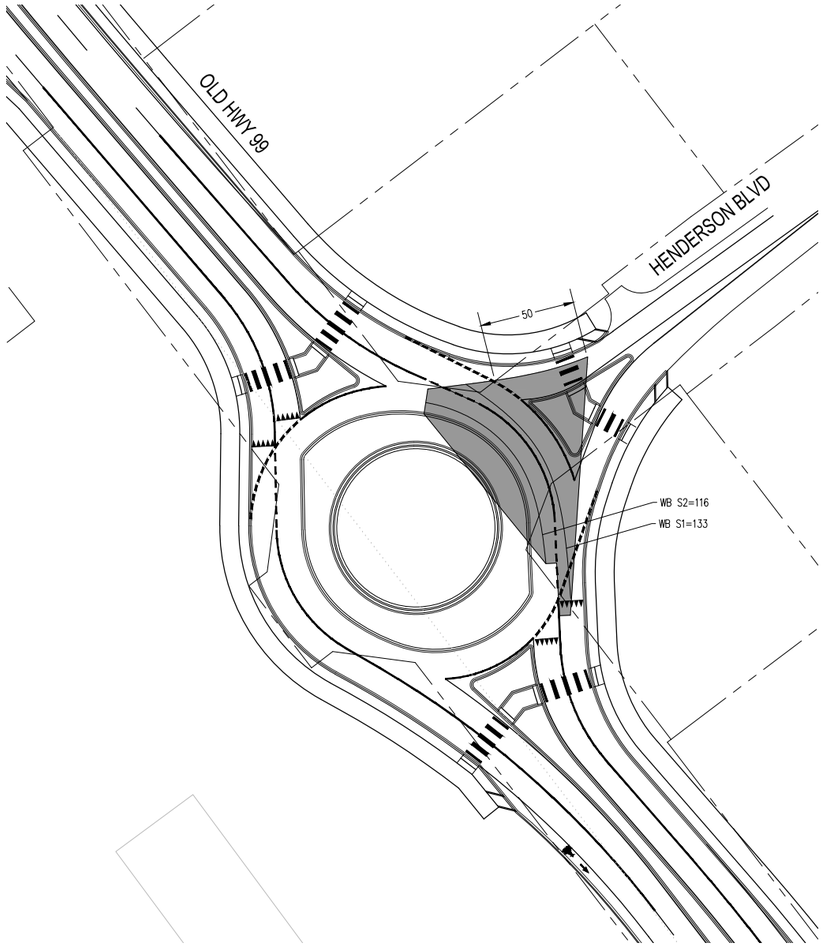

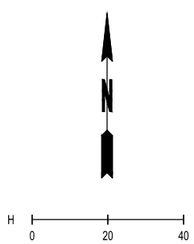

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DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND HENDERSON BLVD
INTERSECTION SIGHT DISTANCE

EXHIBIT No: **EX-13**

SHEET No: **13 of 16**

2021 10:10:40pm - User: kenn.melvin
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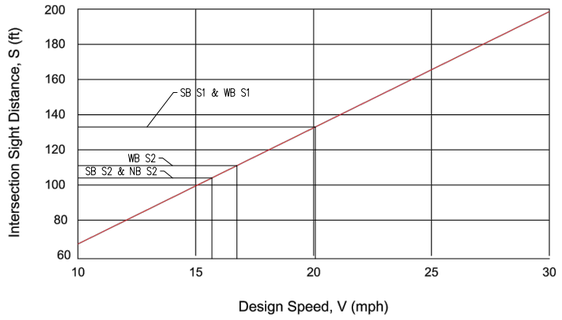

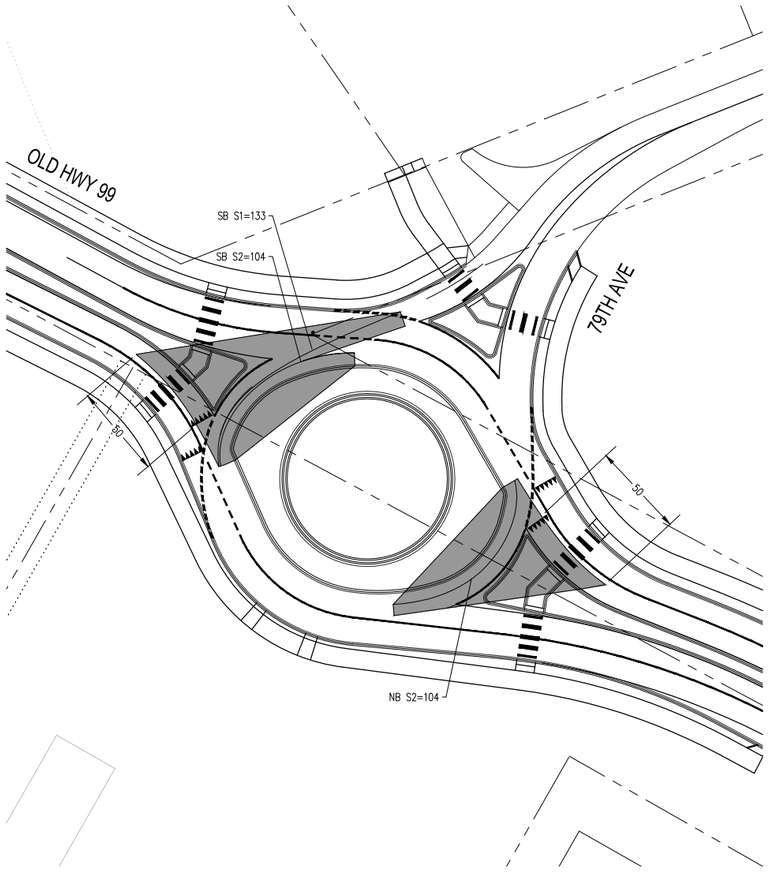

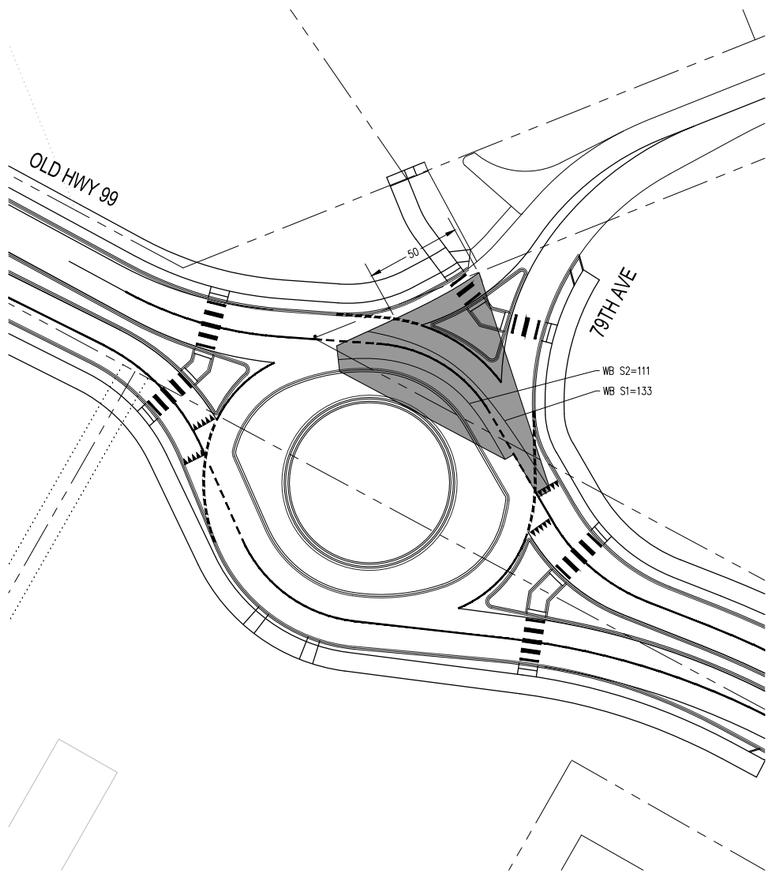

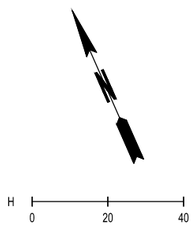

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HORIZONTAL SCALE:	1"=30'
DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 79TH AVE
INTERSECTION SIGHT DISTANCE

EXHIBIT No: **EX-14**

SHEET No: **14 of 16**

2021 10:10:45am – User: kenn.melvin
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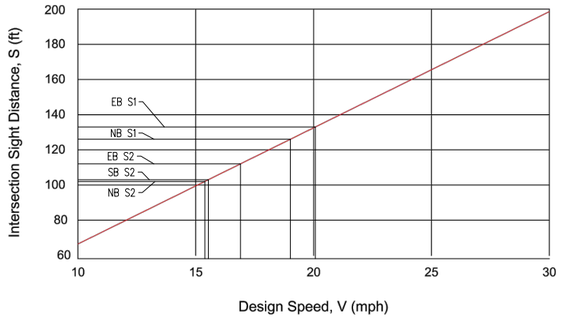

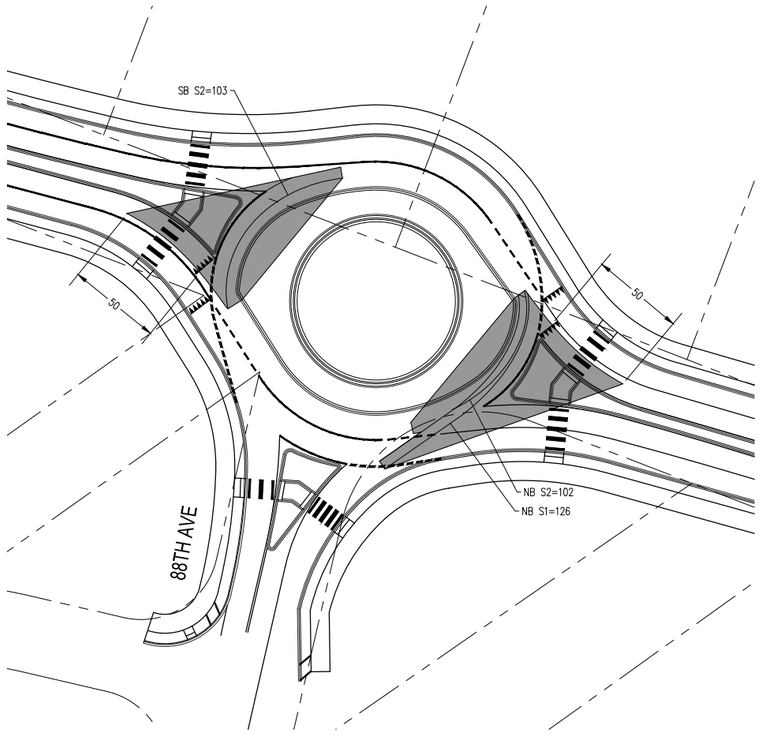

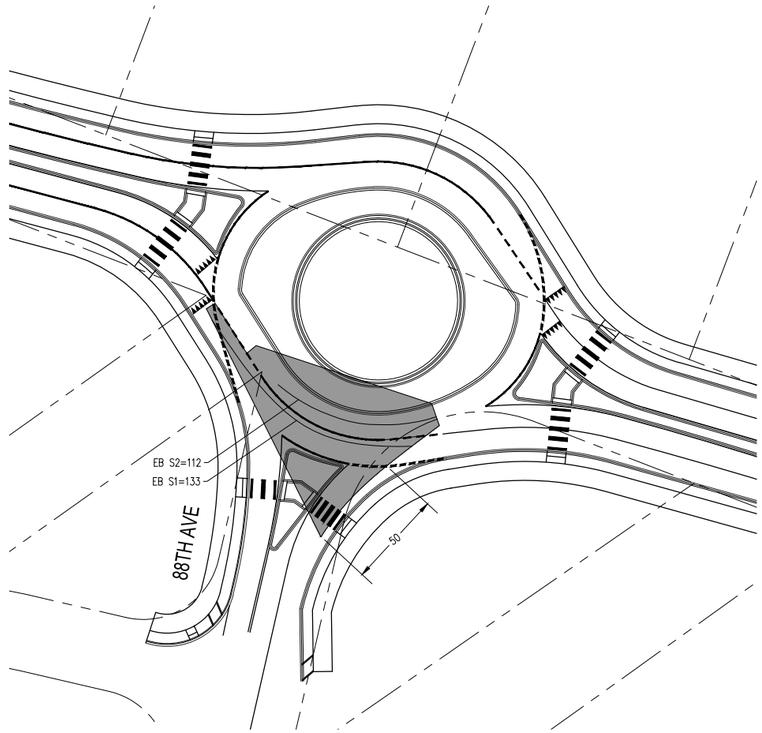

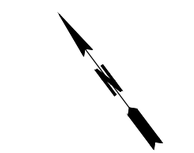

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HORIZONTAL SCALE:	1"=30'
DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 88TH AVE
INTERSECTION SIGHT DISTANCE

EXHIBIT No: **EX-15**
SHEET No: **15 of 16**

...2021 10:10:50am -- User: kona.melvin
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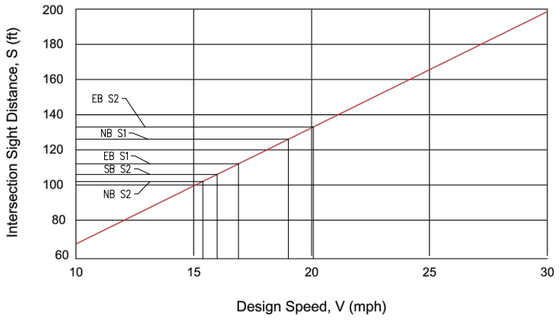

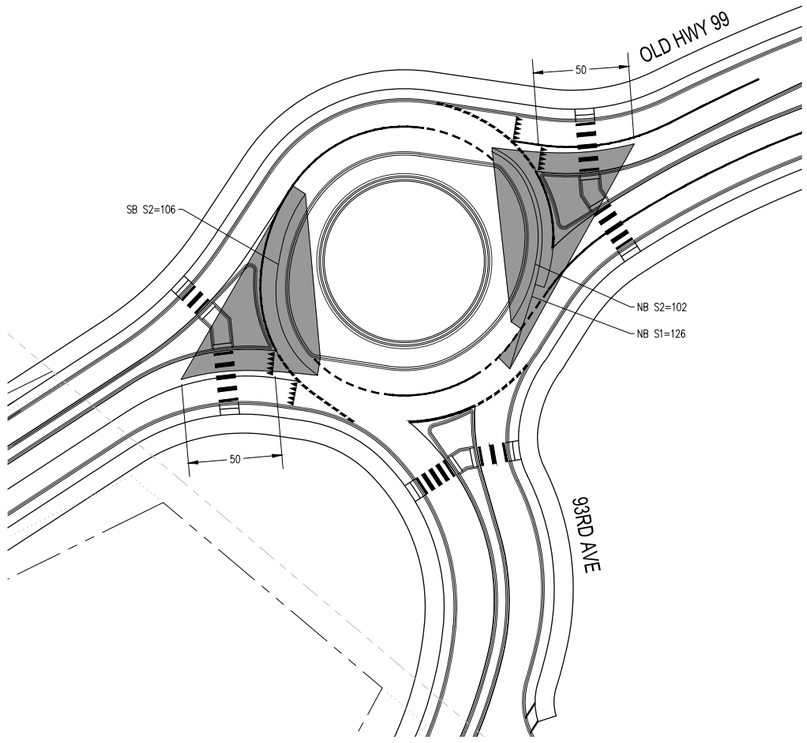

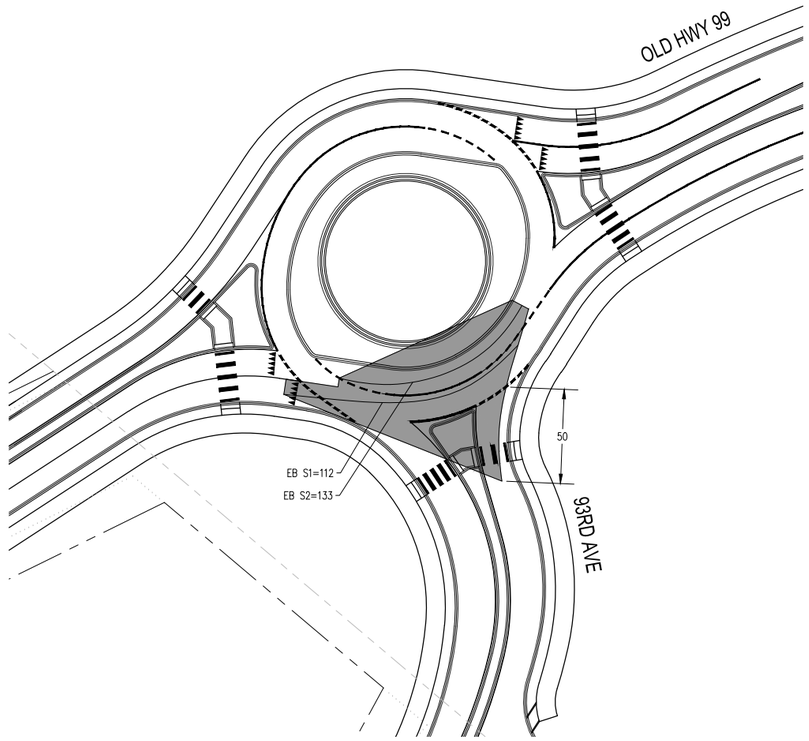

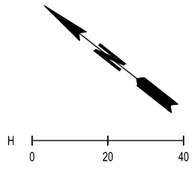

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HORIZONTAL SCALE:	1"=30'
DATE:	April, 2021
JOB No.:	-
DRAWING FILE No.:	-

OLD HWY 99 AND 93TH AVE
INTERSECTION SIGHT DISTANCE

EXHIBIT No: **EX-16**

SHEET No: **16 of 16**

...2021 10:10:55am – User: kona.melvin
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F5) UTILITY TECH MEMO

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Technical Memo

To City of Tumwater

From: David Rowland, PE

Date: September 8th, 2022

Project: 0625.29 – Old Highway 99 Corridor Study

Subject Utility Future Conflicts

Introduction

The Old Highway 99 Corridor Study starts at 73rd Avenue and continues until 93rd Avenue on Old Highway 99. This technical memorandum seeks to provide preliminary design recommendations for utility coordination prior to design for each phase.

Utility Conflicts

For each phase the final footprint of the biofiltration swales, CAVFS, and infiltration basins have not yet been established. Therefore, these elements will require coordination once the footprint and depth are established.

- Phase 1 – 79th Avenue Roundabout

  Installation of signage and illumination poles as well as junction boxes will require the evaluation of the current utilities to prevent conflicts. Stormwater infiltration basins, catch basins and storm pipes near the roundabout at 79th Avenue will require the relocation and coordination of existing utilities with design installations. Biofiltration swales located on east side of the roadway will need to be evaluated to ensure that they do not conflict with existing utilities. Because this phase expands the footprint of the roadway, this will require the relocation of power poles, telephone boxes, storm pipes and structures, and a fire hydrant. Water valves and sewer manholes that are at existing grades, may need to be adjusted to match the new design.

- Phase 2 – 73rd Avenue to 79th Avenue

  Installation of signage and illumination poles as well as junction boxes will require the evaluation of the current utilities to prevent conflicts. Stormwater infiltration basins, catch basins and storm pipes near the roundabout at Henderson Avenue will require the relocation and coordination of existing utilities with design installations. Biofiltration swales located on east side of the roadway will need to be evaluated to ensure that they do not conflict with existing utilities. Because this phase expands the

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footprint of the roadway, this will require the relocation of power poles, illumination poles and junction boxes, telephone boxes, storm pipes and structures, and a fire hydrant. Water valves, gas valves, and sewer manholes that are at existing grades, may need to be adjusted to match the new design.

1.1. Phase 3 – 79th Avenue to 88th Avenue Roundabout

Installation of signage and illumination poles as well as junction boxes will require the evaluation of the current utilities to prevent conflicts. Stormwater infiltration basins, catch basins and storm pipes near the roundabout at 88th Avenue will require the relocation and coordination of existing utilities with design installations. Because this phase expands the footprint of the roadway, this will require the relocation of power poles, illumination poles and junction boxes, telephone boxes, storm pipes and structures, and a fire hydrant. Water valves, gas valves, and sewer manholes that are at existing grades, may need to be adjusted to match the new design grade.

1.2. Phase 4 – 88th Avenue Roundabout to Wyatt Court

Installation of signage and illumination poles as well as junction boxes will require the evaluation of the current utilities to prevent conflicts. Biofiltration swales located on both sides of the roadway will need to be evaluated to ensure that they do not conflict with existing utilities. Because this phase expands the footprint of the roadway, this will require the relocation of power poles, illumination poles and junction boxes, telephone boxes, and storm pipes and structures. Water valves, gas valves, and sewer manholes that are at existing grades, may need to be adjusted to match the new design grade.

1.3. Phase 5 – Wyatt Court to 93rd Avenue Roundabout

Installation of signage and illumination poles as well as junction boxes will require the evaluation of the current utilities to prevent conflicts. Biofiltration swales located on both sides of the roadway will need to be evaluated to ensure that they do not conflict with existing utilities. Stormwater infiltration basins, catch basins and storm pipes near the roundabout at 93rd Avenue will require the relocation and coordination of existing utilities with design installations. Because this phase expands the footprint of the roadway, this will require the relocation of power poles, illumination poles and junction boxes, telephone boxes, and storm pipes and structures. Water valves, gas valves, and sewer manholes that are at existing grades, may need to be adjusted to match the new design grade.

An exhibit showing the extents of the project from 79th Avenue to 93rd Avenue on Old Highway 99 is attached for reference in **Appendix A.**

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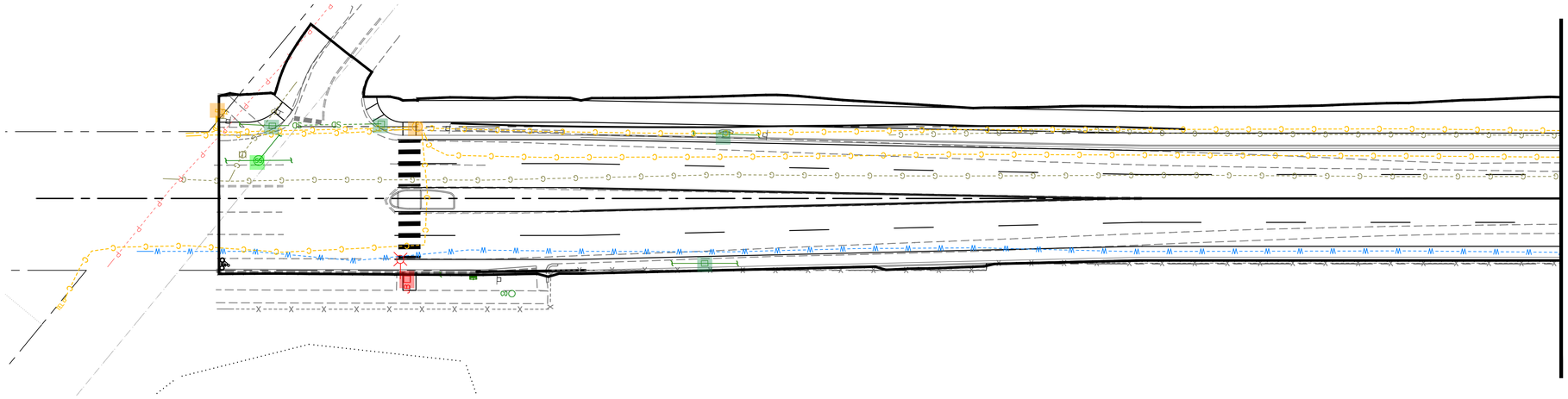
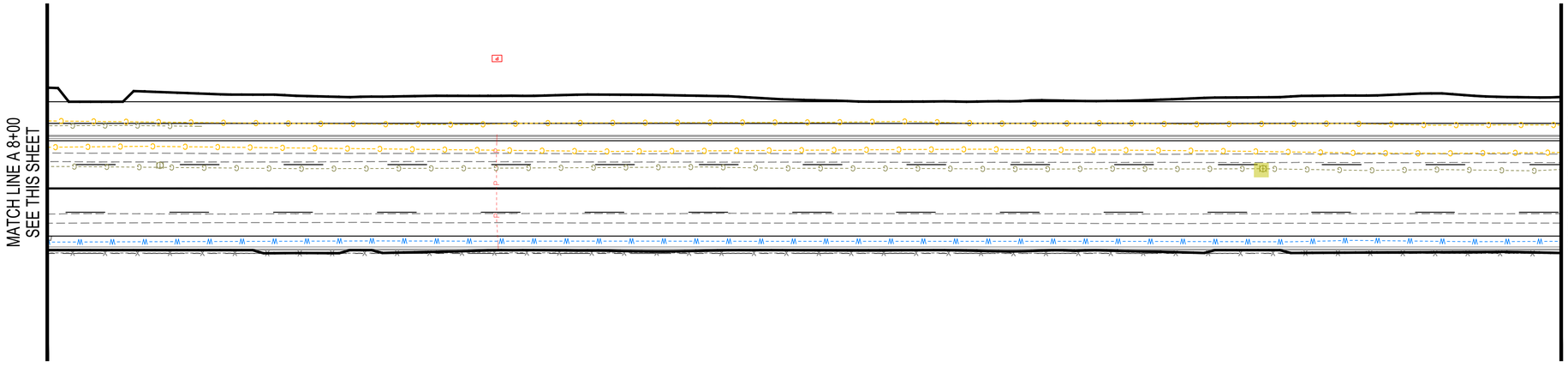
APPENDIX A

EXISTING UTILITIES PLAN

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M





0 30 60

SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

REVISIONS	DATE	BY
PRELIMINARY		

DESIGNED BY: DESIGNER NAME	ISSUE DATE: SEPTEMBER 2020
DRAWN BY: DRAFTER NAME	JOB No.: 0625.29
CHECKED BY: ENGINEER NAME	DRAWING FILE No.: 0625.29-Utility Conflicts Exhibit

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 1+00 - A 15+00

DRAWING No.: UT-1

SHEET No.: ---- OF XX

Oct 20, 2021 8:50:45am – User: sam.dunn
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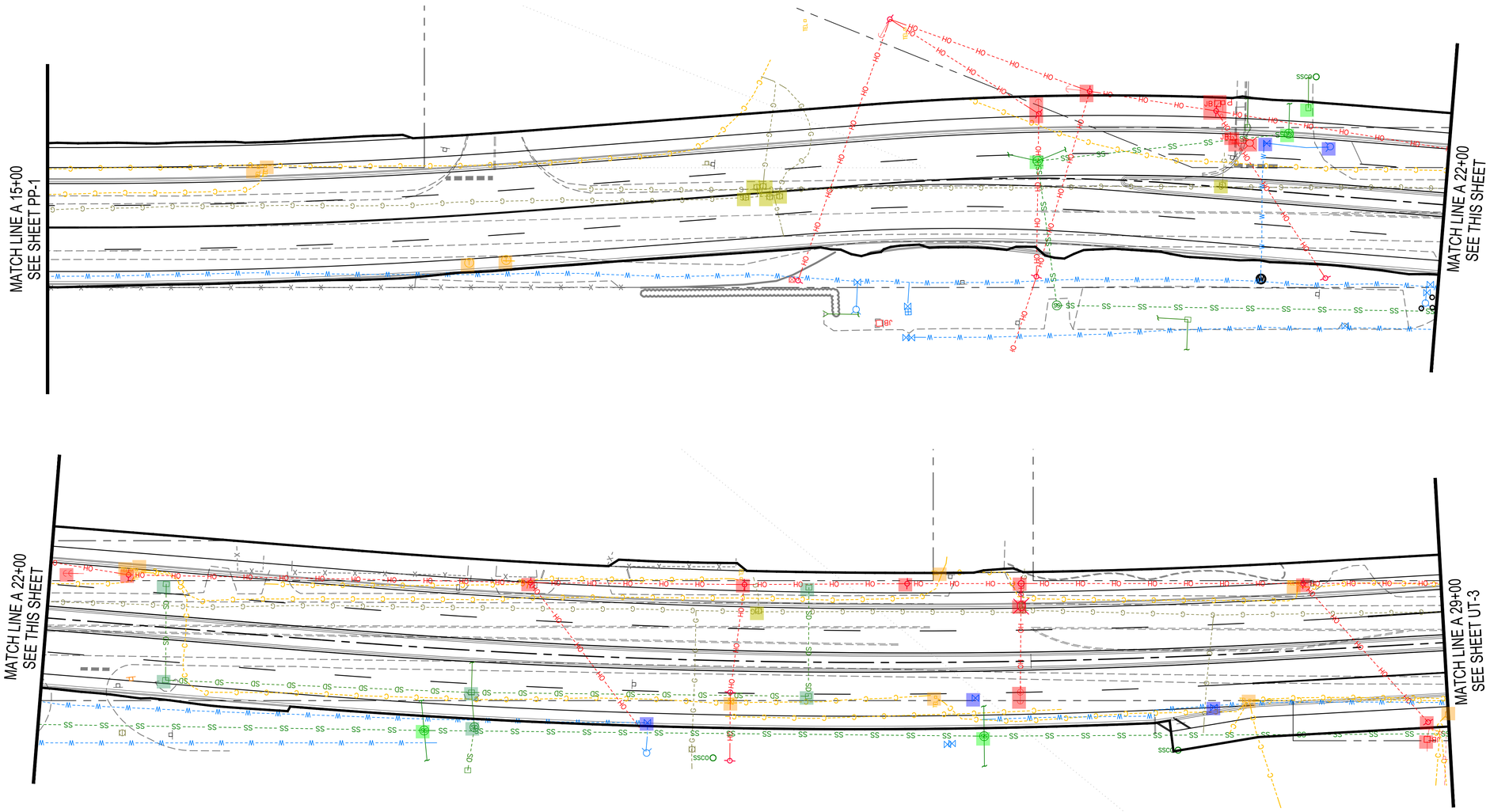
S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M



0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

△	REVISIONS	DATE	BY
	PRELIMINARY		

DESIGNED BY: DESIGNER NAME
DRAWN BY: DRAFTER NAME
CHECKED BY: ENGINEER NAME

ISSUE DATE: SEPTEMBER 2020
JOB No.: 0625.29
DRAWING FILE No.: 0625.29-Utility Conflicts Exhibit

ALL DIMENSIONS SHOWN IN FEET UNLESS OTHERWISE DESIGNATED

PATRICK HOLM — STATE OF WASHINGTON — 49470 — REGISTERED PROFESSIONAL ENGINEER

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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 15+00 - A 29+00

DRAWING No.: UT-2
SHEET No.: ---- OF XX

Oct 20, 2021 - 8:51:13am - User: sam.dunn
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\UTILITY CONFLICTS\0625.29-UTILITY CONFLICTS EXHIBIT.DWG

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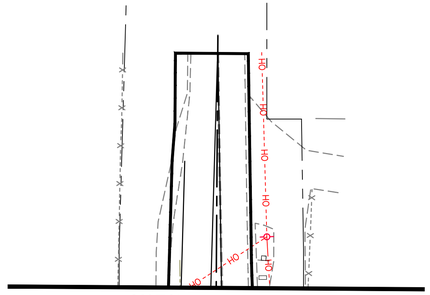

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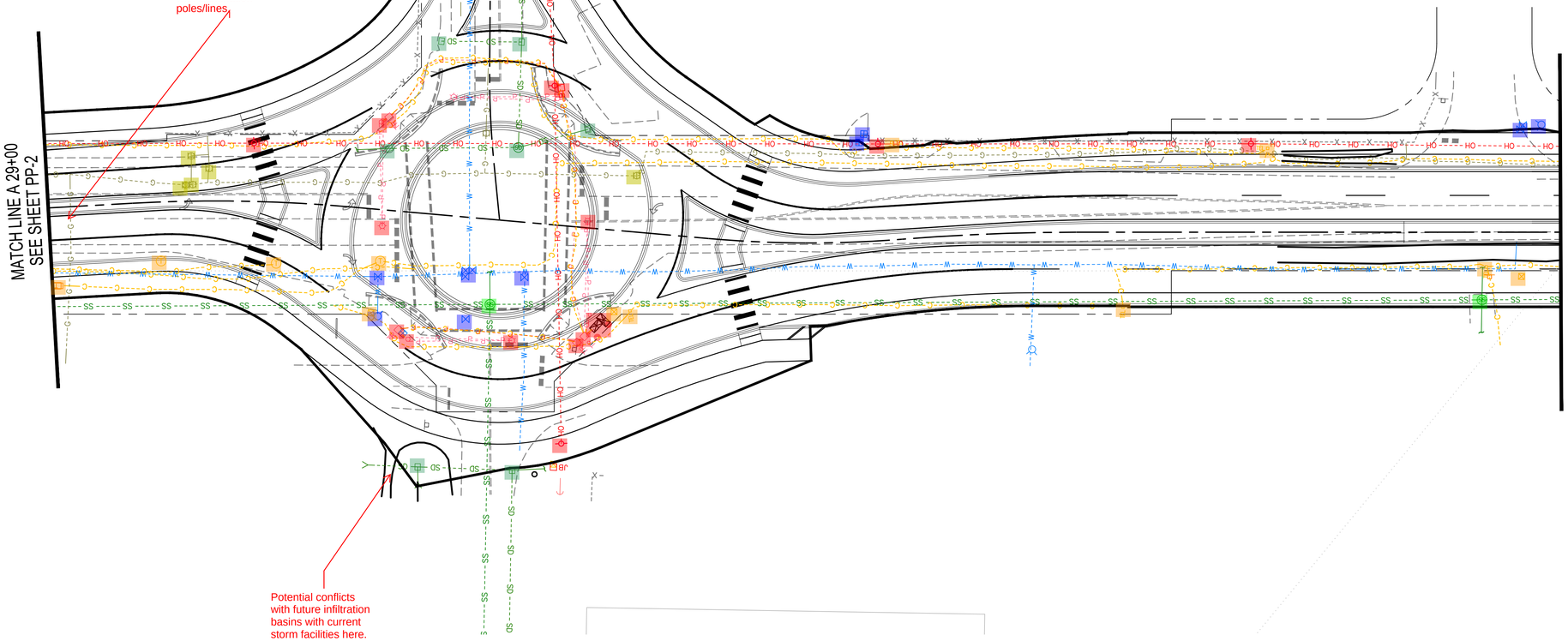
SEE THIS SHEET

MATCH LINE B 202+00
SEE THIS SHEET



0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

△	REVISIONS	DATE	BY
	PRELIMINARY		

DESIGNED BY: DESIGNER NAME	ISSUE DATE: SEPTEMBER 2020
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P: 360-352-1465 F: 360-352-1509
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 29+00 - A 41+00

DRAWING No.: UT-3

SHEET No.: ---- OF XX

Oct 20, 2021 - 8:51:43am - User: sam.dunn
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\UTILITY CONFLICTS\0625.29-UTILITY CONFLICTS EXHIBIT.DWG

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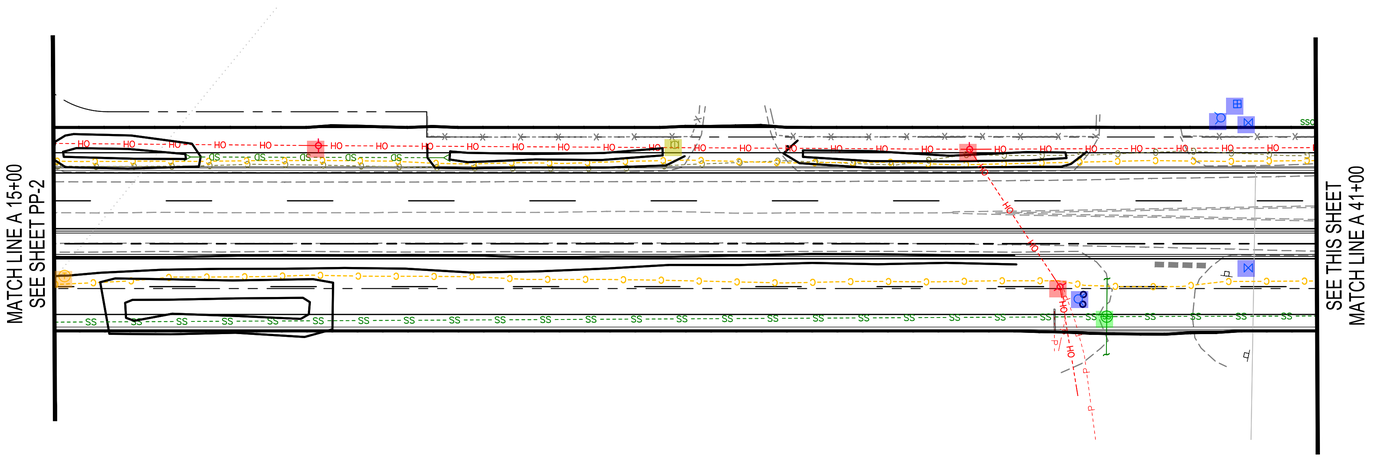

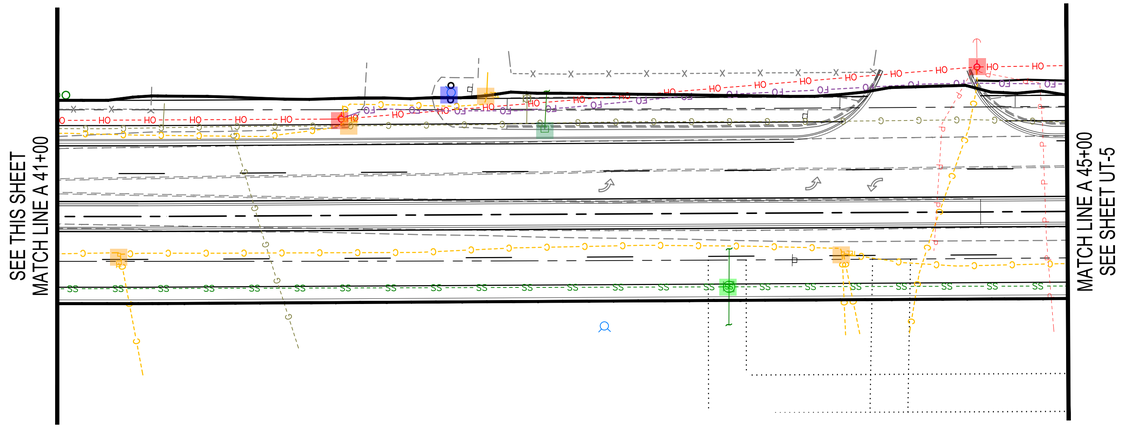

0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

REVISIONS	DATE	BY
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TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 36+00 - A 45+00

DRAWING No.: UT-4
SHEET No.: ---- OF XX

Oct 20, 2021 8:52:17am – User: sam.dunn
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\UTILITY CONFLICTS\0625.29–UTILITY CONFLICTS EXHIBIT.DWG

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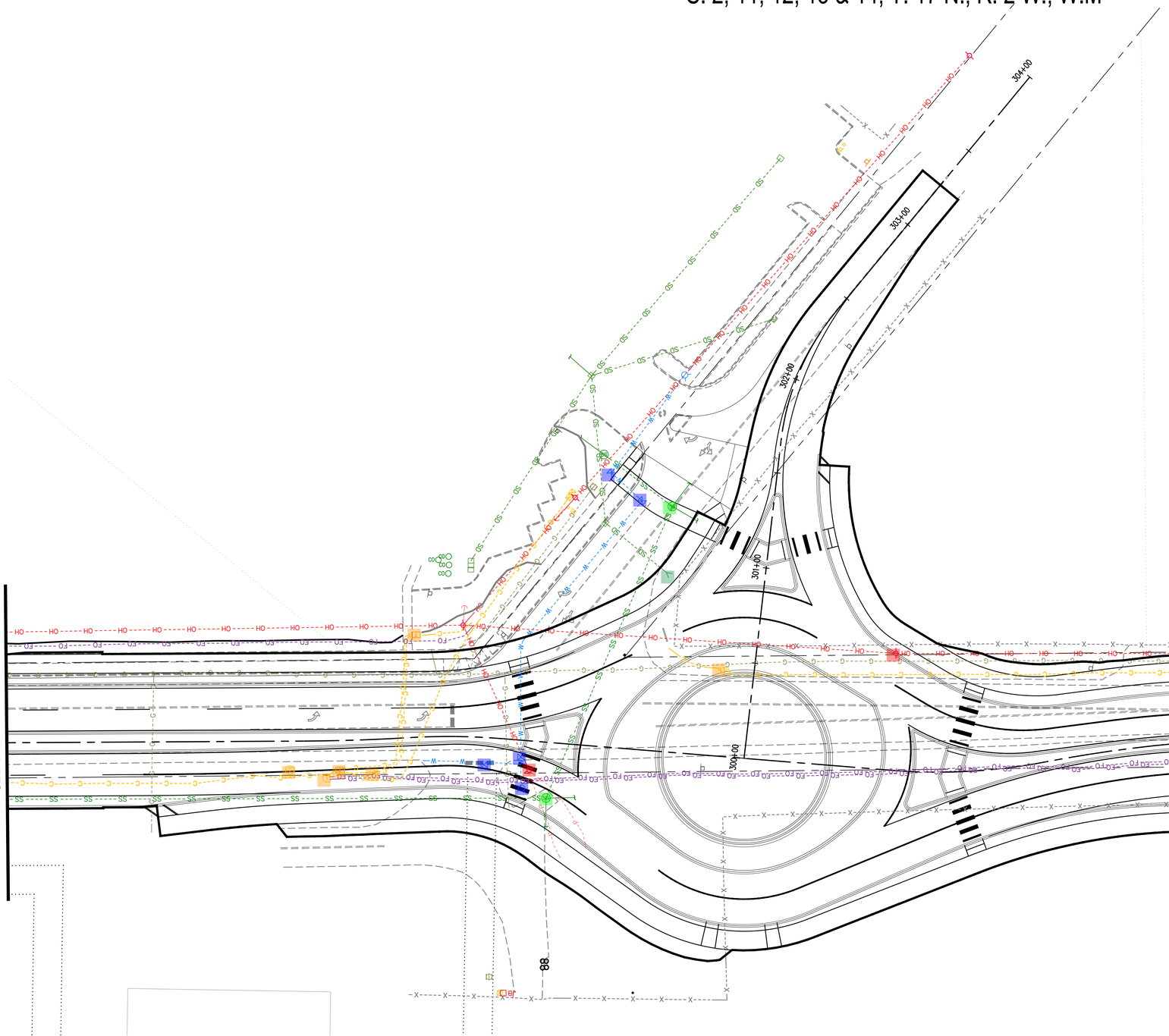

0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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TUMWATER, WA 98501

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TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 45+00 - A 52+00

DRAWING No.: UT-5
SHEET No.: ---- OF XX

Oct 20, 2021 8:52:31am – User: sam.dunn
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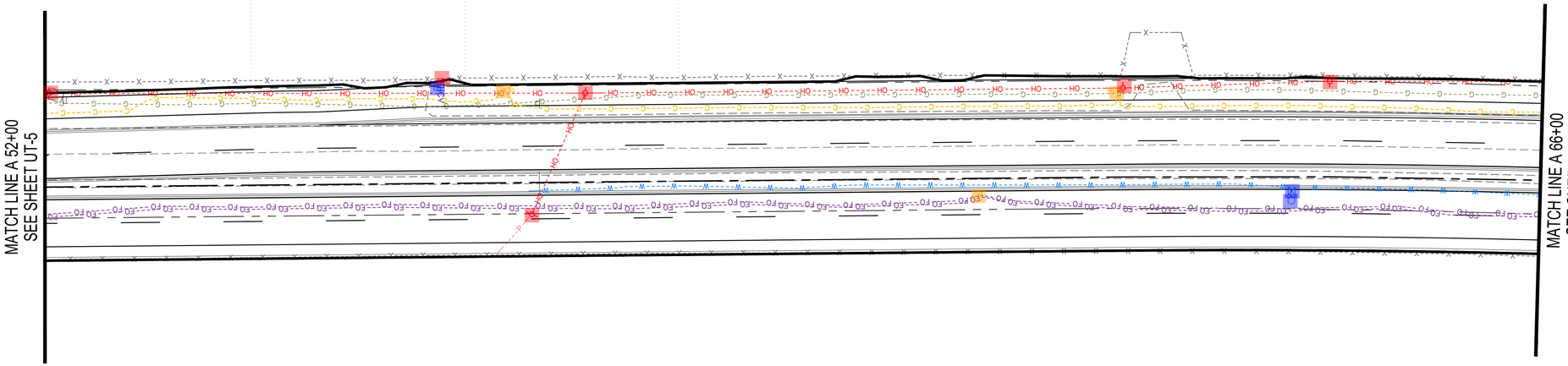

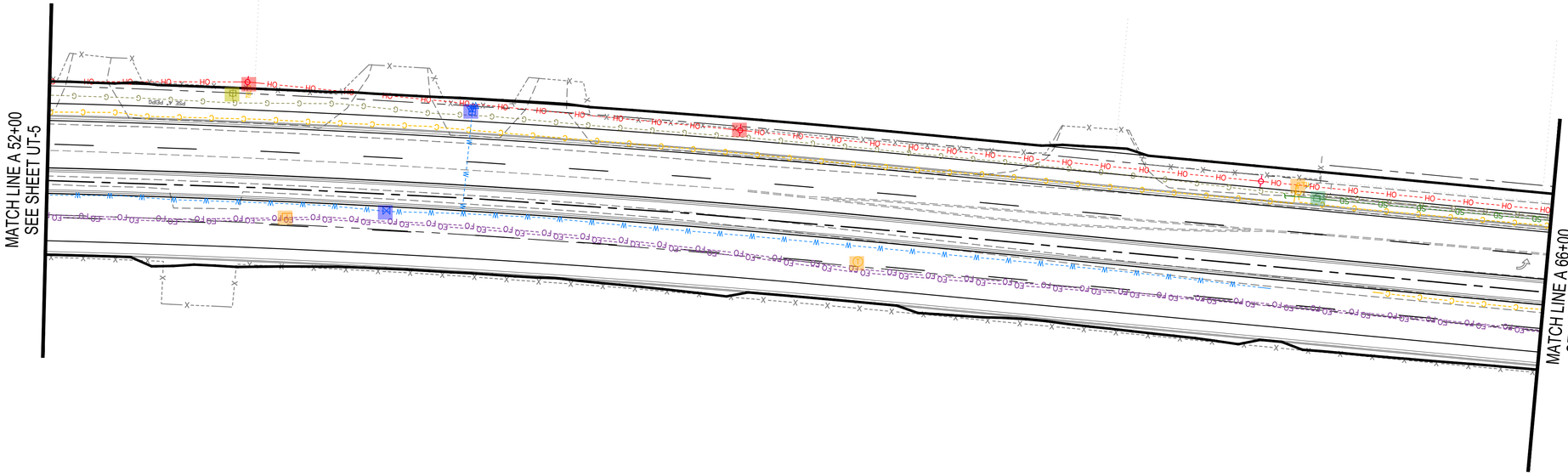

0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 52+00 - A 66+00

DRAWING No.: UT-6
SHEET No.: ---- OF XX

Oct 20, 2021 8:52:58am – User: sam.dunn
N:\PROJECTS\0625 CITY OF TUMWATER\0625.29 TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY\CADD\EXHIBITS\UTILITY CONFLICTS\0625.29–UTILITY CONFLICTS EXHIBIT.DWG

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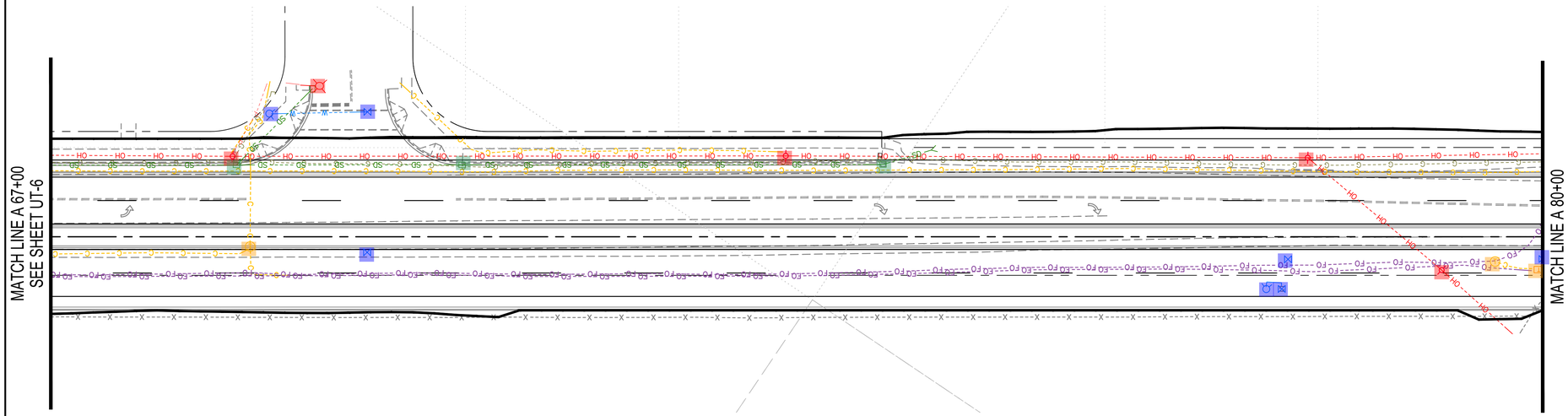

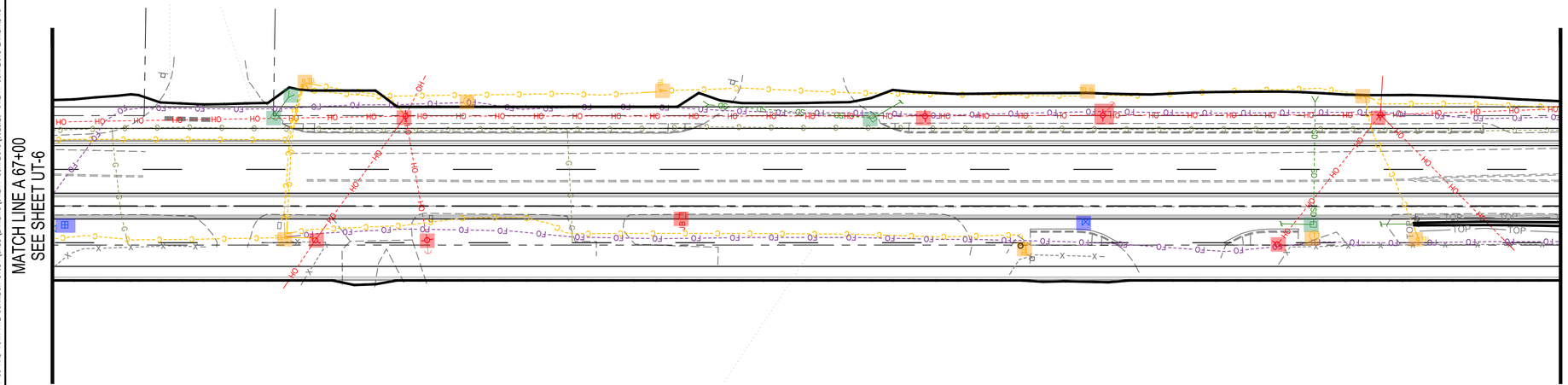

0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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CONSULTING SERVICES
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P: 360-352-1465 F: 360-352-1509
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 67+00 - A 80+00

DRAWING No.: UT-7

SHEET No.: ---- OF XX

Oct 20, 2021 - 8:53:37am - User: sam.dunn
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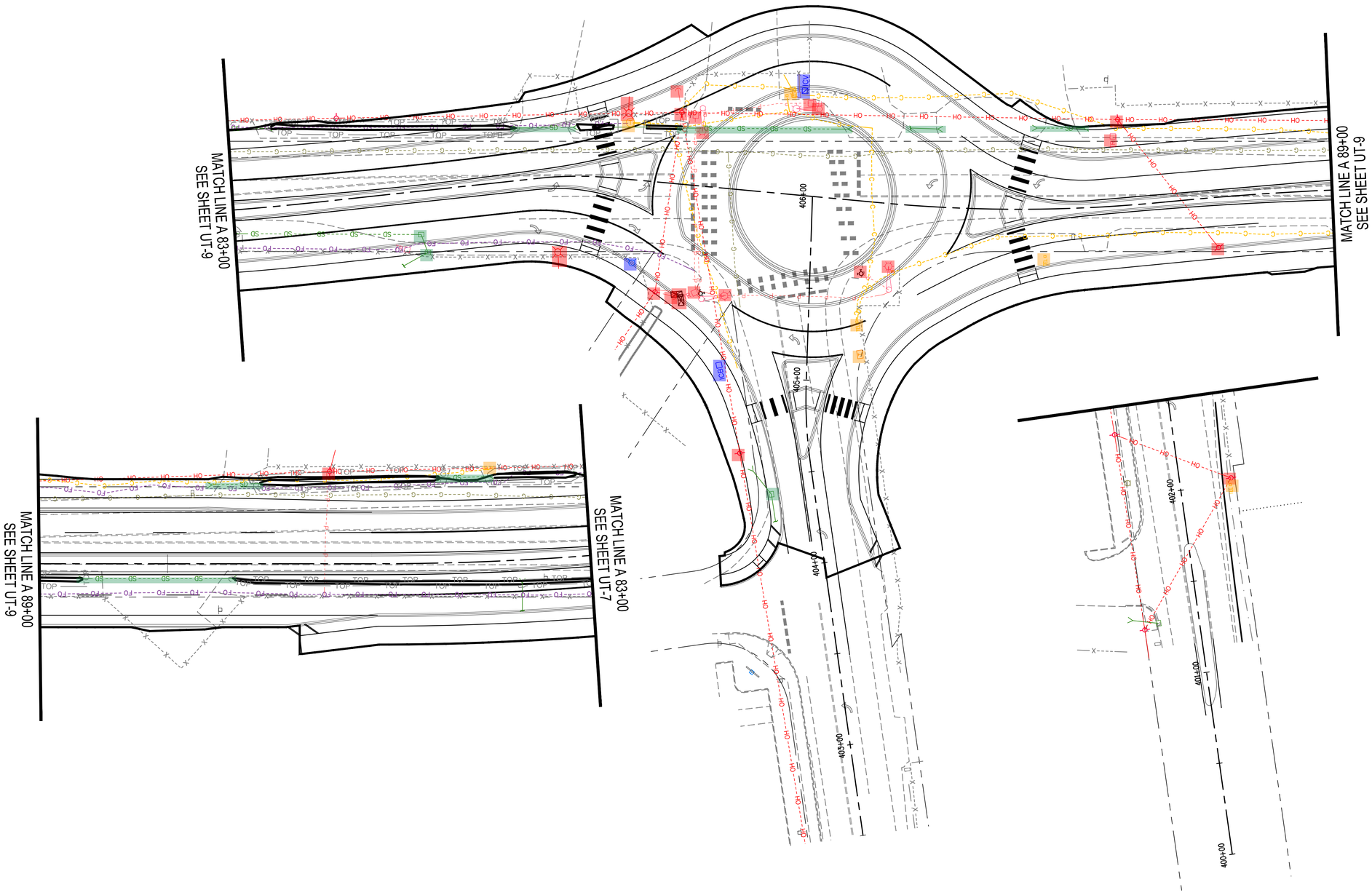

0 30 60

SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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PRELIMINARY

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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 80+00 - A 89+00

DRAWING No.: UT-8

SHEET No.: ---- OF XX

Oct 20, 2021 - 8:53:58am - User: sam.dunn
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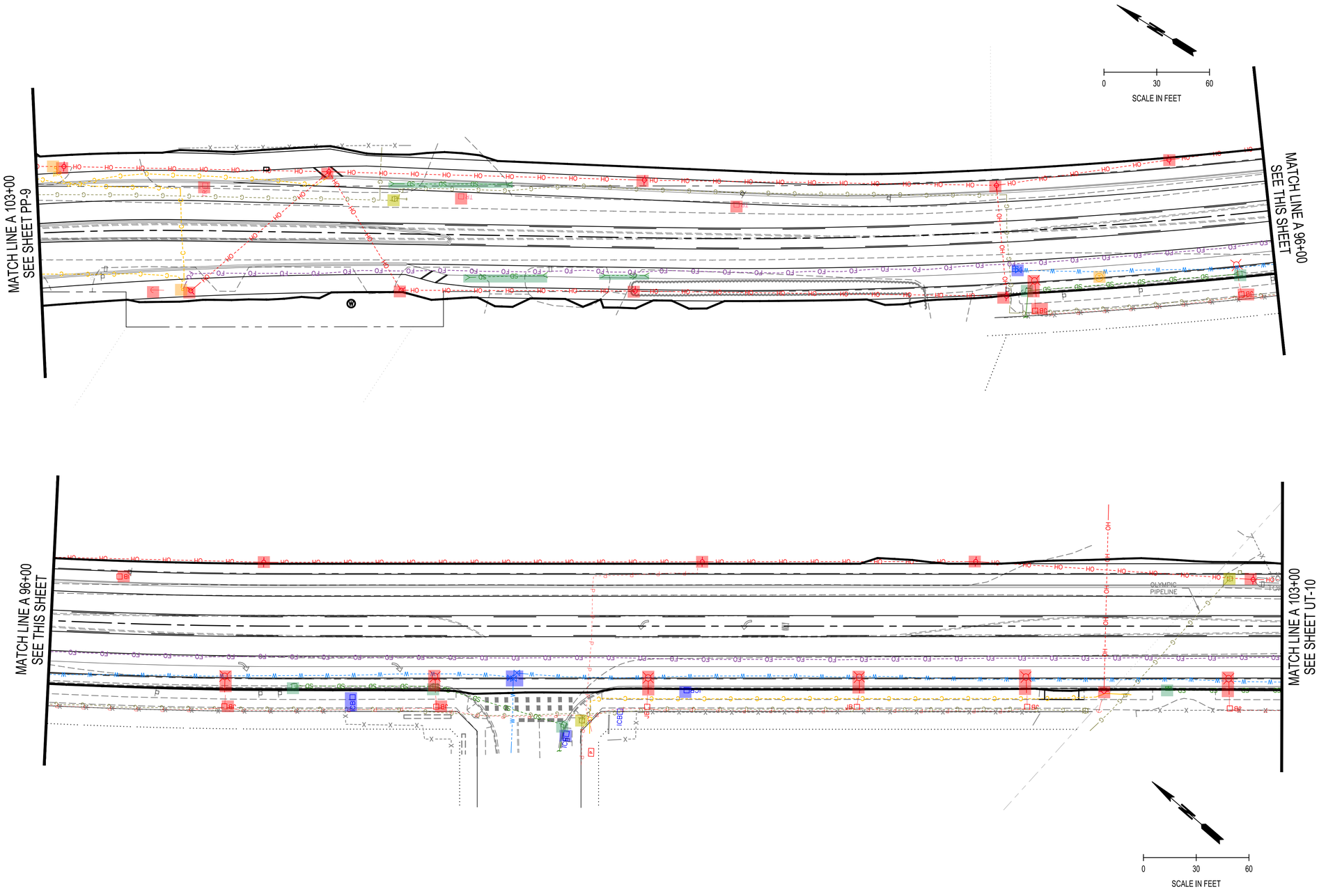

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

REVISIONS	DATE	BY
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DESIGNED BY: DESIGNER NAME	ISSUE DATE: SEPTEMBER 2020
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 89+00 - A 103+00

DRAWING No.: UT-9

SHEET No.: ---- OF XX

Oct 20, 2021 8:54:37am — User: sam.dunn
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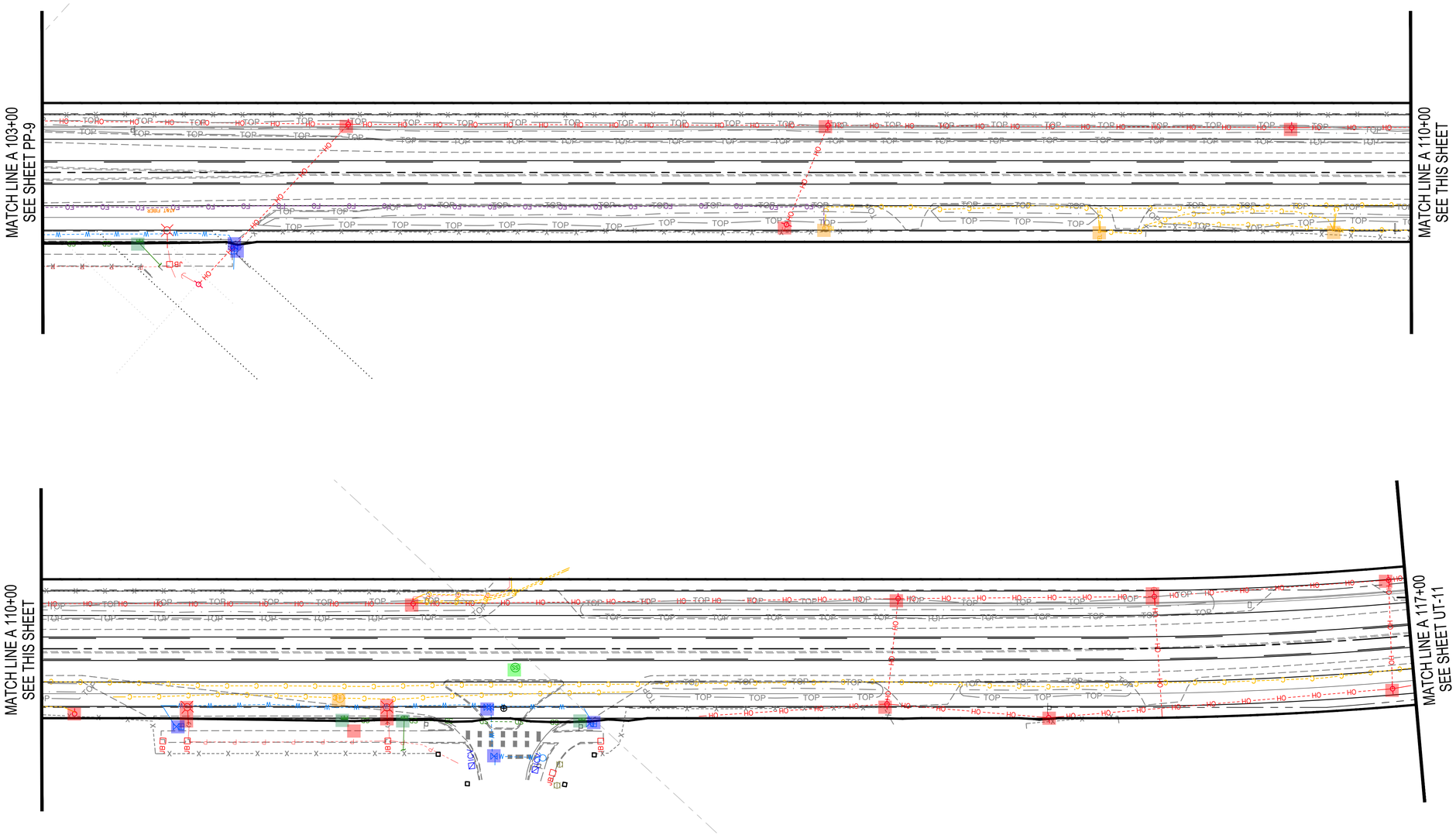

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SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

REVISIONS	DATE	BY
PRELIMINARY		

DESIGNED BY: DESIGNER NAME	ISSUE DATE: SEPTEMBER 2020
DRAWN BY: DRAFTER NAME	JOB No.: 0625.29
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CITY OF TUMWATER
555 ISRAEL ROAD SW
TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 103+00 - A 117+00

DRAWING No.: UT-10

SHEET No.: ---- OF XX

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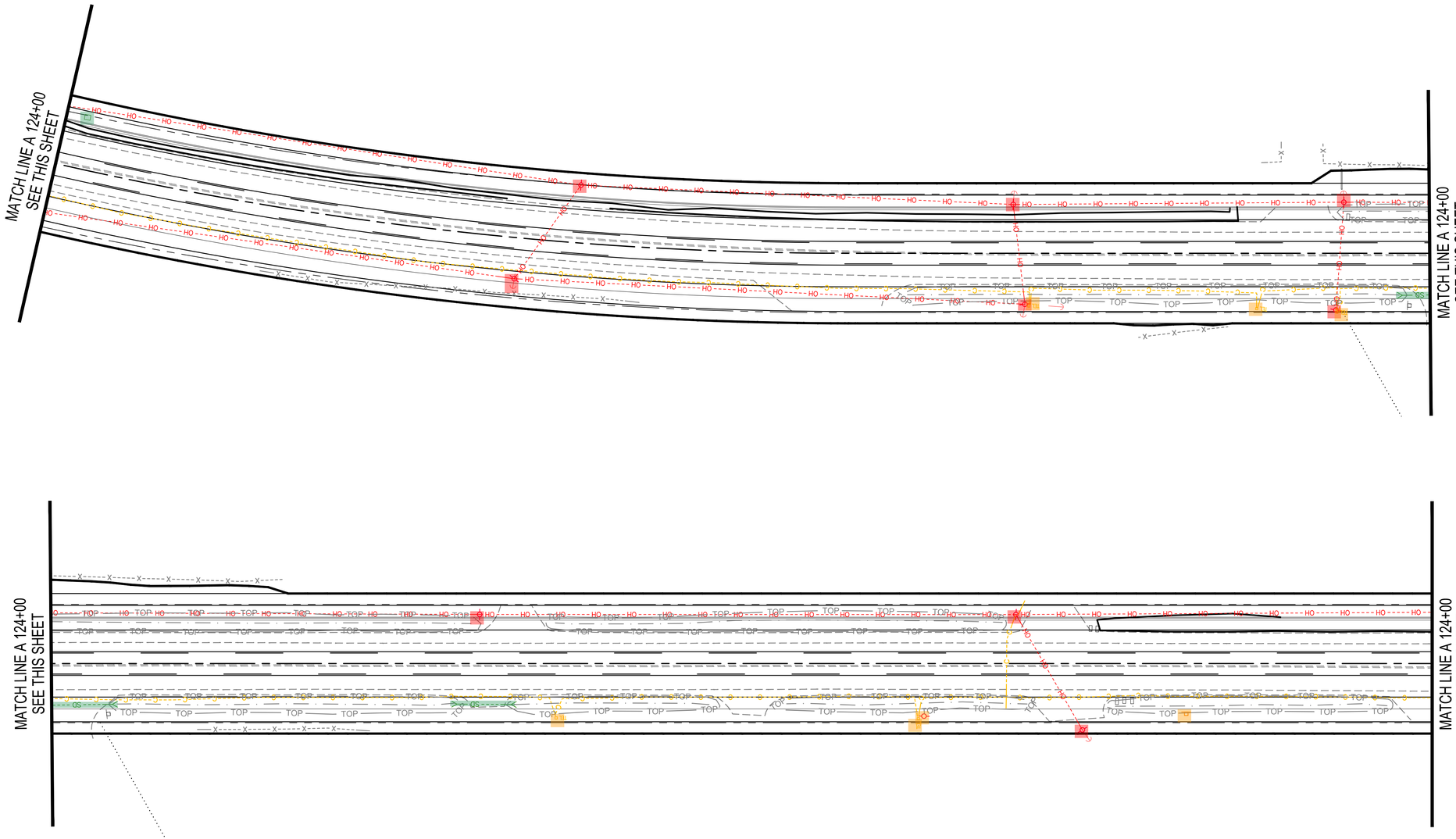

0 30 60
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

REVISIONS	DATE	BY
PRELIMINARY		

DESIGNED BY: DESIGNER NAME	ISSUE DATE: SEPTEMBER 2020
DRAWN BY: DRAFTER NAME	JOB No.: 0625.29
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TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN

DRAWING No.: UT-11

SHEET No.: ---- OF XX

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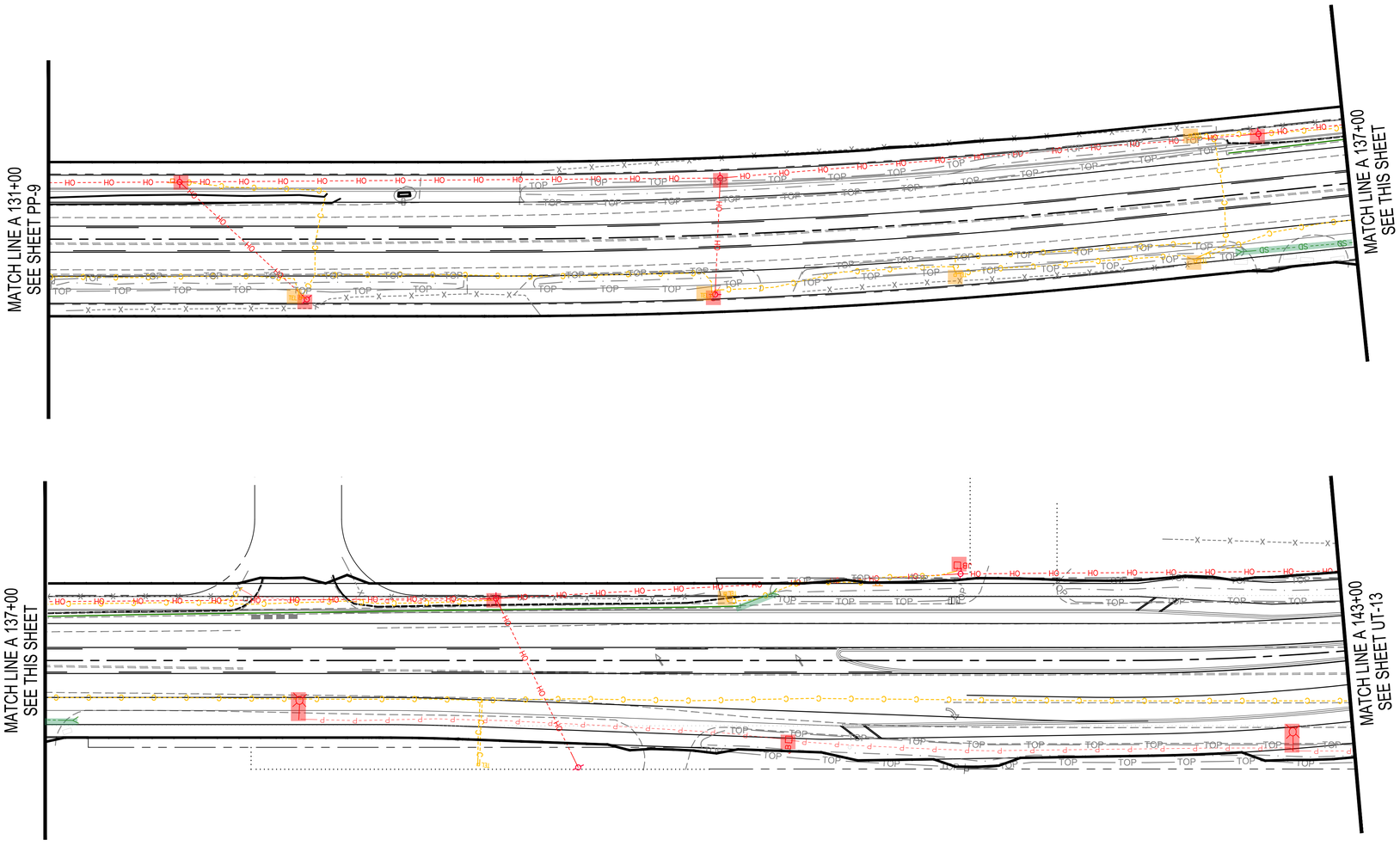

0 30 60

SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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TUMWATER, WA 98501

OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON
MP XX TO MP XX

UTILITY PLAN
A 131+00 - A 143+00

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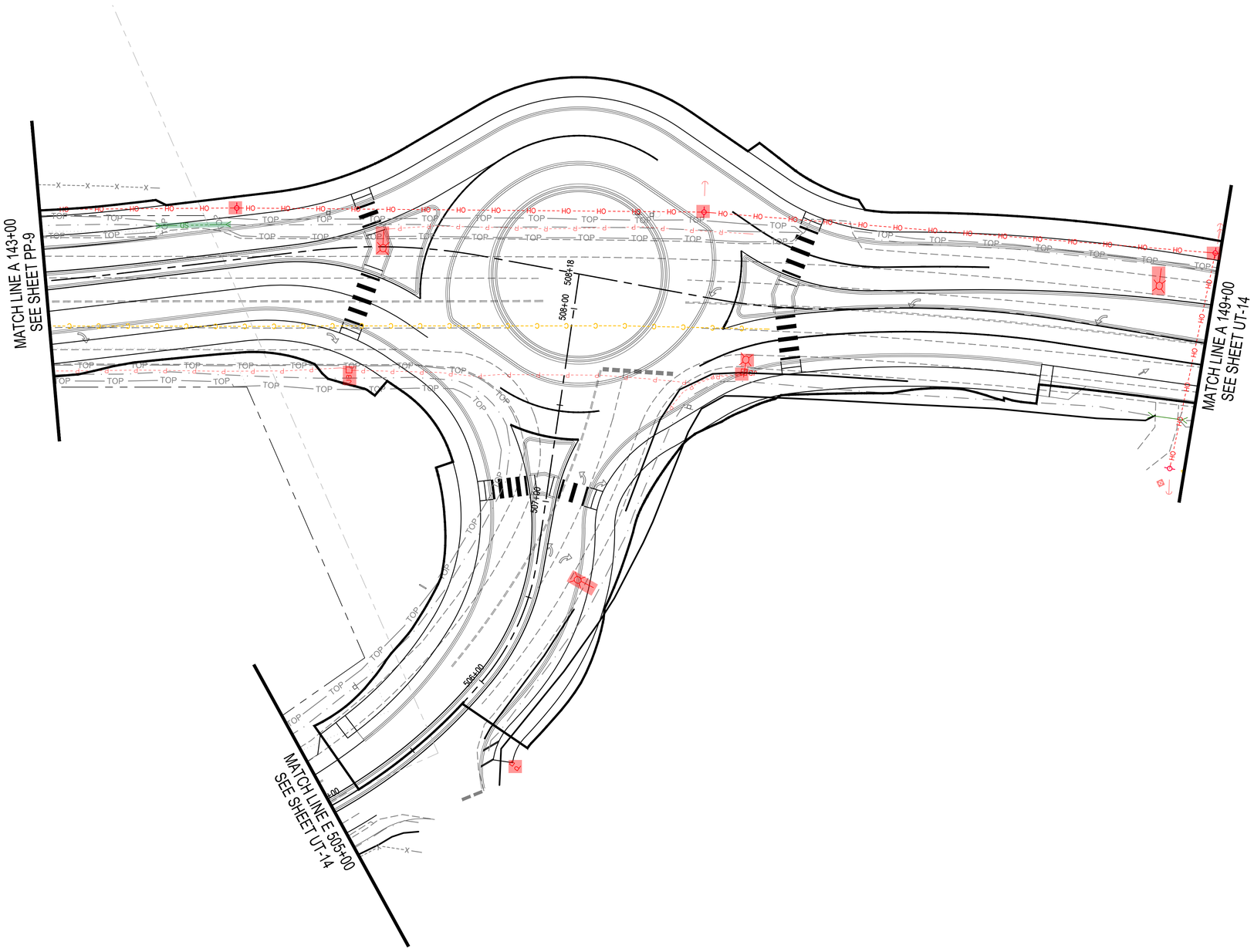

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SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE

UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

PRELIMINARY

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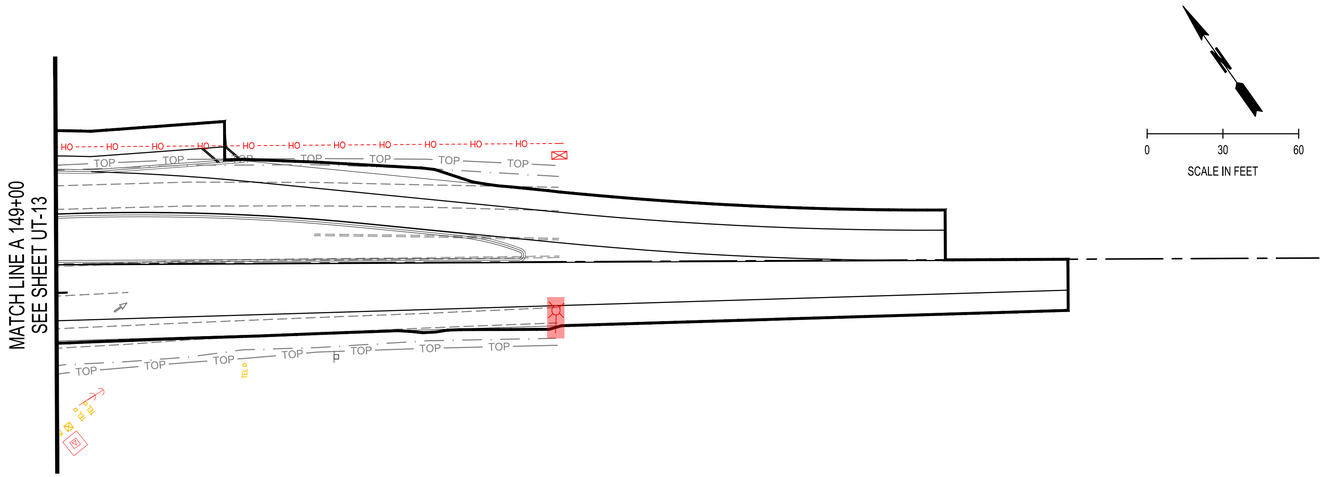

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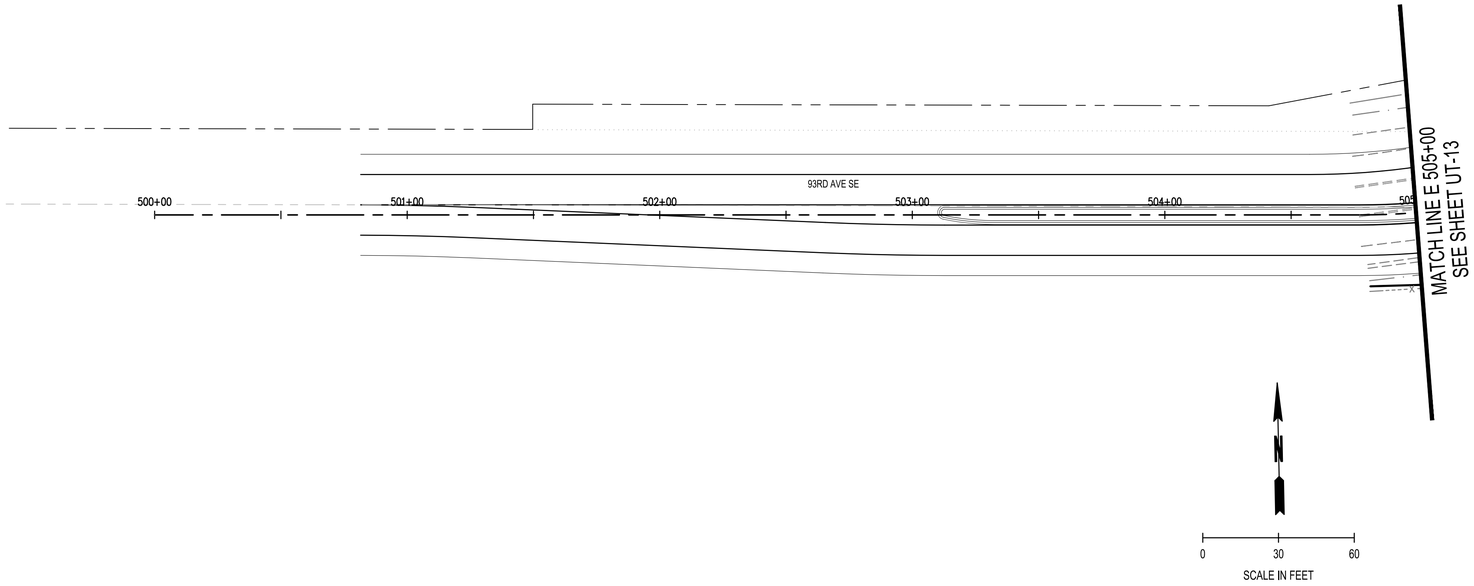
SCALE IN FEET

LEGEND

- 12–INCH WATER MAINS
- WATER VALVE WITH VALVE BOX
- FITTING WITH THRUST BLOCKING
- FIRE HYDRANT ASSEMBLY
- PROPOSED 12–INCH STORM DRAIN LINE
- EXISTING STORM DRAIN LINE
- EXISTING WATER MAIN
- CONSTRUCTION CENTERLINE
- ROW/ PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND POWER LINE
- CATCH BASIN TYPE 1
- CATCH BASIN TYPE 2
- CUT/FILL LINE



UTILITY CONFLICT LEGEND

- GAS
- POWER
- SEWER
- STORMWATER
- TELEPHONE
- WATER

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A 149+00 - E 505+00

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F6) STORMWATER TECH MEMO

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Technical Memo

To City of Tumwater

From: David Rowland, PE

Date: November 1, 2022

Project: 0625.29 – Old Highway 99 Corridor Study

Subject Stormwater Design

Introduction

The Old Highway 99 Corridor Study starts at 73rd Avenue and continues until 93rd Avenue on Old Highway 99. This technical memorandum seeks to provide preliminary design recommendations based on city storm water reports near the Old Highway 99 corridor and geotechnical borings in strategic locations on site. This project will comply with the Tumwater *2022 Drainage Design and Erosion Control Manual* (DDECM) effective July 2022 to manage stormwater runoff.

Due to the large extents of the project, the Old Highway 99 Corridor project was broken up into five different phases. Below are the five phases of the project that were evaluated stormwater solutions:

- Phase 1 – 79th Avenue Roundabout
- Phase 2 – 73rd Avenue to 79th Avenue
- Phase 3 – 79th Avenue to 88th Avenue Roundabout
- Phase 4 – 88th Avenue Roundabout to Wyatt Court
- Phase 5 – Wyatt Court to 93rd Avenue Roundabout

This technical memorandum outlines basin areas, the stormwater management requirements, and the stormwater control plan for each phase of the project and takes the information provided by

Basin Areas

Appendix A contains exhibits for existing conditions and the basin areas. Below are the existing basin areas for all five phases:

Existing Basins – Phase 1 to 5

PHASE 1 – 79th Roundabout Predeveloped Conditions		
SURFACE	SF	ACRES
PGIS =	82,230	1.888
NPGIS =	3,000	0.069
TOTAL IMPERVIOUS =	**85,230**	**1.957**
NPGPS =	113,390	2.603
TOTAL PERVIOUS =	**113,390**	**2.603**
TOTAL =	**198,620**	**4.560**

PHASE 2 – 73rd to 79th Predeveloped Condition		
SURFACE	SF	ACRES
PGIS =	205,190	4.711
NPGIS =	2,650	0.061
TOTAL IMPERVIOUS =	**207,840**	**4.772**
NPGPS =	246,260	5.653
TOTAL PERVIOUS =	**246,260**	**5.653**
TOTAL =	**454,100**	**10.425**

PHASE 3 – 79th to 88th Predeveloped Conditions		
SURFACE	SF	ACRES
PGIS =	175,330	4.025
NPGIS =	3,250	0.075
TOTAL IMPERVIOUS =	**178,580**	**4.100**
NPGPS =	213,100	4.892
TOTAL PERVIOUS =	**213,100**	**4.892**
TOTAL =	**391,680**	**8.992**

PHASE 4 – 88th to Wyatt Predeveloped Conditions		
SURFACE	SF	ACRES
PGIS =	122,420	2.810
NPGIS =	5,060	0.116
TOTAL IMPERVIOUS =	**127,480**	**2.926**
NPGPS =	90,260	2.072
TOTAL PERVIOUS =	**90,260**	**2.072**
TOTAL =	**217,740**	**4.999**

PHASE 5 – Wyatt to 93rd – Predeveloped Condition		
SURFACE	SF	ACRES
PGIS =	208,690	4.791
NPGIS =	0	0
TOTAL IMPERVIOUS =	**208,690**	**4.791**
NPGPS =	206,190	4.733
TOTAL PERVIOUS =	**206,190**	**4.733**
TOTAL =	**414,880**	**9.524**

Appendix B contains proposed conditions and sample areas used to model proposed stormwater systems. Below are the proposed basin areas for all five phases:

Proposed Basins – Phases 1 to 5

Phase 1 – 79th Roundabout Developed Conditions		
SURFACE	SF	ACRES
NEW PGIS =	98,990	2.272
REPLACED PGIS =	82,230	1.888
NEW NPGIS =	36,270	0.833
REPLACED NPGIS =	3,000	0.069
TOTAL IMPERVIOUS =	**135,260**	**3.105**
NPGPS =	61,840	1.420
TOTAL PERVIOUS =	**61,840**	**1.420**
TOTAL =	**197,100**	**4.525**

Phase 2 – 73rd to 79th Developed Conditions		
SURFACE	SF	ACRES
NEW PGIS =	252,460	5.796
REPLACED PGIS =	205,190	4.710
NEW NPGIS =	72,040	1.654
REPLACED NPGIS =	2,650	0.061
TOTAL IMPERVIOUS =	**324,500**	**7.450**
NPGPS =	129,600	2.975
TOTAL PERVIOUS =	**129,600**	**2.975**
TOTAL =	**454,100**	**10.425**

Phase 3 – 79th to 88th – Developed Conditions		
SURFACE	SF	ACRES
NEW PGIS =	216,750	4.976
REPLACED PGIS =	175,330	4.025
NEW NPGIS =	62,330	1.431
REPLACED NPGIS =	3,250	0.075
TOTAL IMPERVIOUS =	**279,080**	**6.407**
NPGPS =	112,600	2.585
TOTAL PERVIOUS =	**112,600**	**2.585**
TOTAL =	**391,680**	**8.992**

Phase 4 – 88th to Wyatt – Developed Conditions		
SURFACE	SF	ACRES
NEW PGIS =	117,900	2.707
REPLACED PGIS =	117,900	2.707
NEW NPGIS =	32,030	0.735
REPLACED NPGIS =	5,060	0.116
TOTAL IMPERVIOUS =	**149,930**	**3.442**
NPGPS =	67,810	1.557
TOTAL PERVIOUS =	**67,810**	**1.557**
TOTAL =	**217,740**	**4.999**

Phase 5 – Wyatt to 93rd – Developed Conditions		
SURFACE	SF	ACRES
NEW PGIS =	218,710	5.02
REPLACED PGIS =	208,690	4.791
NEW NPGIS =	65,690	1.508
REPLACED NPGIS =	0	0.000
TOTAL IMPERVIOUS =	**284,400**	**6.529**
NPGPS =	130,480	2.995
TOTAL PERVIOUS =	**130,480**	**2.995**
TOTAL =	**414,880**	**9.524**

Minimum Requirements

Based on the Tumwater 2022 DDECM, based in the Ecology Manual, all the project phases require application of Minimum Requirements 1-11 for all hard and pollution generating pervious surfaces, and converted vegetation areas.

See **Appendix C** for the Minimum Requirements Flow Charts.

Stormwater Control Plan

Each of the phases will require runoff treatment and flow control. Each system will be designed per the 2022 DDECM and modeled in WWHM2012. For all the phases the use of Bioretention and Compost Amended Vegetated Filter Strips (CAFVS) will be used for flow control. The following preliminary infiltration rates were used for modeling the CAVFs widths, bioretention swales, and infiltration basins:

1. 9.0 inches/hour was used from 73rd Avenue to Henderson Avenue
2. 3.8 inches/hour from Henderson Avenue to 79th Avenue
3. 4.2 inches/hour from 79th Ave to 93rd Avenue

Infiltration pits will need to be used to test the actual infiltration rate for each phase.

For each phase, to evaluate the storm flow control at a preliminary level, a sample portion of the typical section was evaluated to determine the CAVFs width and bioretention necessary for the corridor. Roundabouts were evaluated individually to determine the area needed for infiltration basins.

- Phase 1 – 79th Avenue Roundabout

  This project includes the construction of a roundabout at the intersection of 79th Avenue and Henderson Avenue and three connecting legs into the roundabout. Each leg connecting to Old Highway 99 will have 2 travel lanes in both directions, 10-foot sidewalks, bike lanes that terminate prior to the roundabout. Stormwater from the roundabout will be captured in catch basins and conveyed to infiltration basins. These infiltration basins are planned to be located on the northwest, northeast, and southeast sides of the roundabout. Stormwater along the roadway on the eastside because of the curb will be captured with scuppers and conveyed to bioretention swales. If applicable, CAVFS will be located on the west side of Old Highway 99 and will capture stormwater running off the roadway where curbs and gutters are not present. Any overflow will be routed to the infiltration basins located at the roundabout for both the bioretention facilities and the CAVFS.

  Based on the preliminary geotechnical information acquired from HWA Geotechnical borings, the anticipated infiltration rate is 3.8 inches per hour. This requires the CAFVs to have a width of 6 feet on the west side where a curb and gutter are not present, bioretention swales contained in the 6’ planter strip will be able to handle and infiltrate storm water that is generated in areas where a curb and gutter are present. Infiltration basins for the 79th Avenue roundabout will require an area of 9,600 SF.

- Phase 2 – 73rd Avenue to 79th Avenue

  This phase will include construction of a roundabout at Henderson Avenue and the widening of the road to accommodate 2 lanes in both directions. 10-foot sidewalks will be located on the east of the entire length of the road and 6-foot bicycle lanes will be on the edge of the west side. At the roundabout at Henderson bike lanes will terminate to connect to 10-foot sidewalks to accommodate pedestrians and bicyclists. Stormwater along the roadway on the eastside because of the curb will be captured with scuppers and conveyed to bioretention swales. CAVFS will be located on the west side of Old Highway 99 and will capture stormwater running off the roadway where curbs and gutters are not present. Any overflow will be routed to the infiltration basins located at the roundabout for both the bioretention facilities and the CAVFS.

  Based on the preliminary geotechnical information acquired from HWA Geotechnical borings, the anticipated infiltration rate is 9 inches/hour from 73rd Avenue to Henderson Avenue and 3.8 incher/hour from Henderson Avenue to 79th Avenue. This requires the CAFVs to have a width of 4 feet on the west side where a curb and gutter are not present from 73rd Avenue to Henderson Avenue and 6 feet CAVFs from Henderson Avenue to 79th Avenue. Bioretention swales contained in the 6' planter strip will be able to handle and infiltrate storm water that is generated in areas where a curb and gutter are present. Infiltration basins for the Henderson Avenue roundabout stormwater will require an area of 9,600 SF.

- Phase 3 – 79th Avenue to 88th Avenue Roundabout

  Following the roundabout at 79th Avenue, phase 3 includes widening to 2 travel lanes in both directions with medians, 10-foot sidewalk on east side, and 6-foot bike lane on west side and will terminate at the intersection of 88th Avenue and Old Highway 99 that will be improved with a roundabout. Stormwater draining in the roundabout will be captured with catch basins and conveyed to infiltration basins. Stormwater along the roadway on the eastside because of the curb will be captured with scuppers and conveyed to bioretention swales. CAVFS will be located on the west side of Old Highway 99 and will capture stormwater running off the roadway where curbs and gutters are not present. Any overflow will be routed to the infiltration basins located at the roundabout for both the bioretention facilities and the CAVFS.

  Base on the preliminary geotechnical information acquired from HWA Geotechnical borings, the anticipated infiltration rate is 3.8 inches per hour. This requires the CAFVs to have a width of 6 feet on the west side where a curb and gutter are not present, bioretention swales contained in the 6' planter strip will be able to handle and infiltrate storm water that is generated in areas where a curb and gutter are present. Infiltration basins for the Henderson Avenue roundabout stormwater will require an area of 8500 SF.

- Phase 4 – 88th Avenue to Wyatt Court

  After the roundabout at 88th Avenue there will be 1 lane of travel in both direction with a median. 6-foot sidewalks and 6-foot bicycle lanes will run along the west and east sides. Stormwater will be controlled through bioretention on both sides of the roadway. Any overflow from the bioretention swales will be conveyed to the infiltration basins at 88th Avenue.

  Base on the preliminary geotechnical information acquired from HWA Geotechnical borings, the anticipated infiltration rate is 4.2 inches per hour. Bioretention swales contained in the 6' planter strip will be able to handle and infiltrate storm water that is generated in areas where a curb and gutter are present.

- Phase 5 – Wyatt Court to 93rd Avenue Roundabout

  Phase 5 continues the same section from phase 4 and terminates with a single circulating lane roundabout. Stormwater along the roadway on the eastside because of the curb will be captured with scuppers and conveyed to bioretention swales. Overflow from bioretention swales will be conveyed to infiltration basins located at the roundabout at 93rd Avenue.

  Base on the preliminary geotechnical information acquired from HWA Geotechnical borings, the anticipated infiltration rate is 4.2 inches per hour. Bioretention swales contained in the 6' planter strip will be able to handle and infiltrate storm water that is generated in areas where a curb and gutter are present. Infiltration basins for the 93rd Avenue roundabout stormwater will require an area of 8100 SF.

All values for stormwater control facilities will need to be re-evaluated upon design for construction and will require storm facility specific investigation to confirm design infiltration rates prior to final design.

LIST OF APPENDICES

Appendix A – Existing Basin Areas
Appendix B – Proposed Basin Areas
Appendix C – Stormwater Flow Charts
Appendix D – HWA Geotechnical Report
Appendix E – WWHM Model Reports

Appendix A – Existing Basin Areas

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M

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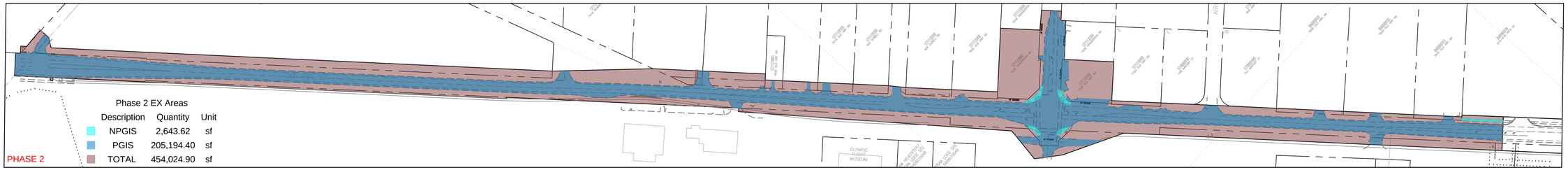

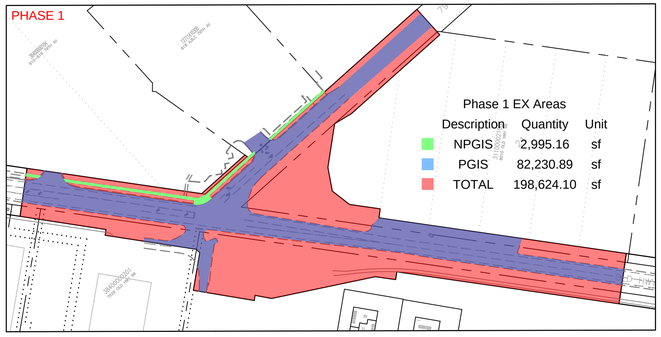

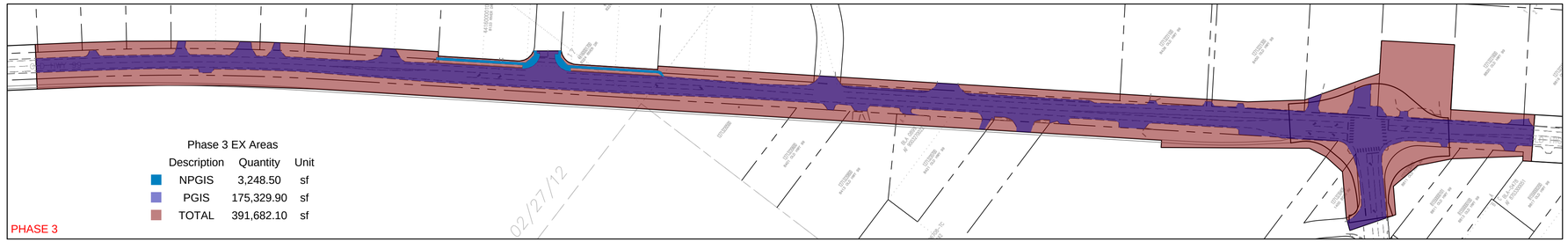

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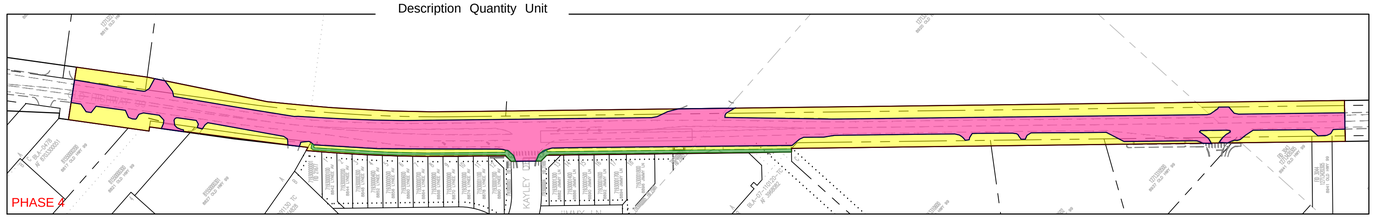


PHASE 1 – 79TH AVENUE ROUNDABOUT

PGIS =	81,040.86
NPGIS =	2,356.55
NPGPS =	113,389.39
Total =	196,786.80

PHASE 2 – 73RD AVENUE TO 79TH AVENUE

PGIS =	205,192.70
NPGIS =	2,644.06
NPGPS =	246,188.14
Total =	454,024.90

PHASE 3 – 79TH AVENUE TO 88TH AVENUE

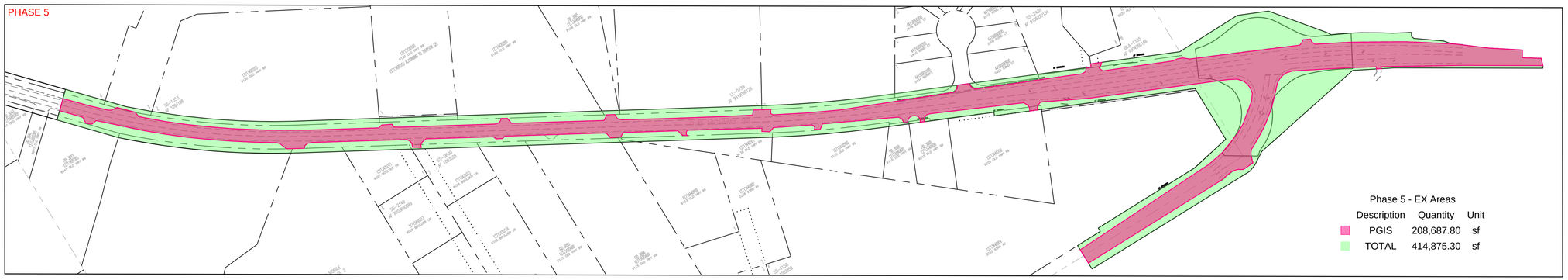
PGIS =	175,330.60
NPGIS =	3,248.50
NPGPS =	213,103.00
Total =	391,682.10

PHASE 4 – 88TH AVENUE TO WYATT COURT

PGIS =	122,414.00
NPGIS =	3,980.94
NPGPS =	91,343.46
Total =	217,738.40

PHASE 5 – WYATT COURT TO 93RD AVENUE

PGIS =	208,686.20
NPGIS =	0.0
NPGPS =	206,189.10
Total =	414,875.30



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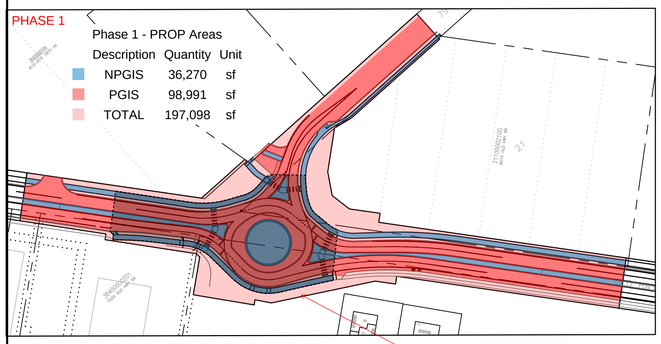
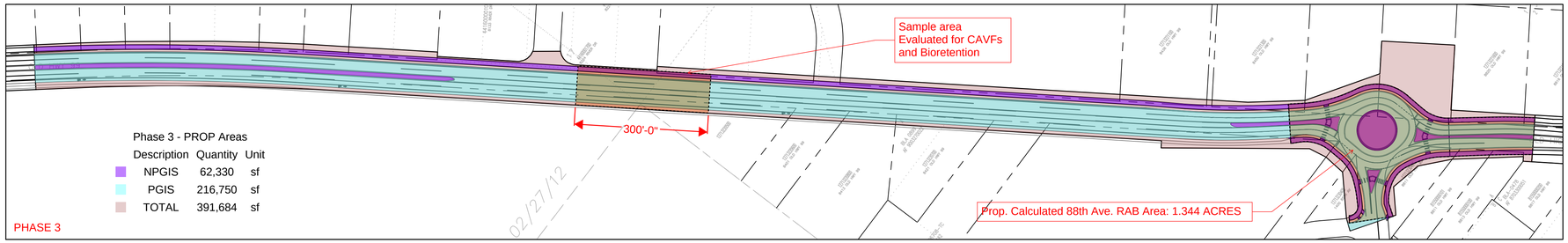
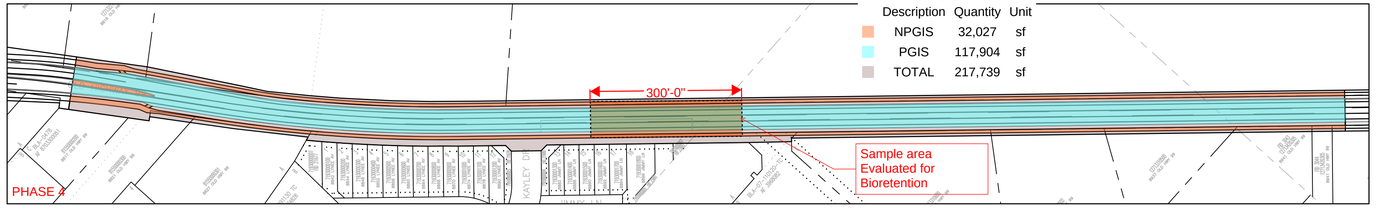
Appendix B – Proposed Basin Areas

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M







PHASE 1 – 79TH AVENUE ROUNDABOUT

PGIS =	98,990.57
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NPGPS =	61,838.56
Total =	197,098.50

PHASE 2 – 73RD AVENUE TO 79TH AVENUE

PGIS =	252,461.60
NPGIS =	72,038.34
NPGPS =	129,604.26
Total =	454,104.20

PHASE 3 – 79TH AVENUE TO 88TH AVENUE

PGIS =	216,749.80
NPGIS =	62,331.12
NPGPS =	112,602.38
Total =	391,683.30

PHASE 4 – 88TH AVENUE TO WYATT COURT

PGIS =	117,903.20
NPGIS =	32,023.97
NPGPS =	67,811.11
Total =	217,738.30

PHASE 5 – WYATT COURT TO 93RD AVENUE

PGIS =	218,709.00
NPGIS =	65,690.06
NPGPS =	130,477.84
Total =	414,876.90

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PROPOSED BASINS - EXHIBIT

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Appendix C – Stormwater Flow Charts

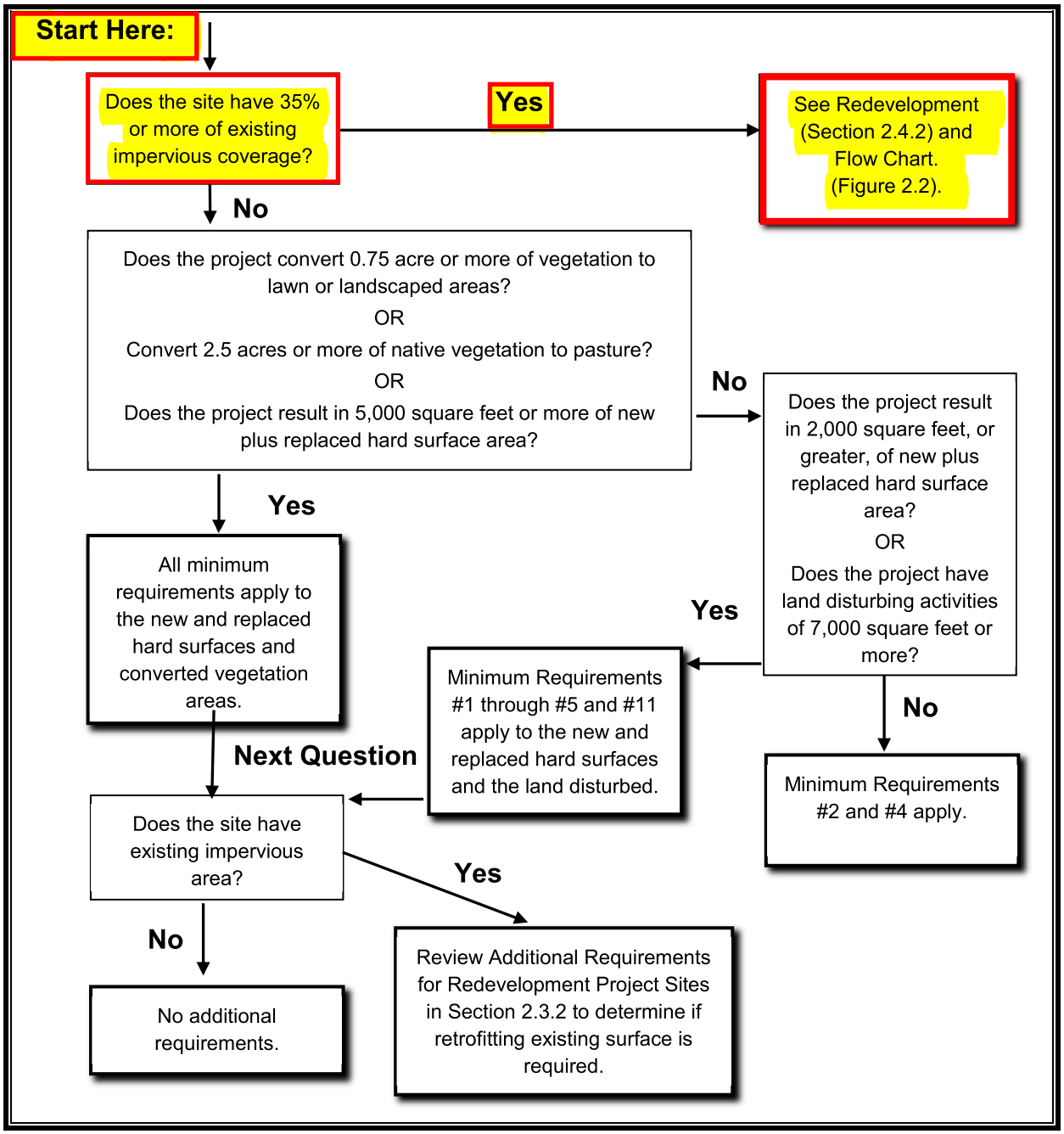

Figure 2.1. Flow Chart for Determining Requirements for New Development.

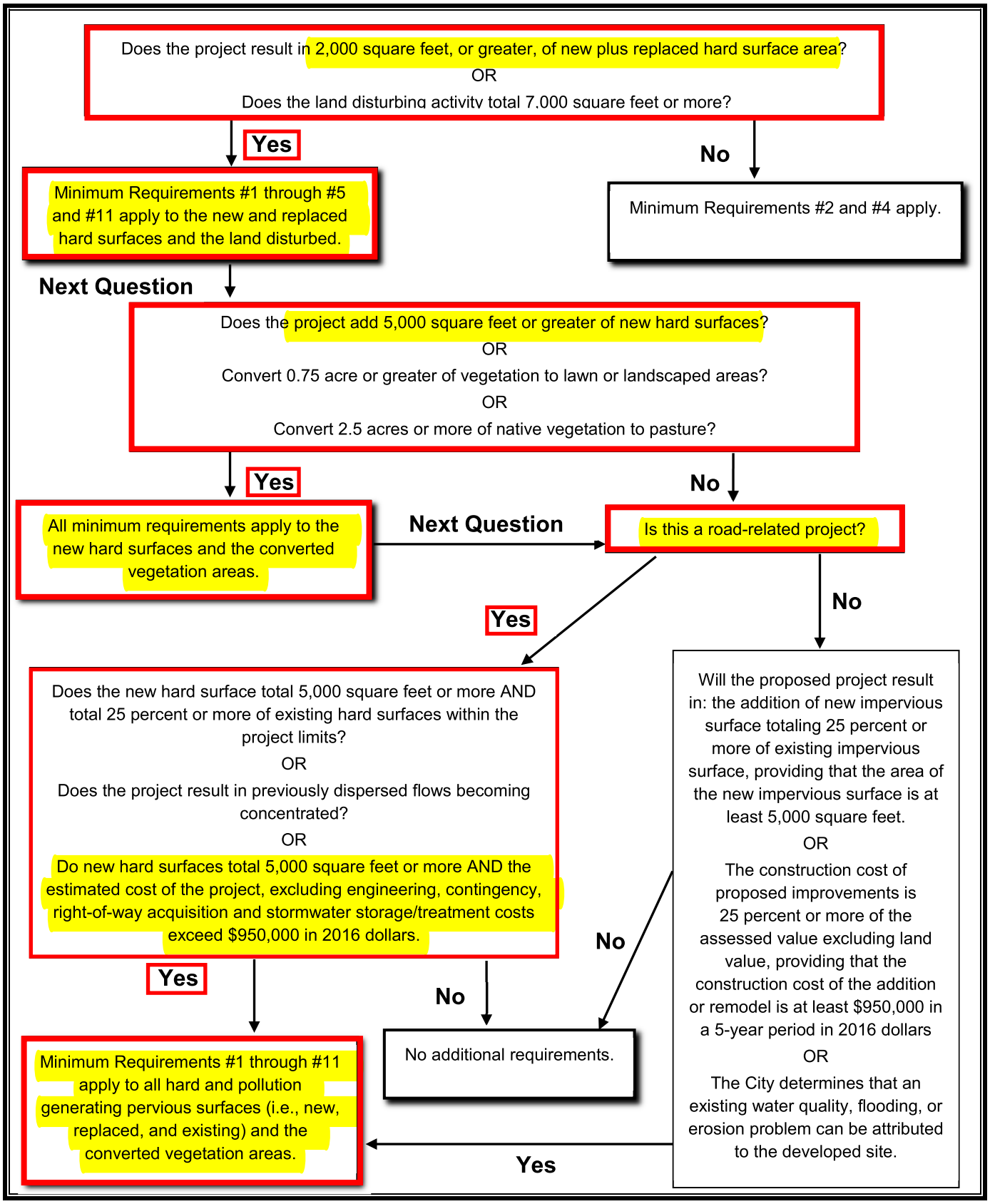

Figure 2.2. Flow Chart for Determining Requirements for Redevelopment.

FLOW CHART FOR ROADWAY WITH AND WITHOUT CURB AND GUTTERS

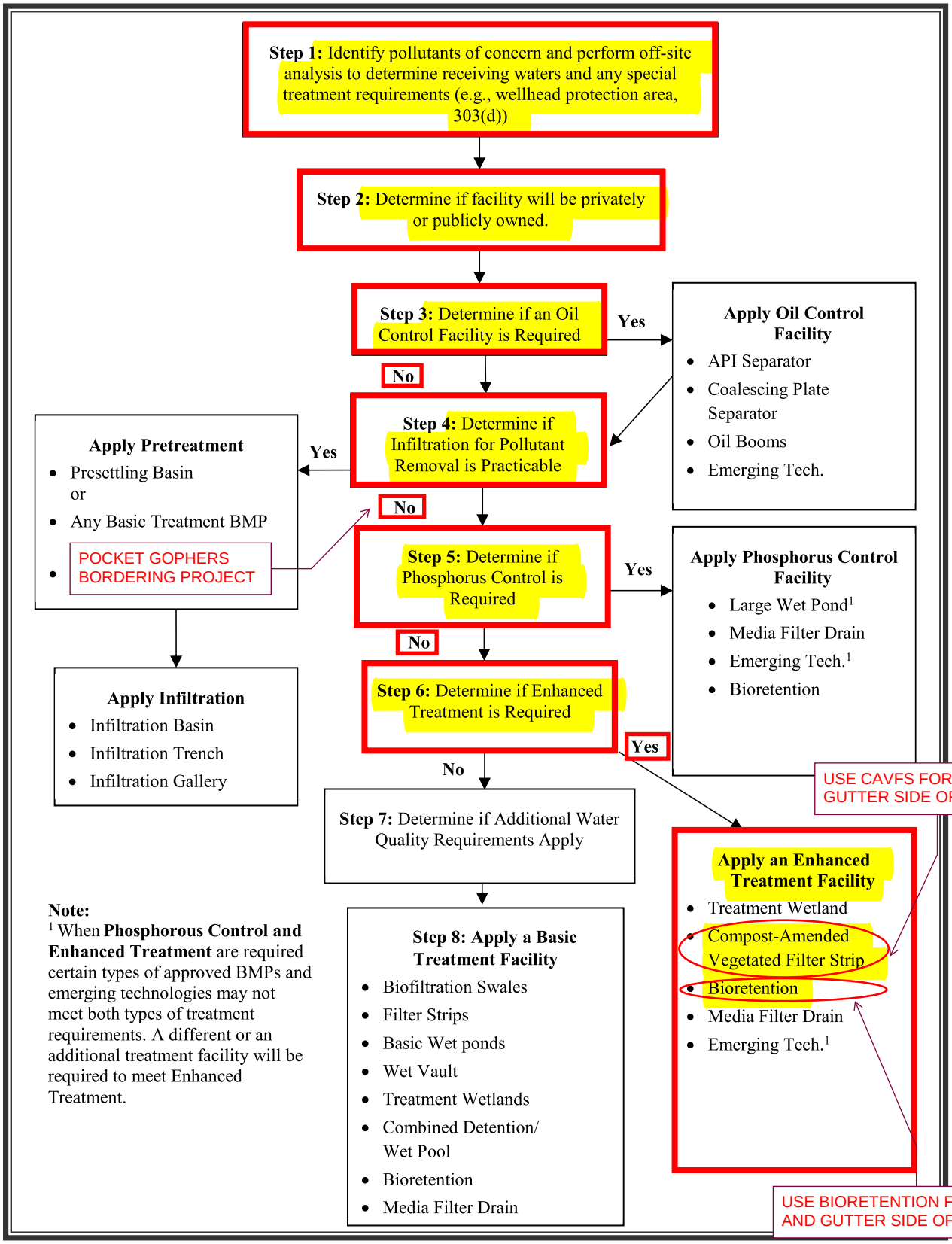

Figure 4.2. Treatment Facility Selection Flow Chart.

FLOW CHART FOR ROUNDABOUTS

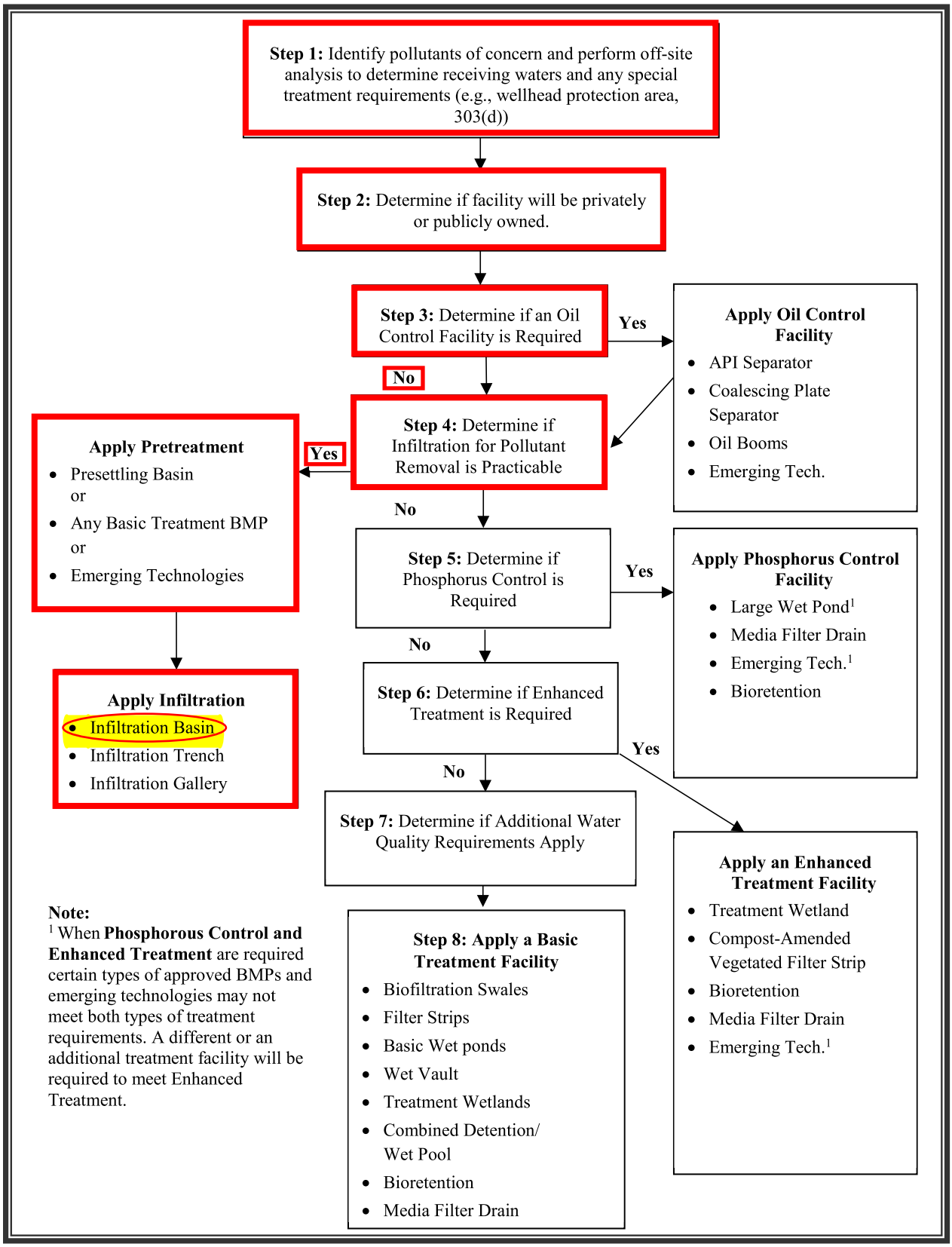

Figure 4.2. Treatment Facility Selection Flow Chart.

Appendix D – HWA Geotechnical Report

PRELIMINARY DRAFT GEOTECHNICAL REPORT
Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

HWA Project No. 2019-183-21

Prepared for
SCJ Alliance

October 12, 2022

HWA GeoSciences Inc.
DBE/MWBE

Geotechnical Engineering
Pavement Engineering
Geoenvironmental
Hydrogeology
Inspection & Testing

HWA GeoSciences Inc.
DBE/MWBE

October 12, 2022
HWA Project No. 2019-183-21

SCJ Alliance
8730 Tallon Lane NE, Suite 200
Olympia, Washington 98516

Attn: Patrick Holm, P.E.

Subject: **Preliminary Draft Geotechnical Report**
Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

Dear Patrick,

As requested, HWA GeoSciences Inc. (HWA) has completed a preliminary draft geotechnical report for the Old Hwy 99 and 79th Ave Corridor Study project in Tumwater, Washington. This report presents the results of our field explorations and laboratory testing along with our recommendations pertaining to luminaire foundations and infiltration feasibility.

We appreciate the opportunity to provide geotechnical engineering services on this project. If you have any questions regarding this report or require additional information or services, please contact the undersigned at your convenience.

Sincerely,

HWA GeoSciences Inc.

JoLyn Gillie, P.E.
Principal Geotechnical Engineer

Joe Westergreen
Geotechnical Engineer

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PRELIMINARY DRAFT GEOTECHNICAL REPORT
TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY
TUMWATER, WASHINGTON

1.0 INTRODUCTION

1.1 GENERAL

This report summarizes the results of a preliminary geotechnical engineering investigation performed by HWA GeoSciences, Inc. (HWA) for the Tumwater Old Highway 99 and 79th Avenue Corridor Study in Tumwater, Washington. The approximate location of the project site is shown on the Site and Vicinity Map, Figure 1, and on the Site and Exploration Plans, Figures 2A through 2C. Our field work included logging and drilling of three (3) boreholes to evaluate soil and groundwater conditions along the project corridor. Laboratory tests were conducted on select soil samples to estimate preliminary infiltration potential, water quality treatment potential, and to determine relevant engineering properties.

1.2 PROJECT UNDERSTANDING

It is our understanding that the project involves validating and building on the *Tumwater City Plan 2036, Transportation Master Plan November 2016*, and preparing a preliminary design for the Old Highway 99 corridor improvements from approximately 73rd Avenue SE to 93rd Avenue SE. We understand the project includes transportation and alternatives analysis to determine and recommend a roadway cross section and intersection improvements at Henderson Boulevard, 79th Avenue SE, 88th Avenue SE, and 93rd Avenue SE in context with the overall corridor improvements.

2.0 FIELD INVESTIGATION AND LABORATORY TESTING

2.1 SUBSURFACE EXPLORATIONS

HWA logged the drilling of three (3) machine-drilled geotechnical borings, designated BH-1 through BH-3, to assess subsurface conditions. The locations of the explorations are shown on the Site and Exploration Plans, Figures 2A through 2C. The borings were drilled by Holocene Drilling of Puyallup, Washington on August 12, 2022, under subcontract to HWA, using a Diedrich D-50 track-mounted drill rig equipped with hollow-stem augers. The boring depths varied from approximately 30.9 to 40.9 feet below ground surface (bgs).

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In each boring, Standard Penetration Test (SPT) sampling was performed using a 2-inch outside diameter split-spoon sampler driven by a 140-pound automatic hammer. During the SPT, samples were obtained by driving the sampler 18 inches into the soil with the hammer free-falling 30 inches. The numbers of blows required for each 6 inches of penetration were recorded. The Standard Penetration Resistance ("N-value") of the soil is calculated as the number of blows required for the final 12 inches of penetration. This resistance, or N-value, provides an indication of relative density of granular soils and the relative consistency of cohesive soils; both indicators of soil strength.

A geotechnical engineer from HWA logged the explorations and recorded all pertinent information. Soil samples obtained from the borings were classified in the field and representative portions were sealed in plastic bags. Pertinent information including soil sample depths, stratigraphy, soil engineering characteristics, and groundwater occurrence was recorded. These soil samples were then taken to our Bothell, Washington, laboratory for further examination and testing.

The stratigraphic contacts shown on the individual exploration logs represent the approximate boundaries between soil types; actual transitions may be more gradual. The soil and groundwater conditions depicted are only for the specific date and location reported and, therefore, are not necessarily representative of other locations and times. A legend of the terms and symbols used on the exploration logs is presented in Appendix A, Figure A-1. Summary logs of the explorations are presented on Figures A-2 through A-4.

2.3 LABORATORY TESTING

Laboratory tests were conducted on selected samples retrieved from our explorations to characterize infiltration potential, water quality potential, and relevant engineering and index parameters of the soils encountered at the site. The tests included visual classifications, determination of natural moisture contents, grain size distribution analyses, and organic matter testing. In addition, select samples were sent to SoilTest Farm Consultants, Inc. in Moses Lake, Washington, for cation exchange capacity (CEC) and organic matter testing. The tests were conducted in general accordance with appropriate American Society for Testing and Materials (ASTM) standards. CEC tests were conducted in general accordance with Environmental Protection Agency (EPA) method 9081.

A brief description of laboratory test methodology is presented in Appendix B. The test results are presented in Appendix B and displayed on the boring logs in Appendix A, as appropriate. Test results from SoilTest Farm Consultants, Inc. are presented in Appendix C.

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3.0 SITE CONDITIONS

3.1 SITE TOPOGRAPHY AND SURFACE CONDITIONS

The project area is relatively flat with elevation changes of approximately 35 feet over the approximate 2.7-mile-long project alignment. The roadway generally consists of one travel lane in each direction with occasional turn lanes. The northern portion of the alignment is generally bordered by the Olympia Regional Airport and commercial properties. The southern portion of the alignment is generally bordered by residential properties.

3.2 GENERAL GEOLOGIC CONDITIONS

The project alignment is located within the Puget Lowland. The Puget Lowland has repeatedly been occupied by a portion of the continental glaciers that developed during the ice ages of the Quaternary period. During at least four periods, portions of the ice sheet advanced south from British Columbia into the lowlands of western Washington. The southern extent of these glacial advances was near Olympia, Washington. Each major advance included numerous local advances and retreats, and each advance and retreat resulted in its own sequence of erosion and deposition of glacial lacustrine, outwash, till, and drift deposits. Between and following these glacial advances, sediments from the Olympic and Cascade Mountains accumulated in the Puget Sound Lowland.

Specific geologic information for the project area was obtained from the Geologic Map of the Maytown 7.5-minute Quadrangle, Thurston County, Washington (Logan et al., 2009). The map indicates the project area is generally underlain by deposits of recessional outwash, generally consisting of sand and silt with minor interbeds of gravel. This material is anticipated to be deposited in meltwater derived from stagnant ice and drainage from glacial lakes. The material is generally loose to medium dense.

3.3 SUBSURFACE SOIL CONDITIONS

Our explorations were drilled in lightly vegetated areas adjacent to Old Highway 99. At the surface we generally encountered a thin topsoil layer (less than 4 inches thick). Below the topsoil we generally encountered fill (except in BH-2), overlying recessional outwash, over glacial till or advance outwash. Brief descriptions of the soil units observed in our explorations are presented below in order of deposition, beginning with the most recently deposited.

Fill: Fill was encountered in borings BH-1 and BH-3 to approximately 1-foot bgs. The fill generally consisted of medium dense, slightly silty, slightly sandy, gravel.

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Recessional Outwash: Recessional outwash was encountered in all borings below the surficial fill or ground surface to depths of approximately 25 to 40 feet bgs. The material generally consists of loose to medium dense, slightly silty to silty sand. In boring BH-3, intermittent layers of soft to stiff, sandy silt were observed between 15 and 25 feet bgs, and an approximate 1-foot-thick layer of stiff clay was encountered at approximately 30 feet bgs.

Glacial Till – Glacial till was encountered below the recessional outwash in BH-3 starting at 40 feet bgs and extending to the maximum depth explored of 40.9 feet bgs. Material consisted of very dense, gravelly, silty sand.

Advance Outwash – Advance outwash was encountered below the recessional outwash in BH-1 and BH-2 starting at depths of approximately 25 to 30 feet and extending the maximum depths explored of 30.9 to 36.5 feet bgs. The advance outwash generally consists of dense to very dense, slightly silty to silty sand.

3.4 GROUNDWATER

Groundwater was encountered during drilling on August 12, 2022, in all borings. Groundwater was encountered at approximately 13, 16, and 20 feet bgs, in borings BH-1, BH-2, and BH-3, respectively. Groundwater levels are anticipated to vary along the project alignment, and to vary seasonally with the highest levels in the wet winter months. If excavations extend below the groundwater table dewatering will be required.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 GENERAL

Based on our subsurface explorations the recessional outwash above the groundwater table is suitable for infiltration of stormwater, however the rates are highly variable. The design of the infiltration facility will depend on the type of facility, the proposed depth of the bottom of the facility, and the required separation between the base of the infiltration facility and the groundwater table. Once the facilities are selected, HWA should review to confirm that there is adequate separation and/or if additional testing/analyses are required to size the proposed facility.

The recessional outwash material is loose and does not meet the assumed lateral bearing pressure values for a City of Tumwater standard luminaire foundation design. We recommend that a non-standard foundation design be conducted to size the foundations for the project luminaires based on the data provided.

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Our recommendations for infiltration suitability, luminaire foundations, and general earthwork are discussed in the subsequent sections.

4.2 EVALUATION OF INFILTRATION POTENTIAL OF SITE SOILS

4.2.1 Feasibility of Using Infiltration

We understand there is desire to infiltrate stormwater as part of the project improvements, if feasible. The feasibility of using infiltration as part of the stormwater management for this site was evaluated in accordance with the 2022 City of Tumwater Drainage Design and Erosion Control Manual (DDECM).

Groundwater was encountered in our explorations while drilling at depths between 13 and 20 feet bgs during drilling. We did not see signs of shallow groundwater during drilling, such as iron oxidation mottling. However, groundwater levels are anticipated to vary seasonally and along the project alignment. In addition, in BH-3, we observed a restrictive layer above the water table consisting of stiff sandy silt starting at 14.5 feet bgs.

Feasibility of using specific infiltration best management practices (BMPs) will depend on the type of facility used and their respective depths of separation required for design. Infiltration BMPs consist of facilities which each have a set of feasibility requirements. These can be grouped into two groups, one being infiltration basins, trenches, and galleries, and the other being bioretention, permeable pavement, and rain gardens.

Infiltration Basins, Trenches, and Galleries

Per the DDECM, infiltration basins, trenches, and galleries require 6 feet of separation between the bedrock, water table, or impermeable layer. This may be decreased to 3 feet with additional testing and performance of mounding analyses. The depth to the groundwater table applies to the highest seasonal groundwater level. At this time, we have the groundwater levels observed in borings completed during the summer, which may not indicate the highest groundwater depth. To account for this, we conclude that the base of the facilities would likely to be limited to about 4 feet bgs to provide the necessary separation without additional testing and analyses. If use of infiltration basins, trenches, or galleries are desired, HWA should review the proposed facilities to determine if additional testing would be needed to ascertain the highest groundwater levels and if mounding analyses would need to be performed.

Bioretention, Permeable Pavement, and Rain Gardens

Based on the requirements of the three BMPs bioretention, permeable pavement, and rain gardens, these infiltration BMPs allow lower depths of separation between the bottom of the facility and the underlying bedrock, water table, or impermeable layer. The bottom of the

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facilities for these BMPs are generally within about 3 feet of the ground surface. The depths of separation range from 1 foot for permeable pavement and rain gardens, and some smaller bioretention facilities, to 3 feet for bioretention facilities servicing larger impervious areas. No mounding analyses are required, such that we conclude that bioretention, permeable pavement, and rain gardens are all feasible for this project site and could be used for stormwater management without further testing.

4.2.2 Design Infiltration Rate

The City of Tumwater DDECM indicates that soil infiltration rates can be determined by pilot infiltration tests (PITs) or soil grain size analysis (for sites underlain by Type A soils). Based on our explorations, mapped geology, and the United States Department of Agriculture (USDA) soils maps, the native soils encountered in our explorations above the groundwater table consist of recessional outwash soils consistent with Type A Soils.

We used grain size distributions as outlined in Method 2 in Appendix "A" of Volume V of the City of Tumwater DDECM to determine initial saturated hydraulic conductivity. This method is adopted from the WSDOT publication of *A Design Manual for Sizing Infiltration Ponds* (Massmann, 2003). Our grain size analysis results in estimated saturated hydraulic conductivity of the soils ranging from 4 in/hr to 30 in/hr within the recessional outwash encountered in our borings above the groundwater table. The correction factors used are based on the recommendations from the 2022 City of Tumwater DDECM and are summarized below:

- Test Method ($F_{testing}$) – 0.4 for the grain-size analysis method
- Geometry ($F_{geometry}$) – 1.0 based on estimated width of the infiltration facility (W) and depth (D) to groundwater table as provided in Appendix V-A.2.1 of the DDECM. This assumes the depth to width ratio (D/W) is greater than 0.25 and will need to be confirmed once the dimensions of the proposed facility are determined.
- Plugging ($P_{plugging}$) – 0.8 for the fine sands and loamy sands observed in our explorations.

After applying the correction factors, the design infiltration rates ranged from 1 to 9 inches per hour. Table 1 presents preliminary design infiltration rates based on grain-size analysis for each sample tested. We understand that PITs will be completed at the locations of the proposed infiltration facilities to determine the final design infiltration rate for each facility.

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Table 1. Preliminary Design Infiltration Rates (based on grain-size analysis)

Boring	USCS Classification	Sample Depth (feet)	D_{10} Value (mm)	D_{60} Value (mm)	D_{90} Value (mm)	% Fines	Combined Correction Factor	Design Infiltration Rate (in/hr)
BH-1	SM	2.5-4.0	0.01	0.11	0.22	49.8	0.32	1.2
BH-1	SP-SM	5.0-6.5	0.07	0.18	0.24	11.2	0.32	9.7
BH-1	SM	7.5-9.0	0.06	0.19	0.28	12.8	0.32	8.7
BH-2	SM	2.5-4.0	0.03	0.21	0.40	27.1	0.32	3.8
BH-2	SP-SM	5.0-6.5	0.01	0.10	0.17	39.9	0.32	1.9
BH-2	SM	7.5-9.0	0.05	0.19	0.29	13.5	0.32	7.9
BH-3	SM	2.5-4.0	0.02	0.15	0.27	23.8	0.32	4.2
BH-3	SP-SM	5.0-6.5	0.01	0.15	0.23	25.2	0.32	3.8
BH-3	SM	7.5-9.0	0.01	0.015	0.18	24.6	0.32	3.9

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4.2.3 Soil Suitability for Water Quality Treatment

To evaluate the potential of the existing soils to provide water quality treatment, laboratory tests were conducted on the upper 3 samples from each of our explorations to determine the cation exchange capacity (CEC) and organic matter content of the soil within anticipated potential infiltration depths. The laboratory test results are summarized in Table 2 below.

Table 2: Cation Exchange Capacity and Organic Matter Content

Boring	Sample	Depth (ft)	CEC (meq/100g)	Organic Matter (%)
BH-1	S-1	2.5-4	5.3	1.1
BH-1	S-2	5-6.5	5.5	1.2
BH-1	S-3	7.5-9	3.2	0.8
BH-2	S-1	2.5-4	5.3	1.6
BH-2	S-2	5-6.5	6.9	1.6
BH-2	S-3	7.5-9	7.3	1.1
BH-3	S-1	2.5-4	8.7	4.8
BH-3	S-2	5-6.5	7.8	2.1
BH-3	S-3	7.5-9	7.3	1.9

The 2022 City of Tumwater DDECM indicates that soil must have a CEC greater than or equal to 5 milliequivalents per 100 grams of dry soil, and an organic content great than 1 percent to provide adequate treatment.

Based on the laboratory test results, most of the material tested meets the water quality requirements, expect for the material in boring BH-1 at depth between 7.5 to 9 feet bgs. As this depth is anticipated to be much deeper than the base of the facility, we conclude that the site soils will meet the water quality treatment requirements.

4.2.4 Subgrade Preparation for Infiltration Facilities

Prior to installation of infiltration facilities, the subgrade should be cut to the base of the infiltration facility. Once the soil is cut to the base of the facility, the exposed soils should be verified by the geotechnical engineer, or their representative, to confirm that they are similar to materials tested for the infiltration analyses. Given the variability of site soils, the depth of the receptor soil may differ across the site. The existing subgrade under areas used for infiltration **should not** be compacted or subjected to excessive construction equipment traffic prior to installation. Where erosion of subgrade occurs during construction and has caused accumulation of fine materials and/or surface ponding, this material shall be removed with light equipment and

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the underlying soils scarified to a minimum depth of 8 inches. Once prepared, the geotechnical engineer should inspect the subgrade to verify that it is suitable to provide the recommended infiltration rates.

4.3 LUMINAIRE FOUNDATION RECOMMENDATIONS

We understand that the project will include installation of new luminaires. We reviewed the City of Tumwater Standard Luminaire Foundation Plan (Plan No. ST-25). The standard foundation plan is designed for 2,000 pounds per square foot (psf) for average soil lateral bearing pressure.

Based on our explorations, the luminaire foundations will be installed within soils that provide lateral bearing pressures lower than those required by the applicable City of Tumwater standard plan. Based on Table 17-2 of the Washington State Department of Transportation Geotechnical Design Manual (WSDOT, 2022), we estimate the average allowable lateral bearing pressure for the upper 8 feet of 1,200 psf.

Based on the loose soil observed in our explorations, a non-standard design is recommended. Non-standard designs can be designed using Brom's method recommended in the *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* (AASHTO, 2013). The estimated friction angle and passive pressure to assume when using the Brom's method are provided below in Table 3.

Table 3 – Recommended Design Parameters for Non-Standard Luminaire Foundations

Φ (deg)	Kp	Moist Unit Weight (pcf)	Buoyant Unit Weight (pcf)	Factor of Safety
30	3.0	120	45.6	3

4.4 CONSTRUCTION CONSIDERATIONS FOR LUMINAIRE FOUNDATIONS

The loose sand and silty sand encountered in our explorations will be prone to caving. We recommend that temporary casing be used for the proposed shaft excavations to limit caving of the on-site material during construction. If shaft excavations extend below the groundwater table, the contractor should be prepared to flood the casing with water or suitable drilling fluid, should it become apparent that water infiltration into the casing will result in potential disturbance to the soils that can impact their ability to provide lateral resistance.

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Drilled shaft bottoms should be cleaned to the extent practical using appropriate methods. If more than 12 inches of water are present in the shaft, concrete should be placed by the tremie method into the shafts. Temporary casing should be withdrawn such that the level of concrete is maintained above the bottom of the casing at all times and at such elevations to counteract any potential hydrostatic effects associated with groundwater conditions that may be present at the location of the work.

All luminaire shaft locations should also be evaluated to confirm that the proposed excavations do not conflict with existing utilities.

4.5 RECOMMENDATIONS FOR EARTHWORK

Earthwork is anticipated for the corridor improvements. General recommendations for earthwork are provided in the following sections.

4.5.1 Sidewalk and Road Subgrade Preparation

A geotechnical engineer, or qualified earthwork technician, should evaluate the subgrade soils for walkways and pavements to confirm that the exposed subgrade will provide adequate support for the proposed structure to be placed. Suitable soils are anticipated to be encountered at the base of the excavations for the improvements; however, if loose or soft soils are encountered, they should be removed and replaced with properly compacted structural fill.

In areas proposed to accommodate sidewalk or road shoulder, subgrade preparation should begin with the removal of all topsoil, deleterious material, and vegetation. Using a smooth bucket, the soils should be excavated to the proposed subgrade elevation. The Geotechnical Engineer, or their representative, should evaluate the exposed subgrade soils for the walls and walkway to confirm that the exposed subgrade will provide adequate support for the proposed structure to be placed. Suitable soils are anticipated to be encountered at the base of the excavations for the improvements; however, if loose or soft soils are encountered, they should be removed and replaced with properly compacted structural fill.

4.5.2 Structural Fill Materials and Compaction

Where structural fill is needed to replace unsuitable soils or to construct the pavement section it should consist of Crushed Surfacing Top Course (CSTC), or Crushed Surfacing Base Course (CSBC) as specified in Section 9-03.9(3) of the WSDOT Standard Specifications (WSDOT, 2022) and for the thicknesses provided by the project plans. Structural fill used to raise site grades, or backfill utility trench excavations, should consist of granular materials such as Gravel Borrow, meeting the requirements of Section 9-03.14(1) of the Standard Specifications (WSDOT, 2022). Structural fill soils for these uses should be moisture conditioned, placed in

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loose horizontal lifts 8 inches thick or less, and compacted to at least 95% of the maximum dry density (MDD) as determined using test method ASTM D1557 (Modified Proctor).

Achievement of proper density of a compacted fill depends on the size and type of compaction equipment, the number of passes, thickness of the layer being compacted and soil moisture-density properties. In areas where limited space restricts the use of heavy equipment, smaller equipment can be used, but the soil must be placed in thin enough layers to achieve the required relative compaction. Generally, loosely compacted soils result from poor construction technique and/or improper moisture content. Soils with high fines contents are particularly susceptible to becoming too wet, and coarse-grained materials easily become too dry for proper compaction.

A Geotechnical Engineer, or their representative, should perform full-time construction monitoring of all fill placement and compaction operations. If the on-site soils are placed either too wet or too dry of optimum moisture content, or if the soils are inadequately compacted, significant settlement should be anticipated.

4.5.3 Temporary Slopes and Excavations

Any temporary excavations deeper than 4 feet should be sloped or shored in accordance with Part N of the Washington Administrative Code (WAC) 296-155 or shored. The recessional outwash soils encountered classify as Type C soils. Temporary excavations in Type C soils may be no steeper than 1.5H:1V to meet safety requirements for worker access during construction. The recommended maximum allowable temporary cut slope inclinations are applicable to temporary excavations above the water table only. Flatter slopes may be required where groundwater seepage in present.

The contractor should monitor the stability of the temporary cut slopes and adjust the construction schedule and slope inclination accordingly. The contractor should be responsible for control of ground and surface water and should employ sloping, slope protection, ditching, sumps, dewatering, and other measures as necessary to prevent sloughing of soils. If temporary shoring is required instead, the design and implementation is the responsibility of the contractor.

4.5.4 Temporary Erosion Control

We recommend that temporary erosion control incorporate Best Management Practices (BMP's) to reduce the potential for erosion at the proposed site during construction. These measures include an erosion control plan that specifies methods for limiting activity during wet periods, placement of a silt retention system on the downslope side of the alignment, and proper disposal or recompaction of any materials that are disturbed on the site.

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4.5.4 Wet Weather Earthwork

General recommendations relative to earthwork performed in wet weather or in wet conditions are presented below. These recommendations should be incorporated into the contract specifications.

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soil should be followed promptly by the placement and compaction of clean structural fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance that may be caused by equipment traffic.

- For wet weather conditions, material used as structural fill should consist of clean granular soil with less than 5 percent passing the U.S. Standard No. 200 sieve, based on wet sieving the fraction passing the ¾-inch sieve. The fine-grained portion of the structural fill soils should be non-plastic. It should be noted that this is an additional restriction on the structural fill materials specified.

- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water.

- The ground surface within the construction area should be sealed on completion of each shift by a smooth drum vibratory roller, or equivalent, and under no circumstances should soil be left uncompacted and exposed to moisture.

- Bales of straw and/or geotextile silt fences should be strategically located to control erosion and the movement of soil.

5.0 CONDITIONS AND LIMITATIONS

We have prepared this report for SCJ Alliance and the City of Tumwater for use in design of this project. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of existing subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between exploration locations and may not be detected by a geotechnical study of this nature. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, HWA should be notified for review of the recommendations of this report, and revision of such if necessary.

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October 12, 2022
HWA Project No. 2019-183-21

Sufficient geotechnical monitoring, testing, and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should conditions revealed during construction differ from those anticipated, and to verify that geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, HWA attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology in the area at the time the report was prepared. No warranty, express or implied, is made.

HWA does not practice or consult in the field of safety engineering. We do not direct the contractor's operations and cannot be responsible for the safety of personnel other than our own on the site. As such, the safety of others is the responsibility of the contractor. The contractor should notify the owner if any of the recommended actions presented herein are considered unsafe.

We appreciate the opportunity to be of service to you on this project.

Sincerely,

HWA GEOSCIENCES INC.

Joe Westergreen, P.E.
Geotechnical Engineer

JoLyn Gillie, P.E.
Principal Geotechnical Engineer

DRAFT

6.0 REFERENCES

AASHTO, 2013, *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* 6th Edition, Washington D.C.

Logan, Robert L.; Walsh Timothy J.; Stanton, Benjamin W.; Sarikhan, Isabelle Y.; *Geologic Map of the Maytown 7.5-minute Quadrangle, Thurston County, Washington*, Washington State Department of Natural Resources, Geologic Map GM-72, scale 1:24,000. February 2009.

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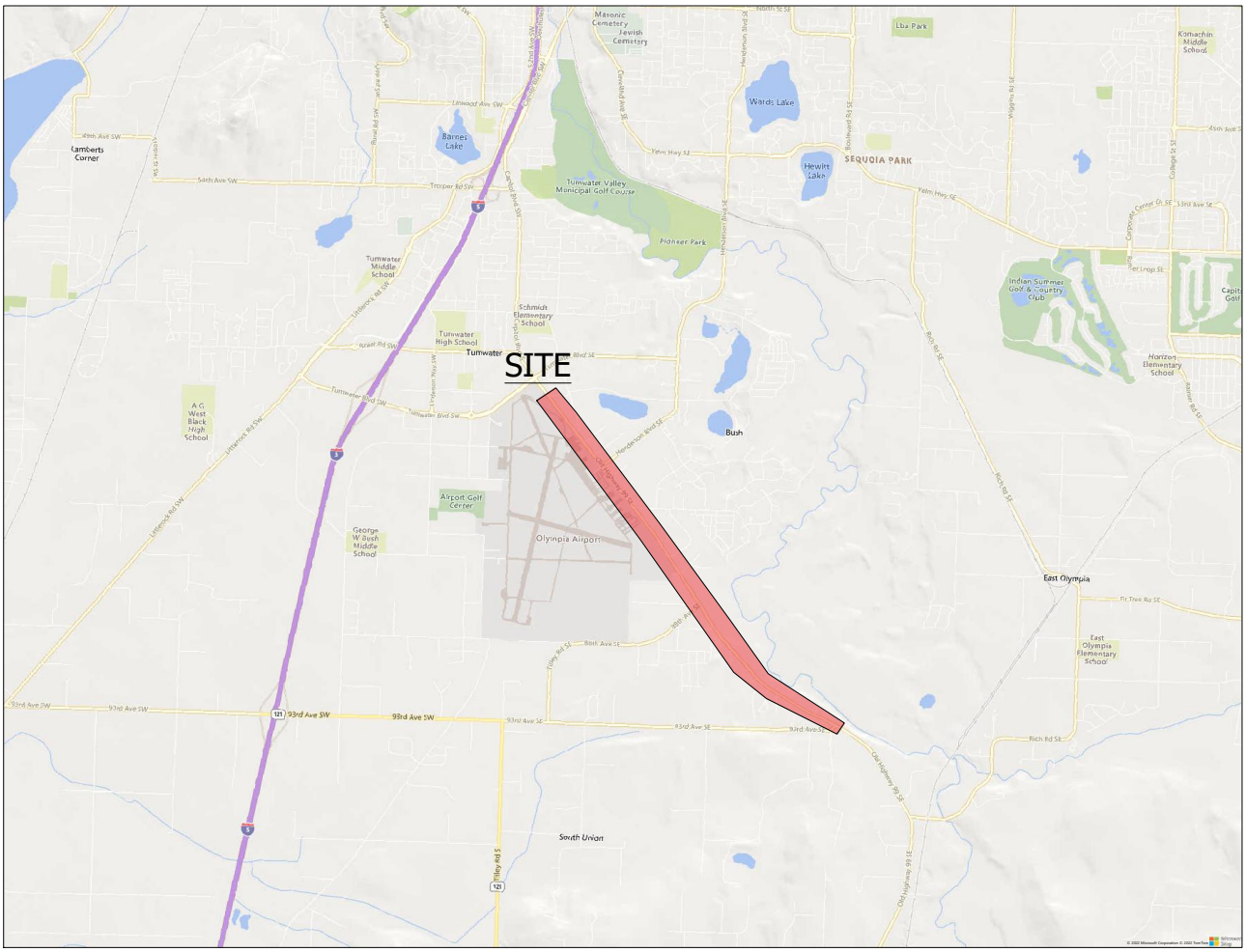
DRAFT

SITE MAP

0 1500' 3000' 4500' 6000'

SCALE: 1" = 3000'



VICINITY MAP

0 3000' 6000' 9000' 12000'

SCALE: 1" = 6000'

GeoSciences Inc. DBE/MWBE	SITE AND VICINITY MAP TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY TUMWATER, WASHINGTON	FIGURE NO.: 1 DRAWN BY: CF CHECK BY: JTW PROJECT # 2019-183-21

CAPITAL BLVD SE / OLD HIGHWAY 99 SE

Scale: 1" = 100'-0"

EXPLORATION LEGEND

BH-1 BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

0 50 100 150 200

SCALE: 1" = 100'

GeoSciences Inc. DBE/MWBE

TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY
TUMWATER, WASHINGTON

SITE & EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2A
CHECK BY:	PROJECT NO.:
JTW	2019-183-21

BASE MAP PROVIDED BY: BING

C:\USERS\CFRY\DESKTOP\2019-183-21 TUMWATER SR 99_73RD TO 93RD AVENUE\2019-183-21 TUMWATER SR 99.DWG <2A> Plotted: 9/16/2022 4:54 PM

OLD HIGHWAY 99 SE
Scale: 1" = 100'-0"

EXPLORATION LEGEND

BH-2 BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

0 50 100 150 200
SCALE: 1" = 100'

GeoSciences Inc. DBE/MWBE

TUMWATER OLD HWY 99 AND 79TH AVE CORRIDOR STUDY
TUMWATER, WASHINGTON

SITE & EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2B
CHECK BY:	PROJECT NO.:
JTW	2019-183-21

BASE MAP PROVIDED BY: BING

C:\USERS\CFRY\DESKTOP\2019-183-21 TUMWATER SR 99_73RD TO 93RD AVENUE\2019-183-21 TUMWATER SR 99.DWG <2B> Plotted: 9/16/2022 4:54 PM

OLD HIGHWAY 99 SE
Scale: 1" = 100'-0"

EXPLORATION LEGEND

BH-3 BOREHOLE DESIGNATION AND APPROXIMATE LOCATION

0 50 100 150 200
SCALE: 1" = 100'

GeoSciences Inc. DBE/MWBE

TUMWATER OLD HWY 99 AND 79TH AVE
CORRIDOR STUDY
TUMWATER, WASHINGTON

SITE &
EXPLORATION PLAN

DRAWN BY:	FIGURE NO.:
CF	2C
CHECK BY:	PROJECT NO.:
JTW	2019-183-21

BASE MAP PROVIDED BY: BING

C:\USERS\CFRY\DESKTOP\2019-183-21 TUMWATER SR 99_73RD TO 93RD AVENUE\2019-183-21 TUMWATER SR 99.DWG <2C> Plotted: 9/16/2022 4:55 PM

APPENDIX A

FIELD EXPLORATIONS

DRAFT

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE

COHESIONLESS SOILS			COHESIVE SOILS		
Density	N (blows/ft)	Approximate Relative Density(%)	Consistency	N (blows/ft)	Approximate Undrained Shear Strength (psf)
Very Loose	0 to 4	0 - 15	Very Soft	0 to 2	<250
Loose	4 to 10	15 - 35	Soft	2 to 4	250 - 500
Medium Dense	10 to 30	35 - 65	Medium Stiff	4 to 8	500 - 1000
Dense	30 to 50	65 - 85	Stiff	8 to 15	1000 - 2000
Very Dense	over 50	85 - 100	Very Stiff	15 to 30	2000 - 4000
			Hard	over 30	>4000

USCS SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP DESCRIPTIONS	
Coarse Grained Soils	Gravel and Gravelly Soils	Clean Gravel (little or no fines)	GW	Well-graded GRAVEL
	More than 50% of Coarse Fraction Retained on No. 4 Sieve		GP	Poorly-graded GRAVEL
		Gravel with Fines (appreciable amount of fines)	GM	Silty GRAVEL
			GC	Clayey GRAVEL
	Sand and Sandy Soils	Clean Sand (little or no fines)	SW	Well-graded SAND
			SP	Poorly-graded SAND
More than 50% Retained on No. 200 Sieve Size	50% or More of Coarse Fraction Passing No. 4 Sieve	Sand with Fines (appreciable amount of fines)	SM	Silty SAND
			SC	Clayey SAND
Fine Grained Soils	Silt and Clay	Liquid Limit Less than 50%	ML	SILT
			CL	Lean CLAY
			OL	Organic SILT/Organic CLAY
50% or More Passing No. 200 Sieve Size	Silt and Clay	Liquid Limit 50% or More	MH	Elastic SILT
			CH	Fat CLAY
			OH	Organic SILT/Organic CLAY
Highly Organic Soils			PT	PEAT

TEST SYMBOLS

%F	Percent Fines
AL	Atterberg Limits: PL = Plastic Limit, LL = Liquid Limit
CBR	California Bearing Ratio
CN	Consolidation
DD	Dry Density (pcf)
DS	Direct Shear
GS	Grain Size Distribution
K	Permeability
MD	Moisture/Density Relationship (Proctor)
MR	Resilient Modulus
OC	Organic Content
pH	pH of Soils
PID	Photoionization Device Reading
PP	Pocket Penetrometer (Approx. Comp. Strength, tsf)
Res.	Resistivity
SG	Specific Gravity
CD	Consolidated Drained Triaxial
CU	Consolidated Undrained Triaxial
UU	Unconsolidated Undrained Triaxial
TV	Torvane (Approx. Shear Strength, tsf)
UC	Unconfined Compression

SAMPLE TYPE SYMBOLS

- 2.0" OD Split Spoon (SPT) (140 lb. hammer with 30 in. drop)
- Shelby Tube
- Non-standard Penetration Test (3.0" OD Split Spoon with Brass Rings)
- Small Bag Sample
- Large Bag (Bulk) Sample
- Core Run
- 3-1/4" OD Split Spoon

GROUNDWATER SYMBOLS

- Groundwater Level (measured at time of drilling)
- Groundwater Level (measured in well or open hole after water level stabilized)

COMPONENT DEFINITIONS

COMPONENT	SIZE RANGE
Boulders	Larger than 12 in
Cobbles	3 in to 12 in
Gravel	3 in to No 4 (4.5mm)
Coarse gravel	3 in to 3/4 in
Fine gravel	3/4 in to No 4 (4.5mm)
Sand	No. 4 (4.5 mm) to No. 200 (0.074 mm)
Coarse sand	No. 4 (4.5 mm) to No. 10 (2.0 mm)
Medium sand	No. 10 (2.0 mm) to No. 40 (0.42 mm)
Fine sand	No. 40 (0.42 mm) to No. 200 (0.074 mm)
Silt and Clay	Smaller than No. 200 (0.074mm)

COMPONENT PROPORTIONS

PROPORTION RANGE	DESCRIPTIVE TERMS
< 5%	Clean
5 - 12%	Slightly (Clayey, Silty, Sandy)
12 - 30%	Clayey, Silty, Sandy, Gravelly
30 - 50%	Very (Clayey, Silty, Sandy, Gravelly)
Components are arranged in order of increasing quantities.	

NOTES: Soil classifications presented on exploration logs are based on visual and laboratory observation.
Soil descriptions are presented in the following general order:

Density/consistency, color, modifier (if any) GROUP NAME, additions to group name (if any), moisture content. Proportion, gradation, and angularity of constituents, additional comments. (GEOLOGIC INTERPRETATION)

Please refer to the discussion in the report text as well as the exploration logs for a more complete description of subsurface conditions.

MOISTURE CONTENT

DRY	Absence of moisture, dusty, dry to the touch.
MOIST	Damp but no visible water.
WET	Visible free water, usually soil is below water table.

GeoSciences Inc.

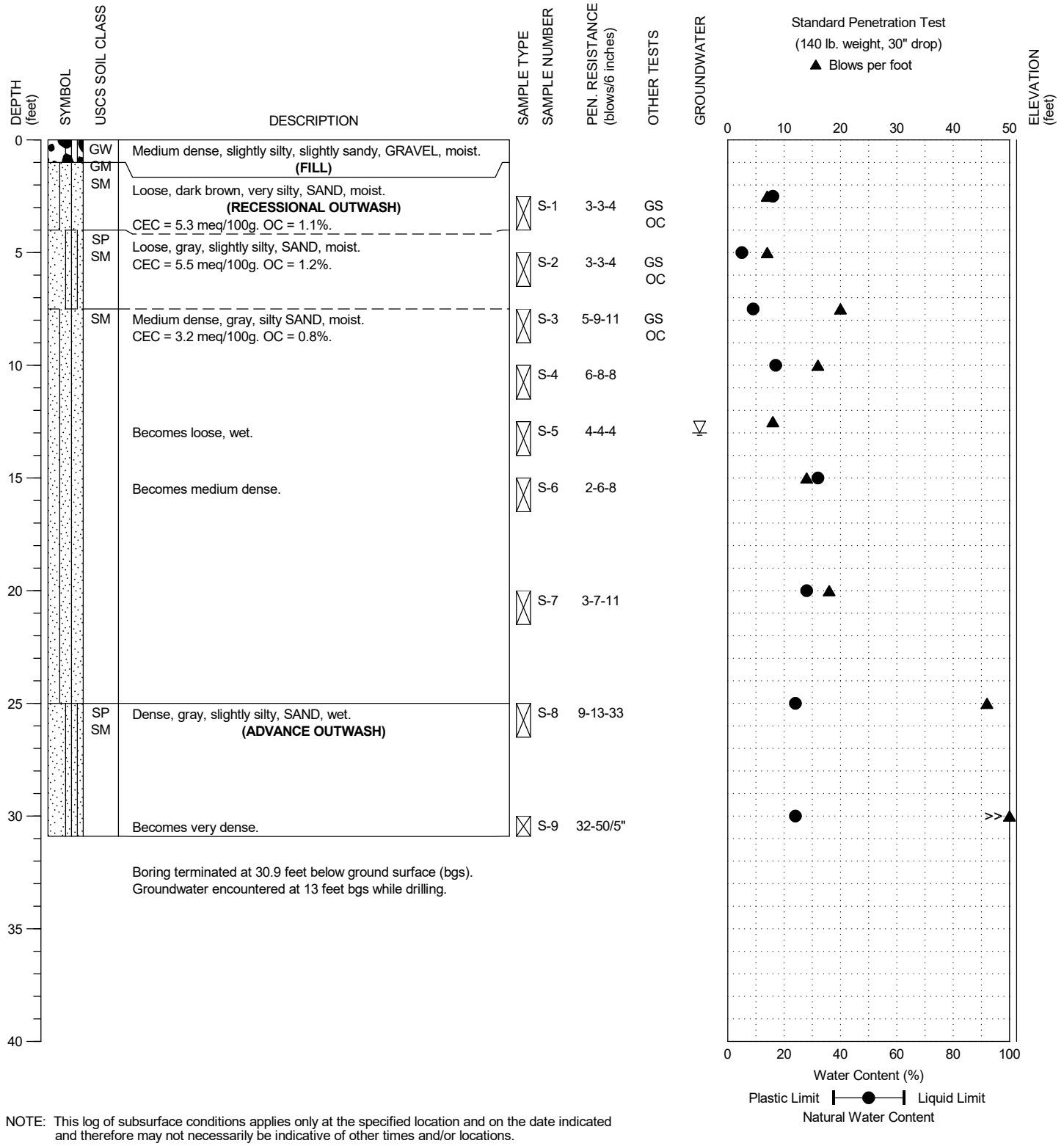
Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

LEGEND OF TERMS AND SYMBOLS USED ON EXPLORATION LOGS

PROJECT NO.: 2019-183-21 FIGURE: A-1

DRILLING COMPANY: Holocene Drilling
DRILLING METHOD: Track Rig with HSA
SAMPLING METHOD: SPT w/ Autohammer
LOCATION: See Figure 2

DATE STARTED: 8/12/2022
DATE COMPLETED: 8/12/2022
LOGGED BY: J. Westergreen



Boring terminated at 30.9 feet below ground surface (bgs).
Groundwater encountered at 13 feet bgs while drilling.

NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

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Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

BORING: BH-1

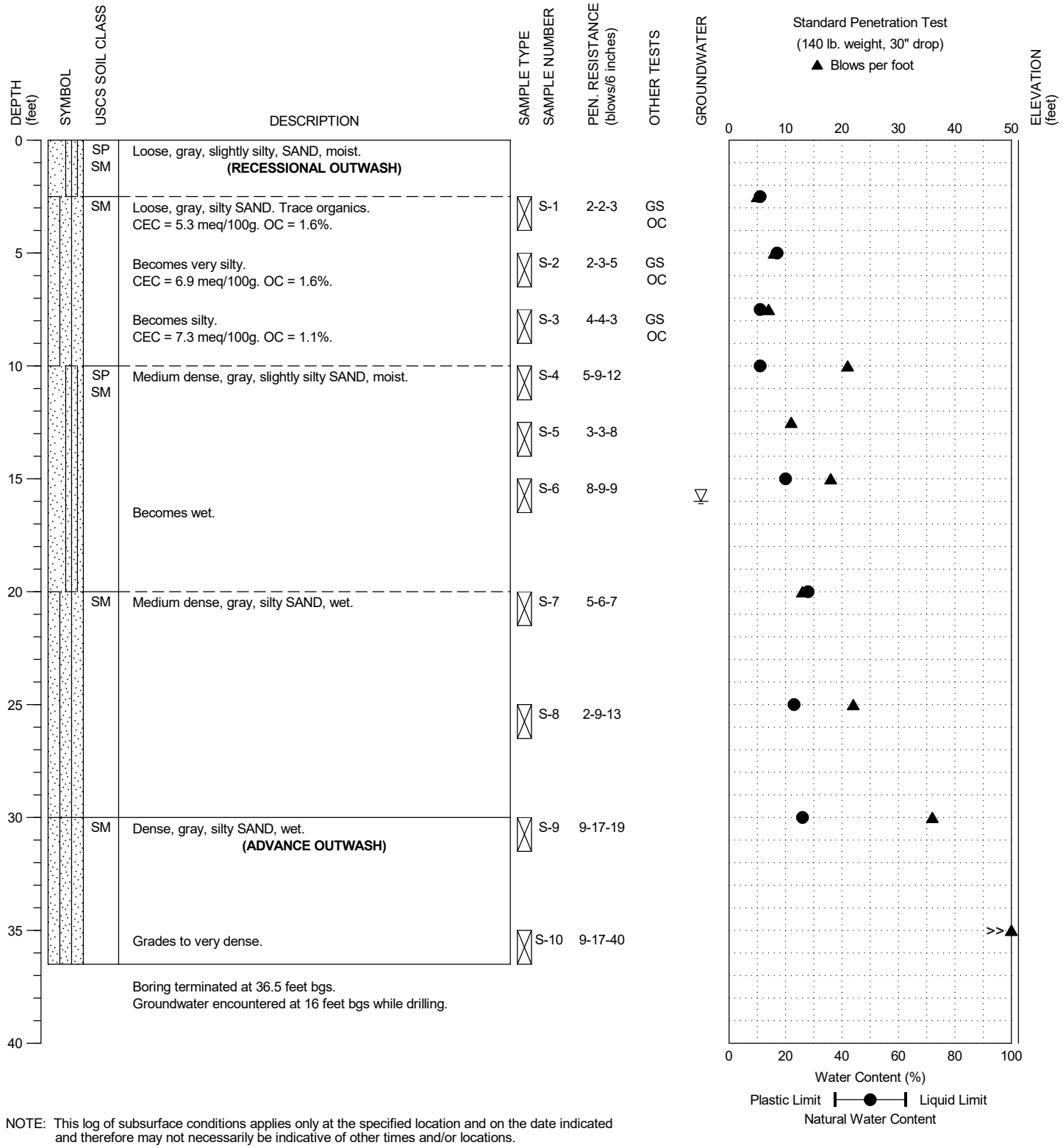
PAGE: 1 of 1

PROJECT NO.: 2019-183-21 FIGURE: A-2

BORING-DSM 2019-183-21.GPJ 9/23/22

DRILLING COMPANY: Holocene Drilling
DRILLING METHOD: Track Rig with HSA
SAMPLING METHOD: SPT w/ Autohammer
LOCATION: See Figure 2

DATE STARTED: 8/12/2022
DATE COMPLETED: 8/12/2022
LOGGED BY: J. Westergreen



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

BORING: BH-2

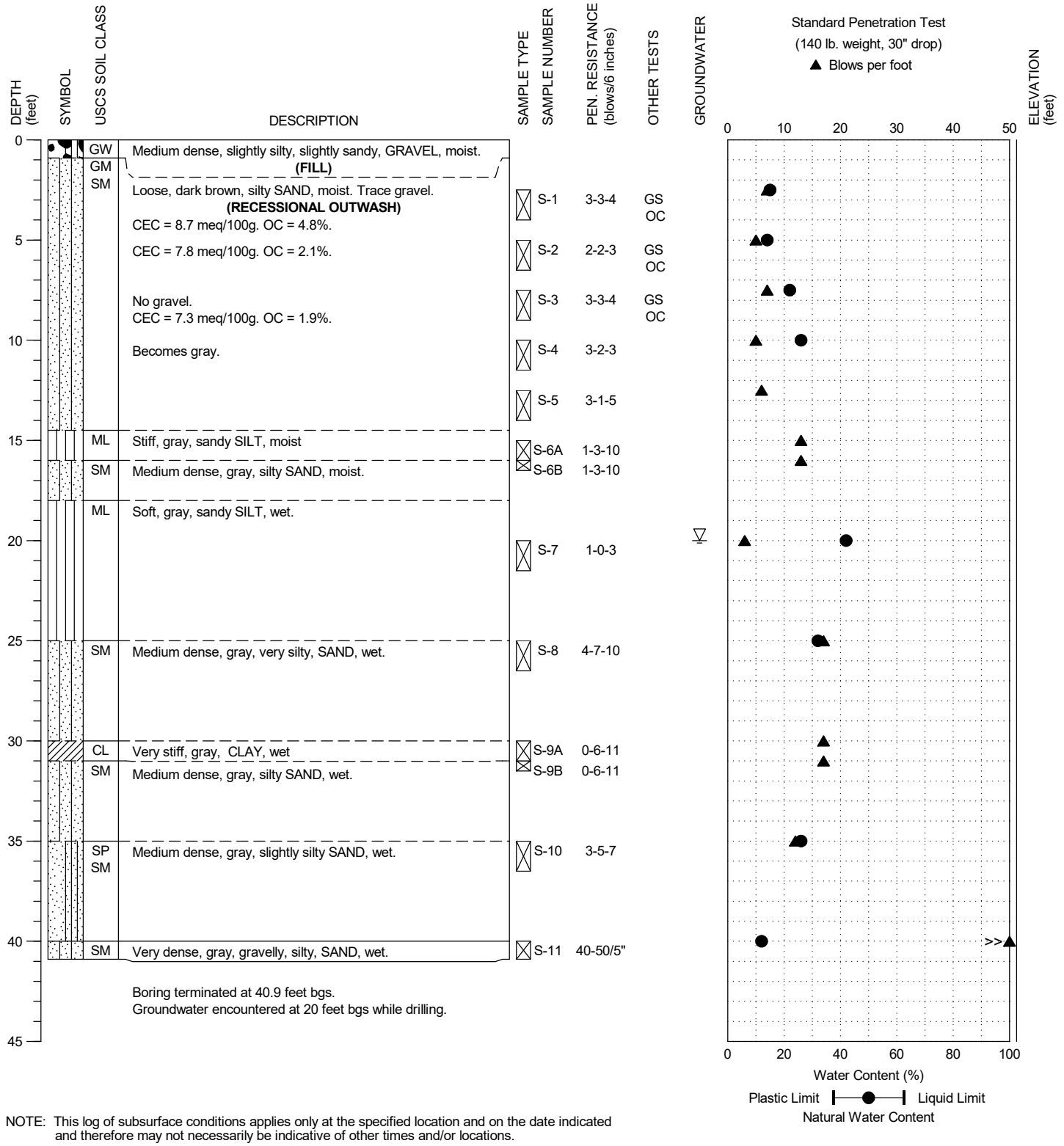
PAGE: 1 of 1

PROJECT NO.: 2019-183-21 FIGURE: A-3

BORING-DSM 2019-183-21.GPJ 9/23/22

DRILLING COMPANY: Holocene Drilling
DRILLING METHOD: Track Rig with HSA
SAMPLING METHOD: SPT w/ Autohammer
LOCATION: See Figure 2

DATE STARTED: 8/12/2022
DATE COMPLETED: 8/12/2022
LOGGED BY: J. Westergreen



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

BORING: BH-3

PAGE: 1 of 1

PROJECT NO.: 2019-183-21 FIGURE: A-4

BORING-DSM 2019-183-21.GPJ 9/23/22

APPENDIX B

LABORATORY TESTING

DRAFT

APPENDIX B

LABORATORY TESTING

Representative soil samples obtained from the explorations were placed in plastic bags to prevent loss of moisture and transported to our Bothell, Washington, laboratory for further examination and testing. Laboratory tests were conducted on selected soil samples to characterize relevant engineering and index properties of the site soils, as described below.

MOISTURE CONTENT OF SOIL: The moisture content of selected soil samples (percent by dry mass) was determined in general accordance with ASTM D 2216. The results are shown at the sampled intervals on the appropriate summary logs in Appendix A and on the Summary of Material Properties provided on Figures B-1 and B-2 in Appendix B.

MOISTURE CONTENT, ASH, AND ORGANIC MATTER: Selected samples were tested in general accordance with method ASTM D 2974, using moisture content method 'A' (oven dried at 105^0 C) and ash content method 'C' (burned at 440^0 C). The results are shown at the sampled intervals on the appropriate summary logs in Appendix A and on the Summary of Material Properties provided on Figures B-1 and B-2 in Appendix B. The results are percent by weight of dry soil.

PARTICLE SIZE ANALYSIS OF SOILS: Selected samples were tested to determine the particle (grain) size distribution of material in general accordance with ASTM D 6913. The results are summarized on the attached Particle Size Analysis of Soils reports, Figures B-3 through B-5, which also provide information regarding the classification of the sample, and the moisture content at the time of testing.

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EXPLORATION DESIGNATION	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MOISTURE CONTENT (%)	ORGANIC CONTENT (%)	CEC (meq/100g)	pH	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% FINES	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
							LL	PL	PI					
BH-1	2.5	4.0	15.6	1.1	5.3						50.1	49.9	SM	Dark yellowish-brown, silty SAND
BH-1	5.0	6.5	5.2	1.2	5.5						88.8	11.2	SP-SM	Light olive-brown, poorly graded SAND with silt
BH-1	7.5	9.0	8.6	0.8	3.2					0.1	87.0	12.8	SM	Olive-brown, silty SAND
BH-1	10.0	11.5	17.0										SM	Dark olive-brown, silty SAND
BH-1	15.0	16.5	32.4										SM	Dark olive-brown, silty SAND
BH-1	20.0	21.5	28.2										SM	Dark olive-brown, silty SAND
BH-1	25.0	26.5	23.6										SP-SM	Very dark brown, poorly graded SAND with silt
BH-1	30.0	30.9	23.8										SP-SM	Very dark brown, poorly graded SAND with silt
BH-2	2.5	4.0	11.2	1.6	5.3						72.9	27.1	SM	Olive-brown, silty SAND
BH-2	5.0	6.5	17.1	1.6	6.9						60.1	39.9	SM	Yellowish-brown, silty SAND
BH-2	7.5	9.0	10.8	1.1	7.3						86.5	13.5	SM	Very dark grayish-brown, silty SAND
BH-2	10.0	11.5	11.4										SP-SM	Dark brown, poorly graded SAND with silt
BH-2	15.0	16.5	20.1										SP-SM	Dark olive-brown, poorly graded SAND with silt
BH-2	20.0	21.5	27.6										SM	Very dark brown, silty SAND
BH-2	25.0	26.5	22.6										SM	Very dark brown, silty SAND
BH-2	30.0	31.5	25.9										SM	Very dark brown, silty SAND
BH-3	2.5	4.0	14.5	4.8	8.7					3.2	72.9	23.8	SM	Very dark brown, silty SAND
BH-3	5.0	6.5	14.3	2.1	7.8					2.6	72.2	25.2	SM	Very dark gray, silty SAND
BH-3	7.5	9.0	21.6	1.9	7.3						75.4	24.6	SM	Olive-brown, silty SAND
BH-3	10.0	11.5	26.0										SM	Light olive-brown, silty SAND

Notes: 1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report text, other graphs and tables, and the exploration logs.

2. The classification of soils in this table is based on ASTM D2487 and D2488 as applicable.

GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

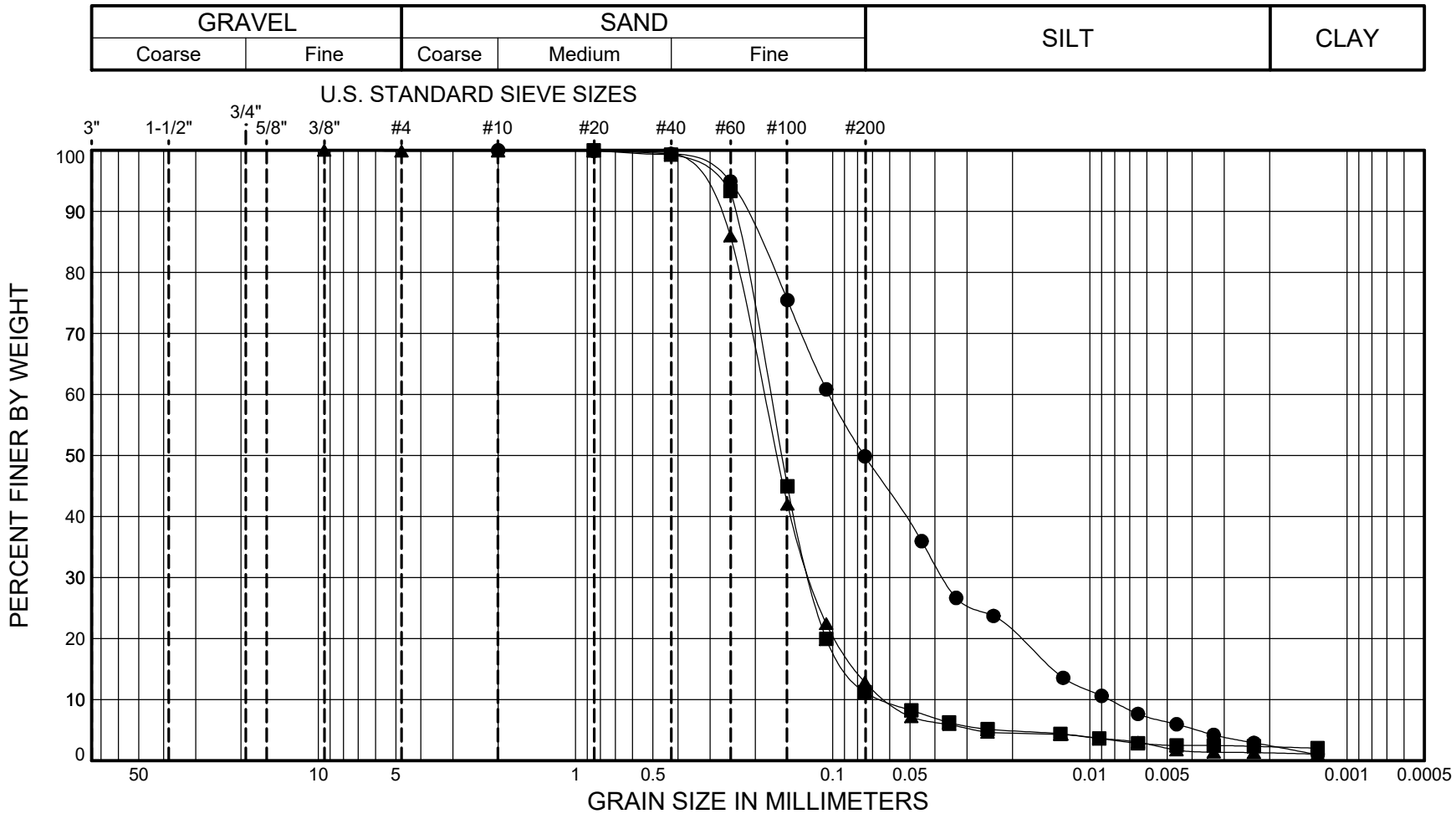
SUMMARY OF
MATERIAL PROPERTIES

PROJECT NO.: 2019-183-21 FIGURE: B-1

EXPLORATION DESIGNATION	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MOISTURE CONTENT (%)	ORGANIC CONTENT (%)	CEC (meq/100g)	pH	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% FINES	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
							LL	PL	PI					
BH-3	20.0	21.5	41.9										ML	Light olive-brown, SILT with sand
BH-3	25.0	26.5	32.1										SM	Very dark brown, silty SAND
BH-3	35.0	36.5	26.4										SP-SM	Very dark brown, poorly graded SAND with silt
BH-3	40.0	41.5	12.1										SM	Dark olive-brown, silty SAND with gravel

Notes: 1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report text, other graphs and tables, and the exploration logs.

2. The classification of soils in this table is based on ASTM D2487 and D2488 as applicable.



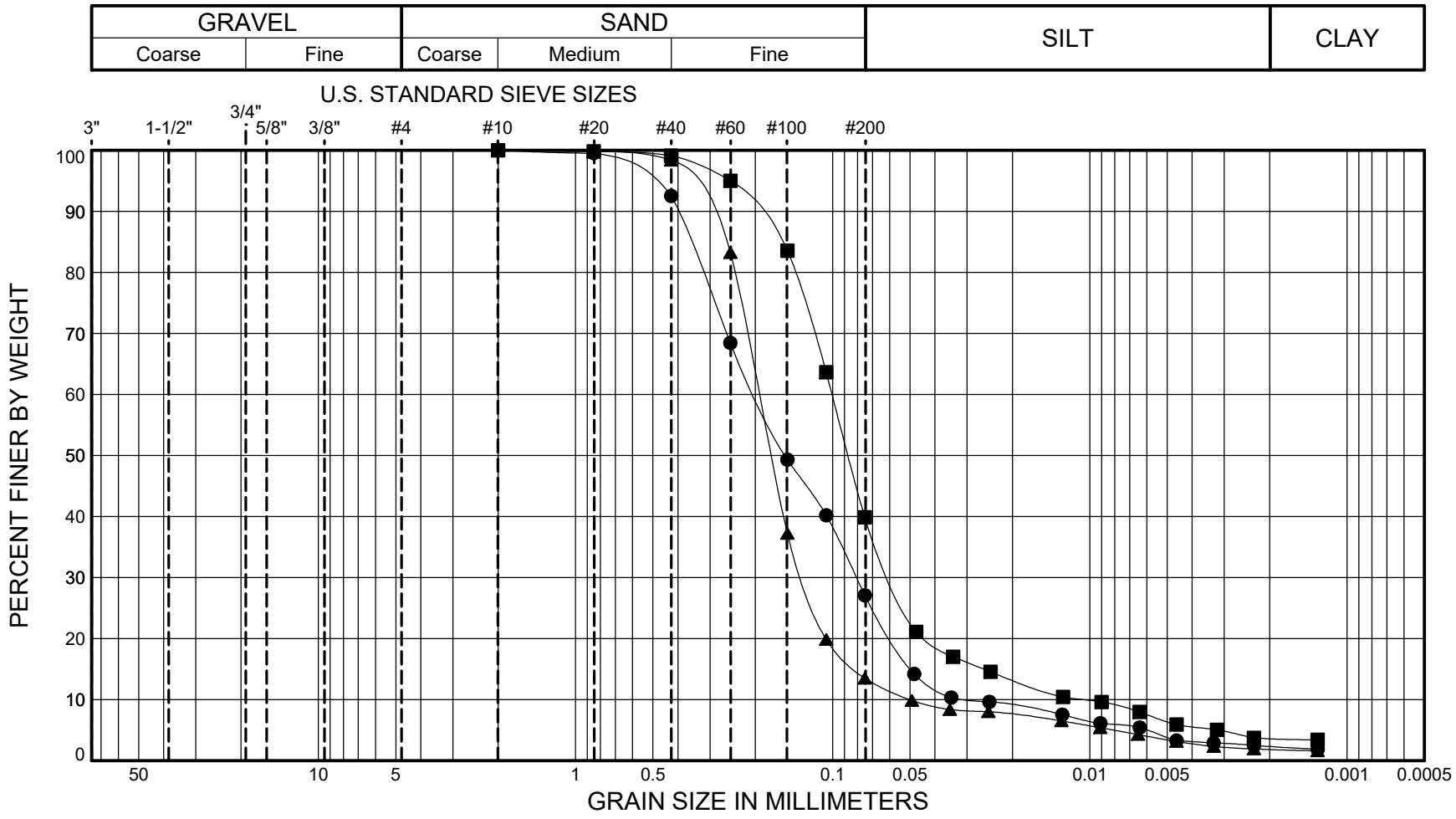
SYMBOL	SAMPLE		DEPTH (ft.)	ASTM SOIL CLASSIFICATION	% MC	LL	PL	PI	Gravel %	Sand %	Silt %	Clay %	Fines %
●	BH-1	S-1	2.5 - 4.0	(SM) Dark yellowish-brown, silty SAND	16					50.1	47.4	2.4	
■	BH-1	S-2	5.0 - 6.5	(SP-SM) Light olive-brown, poorly graded SAND with silt	5					88.8	8.9	2.3	
▲	BH-1	S-3	7.5 - 9.0	(SM) Olive-brown, silty SAND	9				0.1	87.0	11.6	1.2	

HWA GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

PARTICLE-SIZE ANALYSIS
OF SOILS
METHODS ASTM D6913/D7928

PROJECT NO.: 2019-183-21 FIGURE: B-3



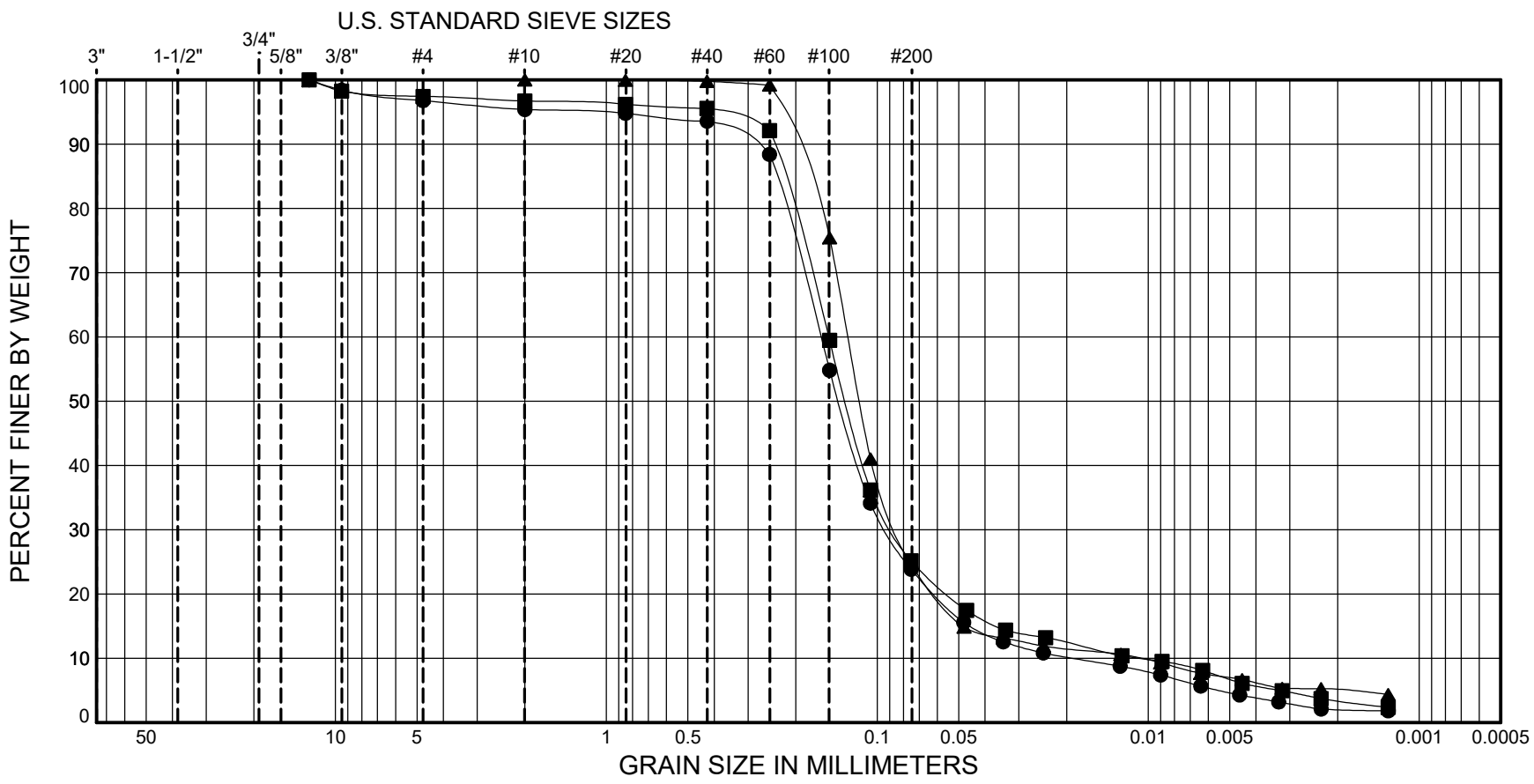
SYMBOL	SAMPLE		DEPTH (ft.)	ASTM SOIL CLASSIFICATION	% MC	LL	PL	PI	Gravel %	Sand %	Silt %	Clay %	Fines %
●	BH-2	S-1	2.5 - 4.0	(SM) Olive-brown, silty SAND	11					72.9	24.8	2.3	
■	BH-2	S-2	5.0 - 6.5	(SM) Yellowish-brown, silty SAND	17					60.1	36.2	3.7	
▲	BH-2	S-3	7.5 - 9.0	(SM) Very dark grayish-brown, silty SAND	11					86.5	11.7	1.8	

HWA GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

PARTICLE-SIZE ANALYSIS
OF SOILS
METHODS ASTM D6913/D7928

PROJECT NO.: 2019-183-21 FIGURE: B-4



SYMBOL	SAMPLE		DEPTH (ft.)	ASTM SOIL CLASSIFICATION	% MC	LL	PL	PI	Gravel %	Sand %	Silt %	Clay %	Fines %
●	BH-3	S-1	2.5 - 4.0	(SM) Very dark brown, silty SAND	15				3.2	72.9	21.8	2.0	
■	BH-3	S-2	5.0 - 6.5	(SM) Very dark gray, silty SAND	14				2.6	72.2	21.8	3.4	
▲	BH-3	S-3	7.5 - 9.0	(SM) Olivе-brown, silty SAND	22					75.4	19.6	5.0	

HWA GeoSciences Inc.

Tumwater Old Hwy 99 and 79th Ave Corridor Study
Tumwater, Washington

PARTICLE-SIZE ANALYSIS
OF SOILS
METHODS ASTM D6913/D7928

PROJECT NO.: 2019-183-21 FIGURE: B-5

APPENDIX C

ADDITIONAL LABORATORY TESTING BY OTHERS

DRAFT

soiltest farm consultants, inc.
2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622

HWA GEOSCIENCES
21312 30TH DRIVE SE, STE 110

BOTHELL , WA 98021

Laboratory #: S22-18530

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-1 S-1 AT 2.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	5.3

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. % 1.1

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S22-18530 Account #: 188200 Reviewed by: K. Bair, PhD, C List Cost: $26.00

soiltest farm consultants, inc.
2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622

HWA GEOSCIENCES
21312 30TH DRIVE SE, STE 110

BOTHELL , WA 98021

Laboratory #: S22-18531

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-1 S-2 AT 5.0FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	5.5

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S22-18531 Account #: 188200 Reviewed by: K. Bair, PhD, C List Cost: $13.00

soiltest farm consultants, inc.
2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622

Soil PAP NAPT 2022

Soil & Plant Program 2022 NAPT Participating Laboratory

HWA GEOSCIENCES
21312 30TH DRIVE SE, STE 110

BOTHELL , WA 98021

Laboratory #: S22-18532

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-1 S-3 AT 7.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	3.2

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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Soil PAP NAPT 2022

Soil & Plant Program 2022 NAPT Participating Laboratory

HWA GEOSCIENCES
21312 30TH DRIVE SE, STE 110

BOTHELL , WA 98021

Laboratory #: S22-18533

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-2 S-1 AT 2.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	5.3

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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HWA GEOSCIENCES
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BOTHELL , WA 98021

Laboratory #: S22-18534

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-2 S-2 AT 5.0FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	6.9

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

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BOTHELL , WA 98021

Laboratory #: S22-18535

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-2 S-3 AT 7.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	7.3

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

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BOTHELL , WA 98021

Laboratory #: S22-18536

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-3 S-1 AT 2.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	8.7

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

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BOTHELL , WA 98021

Laboratory #: S22-18537

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-3 S-2 AT 5.0FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	7.8

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. % 2.1

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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HWA GEOSCIENCES
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BOTHELL , WA 98021

Laboratory #: S22-18538

Date Received: 9/6/2022
Grower: #2019-183
Field: BH-3 S-3 AT 7.5FT
Sampled By:
Customer Account #:
Customer Sample ID:

Soil Test Results

Cation Exchange	CEC	meq/100g	7.3

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg
Organic Matter W.B. %

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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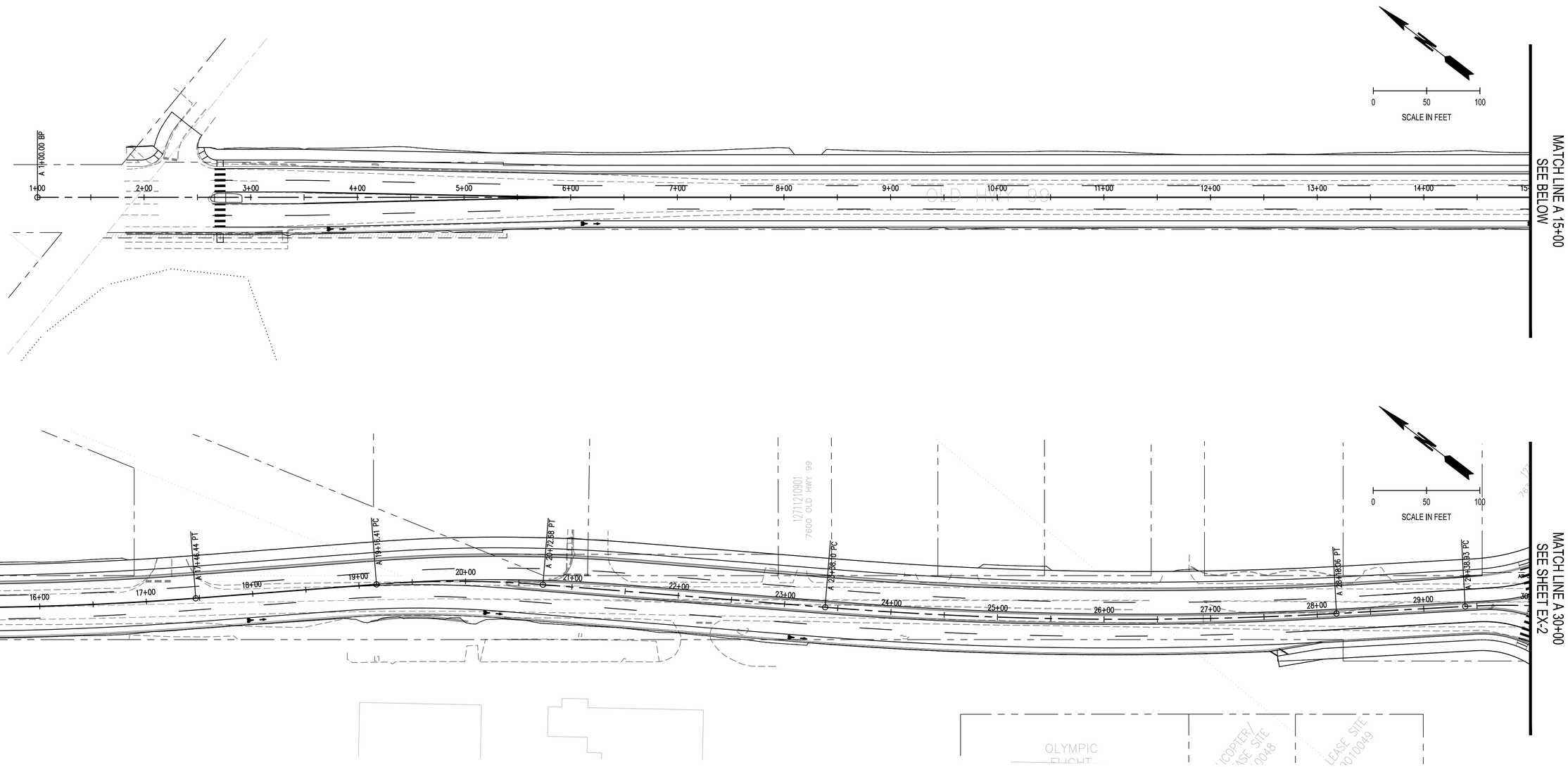
Appendix E – WWHM Model Reports

See Link:

https://drive.google.com/file/d/1RKKfC8CVoSPVHpnUv1nXDBUiEN-CQP2P/view?usp=share_link

F7) PRELIMINARY PLAN SET

S. 2, 11, 12, 13 & 14, T. 17 N., R. 2 W., W.M



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CHECKED BY: #########	DRAWING FILE No.: 0625.29-Plan Layout

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OLD HIGHWAY 99 CORRIDOR STUDY
TUMWATER, WASHINGTON

PLAN VIEW

DRAWING No.: EX-1

SHEET No.: 1 OF 14

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Projects\0625 City of Tumwater\0625.29 Tumwater Old Hwy 99 and 79th Ave Corridor Study\CADD\Exhibits\2021-0720-Plan View Layout\0625.29-Plan Layout.dwg, 9/13/2022 5:09:24 PM, AutoCAD PDF (General Documentation).pc3

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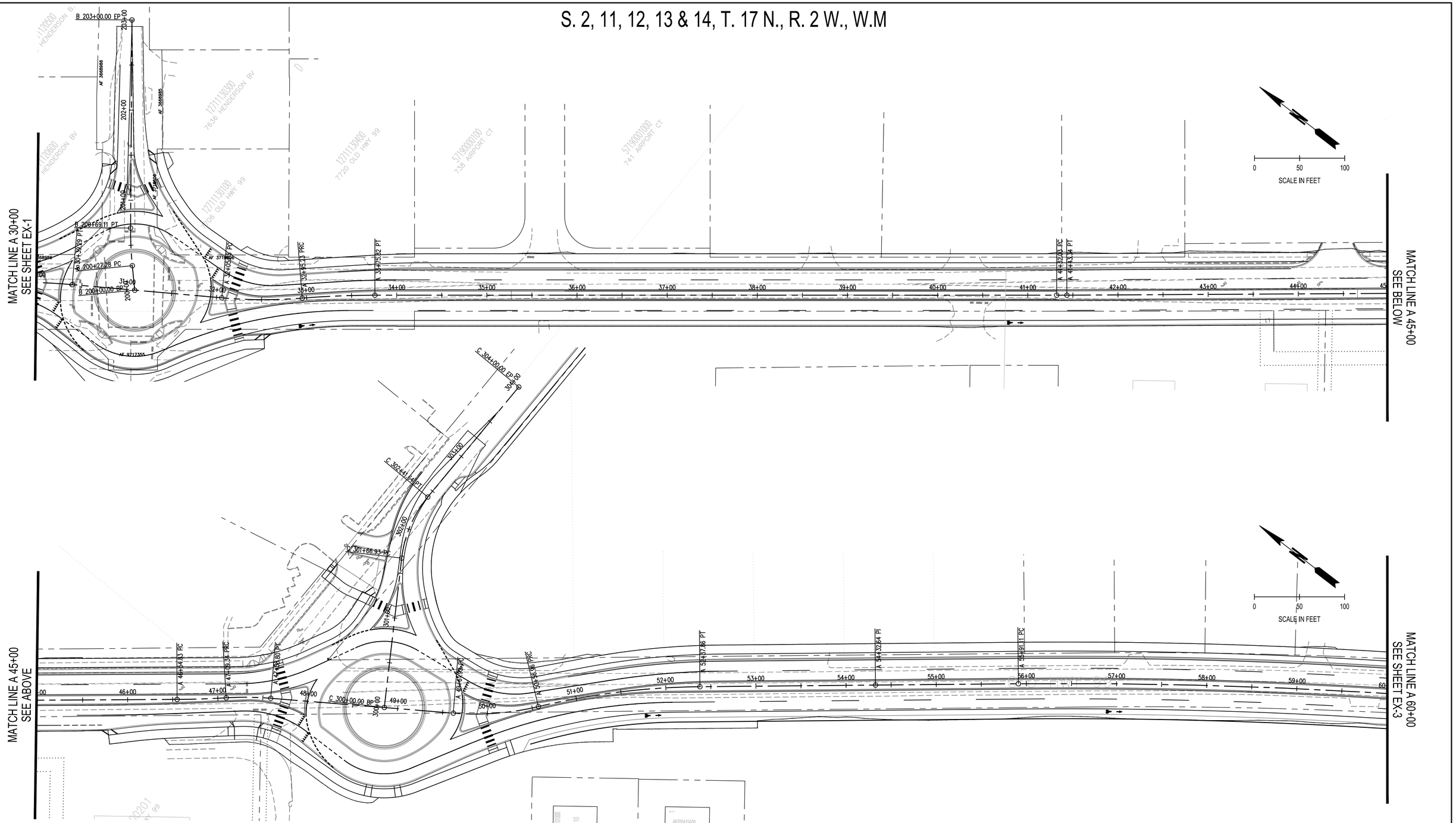

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DESIGNED BY: #########	ISSUE DATE: SEPTEMBER 2020
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PLAN VIEW

DRAWING No.: EX-2

SHEET No.: 2 OF 14

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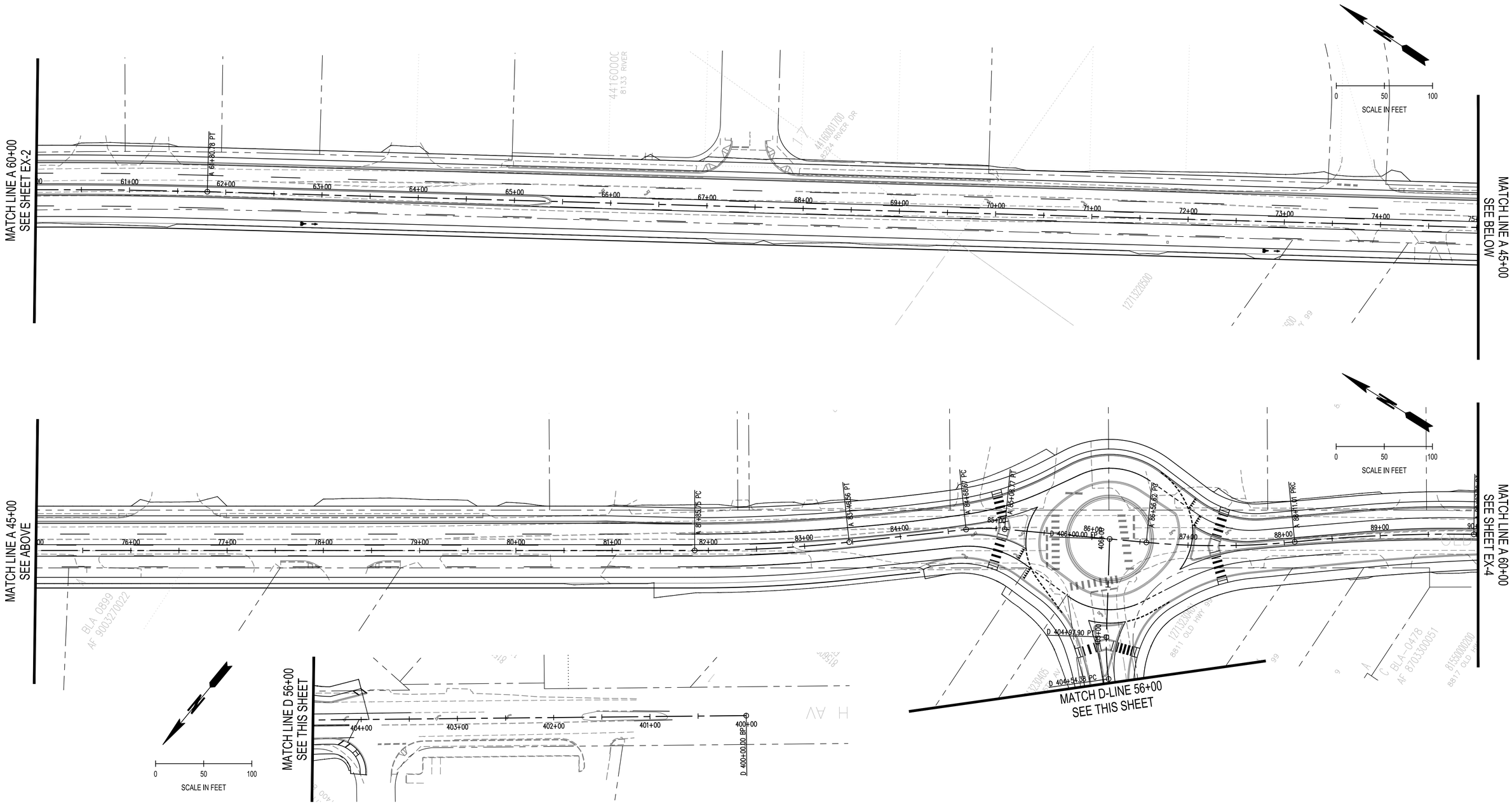

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PLAN VIEW

DRAWING No.: EX-3

SHEET No.: 3 OF 14

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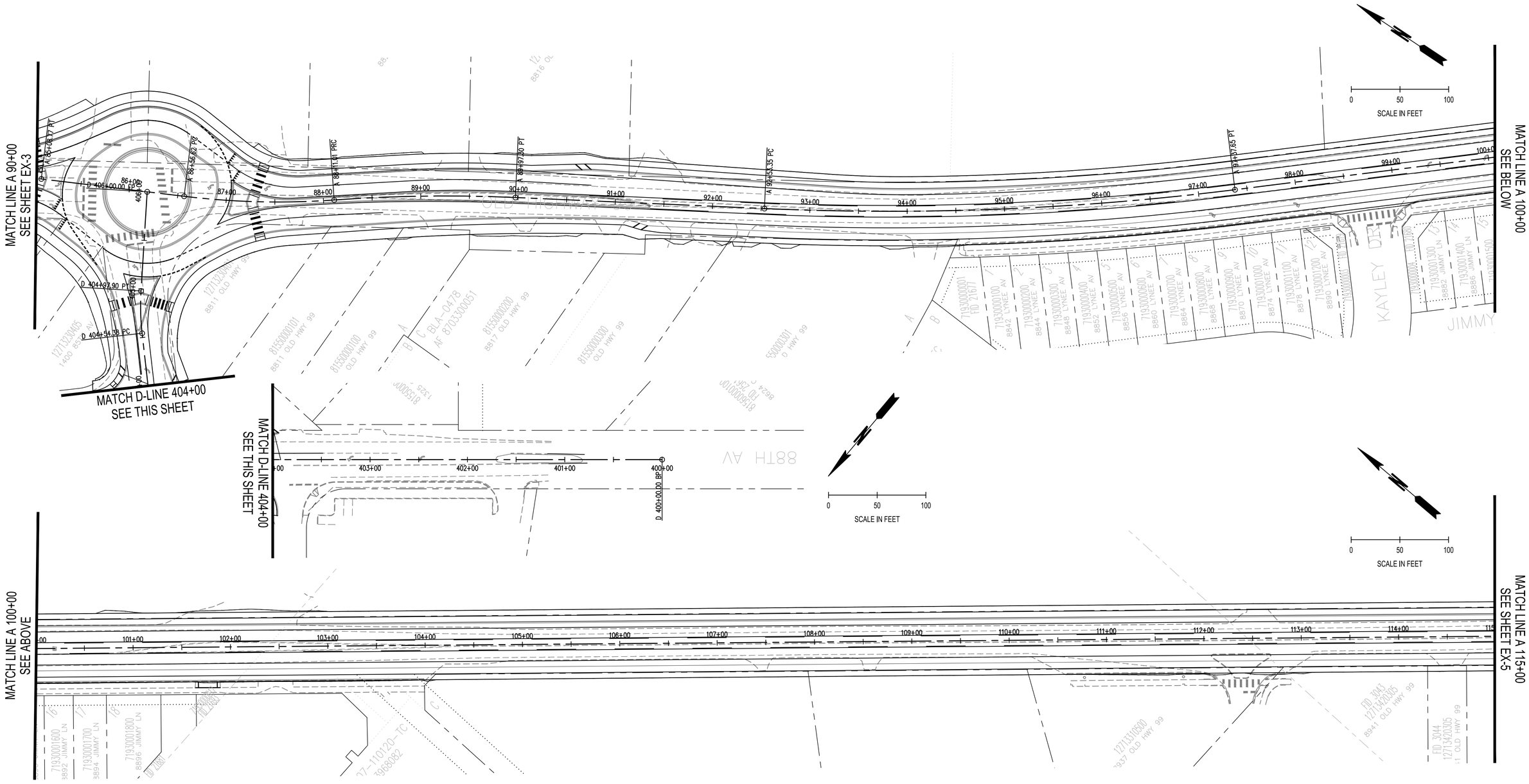

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PLAN VIEW

DRAWING No.: EX-4

SHEET No.: 4 OF 14

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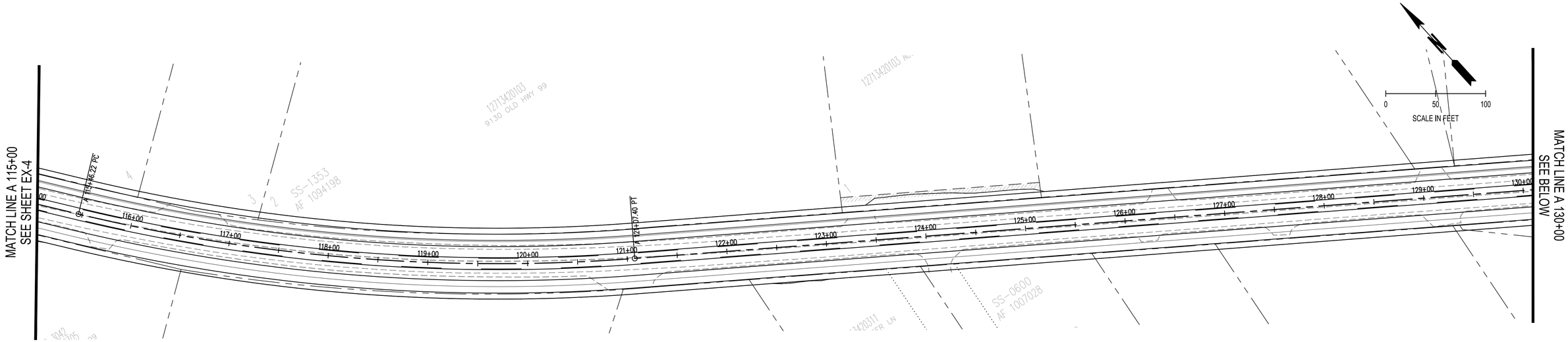

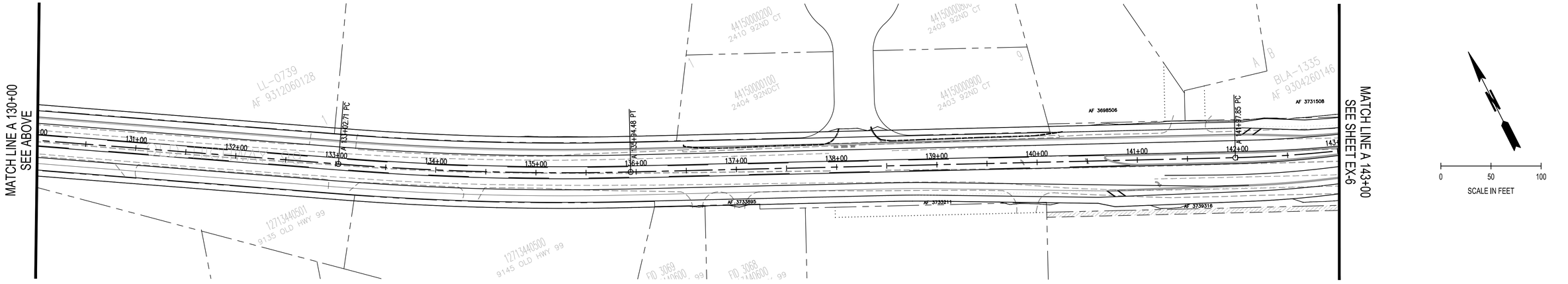

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PLAN VIEW

DRAWING No.: EX-5

SHEET No.: 5 OF 14

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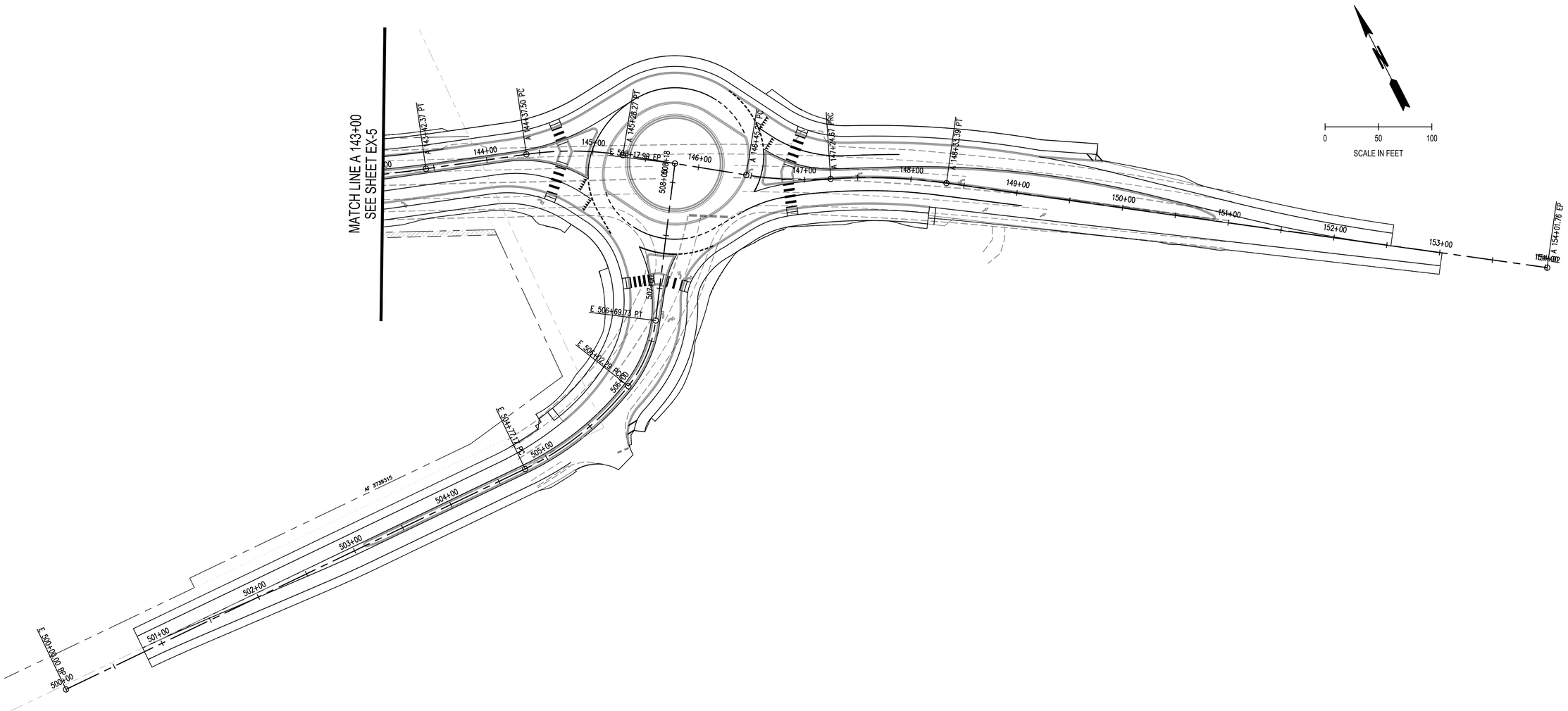

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SHEET No.: 6 OF 14

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APPENDIX G
- ENVIRONMENTAL TECH MEMO

SCJ ALLIANCE
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Technical Memo

To City of Tumwater

From: David Rowland, PE

Date: September 13, 2022

Project: 0625.29 – Old Highway 99 Corridor Study

Subject Environmental Considerations

Introduction

Our Environmental assessment follows the premise laid out in Part 4 – Environmental Considerations from the NEPA CE Categorical Exclusion Documentation Form. Considerations include thirteen elements to identify impacts and the plan for mitigation when needed. Each of these elements are evaluated at a preliminary level to identify potential mitigation in the future and to inform where potential considerations will impact design.

1. Air Quality

Improvements to Old Highway 99 will increase capacity by adding additional lanes for the Old Highway 99 Corridor and the introduction of roundabouts at multiple intersections. Therefore, each of the phases of the project will be evaluated for the air quality impacts. Currently, no pollutants pose persistent air quality problems subject to the Clean Air Act currently. And while air quality mitigation is not anticipated, each phase of the project will have to be further evaluated prior to completion of design.

2. Critical Areas

Critical Areas for Old Highway 99 corridor improvements from 73rd avenue to 93rd avenue were evaluated for this study to determine if there were any potential mitigation needs moving forward.

Sole Source Aquifers

Looking at a map of Sole Source Aquifers from ESA ArcGIS Maps, it was determined that this project falls outside any sole source aquifers. No mitigation anticipated.

Species Habitat

Species that are impacted from the ESA list are Mazama Pocket Gopher and Streaked Horned Lark designated critical habitats or suitable habitats. Further investigation to how this project impacts these species will have to be evaluated for each phase of the project.

See **Appendix A** for Mazama Pocket Gopher Map.

Wetlands

No wetlands are present for the Old Highway 99 improvements and do not need to be considered for mitigation.

3. Cultural Resources/Historic Structures

For the Study, Cultural Resources and Historic Structures where considered. Two sites were identified as areas to be considered for the Old Highway 99 improvements.

Historic Oak Tree

Located adjacent to Old Highway 99 (formerly Pacific Highway), the garry oak tree stands between 70 and 100 feet high and is 16 feet in circumference. The Oregon white oak (Quercus garryana) or garry oak is the only native oak of Washington.

The tree is significant as a specimen tree of the garry oak species. This tree will be protected.

George Washington Bush Interpretive Site

The George Washington Bush Interpretive Site is a four-sided kiosk designed to be reminiscent of the gable of the W. O. Bush home. On the four sides are interpretative panels about the legacy of the Bush family. Two of the panels are replicas of the Jacob Lawrence George Bush Series of paintings.

This marker commemorates the legacy of the George and Isabella and William O and Mandana Bush Families. This land is part of the original Bush donation claim. The Bush family came with the first permanent American settlement to Tumwater in 1845, settling just east of this marker along the Deschutes River.

Property take will be necessary for this location due to its proximity to the proposed roundabout. There is opportunity to incorporate the interpretive site into the design of the roundabout to provide more accessibility to the site. Currently, the interpretive site is hard to access for pedestrians and bicycles because there are none accommodating facilities passing this site. Further evaluation of incorporating the design with the interpretive site will be required.

See **Appendix B** – Historic Properties Report for additional information regarding these sites.

4. Floodplains and Floodways

Evaluation of the 100-year flood revealed that improvements from 73rd Avenue to 93rd Avenue do not fall within the 100-year floodplain area. No mitigation anticipated. Refer to **Appendix C** – Flood Plan Exhibits for reference.

5. Hazardous and Problem Waste

Excavation Below Existing Ground

Roadway improvements will require the excavation of existing ground. Excavation could expose an abandoned underground storage tanks or a forgotten dump site. Known locations are near the roundabout intersections where we have stormwater bioretention facilities planned. Also, in any locations where catch basins and storm pipes are placed, this will require excavation of existing ground. In addition, illumination installation will require excavation for conduit and junction box installation. The City should consider where chemicals may have been historically used prior to enactment of modern environmental laws.

Groundwater

Thurston County's Geodata map was consulted to verify that no groundwater hazards are located on the project site. No mitigation anticipated. See **Appendix D** for High Ground Water Map.

Property Impacts

Property will have to be acquired as a part of the project to provide the amount of right of way necessary for the project. Property acquired and relocated will have to be evaluated in light of Environmental Justice as laid out in section 13.

Site Location with Respect to Development

None of the future improvements are in undeveloped areas including building, parking, storage areas, or agriculture.

Identified Sites by Department of Ecology Near Project

Upon investigation of the Department of Ecology data base, it was determined that there are three sites that fall within a ½ mile radius of the project that have a history of hazardous and problem waste. Below locations that have a history of hazardous and problem waste:

- Deschutes Animal Clinic Inc
- Pearson Air Inc.
- Gower Flying Service

All these sites have been marked complete for cleanup. There are no current hazardous and problem waste sites that border the project site limits.

Site Reconnaissance

At the intersection of 79th Avenue and Old Highway 99 there will be property impacted that is currently operates a gas station. This property potentially has hazardous or problem waste and will require a Phase 1 Environmental Site Assessment.

Also, the project may require the acquiring of property from a Pick-n-Pull site. This site also has potential for hazardous and problem waste and may require a Phase 1 Environmental Site Assessment.

6. Noise

Improvements to Old Highway 99 will increase capacity by adding additional lanes for the Old Highway 99 Corridor and the introduction of roundabouts at multiple intersections. Therefore, each of the phases of the project will be evaluated for the noise impacts and whether the widening moves traffic closer to noise receptors.

7. 4(f)/6(f) Resources

This project impacts part of the G.W. Bush Historic Site. Part of the anticipated roundabout will impact some of this historic site. And evaluation of how much impact and mitigation will need to take place will be created for this site.

Additionally, this project passes close to an historical oak tree discussed in section 6.1.3.1.

8. Agricultural Lands

Project limits will not extend into Agricultural Lands. No mitigation anticipated.

9. Rivers, Streams, or Tidal Waters

At the end of the project near Old Highway 99 and 93rd Avenue, the Deschutes River falls within 300 feet of the existing roadway. We do not anticipate that the Old Highway 99 future improvements will impact the nearby river. Buffer impacts will be evaluated during the design phase of that project.

See **Appendix F** for Rivers and Streams Exhibit.

10. Tribal Lands

Assessing the tribal lands in the area, the Old Highway 99 corridor improvements from 73rd Avenue to 93rd Avenue does not fall within tribal lands. See **Appendix G** for Tribal Lands Map.

11. Water Quality/Stormwater

Stormwater for the corridor improvements will be treated and follow guidelines provided by the *2022 Drainage Design and Erosion Control Manual for Tumwater*. A stormwater evaluation was conducted for the Old Highway 99 Corridor Study.

12. Previous Environmental Commitments

There are no previous environmental commitments on or bordering the Old Highway 99 improvement project site.

13. Environmental Justice

The study used the EJSCREEN map provided by the Environmental Protection Agency (EPA) to determine the level of limited English proficiency, the population by race, and the number of low-income households. Further evaluation will have to be conducted as a part of each phase for meet the Environmental Justice requirements.

1.1.1.1 Limited English Proficiency

Information on race/ethnicity is useful in identifying populations with limited ability to understand English and the need for translation services. The U.S. Department of Justice recommends that agencies consider providing language translation services if an ethnic group with a primary language other than English comprises 5 percent, or 1,000 persons or more, of an area. For example, if 5 percent or more of an area's population is Hispanic, there is a strong possibility that individuals may be limited in their understanding of English, thereby limiting their ability to participate in the project decision-making process. In this case, translation and interpreter services should be provided.

The ACS Summary Report identifies that the population of the Environmental Justice Area has 1 percent of the population that "speak English less than well." According to the U.S. Department of Justice recommendations, translation services are not required. However, if during the proposal or project process a person is identified as a person who "speaks English less than well," interpretation services will be provided.

1.1.1.2 Population by Race

A determination of the presence of an EJ population was conducted using the EJSCREEN ACS Summary Report and the EJSCREEN Census 2015-2019 Summary Report. Table 6.1 summarizes the 2015-2019 census data for the area within ½ mile each side of centerline of the project.

Table 6.1 Population by Race Along Old Highway 99

Minority	Number of Persons	Percentage
White Alone	1567	80%
Hispanic or Latino (of any race)	170	9%
American Indian and Alaskan Native Alone or in Combination	7	0%
Black or African American Alone or in Combination	64	3%
Asian Alone or in Combination	37	2%
Native Hawaiian and Other Pacific Islander Alone or in Combination	13	1%
Some Other Race Alone or in Combination	104	5%

TOTAL POPULATION	**1962**	**100%**

The closest elementary school is East Olympia Elementary School. The school demographic data is shown in Table 2 and does verify the census data, in summary. Because the study area and the school district boundary do not fully overlap, these differences are likely due to a difference in geographical boundaries.

Table 6.2 Population by Race for East Olympia Elementary

Minority	Number of Persons	Percentage
White Alone	339	65%
Hispanic or Latino (of any race)	110	21%
American Indian and Alaskan Native Alone or in Combination	1	0%
Black or African American Alone or in Combination	14	3%
Asian Alone or in Combination	18	4%
Native Hawaiian and Other Pacific Islander Alone or in Combination	1	0%
Some Other Race Alone or in Combination	36	7%
TOTAL POPULATION	**519**	**100%**

1.1.1.3 Low Income Households

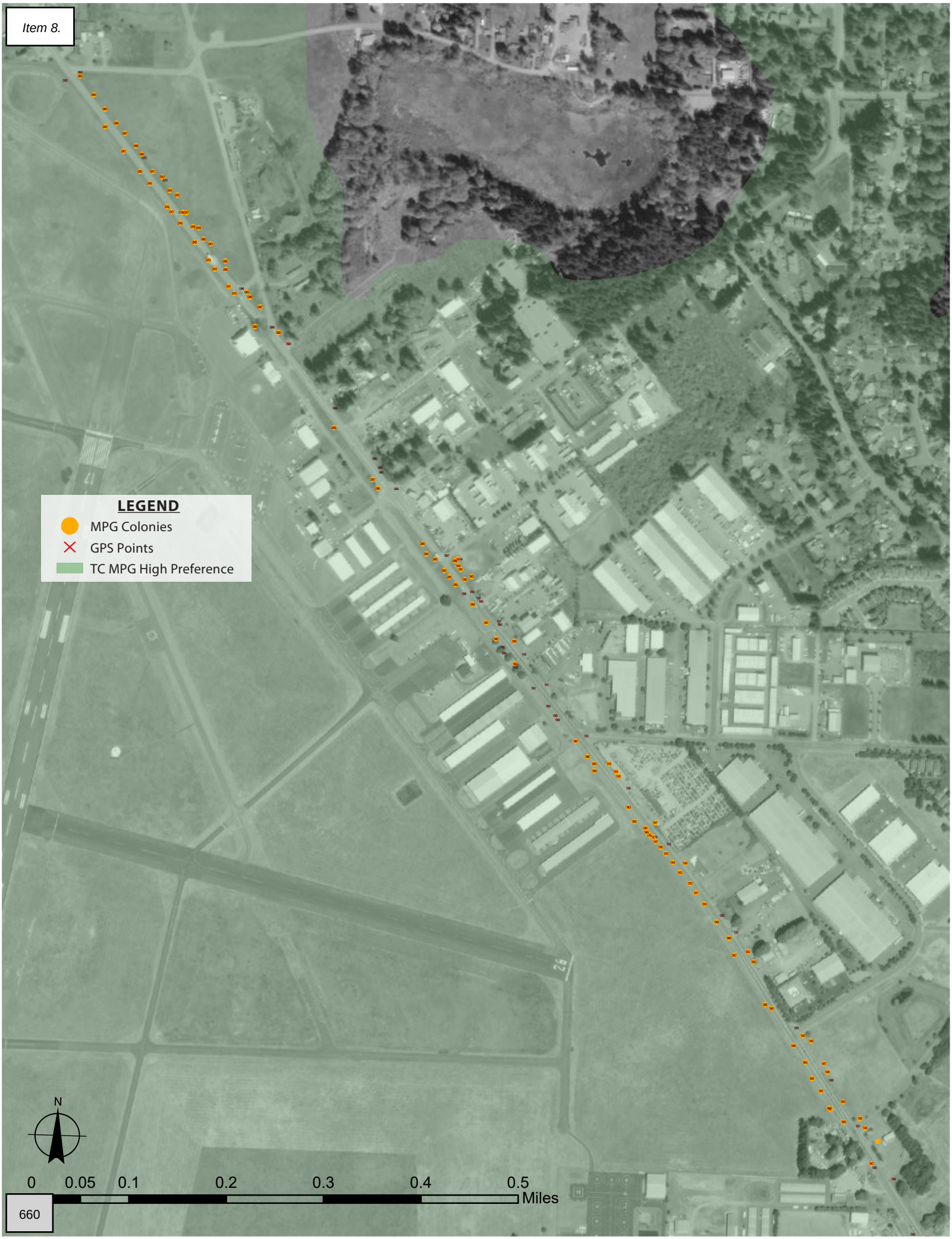
Additionally, the study area is made up of 193 low-income households (23 percent), of a total of 848 total households. This is less than Thurston County's rate of 30 percent of low-income households.

It has not been determined for the property acquisitions and relocations if they will require any EJ mitigation, and evaluation of the property and their owners will need to be conducted on each phase of the project where we have major parcel takes and relocations. For EJSCREEN ACS Summary Reports see **Appendix H.**

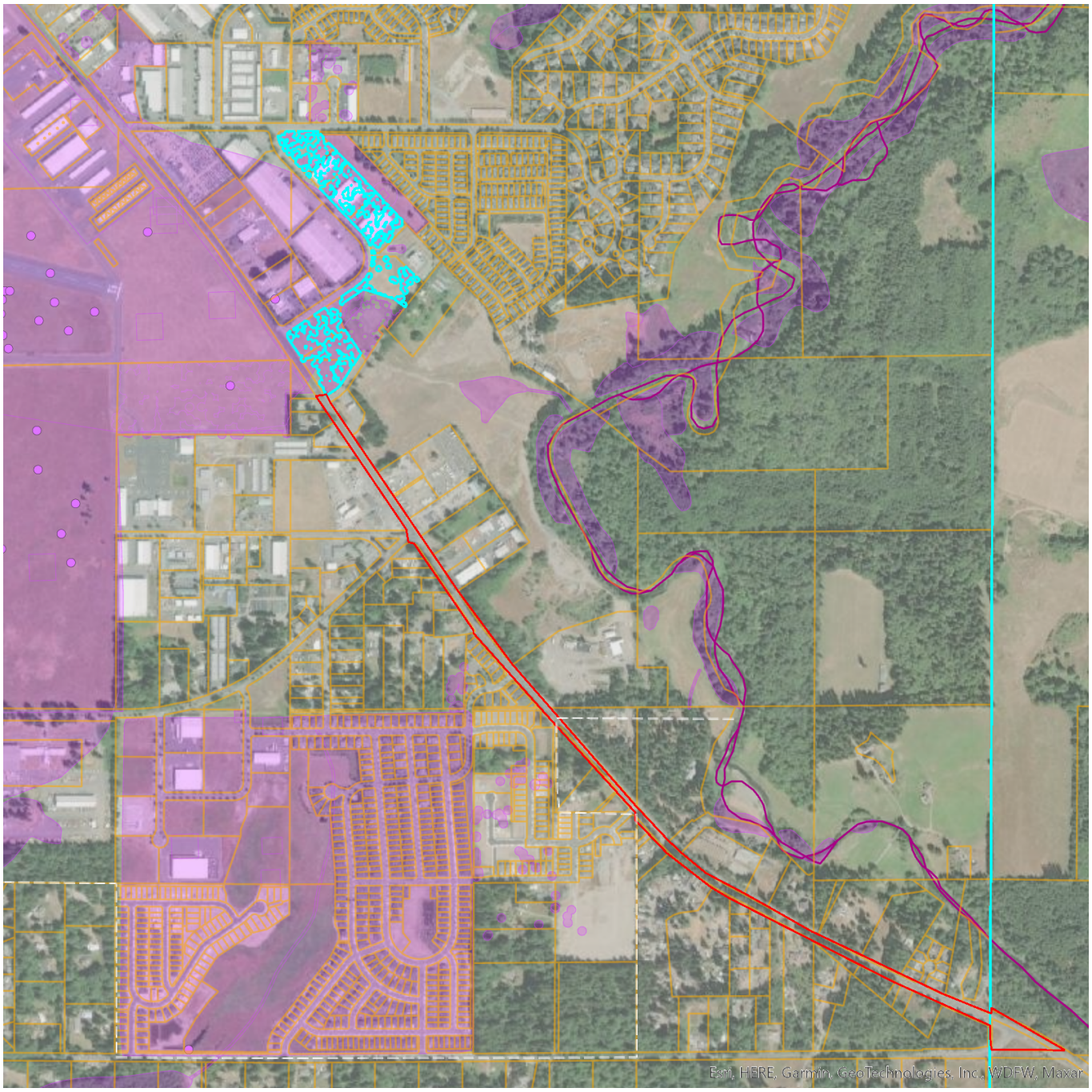
LIST OF APPENDICES

Appendix A - Mazama Pocket Gopher Map
Appendix B – Historic Properties Reports
Appendix C – Flood Plain Exhibits
Appendix D – High Groundwater Map
Appendix E – Agricultural Lands
Appendix F – Rivers and Streams
Appendix G – Tribal Lands Map
Appendix H – EJ Screen Reports

Appendix A - Mazama Pocket Gopher Map And Priority Habitat Species Report


LEGEND
MPG Colonies
GPS Points
TC MPG High Preference
N
0
0.05
0.1
0.2
0.3
0.4
0.5
Miles
660

Priority Habitats and Species on the Web



Report Date: 08/24/2022

User Comments/Notes:

Report spans from 84th Avenue to 93rd Avenue.

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Mazama (Western) pocket gopher	Threatened	Threatened	No
Big brown bat	N/A	N/A	Yes
Townsend's Big-eared Bat	N/A	Candidate	Yes

PHS Species/Habitats Details:

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	DESCHUTES INDUSTRIAL
Accuracy	Map 1:12,000 <= 33 feet
Notes	MAZAMA POCKET GOPHER MOUND CONCENTRATION AREA. NO MOUND COUNT PROVIDED.
Source Record	4426
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	CAPELLI, C./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

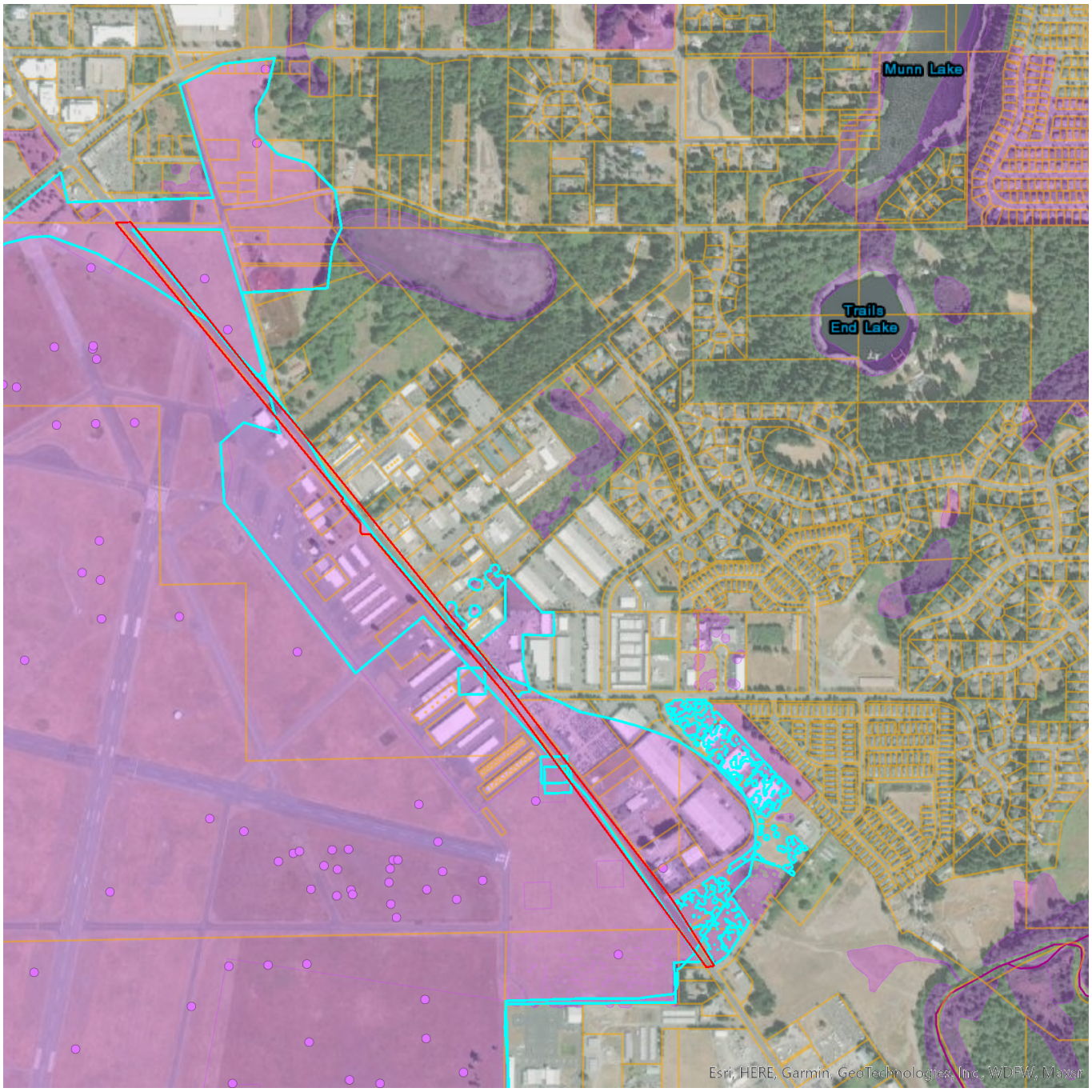
Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

Priority Habitats and Species on the Web



Report Date: 08/24/2022

User Comments/Notes:

This report spans from 73rd Avenue to 84th Avenue SE.

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Streaked horned lark	Threatened	Endangered	No
Oregon vesper sparrow	N/A	Candidate	No
Mazama (Western) pocket gopher	Threatened	Threatened	No
Big brown bat	N/A	N/A	Yes
Townsend's Big-eared Bat	N/A	Candidate	Yes

PHS Species/Habitats Details:

Streaked horned lark	
Scientific Name	*Eremophila alpestris strigata*
Priority Area	Breeding Area
Site Name	OLYMPIA AIRPORT
Accuracy	1 mile (Section)
Notes	STREAKED HORNED LARK NESTS ON OLYMPIA AIRPORT.
Source Record	912954
Source Dataset	PHSREGION
Source Name	MCALLISTER, KELLY
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026
Geometry Type	Polygons

Oregon vesper sparrow	
Scientific Name	*Pooecetes gramineus affinis*
Priority Area	Breeding Area
Site Name	OLYMPIA AIRPORT
Accuracy	1 mile (Section)
Notes	OREGON VESPER SPARROW NESTS ON OLYMPIA AIRPORT.
Source Record	912962
Source Dataset	PHSREGION
Source Name	MCALLISTER, KELLY
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT
Accuracy	GPS
Notes	MAZAMA POCKET GOPHER MOUND SYSTEMS (6,040 SURFACE MOUNDS) RECORDED OVER VIRTUALLY ALL OPEN GRASSLAND AREA AT OLYMPIA AIRPORT. POLYGON COVERS ALL 29 OCCUPIED PROJECT ZONES DELINEATED FOR SAMPLING AREA ID'S. DENSITIES DIFFER ACROSS ZONES.
Source Record	3555
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	CAPELLI, C./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	PERF SOUND INVESTMENT
Accuracy	GPS
Notes	MAZAMA POCKET GOPHER MOUND CONCENTRATION
Source Record	3725
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, T/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT
Accuracy	Standard buffer
Notes	WESTERN POCKET GOPHER MOUND SYSTEM SCATTERED OVER ENTIRE AIRPORT AND SURROUNDING AREAS. MUCH PRAIRIE HAS BEEN CONVERTED TO GROWING CHRISTMAS TREES, GOPHERS EXIST AMONG THESE TREES AS WELL AS IN UNALTERED AREAS. 5 IO TRAPPED.
Source Record	3160
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	WALKER, M./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT
Accuracy	Standard buffer
Notes	MAZAMA (WESTERN) POCKET GOPHER MOUND. LIVE CAPTURE AND RELEASE. AMINAL MARKED WITH RED NAIL POLISH
Source Record	3169
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, A/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	OLYMPIA AIRPORT
Accuracy	Standard buffer
Notes	MAZAMA (WESTERN) POCKET GOPHER MOUND. LIVE CAPTURE AND RELEASE. AMINAL MARKED WITH RED NAIL POLISH
Source Record	3171
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, A/WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	DESCHUTES INDUSTRIAL
Accuracy	Map 1:12,000 <= 33 feet
Notes	MAZAMA POCKET GOPHER MOUND CONCENTRATION AREA. NO MOUND COUNT PROVIDED.
Source Record	4426
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	CAPELLI, C./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	79TH AVE SE
Accuracy	GPS
Notes	PARCEL BOUNDARY MAPPED. EXTENDED AT SOUTHERN POINT TO INCLUDE ADDITIONAL MOUND WAYPOINT.
Source Record	4738
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	CAPELLI, C./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Mazama (Western) pocket gopher	
Scientific Name	*Thomomys mazama*
Priority Area	Occurrence
Site Name	PORT OF OLYMPIA AIRPORT - BONNIEWOOD
Accuracy	GPS
Notes	MAZAMA (WESTERN) POCKET GOPHER MOUND CONCENTRATION. 2016: LOC UPDATED TO COUNTY GOPHER HAB PROTECTION AREA PER WDFW REVIEW.
Source Record	4317
Source Dataset	WS_OccurPolygon
Source Date	WS_OccurPolygon
Source Name	SCHMIDT, T/WDFW;OLSON, G./WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	Threatened
State Status	Threatened
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	Y
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=01175
Geometry Type	Polygons

Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

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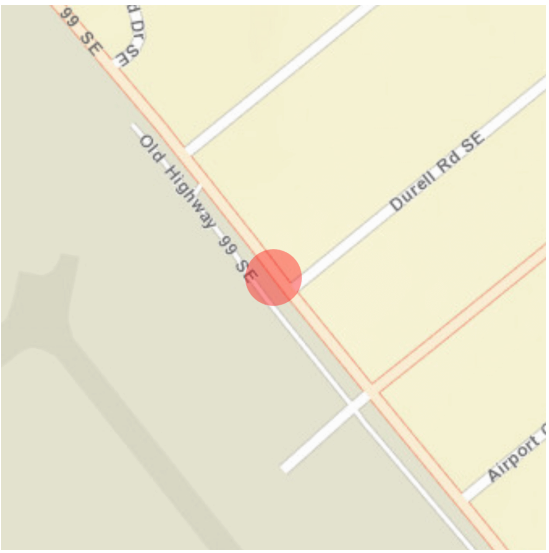
Appendix B – Historic Properties Reports

Historic Property Report

Resource Name: Oak Tree

Property ID: 20170

Location



Address: near 7525 Old Highway 99, vicinity of Tumwater, WA 98501

Geographic Areas: Thurston County, OLYMPIA Quadrangle, T17R02W11

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa

Historic Use:

Category	Subcategory
Landscape	Landscape - Natural Feature
Landscape	Landscape - Natural Feature

Historic Context:

Category

Architect/Engineer:

Category	Name or Company

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Historic Property Report

Resource Name: Oak Tree

Property ID: 20170

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date

Historic Property Report

Resource Name: Oak Tree

Property ID: 20170

Photos

Tree

Original HPI form(s)

Historic Property Report

Resource Name: Oak Tree

Property ID: 20170

Inventory Details - 1/1/1900

Common name: Meeker Oak Tree (#34-169)

Date recorded: 1/1/1900

Field Recorder:

Field Site number: 3465

SHPO Determination

Historic Property Report

Resource Name: Oak Tree

Property ID: 20170

Inventory Details - 4/1/1998

Common name: Meeker Oak Tree (#34-169)

Date recorded: 4/1/1998

Field Recorder: Shanna Stevenson

Field Site number: 3465

SHPO Determination

Detail Information

Surveyor Opinion

Significance narrative: The tree is significant as a specimen tree of the garry oak species. Rob Kavanaugh an expert on Oregon white oak estimates the tree to be approximately 400 years old. Although coring has been attempted, the tree is too hard to permit examination. The tree also represents the ecology of the native peoples. Native peoples managed the landscape to provide for their food gathering needs. An 1853 survey of the area notes the it was widely burned and we know that the Bush family and others settled here because of the open prairie. This helped the oak tree by eliminating the over-canopy of fir trees for the sun-loving oak. The burning was done to open areas so that the prairie food plants, most notably camas, could thrive. This tree has stood over the centuries because of that land management.

The acorns from oak trees such as this were a vital part of the native peoples diet. Del McBride notes:

"The Squalli ate a lot of acorns. These acorns were cooked in the ground like camas, with hot rocks underneath, covered with dirt, fire on top. After the acorns were cooked, they were put into open-work baskets and these baskets were The acorns must be completely covered with water and mud. This mode of caching was never done without first cooking the acorns. When acorns were taken out of the water, they were ready to eat and not cooked again." Originally published in LURE LORE, Vol. X, No. 1 (Fall 1991) by the Nisqually Reach Nature Center.

Cecelia Svinth Carpenter notes:

" . . . Acorns required more care. They contained a bitter taste which could be removed either by boiling or by burying them in the mud by a stream. Acorns were roasted in the embers of the cooking fire and ground into a meal that could be molded into patties or used to make a gruel or soup." in THE SEASONAL ROUND OF LIFE IN TRADITIONAL TIMES, published by the Washington State Capital Museum.

Marian Smith describes the use of acorns:

"Acorns were gathered wherever they could be found and salt water groups made special trips to prairie groves to obtain them. They were eaten raw or pit-baked. The baked nuts were eaten alone or sometimes with salmon eggs. They were also pounded up and boiled with fish, apparently in the same way as roots. After they were baked, they could be stored in baskets lined with leaves and submerged in still water." The Puyallup-Nisqually, page 251.

Historic Property Report

Resource Name: Oak Tree Property ID: 20170

Oak was also used by native peoples for digging sticks for root foodstuff when an antler handle was attached. Other possible products were yellow face paint made from the decaying bark of the oak tree, hide scraping tools, braces for dip nets and firewood.

The tree is also on the historic northern branch of the Oregon Trail, the Cowlitz Trail and undoubtedly has seen the progression of human habitation from native peoples, the Hudson's Bay Company and this area's earliest American settlers. The tree was undoubtedly of significant size 150 years ago to be noted by those who passed by and perhaps was a landmark on this part of the trail.

The tree is part of the donation land claims of James and Samuel Dunlap who settled in the area in 1852. They are buried in the Bush/Union Cemetery. A smaller grove of garry oaks was removed from across the road from the tree in 1994, some of which were 100 years old and could have been the progeny of this tree.

In 1984 a community effort saved the tree when the highway was being improved in this area and the right-of-way was re-routed and a barrier installed to insure its security. This signalled its landmark status to the community.

Although various stories about its being the "Meeker Oak" have been circulated, no direct connection with Ezra Meeker has been established. When Meeker made his epic retracing of the Oregon Trail in 1906, he set a marker post in Tumwater and then took the train to Tenino, his next stop instead of driving his team on this section of the trail. Other stories about its being an Indian gathering site have not been verified.

Physical description: Located adjacent to Old Highway 99 (formerly Pacific Highway), the garry oak tree stands between 70 and 100 feet high and is 16 feet in circumference. The Oregon white oak (Quercus garryana) or garry oak is the only native oak of Washington. It was named by David Douglas in 1820 after his friend Nicholas Garry of the Hudson Bay Company. The tree presents a broad canopy over Old Highway 99.

Bibliography:

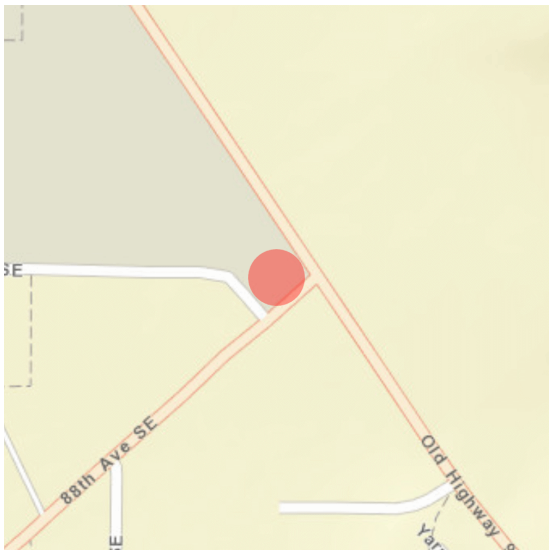
Kavanaugh, Rob, Washington Oak habitat: a plan for managing the oak forests of Washington State, Columbia Gorge Audubon Society, 1991
Correspondence from Jack Davis, 1987, 1994.
Smith, Marian, The Puyallup-Nisqually, AMS Press, New York, reprint 1969.
Carpenter, Cecelia Svinth, "The Seasonal Round of Life in Traditional Times," State Capital Museum, n.d.
McBride, Del "When the Prairie Camas Bloom: Some Notes on edible Plants Among the Puget Sound Indians," Luhr Lore, Vol.X, No. 1 (Fall 1991), Nisqually Reach Nature Center.
Information from 1853 Survey Notes, microfilm, Washington State Library.
Telephone interviews, Rob Kavanaugh, Jack Davis and Joe Roush.
Previous documentation on file (THPC)

Historic Property Report

Resource Name: Bush Interpretative Kiosk

Property ID: 19018

Location



Address: , Olympia, WA 98501

Tax No/Parcel No: 12713230405

Plat/Block/Lot: Metes and Bounds

Geographic Areas: Thurston County, MAYTOWN Quadrangle, T17R02W13

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1997	☐

Historic Use:

Category	Subcategory
Recreation and Culture	Recreation and Culture - Monument/Marker
Recreation and Culture	Recreation and Culture - Monument/Marker

Historic Context:

Category
Ethnic Heritage

Architect/Engineer:

Category	Name or Company
Architect	Carlsson, Lars

Historic Property Report

Resource Name: Bush Interpretative Kiosk Property ID: 19018

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2006-01-00006, , Thurston County 2002	1/1/1900	Not Determined	

Historic Property Report

Resource Name: Bush Interpretative Kiosk

Property ID: 19018

Photos

West side of marker

Historic Property Report

Resource Name: Bush Interpretative Kiosk Property ID: 19018

Inventory Details - 1/1/1900

Common name: Bush Interpretative Site (#34-350)

Date recorded: 1/1/1900

Field Recorder: Shanna Stevenson

Field Site number: 126

SHPO Determination

Detail Information

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property is located in a potential historic district (National and/or local): No

Significance narrative: This marker commemorates the legacy of the George and Isabella and William O and Mandana Bush Families. This land is part of the original Bush donation claim. The Bush family came with the first permanent American settlement to Tumwater in 1845, settling just east of this marker along the Deschutes River. George Bush was a mulatto who settled in Tumwater in 1845 with his wife Isabella and five sons as part of the first permanent American settlement on Puget Sound. He was a highly respected and expert farmer. He had come to the area north of the Columbia River to escape the restrictive land laws of Oregon against men of color. In fact it took an act of Congress, spurred by Washington legislative action, to grant him and his wife their land.

Bush's family were also outstanding. His son, William Owen Bush was a member of the first state legislature and with his family grew world renown produce from what is now known as Bush Prairie. This produce was exhibited at several world's fairs and exhibitions.

As some of the earliest American settlers on Puget Sound in 1845, George and Isabella Bush with their family played a vital role in the beginnings of Washington Territory. Bush's story is even more remarkable because he was a mulatto who overcame prejudice and discrimination to succeed as one of the areas most beloved figures.

Little is known of Bush's early life. It is believed that he was the son of an East or West Indian who was married the Irish maid of a family in Pennsylvania. Their son, George traveled widely before making his way west in 1844. By some accounts he fought in the Black Hawk War, worked for a fur company and may have been at the Battle of New Orleans. It is known that he married Isabella James, an American of German ancestry on July 4, 1832, in Missouri. The became the parents of nine sons, six of whom survived to adulthood.

Feeling the pressures of prejudice in the slavery state of Missouri before the Civil War, Bush and his family joined the westward migration to the Oregon Country in 1844 with their friends and neighbors. Bush had been very successful in the cattle business and came west with excellent supplies as well has a cache of coins said to be $2000.

Bush and his party reached the Dalles in December, 1844 after a seven month journey. Bush took care of the stock at the Dalles over the while the other went on to Washougal on the Columbia River.

George Bush again met prejudice upon his arrival in the Oregon Country. This area was still under a joint occupation agreement between the U.S. and Great Britain with no formal government. However, the Oregon Provisional Government at Oregon City had passed in June, 1844 a law which excluded Negroes of all conditions from the Oregon

Historic Property Report

Resource Name: Bush Interpretative Kiosk Property ID: 19018

area. The sheriff, however, was not required to cross north of the Columbia to enforce the law.

This provision coupled with the desire of the settlers to secure an American foothold north of the Columbia River drove Bush and his party of 30 Americans to Puget Sound where they arrived in November, 1845. By 1846, the Boundary line was settled and the Bush Party had established New Market, later Tumwater at the falls of the Deschutes River as it entered Puget Sound, now part of the United States.

Bush, an accomplished farmer, and his family quickly established a fine farm which encompassed this site. Because of their hospitality and generosity the farm became a noted stopping off place on the Cowlitz Trail which brought settlers north to Puget Sound from the Oregon Trail. Bush was also instrumental in establishing the first mills at the falls of the Deschutes River.

While other white settlers were entitled to free land under the provisions of the Donation Land Claim Law passed in 1850, it took an act of the U.S. Congress to grant George and Isabella Bush their land because of their color. Fifty-five members of the newly formed Washington Territorial Legislature petitioned Congress to grant them their land.

Beloved by his neighbors and friends, Bush died in 1863 and was followed by his wife in 1866 but their legacy continued with their sons who continued to live on the land.

The kiosk was constructed on donated land by the Thurston County Historic Commission with donations from many community groups.

Physical description: Four sided kiosk designed to be reminiscent of the gable of the W. O. Bush home. On the four sides are interpretative panels about the legacy of the Bush family. Two of the panels are replicas of the Jacob Lawrence George Bush Series of paintings.

Bibliography: Palmer, Gayle, ed. The River Remembers, City of Tumwater, 1995, article, George Bush of Tumwater, Washington by Dr. Darrell Milner.

Appendix C – Flood Plain Exhibits

122°54'22.98"W 47°0'6.62"N

122°52'29.62"W 46°58'N

685

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **8/25/2022 4:15 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **282** OF **615**

Panel Contains:

COMMUNITY	NUMBER	PANEL
THURSTON COUNTY	530188	0282
CITY OF TUMWATER	530192	0282

MAP NUMBER
53067C0282F
EFFECTIVE DATE
September 02, 2016

122°54'22.98"W 46°58'14.12"N

686

122°52'29.62"W 46°56'8.44"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

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Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 284 OF 615

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF TUMWATER	530192	0284
THURSTON COUNTY	530188	0284

MAP NUMBER
53067C0284F
EFFECTIVE DATE
September 02, 2016

122°52'30.48"W 46°58'14.11"N

687

122°50'37.13"W 46°56'8.44"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

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This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

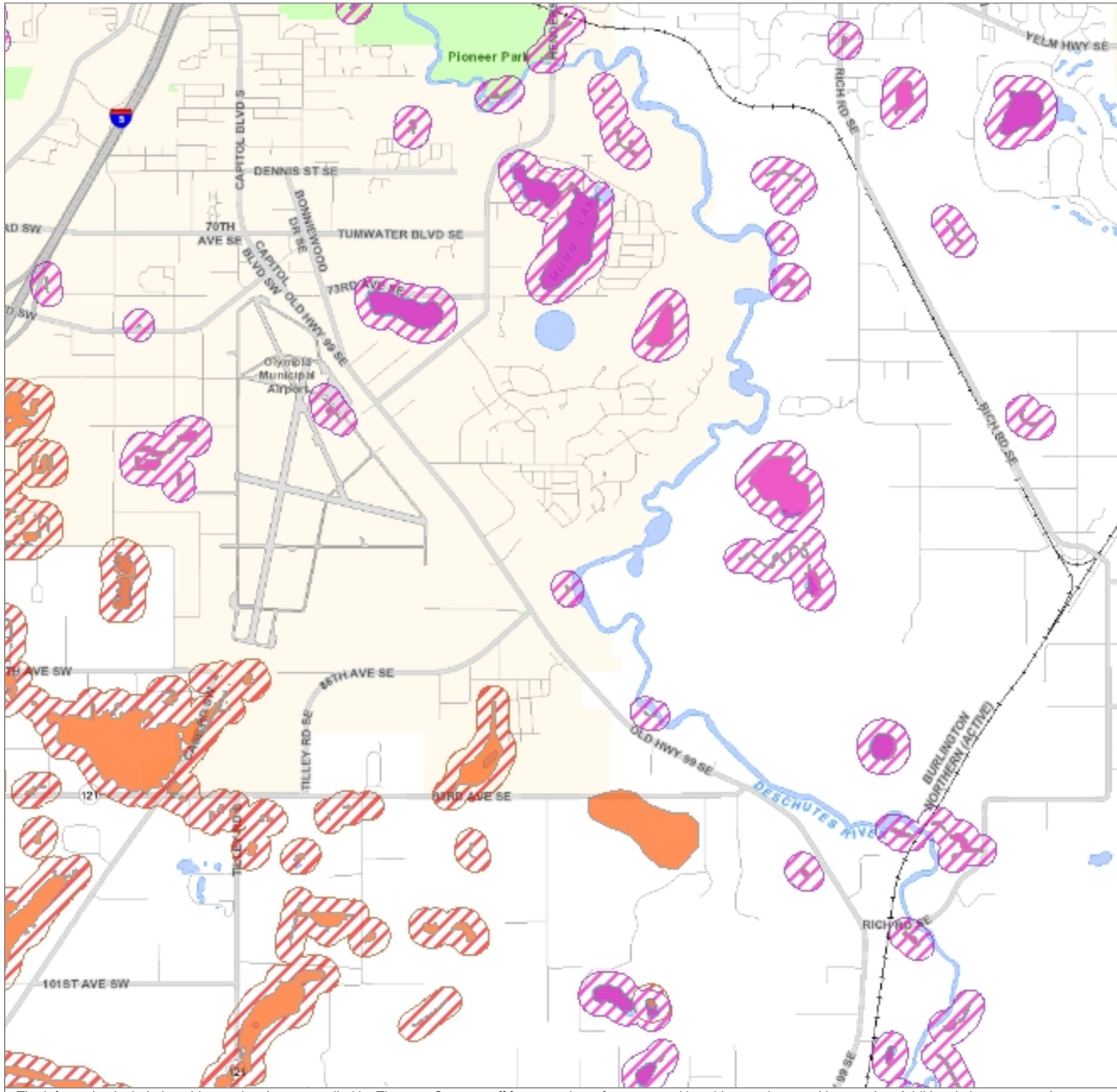
PANEL 303 OF 615

Panel Contains:

COMMUNITY	NUMBER	PANEL
THURSTON COUNTY	530188	0303

MAP NUMBER
53067C0303F
EFFECTIVE DATE
September 02, 2016

Appendix D – High Groundwater Map



Groundwater Map

Legend

Groundwater Concern Areas
- Low Concern
- Limited Groundwater
- Very Limited Groundwater
- Chloride > .5 mg/l
- Pesticide Application

Groundwater Sensitive Areas
- ELD INLET WQPD
- HENDERSON INLET WQPD
- LAKES
- MCALLISTER SPRING; MCALLISTER SPRINGS

High Groundwater Hazard Areas
- High Groundwater Hazard Area
- Salmon Creek High Groundwater Hazard

High Groundwater Hazard Review Areas
- High Groundwater Review Area
- Salmon Creek High Groundwater Review Area

Roads - Major (Large Scale)
- <all other values>
- I 5 ACCESS; US 101 ACCESS; US 101 SB OFF RAMP
- I 5; US 101

Roads (Small Scale)

Railroads

Scale 1: 60,460

0 0.5 1
Miles

Map Created Using GeoData Public Website

Published: 8/31/2022

Note:

THURSTON COUNTY
WASHINGTON
SINCE 1852

Thurston County GeoData Center

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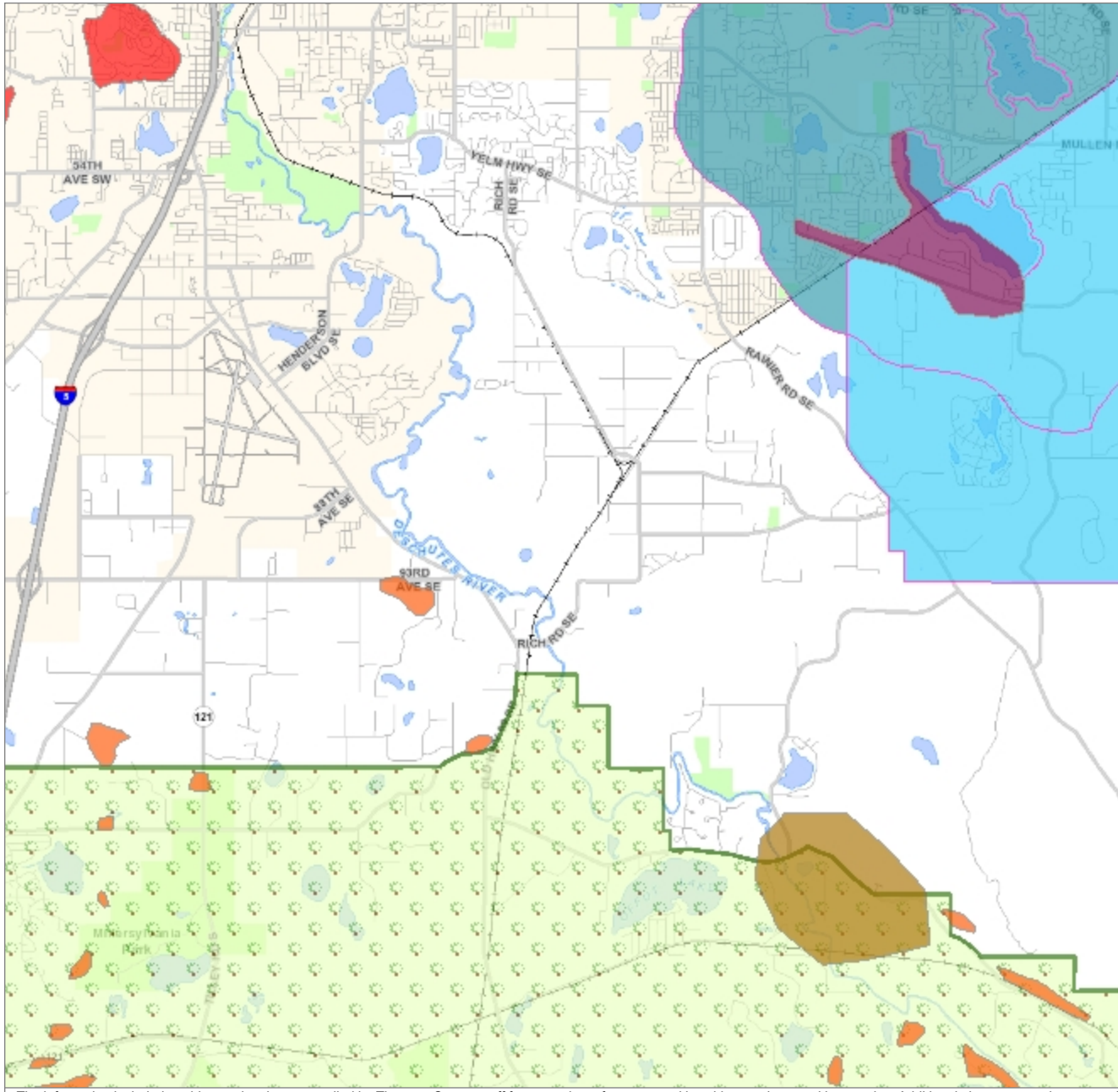
Appendix E – Agricultural Lands



Agricultural Lands Map

Legend

Groundwater Concern Areas
- Low Concern
- Limited Groundwater
- Very Limited Groundwater
- Chloride > .5 mg/l
- Pesticide Application

Groundwater Sensitive Areas
- ELD INLET WQPD
- HENDERSON INLET WQPD
- LAKES
- MCALLISTER SPRING; MCALLISTER SPRINGS

Agritourism Overlay Districts

Roads - Major (Small Scale)
- <all other values>
- I 5 ACCESS; US 101 ACCESS; US 101 SB OFF RAMP
- I 5; US 101

Railroads

County Border

Olympia Municipal Airport

Water Bodies (River - Small Scale)

Water Bodies (Other)

Parks

Cities

Capital Forest

Scale 1: 120,920

0 1 2

Miles

Map Created Using GeoData Public Website

Published: 8/31/2022

Note:

THURSTON COUNTY
WASHINGTON
SINCE 1852

Thurston County GeoData Center

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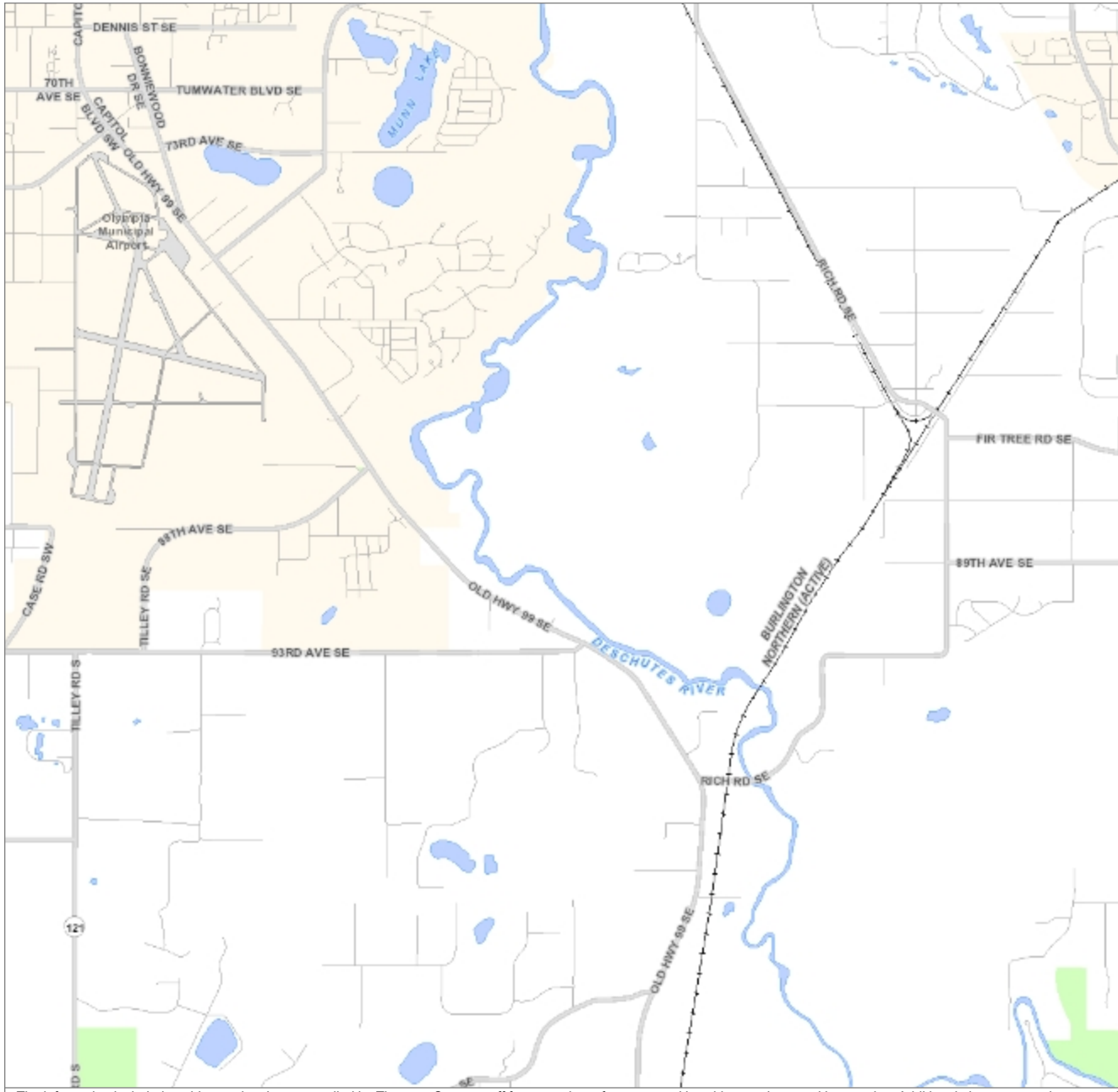
Appendix F – Rivers and Streams



Rivers and Streams

Legend

- Roads - Major (Large Scale)
  - <all other values>
  - I 5 ACCESS; US 101 ACCESS; US 101 SB OFF RAMP
  - I 5; US 101
- Roads (Small Scale)
- Railroads
- County Border
- Olympia Municipal Airport
- Water Bodies (River - Small Scale)
- Water Bodies (Other)
- Parks
- Cities
- Capital Forest
- County Background
- Roads - Major
  - <all other values>
  - I 5 ACCESS; US 101 ACCESS; US 101 SB OFF RAMP
  - I 5; US 101
- Roads
- Railroads
- County Border
- Olympia Municipal Airport
- Water Bodies (River - Small Scale)
- Water Bodies (Other)
- Parks

Scale 1: 60,460

0 0.5 1

Miles

Map Created Using GeoData Public Website

Published: 8/31/2022

Note: Old Highway 99 fall outside of the 300 ft buffer except for near the intersection at 93rd Avenue and Old Hwy 99. No impacts to Deschutes River anticipated.

THURSTON COUNTY
WASHINGTON
SINCE 1852

Thurston County GeoData Center

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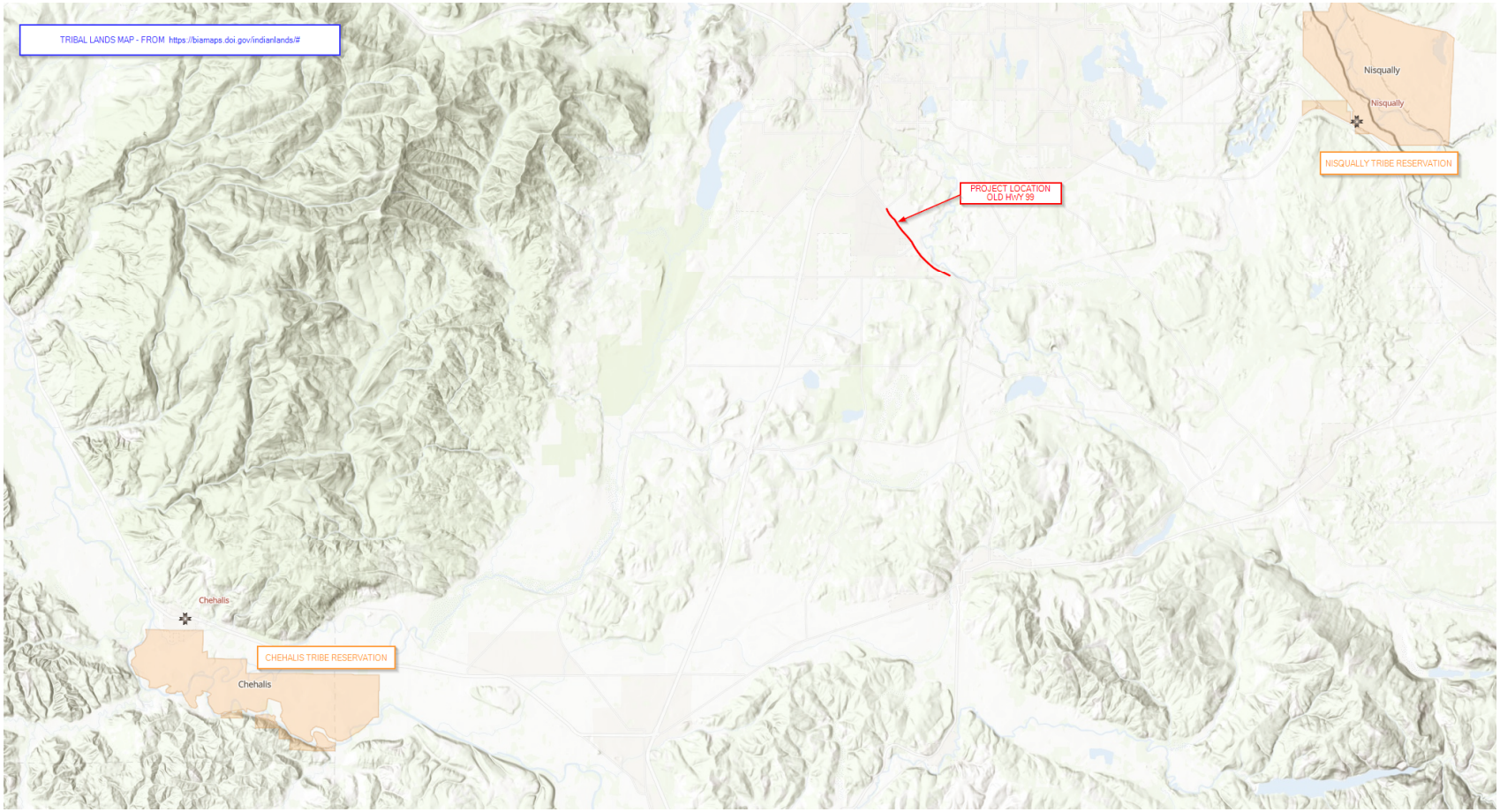
Appendix G – Tribal Lands Map

Tribal Lands with Respect to the Project Site Exhibit



Appendix H – EJ Screen Reports

EJScreen Report (Version 2.0)

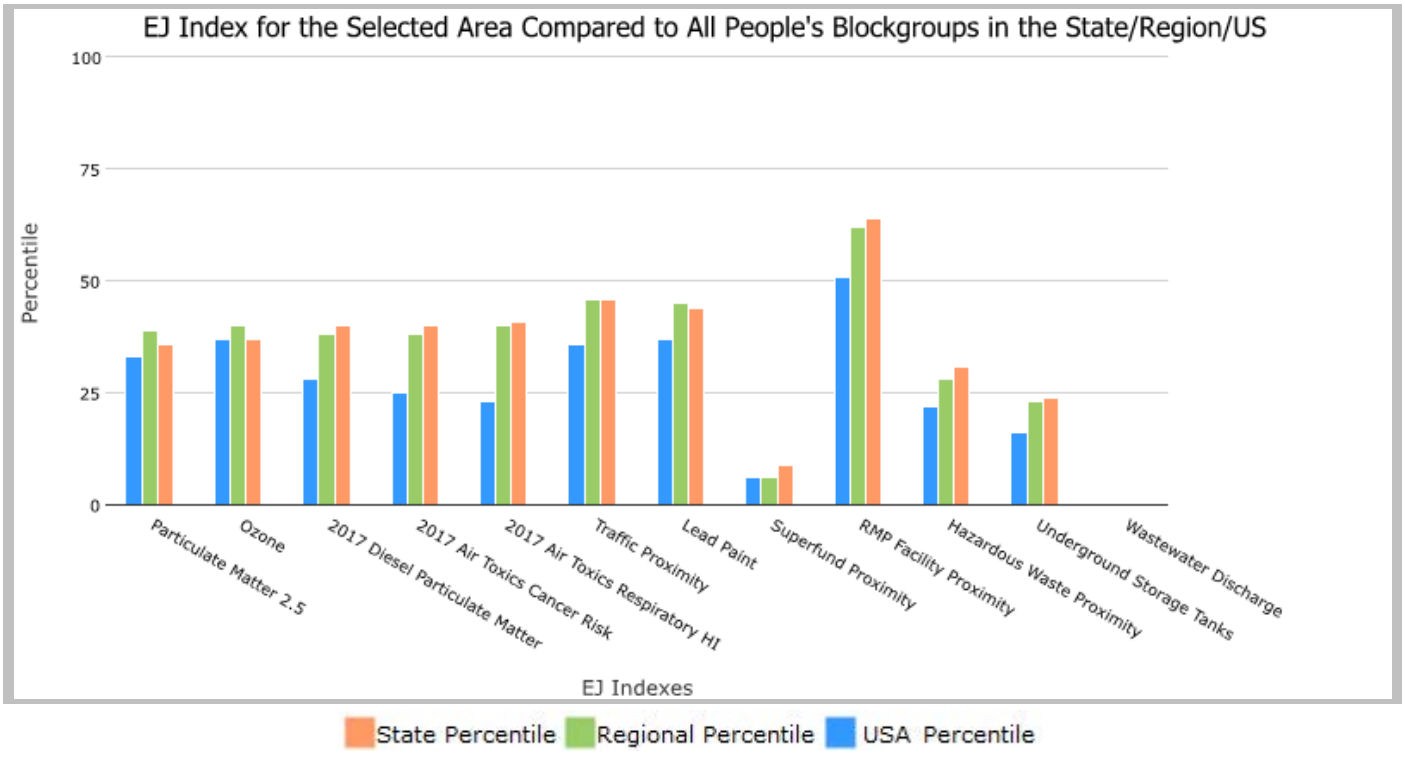
.5 miles Ring around the Corridor, WASHINGTON, EPA Region 10

Approximate Population: 1,962

Input Area (sq. miles): 3.51

Old Hwy 99 Corridor

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	36	39	33
EJ Index for Ozone	37	40	37
EJ Index for 2017 Diesel Particulate Matter*	40	38	28
EJ Index for 2017 Air Toxics Cancer Risk*	40	38	25
EJ Index for 2017 Air Toxics Respiratory HI*	41	40	23
EJ Index for Traffic Proximity	46	46	36
EJ Index for Lead Paint	44	45	37
EJ Index for Superfund Proximity	9	6	6
EJ Index for RMP Facility Proximity	64	62	51
EJ Index for Hazardous Waste Proximity	31	28	22
EJ Index for Underground Storage Tanks	24	23	16
EJ Index for Wastewater Discharge	N/A	N/A	N/A



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

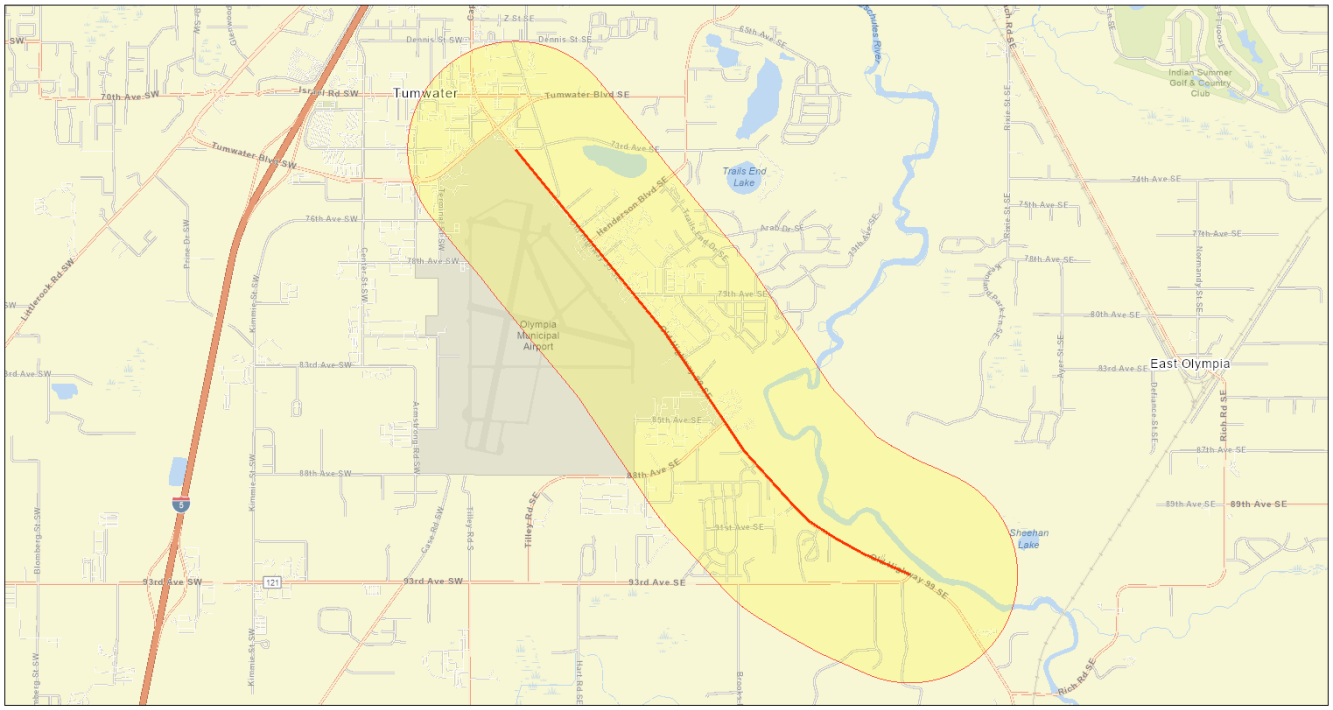
EJScreen Report (Version 2.0)

.5 miles Ring around the Corridor, WASHINGTON, EPA Region 10

Approximate Population: 1,962

Input Area (sq. miles): 3.51

Old Hwy 99 Corridor



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EJScreen Report (Version 2.0)

.5 miles Ring around the Corridor, WASHINGTON, EPA Region 10

Approximate Population: 1,962

Input Area (sq. miles): 3.51

Old Hwy 99 Corridor

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 (µg/m^3)	7.18	7.86	22	8.17	20	8.74	15
Ozone (ppb)	32	35.3	29	37.2	18	42.6	5
2017 Diesel Particulate Matter* (µg/m^3)	0.235	0.336	38	0.312	<50th	0.295	<50th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	30	35	47	33	50-60th	29	80-90th
2017 Air Toxics Respiratory HI*	0.4	0.52	31	0.47	<50th	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	190	710	44	600	48	710	46
Lead Paint (% Pre-1960 Housing)	0.05	0.22	29	0.22	30	0.28	28
Superfund Proximity (site count/km distance)	0.35	0.19	87	0.13	92	0.13	92
RMP Facility Proximity (facility count/km distance)	0.043	0.65	4	0.66	8	0.75	3
Hazardous Waste Proximity (facility count/km distance)	0.63	2.2	43	1.7	52	2.2	48
Underground Storage Tanks (count/km^2)	1.8	6.1	53	4.5	57	3.9	56
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.021	N/A	0.53	N/A	12	N/A
Socioeconomic Indicators							
Demographic Index	25%	29%	51	28%	51	36%	42
People of Color	20%	31%	36	28%	43	40%	36
Low Income	31%	26%	67	28%	61	31%	55
Unemployment Rate	8%	5%	78	5%	77	5%	75
Linguistically Isolated	1%	4%	46	3%	51	5%	48
Less Than High School Education	7%	9%	51	9%	49	12%	39
Under Age 5	4%	6%	33	6%	33	6%	35
Over Age 64	15%	15%	58	16%	56	16%	55

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): .5-miles radius
Description: Old Hwy 99 Corridor

Summary of ACS Estimates	2015 - 2019
Population	1,962
Population Density (per sq. mile)	954
People of Color Population	395
% People of Color Population	20%
Households	848
Housing Units	871
Housing Units Built Before 1950	28
Per Capita Income	34,234
Land Area (sq. miles) (Source: SF1)	2.06
% Land Area	97%
Water Area (sq. miles) (Source: SF1)	0.07
% Water Area	3%

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	1,962	100%	510
Population Reporting One Race	1,857	95%	964
White	1,670	85%	504
Black	64	3%	176
American Indian	18	1%	41
Asian	37	2%	85
Pacific Islander	14	1%	82
Some Other Race	54	3%	76
Population Reporting Two or More Races	106	5%	147
Total Hispanic Population	170	9%	115
Total Non-Hispanic Population	1,793		
White Alone	1,568	80%	496
Black Alone	64	3%	176
American Indian Alone	7	0%	41
Non-Hispanic Asian Alone	37	2%	85
Pacific Islander Alone	13	1%	80
Other Race Alone	5	0%	18
Two or More Races Alone	99	5%	141
Population by Sex			
Male	892	45%	253
Female	1,070	55%	321
Population by Age			
Age 0-4	85	4%	126
Age 0-17	437	22%	205
Age 18+	1,526	78%	284
Age 65+	301	15%	132

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019 .

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): .5-miles radius
Description: Old Hwy 99 Corridor

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,433	100%	318
Less than 9th Grade	20	1%	48
9th - 12th Grade, No Diploma	74	5%	85
High School Graduate	275	19%	110
Some College, No Degree	425	30%	225
Associate Degree	204	14%	110
Bachelor's Degree or more	435	30%	174
Population Age 5+ Years by Ability to Speak English			
Total	1,877	100%	435
Speak only English	1,760	94%	322
Non-English at Home[1+2+3+4]	117	6%	116
[1]Speak English "very well"	99	5%	114
[2]Speak English "well"	18	1%	45
[3]Speak English "not well"	0	0%	12
[4]Speak English "not at all"	0	0%	12
[3+4]Speak English "less than well"	0	0%	12
[2+3+4]Speak English "less than very well"	18	1%	45
Linguistically Isolated Households*			
Total	8	100%	23
Speak Spanish	8	100%	20
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	848	100%	147
< $15,000	83	10%	84
$15,000 - $25,000	110	13%	111
$25,000 - $50,000	139	16%	96
$50,000 - $75,000	155	18%	107
$75,000 +	361	43%	149
Occupied Housing Units by Tenure			
Total	848	100%	147
Owner Occupied	534	63%	138
Renter Occupied	315	37%	131
Employed Population Age 16+ Years			
Total	1,598	100%	344
In Labor Force	973	61%	254
Civilian Unemployed in Labor Force	74	5%	82
Not In Labor Force	624	39%	215

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): .5-miles radius
Description: Old Hwy 99 Corridor

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019.
*Population by Language Spoken at Home is available at the census tract summary level and up.

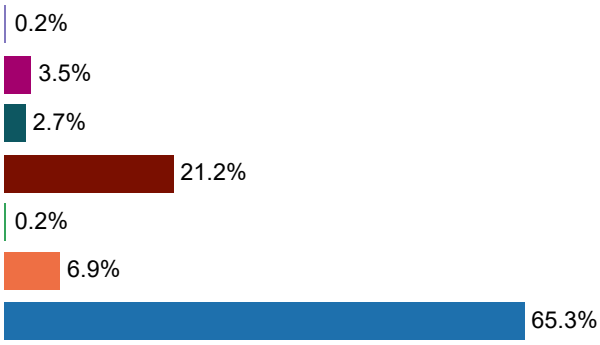
East Olympia Elementary
2021-22

Total Student Enrollment

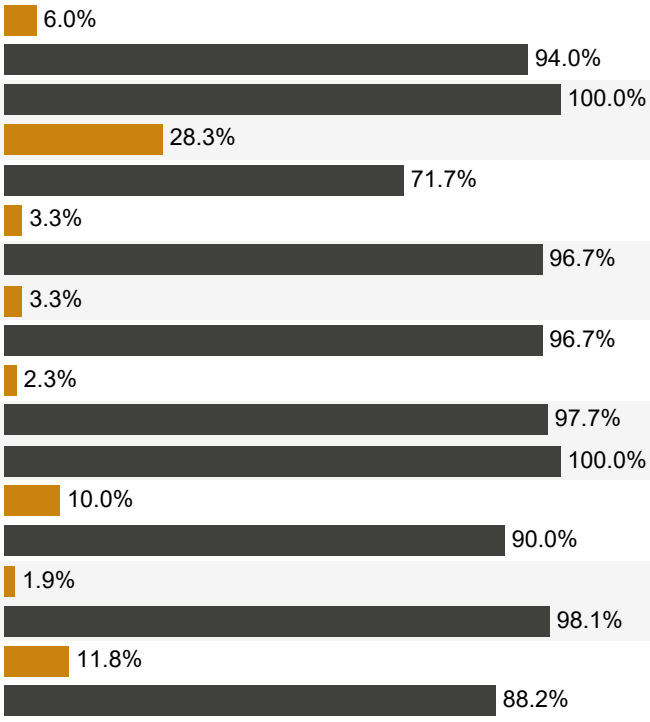
519

Gender

Race/Ethnicity



Program and Characteristic



TO: Planning Commission

FROM: Erika Smith-Erickson, Housing and Land Use Planner

DATE: November 28, 2023

SUBJECT: 2025 Comprehensive Plan Periodic Update – Lands for Public Purposes & Utilities

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1) Recommended Action:

This is a discussion item about the Lands for Public Purposes and Utilities Elements of the 2025 Comprehensive Plan periodic update.

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2) Background:

On a ten-year cycle, the City is required to conduct a Growth Management Act periodic update of its Comprehensive Plan and related development regulations. For the current cycle, the City is required to complete work on the periodic update by June 30, 2025. Work on the periodic update started last fall.

The updated Comprehensive Plan will address diversity, equity, and inclusion throughout the Plan. 2025 Comprehensive Plan Update | City of Tumwater, WA contains links to guidance material and information about the update.

The intent of this work session is to discuss the current version of the Lands for Public Purposes and Utilities Elements and guidance for their update.

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4) Alternatives:

- ❑ None.

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6) Attachments:

A. Staff Report
B. Presentation
C. Lands for Public Purposes Element
D. Utilities Elements Element

Attachment A

MEMORANDUM

Date: November 28, 2023
To: Planning Commission
From: Erika Smith-Erickson, Land Use and Housing Planner

2025 Comprehensive Plan Update – Lands for Public Purposes and Utilities Elements

On a ten-year cycle, the City is required to conduct a Growth Management Act periodic update of its Comprehensive Plan and related development regulations. For the current cycle, the City is required to complete work on the periodic update by June 30, 2025. Work on the periodic update started last fall.

The updated Comprehensive Plan will address diversity, equity, and inclusion throughout the Plan and incorporate a large number of required changes from the state addressing housing, climate change, and other topics.

The intent of the Planning Commission meeting on Tuesday, November 28, 2023, is to start the discussion of the Lands for Public Purposes and Utilities Elements by discussing the state requirements for each and introducing the current versions.

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1 – Growth Management Act – Lands for Public Facilities and Utilities Goals

The state Growth Management Act (Chapter 36.70A Revised Code of Washington (RCW)) requires that the City demonstrate that each Element in its Comprehensive Plan meets the relevant fifteen planning goals contained within the Act. The fifteen goals guide the development and adoption of the City's Comprehensive Plan and development regulations.

The following is a summary of how the updated Lands for Public Purposes and Utility Elements will need to show how they meet the two goals related to growth.

8. ***Urban Growth***. *Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.*

   The Lands for Public Purposes Element ensures that services provided by the public sector, such as water, sewer, stormwater, fire, and police protection, are consistent with the City of Tumwater's Comprehensive Plan and can support the community's growth and development as anticipated over the 20-year planning period the identification of specific

sites and phasing of facilities where appropriate occurs every two years during the six-year Capital Facilities Plan update process.

Utilities Element ensures that utility services provided by the private sector, such as natural gas, electricity, or telecommunication services, are consistent with the City of Tumwater's Comprehensive Plan and can support the community's growth and development as anticipated over the twenty-year planning period.

10. ***Public Facilities and Services***. *Ensure that those public facilities and services necessary to support development shall be adequate.*

    The Lands for Public Purposes Element, as required by the Growth Management Act, will need to provide an inventory of the general location of all existing and proposed capital facilities and a description of the current capacity and the expected future capacity of each capital facility.

    The Utilities Element, as required by the Growth Management Act, must include an inventory of the general location of all existing and proposed utility facilities and a description of the current capacity and the expected future capacity of each utility.

2 – Current Lands for Public Facilities Element

A – Background

As required by the Growth Management Act, the City's Comprehensive Plan includes a Lands for Public Facilities Element that addresses an inventory of existing capital facilities owned by public entities, including green infrastructure, that shows the locations and capacities of the capital facilities; a forecast of the future needs for such capital facilities; the proposed locations and capacities of expanded or new capital facilities; and a requirement to reassess the land use element if probable funding falls short of meeting existing needs to ensure that the Land Use Element, Lands for Public Facilities Element, and financing plan within the six-year Capital Facilities Plan are coordinated and consistent.

The 2016 Lands for Public Facilities Element of the Tumwater Comprehensive Plan was prepared in accordance with the requirements of the Growth Management Act, adopted Thurston County-Wide Planning Policies, and Sustainable Thurston Policies and Actions.

The 2016 Lands for Public Facilities Element covered the 20-year planning period from 2015 to 2035. Areas that are within Tumwater's Urban Growth Area are addressed through the Tumwater and Thurston County Joint Plan in accordance with adopted County-Wide Planning Policies. The Lands for Public Facilities Element of the Comprehensive Plan was fully updated in 2016 and amended in 2019.

The goals, policies, and actions of the current Lands for Public Facilities Element are found in Appendix B of the staff report. A complete list of all the sections of the Lands for Public Facilities Element is found in Appendix C of the staff report.

The Lands for Public Facilities Element Maps show the locations of the existing capital facilities owned by public entities.

B – Structure

The current Lands for Public Facilities Element consists of the following chapters:

1. Introduction
    - 1.1 Introduction
    - 1.2 County-Wide Planning Policies
    - 1.3. Sustainable Thurston
    - 1.4 Population And Demand
    - 1.5 Urban Growth Area
2. Capital Facilities Inventory
    - 2.1 Transportation System
    - 2.2 Solid Waste Management
    - 2.3 Sewage Treatment Facilities and Sanitary Sewer System
    - 2.4 Stormwater Systems and Facilities
    - 2.5 Water Systems and Facilities
    - 2.6 Parks, Recreation, and Open Space
    - 2.7 Fire Protection and Emergency Medical Services
    - 2.8 Police Protection
    - 2.9 School Facilities
    - 2.10 Library Services
    - 2.11 City Facilities
3. Essential Public Facilities Siting and Expansion
    - 3.1 Growth Management Act
    - 3.2 County-Wide Planning Policy
    - 3.3 Siting Process for Essential Public Facilities in Tumwater
4. Goals, Policies, and actions
    - 4.1 Lands for Public Purposes Goals, Policies, and Actions

Lands for Public Purposes Maps

Sewage Treatment Facilities and Sanitary Sewer Systems

Stormwater Systems and Facilities

Water Systems and Facilities

Fire District Map

School Facilities

Library Services

City Facilities

C – Link to Current Lands for Public Facilities Element

https://www.ci.tumwater.wa.us/departments/community-development-department/tumwater-comprehensive-plan

Current Utility Element

A – Background

As required by the Growth Management Act, the City's Comprehensive Plan includes a Utility Element that addresses electrical, telecommunications, and natural gas systems. The City is required to identify all public entities that own utility systems and endeavor in good faith to work with other public entities, such as special purpose districts, to gather and include within the Utilities Element the general location, proposed location, and capacity of all existing and proposed utilities.

The 2016 Utility Element of the Tumwater Comprehensive Plan was prepared in accordance with the requirements of the Growth Management Act, adopted Thurston County-Wide Planning Policies, and Sustainable Thurston Policies and Actions.

The 2016 Utility Element covered the 20-year planning period from 2015 to 2035. Areas that are within Tumwater's Urban Growth Area are addressed through the Tumwater and Thurston County Joint Plan in accordance with adopted County-Wide Planning Policies. The Utility Element of the Comprehensive Plan was last fully updated in 2016.

The goals, policies, and actions of the current Utility Element are found in Appendix D of the staff report. A complete list of all the sections of the Utility Element is found in Appendix E of the staff report.

B – Structure

The current Utility Element consists of the following chapters:

1. Introduction

1.1 Introduction
1.2 Utility Regulations
1.3 County-Wide Planning Policies
1.4 Sustainable Thurston Goals

2. Natural Gas
   2.1 Regulatory Context
   2.2 System Analysis
3. Electricity
   3.1 Regulatory Context
   3.2 Electricity Supply
   3.3 System Analysis
4. Natural Gas And Fuel Pipelines
   4.1 Olympic Pipeline
   4.2 Williams Northwest Pipeline
   4.3 Puget Sound Energy Natural Gas Pipelines
5. Telecommunication
   5.1 Broadband
   5.2 Television
6. Meeting Future Demand
   6.1 System-Level Impacts Of Energy Efficiency
7. Potential Impacts Of Climate Change
8. Utilities Goals, Policies, And Actions
   8.1 Utilities Goals, Policies, And Actions

C – Link to Current Utility Element

https://www.ci.tumwater.wa.us/departments/community-development-department/tumwater-comprehensive-plan

3 – Schedule

Phase 1 – Community Engagement (Summer 2023 – Fall 2023)

Staff are reviewing the visions, goals, and policies in the existing Lands for Public Purposes and Utility Element and preparing a gap analysis. The community and stakeholders will be introduced to the periodic update process through a series of communications and asked to prioritize the Comprehensive Plan's vision, goals, and policies through a variety of media outreach methods, including surveys, utility inserts, open houses, informal meetings, presentations, and social media.

1) Gap Analysis

- To be completed by November 2023
- Process followed:
  1. Review the following in the current Lands for Public Purposes and Utilities Elements:
     - Goals, policies, and actions
     - Technical information
     - Maps
  2. Using these materials:
     - Commerce Periodic Update Checklist
       - *Periodic Update Checklist for Fully Planning Cities* (Commerce, March 2023)
       - *A Guide to the Periodic Update Process Under the Growth Management Act – Fully-Planning Counties & Cities* (Commerce, 2022)
     - Commerce Periodic Update Materials, including:
       - Capital Facilities Planning
         - *Capital Facilities Planning Guidebook* (Commerce, October 2014)
       - Stormwater
         - *Building Cities in the Rain: Watershed Prioritization for Stormwater Retrofits* (September 2016)
     - 2022-23 State Legislation
       - Clean Energy Siting (ESHB 1173/E2SHB 1216)
       - Organic Materials Management (E2SHB 1799)
     - Plans Adopted by the City since 2016
       - NPDES Stormwater Permit Update
     - Specific Plans from Agencies Outside the City

3. Identify what needs to be updated or added to the following:
    - Goals, policies, and actions
    - Technical information
    - Maps

2) Data Collection

- To be completed by Spring 2024
- Mapping – Schedule determined with GIS Team

3) Schedule

- Initial Community Outreach
    - Complete by December 2023
- Data Collection
    - Complete by Spring 2024
- Gap Analysis
    - Complete by December 2023
- Internal Coordination Meetings
    - Started September 2023
- General Comprehensive Plan Meetings
    1. Update Check In
        - Joint City Council – Planning Commission Meeting
            - December 12, 2023
- Initial Lands for Public Purposes and Utilities Elements Meetings – Goals, Policies, and Actions
    1. Includes Appendices and Maps
    2. Planning Commission Work Session
        - November 28, 2023
    3. General Government Committee Briefing
        - December 13, 2023
    4. Public Works Committee Briefing
        - January 18, 2024

4) Specific Topics Addressed as Part of the Update

- Incorporate consideration of Diversity, Equity, and Inclusion throughout

  1. Environmental Justice

     - Special consideration for environmental justice in goals and policies (E2SHB 1181)

- Comprehensive Plan Update

  1. General

     - Create a new format for the Comprehensive Plan that will be shorter, leaner, and more user friendly. The updated Comprehensive Plan will consist of shorter individual Elements and Plans with appendices that contain the required technical information.
     - Use the new Community Outreach Plan for the periodic update process.
     - Create a new Comprehensive Plan Goal and Policy Guide for use by staff and policymakers.
     - Create a new User Guide to the Comprehensive Plan.
     - Create a new Glossary for the Comprehensive Plan.
     - The County-Wide Planning Policies (2015) will not be revised for the 2025 periodic update.
     - Ensure that the updated Comprehensive Plan is internally consistent.
     - Ensure that all the Elements and Plans are consistent with County-Wide Planning policies, the Growth Management Act, coordinated with the Plans of adjacent jurisdictions, individual Elements and Plans, and the future land use map.
     - Update all maps that are a part of the Comprehensive Plan.
     - Provide for a mutually agreeable Memorandum of Agreement between the City and tribes about collaboration and participation in the planning process unless otherwise agreed at the end of a mediation period.
     - Provide for consideration for preserving property rights. The City must evaluate proposed regulatory or administrative actions to assure that such actions do not result in an unconstitutional taking of private property
     - Update list of all adopted Plans.
     - Update City strategic priorities.
     - Revise planning period to 2025 – 2045.
     - Update discussion of Growth Management Act goals.

- Add references to the updated Shoreline Master Program (2019), Thurston Climate Mitigation Plan (2021), and Urban Forestry Management Plan (2021).
- Simplify, reduce, and update goals, policies, and actions.

2. Lands for Public Purposes Element
   - Update inventory and projected needs for public buildings, facilities and services over the 20-year planning period.
   - Use the updated City and urban growth area 20-Year population forecasts.
   - Update provisions for protection of the quality and quantity of groundwater used for public water supplies.
   - Update chart of zone districts that allow essential public facilities.
   - Update the process or criteria for identifying and siting essential public facilities including the reentry and rehabilitation facilities as defined in State law.
   - Update to include regional transit authority facilities in the list of essential public facilities.
   - Update to allow an expansion of the area in the City that would allow for essential public facilities such as inpatient facilities including substance abuse facilities as part of Planning Commission's 2022 Comprehensive Plan amendment cycle recommendations. These essential public facilities uses include, but not limited to, intensive inpatient facilities; long-term residential drug treatment facilities; recovery house facilities.
   - Update the identification of lands useful for public purposes such as utility corridors, transportation corridors, landfills, sewage treatment facilities, storm water management facilities, recreation, schools, and other public uses.
   - Where applicable, update the review of drainage, flooding, and stormwater run-off in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the State.
   - Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate.
   - Address Organics Management Facility Siting (ESSHB 1799).
   - Water Plan
     - Group A water system plans must include climate resilience element if initiated after June 30, 2024
   - Sewer Plan
   - Stormwater update

- NPDES Stormwater Permit
- Update Maps

3. Utilities Element
   - Include all electrical, telecommunication, and natural gas systems and make a good faith effort to gather information from them (E2SHB 1181)
   - Update general location, proposed location and capacity of all existing and proposed gas, electric, cable television, and telecommunications to year 2045.
   - Update wireless telecommunication facilities information as needed.
   - Update the general location, proposed location, and capacity of all existing and proposed utilities.
   - Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate.
   - Update Maps

Phase 2 – Plan Development (Winter 2024 – Fall 2024)

Feedback gathered through the community outreach process will be incorporated into the draft Lands for Public Purposes and Utilities Elements. Staff will present the drafts to the Planning Commission and General Government Committee as well as external and internal stakeholders and focus groups comprised of subject-area experts for review.

1) Community Outreach

- Intermediate Actions:
  - To be determined based on the results of Phase 1 and the Community Outreach Plan.

2) Schedule

- Continuing Community Outreach – January 2024 –June 2024
- Lands for Public Purposes and Utilities Element Development Meetings
  1. Includes Appendices, Maps, and Subarea Plans
  2. Planning Commission Work Session
     - May 28, 2024
     - August 13, 2024
  3. General Government Committee Briefing

- August 14, 2024

4. Public Works Committee Briefings
    - August 8, 2024

- Commerce Preliminary Review
    - Review of Comprehensive Plan Format
        - March 2024
- Complete Draft of Comprehensive Plan
    - All Elements, Maps, and Appendices
    - July 2024 – October 2024

Phase 3 – Legislative Process (Fall 2024 – June 30, 2025)

Staff will complete a draft version of the Comprehensive Plan during Phase III. Staff will present the draft to the Planning Commission and General Government Committee as well as external and internal stakeholders for review.

The Planning Commission will hold a number of work sessions to discuss the Comprehensive Plan and then conduct a public hearing to gather formal public comment on the draft Comprehensive Plan before developing findings of fact, conclusions, and recommendations that will be forwarded to City Council.

The City Council will hold a number of work sessions to discuss the Comprehensive Plan. The City Council will consider the recommendation forwarded by the Planning Commission.

The process will culminate in the adoption of an updated Comprehensive Plan by the Growth Management Act deadline of June 30, 2025.

1) Community Outreach

- Final Actions:
    - To be determined based on the results of Phase 2 and the Community Outreach Plan.

2) Schedule

- Commerce Review
    - Fall 2024 – Winter 2025
- Prepare Comprehensive Plan Update Ordinance
    - October 2024
- SEPA Review

- November 2024 – December 2024

- Commerce Notice of Intent
  - November 2024 - December 2024
- Public Adoption Meetings
  1. Planning Commission
     - Briefing
       - November 26, 2024
     - Work Session
       - December 10, 2024 (Joint with City Council)
       - January 14, 2025
       - February 11, 2025
     - Public Hearing
       - February 25, 2025
  2. General Government Committee
     - Briefing for Comprehensive Plan Update Ordinance
       - March 12, 2025
  3. City Council Work Session
     - December 10, 2024 (Joint with Planning Commission)
     - April 15, 2025
     - May 27, 2025
  4. City Council
     - June 17, 2025
- Notice of Adoption
  1. Submit Notice of Adoption to Commerce
  2. June 30, 2025

Appendix A – Guidance

The State Department of Commerce has provided guidance specific to the periodic update on their Periodic Update webpage

https://www.commerce.wa.gov/serving-communities/growth-management/periodic-update/

www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics

In addition, the Puget Sound Regional Council is conducting a series of workshops on a variety of topics related to the periodic update.

www.psrc.org/our-work/passport-2044-comprehensive-plan-workshop-series)

The Municipal Research Services Center has a Comprehensive Planning webpage.

https://mrsc.org/getdoc/d7964de5-4821-4c4d-8284-488ec30f8605/Comprehensive-Planning.aspx

Appendix B – Current Lands for Public Purposes Element Goals, Policies, and Actions

4.1 Lands for Public Purposes Goals, Policies, and Actions

Goal LPP-1 **Provide sufficient and efficient services to Tumwater and the Urban Growth Area.**

Policy	Action
LPP-1.1	Coordinate with Thurston Regional Planning Council, Thurston County, and other service providers to identify areas of shared need for public facilities.
LPP-1.2	Ensure concurrency with City, County, and Regional plans to provide the most efficient array of services.
LPP-1.3	Follow the requirements of County-Wide Planning Policy V and RCW 36.70A.200 when siting new facilities and improve the process whenever possible.

Goal LPP-2 **Make recommendations for improvements in the provision of public services.**

Policy	Action
LPP-2.1	Support actions to expand and improve Tumwater's multimodal transit network.
	LPP-2.1.1 Support the creation of an advisory body or bodies focused on non-motorized transit options in Tumwater or the region as a whole to give bicyclists and pedestrians a stronger voice in the planning process.
LPP-2.2	Improve waste management services and decrease waste production in the City.
	LPP-2.2.1 Cooperate with the County Solid Waste System and other local agencies to locate and build a new Waste and Recovery Center, HazoHouse, and other waste management facilities as needed.
	LPP-2.2.2 Encourage reuse and recycling to minimize solid waste production in the City.
	LPP-2.2.3 Encourage innovative and alternative technologies for converting solid waste to energy or fuel where financially practical and environmentally safe.
LPP-2.3	Assist school districts with the creation of new facilities to accommodate growing student populations.
	LPP-2.3.1 Coordinate with the Tumwater and Olympia School Districts to arrange the acquisition of land for new school facilities.
	LPP-2.3.2 Ensure that the land around sites of future school facilities is compatible with the intended usage by considering factors the City can influence such as the level of transit accessibility to the site,

provision of public services, and the zoning of the surrounding area.

LPP-2.4 Encourage the use of technological advancements to improve City services.

LPP-2.4.1 Support the modernization of library services to incorporate increasingly popular media forms such as electronic books and other related services.

LPP-2.4.2 Consider establishing public Wi-Fi accessibility in City-owned buildings, particularly City Hall.

LPP-2.5 Support the fulfillment of citizen requests for public facilities in line with the Parks, Recreation, and Open Space Plan.

LPP-2.5.1 Create facilities the public has identified as needs in surveys and public comment.

Appendix C – Structure of Current Version of the Lands for Public Purposes Element

The Lands for Public Purposes Element of the Comprehensive Plan was fully updated in 2016 and amended in 2019. The current Lands for Public Purposes Element consists of the following parts:

1. Introduction
    - 1.1 Introduction
    - 1.2 County-Wide Planning Policies
    - 1.3. Sustainable Thurston
        - 1.3.1 Priority Goals
        - 1.3.2 Leadership & Participation Goals
        - 1.3.3 Community Goals
        - 1.3.4 Economy Goals
        - 1.3.5 Housing Goals
        - 1.3.6 Schools & Transportation Goals
        - 1.3.7 Water Infrastructure Goals
        - 1.3.8 Public Safety Goals
        - 1.3.9 Solid Waste Goals
        - 1.3.10 Environmental Goals
    - 1.4 Population And Demand
    - 1.5 Urban Growth Area
2. Capital Facilities Inventory
    - 2.1 Transportation System
        - 2.1.1 Streets and Roads
        - 2.1.2 Regional Transit Facilities and Services
        - 2.1.3 Transit Service and Facilities Inventory
        - 2.1.4 Pedestrian and Bicycle System
    - 2.2 Solid Waste Management
        - 2.2.1 Pathways to Zero Waste
    - 2.3 Sewage Treatment Facilities and Sanitary Sewer System
    - 2.4 Stormwater Systems and Facilities
    - 2.5 Water Systems and Facilities
    - 2.6 Parks, Recreation, and Open Space

2.7 Fire Protection and Emergency Medical Services
2.7.1 Administration
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2.7.3 Emergency Medical Services
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2.7.5 Fire Prevention
2.7.6 Summary
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2.8.1 Administration
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2.8.4 Investigation
2.8.5 Crime Prevention
2.8.6 Summary
2.9 School Facilities
2.10 Library Services
2.11 City Facilities
3. Essential Public Facilities Siting and Expansion
3.1 Growth Management Act
3.2 County-Wide Planning Policy
3.3 Siting Process for Essential Public Facilities in Tumwater
4. Goals, Policies, and actions
4.1 Lands for Public Purposes Goals, Policies, and Actions

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Stormwater Systems and Facilities
Water Systems and Facilities
Fire District Map
School Facilities
Library Services

City Facilities

Appendix D – Current Utilities Element Goals, Policies, and Actions

8.1 Utilities Goals, Policies, and Actions

Goal U-1: Increase efficiency when planning for and siting utilities.

Policy	Action
U-1.1	Communicate with private utility companies when siting utilities to discuss anticipated growth projections and how to size utilities appropriately to meet anticipated demand.
	U-1.1.1 Cooperate and participate with Puget Sound Energy in the formulation of policy and development of an underground management plan with respect to Puget Sound's aerial facilities with the City of Tumwater.
U-1.2	Be aware of public service obligations when local review of utility improvements occur.
U-1.3	Utilize transportation rights-of-way for utility corridors whenever feasible.
U-1.4	Provide timely notification to all affected utilities prior to road construction.
U-1.5	Approve utility permits when the project to be served is approved whenever feasible and as quickly as possible.
U-1.6	Coordinate with Thurston County, and the Cities of Lacey and Olympia to ensure consistency of the respective utility plans in order to facilitate orderly utility service.

Goal U-2: Increase energy generation from renewable resources to reduce the region's carbon footprint.

Policy	Action
U-2.1	Explore incentives to support the installation of distributed electrical generation equipment, (e.g., rooftop solar panels).
	U-2.1.1 Encourage developers and homeowners to take advantage of existing national incentive programs (e.g., the tax credit program for the installation of solar systems in homes).
U-2.2	Investigate large-scale, multi-jurisdictional renewable energy projects (e.g., large-scale solar arrays).
U-2.3	Adopt uniform building codes and permitting practices in jurisdictions to make the installation of solar panels, or other distributed generation technologies, easier and faster.

Goal U-3: Enhance the region's electricity distribution, monitoring, and storage infrastructure to support adoption of cleaner technologies and practices.

Policy	Action
U-3.1	Monitor system, or grid-scale, energy storage innovations, and learn from the experiences of communities that begin to deploy them.
U-3.2	Support energy suppliers' equipment upgrades, new programs, and service offerings related to adding information technology to the system or grid.
U-3.3	Collaborate with energy providers to test innovative system-scale, grid-scale, energy storage solutions in isolated, controlled conditions. If, and when, technological progress is proven, collaborate with energy providers for deployment of such storage solutions.
U-3.4	Support voluntary programs for adding vehicle chargers to homes, businesses, and public parking infrastructure.
U-3.5	Promote integration of electric vehicle infrastructure into residential building codes and public and private facilities, including allowances in zoning regulations for charging stations in locations where they are needed.
U-3.6	Create local projects to increase the existing electric vehicle fleet.
U-3.7	Encourage a change in state policies to increase the utility share of funding for undergrounding of overhead wires to reduce power outages.
U-3.8	Protect and reserve existing electrical transmission corridors to maintain their usefulness in meeting future needs.
U-3.9	Coordinate with the Natural Hazards Mitigation Plan to reduce service interruptions and provide services that are more reliable during hazard events.

Goal U-4: Increase energy efficiency and conservation to reduce the region's carbon footprint.

Policy	Action
U-4.1	Develop new incentives for green buildings, (e.g., Leadership in Energy & Environmental Design – LEED programs).
U-4.2	Offer incentives for the use of roof-mounted solar water heaters.
U-4.3	Continue conversion of public fleets to hybrid, natural gas, and electric vehicles. Lead by example.
U-4.4	Consider adopting policies that require residential and commercial properties to undertake an energy audit at time of sale or during substantial remodel, including, if deficiencies are found, encouraging energy retrofits to upgrade properties to a specified level.

Goal U-5: Ensure vital utilities are created, operated, and maintained in a safe manner.

Policy	Action
U-5.1	Encourage the undergrounding of utilities to increase public safety.
	U-5.1.1 Consider strengthening the standards for the undergrounding of utilities and utility corridors.
	U-5.1.2 Work with neighborhood associations to encourage the development of local improvement districts to provide funding for undergrounding existing utilities.
U-5.2	Encourage pipeline safety through public awareness and regulations.
	U-5.2.1 Consider adopting code language, which limits high-risk uses near pipelines to protect both the public and the pipelines themselves.
	U-5.2.2 Consider strategies to educate the public on pipeline safety and pipeline locations within the city.

Appendix E – Structure of Current Version of the Utilities Element

The Utilities Element of the Comprehensive Plan was last fully updated in 2016. The current Utilities Element consists of the following parts:

1. Introduction
    - 1.1 Introduction
    - 1.2 Utility Regulations
        - 1.2.1 State Regulation
        - 1.2.2 Federal Regulation
        - 1.2.3 Franchise Agreements
    - 1.3 County-Wide Planning Policies
    - 1.4 Sustainable Thurston Goals
        - 1.4.1 Priority Goals
        - 1.4.2 Economy Goals
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        - 2.1.1 Natural Gas Policy Act 1978
        - 2.1.2 The Clean Air Act Amendment Of 1990
        - 2.1.3 The Clean Air Rule
        - 2.1.4 Olympic Region Clean Air Agency
    - 2.2 System Analysis
        - 2.2.1 Residential Rates
        - 2.2.2 Industrial Rates

3. Electricity
    - 3.1 Regulatory Context
        - 3.1.1 The Western Electricity Coordinating Council
        - 3.1.2 The Northwest Power Pool

3.1.3 The Northwest Power And Conservation Council
3.1.4 Washington Energy Independence Act
3.1.5 Western Interstate Energy Board
3.2 Electricity Supply
3.2.1 Understanding Electricity Transmission And Distribution
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4. Natural Gas And Fuel Pipelines
4.1 Olympic Pipeline
4.2 Williams Northwest Pipeline
4.3 Puget Sound Energy Natural Gas Pipelines

5. Telecommunication
5.1 Broadband
5.1.1 Digital Subscriber Line (DSL)
5.1.2 Cable
5.1.3 Wireless
5.1.4 Satellite
5.1.5 Mobile
5.1.6 Fiber Optic
5.2 Television

6. Meeting Future Demand
6.1 System-Level Impacts Of Energy Efficiency

7. Potential Impacts Of Climate Change

8. Utilities Goals, Policies, And Actions
8.1 Utilities Goals, Policies, And Actions

Attachment B

Lands for Public Purposes Element and Utilities Element Review for the City of Tumwater's 2025 Comprehensive Plan Update

Balancing Nature and Community: Tumwater's Path to Sustainable Growth

Planning Commission – November 28, 2023

Intent

- Discuss Growth Management Act LPP and Utilities Goals
- Present the current version of the Elements
- Consider specific issues for the Elements
- Consider how to incorporate diversity, equity, and inclusion throughout
- Discuss guidance materials

Growth Management Act Conservation Goals

- ***Urban Growth***. *Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.*

- ***Public Facilities and Services***. *Ensure that those public facilities and services necessary to support development shall be adequate.*

2016 Lands for Public Purposes Element

- Inventory of existing capital facilities owned by public entities
- Forecast of the future needs for such capital facilities
- Proposed locations and capacities of expanded or new capital facilities
- Lands for Public Facilities Element Maps show the locations of the existing capital facilities owned by public entities
- Essential Public Facilities and siting

Lands for Public Purposes- Capital Facilities Inventory

- Transportation System
- Solid Waste Management
- Sewage Treatment Facilities and Sanitary Sewer System
- Stormwater Systems and Facilities
- Water Systems and Facilities
- Parks, Recreation, and Open Space
- Fire Protection and Emergency Medical Services
- Police Protection
- School Facilities
- Library Services
- City Facilities

2016 Capital Facilities Maps

- Sewage Treatment Facilities and Sanitary Sewer System
- Stormwater Systems and Facilities
- Water Systems and Facilities
- School Facilities, Library Services , City Facilities

Lands for Public Purposes- Essential Public Facilities

Table 5. Essential Public Facilities from TMC Figure 18.56.140(B)

Code	Essential Public Facility
A	Airports
B	State Education Facilities
C	Large Scale State or Regional Transportation Facilities
D	Prisons, Jails, and Other Correctional Facilities (including but not limited to: jails; juvenile detention facilities; prisons and prerelease facilities; work release facilities)
E	Solid Waste Handling Facilities
F	Inpatient facilities including substance abuse facilities (including but not limited to: intensive inpatient facilities, long-term residential drug treatment facilities, and recovery house facilities)
G	Mental Health Facilities (including but not limited to: congregate care facilities, adult residential treatment facilities, and evaluation and treatment centers)
H	Sewage Treatment Facilities (not including individual or community wastewater treatment systems)
I	Emergency Communication Towers and Antennas
J	Secure Community Transition Facilities
K	Other Facilities Designated by the Washington State Office of Financial Management as Essential Public Facilities

Essential Public Facility Siting

Table 4. Essential Public Facilities from TMC Figure 18.56.140(A)

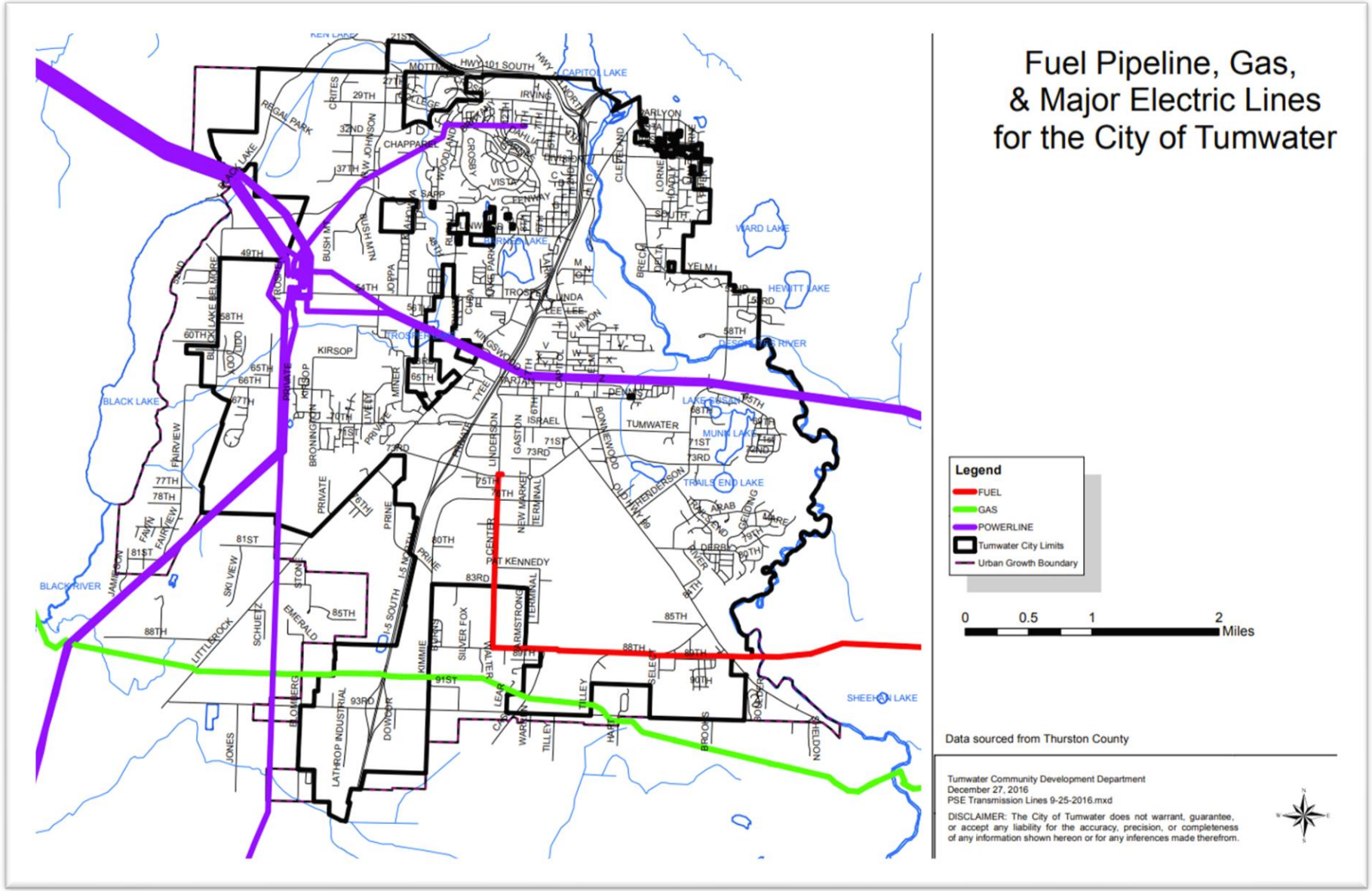
Tumwater Essential Public Facility Siting Policies for City Zoning

	RSR	SFL	SFM	MFM	MFH	MU	CBC	NC	CS	GC	TC	LI	HI	HC	GB	OS	AP	ARI	BD
A																		P	
B						C	C		C	C	C	C						C	C
C									C(3) (4)			C(3) (4)	C(3) (4)					C(3) (4)	
D												C	C					C	
E												C	C					C	
F				C	C	C	C	C		C									
G				C	C	C	C	C		C									
H												C	C					C	
I		C	C	C	C	C		C	C	C	C(1)	C	C					C	
J												C(2)							

2016 Utilities Element

- Utilities Element discusses the general location, proposed location, and capacity of all existing and proposed private utilities
  - Natural gas
  - Electricity
  - Telephone
  - Utility pipelines
  - Cable television
  - Cellular
  - Broadband internet

2016 Utilities Map



2025 Topics to Address as Part of the Update

Lands for Public Purposes Element:

- Address Organics Management Facility Siting (ESSHB 1799)
- Update inventory and projected needs for public buildings, facilities and services over the 20-year planning period
- Use the updated City and urban growth area 20-Year population forecasts
- Update provisions for protection of the quality and quantity of groundwater used for public water supplies

2025 Topics to Address as Part of the Update

Lands for Public Purposes Element:

- Allow expansion of the area in the City that would allow for essential public facilities such as inpatient facilities as part of Planning Commission's 2022 Comprehensive Plan amendment cycle recommendations
- Group A water system plans must include climate resilience element if initiated after June 30, 2024

2025 Topics to Address as Part of the Update

Utilities Element:

- Include all electrical, telecommunication, and natural gas systems and make a good faith effort to gather information from them (E2SHB 1181)
- Update general location, proposed location and capacity of all existing and proposed gas, electric, cable television, and telecommunications to year 2045
- Update wireless telecommunication facilities information as needed
- Update the general location, proposed location, and capacity of all existing and proposed utilities
- Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate
- Update Maps

New Requirements

- Special consideration for environmental justice in goals and policies (E2SHB 1181)
- Address Organics Management Facility Siting (ESSHB 1799)

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Current Lands for Public Purposes & Utilities Element

Link to current Elements:

Tumwater Comprehensive Plan | City of Tumwater, WA

Commerce Conservation Guidance Materials

- *Periodic Update Checklist for Fully Planning Cities* (Commerce, March 2023)
- *A Guide to the Periodic Update Process Under the Growth Management Act – Fully-Planning Counties & Cities* (Commerce, 2022)
  - Commerce Periodic Update Materials, including:
    - Capital Facilities Planning
      - *Capital Facilities Planning Guidebook* (Commerce, October 2014)
    - Stormwater
      - *Building Cities in the Rain: Watershed Prioritization for Stormwater Retrofits* (September 2016)

Next Steps

- Staff complete Gap Analysis – November 2023
- General Government Committee briefing – December 13, 2023
- Public Works Committee Briefing – January 18, 2024

Comments and Contact information

Written comments are welcome at any time during the periodic update process and staff will address and publish all formal comments

City of Tumwater Contact:

Brad Medrud, AICP
City of Tumwater Planning Manager
Community Development Department
555 Israel Road SW
Tumwater, WA 98501
Phone: 360-754-4180
Email: bmedrud@ci.tumwater.wa.us

- The periodic update email is compplan@ci.tumwater.wa.us
- All documents related to the periodic update will be located on the City's periodic update webpage

Tumwater City Plan 2036

Lands for Public Purposes Element

Primary Partners:

PORT of OLYMPIA
Serving All of Thurston County

THURSTON REGIONAL PLANNING COUNCIL

Tumwater School District

INTERcity TRANSIT

CITY OF TUMWATER

TUMWATER CITY COUNCIL

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TUMWATER CITY STAFF

John Doan, AICP, City Administrator
Michael Matlock, AICP, Community Development Director
Brad Medrud, AICP, Planning Manager
David Ginther, Senior Planner
Megan Lande, Planning Intern

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1. INTRODUCTION

1.1 Introduction

The Lands for Public Purposes Element addresses those facilities and lands owned, operated, or franchised by a unit of general or special purpose local government for the health, safety, and general wellbeing of its citizens. Lands for public purposes also include utility corridors owned or operated by private utilities subject to public service obligations. Public facilities, public services, and private utility corridors are included in this definition.

Lands for public purposes include buildings, equipment, and whole systems of activities of governmental services provided for the public. They are important components of a city and add measurably to the quality of urban life.

Essential public facilities are those public facilities that are typically difficult to site. They include airports, state education facilities, regional transit authority facilities as defined in RCW 81.112.020, state or regional transportation facilities as defined in RCW 47.06.140, state and local correctional facilities, solid waste handling facilities, and in-patient facilities including substance abuse facilities, mental health facilities, group homes, and secure community transition facilities as defined in RCW 71.09.020. Chapter 3 of this Element identifies locally- essential public facilities and identifies a process for siting those facilities.

The demand for more and varied community facilities and services increases as urban growth continues, population grows, existing facilities become obsolete, and living standards and expectations rise. This plan will identify issues and policies that ensure a provision of lands for public purposes and essential public facilities that is coordinated with the overall Comprehensive Plan.

The Growth Management Act requires that Tumwater identify lands useful for public purposes. The Growth Management Act also requires that Tumwater prepare a prioritized list of lands necessary for the identified public uses including an estimated date by which the acquisition will be needed.

In light of the requirements of the Growth Management Act, the City has prepared the Lands for Public Purposes Element. This Element addresses some facilities directly and references other documents included in the Comprehensive Plan. The plan addresses lands for public purposes in both the City and its Urban Growth Area.

The goal of the Lands for Public Purposes Element is to determine the needs for public facilities in Tumwater and its Urban Growth Area for the next 20 years ensuring the City is able to accommodate new growth. Identification of specific sites and phasing of facilities where appropriate occurs when the City updates its Capital Facilities Plan. The Element also addresses lands for public purposes.

The Utilities Element is dedicated to planning for the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines consistent with RCW 36.70A.

The demand for more and varied community facilities and services increases as urban growth continues, population grows, existing facilities become obsolete, and living standards and expectations rise. This plan identifies issues and policies that ensure a provision of lands for public purposes and essential public facilities that is coordinated with the overall Comprehensive Plan and with provision of essential public facilities region-wide.

Table 1 identifies documents that address each of the listed facilities in detail. These documents are incorporated by reference into this plan.

Table 1. Foundational Plans and Data

Topic Index	Supporting Plans and Materials
General Policy	• Land Use Element • County-Wide Planning Policies, Thurston County (2015) • Natural Hazards Mitigation Plan for the Thurston Region (2009) • Sustainable Thurston, Thurston Regional Planning Council (2013)
Utility Corridors	• Utilities Element

Topic Index	Supporting Plans and Materials
Transportation System	• Parks, Recreation, and Open Space Plan (Element) • Transportation Element • Capital Facilities Plan (2016-2021) • 2040 Regional Transportation Plan, Thurston Regional Planning Council (2016) • Intercity Transit Strategic Plan (2016-2021) • Railroad Right of Way Preservation and Use Strategy for the Thurston Region (1992) • Regional Transportation Improvement Program, Thurston Regional Planning Council (2016-19) • Transportation Improvement Plan (2016-2021) • Thurston Regional Trails Plan (2007) • Brewery District Plan (2014)
Solid Waste Management	• Thurston County Solid Waste Management Plan, Thurston Regional Planning Council (2009)
Sewage Treatment Facilities and Sanitary Sewer Systems	• Capital Facilities Plan (2016-2021) • Sanitary Sewer Comprehensive Plan (2015) • Thurston County On-Site Sewage Management Plan (2014) • Wastewater Resource Management Plan, LOTT Clean Water Alliance (2015)

Topic Index	Supporting Plans and Materials
Stormwater Systems and Facilities	• Capital Facilities Plan (2016-2021) • Black Lake Basin Water Resource Protection Study, Thurston Regional Planning Council (2015) • Budd/Deschutes Watershed Plan, Thurston Regional Planning Council (2009) • Comprehensive Stormwater Implementation Plan (2002, 2016 Plan in development) • Deschutes River, Percival Creek, and Budd Inlet Tributaries Total Maximum Daily Load Water Quality Improvement Report and Implementation Plan, WA Department of Ecology (2015) • Northern Thurston County Groundwater Management Plan (1992) • Percival Creek Drainage Basin Plan, Thurston Regional Planning Council (1993) • Salmon Creek Comprehensive Drainage Basin Plan (2004) • Thurston Regional Drainage and Erosion Control Manual, Thurston Regional Planning Council (2009, 2016 Plan in development)
Water Systems and Facilities	• Conservation Element • Capital Facilities Plan (2016-2021) • Northern Thurston County Groundwater Management Plan (1992) • Water System Plan (2010-2015) • Wellhead Protection Plan (2010 informal update, 2016 update underway)
Parks, Recreation, and Open Space	• Conservation Element • Parks, Recreation, and Open Space Plan (Element) • Shoreline Master Program (2014) • Capital Facilities Plan (2016-2021)
Fire Protection	• Comprehensive Emergency Management Plan (2010) • Fire Master Plan (2009)
Police Protection	• Police Master Plan (2001)

Topic Index	Supporting Plans and Materials
School Facilities	• Capital Facilities Plan (2014 – 2020), Tumwater School District (2014) • Capital Facilities Plan (2016 – 2021), Olympia School District (2015)
Library Services	• Timberland Regional Library Strategic Plan: Annual Timberland Regional Library Action Plan/Progress Report, Timberland Regional Library (2014-2018)
City Facilities	• Capital Facilities Plan (2016-2021) • City of Tumwater Resource Conservation Management Program (Phase 1 and 2) - Energy Conservation Assessment, State General Administration and Washington State University Extension Energy Program (2008)

1.2 County-Wide Planning Policies

The Growth Management Act requires that comprehensive plans be consistent with Thurston County's County-Wide Planning Policies, as amended in 2015. The following is a list of relevant policies that apply to this Element of the Comprehensive Plan. All County-Wide Planning Policies are adopted as Appendix B to the Comprehensive Plan. The relevant sections of the County-Wide Planning Policies to this element are cited below.

The Lands for Public Purposes Element contains goals, policies, and actions that address County-Wide Planning policies 1.1 through 1.14. These goals, policies, and actions support Tumwater and Thurston County's vision for compact, efficient urban development that phases outward from the urban core by efficiently providing Lands for Public Purposes to Tumwater and its Urban Growth Area.

II. Urban Growth Areas

2.2 The boundaries of the urban growth areas must meet the following criteria

[…]

b. Be served by or planned to be served by municipal utilities.

[…]

The Lands for Public Purposes element, along with the Utilities element, provides an overview of existing services (Chapter 2 of this element) to assist with the assessment of public services in the urban growth area.

III. Promotion of Contiguous and Orderly Development, Provision of Urban Services, and Protection of Rural Areas

3.1 Concentrate development in urban growth areas and protect rural areas by:

[…]

c. Phasing urban development and facilities outward from core areas.

[…]

h. Where urban services and utilities are not yet available, require development be configured so urban growth areas may eventually infill and become urban.

[…]

3.2 Coordinate Urban Services, Planning, and Development Standards through:

a. Maximizing the use of existing infrastructure and assets and leveraging the value of these in building vital, healthy, and economically viable communities.

b. Making public investments that further multiple community goals, target identified priorities, and leverage additional investment.

[…]

d. Providing and maintaining municipal services (water, sewer, solid waste, public safety, transportation, and communication networks) in a sustainable, and cost effective manner.

e. Coordinating planning and implementation of polices regarding urban land use, parks, open space corridors, transportation, and infrastructure within growth areas. Developing compatible development standards and road/street level of service standards among adjoining jurisdictions.

f. Developing and ensuring the enforcement of agreements between Thurston County and the cities and towns within its borders that ensure development occurring within unincorporated urban growth areas is consistent with city utility and storm water planning and conforms to the development standards and rod/street level of services standards of the associated city or town.

g. Phasing extensions of urban services and facilities concurrent with development and prohibiting extensions of urban services and facilities, such as sewer and water, beyond urban growth boundaries except to service existing development in rural areas with public health or water quality problems.

h. Identifying, in advance of development, sites for schools, parks, fire and police stations, major storm water facilities, greenbelts, open space, and other public assets. Acquisition of sites for these facilities shall occur in a timely manner and as early as possible in the overall development of the area.

3.4 Provide Capacity to accommodate planned growth by:

a. Assuring that each jurisdiction will have adequate capacity in transportation, public and private utilities, storm drainage systems, municipal services, parks, and schools to serve growth that is planned for in adopted local comprehensive plans; and

b. Protecting groundwater supplies from contamination and maintaining ground water in adequate supply by identifying and reserving future supplies well in advance of need.

Chapter 3 of this element explains the process for siting and expanding essential public facilities to best support the creation of dense, urban development in appropriate areas while protecting rural areas and the resources they provide. Chapter 2 also provides the rationale behind the siting and the future need for expansions of some of the public services Tumwater provides.

V. Siting County-Wide and State-Wide Public Capital Facilities

The County-Wide requirements for the siting public capital facilities are met by this element in Chapter 2: Siting and Expansion.

IX. TRANSPORTATION

9.1 Increase transportation choices to support all ranges of lifestyles, household incomes, abilities, and ages.

9.2 Increase opportunities for ride transit, biking, walking, ridesharing, allowing and encouraging flexible work schedules, and teleworking.

9.3 Encourage efficient multi-modal transportation systems that are based on regional priorities and are coordinated with county and city comprehensive plans.

a. Local comprehensive plans will consider the relationship between transportation and land use density and development standards.

b. Local comprehensive plans and development standards should provide for local and regional pedestrian and bicycle circulation.

c. Improved transit service will be based on Intercity Transit's plans, informed by and consistent with the regional transportation plan and local comprehensive plans.

[…]

Section 2.1 offers an inventory of the transportation system, references to more in depth plans, and some long-term goals for improving multi-

modal transit options.

X. ENVIRONMENTAL QUALITY

10.3 Protect the soil, air, surface water, and groundwater quality, through:

[…]

b. Ensuring adequate clean water is available to support household and commercial needs while sustaining ecological systems through conservation, balancing of uses, and reuse.

c. Protecting ground and surface water and the water of the Puget sound from further degradations by adopting and participating in comprehensive, multi-jurisdictional programs to protect and monitor water resources for all uses.

[…]

10.4 Take action to conserve resources, increase use of renewable resources, and decrease dependence on non-renewable resources by:

[…]

b. Encouraging the reuse and recycling of materials and products and reduction of waste to the maximum extent practicable.

[…]

Water conservation, wellhead protection, and low impact development standards are discussed within this element as a means of protecting water quality. Section 2.2.1 addresses how Tumwater might begin to increase reuse and recycling through the Pathways to Zero Waste, a blend of innovative polices to reduce waste production and accumulation.

1.3. Sustainable Thurston

Tumwater adopts as part of the Lands for Public Purposes Element of the Comprehensive Plan, the following Sustainable Thurston Goals:

1.3.1 Priority Goals

Priority Goal 3: Create a robust economy through sustainable practices.

Priority Goal 4: Protect and improve water quality, including groundwater, rivers, streams, lakes, and the Puget Sound.

Priority Goal 5: Plan and act toward zero waste in the region.

Priority Goal 6: Ensure that residents have the resources to meet their daily needs.

Priority Goal 8: Ensure that the region's water supply sustains people in perpetuity while protecting the environment.

Priority Goal 9: Move toward a carbon-neutral community.

Priority Goal 10: Maintain air quality standards.

Priority Goal 11: Provide opportunities for everyone in the Thurston Region to learn about and practice sustainability.

Priority Goal 12: Make strategic decisions and investments to advance sustainability regionally.

1.3.2 Leadership & Participation Goals

L-1: Become a model for sustainability and livability. Identify resources, organizational structure, and educational opportunities to achieve regional sustainability goals.

L-2: Develop regional plans and strategies essential to meeting sustainability priority goals and targets.

L-3: Increase regional, multi-regional, and state coordination and collaboration.

1.3.3 Community Goals

C-1: North County — Urban Corridors & Centers: Create vibrant city centers and activity nodes along transit corridors that support active transportation and housing, jobs, and services.

1.3.4 Economy Goals

EC-4: Provide robust infrastructure to support economic development.

EC-5: Ensure adequate supply of shovel-ready land along primary transportation corridors and invest in commercial and industrial redevelopment.

EC-6 Foster a progressive education system to match worker skills with employer needs.

1.3.5 Housing Goals

H-4: Maximize opportunity to redevelop land in priority areas by investing in infrastructure and environmental remediation.

1.3.6 Schools & Transportation Goals

S-1: Encourage safe and active school transportation to improve community health, economic, and environmental outcomes.

S-2: Improve community coordination to create schools that use land, tax dollars, and other resources efficiently.

S-3: Improve infrastructure around schools that results in safe pedestrian, bicycle, and bus access.

1.3.7 Water Infrastructure Goals

WI-1: Provide efficient and effective drinking water infrastructure.

WI-2: Manage wastewater in a cost-effective and environmentally sound way.

WI-3: Manage stormwater in a cost-effective and environmentally sound way.

WI-4: Expand the use of reclaimed water for non-potable uses.

1.3.8 Public Safety Goals

PS-1: Provide emergency services in a dependable and efficient manner to meet the dynamic needs of a diverse society.

PS-2: Create a resilient region by improving disaster preparedness, response, and recovery efforts, as well as by expanding public safety education.

1.3.9 Solid Waste Goals

SW-1: Plan and take action to reduce, reuse and recycle as much waste as possible and meet the needs of current and future populations.

SW-2: Continue to plan for, educate, assist, and offer access to safely and efficiently manage disposal and reduce hazardous waste.

1.3.10 Environmental Goals

E-2: Reduce the region's carbon footprint and protect critical infrastructure in case of extreme weather or sea level rise.

E-3: Conserve and protect drinking water to meet the region's daily and long-term needs.

E-4: Protect, preserve, and restore streams, wetlands, and shorelines to protect water quality.

1.4 Population and Demand

In order to determine possible needs and system capacities for lands used for public purposes over the 20-year planning period, it is necessary to project future population.

Table 2 shows projected population growth for Tumwater and its Urban Growth Area. The Thurston Regional Planning Council developed this and it is based upon a hybrid economic and demographic model.

Thurston Regional Planning Council has applied two growth scenarios in their projection: current trends and full density. The current projection shows that growth will occur as it has with existing zoning and development regulations. The

full density forecast assumes that development will occur in a more compact manner than presently occurs and that more growth will be accommodated in Tumwater and its Urban Growth Area. Given the goals and mandates of the Growth Management Act and the policies and land use designations used in the Land Use Element and the Housing Element, the full density population projection has been used.

Table 2. Tumwater and Urban Growth Area 20-Year Population Projection

	2015[1] Population	2035[2] Population	Population Increase	Percent Increase 2015-2035
Tumwater	21,939	34,680	12,741	58%
Urban Growth Area	3,250	8,203	4,954	152%
Combined Areas	**25,188**	**42,883**	**17,695**	**70%**

Source: [1] Office of Financial Management, Forecasting Division
[2] The Profile, October 2015, Thurston Regional Planning Council, and the Population and Employment Forecast for Thurston County Final Report

Note: The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

Table 2 shows the total population within Tumwater's city limits will be 34,680 by 2035.[1] The population within Tumwater's city limits was 21,939. This means an additional population of 12,741 must be accommodated within the city limits within the 20-year planning period.

1.5 Urban Growth Area

Section II of the Thurston County, County-Wide Planning Policies contains specific guidelines and policies for the provision of urban services within the Urban Growth Area. These policies are adopted by reference and are included in their entirety in the Appendix B of the Land Use Element.

County-wide policies should guide the development and provision lands for public purposes within the Tumwater Urban Growth Area. These policies are implemented through the Joint Planning process. Tumwater coordinates with the Thurston Regional Planning Council and Thurston County along with other service providers to

[1] The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

identify areas of shared need for public facilities.

2. CAPITAL FACILITIES INVENTORY

2.1 Transportation System

The Transportation Element contains goals and policies for transportation, documents existing traffic conditions, develops a future and existing land use base traffic model, develops an impact fee program, and develops recommendations for traffic improvements including future transportation corridors.

The *Regional Transportation Plan* prepared by the Thurston Regional Planning Council addresses transportation needs on a region-wide basis.

The *Thurston Regional Planning Council Transportation Improvement Program* contains specific recommendations for transportation improvement within the County.

2.1.1 Streets and Roads

The Transportation Element is hereby incorporated by reference. It should be consulted for information on street and road corridors and the modal integration of Tumwater and its Urban Growth Area that is more detailed.

The Capital Facilities Plan identifies funding for the transportation improvements in Tumwater and it is hereby incorporated by reference.

2.1.2 Regional Transit Facilities and Services

The *Intercity Transit Strategic Plan* is the master planning document that drives Intercity Transit operations and service delivery. The plan, updated annually, highlights service concepts, resource priorities, capital investments, and policy direction. It is based on population growth, regional development, and financial forecasting. The *Intercity Transit Strategic Plan* includes operational policy positions that guide the agency and its vision for public transportation service delivery in the region, including within Tumwater. The *Intercity Transit Strategic Plan* is hereby incorporated by reference.

2.1.3 Transit Service and Facilities Inventory

There are six Intercity Transit routes directly providing service to and from Tumwater: Local Routes: 12, 13, 42, 43, 68, and Express Route 609 from Tumwater to Lakewood.

Fixed Local Transit Routes

Route 12: Olympia to Tumwater, a neighborhood collector via Capitol Blvd to Littlerock Road and Department of Health – Labor and Industries

- Weekdays: 30-minute peak and 60-minute off-peak service, 6 a.m. – 11 p.m.
- Weekends: 60-minute service from 8:15 a.m. – 8:40 p.m.

Route 13: Olympia to Tumwater, a trunk route via Capitol Blvd to Labor and Industries

- Weekdays: 15-minute service 6:15 a.m. – 5:45 p.m. then 30 to 60-minute service 5:45 p.m. – 10:50 p.m.
- Weekends: 60-minute service from 8:45 a.m. – 10:50 p.m. Saturdays and to 8:10 p.m. Sundays

Route 42: Olympia to Tumwater, a circulator loop route via South Puget Sound Community College to County Accountability and Restitution Center – Family Court to Black Lake and Cooper Point

- Weekdays only: 30-minute service broken into four groupings for morning (7:15 – 9:00 a.m.), mid-day (12:00 – 1:30 p.m.), and late afternoon/evening (3:00 – 6:20 p.m.)

Route 43: Olympia to Tumwater, a neighborhood collector via Deschutes Parkway to the Courthouse, South Puget Sound Community College, and Tumwater Square

- Weekdays: 30-minute service 6:15 a.m. – 7:40 p.m.
- Saturdays: 60-minute service 8:45 a.m. – 7: 10 p.m.

Route 68: Olympia to Tumwater to Lacey, a neighborhood collector via Olympia Transit Center to Tumwater Square to Henderson Boulevard to Yelm Highway, Corp Center Transfer Station, via Ruddell Road, Mullen Road, Carpenter Road, and Pacific Avenue to the Lacey Transit Center

- Weekdays and Saturdays: 30-minute service morning and afternoon peak and 60-minute off peak, 6 a.m. – 8:30 p.m.

- Sundays: 60-minute service from 8:30 a.m. – 8:30 p.m.

Express Route 609: Tumwater to Lakewood Express service via Department of Health – Labor and Industries, Capitol Campus, Hawks Prairie Park and Ride to Lakewood Station-SR 512 Park and Ride. Grant funded through mid-June 2017

- Weekdays only: 10 northbound trips and 11 southbound trips between 5 a.m. – 7:30 p.m.

Paratransit Service

Dial-A-Lift: On-demand service at least 24-hour reservation for qualified mobility challenged clients: operates seven days a week throughout the service district following the same operating hours as fixed route service. The service covers up to ¾ mile on either side of a fixed route in urban areas and up to 1 ½ miles either side of a fixed route in rural areas.

Commuter Vanpool Program

Vanpool: Groups of 5 – 15 people lease a commuter van on a monthly basis to commute to/from work. A van group must originate in or end in Thurston County to qualify for its use. Intercity Transit currently has approximately 200 vanpools operating weekdays throughout the Puget Sound area. Groups are traveling as far south as Chehalis as well as north to Bremerton, Renton, Redmond, and Seattle.

- Vanpools ending in Tumwater: 39
- Vanpools originating in Tumwater: 4

Employment Assistance Program

Village Vans: Federal and state funded program offers two free programs: driver training/job skills and work-related transportation for low-income job seekers. Vans operate throughout Intercity Transit's service district. Program coordinates efforts with a number of service organizations and South Puget Sound Community College, including "WorkSource Thurston County," located on Irving St SW, Tumwater.

Capital Facilities in Tumwater

Tumwater Square: Currently, four routes serve this on-street location on weekdays and Saturdays, and three routes on Sundays. Tumwater

Square includes bus shelters and waiting areas on both sides of Cleveland Avenue, adjacent to the Safeway grocery store. Routes 12, 13, 43, and 68 serve this stop as does Rural and Tribal Transit vans.

In line with the Brewery District Plan, the City and Intercity Transit are working on moving the Tumwater Transfer Station to Capitol Boulevard, between Custer Way and Cleveland Avenue.

State office – Department of Labor and Industries: Intercity Transit maintains a transfer stop at the main entrance to the Labor and Industries Building. Routes 12, 13, and 609 serve this stop as does Rural and Tribal Transit.

Tumwater Park and Ride Lot: Agreement with property owner of State Department of Health facility to use 30 stalls of the parking lot at Israel/Bonniewood Drive SE. Routes 12 and 609 serve this lot.

South Puget Sound Community College (Olympia): InterCity Transit maintains a transfer stop at the main entrance to the community college. Routes 42, 43, and 44 serve this stop.

Bus Stops/Shelters: There are approx. 945 bus stops throughout Intercity Transit's service district. Of those, about 120 are within Tumwater.

Other Public Transportation Service Providers

Rural and Tribal Transit: Operates 4 fixed routes between the South County (Rochester, Grand Mound, Centralia, Bucoda, Tenino, Rainier, and Yelm/Nisqually Reservation). Rural and Tribal Transit provides service to the State's Labor and Industries building and to InterCity's Tumwater Square Transfer Station. Riders can transfer to and from Intercity Transit service at either of these transfer points. Weekdays only: trip schedules vary but generally from 6 a.m. – 6 p.m. on most routes.

2.1.4 Pedestrian and Bicycle System

Promoting the increased use and safety of bicycling and walking as transportation modes is city, regional, state, and federal transportation policy.

The purpose of a pedestrian and bicycle transportation system is to provide opportunities to walk or ride a bicycle safely as part of their everyday life. The vision for a system of connected biking and walking infrastructure requires the creation of a changed transportation system that offers not only choices among travel modes for specific trips, but more importantly presents these options in a way that they are real choices that meet the needs of individuals and society as a whole. Some of the long-term goals of effectively designed pedestrian and bicycle systems include:

- Doubling the percentage of trips taken by bicycling and walking for all transportation purposes and simultaneously reduce the number of bicyclist injuries and fatalities.

- Increasing the number of bicyclists and pedestrians or increasing facility mileage each year.

- Improving the connections among bicycle, pedestrian, and transit systems.

- Allowing people to bicycle safely and conveniently within five miles of their homes and to make streets and roads "bicycle friendly" and well designed to accommodate both motorized and non-motorized modes of transportation.

Network performance criteria should be developed. Some applicable criteria would be accessibility, directness, continuity, route attractiveness, low numbers of conflicts with other route users, number of bicycle links with transit, cost, and ease of implementation.

The *Thurston Regional Trails Plan,* the Transportation Element, and the Tumwater Parks, Recreation, and Open Space Plan address the creation of trails as a means of transportation for pedestrians and bicyclists.

2.2 Solid Waste Management

The *Thurston County Solid Waste Management Plan* addresses waste management in all incorporated and unincorporated areas of Thurston County.

The *Thurston County Solid Waste Management Plan* is hereby incorporated by reference. It should be consulted for information on landfill siting and solid waste management for Tumwater and the Urban Growth Area that is more detailed.

Each year the solid waste disposal system is reviewed through the County's Capital Facilities Plan. The County's Capital Facilities Plan process identifies those capital projects required to meet the policy goals and objectives in the *Thurston County Solid Waste Management Plan* and the *Thurston County Comprehensive Plan*, to comply with federal and state law, and address facility safety, operational, capacity, and obsolescence issues.

The project assessment objectively ranks projects based on:

- Ability to meet level of service
- Regulatory compliance
- Health and safety goals and policies
- Sustainability
- Technical feasibility
- Other associated costs

Projects are scheduled over a six-year period relative to their ranking.

The majority of waste generated within the county passes through the Thurston County Waste and Recovery Center prior to being sent for disposal or recovery. The Thurston County Waste and Recovery Center was built on the Hawks Prairie Landfill, and was opened when the landfill closed in 2000. The landfill had served as the primary disposal facility in the county.

The Thurston County Waste and Recovery Center contains a collection of solid waste facilities, including a tollhouse, a recycling drop off center, a yard waste drop off facility, a hazardous materials drop off center (HazoHouse), and a transfer station. The facility is located just outside of Lacey in the northeastern portion of the county along the I-5 corridor. In addition, there is a demonstration garden called the "Closed Loop Park." Thurston County provides space to Goodwill Industries for a collection center at the entrance to the facility.

The Thurston County Waste and Recovery Center transfer station was constructed by Allied Waste Industries, Inc. (Allied) and LeMay to serve as the main collection point for all municipal solid waste collected in the county to be transferred to the Roosevelt Landfill. On average, the Thurston County Waste and Recovery Center receives about 550 tons per day of municipal solid waste.

In addition to household solid waste, this includes:

- 100 tons/day of construction and demolition waste;
- 42 tons/day of yard and food waste; and
- 4 tons/day of recyclable materials.

A new HazoHouse facility is a priority within the County Solid Waste System. While the operational mitigation measures at the current facility have allowed Thurston County to work with the State Department of Ecology and the County Health Department to keep it open while a new facility is designed, they have indicated that a new facility is needed. The new facility should be constructed to meet, at a minimum level, the state minimum standards for municipal waste collection facilities. The facility could be at the same location at the Thurston County Waste and Recovery Center, which is on top of the existing landfill, to make continued use of the protection offered by the landfill liner. However, since the current facility is located on the old landfill, foundation improvements and a robust landfill-gas-capture and management system are necessary.

A new facility could also be sited at the Thurston County Waste and Recovery Center on solid ground at the property leased by Lakeside Asphalt and Paving. This location would require less foundation work, a less complex landfill-gas management system, and significantly less capital expense. Additional locations nearer the center of the population centers may also be viable. Thurston County has is planning for a replacement facility but has not decided on a site on which to construct it.

2.2.1 Pathways to Zero Waste

Despite new technologies and processes that have improved the ability of residents, businesses, and municipalities to handle, sort, and recycle materials, recycling volumes, including yard and food waste, in Thurston County have only improved slightly, and currently make up less than one percent of the total waste stream or 4 tons out of 550 tons per day. As landfills close and the city seeks innovative solutions to the problem of higher waste disposal costs, state government has fewer resources to help. Meanwhile, solid waste management is an important contributor to greenhouse gas emissions, which Washington is bound by law to reduce 25 percent by 2020 below 1990 levels and 80 percent by 2050.

Through a blend of innovative policies, ranging from technical assistance to legislation to initiatives to support and grow recycling markets, the *Solid Waste*

Plan should address these challenges and place the region on the pathway to higher reuse and recycling volumes and reduced disposal that will make zero waste a reality including:

- Providing assistance to dramatically increase recycling and re-use;
- Seizing green economic opportunities to build local markets, jobs, and firms in recycling, re-use, and related material management efforts;
- Explore innovative and alternative technologies for converting municipal solid waste to energy or fuel when financially practical and environmentally safe;
- Increasing producer responsibility to reduce waste that needs to be recycled or disposed of by municipalities and eliminate products containing toxic chemicals from disposal; and
- Developing integrated solid waste management systems that minimize the amount of material that must ultimately be disposed of.

2.3 Sewage Treatment Facilities and Sanitary Sewer System

Sanitary sewage treatment in Tumwater is provided by the LOTT interception and treatment system. The LOTT system is based on a joint agreement, and it was created to serve the sewage collection and treatment needs of the cities and urban growth areas in north Thurston County. Participating members include the cities of Lacey, Olympia, Tumwater, and Thurston County.

LOTT has purchased a portion of the former Olympia Brewery and plans to build a reclaimed water treatment plant there. LOTT and the City of Tumwater recently extended a reclaimed water line and storage tank to the south side of the Tumwater Valley Golf Course. This tank stores reclaimed water that is being used to irrigate the golf course. LOTT's mid-range plan is to extend this water line east to Henderson Boulevard and then south to an infiltration facility next to Henderson on the bluff above the Deschutes River where LOTT has purchased land.

Currently, new development within the city limits and urban growth area is required to connect to LOTT if sewer line is available within reasonable distance, as defined in the City's Sewer Plan. Tumwater is in discussions with Thurston County, the cities of Olympia and Lacey, and LOTT on a plan to convert existing developments that are on septic systems to LOTT sewer lines. This is intended to reduce surface water and groundwater impacts from these existing systems.

Sanitary sewer systems for Tumwater and the Urban Growth Area are addressed in detail in the *Comprehensive Sewer Plan*. The *Comprehensive Sanitary Sewer Plan* covers the existing and proposed sanitary sewer collection and conveyance system for the city limits and the Urban Growth Area.

The *Comprehensive Sanitary Sewer Plan* and any subsequent updates to this plan are incorporated by reference. It should be consulted for information on sanitary sewer systems and facilities within Tumwater and the Urban Growth Area that is more detailed.

The Capital Facilities Plan identifies funding for the Tumwater sanitary sewer system and it is incorporated by reference.[2]

2.4 Stormwater Systems and Facilities

Improvements to Tumwater's stormwater system are identified in the Capital Facilities Plan. This plan is incorporated by reference. In addition to these projects, Tumwater has implemented a comprehensive stormwater program since 2007 to meet National Pollutant Discharge Elimination System (NPDES) – Phase II permit requirements. Tumwater has also adopted groundwater-monitoring standards, similar to that of Thurston County, to examine long-term groundwater quality trends in the Salmon Creek Drainage Basin, Black Lake Drainage Basin, and Deschutes River Watershed and require developments to limit impacts of the projects to neighboring properties.

2.5 Water Systems and Facilities

The *Comprehensive Water System Plan* reviews land use, demands within the city's service area, supply sources, system deficiencies, and capital improvements to address those deficiencies, and water quality, including wellhead protection and utility operations and maintenance. This plan recognizes the need for coordination between

[2] Because LOTT is effectively an extension of the City (and the other partners), agreements are not needed to accommodate growth. However, coordinated planning is essential to ensuring capacity exists for Tumwater and all the LOTT partners. Every year, LOTT revisits the planning horizons with each jurisdiction and develops a capital program to accommodate growing demands. As we saw with the forecasts in the 2010 Water System, earlier growth projections sparked an aggressive capacity-building era at LOTT to ensure sufficient treatment capacity for future years. In 2015, LOTT re-evaluated growth projections and it has slowed capacity-building projects to reflect current growth projections more accurately.

land use and water service provision. The Tumwater City Council adopted the *Comprehensive Water System Plan* and the State Department of Health approved it.[3]

The City's *Wellhead Protection Plan,* most recently updated in 2016, addresses groundwater protection. The plan identifies regulated areas where a program systematically reviews the management, use, and disposal of hazardous materials, details an early response-monitoring program, and outlines policies and goals for maintaining protections for groundwater. Wellhead protection requirements are also identified in Title 16 of the Tumwater Municipal Code (aquifer and wellhead protection standards). The implementation of Tumwater's Low Impact Development (LID) ordinance will provide best management practices in design and development to minimize stormwater runoff that could potentially harm Tumwater's water sources.

The *Comprehensive Water System Plan* and the *Wellhead Protection Plan* are hereby incorporated by reference. It should be consulted for information on water systems and facilities within Tumwater that is more detailed.

The Capital Facilities Plan identifies funding for the Tumwater water system and it is incorporated by reference.

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[3] In the 2010 Water System Plan, the planning forecast was based on growth and regional forecasts that have since changed for longer-term growth. For example, the forecast called for an Average Day Demand (ADD) of 4.45 Million Gallons Per Day (MGD) by 2015 (without conservation measures) and a Peak Day Demand (PDD) of 10.69 MDD.

In 2015, the City's actual ADD was 2.75 MGD (62% of the forecast) and PDD was 5.9 MGD (55% of forecast). The City's water plans are historically more conservative than reality, as the City plans for "worst case scenario" and heavy fast growth – in this case was experienced in the area from 2006-2008. All growth factors have relaxed, and the forecasts will be updated over the next year as part of the updated Water Plan to reflect this.

Regardless, the City continues to improve operational efficiency, encourage water conservation strategies, and seek new sources of water. Three such sources that were not addressed in the water system plan include a 1,000 gallon per minute (gpm) / 300 acre-feet (acft) water right under current negotiation for acquisition, another water right under negotiation for ~450 gpm / 172 acft, and the third the City will process for transfer in 2017 at the golf course for 2,000 gpm / 400 acft. All these acquisitions, aside from new water rights being pursued, will help the City meet the needs of future growth.

The City is actively pursuing development of the Brewery Wellfield, with planning and design efforts to get underway in 2017. In addition, work on the Southwest Wellfield will pick up in 2017, as well site approval has been received from the Thurston County Health Department. Other major projects completed since the 2010 water system plan include wellfield improvements, including replacement of two failing wells and expansion of production capacity at the Bush Wellfield.

2.6 Parks, Recreation, and Open Space

Recreation, the pursuit of leisure activities, enjoyment of the outdoors, and preservation of open space, habitat, and the natural environment are essential elements in maintaining a balance in the quality of life in Tumwater.

The Parks, Recreation, and Open Space Plan (Element) is an element of the Comprehensive Plan and the Thurston County Joint Plan for the Tumwater Urban Growth Area. A 20-year vision for parks, recreation programs, open space, and trails is identified in this plan. The Parks, Recreation, and Open Space Plan (Element) is incorporated by reference. It is the source for more detailed information on parks and open space related issues for Tumwater and its Urban Growth Area.

The Capital Facilities Plan identifies funding for parks and related facilities and it is hereby incorporated by reference.

2.7 Fire Protection and Emergency Medical Services

The Tumwater Fire Department is responsible for protecting the city from fire, medical, natural, and man-made emergencies. The department provides rescue, fire extinguishment, fire prevention, fire and arson investigation, emergency medical services, hazardous materials services, disaster services, and public education activities to its citizens. In addition to providing these services to citizens, the department also provides fire services to the Olympia Regional Airport and Fire District 15. Medic One services are also provided. The functions of the department are divided into five major divisions: 1) Administration, 2) Suppression, 3) Emergency Medical Services, 4) Training, and 5) Fire Prevention.

2.7.1 Administration

The Administrative division of the Fire Department is responsible for the overall management and administrative direction, planning and budgeting for all units within the department. Administration maintains ongoing relations with the other City departments to assist in overall planning for the community's development. The Fire Chief is also responsible for negotiation of fire service contracts, intergovernmental agreements, and acts as the Disaster Coordinator. Included are costs reflecting the Thurston County (CAPCOM) communication costs for dispatch services.

2.7.2 Suppression

The Suppression division responds to all fire and Emergency Medical Service (EMS) calls. They also conduct public safety inspections and assist in educating the public to prevent fires. In addition, the Suppression division performs maintenance on the fire apparatus and the Fire Station facilities to guarantee readiness.

2.7.3 Emergency Medical Services

Members of the Emergency Medical Services (EMS) division respond to advanced life support emergencies as established by a contract with Thurston County Medic One. Medic personnel are assigned to the Suppression division as the workload permits. Tumwater also enters into an annual inter-local agreement with Thurston County, which, among other things, provides for 80% funding of the program.

2.7.4 Training

The Training division is responsible for coordinating and supervising all departmental training to meet the objectives of the Administration division as required. This division monitors and evaluates the training through observation of manipulative skills at drills and actual incidents.

2.7.5 Fire Prevention

The Fire Prevention division performs the coordination of efforts between the Fire Department and the Community Development Department. This division is responsible for the public safety of the citizens of Tumwater by implementing code enforcement, public education, and fire investigation.

2.7.6 Summary

Continued emphasis is being placed on the administration and enforcement of the Uniform Fire Code. This includes on-going inspections of structures for and of occupancy and requires coordination with the Community Development Department by being part of the team of the Development Review Committee.

The *Tumwater Fire Services Plan* is incorporated by reference. It should be referenced for information regarding fire protection in Tumwater that is more detailed. The Capital Facilities Plan identifies funding for fire facilities and it is hereby incorporated by reference.

The Tumwater Fire Department responds to calls from two city fire stations. The Headquarters Fire Station T-1, located next to Tumwater City Hall, serves the southern area of the city; and Station T-2, located at the intersection of Linwood Avenue and 2nd Avenue, serves the northern portion of the city.

Presently, fire protection is also provided in Tumwater's Urban Growth Area through four volunteer fire districts. These include:

- Fire District 9 – McLane
- Fire District 5 - Black Lake
- Fire District 11 – Littlerock
- Fire District 6 - East Olympia

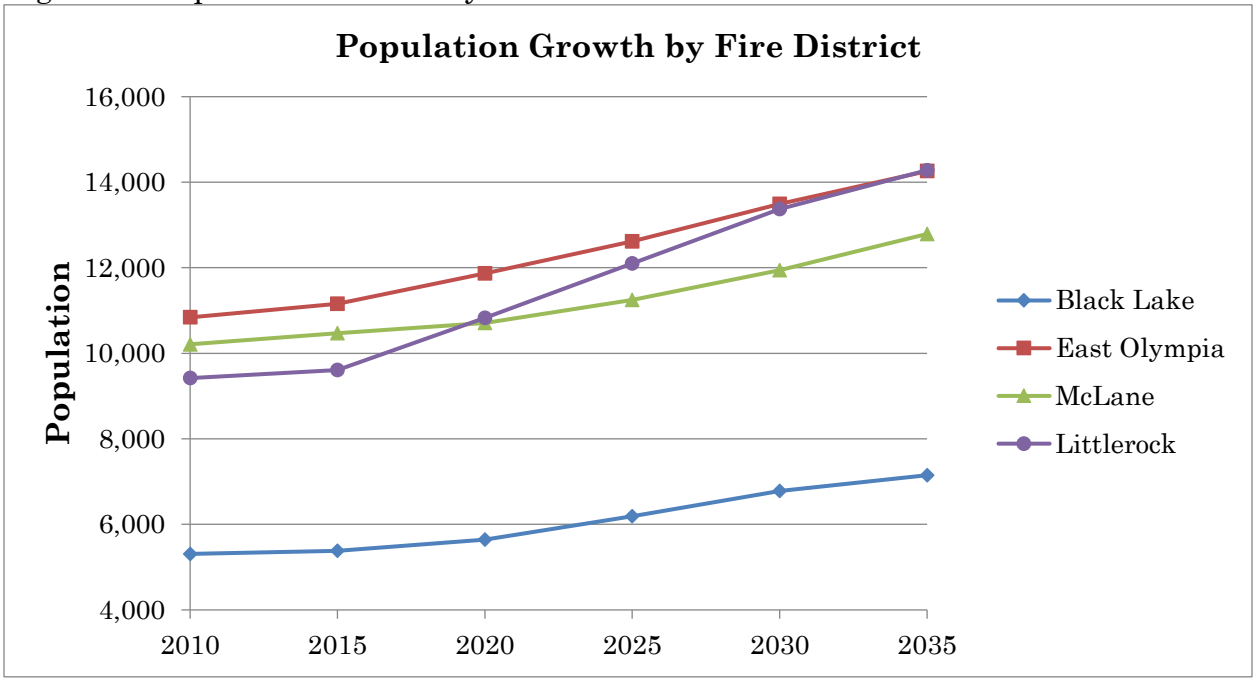
All Fire Districts in Thurston County are mapped in Appendix A.

Table 3. Population Growth by Fire District

Fire District	**Year**					
	2010	**2015**	**2020**	**2025**	**2030**	**2035**
Black Lake	5,310	5,380	5,640	6,190	6,780	7,150
East Olympia	10,840	11,160	11,870	12,620	13,490	14,260
McLane	10,210	10,470	10,710	11,250	11,940	12,790
Littlerock	9,420	9,610	10,830	12,100	13,370	14,280

Note: The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

Figure 1. Population Growth by Fire District



Thurston County does not provide fire protection to county residents. Tumwater presently has reciprocal mutual response agreements with all of the above-listed fire districts. A reciprocal mutual response agreement is an agreement whereby a fire district and the city both provide assistance depending on which unit is able to respond first.

2.8 Police Protection

The Police Department is responsible for maintaining law and order and providing police services to the community under the direction of the Police Chief. The agency provides for the preservation of life, protection of property, and reduction of crime. The department is organized into five areas: 1) Administration, 2) Patrol, 3) Traffic, 4) Investigation, and 5) Crime Prevention.

2.8.1 Administration

The Administration unit provides the overall management and administrative direction, planning, budgeting, scheduling, inspection, and training for the department. Also included in this division is the records management function, which maintains incident reports and prepares management reports and records necessary for the effective operation of the department. Additionally, the unit handles telephone and personal requests for service from the public at the Police

Station. Tumwater continues to use the Nisqually Jail and Thurston County Accountability and Resource Center for holding and incarceration of defendants. Tumwater also enters into an interlocal agreement for all dispatch services with Thurston County CAPCOM.

2.8.2 Patrol

The Patrol unit deters and detects crime, apprehends violators, and renders other services designed to provide public protection. This is accomplished by preventive patrol, response to calls for service, and preliminary investigation and follow-up of reports and crimes.

2.8.3 Traffic

The Traffic unit promotes traffic safety and reduces traffic accidents. This is accomplished by enforcement of traffic laws, investigation of traffic accidents, providing input on engineering solutions for traffic safety, and public education.

2.8.4 Investigation

The Investigative unit conducts follow-up activities for serious cases, provides investigative assistance to the patrol unit, and investigates major crime scenes. This unit enforces narcotics violations through participation in the Thurston County Narcotics Task Force, performs crime analyses, and presents information to the Prosecutor's Office for filing of criminal proceedings.

2.8.5 Crime Prevention

Through pro-active patrol efforts, Tumwater Police reduce crime through public education and assistance in residential neighborhoods, the business community, and in the schools. They are responsible for planning and developing various community programs. The primary function is the administration of School Resource Officer program in the school system. The city sponsors the School Resource Officer program with staffing, training, and limited supplies. The Tumwater School District and the City are currently in discussions to expand the program to include two full time police officers.

2.8.6 Summary

The Police Department presently employs 32 commissioned officers and 5.5 non-commissioned administrative staff. The headquarters for this force is the Tumwater City Hall. Officers circulate throughout the city on patrol and respond to

calls from the dispatch center located at 2703 Pacific Avenue SE, Suite A, in Olympia. Because the police force is constantly patrolling throughout the city, there is no need for multiple full service police stations. However, in the past, the police have established a satellite station where an enhanced presence was needed, and it is anticipated this could occur again in the future if the need arises. The current police headquarters was recently expanded to provide space for additional personnel. Thus, an expanded or new police headquarters is not anticipated to be needed within the planning horizon of this plan.

The *Police Master Plan* is incorporated by reference and it should be referenced for specific recommendations. The Capital Facilities Plan identifies funding for police facilities and it is hereby incorporated by reference.

Tumwater has been strongly committed to creating and providing a high level of police protection and services. Police protection services should expand at a rate consistent with community need.

2.9 School Facilities

Tumwater is served almost exclusively by the Tumwater School District. The boundaries of the Tumwater School District are indicated in Figure 2. The Olympia School District serves a few small areas of the city near the northeast city boundary.

Figure 2. Tumwater School District Boundary

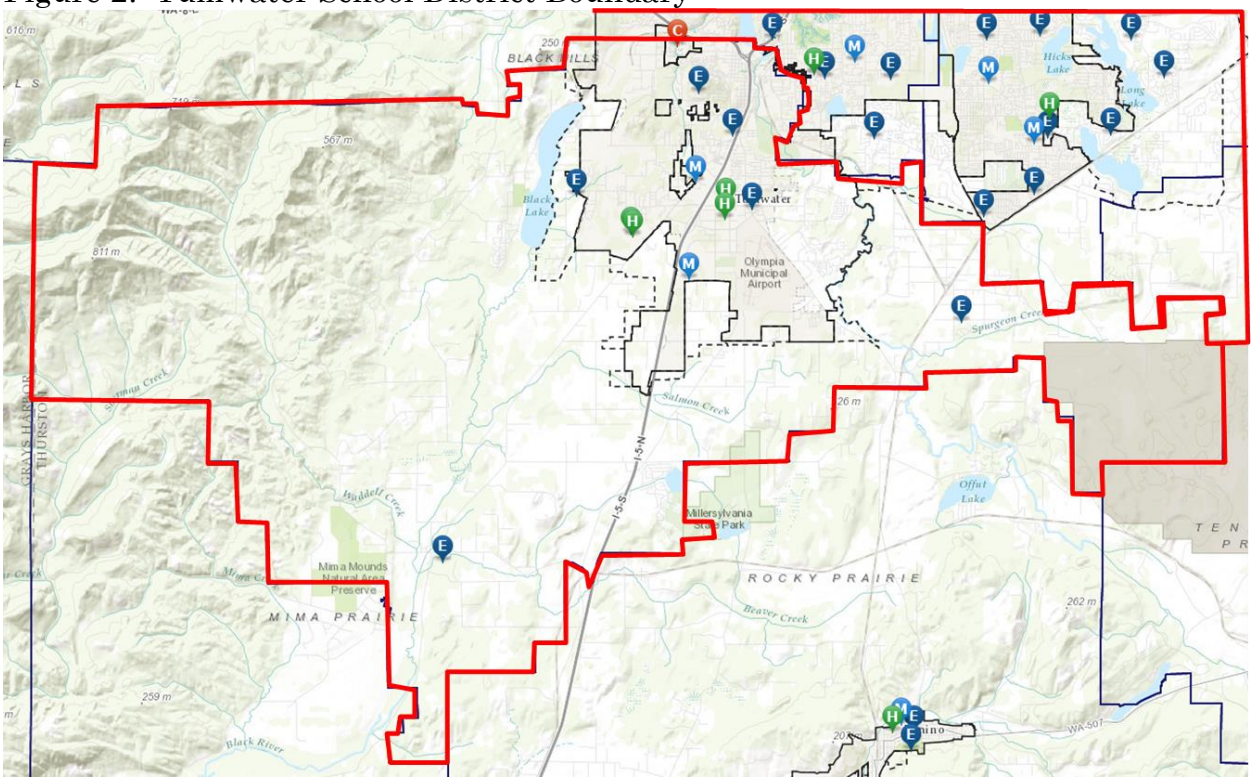
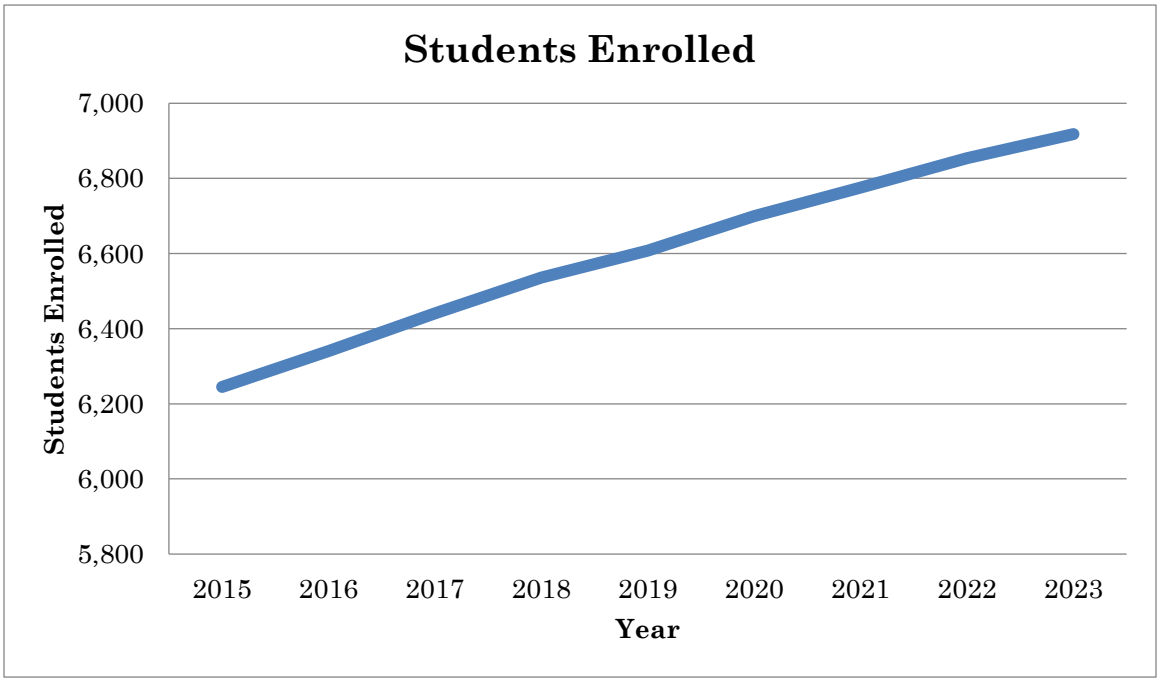


Figure 3. School District Population Growth Projection



Public schools are operated by local school districts and governed by state and federal laws and regulations. State funds provide a large part of school construction financing. School districts raise additional funds from local property taxes. State laws and State Board of Education Rules set standards for funding levels and facility development. School districts perform the task of planning new school facilities within those guidelines.

Tumwater works in cooperation with the Tumwater School District and the Olympia School District to determine and plan for the needs of the districts in Tumwater's Urban Growth Area for the 20-year planning period. The districts have provided information regarding proposed new school facility locations and site criteria. Tumwater will make every effort to assist the Tumwater School District in providing needed facilities as population growth in Tumwater and its Urban Growth Area occurs. Further, the annual update of Tumwater's Capital Facilities Plan includes short-term needs for both Tumwater and Olympia School Districts and it is incorporated as part of the Lands for Public Purposes Element by reference.

Tumwater and the school districts should meet regularly to formally discuss the district's capacity needs and evaluate siting options, including the need for new and upgraded schools (capacity), location of expected new growth, zoning and anticipated growth, and issues such as location, configuration, joint use, and school capture areas.

Tumwater can help to achieve this goal by ensuring that the environment around existing and future school sites is properly conducive to their needs. Tumwater should take into account the safety needs of schoolchildren and the need for school buildings to be appropriately accessible to their service areas. Additionally, Tumwater can ensure that school sites are planned for locations with adequate public facilities and services such as sewer, water, transportation, and law enforcement services.

In order to determine the need for new schools and to account for special growth conditions within the district, Tumwater School District has developed a method to project student enrollment. This method relies upon growth projections supplied by Thurston Regional Planning Council, consultants, and experience within the district. Two factors require that these projections be updated yearly. They are varying kindergarten enrollment, and unanticipated student in-migration.

The number of students per household is a factor the district uses to plan for new schools. Data reporting the number of students per household, by type of house, number of bedrooms, and grade level is available from the U.S. Census. This information is published by the U.S. Department of Commerce, Bureau of Census and is titled "*Demographic Multipliers for Common Configurations of Standard Housing Types for School-Age Children (by Grade Category).*

The district has adopted the multipliers for the Pacific Northwest Region as the standard for determining the number of students generated from new developments. The multipliers adopted by the district have been adjusted from the Census multipliers to reflect the actual grade breakdown in the District.

Total student population for the Tumwater School District in 2015 was 6,245 and is expected to increase to 6,918 by 2023, an 11% increase.

The School District utilizes a Boundary Committee to monitor enrollment in the district and recommend modifications of attendance zones for elementary, middle, and high school sites. The Committee consists of staff and interested parents. The committee makes its recommendations to the School Board for actual adoption. The location of new elementary schools is based upon growth trends around existing schools and the location of new development. General areas are identified for the placement of a new elementary school because of the need to provide relief from overcrowding of existing elementary schools. The same is true for secondary schools.

2.10 Library Services

Tumwater Timberland Library is a member of the Timberland Regional Library District. The district consists of 27 community libraries and 7 cooperative library centers in five counties in southwest Washington State: Grays Harbor, Lewis, Mason, Pacific, and Thurston counties. The Administrative Service Center is in Tumwater. Books and other materials are exchanged freely with all member libraries within the district.

Tumwater Library began in 1965 as a storefront library in the Southgate Shopping Center. The library has been a part of the Timberland Regional Library District since 1983. A new 17,300 square-foot library, located adjacent to Tumwater City Hall on New Market Street, opened in March 1995. Circulation at the Tumwater Timberland Library has increased significantly since 1995. A total of 292,729 items were checked out in 1995, compared to 391,261 items in 2001, and in 2015, a total of 488,668 were checked out, an increase of more than 20% even with the popularity of online media. While the library facility should be sufficient to provide library services to the community within the planning period, consideration should be given to modernization to keep pace with rapidly changing electronic media, books, and related services.

2.11 City Facilities

Tumwater City Hall provides a center for local governmental activities in Tumwater. City Hall was relocated in 1988 from a site at the intersection of Second Avenue and Bates Street to its present location on Israel Road. City Hall was relocated to the southern area of Tumwater to reflect the future growth of Tumwater and to provide a more central focus.

Tumwater City Hall is located in the Tumwater Town Center. The town center consists of approximately 200 acres and Israel Road, Tumwater Boulevard, and Interstate 5 border it. The *Tumwater Comprehensive Plan* envisions a broad mix of uses in this area that are high density, transit-supportive, and pedestrian and bicycle friendly.

City Hall provides office space for the Mayor, City Administration, City Attorney, and the following departments: Community Development, Finance, Administrative Services, Parks and Recreation, Police, and Public Works. Additional space is provided in the former fire station at the intersection of Israel Road and Capitol Boulevard and is currently used by facilities maintenance staff.

The current City Hall is reaching capacity and will likely need to be expanded or supplemented with an additional building within the planning horizon of this plan. The city has purchased the former Trails Arena in anticipation of moving the Public Works Shop to this location. A draft master plan for the City Hall campus exploring potential expansion options at the current City Hall location is being prepared.

3. ESSENTIAL PUBLIC FACILITIES SITING AND EXPANSION

This chapter of the Lands for Public Purposes Element addresses the identification, siting, and expansion of essential public facilities. This process was developed by the Thurston Regional Planning Council to provide guidance for the implementation of County-Wide Planning Policy V, which recommends that a regional process for the siting of essential public facilities be developed. County-Wide Planning Policy V originated from a requirement in the Growth Management Act itself.

3.1 Growth Management Act

The following language is specified in the Growth Management Act and provides the background for the development of County-Wide Planning Policy V and the process identified in this chapter [Note: The following language is taken from RCW 36.70A.200 Siting of Essential Public Facilities.]

(1) The comprehensive plan of each county and city that is planning under this chapter shall include a process for identifying and siting essential public facilities. Essential public facilities include those facilities that are typically difficult to site, such as airports, state education facilities and state or regional transportation facilities as defined in RCW 47.06.140, State and local correctional facilities, solid waste handling facilities, and in-patient facilities including substance abuse facilities, mental health facilities group homes, and secure community transition facilities as defined in RCW 71.09.020.

(2) Each county and city planning under RCW 36.70A.040 shall, not later than September 1, 2002, establish a process, or amend its existing process, for identifying and siting essential public facilities, and adopt or amend its development regulations as necessary to provide for the siting of secure community transition facilities consistent with statutory requirements applicable to these facilities.

(3) The Office of Financial Management shall maintain a list of those essential public facilities that are required or likely to be built within the next six years. The Office of Financial Management may at any time add facilities to the list.

(4) No local comprehensive plan or development regulation may preclude the siting of essential public facilities.

3.2 County-Wide Planning Policy

Section V of the Thurston County, County-Wide Planning Policies contains guidelines for development of a process for identifying and siting essential public facilities as recommended in the Growth Management Act. These guidelines are as follows:

5.1 Cooperatively establish a process for identifying and siting within their boundaries public capital facilities of a county-wide and statewide nature, which have a potential for impact beyond jurisdictional boundaries. The process will include public involvement at early stages. These are facilities that are typically difficult to site, such as airports, terminal facilities, state educational facilities, state or regional transportation facilities, state and local correctional facilities, solid waste handling facilities, and in-patient facilities including substance abuse facilities, mental health facilities, and group homes.

5.2 Base decisions on siting county-wide and statewide public capital facilities on the jurisdiction's adopted plans, zoning and environmental regulations, and the following general criteria

a. County-wide and state-wide public capital facilities shall not have any probable significant adverse impact on lands designated as critical areas or resource lands; and

b. Major public facilities that generate substantial traffic should be sited near major transportation corridors.

3.3 Siting Process for Essential Public Facilities in Tumwater

The following process outlined in TMC 18.56.140 shall be used for siting the essential public facilities identified in Table 5. This process was developed by the Thurston Regional Planning Council to provide guidance for the implementation of County-Wide Planning Policy V.

Essential public facilities identified as conditional uses in the applicable zone district or land use designation shall be subject, at a minimum, to the following requirements.

1. Classify essential public facilities as follows:

   a. Type One. Multi-county facilities. These are major facilities serving or potentially affecting more than one county. These

facilities include, but are not limited to, regional transportation facilities, such as regional airports; State correction facilities; and State educational facilities.

b. Type Two. These are local or interlocal facilities serving or potentially affecting residents or property in more than one jurisdiction. They could include, but are not limited to, county jails, county landfills, community colleges, sewage treatment facilities, emergency communication towers and antennae, secure community transition facilities, and inpatient facilities (e.g., substance abuse facilities, mental health facilities, and group homes). (Note: Such facilities, which would not have impacts beyond the jurisdiction in which they are proposed to be located, would be Type Three facilities.)

c. Type Three. These are facilities serving or potentially affecting only the jurisdiction in which they are proposed to be located.

In order to enable the City to determine the project's classification, the applicant shall identify the proposed service area of the facility and the approximate area within which the proposed project could potentially have adverse impacts, such as increased traffic, public safety risks, noise, glare, emissions, or other environmental impacts.

2. Provide early notification and involvement of affected citizens and jurisdictions as follows:

a. Type One and Two facilities. At least ninety days before submitting an application for a Type One or Type Two essential public facility, the prospective applicant shall notify the affected public and jurisdictions of the general type and nature of the proposal, identify sites under consideration for accommodating the proposed facility, and identify opportunities to comment on the proposal. Applications for specific projects shall not be considered complete in the absence of proof of a published notice regarding the proposed project in a newspaper of general circulation in the affected area. This notice shall include the information described above and shall be published at least ninety days prior to the submission of the application.

It is expected that an Environmental Impact Statement may be required for most Type One and Type Two facilities in

accordance with the SEPA environmental review process.

The Thurston Regional Planning Council may provide the project sponsor and affected jurisdictions with their comments or recommendations regarding alternative project locations during this ninety-day period.

(Note: The purpose of this provision is to enable potentially affected jurisdictions and the public to review and comment collectively on alternative sites for major facilities before the project sponsor has made their siting decision.)

b. Type Three facilities. Type Three essential public facilities are subject to the city's standard notification requirements for conditional uses.

3. Should any of the above-listed facilities be proposed to be sited in the City, they should be consistent with the intent of the underlying zoning of the proposed site.

4. Essential Public Facilities shall not have any probable significant adverse impact on critical areas or resource lands, except for lineal facilities, such as highways, where no feasible alternative exists (adapted from County-Wide Policy 5.2(a)).

5. Major public facilities, which generate substantial traffic, should be sited near major transportation corridors (adapted from County-Wide Planning Policy 5.2(b)).

6. Applicants for Type One essential public facilities shall provide an analysis of the alternative sites considered for the proposed facility. This analysis shall include the following:

a. An evaluation of the site's capability to meet basic siting criteria for the proposed facility, such as size, physical characteristics, access, and availability of necessary utilities and support services;

b. An explanation of the need for the proposed facility in the proposed location;

c. The site's relationship to the service area and the distribution of other similar public facilities within the service area or jurisdiction, whichever is larger; and

d. A general description of the relative environmental, traffic, and social impacts associated with locating the proposed facility at the alternative sites, which meet the applicant's basic siting criteria. The applicant shall also identify proposed mitigation measures to alleviate or minimize significant potential impacts.

The applicant shall also briefly describe the process used to identify and evaluate the alternative sites.

7. The proposed project shall comply with all applicable provisions of the Comprehensive Plan, Zoning Ordinance, and other city regulations.

The following tables shall denote Tumwater's policies for siting and expansion of essential public facilities within existing zones: See Tables 4 and 5.

Table 4. Essential Public Facilities from TMC Figure 18.56.140(A)

Tumwater Essential Public Facility Siting Policies for City Zoning																		
	RSR	SFL	SFM	MFM	MFH	MU	CBC	NC	CS	GC	TC	LI	HI	HC	GB	OS	AP	ARI	BD
A																		P	
B						C	C		C	C	C	C						C	C
C									C(3) (4)			C(3) (4)	C(3) (4)					C(3) (4)	
D												C	C					C	
E												C	C					C	
F				C	C	C	C	C		C									
G				C	C	C	C	C		C									
H												C	C					C	
I		C	C	C	C	C		C	C	C	C(1)	C	C					C	
J												C(2)							

Figure 18.56.140(A) Footnotes:

See Table 5 for meaning of codes A – J.

"C" means conditional use; "P" means permitted use.

Shaded areas mean use is not permitted.

Figure 18.56.140(A) Explanatory Notes:

(1) In the TC zone district, emergency communication antennas must be affixed to or erected upon existing buildings, water tanks, or other existing structures. Antennas shall not be affixed to a wireless communication support structure. Emergency communication towers are not permitted.

(2) Secure community transition facilities shall meet the following conditions:

A. Minimum Conditions.

1. Location.

a. In no case may a secure community transition facility be sited adjacent to, immediately across a street or parking lot from, or within the line of sight of risk potential activities or facilities in existence at the time a site is listed for consideration. "Within the line of sight" means that it is possible to reasonably visually distinguish and recognize individuals;

b. In no case may a secure community transition facility be sited within three hundred feet of a residential zoning district;

c. Secure community transition facilities are permitted as a conditional use in the light industrial zoning district excluding light industrial zone districts north of Sapp Road Southwest and west of Crosby Boulevard Southwest;

2. Compliance with Statutory Requirements. The applicant shall provide verification from the Department of Social and Health Services that the proposed facility complies with all applicable state regulations and requirements pursuant to Chapter 71.09 RCW. Where the requirements of this section conflict with the state requirements, the state requirements shall be adhered to over this section;

3. A maximum of three beds for sexually violent predators may be located within any secure community transition facility.

B. Process Requirements. In addition to the standard public notification requirements, all property owners and residents within one-half mile of the proposed project site shall be sent notice of the public hearing regarding the requested conditional use.

(3) "Juvenile detention facilities" shall meet the following conditions:

A. Minimum Conditions.

1. Location.

a. Buildings accommodating juvenile detention facilities shall not be located closer than two hundred feet from the boundary of a district in which the use is not allowed as a conditional use;

b. Juvenile detention facilities shall be located such that outside law enforcement officers can respond to a call for assistance within five minutes under typical conditions;

c. Advance life support service, as defined in RCW 18.73.030(19), must be available within five minutes under typical conditions;

2. Security.

a. The applicant shall submit a security plan, reviewed by the police chief, which at a minimum complies with applicable American Corrections Association's security standards for juvenile detention facilities. This plan shall identify staffing levels and scheduling, building security, and escape search plan, and provisions for immediate public notification of escapes;

3. Design.

a. Size. Juvenile detention facilities with capacity for up to seventy-five inmates shall be located on a site of at least five acres. Sites shall contain an additional four acres for each additional fifty-bed increase in capacity above this threshold;

b. Setbacks. The facility shall be set back at least seventy-five feet from public rights-of-way and property lines;

4. Landscaping/Buffers.

a. The applicant shall submit a landscaping plan, which serves to maintain or enhance the character of the area without jeopardizing security. This plan shall incorporate at least a twenty-five-foot landscaping buffer along public rights-of-way;

b. The applicant shall install an eight-foot-high fence in character with the neighborhood between the facilities and all property boundaries, with the exception of the landscaped street frontage, which effectively screens the site from adjacent properties. The hearing examiner may waive or lessen this requirement if he/she determines that, due to existing site features or the type of character of adjoining uses, the privacy and security of the occupants of adjoining properties can be maintained in the absence of a fence or with a lower fence;

c. Barbed wire topped fencing shall not be visible from public rights-of-way;

d. Outdoor activity areas located in residential districts shall not be visible from public rights-of-way or adjacent properties;

5. Noise.

a. The hearing examiner may require conditions to minimize potential noise impacts including, but not limited to, altering the locations of outdoor use areas and noise-generating facilities, and installations of noise reducing elements such as walls, berms, and landscaping;

6. Access.

a. Juvenile detention facilities shall have direct access to an arterial or collector unless the hearing examiner determines that access via lesser classifications of street would not be detrimental to neighborhood character and would not increase public safety risks.

B. Process Requirements. Property owners within one thousand four hundred feet of the proposed project site shall be sent notice of the public hearing regarding the requested conditional use.

(4) "Work release facilities" shall meet the following conditions:

A. Minimum Conditions.

1. General Requirements.

a. The applicant shall provide verification from the Department of Corrections (DOC) that the proposed facility complies with DOC standards and applicable state and local regulations;

b. The site must be within one-quarter mile of public transportation or an alternative transportation program, approved by the hearing examiner, must be provided to serve the needs of the facility's occupants;

2. Location.

a. Work release facilities shall not be located closer than five hundred feet from the boundary of a district in which the use is not allowed as a conditional use;

b. Setbacks. The facility shall be set back at least seventy-five feet from public rights-of-way and property lines;

c. Landscaping/Buffers.

i. The applicant shall submit a landscaping plan, which serves to maintain or enhance the character of the area without jeopardizing security. This plan shall incorporate at least a twenty-five-foot landscaping buffer along public rights-of-way;

ii. The applicant shall install an eight-foot-high fence in character with the neighborhood between the facilities and all property boundaries, with the exception of the landscaped street frontage, which effectively screens the site from adjacent properties. The hearing examiner may waive or lessen this requirement if he/she determines that, due to existing site features or the type of character of adjoining uses, the privacy and security of the occupants of adjoining properties can be maintained in the absence of a fence or with a lower fence;

d. Noise.

i. The hearing examiner may require conditions to minimize potential noise impacts including, but not limited to, altering the locations of outdoor use areas and noise generating facilities, and installations of noise reducing elements such as walls, berms, and landscaping;

e. Access.

i. The proposed site shall have direct access to an arterial or collector unless the hearing examiner determines that access via a lesser classification of street would not be detrimental to neighborhood character and would not increase public safety risks.

B. Process Requirements. Property owners within one thousand four hundred feet of the proposed project site shall be sent notice of the public hearing regarding the requested conditional use.

Legend for Table 4:

RSR: Residential/Sensitive Resource
SFL: Single Family Low Density
SFM: Single Family Medium Density
MFM: Multi-Family Medium Density
MFH: Multi-Family High Density
MU: Mixed use
CBC: Capital Boulevard Community
NC: Neighborhood Commercial
CS: Community Service
GC: General Commercial
TC: Town Center
LI: Light Industrial
HI: Heavy Industrial
HC: Historic Commercial
GB: Greenbelt
OS: Open Space
AP: Airport Hazard
ARI: Airport Related Industrial
BD: Brewery District

Table 5. Essential Public Facilities from TMC Figure 18.56.140(B)

Code	Essential Public Facility
A	Airports
B	State Education Facilities
C	Large Scale State or Regional Transportation Facilities
D	Prisons, Jails, and Other Correctional Facilities (including but not limited to: jails; juvenile detention facilities; prisons and prerelease facilities; work release facilities)
E	Solid Waste Handling Facilities
F	Inpatient facilities including substance abuse facilities (including but not limited to: intensive inpatient facilities, long-term residential drug treatment facilities, and recovery house facilities)
G	Mental Health Facilities (including but not limited to: congregate care facilities, adult residential treatment facilities, and evaluation and treatment centers)
H	Sewage Treatment Facilities (not including individual or community wastewater treatment systems)
I	Emergency Communication Towers and Antennas
J	Secure Community Transition Facilities
K	Other Facilities Designated by the Washington State Office of Financial Management as Essential Public Facilities

4. GOALS, POLICIES, AND ACTIONS

4.1 Lands for Public Purposes Goals, Policies, and Actions

Goal LPP-1 Provide sufficient and efficient services to Tumwater and the Urban Growth Area.

Policy	Action
LPP-1.1	Coordinate with Thurston Regional Planning Council, Thurston County, and other service providers to identify areas of shared need for public facilities.
LPP-1.2	Ensure concurrency with City, County, and Regional plans to provide the most efficient array of services.
LPP-1.3	Follow the requirements of County-Wide Planning Policy V and RCW 36.70A.200 when siting new facilities and improve the process whenever possible.

Goal LPP-2 Make recommendations for improvements in the provision of public services.

Policy	Action
LPP-2.1	Support actions to expand and improve Tumwater's multimodal transit network.
	LPP-2.1.1 Support the creation of an advisory body or bodies focused on non-motorized transit options in Tumwater or the region as a whole to give bicyclists and pedestrians a stronger voice in the planning process.
LPP-2.2	Improve waste management services and decrease waste production in the City.
	LPP-2.2.1 Cooperate with the County Solid Waste System and other local agencies to locate and build a new Waste and Recovery Center, HazoHouse, and other waste management facilities as needed.
	LPP-2.2.2 Encourage reuse and recycling to minimize solid waste

production in the City.

LPP-2.2.3 Encourage innovative and alternative technologies for converting solid waste to energy or fuel where financially practical and environmentally safe.

LPP-2.3 Assist school districts with the creation of new facilities to accommodate growing student populations.

LPP-2.3.1 Coordinate with the Tumwater and Olympia School Districts to arrange the acquisition of land for new school facilities.

LPP-2.3.2 Ensure that the land around sites of future school facilities is compatible with the intended usage by considering factors the City can influence such as the level of transit accessibility to the site, provision of public services, and the zoning of the surrounding area.

LPP-2.4 Encourage the use of technological advancements to improve City services.

LPP-2.4.1 Support the modernization of library services to incorporate increasingly popular media forms such as electronic books and other related services.

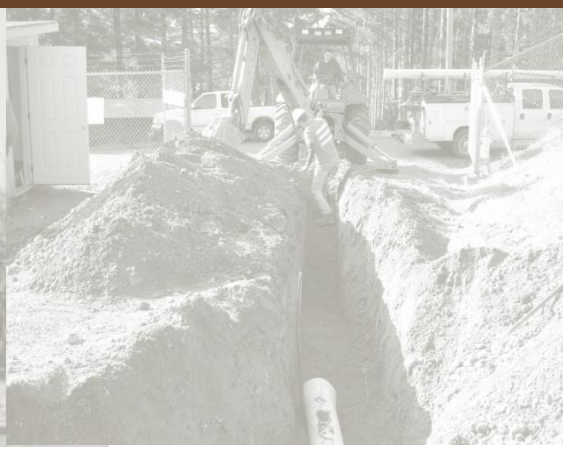
LPP-2.4.2 Consider establishing public Wi-Fi accessibility in City-owned buildings, particularly City Hall.

LPP-2.5 Support the fulfillment of citizen requests for public facilities in line with the Parks, Recreation, and Open Space Plan.

LPP-2.5.1 Create facilities the public has identified as needs in surveys and public comment.

Attachment D

Tumwater City Plan 2036
Utilities Element



CITY OF TUMWATER

TUMWATER CITY COUNCIL

Pete Kmet, Mayor
Neil McClanahan, Mayor Pro Tem
Nicole Hill
Tom Oliva
Joan Cathey
Eileen Swarthout
Ed Hildreth
Debbie Sullivan

TUMWATER PLANNING COMMISSION

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Joel Hansen
Michael Althauser

TUMWATER CITY STAFF

John Doan, AICP, City Administrator
Michael Matlock, AICP, Community Development Director
Brad Medrud, AICP, Planning Manager
David Ginther, Senior Planner
Megan Lande, Planning Intern

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1. INTRODUCTION

1.1 Introduction

The Utilities Element ensures that utility services provided by both public and private suppliers are consistent with the City of Tumwater's Comprehensive Plan and can support the community's growth and development as anticipated over the 20-year planning period.

The Utilities Element is based on the same assumptions and is consistent with the Land Use Element, which establishes the overall growth strategy for the City of Tumwater and its Urban Growth Area. The system design and timing for extension of utility services supports the land use pattern and policies proposed throughout the Comprehensive Plan. The level of service standards established for public utilities determines capital facilities costs and revenue analysis in the Capital Facilities Plan and provides a foundation for analysis of the existing utility delivery system and proposed improvements, which are necessary to meet the City of Tumwater's rapidly changing demands in six primary areas including:

- Natural gas
- Electricity
- Telephone
- Utility pipelines
- Cable television
- Cellular
- Broadband internet

Water and wastewater services are addressed as part of the Lands for Public Purposes Element.

The Utilities Element, as required by the Growth Management Act, must include an inventory of the general location of all existing and proposed utility facilities and a description of the current capacity and the expected future capacity of each utility. This Element identifies ways of improving the quality of these services and includes policies that ensure utilities are coordinated with land use. The City of Tumwater will implement these policies through its franchise agreements with the utilities and

through the land use permit process. Table 1 provides a list of the plans that provide the foundation for this element of the Comprehensive Plan.

1.2 Utility Regulations

Both public and private agencies are involved with regulation, coordination, production, delivery, and supply of services. This section of the Utilities Element identifies the major pieces of legislation and organizations that are most prominent in the utilities sector in Table 1 below.

Table 1. Foundational Plans and Data

Topic Index	Supporting Plans and Materials
Natural Gas	• Pipeline and Hazardous Materials Safety Administration Strategic Plan (2012-2016) • Pipeline Safety Act, Washington State (Chapter 81.88 RCW) (2007) • Land Use Planning in Proximity to Natural Gas and Hazardous Liquid Transmission Pipelines in Washington State, Washington Utilities and Transportation Commission (2006)
Electricity	• Northwest Regional Forecast of Power Loads and Resources 2016 through 2025, Pacific Northwest Utilities Conference Committee (2015) • Pacific Northwest Loads and Resources Study, Bonneville Power Administration (2015) • Pacific Northwest Power Supply Adequacy Assessment for 2020, Northwest Power and Conservation Council (2015) • Public Utility District No. 1 of Thurston County Electric Initial Business Assessment, Thurston County PUD (2012) • Seventh Northwest Conservation and Electric Power Plan, Appendix M Climate Impacts, Northwest Power and Conservation Council (2016) • State Energy Data System, U.S. Energy Information Administration (2015) • Sustainable Thurston Energy White Paper, Thurston Regional Planning Council (2011)

Topic Index	Supporting Plans and Materials
Puget Sound Energy (Natural Gas and Electricity Provision)	• Comprehensive Assessment of Demand-Side Resource Potentials 2016-2035, Puget Sound Energy (2015) • Integrated Resource Plan, Puget Sound Energy (2015) • Puget Sound Energy Annual Statistics (2015) • Puget Sound Energy Franchise Agreement, City of Tumwater and Puget Sound Energy (2015)
Telecommunications	• Broadband Feasibility Assessment with Cities of Olympia, Tumwater and Lacey, Thurston County Public Utility District (2015)
Comcast (Telecommunications Service Provision)	• Comcast Franchise Agreement, City of Tumwater and Comcast (2009)
General	• Land Use Element • County-Wide Planning Policies, Thurston County (2015) • Sustainable Thurston, Thurston Regional Planning Council (2013) • Climate Action Plan, City of Tumwater (2008) • Lands for Public Purposes Element • Capital Facilities Plan (2016-2021) • City of Tumwater Resource Conservation Management Program (Phase 1 and 2) - Energy Conservation Assessment, State General Administration and Washington State University Extension Energy Program (2008) • Natural Hazards Mitigation Plan for the Thurston Region (2009)

1.2.1 State Regulation

Investor-owned utilities are regulated in Washington by the Washington Utilities and Transportation Commission, which is composed of three members appointed by the Governor. The commission is empowered by Title 80 of the Revised Code of Washington (RCW) to regulate electrical, gas, irrigation, telecommunications, and water companies. State law directs the commission to regulate the rates, charges, services, facilities, and practices of the utilities. Any change in customer charges or service provision requires commission approval.

The commission, under Title 81 RCW, also regulates the rates and safety practices of the transportation of solid waste (garbage), intrastate petroleum and gas products via

pipeline, and scheduled auto transportation services. As part of its mission to protect consumers, the commission maintains a call center for customer complaints at 1-888-333-9882 and coordinates the 811 Call Before You Dig line, a free service for locating utilities on public or private property that anyone can use.

1.2.2 Federal Regulation

The Federal Energy Regulatory Commission is an independent five-member commission working with the U.S. Department of Energy. The Commission regulates the interstate transmission of natural gas, oil, and electricity, as well as licensing natural gas and hydropower generation projects.

The Federal Communications Commission regulates interstate and international communications by raid, television, wire, satellite, and cable. An independent U.S. government agency overseen by Congress, the five-member commission is the United States' primary authority for communications laws, regulation, and technological innovation. The commission maintains a consumer call center at 1-888-255-5322, as well as an online help center.

1.2.3 Franchise Agreements

All private utilities have existing franchise agreements to provide service in the City of Tumwater. The franchise agreements are a non-exclusive right to occupy the public right-of-way.

Several private service providers are available in the community that provide television, cable, internet, and telephone services. Some companies lease underground utility conduit from the City of Tumwater. The City of Tumwater has a special franchise agreement with Xfinity cable services that provides public education funding to support Tumwater TV, Channel 26 (Xfinity only), operated by Thurston Community Television (TCTV). The City of Tumwater provides limited liaison assistance in resolving escalated service requests with Xfinity.

1.3 County-Wide Planning Policies

The Growth Management Act requires that comprehensive plans be consistent with Thurston County's County-Wide Planning Policies, as amended in 2015. The following is a list of the relevant policies that apply to this Element. All County-Wide Planning Policies are adopted as Appendix B to the Comprehensive Plan. The relevant sections of the County-Wide Planning Policies to this Element are cited below.

I. General Policies

1.12 Champion energy efficiency and renewable energy strategies that contribute to energy independence, economic stability, reduced climate impacts, and long-term household and community health.
The Utilities Element contains goals, policies, and actions that address County-Wide Planning Policy 1.12. These goals, policies, and actions contribute to energy independence, economic stability, reduced climate impacts, and long-term household and community health.

II. Urban Growth Areas

2.2 The boundaries of designated urban growth areas must meet the following criteria:

[…]

b. Be served by or planned to be served by municipal utilities.

The purpose of the Utilities Element is to plan the provision of utilities to the City of Tumwater and its Urban Growth Area.

III. Promotion of Contiguous and Orderly Development, Provision of Urban Services, and Protection of Rural Areas

3.1 Concentrate development in urban growth areas and protect rural areas by:

[…]

h. Where urban services & utilities are not yet available, requiring development to be configured so urban growth areas may eventually infill and become urban.

3.2 Coordinate Urban Services, Planning, and Development Standards through:

a. Maximizing the use of existing infrastructure and assets, and leveraging the value of these in building vital, healthy, and economically viable communities.

b. Making public investments that further multiple community

goals, target identified priorities, and leverage additional investment.

[…]

d. Providing and maintaining municipal services (water, sewer, solid waste, public safety, transportation, and communication networks) in a sustainable, and cost-effective manner.

e. Coordinating planning and implementation of polices regarding urban land use, parks, open space corridors, transportation, and infrastructure within growth areas. Developing compatible development standards and road/street level of service standards among adjoining jurisdictions.

f. Developing, and ensuring the enforcement of, agreements between Thurston County and the cities and towns within its borders, that ensure development occurring within unincorporated urban growth areas is consistent with city utility and stormwater planning and conforms to the development standards and road/street level of service standards of the associated city or town.

3.4 Provide capacity to accommodate planned growth by:

a. Assuring that each jurisdiction will have adequate capacity in transportation, public and private utilities, storm drainage systems, municipal services, parks, and schools to serve growth that is planned for in adopted local comprehensive plans;

The Utilities Element seeks to find the most effective way to serve the greatest amount of people at the lowest cost possible through examining how utilities are currently provided, what private utility providers have planned, and how future demand will shape utility distribution.

VII. Economic Development and Employment

7.3 Provide in comprehensive plans for an adequate amount of appropriately located land, utilities, and transportation systems to support desirable economic development. Create and maintain regulatory certainty, consistency, and efficiency.

7.5 Build a vital, diverse, and strong local economy, including job opportunities that support community and household resilience, health, and well-being by:

[…]

c. Providing opportunities for a range of business types to succeed.

d. Emphasizing polices that support locally owned businesses including home-based, entrepreneurial, and nonprofit business and organizations.

[…]

j. Adding incentives for businesses to demonstrate their environmental sustainability including reduction in greenhouse gas emissions.

In addition to the provision of natural gas and electricity, the Utility Element outlines the provision of telecommunication networks, which supports businesses of all types as internet access becomes increasingly vital to the success of a business.

IX. Transportation

9.2 Increase opportunities for riding transit, biking, walking, ridesharing, allowing and encouraging flexible work schedules, and teleworking.

Teleworking is supported by the provision of internet as covered in Section 5.1.

X. Environmental Quality

10.4 Take action to conserve resources, increase use of renewable resources, and decrease dependence on non-renewable resources by:

a. Reducing energy consumption and reliance on nonrenewable energy sources.

Goals U-2 and U-4 of this element address reducing energy consumption and increasing energy generation from renewable sources to minimize

the City of Tumwater's carbon footprint.

1.4 Sustainable Thurston Goals

The City of Tumwater adopts as part of the Utilities Element the following Sustainable Thurston Goals:

1.4.1 Priority Goals

Priority Goal 5: Plan and act toward zero waste in the region.

Priority Goal 11: Provide opportunities for everyone in the Thurston Region to learn about and practice sustainability.

Priority Goal 12: Make strategic decisions and investments to advance sustainability regionally.

1.4.2 Economy Goals

EC-4: Provide robust infrastructure to support economic development.

1.4.3 Housing Goals

H-7: Encourage the construction, weatherization, and operation of homes to boost energy efficiency.

1.4.4 Energy Goals

EN-1: Increase energy generation from renewable resources to reduce the region's carbon footprint.

EN-2: Enhance the region's electricity distribution, monitoring, and storage infrastructure to support adoption of cleaner technologies and practices.

EN-3: Increase energy efficiency and conservation to reduce the region's carbon footprint.

1.4.5 Solid Waste Goals

SW-1: Plan and take action to reduce, reuse, and recycle as much waste as possible and meet the needs of current and future populations.

SW-2: Continue to plan for, educate, assist, and offer access to safely and efficiently manage disposal and reduce hazardous waste.

1.4.6 Environment Goals

E-1: Reduce air pollution that endangers human health.

E-2: Reduce the region's carbon footprint and protect critical infrastructure in case of extreme weather or sea level rise.

2. NATURAL GAS

The City of Tumwater and the surrounding urban growth area are served entirely by Puget Sound Energy. Puget Sound Energy serves all municipalities within Thurston, King, Pierce, Lewis, Snohomish, and Kittitas Counties, an approximate 1.1 million electric and 775,000 gas customers. This service area has experienced over 70% increase in customers since 2004.

2.1 Regulatory Context

The activities of Puget Sound Energy are regulated by both federal and state legislation. This legislation is primarily concerned with promoting competition among gas suppliers and controlling the cost of natural gas to the consumer. Puget Sound Energy is subject to the general regulations and oversight by the energy agencies, such as the Washington Utilities and Transportation Commission and the Federal Energy Regulatory Commission. Other pieces of legislation that have specific implications for the natural gas industry are described below:

2.1.1 Natural Gas Policy Act 1978

The National Gas Policy Act encouraged competition among fuels and suppliers across the United States. As a result, natural gas has essentially been de-controlled. The Act also contained incentives for developing new natural gas resources and a tiered pricing structure aimed at encouraging the development of national transmission pipelines.

2.1.2 The Clean Air Act Amendment of 1990

The passage of the Clean Air Act amendments in 1990 has shown a federal intent to promote the diversification of fuel sources for motor vehicles. This is in response to the need to both reduce carbon dioxide atmospheric emissions and to reduce the nation's reliance on gasoline for strategic reasons.

The Olympic Region Clean Air Agency serves Clallam, Grays Harbor, Jefferson, Mason, Pacific, and Thurston counties and it is one of seven such regional air pollution control agencies in the state of Washington. Olympic Region Clean Air Agency works cooperatively with the State Department of Ecology and the regional United States Environmental Protection Agency to measure criteria ambient air pollutants, meteorological parameters, and other air-related data. It currently operates and maintains air monitoring equipment for measurement of three of the six criteria pollutants: particulate matter (PM2.5), ozone (O3), and carbon monoxide (CO).

2.1.3 The Clean Air Rule

The State Department of Ecology has set a cap on carbon pollution to help slow climate change and limit the projected effects on the state's coastal communities, agricultural industries, and drinking water supplies.

Under the new rule to cap and reduce carbon pollution, businesses that are responsible for 100,000 metric tons of carbon pollution annually are required to cap and then gradually reduce their emissions. Organizations regulated by the Clean Air Rule are required to reduce emission beginning in 2017. Beginning in 2020, the threshold reduces by 5,000 metric tons every three years. By 2035, the compliance threshold will be 70,000 metric tons of carbon dioxide equivalent or more. The threshold will remain constant at 70,000 MTCO2e after 2035.[1]

2.1.4 Olympic Region Clean Air Agency

The Olympic Region Clean Air Agency is a local government agency responsible for enforcing federal, state, and local air pollution standards and governing air pollutant emissions from new and existing sources in Clallam, Grays Harbor, Jefferson, Mason, Pacific, and Thurston counties.

2.2 System Analysis

The 2,889 residential natural gas customers in the City of Tumwater use an estimated 37 million cubic feet of natural gas in December 2015. This is 0.3% of Washington's total residential natural gas consumption.

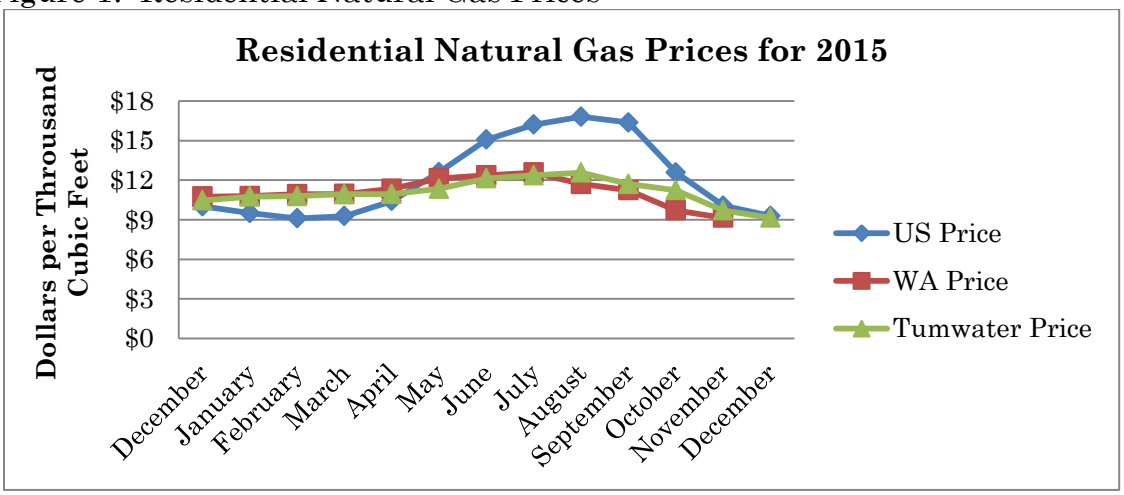
The City of Tumwater's natural gas supply system currently serves existing customers. Washington Utilities and Transportation Commission regulations prohibit Puget Sound Energy from extending gas facilities to areas that are not expected to pay for themselves from the outset. While this keeps the existing ratepayers from financing improvements to other areas, it does limit service delivery of natural gas to marginally profitable areas.

2.2.1 Residential Rates

Residential natural gas prices in the City of Tumwater averaged $9.15 per thousand cubic feet in 2015. This average rate was approximately 1.5% less than the U.S. average rate of $9.29 per thousand cubic feet for residential customers in that month.

[1] The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

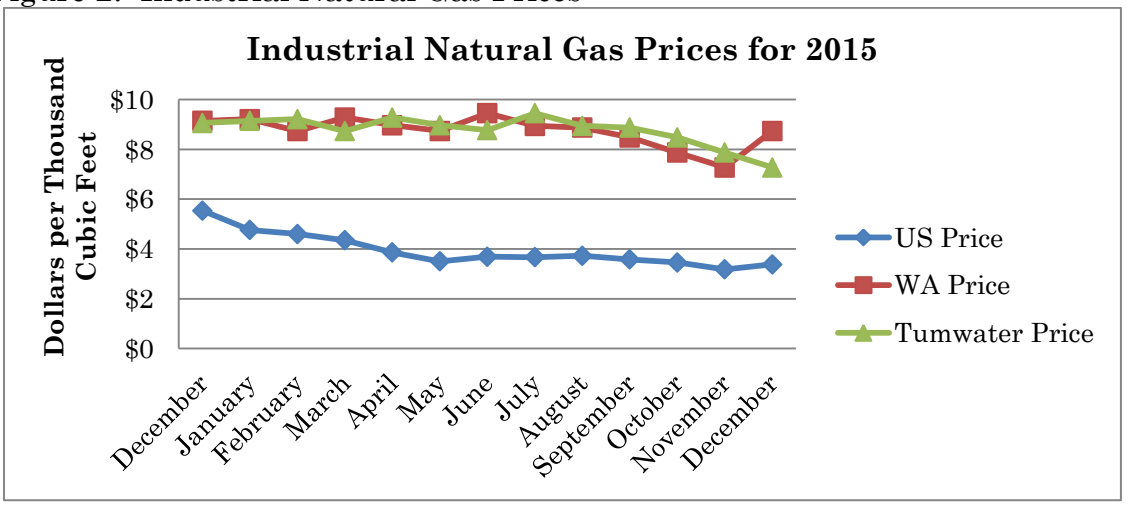
Figure 1. Residential Natural Gas Prices



2.2.2 Industrial Rates

The City of Tumwater's industrial natural gas prices in 2015 averaged $7.27 per thousand cubic feet, which was approximately 115% more than the national average rate of $3.38 per thousand cubic feet. The average industrial natural gas rate in the City of Tumwater decreased 19%, from $9.06 per thousand cubic feet in December 2014 to $7.27 per thousand cubic feet in December 2015.

Figure 2. Industrial Natural Gas Prices

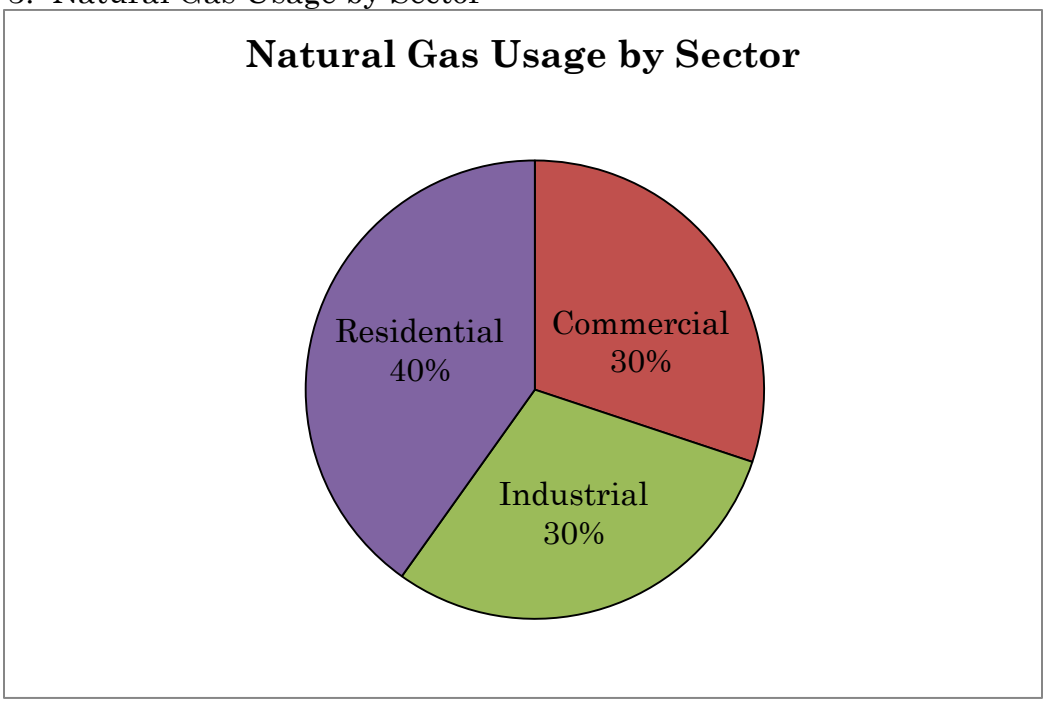


Puget Sound Energy expects nominal retail gas rates to rise between 2.9% and 3.4% per year, depending on the class, between 2016 and 2033.

2.2.3 Natural Gas Usage

The City of Tumwater used natural gas to create 6.45 million therms of heat energy in 2015. Residential uses consumed about 10% more natural gas than commercial or industrial uses.

Figure 3. Natural Gas Usage by Sector



3. ELECTRICITY

Puget Sound Energy, the City of Tumwater's energy provider, is an investor-owned public utility incorporated in the State of Washington. The utility delivers local service to more than 1.1 million residential, commercial, and industrial customers in a nine county, 4,500 square mile service territory. Approximately 450,000 customers have been added to this service territory in the past ten years, an over 70% increase in service area population. Puget Sound Energy builds, operates, and maintains an extensive electrical system consisting of generating plants, transmission lines, substations, and distribution systems.

The Bonneville Power Administration, a power-marketing agency of the U.S. Federal Government, owns and operates the principal high voltage bulk transmission lines serving the Puget Sound region. Puget Sound Energy relies on Bonneville Power Administration for bulk transmission services of power generated by federal hydro dams and Energy Northwest generators.

3.1 Regulatory Context

Puget Sound Energy and the Bonneville Power Administration activities are coordinated by the policies of the Western Electricity Coordinating Council and Northwest Power and Conservation Council. The Federal Energy Regulatory Commission and the Washington Utilities and Transportation Commission provide regulation for the system. The role and structure of the Washington Utilities and Transportation Commission, which regulates all utilities, has been described in Chapter 1. Organizations and regulations that are specific to electricity supply are described below:

3.1.1 The Western Electricity Coordinating Council

Western Electricity Coordinating Council is responsible for coordinating electricity supply across the western United States. It covers all of the United States west of the Rockies and parts of Mexico and Canada. Its primary function is to coordinate wheeling of power between the regions and to provide safeguards in the national grid so that a power disturbance in one part of the country will not leave another region without power.

3.1.2 The Northwest Power Pool

Northwest Power Pool is an integrated system of generating resources and transmission facilities owned by Northwest Utilities. The pool was formed in 1942 to coordinate sales and interchange of power within the region. Puget Sound Energy is a member of the Northwest Power Pool.

3.1.3 The Northwest Power and Conservation Council

The Northwest Power Act of 1980 authorized the Council and it was approved by a vote of the legislatures of all four northwestern states, Washington, Oregon, Idaho, and Montana. The governor of each of the four states appoints two members to serve on the Council. The Council's focus is on the generation of electricity; however, its policies have implications for gas service. The act contains three principal mandates for the council to carry out:

1. Develop a 20-year electric power plan that will guarantee adequate and reliable energy at the lowest economic and environmental cost to the Northwest. Energy conservation, renewable resources, such as wind power, solar, geothermal, and biomass, and high-efficiency resources, such as those that use heat from manufacturing processes to generate electricity, are listed in the Northwest Power Act as priorities.

2. Develop a fish and wildlife program to protect and rebuild populations affected by hydropower development in the Columbia River Basin.

3. Conduct an extensive program to educate and involve the public in the council's decision-making processes.

The plans and policies the Council develops and approves are implemented by numerous agencies including Bonneville Power Administration, U.S. Army Corps of Engineers, Bureau of Reclamation, and Federal Energy Regulatory Commission as well as both investor-owned and public utilities. State, tribal, and local governments often work closely with the Council as it develops its power and fish and wildlife plans, and these entities implement measures in those plans. The Power Plan and the fish and wildlife program are updated at least every five years.

3.1.4 Washington Energy Independence Act

The Washington State Energy Independence Act (RCW 19.285) sets annual targets for utilities to use eligible renewable resources or acquire equivalent renewable energy credits. These targets increase over the years, for example the target percentage was 3% in 2012, 9% in 2016, and by 2020 utilities should have 15% of their power production come from renewable resources or energy credits.

3.1.5 Western Interstate Energy Board

The Western Interstate Energy Board was created Western Interstate Nuclear Compact. It is an organization of governors and premiers of the eleven western states and three western Canadian provinces. The Board's purpose is to provide the

instruments and framework for cooperative state efforts to enhance the economy of the West and contribute to the well-being of the region's people. Most of the Board's work is conducted through its three committees:

1. The High-Level Radioactive Waste Committee works with the U.S. Department of Energy to develop a safe and publicly acceptable system for transporting spent nuclear fuel and high-level radioactive waste under the Nuclear Waste Policy Act.

2. The Energy Minerals Reclamation Committee works to improve the administration of the Surface Mining Control and Reclamation Act in coal producing states.

3. The Committee on Regional Electric Power Cooperation works with the Western Conference of Public Service Commissioners to improve the efficiency of the western electric power system.

3.2 Electricity Supply

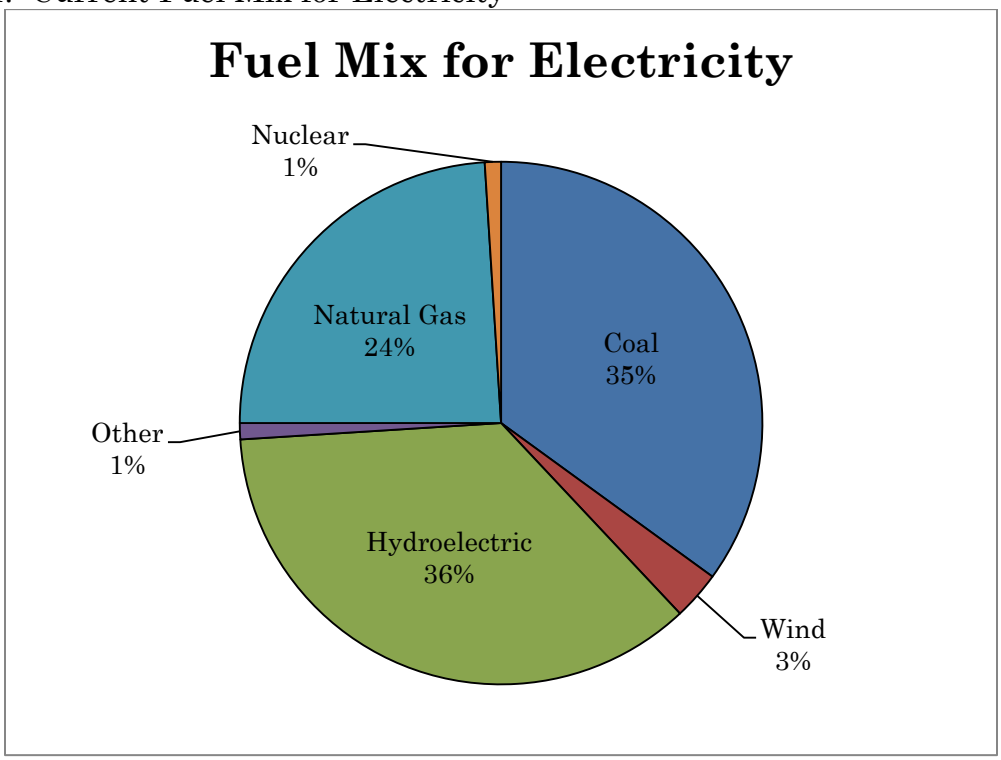
The first tier of PSE's electrical supply system is generation. Hydroelectric plants generate a large proportion of the electricity consumed in the Pacific Northwest. Much of the power comes from dams on the Columbia River to the east of the Cascades. Puget Sound Energy owns or has long term operating contracts on:

- Hydroelectric plants: 14
- Coal fired plants: 5
- Natural gas fired plants: 7

Three of PSE's coal fired sources will be shut down by 2025 to meet clean air standards, regulations, and goals in Washington and Montana.

In 2003, the company's energy production was 40% hydro resources and 60% thermal plants. Thermal plants take a number of forms, including coal-fired, natural gas-fired, and oil-fired. Puget Sound Energy does not presently own any nuclear generating facilities.

Figure 4. Current Fuel Mix for Electricity



3.2.1 Understanding Electricity Transmission and Distribution

The "transmission system" is the second tier in the electricity supply system. Puget Sound Energy's transmission system covers Thurston County and the City of Tumwater. It is a grid, which provides a link between Bonneville Power Administration's Bulk Transmission System and the local feeder system, which connects with customers. It has the function of moving power around Puget Sound Energy's service area.

The City of Tumwater is included in a Puget Sound Energy service area, which also covers the Cities of Bucoda, Lacey, Olympia, Rainier, Rochester, Tenino, and Yelm, and the unincorporated areas of Thurston County. There is one power generation station in the City of Centralia near the sub-area that feeds electricity into Puget Sound Energy's transmission system. Other sources of power outside this subarea flow through three transmission stations in Thurston County.

Power from generating plants along the Columbia River is delivered through existing 500 Kilovolt (kV) lines to the Bonneville Power Administration Raver Station in King County, to the Bonneville Power Administration Paul Station near the Centralia Generating Plant. The Tono Station just south of Thurston County steps the 500 kV voltage down to 115 kV, supplying two 115 kV lines north into central Thurston County.

The 500 kV system continues north to the Bonneville Power Administration Olympia Substation located west of the City of Tumwater in Thurston County, where the power is stepped down to the 230 and 115 kV levels. A 230 kV line originating at the White River Generating Plant in Pierce County also provides power to the Bonneville Power Administration Olympia Substation, where the power is stepped down to the 115 kV level. From there, two 115 kV lines run east from the Bonneville Power Administration Olympia Substation to serve Puget Sound Energy's Olympia Transmission Substation. This transmission station then serves the Saint Clair and the West Olympia Substations in the Olympia area. A 115 kV line originating at the White River Station runs southwest to the Saint Clair Transmission Station, which serves substations in the Lacey area.

Power is transformed from 115 kV to 55 kV by one transformer at the Olympia Transmission Substation to serve some distribution substations with 55 kV lines. The Saint Clair and West Olympia Transmission Substations have a similar transformer used to serve 55 kV distribution substations in Thurston County.

Because the power system in the Thurston County area is connected to a larger transmission grid throughout the Northwest, power must be able to flow north and south as the needs of the system evolve. As mentioned previously, the demand for electricity in the Puget Sound area varies throughout the year. In the spring, heavy water flows from the winter snowpack cause large amounts of imported power to flow across our system from Canada to California. In the fall, when local water reservoirs are low, power is imported from California to the Puget Sound Energy system.

The "distribution system" is the third and final tier in the electricity supply system. Power is supplied from the transmission system into the City of Tumwater's local feeder system at five distribution sub-stations, three of which are located in the City of Tumwater and its Urban Growth Area. The remaining two are located in the City of Olympia and its Urban Growth Area.

3.3 System Analysis

Programs to ensure a reliable and economic power system over the next 20 years and reduce the potential for system overload were identified in the Bonneville Power Administration's *Puget Sound Reliability Study* (2014) and Northwest Power and Conservation Council's *Seventh Northwest Conservation and Electric Power Plan*. These programs included the following:

- Increase energy efficiency measures.
- Develop the capability to deploy demand response resources or rely on increased market imports to meet system capacity needs under critical water and weather conditions.

- Invest in new natural gas-fired generation.

At the local level, Puget Sound Energy continues to pursue energy efficiency programs. Puget Sound Energy offers grants and consultation for energy conservation measures in industrial facilities. There is also an active program to raise consumer consciousness regarding energy efficiency. Puget Sound Energy upgrade their existing transmission substation in the City of Tumwater in 2012 and constructed a new distribution and transmission switching station and 12 miles of local transmission lines between the Cities of Lacey and Tumwater between 2012 and 2015.

Both the Bonneville Power Administration and Puget Sound Energy are working to manage demand. The aim is to reduce demand at peak times, and spread demand more evenly over the daily and seasonal cycle. Encouraging commercial customers to carry out high-energy consumption processes when supply is plentiful in off peak periods can encourage and use power when greater supply is available. The Bonneville Power Administration is undertaking programs to develop the bulk transmission system. The aim of these programs is to increase system capacity, to deliver more power, and to protect the consumer from power loss.

Almost all of the forecast data is affected by uncertainty in economic conditions, weather, environmental and governmental policies, and other factors that could significantly affect the magnitude, duration, and timing of projected surpluses or deficits. Some of these uncertainties include:

- Natural variations in weather;
- Potential increases or decreases in retail loads due to changes in local, regional, and national economic conditions;
- Future local, state, and national policy requirements;
- Cost and availability of fuel;
- Changes in existing or contracted generating resources;
- Availability of new and existing uncommitted regional resources;
- Availability and reliability of import/export markets and transmission limits; and
- Future climate change impacts to retail loads, stream flows, and resources.

The City completed an energy conservation assessment in 2008 to identify opportunities to save energy and other resources. Because of the assessment, the City adopted the *Climate Action Plan,* which implemented recommendations from the assessment such as retrofitting lights and improving the heating, venting, and air conditioning systems in City-owned buildings.

3.3.1 Electricity Rates

The average commercial electricity rate in the City of Tumwater is 9.46 cents/kWh. This is 23% greater than the Washington average rate of 7.68 cents/kWh and 6% less than the national average rate of 10.09 cents/kWh. Commercial rates in the U.S. range from 6.86 cents/kWh to 34.88 cents/kWh.

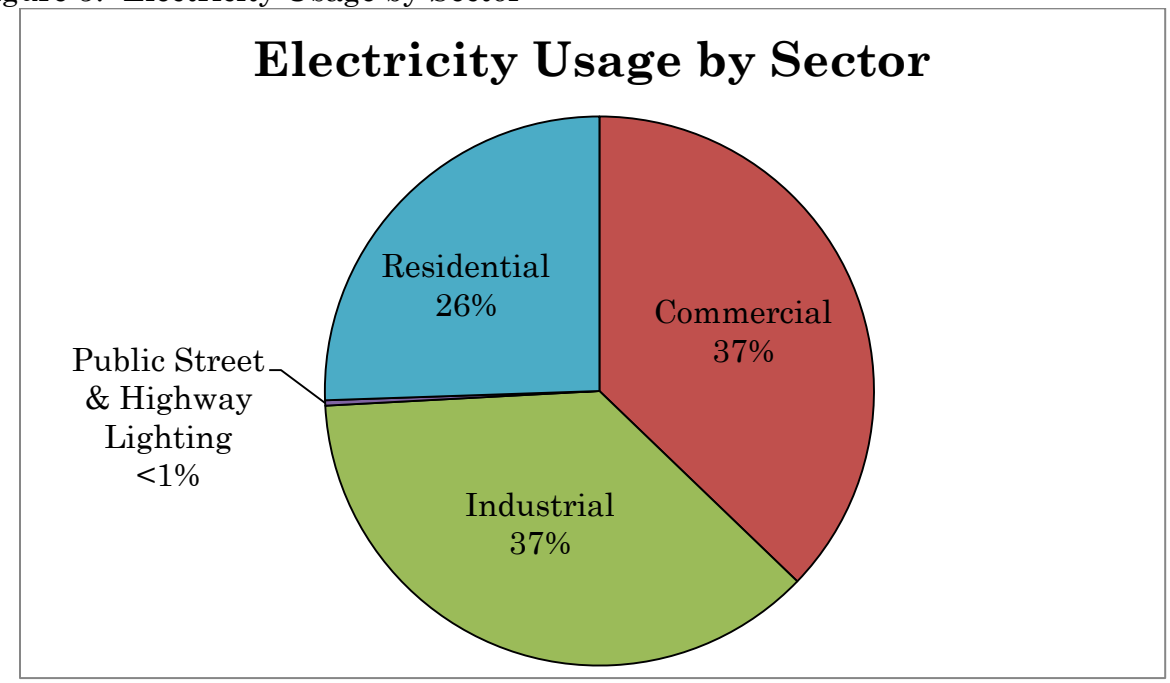
For residential, the average electricity rate in the City of Tumwater is 10.36 cents/kWh which is 21% greater than the Washington average rate of 8.53 cents/kWh and 12% less than the national average rate of 11.88 cents/kWh.

Puget Sound Energy projects that between 2016 and 2033, nominal retail electric rates will grow at an average annual rate of between 1.1% and 1.3%.

3.3.2 Electricity Usage

The City of Tumwater used about 315 million kWh in 2015. The sectors that used the most were commercial and industrial with 118 million kWh and 115 million kWh respectively.

Figure 5. Electricity Usage by Sector



4. NATURAL GAS AND FUEL PIPELINES

Two major natural gas and fuel pipelines pass within the City of Tumwater and its urban growth area:

- Olympic Pipeline (2.8 miles located within the City of Tumwater)
- Williams Northwest Pipeline (2.5 miles located within the City of Tumwater)

4.1 Olympic Pipeline

The Olympic Pipeline spur was used to carry liquid fuels from Olympic Pipelines' main north-south pipeline east of the City of Tumwater to a bulk storage tank facility at the corner of Linderson Way and Tumwater Boulevard. The lease for that bulk storage facility has lapsed and it is no longer a conforming land use for that location. The spur pipeline and easement remains in place but is currently inactive. No plans are currently on file to relocate the bulk storage facility or reactivate this pipeline spur.

4.2 Williams Northwest Pipeline

The Williams Northwest Company pipeline conveys natural gas from Williams Northwest Company Pipeline main north-south pipeline east of the City of Tumwater to the Satsop Business Park in Grays Harbor County. This pipeline consists of two parallel 16-inch diameter gas pipelines located within a right of way that passes through the southern portion of the City of Tumwater and its urban growth area. This pipeline is active and no further expansion of this pipeline is planned at this time.

4.3 Puget Sound Energy Natural Gas Pipelines

Puget Sound Energy maintains an extensive network of pipelines that distribute natural gas to customers throughout the City of Tumwater.

The Williams Northwest Company supplies natural gas to Puget Sound Energy through four gate stations in the Olympia area.

1. Olympia Gate Station at Flying Carpet and Fir Tree. This gate station also serves the Cities of Olympia and Lacey.
2. Olympia Town Border Station at 42nd and Boulevard. This station also serves the Cities of Olympia and Lacey.

3. Littlerock Gate Station at 90th Lane SW and Littlerock Road.

4. Black Lake Gate Station at Delphi and 62nd Avenue SW.

Other additional gas facilities serving the City of Tumwater include the following:

- A six-inch gas main from Olympia Gate to the Capitol, serving about 5,000 residential customers.
- A four-inch West Olympia Main from Black Lake to Evergreen College serving about 1,600 residential customers.
- A four-inch main from Littlerock to the City of Tumwater serving about 1,600 residential customers.

5. TELECOMMUNICATION

The telecommunications industry is currently undergoing large advances in technology. Cellular and optical fiber technology have changed the way telecommunications service is delivered. In addition to this, technology is evolving that will eliminate current physical barriers that separate data, video, and voice technologies.

5.1 Broadband

With the rise of broadband-enabled services and applications, and the increasing migration of many aspects of modern life online, a lack of broadband connectivity can increasingly have a negative impact on social and economic development by excluding those who lack broadband access or do not see the relevance of broadband services. The Federal Communications Commission currently defines broadband access in the United States as 25Mbps when downloading data and 3Mbps when uploading data. It is becoming an increasingly important utility since more educational, occupational, communicative, and entertainment opportunities are dependent on this service.

In the City of Tumwater, 25 internet service providers offer broadband connections over a variety of methods to both residences and businesses. CenturyLink and Xfinity are the leading providers in the City of Tumwater. According to BroadbandNow, an organization that assesses broadband access, currently 92% of the City of Tumwater has access to CenturyLink's digital subscriber lines, 97% has access to Xfinity cable services, and Hughes Net's satellite coverage is accessible to buildings with a satellite dish and a clear view of the southern sky. The general types of broadband connections include:

5.1.1 Digital Subscriber Line (DSL)

Digital subscriber line uses existing phone lines to connect to the internet, similar to dial-up, but still allows for simultaneous phone and internet usage.

5.1.2 Cable

Cable uses existing television cables to connect to the internet without interfering with the television signals.

5.1.3 Wireless

Wireless internet connections are broadcast over the airways via a ground station provider to antennas. This method requires a clear line of sight between the antenna and the ground station making it susceptible to weather conditions.

5.1.4 Satellite

Satellite internet is a form of wireless internet that uses geosynchronous satellites to connect to the internet. This method requires a clear line of sight between the satellite dish and the orbiting satellite making it susceptible to weather conditions.

5.1.5 Mobile

Certain phones and smart devices are able to access the internet using the cellular phone network.

5.1.6 Fiber Optic

Fiber optic technology uses thin glass fibers to convert electrical data signals into light for faster and more reliable connections. The City has some fiber conduits around the city and is currently planning how to best use these assets.

Many providers of digital subscriber line, cable, or satellite phone and television services use the same infrastructure to provide internet services. Table 3 includes a current inventory of this infrastructure that is registered by the Federal Communications Commission, the national regulator of interstate communications.

Table 3. Current Inventory of Infrastructure

Infrastructure	Number
Cell Phone Towers	1
Antenna Towers	95
Commercial Land Mobile Towers	3
Private Land Mobile Towers	30
Microwave Towers	22
Paging Towers	13
Maritime Coast & Aviation Ground Towers	3
Amateur Radio Licenses	122

5.2 Television

Cable television is available to residents through Xfinity. Service is through a franchise agreement. Lines installed in public rights of way provide cable transmission. The lines are usually required to be underground. All of the City of Tumwater currently has access to cable TV including recently annexed areas. Xfinity plans to accommodate future population as market conditions demand. It is not bound by the level of service and concurrency requirements under the Growth Management Act.

6. MEETING FUTURE DEMAND

In the six county service area of Puget Sound Energy, an inflow of more than 775,000 new residents between 2016 and 2035 will increase Puget Sound Energy's electric service territory population to almost 4.8 million by 2035. Additionally, employment is expected to grow at an average annual rate of 0.7% between 2016 and 2035, manufacturing employment is expected to decline annually by 0.4% on average between 2016 and 2035, and local employers are expected to create about 297,000 jobs between 2016 and 2035.[2]

Growth in the City of Tumwater follows closely with growth trends in other parts of the Puget Sound Energy service area. There were 20,610 jobs in the City of Tumwater in 2015. Over the 20-year planning period, the City of Tumwater is projected to add an additional 11,055 jobs for a 54% gain in total employment primarily in the areas of government, professional services, and retail. The biggest changes in employment occur in information, construction, and utilities.

These projections form the basis of the utility forecast for the City of Tumwater helping ensure adequate services are in place and identify potential changes or adjustments needed.

Table 5. The City of Tumwater and Urban Growth Area 20-Year Population Projection

	2015[1] Population	2035[2] Population	Population Increase	Percent Increase 2015-2035
Tumwater	21,939	34,680	12,741	58%
Urban Growth Area	3,250	8,203	4,954	152%
Combined Areas	**25,188**	**42,883**	**17,695**	**70%**

Source: [1] Office of Financial Management, Forecasting Division
[2] The Profile, October 2015, Thurston Regional Planning Council, and the Population and Employment Forecast for Thurston County Final Report

Note: The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

[2] The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

Table 6. The City of Tumwater and Urban Growth Area 20-Year Housing Projection

	2015 Housing Units[1]	2035 Housing Units[2]	Housing Increase	Percent Increase 2015-2035
Tumwater	8,680	13,840	5,160	60%
Urban Growth Area	2,710	5,330	2,620	97%
Combined Areas	**11,390**	**19,170**	**7,780**	**68%**

Source: [1] Office of Financial Management, Forecasting Division
[2] The Profile, October 2015, Thurston Regional Planning Council, and the Population and Employment Forecast for Thurston County Final Report

Note: The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

One simple measure of the energy intensity is the gross measure of total energy consumed divided by the population. This per capita indicator is a good measure of energy consumption because decisions by individual consumers have an important effect on overall energy consumption. Combined with energy efficiency projections outlined in Section 6.1 of this document, this measure provides a straight-line projection that provides a conservative picture of anticipated demand.

Table 7. The City of Tumwater and Urban Growth Area 20-Year Energy Consumption Projection

	2015 Households[1]	2035 Households[2]
Tumwater	**8,470**	**13,390**
Natural Gas	276,400 MBTU	346,800 MBTU
Electricity	116,956,800 kWh	153,459,000 kWh
Urban Growth Area	**1,255**	**3,167**
Natural Gas	41,000 MBTU	82,030 MBTU
Electricity	17,325,800 kWh	36,298,300 kWh
Combined Areas	**9,725**	**16,557**
Natural Gas	317,400 MBTU	428,830 MBTU
Electricity	134,277,200 kWh	189,757,300 kWh

Source: U.S. Energy Information Administration (EIA) State Energy Data System, Puget Sound Energy, and the 2010 Census

Notes: [1] In 2015, the estimated per capita uses were approximately 12.6 Million BTU per capita for natural gas and 5,331 kWh per capita for electricity.

[2] In 2035, the estimated per capita uses will be approximately 10 Million BTU per capita for natural gas and 4,425 kWh per capita for electricity due to estimated improvements in efficiency.

Average household size was estimated to be 2.59 people.

The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

6.1 System-level Impacts of Energy Efficiency

The Energy Independence Act requires electric utilities with 25,000 or more retail customers in Washington to use renewable resources and conservation to help meet their customers' energy needs. The utilities must report annually to the State Department of Commerce on their compliance.

Currently, the utilities in Washington State are using wind power for about 80% of their renewable supplies and efficiency improvements and hydroelectric projects for about 15%. In 2016, the renewable energy target increased from 3% to 9% of customers' electricity load, and in 2020, the target will increase again to 15%.

In 2005, in response to WAC 458-20-273, Puget Sound Energy, which serves the City of Tumwater and many other communities in the Puget Sound area, launched a renewable energy production incentive payment program. Under this program, Puget Sound Energy makes payments to interconnected electric customers who own and operate eligible renewable energy systems that include solar PV, wind, or anaerobic digesters. Average annual credits range from $0.12 to $1.08 per kWh of energy produced by their system. Puget Sound Energy receives a state tax credit equal to the payments made to customers. By the end of 2014, Puget Sound Energy had paid $3,130,000 to 2,000 customers eligible for production payments.

Puget Sound Energy anticipates that electric demand side efficiency efforts have the potential to reduce consumption 20% and similar efforts for natural gas efficiencies may reduce consumption by 17% by 2035.[3]

[3] The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

7. POTENTIAL IMPACTS OF CLIMATE CHANGE

There are at least two ways in which climate change can affect utility demand and availably. First, long-term changes in temperature will alter electricity demand and change precipitation patterns, river flows, and hydroelectric generation. Second, policies enacted to reduce greenhouse gases will affect future resource choices.

Northwest Power and Conservation Council analysis and planning shows that climate induced changes to loads and river flows will not affect resource choices during the period 2016 through 2021. However, beyond 2026, resource decisions may be impacted. Their prediction for the Northwest is for less snow and more rain during winter months, resulting in a smaller spring snowpack and lower summer flows. Winter electricity demands would decrease with warmer temperatures, easing generating requirements. In the summer, demands driven by air conditioning and irrigation loads would rise. The power supplies projected through 2026 are anticipated to meet demand, even under a climate change scenario.

After applying the climate induced shift in river flows and load to assumptions in Northwest Power and Conservation Council's modeling scenarios, the likelihood of a shortfall in 2035 grows to 15%, which is above adequacy standard of 5% established by this organization and Puget Sound Energy.[4]

Other potential climate change impacts include increased flooding concerns in fall and winter, reduced salmon migration survival due to lower summer river flows combined with higher water temperatures, and increased summer electricity prices.

Utility agencies recommend that research continue in this area and suggest that while no immediate actions regarding reservoir operations are indicated, the region should consider alternative reservoir operations that could potentially mitigate future climate change impacts.

[4] The City of Tumwater started the update process in 2015 using data from 2015 and did not receive 2016 data until it was too late to incorporate in the update process.

8. UTILITIES GOALS, POLICIES, AND ACTIONS

8.1 Utilities Goals, Policies, and Actions

Goal U-1: Increase efficiency when planning for and siting utilities.

Policy	Action
U-1.1	Communicate with private utility companies when siting utilities to discuss anticipated growth projections and how to size utilities appropriately to meet anticipated demand.
	U-1.1.1 Cooperate and participate with Puget Sound Energy in the formulation of policy and development of an underground management plan with respect to Puget Sound's aerial facilities with the City of Tumwater.
U-1.2	Be aware of public service obligations when local review of utility improvements occur.
U-1.3	Utilize transportation rights-of-way for utility corridors whenever feasible.
U-1.4	Provide timely notification to all affected utilities prior to road construction.
U-1.5	Approve utility permits when the project to be served is approved whenever feasible and as quickly as possible.
U-1.6	Coordinate with Thurston County, and the Cities of Lacey and Olympia to ensure consistency of the respective utility plans in order to facilitate orderly utility service.

Goal U-2: Increase energy generation from renewable resources to reduce the region's carbon footprint.

Policy	Action
U-2.1	Explore incentives to support the installation of distributed electrical generation equipment, (e.g., rooftop solar panels).
	U-2.1.1 Encourage developers and homeowners to take advantage of existing national incentive programs (e.g., the tax credit program for the installation of solar systems in homes).

U-2.2 Investigate large-scale, multi-jurisdictional renewable energy projects (e.g., large-scale solar arrays).

U-2.3 Adopt uniform building codes and permitting practices in jurisdictions to make the installation of solar panels, or other distributed generation technologies, easier and faster.

Goal U-3: Enhance the region's electricity distribution, monitoring, and storage infrastructure to support adoption of cleaner technologies and practices.

Policy	Action

U-3.1 Monitor system, or grid-scale, energy storage innovations, and learn from the experiences of communities that begin to deploy them.

U-3.2 Support energy suppliers' equipment upgrades, new programs, and service offerings related to adding information technology to the system or grid.

U-3.3 Collaborate with energy providers to test innovative system-scale, grid-scale, energy storage solutions in isolated, controlled conditions. If, and when, technological progress is proven, collaborate with energy providers for deployment of such storage solutions.

U-3.4 Support voluntary programs for adding vehicle chargers to homes, businesses, and public parking infrastructure.

U-3.5 Promote integration of electric vehicle infrastructure into residential building codes and public and private facilities, including allowances in zoning regulations for charging stations in locations where they are needed.

U-3.6 Create local projects to increase the existing electric vehicle fleet.

U-3.7 Encourage a change in state policies to increase the utility share of funding for undergrounding of overhead wires to reduce power outages.

U-3.8 Protect and reserve existing electrical transmission corridors to maintain their usefulness in meeting future needs.

U-3.9 Coordinate with the Natural Hazards Mitigation Plan to reduce service interruptions and provide services that are more reliable during hazard events.

Goal U-4: Increase energy efficiency and conservation to reduce the region's carbon footprint.

Policy	Action
U-4.1	Develop new incentives for green buildings, (e.g., Leadership in Energy & Environmental Design – LEED programs).
U-4.2	Offer incentives for the use of roof-mounted solar water heaters.
U-4.3	Continue conversion of public fleets to hybrid, natural gas, and electric vehicles. Lead by example.
U-4.4	Consider adopting policies that require residential and commercial properties to undertake an energy audit at time of sale or during substantial remodel, including, if deficiencies are found, encouraging energy retrofits to upgrade properties to a specified level.

Goal U-5: Ensure vital utilities are created, operated, and maintained in a safe manner.

Policy	Action
U-5.1	Encourage the undergrounding of utilities to increase public safety.
	U-5.1.1 Consider strengthening the standards for the undergrounding of utilities and utility corridors.
	U-5.1.2 Work with neighborhood associations to encourage the development of local improvement districts to provide funding for undergrounding existing utilities.
U-5.2	Encourage pipeline safety through public awareness and regulations.
	U-5.2.1 Consider adopting code language, which limits high-risk uses near pipelines to protect both the public and the pipelines themselves.
	U-5.2.2 Consider strategies to educate the public on pipeline safety and pipeline locations within the city.

TO: Planning Commission

FROM: Brad Medrud, Planning Manager

DATE: November 28, 2022

SUBJECT: 2024 Long Range Planning Work Program

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1) Recommended Action:

Review the draft 2024 Long Range Planning Work Program and discuss topics for the joint meeting with the City Council on December 12, 2023 at 6:00 p.m.

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2) Background:

An annual Long Range Planning Work Program is approved by the City Council at the beginning of each year. The draft 2024 Long Range Planning Work Program will be discussed at the joint City Council and Planning Commission meeting on December 12, 2023 at 6:00 p.m. It is on the General Government Committee's calendar for their January 10, 2024 meeting for discussion and the City Council's January 16, 2023 regular meeting for approval.

The City Council, Planning Commission, residents, property owners, and City staff typically propose annual work program items. The focus of the draft 2024 Long Range Planning Work Program will be on the City's 2025 Comprehensive Plan periodic update.

A short list of discussion topics for review is included in the attached staff report.

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3) Alternatives:

- ❑ None.

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4) Attachments:

A. Staff Report
B. Draft 2024 Long Range Planning Work Program (B1 – B3)
C. 2025 Comprehensive Plan and Development Code Update Schedule

Attachment A

MEMORANDUM

Date: November 28, 2023
To: Planning Commission
From: Brad Medrud, Planning Manager

2024 Long Range Planning Work Program

The City Council approves an annual long range planning work program at the beginning of every year. The annual work program will guide all long range planning projects during 2024. The City Council and Planning Commission will discuss the draft 2024 work program at a joint work session on December 12, 2023. The City Council is expected to approve the 2024 work program on January 16, 2024.

The City Council, Planning Commission, community members, and City staff can propose projects for the annual work program.

The draft 2024 work program consists of projects budgeted for 3.10 FTEs.

Almost half of the time budgeted for the proposed 2024 work program will be spent on the City's 2025 Comprehensive Plan and Development Code periodic update, which is discussed in more detail below. Ongoing work on the Bush Prairie Habitat Conservation Plan and with the Regional Housing Council on homelessness and affordable housing issues will take more than one quarter of long range planning staff time in 2024.

The joint work session in December will be an opportunity for the City Council and Planning Commission to discuss the draft 2024 work program as well as general topics related to their roles on a range of community development issues.

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Role of the Planning Commission

The Planning Commission is an advisory body to the City Council with a wide remit. TMC 2.56.030 establishes the powers of the Planning Commission as set forth in Chapter 35.63 RCW.

The Planning Commission proposes and develops policy recommendations for consideration by the City Council, which includes work on the Comprehensive Plan and subarea plans, as well as special plans such as the Thurston Climate Mitigation Plan, Tumwater Housing Action Plan, and Urban Forestry Management Plan.

In addition, the Planning Commission is involved in developing recommendations for amendments to regulations related to development, which includes the development code (TMC Title 16 *Environment*, Title 17 *Land Division*, and Title 18 *Zoning*). In the recent past, the Planning Commission has also reviewed amendments to sections of TMC Title 2 *Administration and Personnel*, Title 8 *Health and Safety*, Title 11 *Telecommunications and Telecommunications Facilities*, Title 12 *Streets, Sidewalks and Public Places*, Title 14 *Development Code Administration*, and Title 15 *Buildings and Construction* in support of the development code.

Role of the City Council and Mayor

The City Council serves as the City's legislative body. This separation of powers is based on the traditional federal and state models in the United States. The City Council has the authority to formulate and adopt city policies and the Mayor is responsible for carrying them out. The City Council also has the authority to adopt budgets, approve contracts, and amend the Tumwater Municipal Code. The City Council relies on a number of advisory commissions and boards for support in making decisions. The General Government Committee considers recommendations from the Planning Commission before they go to the full City Council.

Suggested Joint Work Session Discussion Topics

A short list of discussion topics to consider during the joint work session is listed below.

- What went well with the 2023 long range work program and what could be improved?
- If adjustments to the 2024 long range work program are needed, what projects have less priority?

- How has coordination between the City Council and Planning Commission gone in 2023 and what can be improved in 2024?
- Are there additional projects in 2024 to be considered? If so, what projects currently proposed can be delayed?

If the Planning Commission has additional topics to consider, please let staff know.

2023 Accomplishments

We were able to bring on Erika Smith-Erickson as our new Land Use and Housing Planner.

The following items were completed from the 2023 long range work program:

- Housing Action Plan – Rental Registration (Ordinance No. O2022-014)

The following items are still ongoing from the 2023 long range work program:

- 2023 Comprehensive Plan Amendments (Ordinance No. O2023-002)
- General Development Code Housekeeping Amendments (Ordinance No. O2023-012)
- 2025 Comprehensive Plan and Development Code Periodic Update
- Bush Prairie Habitat Conservation Plan
- Regional Housing Council
- Hazard Mitigation Plan for the Thurston Region Update
- Urban Forestry Management Plan – Landscaping and Buffering Requirements Update
- Urban Forestry Management Plan – Street Tree Standards Update
- Urban Forestry Management Plan – Tree and Vegetation Preservation Regulation Update
- Thurston County Code Title 22 – Tumwater Urban Growth Area Zoning Update
- Equity Toolbox

Proposed 2024 Long Range Work Program

Attachment B is the draft 2024 long range planning work program. The 2024 work program is divided into five parts:

1. Comprehensive Plan Amendment Docket
2. Development Regulation Amendment Docket
3. Other Planning Projects
4. General Management and Coordination

5. Below the Line Projects – Projects that would be considered if the projects in the first four parts are completed and staff time is available.

Under each of the five parts, individual projects are identified with an estimate of staff time needed to complete, who proposed the project, how they address City Council strategic priorities, and detail on the work required. For more details on individual projects, please see Attachment B *Draft 2024 Long Range Planning Work Program*.

1. **Comprehensive Plan Amendment Docket** – Discussed further below.

   Approximately 33% of all budgeted staff time.

   a. 2025 Comprehensive Plan Periodic Update (Continued from 2022-23)

2. **Development Regulation Amendment Docket**

   Approximately 22% of all budgeted staff time. 2025 Development Code Periodic Update is approximately 10% of all budgeted staff time.

   a. 2025 Development Code Periodic Update – Discussed further below (Continued from 2022-23)
   b. Urban Forestry Management Plan Amendments – Landscaping, Street Tree Standards, and Tree and Vegetation Preservation (Continued from 2022-23)
   c. Other Amendments – 2024 Development Code Housekeeping Amendments and Thurston County Code Title 22 – Tumwater Urban Growth Area Zoning (Continued from 2022)

3. **Other Planning Projects**

   Approximately 25% of all budgeted staff time. Habitat Conservation Plan is approximately 11% of all budgeted staff time.

   a. Bush Prairie Habitat Conservation Plan (Continued from 2016)
   b. Equity Toolbox (Continued from 2022-23)
   c. Food System Plan (New in 2024)
   d. Hazard Mitigation Plan Update (Continued from 2022-23)
   e. Managing Multifamily Tax Exemption Program (Ongoing)
   f. Code Enforcement (Ongoing)
   g. As well as Permit Review Support, Public Inquiries, and other items (Ongoing)

4. **General Management and Coordination**

Approximately 20% of all budgeted staff time. Regional Housing Council is approximately 10% of all budgeted staff time.

a. General Coordination with Other Departments – Code Compliance Team, Traffic Team, Green Team, Stormwater Team, GIS Team, and other items (Ongoing)

b. General Coordination with Other Jurisdictions

1) Regional Housing Council (minimum 0.25 FTE per Memorandum of Understanding) (Ongoing)

2) Work with the Port of Olympia, other cities, County, State, Tribes, Thurston Regional Planning Council, and Intercity Transit among others (Ongoing)

3) Department Management (Ongoing)

4) Training (Ongoing)

Growth Management Act and the Periodic Update

In Washington State, the Growth Management Act requires fast-growing cities and counties to manage their population growth by developing a comprehensive plan and keeping it updated.

Every ten years under the Growth Management Act, the City must conduct a periodic update of its Comprehensive Plan and related development regulations to ensure they comply with the Growth Management Act and respond to changes in the City since the last periodic update in 2016.

Tumwater Comprehensive Plan

The Comprehensive Plan establishes the outline for managing the City's policymaking and investment decisions for the next 20 years from 2025 to 2045.

The Comprehensive Plan's goals, policies, and implementation actions are the foundation for how the City addresses future public and private development, directs spending for capital facilities improvements, and collects development impact fees and other development charges.

The Comprehensive Plan addresses where development will occur, at what intensities, and concurrent with required infrastructure improvements.

Tumwater Development Regulations

The City's development regulations translate the goals and policies of the Comprehensive Plan into the zoning, land division, and environmental codes that private and public landowners must follow to build on and develop property in the City. Zoning is a planning practice of classifying land as regulated zones for designated purposes to create suitable land use patterns, by various types of similar uses, or by design standards, e.g., form-based codes, to meet the goals and vision identified in the City's Comprehensive Plan.

The City's development regulations adopt the City's Zoning Map which establishes the location and boundaries of the zoning districts that allow for specific uses and intensities. The City's Zoning Map is based in turn on the land uses and intensities identified in the Citywide Future Land Use Map in the Comprehensive Plan.

2025 Periodic Update

On a ten-year cycle, the City is required by the state to conduct a Growth Management Act periodic update of its Comprehensive Plan and development regulations. For the current cycle, the City is required to complete the periodic update by June 30, 2025.

The updated Comprehensive Plan will address diversity, equity, and inclusion throughout the Plan and incorporate many state-required changes addressing affordable housing, climate change, transportation, and other topics.

The City is expected to grow in population from 27,100 in 2023 to 37,380 by 2045 with an additional 6,000 people in the City's urban growth area. Note that these numbers may be an undercount of likely growth based on projected and actual growth since the last Comprehensive Plan periodic update in 2016. The projected housing need from 2025-45 is 6,664 new dwelling units with the majority being multifamily. The Comprehensive Plan is required to show how the new population and housing will be accommodated.

The addition of more people, housing, and jobs will result in a greater need for public services maintained by the City from roads, sidewalks, and bike lanes, to police and fire services, to water, sanitary sewer, and stormwater facilities, parks and recreation facilities, as well as the staff required to maintain those services.

It is expected that the periodic update will result in increased density throughout the City to meet state requirements for housing, climate mitigation, and conservation of federally protected species. In turn, this will require revisions to how transportation, public utilities, and park and recreation facilities will be funded through impact fees and Capital Facilities Plan projects to meet state concurrency requirements.

Under state law, the periodic update process is the time where the City Council and the community have the greatest ability to provide input on how and where development of the City occurs.

Periodic Update Schedule and Action Items

The periodic update process will require resources from all City departments to complete. The attached schedule (Attachment C) identifies the lead and supporting departments for each Element and Plan in the Comprehensive Plan, funding, and the likelihood of consultant support. Funding for the periodic update will be a mixture of general government and state grant funds.

Phase 1 – Project Start (Summer 2023 – Winter 2024)

City staff will review the visions, goals, and policies in the existing Comprehensive Plan and prepare gap analyses for the Comprehensive Plan and Development Code. The community and stakeholders will be introduced to the periodic update process through a series of communications and asked to prioritize the Comprehensive Plan's vision, goals, and policies through a variety of media outreach methods, including surveys, utility inserts, open houses, informal meetings, presentations, and social media.

Phase 2 – Plan Development (Winter 2024 – Spring 2024)

Feedback gathered through the community outreach process will be incorporated into the draft Comprehensive Plan and Development Code. City staff will present the drafts of the Elements and Plan to the Planning Commission and General Government Committee as well as external and internal stakeholders and focus groups comprised of subject-area experts for review and comment.

Phase 3 – Legislative Process (Summer 2024 – June 30, 2025)

City staff will complete a draft version of the Comprehensive Plan and the Development Code amendments during Phase III. City staff will present the drafts to the Planning Commission and General Government Committee as well as external and internal stakeholders for review.

The Planning Commission will hold several work sessions to discuss the Comprehensive Plan and the Development Code amendments and then conduct a public hearing to gather formal public comment on the draft Comprehensive Plan before developing findings of fact, conclusions, and recommendations that will be forwarded to City Council.

The City Council will consider the recommendation forwarded by the Planning Commission and will hold several work sessions to discuss the Comprehensive Plan and the Development Code amendments.

The process will culminate in the adoption of an updated Comprehensive Plan and amended Development Code by the Growth Management Act deadline of June 30, 2025.

Periodic Update Process and Schedule

Comprehensive Plan Periodic Update

Phase I –Community Engagement – *Fall 2022 – Summer 2025*

1) Community Engagement Process – *Through June 30, 2025*
2) Consultant Selection and Contracting – Develop and issue request for proposals for consultant and consultant selection and contracting – *Winter and Spring 2024*
3) Data Gathering – Staff and consultants gather data and start review of the Elements, Plans, and maps – *Spring and Summer 2024*

Phase II – Plan Development – Winter 2024 – Fall 2024

1) Periodic Update Drafts – Staff and consultants start work on the draft Comprehensive Plan Elements, Plans, and maps and the Development Code – *Winter 2024*
2) Individual Comprehensive Plan Element and Plan Discussions and Work Sessions – *Winter – Fall 2024*
    a) Community Stakeholders
    b) Planning Commission
    c) General Government Committee and City Council
3) Complete Draft of Periodic Update – Staff and consultants complete draft of the Comprehensive Plan Elements, Plans, and maps and the Development Code – *Fall 2024*

Phase III – Legislative Process – Fall 2024 – June 30, 2025

1) SEPA and Commerce Review – *Fall 2024*
2) Public Adoption Meetings – *Fall 2024 and Winter 2025*
    a) Community Stakeholders
    b) Planning Commission
    c) City Council
3) Submit Notice of Adoption to Commerce – *Spring 2025*

Capital Facilities Plan Update – 2025

1) Preliminary Docket Process – *Winter 2025*
2) Develop Capital Facilities Plan – *Spring and Summer 2025*
3) SEPA and Commerce Review – *Summer 2025*
4) Final Docket Process – *Fall 2025*

Development Code Periodic Update Process – 2024/2025

1) Discussions of Amendments to Development Code Regulations (Titles 16, 17, and 18) and Title 3 – *Spring, Summer and Fall 2024*
2) Draft Ordinance – Staff and consultants complete draft ordinance – *Winter 2025*
3) SEPA and Commerce Review – *Winter 2025*

4) Public Adoption Meetings – *Winter 2025 and Spring 2025*
5) Submit Notice of Adoption to Commerce – *June 30, 2025*

Resources Needed

Staff

The periodic update is expected to require the following staff resources:

1) Community Development Department
   a) Planning – The periodic update process is expected to require 1.5 FTE in 2024 and 2025.
   b) Economic Development – The minor periodic update of the goals and strategies in the Economic Development Plan and coordination with the Economic Development Manager and a consultant to update the data workbook is expected to require 5% of one FTE in 2024 and 2025.
2) Executive Department
   a) Executive - – The periodic update will require staff time from the Executive Team to support the periodic update.
   b) Communications Team – The periodic update will require staff time from the Communications Team to support the actions identified in the Public Engagement Plan.
3) Transportation & Engineering Department
   a) Transportation – The major periodic update of the Transportation Plan will require staff time from the Transportation & Engineering Department Director and Transportation Manager and coordination with a consultant to update the Transportation Plan and prepare the Climate Element.
   b) GIS Team – The periodic update will require staff time from the GIS Team to support the periodic update.
4) Water Resources & Sustainability Department – The preparation of the new Climate Elementa and the periodic update of the Lands for Public Purposes Element and Conservation Element will require staff time from the Water Resources & Sustainability Department Director and from the Water Resources & Sustainability staff, including the Sustainability Coordinator.
5) Parks & Recreation Department – Work on a major periodic update of the Parks, Recreation, and Open Space Plan was not funded as part of this periodic update process.

Consultants

The periodic update is expected to require the following consultant resources for the following:

1) Economic Development Plan – Minor update of Plan was completed in 2019.
2) Transportation Plan – Major update of Plan was completed in 2016.

Funding

The periodic update is primarily an internally funded annual work program task. The City has filed an application for a Washington State Department of Commerce grant for $125,000 to update the Transportation Plan and Economic Development Plan. The City has been awarded a Washington State Department of Commerce grant for $75,000 to address the new state middle housing requirements. The City has filed an application for a Washington State Department of Commerce grant application for $500,000 to support the development of a Climate Element and supporting implementation actions.

Appendix A – Topics Addressed by the Update

General

A. Diversity, equity, inclusion, and environmental justice will be considered throughout the Comprehensive Plan.

B. All elements, plans, and maps will be updated and be internally consistent.

C. The updated Comprehensive Plan will consist of shorter individual Elements and Plans with a focus on simplified and updated goals, policies, and implementation actions with appendices that contain the required technical information.

D. A new Comprehensive Plan Goal and Policy Guide will be created for use by staff and policymakers as well as a new User Guide for community members.

E. Mutually agreeable Memorandum of Agreements between the City and tribes about collaboration and participation in the planning process will be discussed.

Specific Elements and Plans

A. Capital Facility Plan (2026-27)

- Address green infrastructure.
- Inventory existing capital facilities owned by public entities in the City.
- Forecast future needs for such capital facilities.
- Update the proposed locations and capacities of expanded or new capital facilities.
- Consider equity for any infrastructure investments and plan for any potential displacement impacts.
- Forecast need for capital facilities based on projected population and adopted levels of service over the planning period. Note the changes to housing types and density provisions in the Housing and Land Use Elements below.
- Establish financing of such capital facilities within projected funding capacities and sources of public money for such purposes.
- Reassess the Land Use Element if probable funding falls short of meeting existing needs and to ensure that the Land Use Element, Capital Facilities Plan, and financing plan within the Capital Facilities Plan are coordinated and consistent.
- Establish procedures to ensure capital budget decisions are in conformity with the Comprehensive Plan.
- If impact fees are collected, identify the public facilities on which money is to be spent.

B. Climate Element

- New state requirement in 2023.

- Build on work done for Sustainable Thurston, the Thurston Climate Adaptation Plan, and the Thurston Climate Mitigation Plan.
- Develop a greenhouse gas emissions reduction subelement consistent with Commerce guidelines to reduce greenhouse gas emissions and per capita vehicle miles traveled, prioritizing reductions that benefit overburdened communities.
- Development a resiliency subelement to avoid or reduce adverse impacts of climate change consistent with best available science, prioritizing actions that benefit overburdened communities.
- Goals and policies must include natural areas to foster resiliency and protect vital habitat for species migration; social, economic, and built environment factors; and addressing natural hazards aggravated by climate change.
- Adopt Natural Hazard Mitigation Plan that addresses entire resiliency subelement by reference.

C. Conservation Element

- Update policies to designate and protect critical areas.
- Use best available science to protect the functions and values of critical areas and give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries.
- Address how the Bush Prairie Habitat Conservation Plan will manage affected listed species and prairie eco-systems across private and public lands in the City.
- Update greenhouse gas emission targets in the coordination with Climate Element work.
- Address Urban Forestry Management Plan.
- Update Maps.

D. Economic Development Plan

- Update the data workbook for the Plan.
- Add new initiatives.

E. Housing Element

- Update goals, policies, and implementation actions for the preservation, improvement, and development of housing.
- Consider housing locations in relation to employment locations and the role of middle housing and accessory dwelling units.

- Revise inventory and analysis of existing and projected housing needs over the planning period, by income band, consistent with the jurisdiction's share of housing need, as provided by the State Department of Commerce.
- Include adequate provisions for existing and projected housing needs for all economic segments of the community.
- Revise identification of capacity of land for housing including, but not limited to, government-assisted housing, housing for moderate, low, very low, and extremely low-income households, manufactured housing, multifamily housing, group homes, foster care facilities, emergency housing, emergency shelters, and permanent supportive housing.
- Identify local policies and regulations that result in racially disparate impacts, displacement, and exclusion in housing, including zoning that may have a discriminatory effect, disinvestment, and infrastructure availability.
- Establish policies and regulations to address and begin to undo racially disparate impacts, displacement, and exclusion in housing caused by local policies, plans, and actions.
- Identify areas that may be at higher risk of displacement from market forces that occur with changes to zoning development regulations and capital investments.
- Establish anti-displacement policies, with consideration given to the preservation of historical and cultural communities as well as investments in low, very low, extremely low, and moderate-income housing; equitable development initiatives; inclusionary zoning; community planning requirements; tenant protections; land disposition policies; and consideration of land that may be used for affordable housing.
- Update information on federal, state, and local financing programs.
- Update housing services provided by public and private service agencies.
- Consider policies to support rental and residential inspections programs.
- Update regulatory barrier assessment, citywide housing needs, and existing and future housing needs to year 2045.
- Address Regional Housing Council and Five-Year Thurston County Homeless Plan.

F. Land Use Element

- Use 20-year population projection for the City and its urban growth area throughout the Plan, update estimates of population densities and building intensities based on future land uses and housing needs.
- Update City land use patterns and distribution information.
- Update City-Wide Future Land Use Map.

- Update Capitol Boulevard Corridor, Brewery District, Littlerock Road, and Town Center Subarea Plans.
- Update Neighborhood Appendix to incorporate current information describing existing development patterns.
- Address specific topics:
  - Airport.
    - Update policies, land use designations, and zoning to discourage location of incompatible uses adjacent to the Olympia Regional Airport.
  - Definitions.
    - Add new definitions.
  - Essential Public Facilities.
    - Shorten and remove regulations in Element.
    - Address clean energy and treatment program facilities amendments to essential public facilities.
  - Green Spaces and Urban Forests.
    - Designate greenspaces and urban forests.
  - Growth Management Goals.
    - Address updated and new Growth Management Goals.
  - Habitat Conservation Plan.
    - Remove existing conservation lands from land capacity.
    - Establish policy for removing new conservation lands from land capacity.
  - Manufactured Home Parks.
    - Expand location of MHP Manufacture Home Park land use designation.
  - Middle Housing.
    - Allow two housing units on every lot, independent of allowed land use densities.
    - Determine how land use densities will work with this and in turn how to plan for capital facilities.
  - Mixed Use/Neighborhood Commercial.
    - Review the “neighborhood center” concept.
    - Look at 88th and Old Highway 99 as a mixed use center, as it has General Commercial and Mixed Use land use designations.

- Look at 79th and Old Highway 99 as the area is currently designated Light Industrial but functions as a General Commercial and Light Industrial land use designation hybrid.

- Natural Hazard Mitigation.
  - Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate.
- Permanently Affordable Housing.
  - Incorporate implementation actions from the Tumwater Housing Action Plan.
- Physical Activity.
  - Use urban planning approaches that promote physical activity.
- Residential Densities.
  - Update minimum and maximum residential densities.
- Schools.
  - Review land use designations and zone districts for schools.
- Single Family and Multifamily Land Use Designations.
  - Replace single family and multifamily land use designations with a range of residential intensities in text and maps.
- Transfer of Development Rights.
  - Remove transfer of development rights requirement for maximum densities in residential land use designations.
- Tree Canopy.
  - Evaluate canopy coverage.
- Urban Growth Area.
  - Coordinate with Thurston County regarding urban growth area size, patterns of development, suitability, and infrastructure.
- Vehicle Miles Traveled.
  - Consider land use approaches to reduce per capita vehicle miles travel.

G. Lands for Public Purposes Element

- Update inventory and projected needs for public buildings, facilities, and services over the 20-year planning period.
- Update provisions for protection of the quality and quantity of groundwater used for public water supplies.
- Update chart of zone districts that allow essential public facilities.

- Update the process or criteria for identifying and siting essential public facilities including the reentry and rehabilitation facilities as defined in state law.
- Include regional transit authority facilities in the list of essential public facilities.
- Update to allow an expansion of the area in the City that would allow for essential public facilities such as inpatient facilities including intensive inpatient facilities, long-term residential drug treatment facilities, and recovery house facilities.
- Update the identification of lands useful for public purposes such as utility corridors, transportation corridors, landfills, sewage treatment facilities, stormwater management facilities, recreation, schools, and other public uses.
- Where applicable, update the review of drainage, flooding, and stormwater run-off and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute the waters of the state.
- Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate.
- Address organics management facility siting.
- Include climate resilience element in Group A water system plans if initiated after June 30, 2024.
- Update information from Sewer Plan and NPDES Stormwater Permit.
- Update Maps.

H. Parks, Recreation, and Open Space Plan

- Creation of a complete updated plan is not part of update per direction of the City Administrator and Mayor in 2022.
- Update may include limited revisions to support grant funding opportunities.

I. Shoreline Master Program

- Update complete, next required update 2030.

J. Transportation Plan

- Update Maps.
- Update existing conditions and operations.
- Update planned improvements and future operations to 2045.
- Update transportation improvement program.
- Update financial analysis.
- Update traffic impact fees.

- Update estimated traffic impacts to state-owned transportation facilities resulting from land use assumptions to assist the State Department of Transportation in monitoring the performance of state facilities, to plan improvements for the facilities, and to assess the impact of land-use decisions on state-owned transportation facilities.
- Update land use assumptions used in estimating travel.
- Update facilities and service needs, including:
  - An inventory of air, water, and ground transportation facilities and services, including transit alignments and general aviation airport facilities, to define existing capital facilities and travel levels as a basis for future planning.
    - This inventory must include state-owned transportation facilities within the city or county's jurisdictional boundaries.
  - Level of service standards for all locally owned arterials and transit routes to serve as a gauge to judge performance of the system.
    - These standards should be regionally coordinated.
  - For state-owned transportation facilities, include the level of service standards for highways to gauge the performance of the system.
  - Identify specific actions and requirements for bringing into compliance locally owned transportation facilities or services that are below an established level of service standard.
  - Update forecasts of traffic for at least ten years based on the adopted Land Use Element to provide information on the location, timing, and capacity needs of future growth.
  - Identify state and local system needs to meet current and future demands.
    - Identified needs on state-owned transportation facilities must be consistent with the statewide multimodal transportation plan.
- Update financial analysis, including:
  - An analysis of funding capability to judge needs against probable funding resources.
  - A multiyear financing plan based on the needs identified in the Comprehensive Plan, the appropriate parts of which shall serve as the basis for the six-year street, road, or transit program required for cities and for public transportation systems.
    - The multiyear financing plan should be coordinated with the ten-year investment program developed by the state Office of Financial Management.
  - If probable funding falls short of meeting identified needs, a discussion of how additional funding will be raised, or how land use assumptions will be reassessed to ensure that level of service standards will be met.

- The Transportation Plan, the six-year Capital Facilities Plans for cities and for public transportation systems, and the ten-year investment program for the state, must be consistent.
- Provide a projection of state and local system needs to meet current and future demand.
- Provide a pedestrian and bicycle component to include collaborative efforts to identify and designate planned improvements for pedestrian and bicycle facilities and corridors that address and encourage enhanced community access and promote healthy lifestyles.
- Consider approaches that increase physical activity.
- Describe any existing and planned transportation demand management strategies, such as high occupancy vehicle lanes or subsidy programs and parking policies.
- Provide an analysis of future funding capability to judge needs against probable funding resources.
- Provide a multi-year financing plan based on needs identified in the Comprehensive Plan, the appropriate parts of which serve as the basis for the six-year street, road, or transit program.
- If probable funding falls short of meeting identified needs, provide a discussion of how additional funds will be raised, or how land use assumptions will be reassessed to ensure that level of service standards will be met.
- Describe intergovernmental coordination efforts, including an assessment of the impacts of the Transportation Plan, land use assumptions on the transportation systems of adjacent jurisdictions, and how the Plan is consistent with the regional transportation plan.
- Identify lands useful for public purposes such as utility corridors, transportation corridors, landfills, sewage treatment facilities, stormwater management facilities, recreation, schools, and other public uses.
- Identify open space corridors within and between urban growth areas, including lands useful for trails.
- Update, as needed, the process or criteria for identifying and locating essential public facilities in coordination with the update of the Lands for Public Purposes Element.
- Update demand-management strategies.
- Update information on pedestrian and bicycle component to include collaborative efforts to identify and designate planned improvements for pedestrian and bicycle facilities and corridors that address and encourage enhanced community access and promote healthy lifestyles.
- Revisions to allow for some form of Intercity Transit turnarounds on Littlerock Road and Old Highway 99 to allow for future transit services.

- Update to include work done on the Thurston Thrives walkability study, Intercity Transit studies, and the Old Highway 99 Corridor Study.
- Allow active transportation facilities, transportation demand management, or public transportation services to meet concurrency.
- Incorporate equitable implementation.
- Estimate multimodal level of service impacts to state transportation facilities.
- Add impact fee revenue for bike and pedestrian facilities.
- Provide multimodal level of service and needs forecasts for arterials, transit routes, and active transportation facilities.
- Give priority to the greatest multimodal safety benefit to each category of roadway users.
- Include Americans with Disabilities Act transition plan.
- Provide funding analysis that includes state transportation facilities.

K. Utilities Element

- Include all electrical, telecommunication, and natural gas systems and make a good faith effort to gather information from them.
- Update general location, proposed location, and capacity of all existing and proposed gas, electric, cable television, and telecommunications to year 2045.
- Update wireless telecommunication facilities information as needed.
- Update the general location, proposed location, and capacity of all existing and proposed utilities.
- Incorporate provisions of the updated 2023 Hazard Mitigation Plan as appropriate.
- Update Maps.

L. Development Regulation Update

1. Accessory Dwelling Units.
   - Expand housing options by reducing barriers to the construction and use of accessory dwelling units.
   - Ensure accessory dwelling unit development regulations in Chapter 18.42 *General Land Use Regulations* address the following:
     - Impact fees may not be more than 50% of single family homes.
     - Allow two accessory dwelling units per lot.
     - The maximum size for accessory dwelling units is no less than 1,000 square feet.
     - No development or design standards more restrictive than on the principal home.

- Allow conversion of existing building even if nonconforming.

2. Affordable Housing.
   - Update to address the requirements for allowing for affordable housing as needed according to state law.
   - Update to address limitations on regulating outdoor encampments, safe parking efforts, indoor overnight shelters, and temporary small houses on property owned or controlled by a religious organization.
3. Brewery District.
   - Update Chapter 18.27 *BD Brewery District Zone District*.
4. Citywide Design Guidelines.
   - Update Chapter 18.43 *Citywide Design Guidelines.*
5. Concurrency and Transportation Demand Management.
   - Update as needed to address state law.
6. Critical Areas.
   - Address updates required in the State Department of Ecology's Critical Areas Checklist.
7. Cultural Resources.
   - Update regulations as needed to address procedures to identify, preserve, and/or monitor historical or archaeological resources according to state law.
8. Design Review Standards.
   - Update as needed.
9. Electric Vehicles.
   - Update as needed to address that electric vehicle infrastructure adjacent to Interstate 5 and other criteria must be allowed as a use in all areas except those zoned for residential, resource use, or critical areas.
10. Energy, Sustainability, and Design.
    - Add development regulations needed to implement Comprehensive Plan policies such as energy, sustainability, or design.
11. Essential Public Facilities.
    - Update the process or criteria in Chapter 18.56 *Conditional Use Permit*s for identifying and siting essential public facilities including the reentry and rehabilitation facilities as defined in state law.
    - Update to include regional transit authority facilities in the list of essential public facilities.

- Update to allow an expansion of the area in the City that would allow for essential public facilities such as inpatient facilities including substance abuse facilities including, but not limited to, intensive inpatient facilities; long-term residential drug treatment facilities; recovery house facilities.
- Update to allow clean energy facility location.

12. Existing Buildings for Housing.
    - Updates to multiple chapters of Title 15 Buildings and Construction and TMC 18 *Zoning* for use of existing buildings for residential purposes, including Chapter 15.48 *Transportation Concurrency Requirements*.
13. Family Day Care.
    - Update as needed to address the requirement that family day care providers are allowed in all residential dwellings located in areas zoned for residential or commercial.
    - Update definition as needed according to state law.
14. Floodplain Overlay.
    - Update Chapter 18.38 *FP Floodplain Overlay* based on Ecology 2023 review.
15. Impact Fees.
    - Ensure that impact fees are applied consistent with state law.
    - Ensure that the City's collection of impact fees follows and maintains a system for the deferred collection of impact fees for single-family detached and attached residential construction required by state law.
    - Ensure that the state law's limitations on impact fees for early learning facilities are followed.
    - Ensure that the state law exemptions of impact fees for low-income and emergency housing development are followed and definitions are updated.
    - Update Chapter 3.50 *Impact Fees* to include bike and pedestrian impact fees
    - Update Chapter 3.52 *Tumwater Park Impact Fees*.
    - Updates to impact fees for smaller residential units
    - Updates impact fees for accessory dwelling units
16. Land Division.
    - Update Chapter 17.14 *Preliminary Land Divisions* to allow unit lot (condominium) divisions.
17. Update MHP Manufacture Home Park zone district to address expansion.
18. Middle Housing.

- Increase middle housing in areas traditionally dedicated to single-family detached housing.
- Amendments to allow:
  - At least two units per lot in residential zones, except on lots less than 1,000 sf, unless higher-density zoning applies.
  - At least four units per lot in residential zones, except lots less than 1,000 sf, unless higher-density zoning applies, if at least one unit is affordable housing.
  - As an alternative to the first two bullets above, meet their density requirements on 75% of city lots that are primarily dedicated to single-family. Also, meet criteria for the other 25%.
  - Allow at least six of the nine types of middle housing in residential zones.
  - Allow zero lot line short plats.
  - Limit design review for middle housing to administrative process, and not apply any development standards that do not apply to single-family houses.
  - Limit parking requirements for middle housing to one space on lots less than 6,000 SF and two spaces on lots less than 6,000 SF.
    - Option to submit transportation safety study to State Department of Commerce.
- Updates to multiple chapters of Title 18 *Zoning*.
- Option for State Department of Commerce to provide extension of timeline if will result in displacement or overburdened infrastructure
  - Capital Facilities Plan update can also be delayed if extension granted
- Common Interest Communities (e.g., condominium or homeowner's associations) cannot prohibit implementation of these requirements.

19. Mixed Use Zone District.
    - Review Mixed Use zone district locations and standards in Chapter 18.20 *MU Mixed Use Zone District* and Chapter 18.33 *MUO Mixed Use Overlay*.
20. Organic Materials Management.
    - Update Chapter 18.04 *Definitions* and TMC 18.56 *Conditional Use Permits* for compost handling facilities.
21. Parking.
    - Review limitations on the amount of parking the City can require for low-income, senior, disabled, and market-rate housing units located near high-quality transit service.
22. Parks Concurrency.

- The transportation concurrency requirement includes specific language that prohibits development when level of service standards for transportation facilities cannot be met. Note: Concurrency is required for transportation but may also be applied to park facilities.

23. Project Permit Review.
    - Update Title 14 *Development Code Administration*.
24. Residential Zoning.
    - Update permitted residential uses.
    - Replace single family and multifamily zone districts with a range of residential intensities in text and maps.
25. Make SEPA threshold amendments to Chapter 16.04 Environmental Policy.
26. Town Center Zone District.
    - Update Chapter 18.23 *TC Town Center Zone District*.
27. Transfer of Development Rights.
    - Remove the transfer of development rights requirement for maximum density in residential zone districts.
28. Transportation Concurrency.
    - Update regulations to address the transportation concurrency requirement that prohibits development when level of service standards for transportation facilities cannot be met.
    - Update regulations to address measures to bring into compliance locally owned transportation facilities or services that are below the levels of service established in the Comprehensive Plan.
        - Levels of service can be established for automobiles, pedestrians, and bicycles.
    - Ensure that highways of statewide significance are exempt from the concurrency ordinance.
    - Ensure that traffic demand management requirements are consistent with the Comprehensive Plan.
        - Examples may include requiring new development to be oriented towards transit streets, pedestrian-oriented site and building design, and requiring bicycle and pedestrian connections to street and trail networks.
        - State law recommends adopting methodologies that analyze the transportation system from a comprehensive, multimodal perspective.
    - Ensure if required by state law, a commute trip reduction ordinance to achieve reductions in the proportion of single-occupant vehicle commute trips has been adopted.

- The ordinance should be consistent with Comprehensive Plan policies for commute trip reduction and State Department of Transportation rules.

Appendix B - Guidance

The State Department of Commerce has provided guidance specific to the periodic update on their Periodic Update webpage.

Growth Management Act Periodic Update

Growth Management Planning Topics

In addition, the Puget Sound Regional Council is conducting a series of workshops on a variety of topics related to the periodic update.

Passport to 2044: Comprehensive Plan Workshop Series

The Municipal Research Services Center has a Comprehensive Planning webpage.

MRSC Comprehensive Planning

Attachment B1

2024 DRAFT CITY OF TUMWATER LONG RANGE PLANNING WORK PROGRAM

	PROJECT	STAFF HOURS	PROPOSED BY	CITY COUNCIL STRATEGIC PRIORITIES	PROJECT DESCRIPTION/COMMENTS
	COMPREHENSIVE PLAN AMENDMENT DOCKET				
1	2025 Comprehensive Plan Periodic Update	1,800	City Staff	1, 2, 3, 5	Starting in Fall 2022 through June 30, 2025, prepare state required ten-year periodic update to the City's Comprehensive Plan, including updates to the Conservation, Housing, Land Use, Lands for Public Purposes, and Utilities Elements as well as the Transportation Plan and the creation of a Climate Element. Manage community engagement process an d project website. Work in 2024 will primarily be focused on community engagement and working with other City departments and consultants on preparing the draft elements and plans. Work will be coordinated with concurrent updates to development regulations. Consultant and grant management. Work with the community, internal and external stakeholders, other agencies, Planning Commission, Public Works Committee, General Government Committee, and City Council.
	Subtotal	**1,800**			
	DEVELOPMENT REGULATION AMENDMENT DOCKET				
1.	**Development Regulation Periodic Update**				
a	*Development Regulation Periodic Update*	*560*	*City Staff*	*1, 2*	*Starting in Fall 2022 through June 30, 2025, review and update development regulations to address the required state periodic update. Review Commerce checklist and Ecology checklist for critical areas. Will involve updates to Titles 3, 14, 15, 16, 17, and 18. Work will be coordinated with concurrent updates to the Comprehensive Plan. Consultant and grant management. Briefings, work sessions, and hearing would occur in 2024-25, as well as preparing the staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.*
		560			
2.	**Urban Forestry Management Plan Amendments**				
a	*Landscaping and Buffering Requirements (O2022-007)*	*100*	*City Staff*	*2*	*Ongoing from 2022. After completion of the Urban Forestry Management Plan update in 2021, work with consultant to complete update to landscape buffering and screening regulations (TMC 18.47). Work was paused to addressed issues with the Washington State Wildland-Urban Interface Code. Consultant management. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Tree Board, Planning Commission, General Government Committee, and City Council.*
b	*Street Tree Standards Update (O2021-016)*	*120*	*City Staff*	*2*	*Ongoing from 2021. After completion of the Urban Forestry Management Plan update in 2021, work with a consultant to prepare update to street tree regulations (TMC 12.24), a Street Tree Plan, and guidelines throughout the code. Work was paused to addressed issues with the Washington State Wildland-Urban Interface Code. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Tree Board, Planning Commission, General Government Committee, and City Council.*
c	*Tree Preservation Regulation Update (O2022-008)*	*160*	*City Staff*	*2*	*Ongoing from 2022. After completion of the Urban Forestry Management Plan update in 2021, work with consultant to complete update to tree preservation regulations (TMC 16.08). Work was paused to addressed issues with the Washington State Wildland-Urban Interface Code. Consultant management. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Tree Board, Planning Commission, General Government Committee, and City Council. Work includes resolving issues with the adoption of the Washington State Wildland-Urban Interface Code.*
		380			
3.	**Other Amendments**				
a	*General Development Code Housekeeping Amendments*	*80*	*City Staff*	*1*	*Address minor housekeeping amendments from 2023 and 2024, including updating code that addresses signs. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.*
b	*Thurston County Code Title 22 - Tumwater Urban Growth Area Zoning*	*160*	*City Staff*	*1, 2*	*After completion of the Joint Plan update in 2021, start work with County staff to revise Thurston County Code Title 22 and City development codes as needed to be consistent in the Urban Growth Areas. Schedule will depend on County work plan. Briefings, work sessions, and hearing. Prepare staff report, ordinance, and other materials and work with City and County Planning Commissions, General Government Committee, and City Council.*
		240			
	Subtotal	**1,180**			

	OTHER PLANNING PROJECTS				
1	Annexations	0	City Staff	1	Briefings, work sessions, and hearings. Prepare staff reports, ordinances, and other materials and work with County, Office of Financial Management, Boundary Review Board, General Government Committee and City Council.
2	Code Enforcement Process	60	City Staff	4	Code Enforcement process improvements. Staff meetings and discussion.
3	Current Planning Projects	48	City Staff	1	Advise permit staff on permitting projects.
4	Deschutes Flood Reduction Study/Thurston and Olympia Lakes Flood Map Study	4	City Staff	2	Support Deschutes Flood Reduction Study and Thurston and Olympia Lakes Flood Map Study work.
5	Equity Toolbox	80	City Staff	6	Ongoing from 2021. Complete work with consultant to prepare equity toolbox. Meetings with City staff and research.
6	Food System Plan	80	City Council	1	Prepare a City Food System Plan to address community concerns with food insecurity on the local level. Work with a consultant to prepare a Plan that focuses on supporting ways to access food more effectively and consider the role of local and community based agriculture activities, such as community gardens and local producers and processers to build a more resilient food system. The Plan would focus on how to provide healthy food to the community, reduce food waste, support local food processing, eliminate barriers, address gaps in the current system, produce solutions to implement at appropriate scale, and identify how to maintain and update resource materials through jurisdictional and community partners. Briefings, work sessions, and hearing. Prepare staff report, plan, resolution, and other materials and work with Planning Commissions, General Government Committee, and City Council.
7	Grant Funding	20	City Staff	1, 2	Research grant funding opportunities that support long range planning goals. Senior housing support is one potential grant area.
8	Habitat Conservation Plan	600	City Council	2	Ongoing from 2016. Phase II and III work and potential Phase IV. Includes consultant management and coordination with Port and USFWS. NEPA/SEPA EIS support as state SEPA lead agency. Complete public draft of the HCP. Development implementation tools. Briefings, work sessions, stakeholder meetings, and community meetings. Work with other City departments, internal stakeholder team, Port staff, USFWS, WDFW, Planning Commission, General Government Committee, and City Council. Includes consultant management and grant management.
9	Hazard Mitigation Plan for the Thurston Region	40	City Staff	2, 4	Ongoing from 2021. Complete the update the City of Tumwater chapter of the Hazard Mitigation Plan for the Thurston Region. The current plan is due for an update in 2023. Thurston County Emergency Management and Thurston Regional Planning Council (TRPC) secured a FEMA Pre-Disaster Mitigation grant to update our region's plan. The plan update process is expected to launch in November 2021 and take approximately 18 months to complete. Participation in a multi-agency planning workgroup. Briefings, work sessions, stakeholder meetings, and community meetings. Work with other City departments, internal stakeholder team, Planning Commission, General Government Committee, and City Council.
10	Long Range Planning Website Updates	12	City Staff	1	Ongoing.
11	Managing Multifamily Tax Exemption Program	80	City Staff	1	Manage new applications and annual reporting to the State for the City's TMC 3.30 Multifamily Housing Tax Exemptions programs. Briefings, work sessions, and hearings. Prepare staff reports, contracts, and other materials and work with General Government Committee and City Council.
12	Public Inquiries and General City Council and Interdepartmental Support	320	Various	1	Support on unspecified projects, inquiries, and requests.
	Subtotal	**1,344**			
	GENERAL MANAGEMENT AND COORDINATION				
1	General Coordination with Other City Departments	**72**	City Staff		Various
a	*All City Staff Meetings*	*8*	*City Staff*	*6*	*Quarterly meetings*
b	*Code Compliance Team*	*0*	*City Staff*	*2, 4*	*Ongoing monthly meetings*
c	*GIS Team*	*8*	*City Staff*	*6*	*Ongoing meetings*
d	*Green Team*	*16*	*City Staff*	*2*	*Ongoing meetings*
e	*Stormwater Interdisciplinary Team*	*12*	*City Staff*	*2*	*Ongoing meetings*
f	*Traffic Team*	*20*	*City Staff*	*3*	*Ongoing meetings*
g	*Web Team*	*8*	*City Staff*	*1*	*Ongoing meetings*
2	General Coordination with Other Jurisdictions	**669**	City Staff		Various
a	*Port of Olympia*	*24*	*City Staff*	*1*	*Quarterly Meetings and other coordination*
b	*City of Olympia*	*8*	*City Staff*	*1*	*Review proposed Comprehensive amendments and other coordination outside of housing*
c	*Intercity Transit*	*8*	*City Staff*	*3*	*Coordination with staff*
d	*Olympia School District*	*1*	*City Staff*	*1*	*Coordination with staff*
e	*Regional Housing Council*	*520*	*City Staff*	*1*	*Ongoing from 2020. Bimonthly RHC meetings, monthly City Staff RHC prep meetings, weekly technical team meetings, and other workgroup meetings. 0.25 FTE annual commitment per MOU.*
f	*State of Washington*	*4*	*City Staff*	*1*	*Coordination with staff*
g	*Thurston County*	*24*	*City Staff*	*1*	*Ongoing coordination not associated with a specific project, includes long range planning coordination with four jurisdictions*
h	*Thurston County TDR Program*	*24*	*City Staff*	*1*	*Coordination with Council and other City staffs on updating TDR program*
i	*Thurston Regional Planning Council*	*28*	*City Staff*	*1*	*Regional planner meetings/jurisdiction meetings*
j	*Thurston Thrives - Housing Action Team*	*20*	*City Staff*	*1*	*Attend monthly regional coordination meetings*
k	*Tribal Governments*	*4*	*City Staff*	*1*	*Coordination with staff*
l	*Tumwater School District*	*4*	*City Staff*	*1*	*Review Capital Facilities Plan and other coordination*
3	Department Management	**268**	City Staff		Various
a	*General Management*	*48*	*City Staff*	*1*	*Staff review and development. Managing staff.*
b	*Management Team Meetings*	*160*	*City Staff*	*1*	*Ongoing Weekly Meetings*
c	*Planning Commission Support*	*60*	*City Staff*	*1*	*Ongoing coordination with chair. Zoom meeting management. Interviews and training.*
4	Training	**60**	City Staff	1	AICP certificate maintenance. Conferences.
	Subtotal	**1,069**			
	TOTAL HOURS:	**5,393**			
	TOTAL REQUIRED PLANNERS (FTEs):	**3.00**			Approved by the City Council on January _____, 2024
	TOTAL AVAILABLE PLANNERS (FTEs):	**3.10**			
	TOTAL AVAILABLE PLANNER TIME (Hours X FTEs):	**5,395**			Note: Staff hours for items that include briefings, work sessions, and ordinances include a minimum
	PLANNER TIME DIFFERENCE(Hours X FTEs):	**2**			number of public meetings (5) and hours for the public meeting process (40).

	PROJECT	STAFF HOURS	PROPOSED BY	CITY COUNCIL STRATEGIC PRIORITIES	PROJECT DESCRIPTION/COMMENTS
BELOW THE LINE PROJECTS (To be considered as projects above are completed and staff time is available)					
→	Aquifer Protection Standards Amendments	80	City Staff	2	Update TMC 16.24 Aquifer Protection Standards and TMC 18.39 AQP Aquifer Protection Overlay to consider extending protections offered by the City system to other water systems in the City per Planning Commission recommendation on April 9, 2019. Briefings, work sessions, hearing, and ordinance.
→	Autonomous Vehicles	80	City Staff	3	See TVW series on transportation 2019 per John Doan. Prepare update to regulations. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Basin Plans – Deschutes and Black Lake (Subdivision Code/Housing Types	120	City Staff	2	Thurston County and TRPC led basin planning efforts for Black Lake and Deschutes basins. Black Lake Basin Water Resource Protection Study, Final Report was issued June 2015. Study recommended considering removal of portion of UGA on south Black Lake. Consider fire service (Black Lake) and conversion of septic systems to sewer. Appendix E of Study included suggested amendments to the City's Subdivision code for new subdivisions near wetlands and high groundwater flooding. Deschutes Basin Watershed Land Use Analysis, Scenario Development Report issued November 2016.
→	Citywide Design Standards Update	80	City Staff	1	Review how the Citywide Design Guidelines (TMC 18.43) have been working since adoption in 2016. Includes addressing corner setbacks for industrial zone district in the Citywide Design Guidelines do not match the standards found in the municipal code (TMC 18.24 and TMC 18.43) and addressing materials of new mini-storage uses (TMC 18.43). Briefings, work sessions, hearing, and ordinance.
→	Code Enforcement Amendments	60	City Staff		Ongoing from 2020. Substantive code revisions to reconcile International Property Maintenance Code (TMC 15.18) and Nuisances Code (TMC 8.04). Briefings, work sessions, and hearing. Prepare staff report, ordinance, and other materials and work with General Government Committee and City Council.
→	Electric Vehicle Infrastructure	80	City Staff	3	Work with Building Official on electric vehicle charging infrastructure requirements for new commercial buildings per WAC 51-50-0427. Prepare update to regulations. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Essential Public Facilities	120	City Staff		Separate essential public facilities from the Conditional Use Permit chapter (TMC 18.56) and establish conditions for each of the individual essential public facilities. Briefings, work sessions, hearing, and ordinance.
→	Essential Public Facilities - Treatment Facilities	80	City Staff		Code amendments for essential public facilities related to treatment facilities. Related to Comprehensive Plan Amendments. Briefings, work sessions, and hearing. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Housing - Affordability and Homelessness	48	City Council	1	Ongoing from 2020. Work outside of development regulation amendments above and specific Regional Housing Council management and coordination meetings below on other housing affordability and homelessness strategies. Marketing.
→	Housing Action Plan - Development Code Amendments	120	City Staff	1	After acceptance of Tumwater Housing Action Plan in 2021, associated updates to development regulations to respond to Plan actions. Briefings, work sessions, and hearing. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Housing Action Plan - Infrastructure (Housing Affordability Fee Work Plan Ordinance #9/Housing Action Plan Action 1.m.)	60	City Council	1, 3	Part of Housing Affordability Fee Work Plan approved May 28, 2019 and Housing Action Plan approved 2021. Work with the Public Works Department to make infrastructure investments for infill areas needing upgrades with follow-up by City staff to develop potential scenarios with emphasis on areas where housing affordability is most likely to occur. Public meetings, briefings, work sessions, hearing, and ordinance.
→	Multifamily Tax Exemption Update	160	City Staff	1	Review and update TMC 3.30 Multifamily Housing Tax Exemptions to response to 2021 updates to state law. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Pipeline - Land Use Review	80	City Staff	2	Review proposed land use and zoning along the Olympic fuel pipeline and Williams natural gas pipeline and propose amendments as needed. Coordinate with County for Urban Growth Area issues as needed. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
→	Thurston Climate Mitigation Plan - Related Development Code Amendments	120	City Council	2	After acceptance of Thurston Climate Mitigation Plan in 2021 and the start of Phase 4 implementation, work on associated updates to development regulations. Briefings, work sessions, and hearing. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
	Zero Effect Drainage Discharges	120	City Staff	2	Review TMC 13.22 - Zero Effect Drainage Discharge after new Drainage and Erosion Control Manual is adopted to see if it is appropriate to revise or remove. From the LID update, look at how TMC 13.22 works with the new City of Tumwater Drainage and Erosion Control Manual and what projects have been built using the code. Briefings, work sessions, and hearings. Prepare staff report, ordinance, and other materials and work with Planning Commission, General Government Committee, and City Council.
	TOTAL HOURS:	**1,408**			

Working Days Calculation - 2024

	Weekend Days		Weekday Days	
	5.00	4.00	Total	Working
January	1.00	1.00	31.00	22.00
February	0.00	2.00	28.00	20.00
March	2.00	0.00	31.00	21.00
April	0.00	2.00	30.00	22.00
May	0.00	2.00	31.00	23.00
June	2.00	0.00	30.00	20.00
July	0.00	2.00	31.00	23.00
August	1.00	1.00	31.00	22.00
September	1.00	1.00	30.00	21.00
October	0.00	2.00	31.00	23.00
November	1.00	1.00	30.00	21.00
December	1.00	1.00	31.00	22.00
	9.00	15.00		
	45.00	60.00		
Total Days Per Year Per FTE		**105.00**		**260.00**
Total Hours Per Year per FTE				**2,080.00**

FTE Calculations - 2024

Brad Medrud	1.00
Erika Smith-Erickson	0.80
Alex Baruch	0.20
Austin Ramirez	0.10
Senior Planner	0.70
Intern	0.00
Permit Tech/Administrative Assistant	0.10
Mike Matlock	0.20
Total FTEs	**3.10**

Productive Hours Calculation - 2024

	Hours
Total Hours Per Year (X Total FTEs)	**6,448**
Less	
Holidays (11 days X Total FTEs)	*273*
Vacations (12 days X Total FTEs)	*298*
Sick Leave (5 days X Total FTEs)	*198*
Subtotal	**769**
TOTAL	**5,679**
95% Work Program Work	**5,395**

1. Build a Community Recognized for Quality, Compassion, and Humanity

Adopt and implement Tenant Protections
Build and enhance Tribal Relations
Explore alternative building materials for Housing
Implement Metropolitan Park District
Implement the Affordable Housing & Houselessness Action Plan
Implement the Arts & Cultural Heritage Program
Plan and site new Community Center
Raise the Minimum Wage for everyone in Tumwater
Streamline Permitting for Housing Projects
Support and advance Intergenerational Housing Opportunities
Support Housing Stability Policies and Programs

2. Be a Leader in Environmental Sustainability

Complete and Implement Habitat Conservation Plan
Continue Septic to Sewer Conversion
Continue to update and advance the Climate Action Plan
Ensure ample water supply
Implement Urban Forestry Plan
Include environmental protection in City projects
Integrate Code Enforcement and Tree Protection
Recruit Green Employers and Jobs
Remove Obstructions to Fish Passage
Require new City buildings be all-electric
Streamline permitting for Green Projects
Update the Tree Protection Ordinance

3. Create and Maintain a Transportation System Safe for All Modes of Travel

Bike and Pedestrian System
Implement Capitol Boulevard Plan
Implement Sidewalk Plan
Update the Transportation Impact Fee System

4. Provide and Sustain Quality Public Safety Services

“FD Cares” a Social and Human Services Response
Complete RFA Planning Work
Expand the Community Risk Reduction Program
Implement City Emergency Management Program
Law Enforcement Master Plan
Study BLS Transport in Fire Department

5. Pursue Targeted Community Development Opportunities

Continue to build the Craft Beverage Legacy
Find a Permanent Home for Farmer’s Market
Hire an Economic Development staff person
Implement the City’s Economic Development Plan

6. Refine and Sustain a Great Organization

Construct the new O&M Facility
Create a Continuous Learning Organization

Ensure a Safe and Healthy Workforce
Explore Trades Training with LOTT, SPSCC and Olympia
Implement the ERP
Promote a talented DEI Workforce
Update Employee Compensation Plan

Attachment C

	Community Outreach and Plan Adoption	Climate Element	Conservation Element	Economic Development Plan	Housing Element	Land Use Element	Lands for Public Purposes Element	Parks, Recreation, and Open Space Plan	Transportation Plan	Utilities Element	Development Code Update
Includes			Resource Lands and Critical Areas	Data workbook update			Sewer, Stormwater, and Water				Impact Fees and 2026-27 CFP
Lead	*CDD*	*WRS*	*CDD*	*CDD – Economic*	*CDD*	*CDD*	*WRS*	*CDD*	*TED*	*CDD*	*CDD*
Support	*Communications*	*CDD, TED*					*CDD*	*PRD*	*CDD, WRS*		*TED, WRS, PRD*
Consultant Support	*Potentially City $*	*State Grant $500 K*	*No*	*State Grant ~$30 K*	*Potentially City $*	*Potentially City $*	*No*	*No*	*State Grant ~$90 K*	*No*	*State Grant $75 K*
Jul 23	PC/GGC Community Outreach Plan										
Aug 23	GGC Work Program				PC Introduction	PC Introduction					
Sept 23	Project Website				GGC Introduction PC State Law	GGC Introduction PC Policies & Actions					GGC Introduction
Oct 23		PC Introduction	PC Introduction								PC Introduction
Nov 23		GGC Introduction	GGC Introduction	PC Introduction	GGC Allocation		PC Introduction			PC Introduction	
Dec 23	CC-PC Joint Work Session			GGC Introduction			GGC Introduction			GGC Introduction	
Jan 24		PC Plan Drafting							PC Introduction GGC Introduction		
Feb 24		GGC Plan Drafting	PC Plan Drafting			PC Plan Drafting					
Mar 24			GGC Plan Drafting		PC Plan Drafting						PC Code Drafting
Apr 24					PC Plan Drafting	PC Plan Drafting GGC Plan Drafting					GGC Code Drafting
May 24				PC Plan Drafting	GGC Plan Drafting		PC Plan Drafting			PC Plan Drafting	
Jun 24		PC Plan Drafting GGC Plan Drafting							PC Plan Drafting		
Jul 24				PC Plan Drafting GGC Plan Drafting							PC Code Drafting
Aug 24							PC Plan Drafting GGC Plan Drafting		PC Plan Drafting GGC Plan Drafting	PC Plan Drafting GGC Plan Drafting	GGC Code Drafting
Sep 24					PC Plan Drafting	PC Plan Drafting					
Oct 24						GGC Plan Drafting					PC Code Drafting
Nov 24	PC CPU Ordinance PC DCU Ordinance				GGC Plan Drafting						GGC Code Drafting
Dec 24	CC-PC Joint CPU Ordinance CC-PC Joint DCU Ordinance										
Jan 25	PC CPU Ordinance PC DCU Ordinance										
Feb 25	PC CPU Ordinance PC DCU Ordinance										
Mar 25	GGC CPU Ordinance GGC DCU Ordinance										
Apr 25	CC CPU Ordinance CC DCU Ordinance										
May 25	CC CPU Ordinance CC DCU Ordinance										
Jun 25	CC CPU Ordinance CC DCU Ordinance										
State Deadline	June 30, 2023										

Legend
CC – City Council
CDD – Community Development Department

CPU – Comprehensive Plan Update
DCU – Development Code Update
GGC – General Government Committee
PC – Planning Commission
PRD – Parks & Recreation Department
TED – Transportation & Engineering Department
WRS – Water Resources Department