PLEASANT VALLEY

TRANSPORTATION REFINEMENTS

Pleasant Valley

# TSP REFINEMENT

August 2019

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# ACKNOWLEDGEMENTS


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## SPECIAL THANKS

Special thanks are offered to the community members of the Pleasant Valley area and local service agencies who participated in the community surveys, advisory committee meetings, and public meetings to provide input throughout the planning process.

We sincerely appreciate the efforts of City staff who played a critical role in providing data and comments for this plan.

## PREPARED BY:

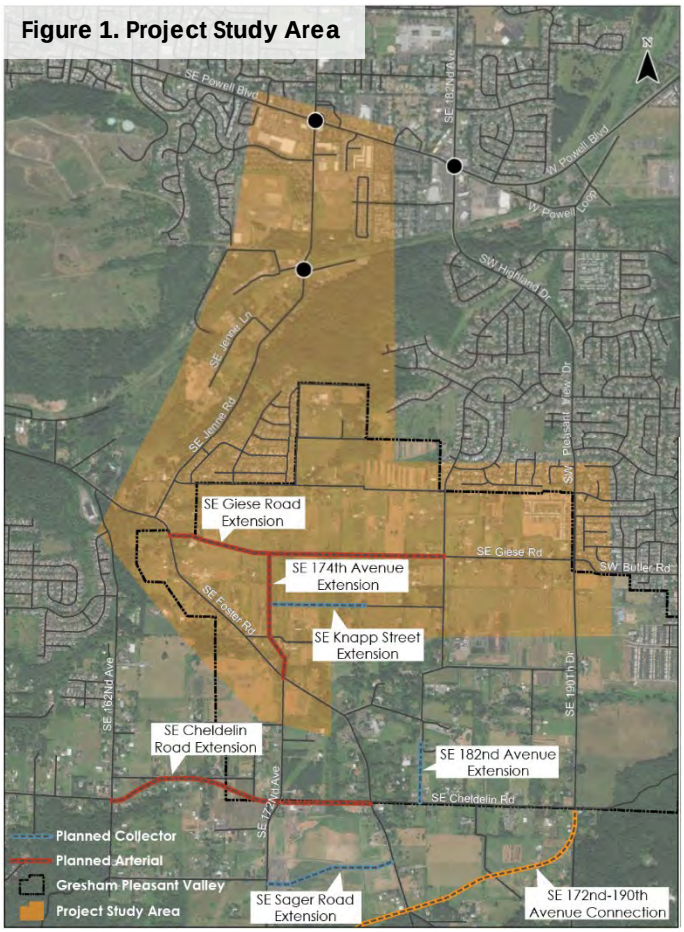
Kittelson & Associates, Inc.

## IN ASSOCIATION WITH:

The City of Gresham

# 01 | INTRODUCTION

**Figure 1. Project Study Area**




***In this section:***

Project background, goals and objectives, and overview of the process followed to engage the community, assess alternatives, and prepare an implementation plan for the preferred alternative.



## 1.1 PROJECT BACKGROUND

The City of Gresham initiated the project to review planned transportation facilities in the Pleasant Valley Transportation System Plan (TSP) with a primary focus on determining how the system can function adequately in the future. Alternatives that included and excluded a potential new arterial extension of SE 174th Avenue to connect between SE Giese Road and SE Jenne Road were analyzed to understand the impacts of that connection on the overall function of the Pleasant Valley street network. The SE 174th Avenue extension was originally identified by Metro in planning for the Powell-Foster corridors and is included in the 2018 Metro Regional Transportation Plan (RTP) project list. A preferred alternative, which does not include the SE 174th Avenue extension in the RTP was selected to be incorporated into an updated Pleasant Valley TSP. In addition, information about construction phasing, costs, right-of-way needs, and impacts were developed for improvements.

The Pleasant Valley TSP was adopted in 2005. Since that time, planning has occurred by Clackamas County, Portland, and Metro. These plans are based on the Pleasant Valley TSP, which includes an extension of Giese Road between SE Foster Road and SE 182nd Avenue. In addition, it includes the downgrading of Foster Road into a local access street (i.e., retain the current two-lane configuration), with the potential to disconnect or vacate the street near the crossing of Kelley Creek. In 2012, Happy Valley and Clackamas County jointly adopted the *172nd Avenue/190th Drive Corridor Management Plan* which includes a new arterial connection between SE 172nd Avenue and SE 190th Avenue (the "172nd -190th Connector") in Clackamas County. The new connection, which creates more direct flow to SE 190th Avenue, was developed based on modeled future capacity needs. that could not be assumed by roads west of SE 190th Avenue and with limited capacity on Foster Road within Pleasant Valley.

Figure 1, shown above, illustrates the Pleasant Valley Boundary, the SE 174th Avenue extension in Metro's RTP, SE Giese Road extension, and 172nd -190th Connector, as well as the project study area and study intersections.

# 1.2 GOALS AND OBJECTIVES

Project goals and objectives were developed by reviewing the Pleasant Valley Concept Plan and 2005 Pleasant Valley TSP and updating these with the Technical Advisory Committee (TAC) and Community Advisory Committee (CAC). Goals included process-focused and outcome-focused categories and are shown in Table 1.

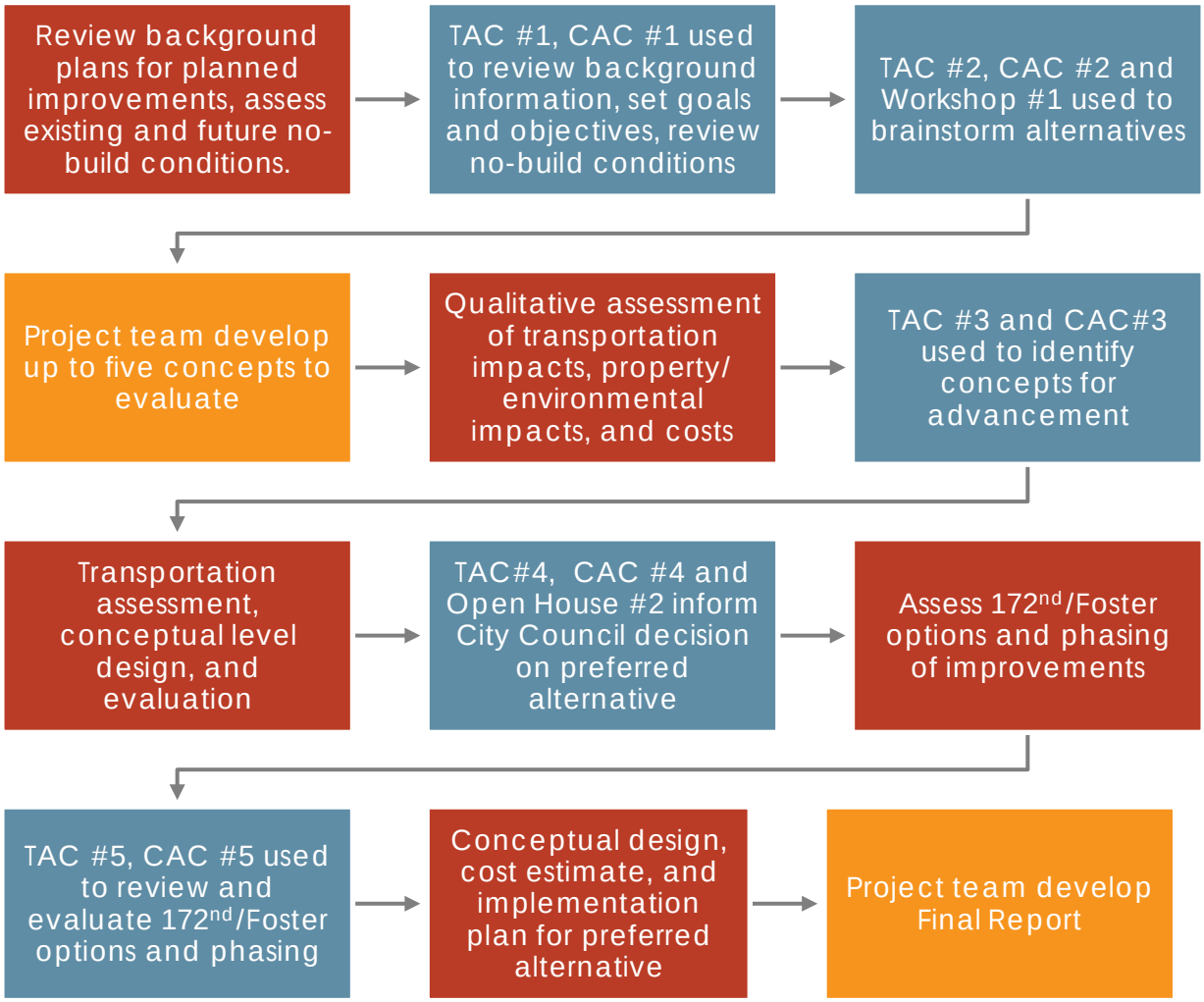
**Table 1. Project Goals and Objectives**

| | Goals | Objectives |
|---|---|---|
| Process-Focused | Clear Plan | ▶ Provide a clear plan for the area, including an implementation strategy.<br>▶ Incorporate and build from previous plans for the study area. |
| | Community Involvement | ▶ Communicate key milestones throughout the project to the public.<br>▶ Build community support and understanding of how and why the preferred solution was selected. |
| | Feasible Plan | ▶ Accurately and clearly identify the feasibility of potential alternatives.<br>▶ Consider anticipated costs, funding sources, environmental impacts, and permitting. |
| | Coordinated Plan | ▶ Coordinate with neighboring jurisdictions and area partners to provide consistency with other area plans. |
| Outcome-Focused | Livability | ▶ Incorporate design elements that increase community livability and cohesiveness.<br>▶ Support an integrated approach to land use and transportation planning to encourage livable and sustainable communities, decrease average trip lengths, and increase accessibility for all modes.<br>▶ Preserve, restore and enhance natural resources and develop connected habitat corridors. |
| | Mobility | ▶ Promote efficient movement of people and freight.<br>▶ Facilitate access to daily needs and services.<br>▶ Provide transportation options for all modes of travel.<br>▶ Balance the functional classification system throughout the study area. |
| | Safety | ▶ Reduce crash frequency and severity of crashes for all modes of travel. |

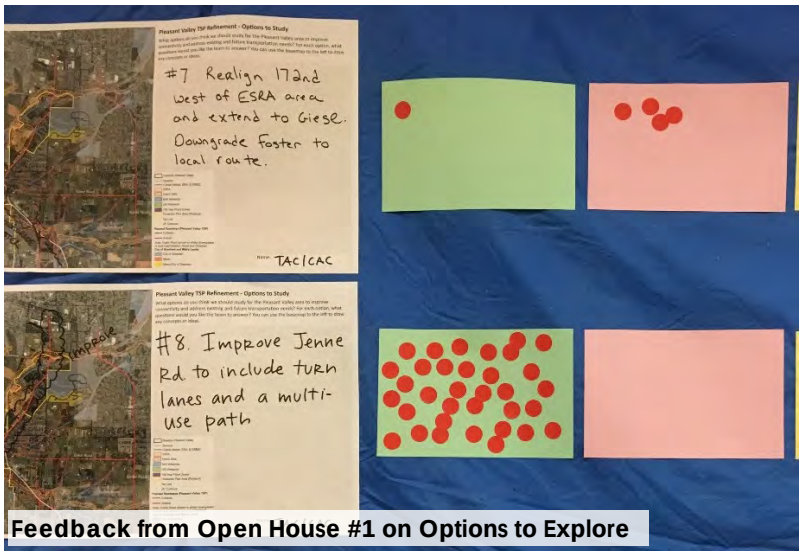
# 1.3 PROJECT PROCESS

The project process included review of background information, future alternatives development, and iterative refinement between the project team, City of Gresham, TAC, CAC, and the public. Figure 2 shows the steps taken to develop, refine, and select a preferred alternative.

**Figure 2. Project Process**



# 02 | PUBLIC INVOLVEMENT PROCESS




**Feedback from Open House #1 on Options to Explore**

***In this section:***

Public involvement purpose, goals, decision-making, schedule and tools to provide effective and collaborative outreach with the community.



## 2.1 PURPOSE AND GOALS

The purpose of the public involvement program was to share information and gather input regarding the needs and issues of Pleasant Valley residents, the public, stakeholders, and interested parties. The public involvement goals were to:

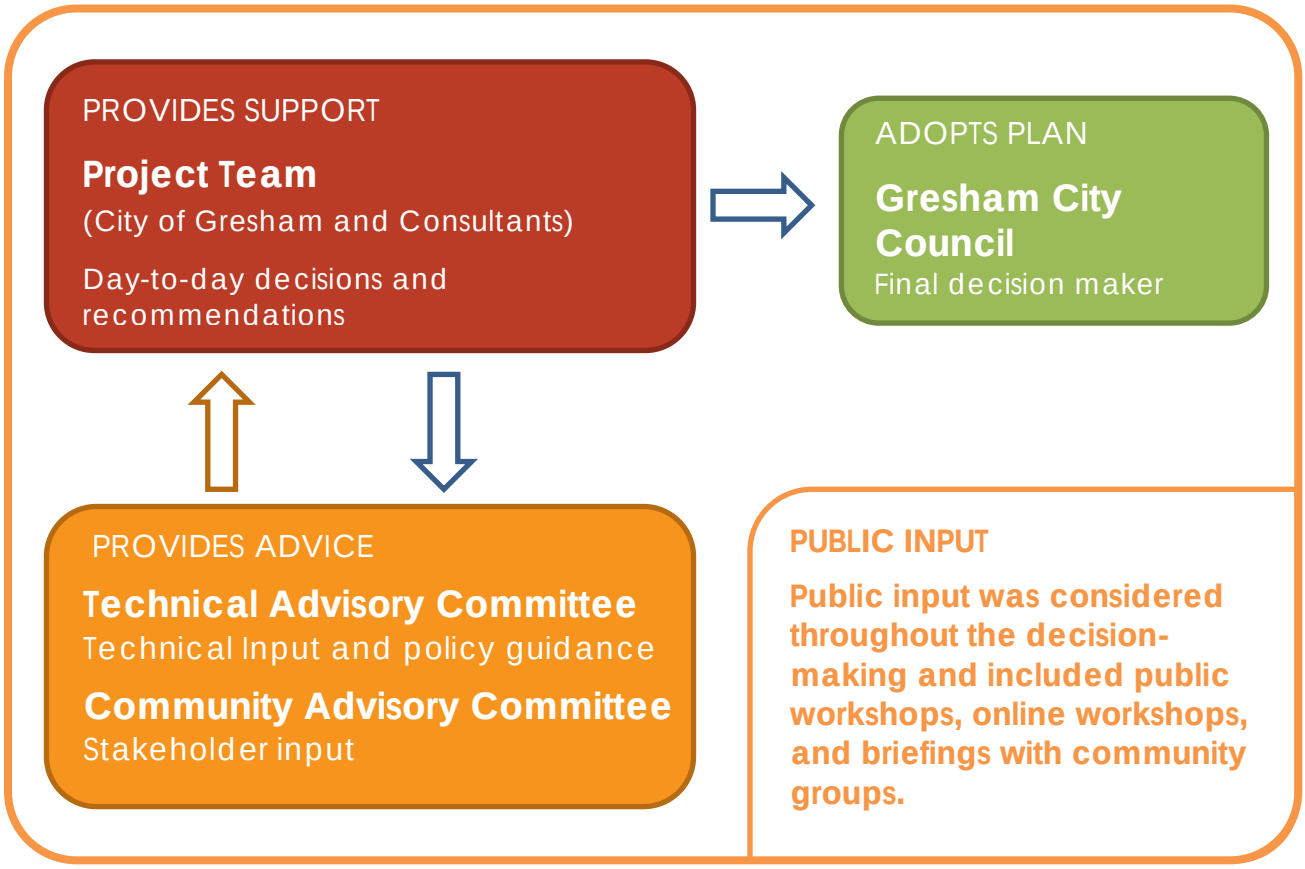
- Communicate complete, accurate, understandable, and timely information to the public.
- Seek participation of all potentially affected and/or interested individuals, communities, and organizations.
- Provide meaningful public involvement opportunities and demonstrate how input has influenced the process.
- Seek participation of Civil Rights Act of 1964 Title VI/Environmental Justice groups, including disabled, low-income, limited English proficiency, minority or other underserved groups in the project area.
- Ensure that the public involvement process is consistent with applicable state and federal laws and requirements and is sensitive to local policies, goals, and objectives.

The above goals informed the public involvement approach throughout the project.

## 2.2 DECISION-MAKING STRUCTURE

The following sections describes the decision-making parties involved in the Pleasant Valley TSP Update. Figure 3 shows the decision-making structure, including the role and interaction of the project team, technical advisory committee, community advisory committee, public input, and Gresham City Council.

**Figure 3. Decision-Making Structure**




**Technical Advisory Committee**: TAC members included transportation plus natural resources planning and engineering staff from the coordinating agencies (City of Gresham, City of Portland, City of Happy Valley, Clackamas County, Multnomah County, Metro, and TriMet). The TAC provided technical input and review and developed recommendations for the Project Team, Community Advisory Committee, and the Gresham City Council.

**Community Advisory Committee**: The Community Advisory Committee (CAC) was formed to provide community-based recommendations. The CAC developed recommendations to the Project Team and Gresham City Council. All meetings were open to the public and included a public comment period. The CAC included a range of neighborhood, environmental, and economic development representatives. Table 2 shows the CAC members and their organization.

**Table 2. Community Advisory Committee Members**

| | Name | Organization |
|---|---|---|
| 1 | Angeline Adler | President, Gresham Pleasant Valley Neighborhood Association |
| 2 | Kent Liebelt | Land Use, Gresham Pleasant Valley Neighborhood Association |
| 3 | Steve Bennett | Land Use Chair, Southwest Neighborhood Association |
| 4 | Dale Shetler | Portland Pleasant Valley Neighborhood Association |
| 5 | Jason Howard | Johnson Creek Watershed Council |
| 6 | Joe Schiewe | Developer, Holt Group |
| 7 | Greg Lecuyer | Centennial School District |

**Gresham City Council**: Gresham City Council is the project's final decision maker. It conducted a final review of the recommendations. The City of Gresham has the ultimate authority and responsibility to bring the final TSP refinements through the adoption process. If the final recommendations include recommendations that cross jurisdictional lines, the City of Gresham may enter into an Intergovernmental Agreement (or another type of agreement) to further implementation of the recommendations.

**Project Team**: The project team was made up of City of Gresham staff and consultants, including Kittelson & Associates, Inc., JLA Public Involvement, Mason, Bruce & Girard, and Otak, Inc.

## 2.3 ACTIVITIES OVERVIEW

Meetings and public involvement activities were conducted at key points to provide updates, present information, and gather input and feedback. Table 3 shows the type of meeting or activity and details of the events.

**Table 3. Public Involvement Activities**

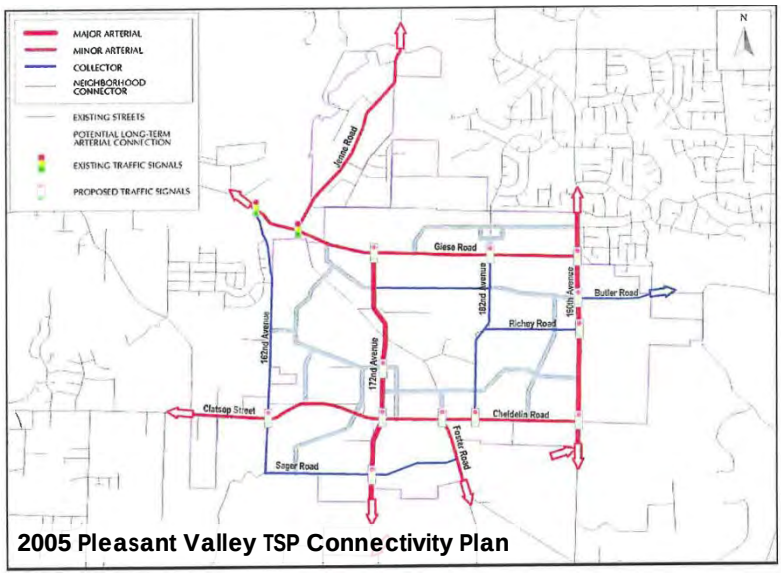
| Type of Meeting | Meeting Details |
|---|---|
| TAC/CAC Meetings #1 | Reviewed project background. Reviewed draft goals and objectives for the project, and analysis of existing and future planned conditions. |
| TAC/CAC Meetings #2 | Reviewed evaluation criteria, environmental baseline, basemap, and generated initial options to study. |
| Council Briefing #1 | Presented project background, draft goals and objectives, and analysis of existing and future no-build conditions. |
| Public Workshop #1 | Presented background, gathered input on initial alternatives. |
| Planning Commission Briefing #1 | Presented project background, draft goals and objectives, and analysis of existing and future no-build conditions. |
| TAC/CAC Meetings #3 | Presented review of alternatives and selected alternatives for advancement. |
| TAC/CAC Meetings #4 | Reviewed evaluation of alternatives and selected preferred alternative. |
| Council Briefing #2 | Reviewed evaluation of alternatives and technical and community input into the preferred alternative. |
| Public Workshop #2 | Reviewed evaluation of alternatives and provided feedback. |
| TAC/CAC Meetings #5 | Presented conceptual design, cost estimate and implementation strategy |
| Planning Commission Briefing #2 | Presented conceptual design, cost estimate and implementation strategy prior to adoption process |
| Council Briefing #3 | Presented conceptual design, cost estimate and implementation strategy. |

# 2.4 TOOLS

The project advisory committees served as the primary tools for collaboration and consensus building on the project. Below is a list of stakeholder engagement and informational tools and activities that supplemented advisory committees throughout the project to engage and inform a broader public audience.

- Stakeholder Interviews
- Stakeholder database
- Comment collection, analysis and responses
- Email Blasts
- Project Website
- Project Outreach Materials
  - Pleasant Valley TSP Refinement overview
  - Project Goals & Objectives
  - Alternatives for Review
  - Overview of the evaluation of the alternatives
  - Overview of the selected preferred alternative and conceptual design
- Public Workshops - 2/15/2018, 3/20/2018, 9/25/2018
- Virtual Public Workshops -
- Notification of Public Workshops and Virtual Workshops
  - Email to interested parties list
  - Post flyers at locations in Pleasant Valley
  - Post Card mailing to all Pleasant Valley addresses
  - Facebook posts
- Council Briefings

# 03 | REVIEW OF BACKGROUND DOCUMENTS



**2005 Pleasant Valley TSP Connectivity Plan**

***In this section:***

Description of prior planning efforts and resources used to inform the Pleasant Valley TSP Update and overview of the planned improvements assumed to be in-place under future conditions.



## 3.1 DOCUMENT SUMMARY

Table 4 shows the documents from prior planning efforts, their goals/objectives, and the planned projects identified and assumed to be in-place under future conditions.

**Table 4. Document Summary**

| Document | Goals/Objectives | Planned Projects |
|---|---|---|
| **Pleasant Valley Concept Plan** | ▸ Create a community<br>▸ Create a town center as the heart of the community<br>▸ Integrate schools and civic uses into the community<br>▸ Celebrate Pleasant Valley's cultural and natural history<br>▸ Preserve, restore and enhance natural resources<br>▸ Use "green" development practices<br>▸ Locate and develop parks and open spaces throughout the community<br>▸ Provide transportation choices<br>▸ Provide housing choices<br>▸ Provide and coordinate opportunities to work in and near Pleasant Valley | ▸ 172nd Avenue extension north to Giese Rd<br>▸ Giese Rd west to Foster Rd<br>▸ Clatsop St west to Cheldelin Rd<br>▸ 182nd Ave south to Cheldelin Rd<br>▸ Butler Rd west to 190th Ave<br>▸ Sager Rd east to Foster Rd<br>▸ Long-term arterial connection from 172nd to 190th Avenue south of the study area<br>▸ Downgrade Foster and Richey roads to serve as local access streets |
| **Pleasant Valley Transportation System Plan (TSP)** | Goal: Pleasant Valley will be a community where a wide range of safe and convenient transportation choices are provided. | Same extensions and connections called out in the concept plan. |

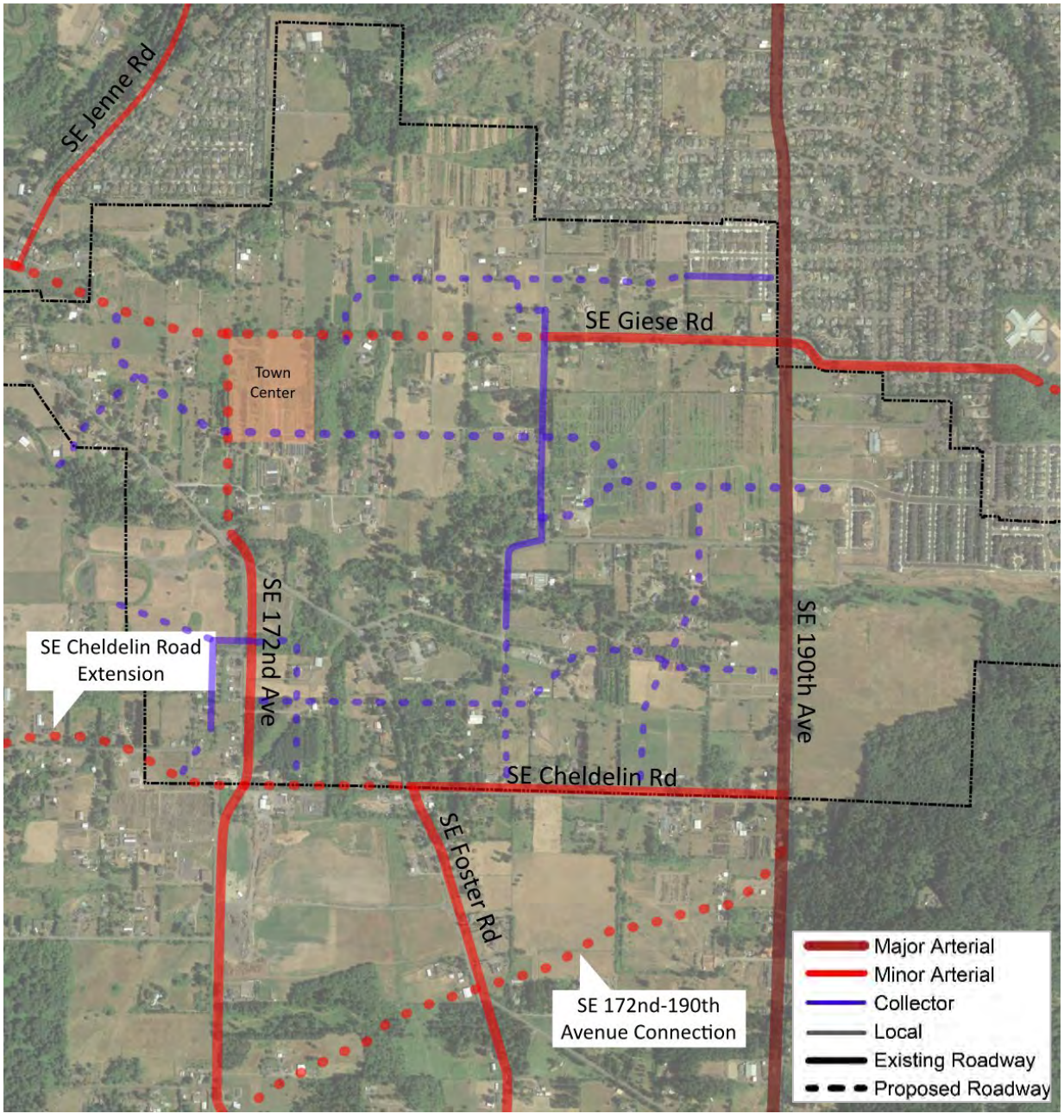
| Document | Goals/Objectives | Planned Projects |
|---|---|---|
| **Happy Valley TSP** | ▶ Livability<br>▶ Mobility<br>▶ Multi-Modal Travel<br>▶ Safety<br>▶ Evaluation<br>▶ Accessibility<br>▶ Cooperation<br>▶ Goods Movement<br>▶ Interchange Management Areas<br>▶ 172nd Avenue/190th Drive Corridor Management Plan | ▶ Extension of SE Clatsop Street to the east to SE Foster Road<br>▶ Extension of SE Sager Road to the east to SE Foster Road<br>▶ SE 172nd/190th Connector<br>▶ New east/west roadway parallel to SE 172nd Avenue to the east<br>▶ SE 162nd Avenue connection between SE Hagen Road and SE Sager Road |
| **Gresham TSP** | ▶ Accessibility<br>▶ Economic Development<br>▶ Efficiency<br>▶ Environmental Stewardship<br>▶ Healthy Equity<br>▶ Livability<br>▶ Mobility<br>▶ Safety<br>▶ Sustainable Funding | References Happy Valley TSP |
| **Clackamas County TSP** | ▶ Goal 1: Provide a transportation system that optimizes benefits to the environment, the economy and the community<br>▶ Goal 2: Plan the transportation system to create a prosperous and adaptable economy and further the economic well-being of businesses and residents of the County.<br>▶ Goal 3: Tailor transportation solutions to suit the diversity of local communities.<br>▶ Goal 4: Promote a transportation system that maintains or improves our safety, health, and security.<br>▶ Goal 5: Provide an equitable transportation system.<br>▶ Goal 6: Promote a fiscally responsible approach to protect and improve the existing transportation system and implement a cost-effective system to meet future needs. | ▶ Long term capital projects to improve and extend Cheldelin Road (Project ID 3007 and 3008)<br>▶ Long-term project to add bikeway, pedestrian facilities, and turn lanes at major intersections to SE 162nd Avenue (Project ID 3002) |
| **Multnomah County TSP** | Goal: To provide a safe and efficient transportation network for all modes of travel that serves the rural areas of the County and achieves the following objectives:<br>▶ Implement a transportation system that is safe and efficient in meeting the needs of area residents.<br>▶ Implement a balanced transportation system that supports all modes of travel.<br>▶ Develop a transportation system that supports the rural character of unincorporated Multnomah County.<br>▶ Develop a transportation system the supports a healthy economy.<br>▶ Provide transportation improvements in a timely manner according to funding capability.<br>▶ Reduce vehicle traffic on rural County roadways caused by those traveling through the area. | - |

| Document | Goals/Objectives | Planned Projects |
|---|---|---|
| **Metro Powell/Foster Corridor Refinement Plan** | ▶ Cost-effectiveness<br>▶ Impacts to neighborhoods and the environment<br>▶ Preservation of the through movement function of the alternatives<br>▶ Safety<br>▶ Opportunities for access management | Jenne Road or new SE 174th Avenue (between Giese Road extension and Jenne Road) |
| **Metro Regional Transportation Plan** | ▶ Foster Vibrant Communities and Efficient Urban Form<br>▶ Sustain Economic Competitiveness and Prosperity<br>▶ Expand Transportation Choices<br>▶ Emphasize Effective and Efficient Management of the Transportation System<br>▶ Enhance Safety and Security<br>▶ Promote Environmental Stewardship<br>▶ Enhance Human Health<br>▶ Ensure Equity<br>▶ Ensure Fiscal Stewardship<br>▶ Deliver Accountability | See Table 2 of Background Documents Review Memorandum for full project list |
| **East Metro Connections Plan** | - | Action plan projects:<br>▶ SE 174th N/S Improvements Giese – 174/Jenne<br>▶ Foster Rd Extension (north) Jenne – 172nd<br>▶ Giese Rd. Extension (182-172)<br>▶ 172nd Ave. improvements (Giese to Foster)<br>▶ 172nd Ave. Improvements (Foster to Cheldelin) |

## 3.2 PLANNED IMPROVEMENTS

Several key planned projects emerged from the background document review, including the extension of SE Giese Road, SE 174th Avenue, SE Knapp Street, SE Cheldelin Road, and SE 182nd Avenue, and the construction of the 172nd-190th Connector. Figure 4 shows these improvements.

**Figure 4. Planned Improvements near and within Study Area**



# 04 | EXISTING AND FUTURE PLANNED CONDITIONS

**SE 174th Avenue/Powell Boulevard Intersection**

***In this section:***

Description of the traffic operations, safety evaluation, and planned roadway, bicycle, pedestrian, and transit improvements in the study area.



## 4.1 KEY FINDINGS

The Existing and Future Planned Conditions Memorandum evaluated traffic operations, safety, and planned improvements in the study area. Key findings for the Existing and Future Planned Conditions include:

- Under existing conditions, all study intersections operate at LOS "D" or better during both weekday AM and PM peak hours, **except** for the following:
  - SE Foster Road/SE 172nd Avenue operates at LOS "F" during both weekday AM and PM peak hours, and
  - Powell Boulevard/SE 174th Avenue operates at LOS "F" during the weekday PM peak hour.
- Average crash rates exceeded critical crash rates based on statewide average rates by traffic control and intersection configuration at Powell Boulevard/SE 174th Avenue, SE Jenne Road/SE Foster Road, SE 172nd Avenue/SE Foster Road, and SE Giese Road/SE 190th Avenue.
- Planned improvements in the Pleasant Valley TSP include:
  - Sidewalks and bicycle lanes on all study roadways.
  - Potential transit service corridors on 172nd Avenue, Giese Road, 182nd Avenue, 190th Avenue, Clatsop Street/Cheldelin Road, and/or the new east-west collector south of Giese Road.
  - New east-west and north-south connections, including extensions to SE Giese Road, SE 172nd Avenue (between Cheldelin and Giese), and SE Knapp Street within the study area.
  - Signalization of SE Giese Road/SE Foster Road, SE Giese Road/SE 172nd Avenue, SE Giese Road/SE 190th Avenue, and a signal modification to SE Jenne Road/SE Foster Road. Consideration of a signal, roundabout, or other improvement at SE Foster Road/SE 172nd Avenue are also included.
- The Happy Valley TSP references and implements the 172nd/190th Corridor Management plan, which includes the 172nd-190th Connector in Clackamas County.

- The City of Portland TSP includes widening of Powell Boulevard from SE 162nd Avenue to SE 174th Avenue to a four-lane cross-section.
- Under future planned conditions, all study intersections operate at LOS "D" or better during both weekday AM and PM peak hours, **except** for the following:
    - Powell Boulevard/SE 182nd Avenue operates at LOS "F" during the weekday PM peak hour, and
    - Powell Boulevard/SE 174th Avenue operates at LOS "F" during both weekday AM and PM peak hours.

## 4.2 FUTURE PLANNED TRAFFIC OPERATIONS

The Pleasant Valley TSP identifies signalization of SE Foster Road/SE Giese Road, SE Giese Road/SE 172nd Avenue, SE Giese Road/SE 190th Avenue, and SE Foster Road/SE 172nd Avenue and these intersections are forecast to meet signal warrants under future conditions. Future traffic control devices and lane configuration assumptions are shown in Figure 5. Figures 6 and 7 show the projected future traffic volumes and operations at each of the study intersections under the planned future conditions during weekday AM and PM peak hours, respectively. As shown in the figures, Powell Boulevard/SE 182nd Avenue is forecast to operate over capacity during the weekday PM peak hour[1] and Powell Boulevard/SE 174th Avenue is forecast to operate over capacity during both weekday AM and PM peak hours. All other study intersections operate acceptably during both peak periods and meet the LOS and/or volume-to-capacity ratio standards enforced by the governing agency.

[1]No future analysis was conducted for the weekday AM peak hour given the lack of available counts.

**Figure 5. Future Planned Lane Configurations and Traffic Control Devices**

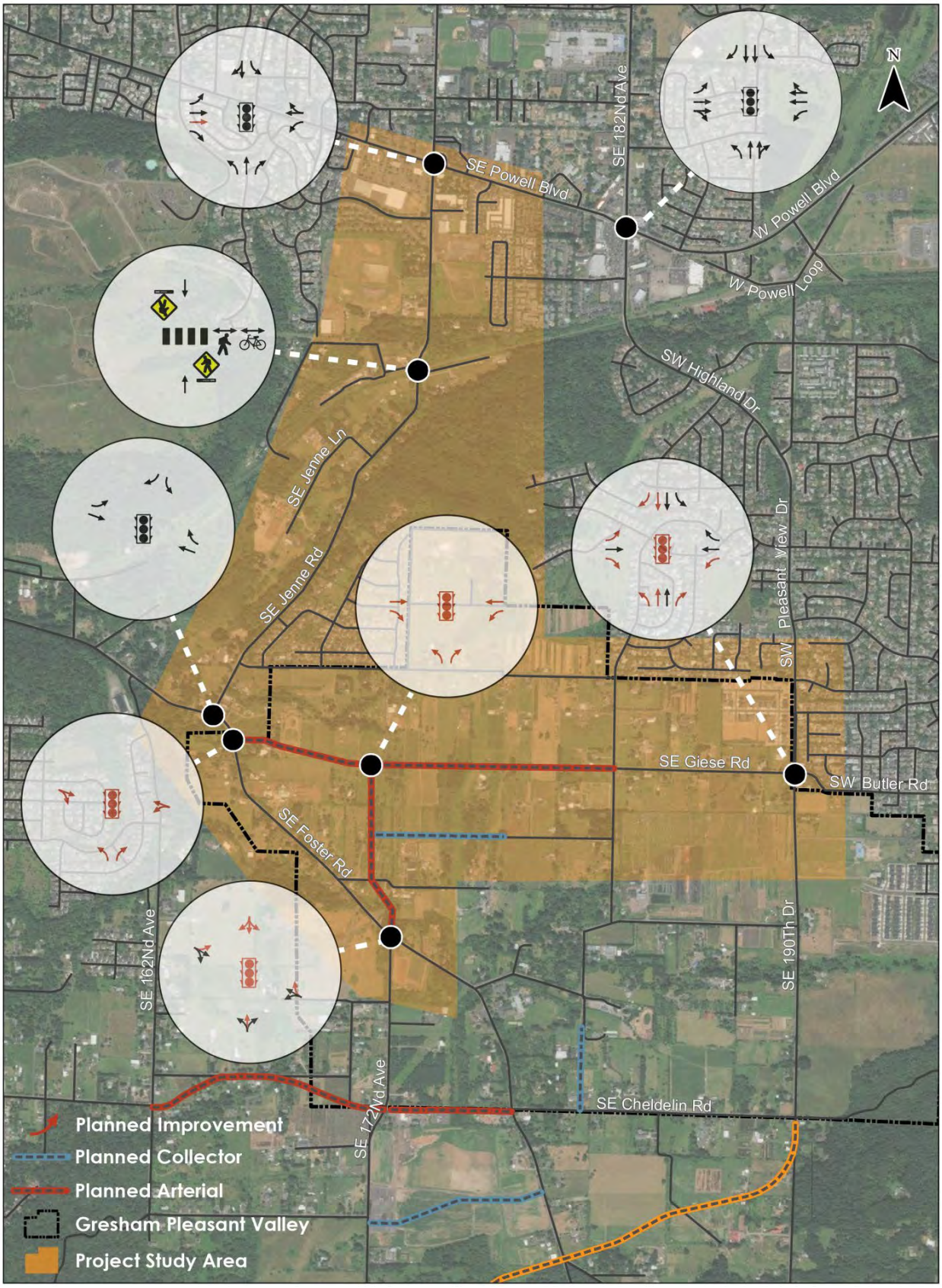


**Figure 6. Future Projected Traffic Conditions, Weekday AM Peak Hour**

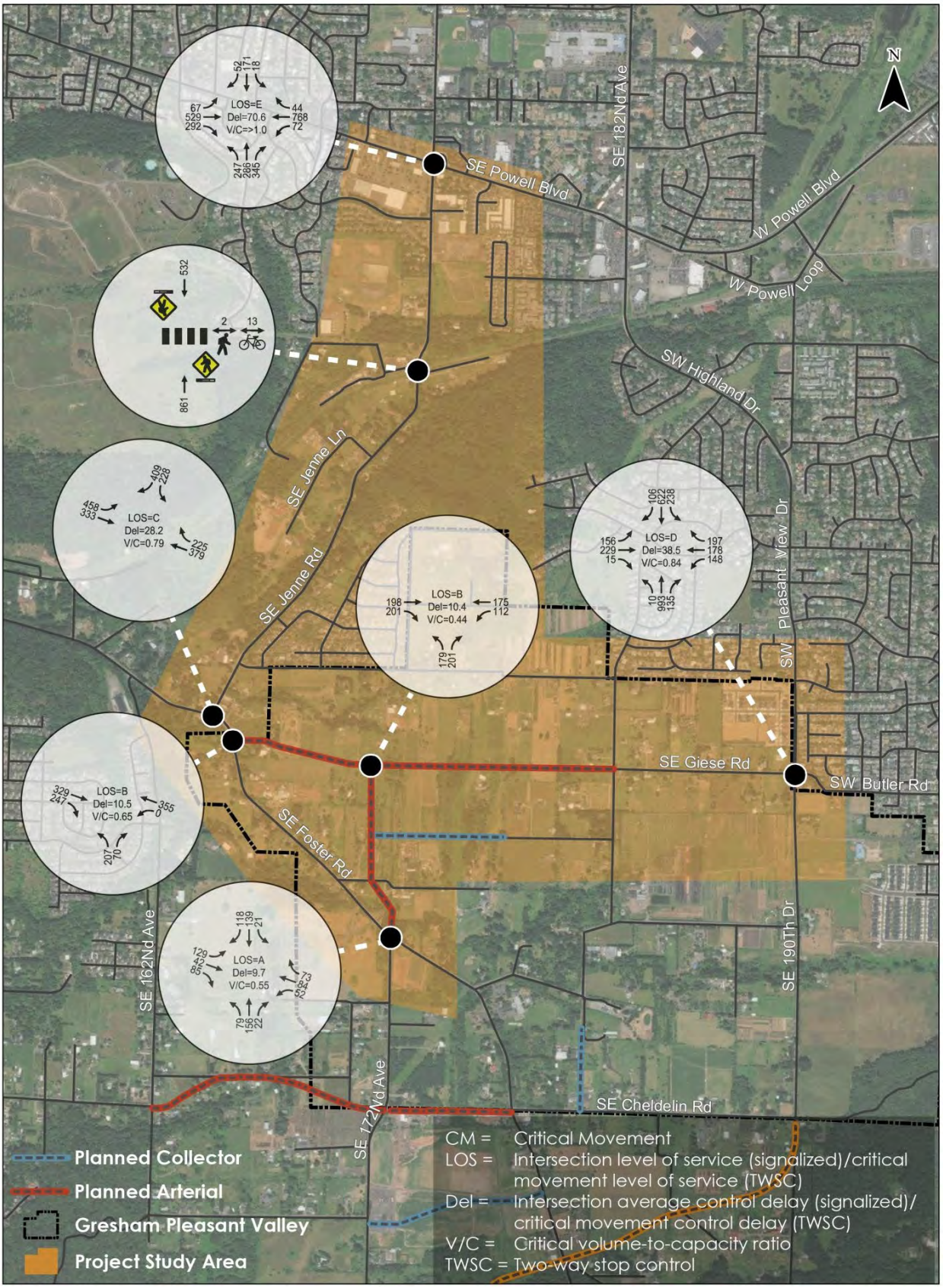
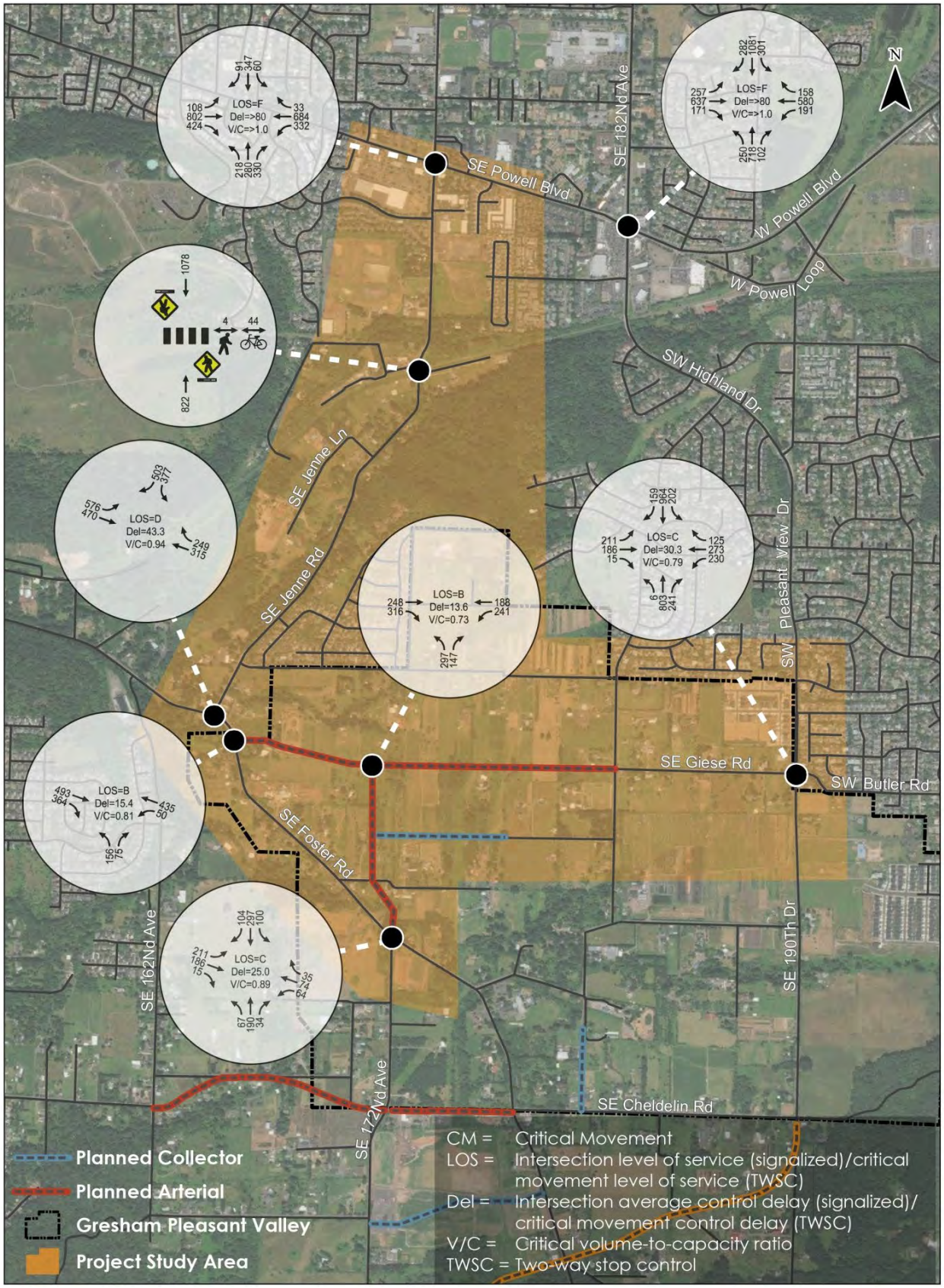


**Figure 7. Future Projected Traffic Conditions, Weekday PM Peak Hour**



# 05 | ALTERNATIVES DEVELOPMENT

***In this section:***

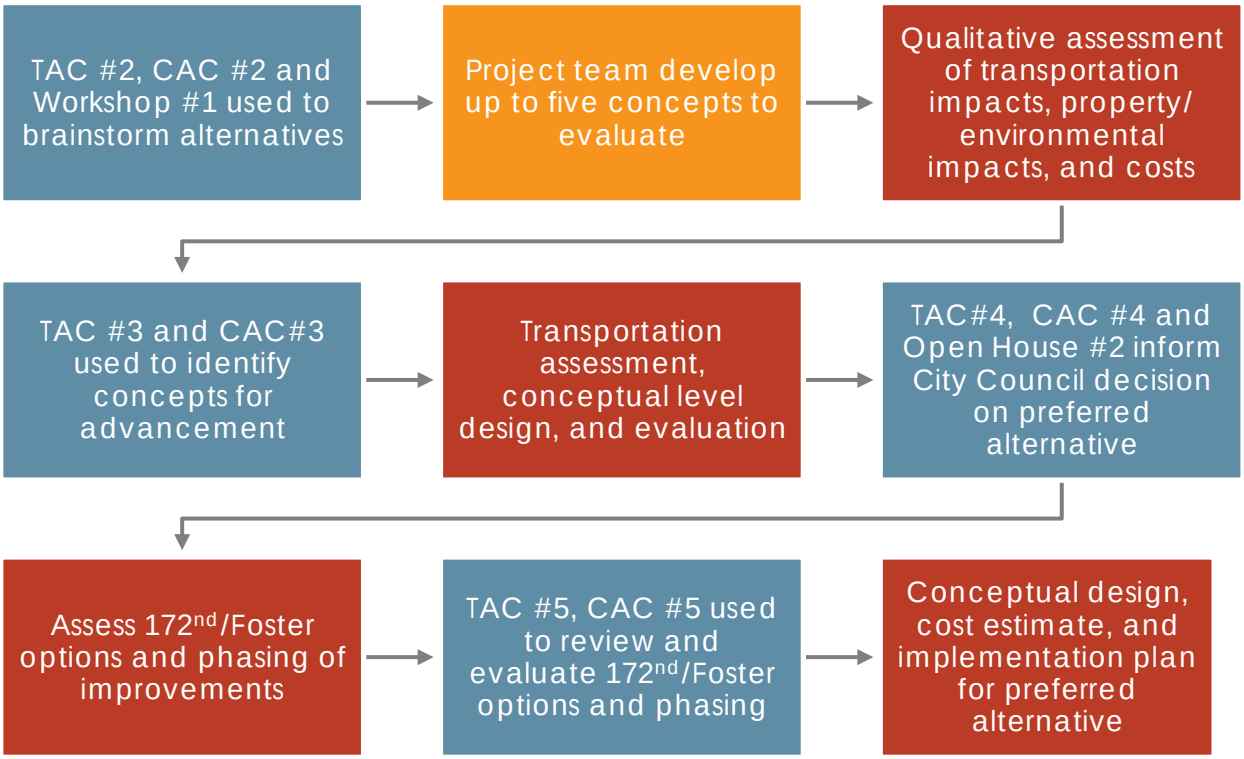
Overview of the development process, evaluation criteria, screening, initial preferred alternative, and concept refinement that led to selection of the preferred alternative.



## 5.1 ALTERNATIVES DEVELOPMENT PROCESS OVERVIEW

Alternatives were brainstormed and refined through TAC and CAC meetings, public workshops, City Council briefings, and project team knowledge. Figure 8 shows the alternatives development process.

**Figure 8. Alternatives Development Process**



# 5.2 EVALUATION CRITERIA

The project goals and objectives served as the basis to develop evaluation criteria and measures which were supplemented with TAC and CAC input. Table 5 shows the evaluation criteria.

**Table 5. Project Goals and Objectives and Evaluation Criteria**

| | Goals | Objectives | Evaluation Criteria/Measures |
|---|---|---|---|
| Process Focused | Clear Plan | ▶ Provide a clear plan for the area, including an implementation strategy.<br>▶ Incorporate and build from previous plans for the study area. | ▶ Each improvement has an identified cost, timeline, and potential funding strategy (yes/no) |
| | Community Involvement | ▶ Communicate key milestones throughout the project to the public.<br>▶ Build community support and understanding of how and why the preferred solution was selected. | ▶ Number of workshop participants and virtual workshop comments received (# per activity)<br>▶ Documentation of how community input shaped the plan (yes/no) |
| | Feasible Plan | ▶ Accurately and clearly identify the feasibility of potential alternatives.<br>▶ Consider anticipated costs, funding sources, environmental impacts, and permitting. | ▶ Cost estimates include potential bridge and retaining wall needs (yes/no)<br>▶ Identification of potential environmental impacts and permitting strategy where necessary (yes/no) |
| | Coordinated Plan | ▶ Coordinate with neighboring jurisdictions and area partners to provide consistency with other area plans. | ▶ All neighboring jurisdictions and area partners providing comments on the plan during development (yes/no) |
| Outcome Focused | Livability | ▶ Incorporate design elements that increase community livability and cohesiveness.<br>▶ Support an integrated approach to land use and transportation planning to encourage livable and sustainable communities, decrease average trip lengths, and increase accessibility for all modes.<br>▶ Preserve, restore and enhance natural resources and develop connected habitat corridors. | ▶ Do the planned improvements increase the number of future destinations accessible by walking, biking, or public transit for residents? (yes/no)<br>▶ Does the preferred concept minimize impacts or mitigate habitat fragmentation? (yes/no)<br>▶ Does the preferred concept minimize impacts to or mitigate impacts to sensitive habitat? (yes/no) |
| | Mobility | ▶ Promote efficient movement of people and freight.<br>▶ Facilitate access to daily needs and services.<br>▶ Provide transportation options for all modes of travel.<br>▶ Balance the functional classification system throughout the study area. | ▶ Does the preferred concept improve operations for vehicles, pedestrians, and/or bicycles? (yes/no)<br>▶ Does the preferred concept provide new connections to enhance access to daily needs and services for all modes? (yes/no)<br>▶ Is the preferred concept consistent with the desired spacing of different classifications of roadway? (yes/no) |
| | Safety | ▶ Reduce crash frequency and severity of crashes for all modes of travel. | ▶ Are the projects projected to reduce the frequency and severity of vehicle, pedestrian, and bicycle crashes? (yes/no)<br>▶ Does the preferred concept maximize separation between modes? |

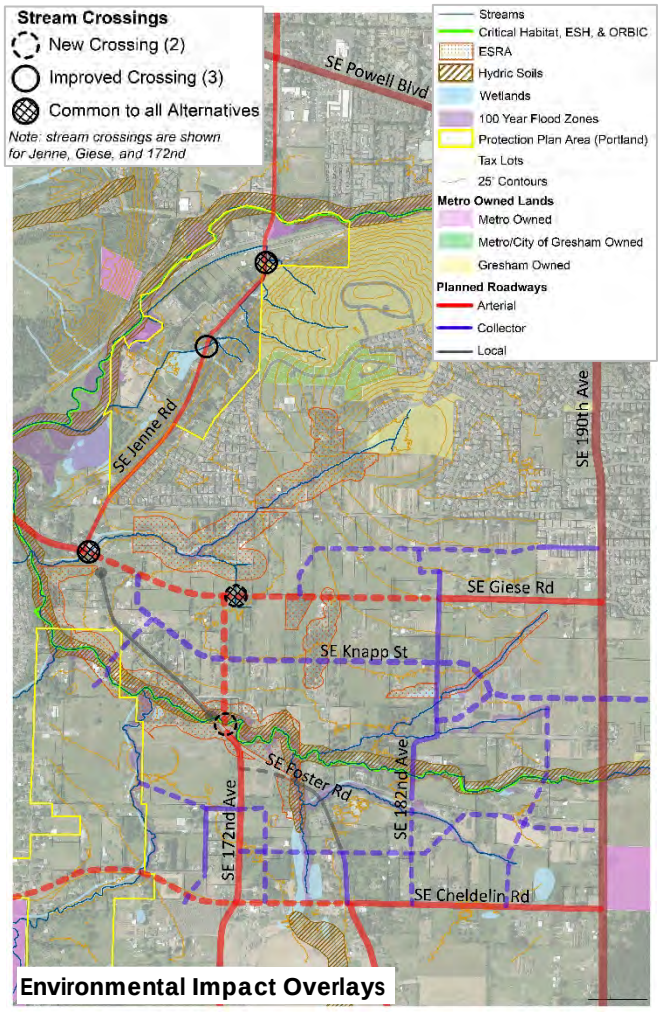
# 5.3 OVERVIEW OF DESIGN CONCEPTS

The following section shows the design concepts, their key features, and high-level strengths and weaknesses. Five concepts were initially developed. Alternative 5 was removed mid-process while Alternatives 1 through 4 were advanced. An additional concept, Alternative 3B, emerged from discussions with the CAC. Alternative 3B combines the northern elements of Alternative 3 and the southern elements of Alternative 4.

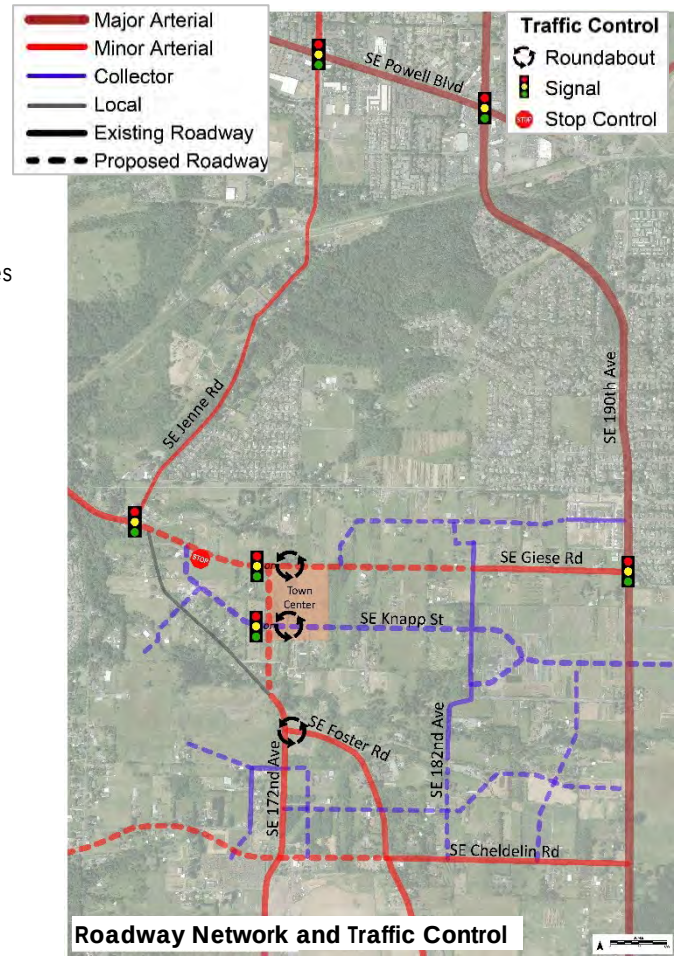
## ALTERNATIVE 1

**Key Features:**

- Giese Road Extension to Foster Road at Jenne Road (creates east-west through route)
- Safety improvements on SE Jenne Road – turn lanes where needed and pedestrian/bicycle facilities
- Downgrade of SE Foster Road to a local roadway between SE Giese Road and SE Cheldelin Road, with off-set intersections at SE 172nd Avenue



Environmental Impact Overlays



Roadway Network and Traffic Control

**Strengths:**

- Pedestrian, bicycle, and safety improvements on Jenne Road
- Shorter crossing of Kelley Creek (opportunity for mitigation and decommission of long culvert crossing at Foster Road)
- Several culvert replacements, potential for improved stream crossings on Jenne Road
- Grid network
- Direct town center access

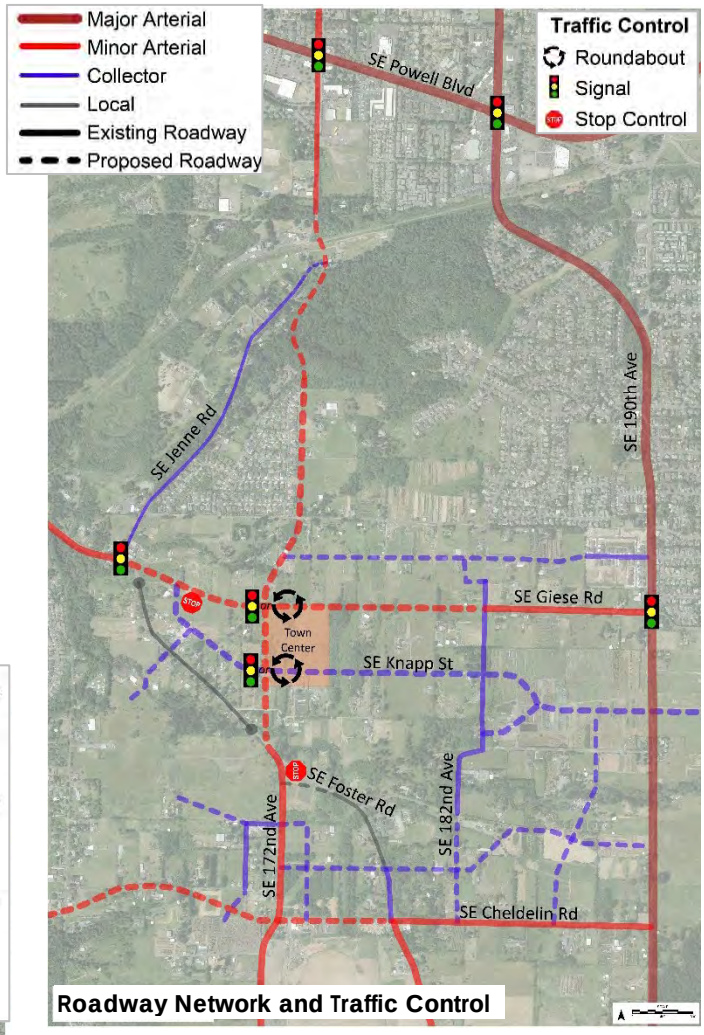
**Weaknesses:**

- Moderate impact to mature trees on Jenne Road
- Impact on wetlands near Kelley Creek with 172nd Avenue Extension

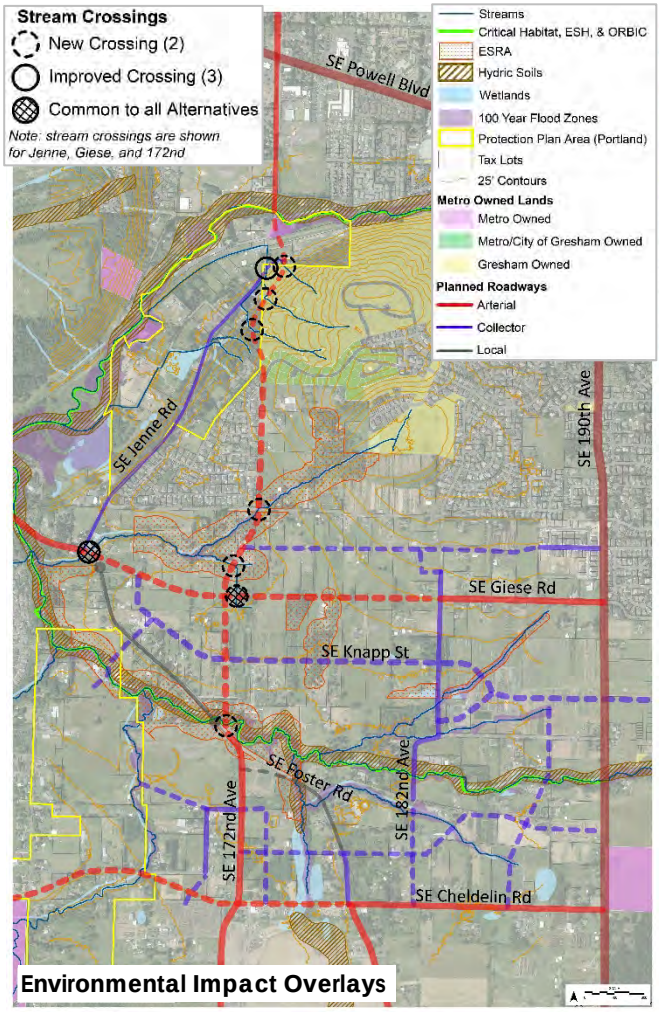
# ALTERNATIVE 2

**Key Features:**

- Giese Road Extension to Foster Road at Jenne Road (creates east-west through route)
- SE 174th Extension north of Giese Road
- No improvements to SE Jenne Road (decreased traffic)
- Downgrade of SE Foster Road to a local roadway between SE Giese Road and SE Cheldelin Road, with off-set intersections at SE 172nd Avenue



Roadway Network and Traffic Control



Environmental Impact Overlays

**Strengths:**

- Creates a multimodal alternative to Jenne Road
- Lower traffic volumes on Jenne Road
- Shorter crossing of Kelley Creek (opportunity for mitigation and decommission of long culvert crossing at Foster Road)
- Grid network
- Direct town center access

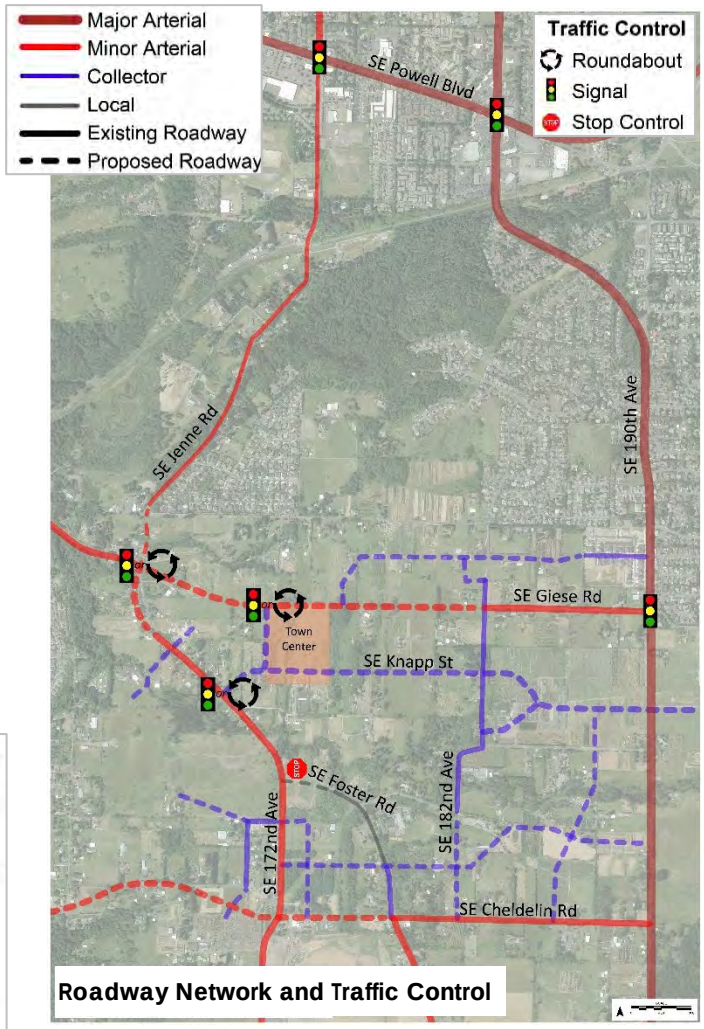
**Weaknesses:**

- Several new stream crossings, mature tree removal, and habitat fragmentation with 174th Avenue Extension
- Impact on wetlands near Kelley Creek with 172nd Avenue Extension

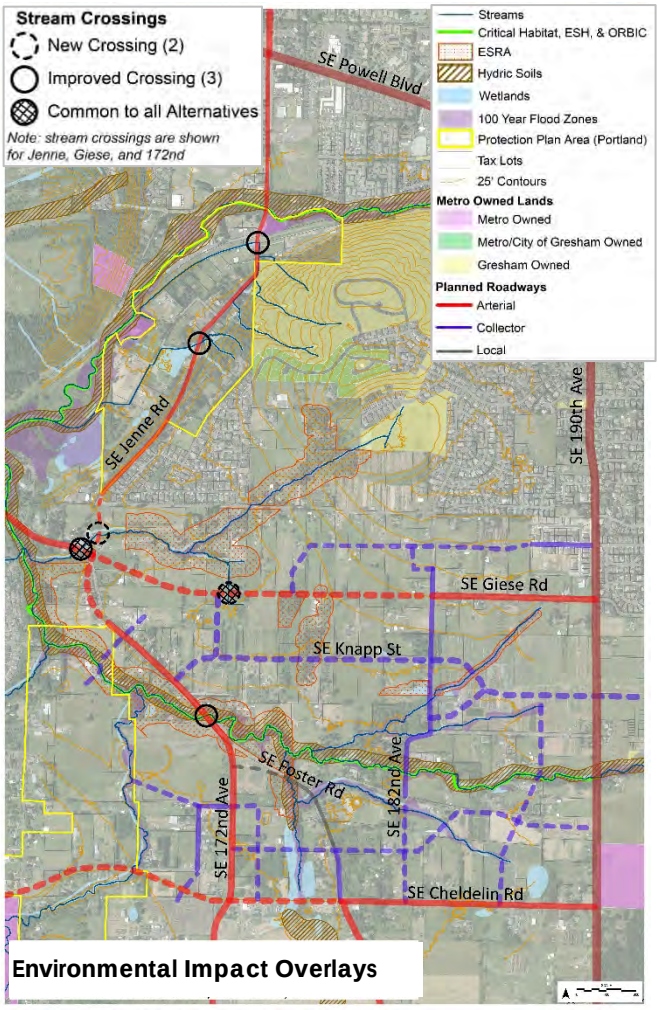
# ALTERNATIVE 3

**Key Features:**

- Giese Road Extension to Foster Road at Jenne Road (creates east-west through route)
- Improved SE Jenne Road, SE Foster Road, and SE 172nd as north-south through route
- Creation of a four-way intersection of SE Jenne Road, SE Giese Road, SE 172nd Avenue, and SE Foster Road
- Downgrade of Foster Road to a local or collector roadway between SE 172nd Avenue and SE Cheldelin Road




**Roadway Network and Traffic Control**




**Environmental Impact Overlays**

**Strengths:**

- Utilizes existing alignments
- Provides pedestrian, bicycle, and safety improvements on Jenne Road
- Several culvert replacements or improvements needed, potential for improved stream crossings on Jenne Road
- Potential for Kelley Creek crossing improvements
- Grid network

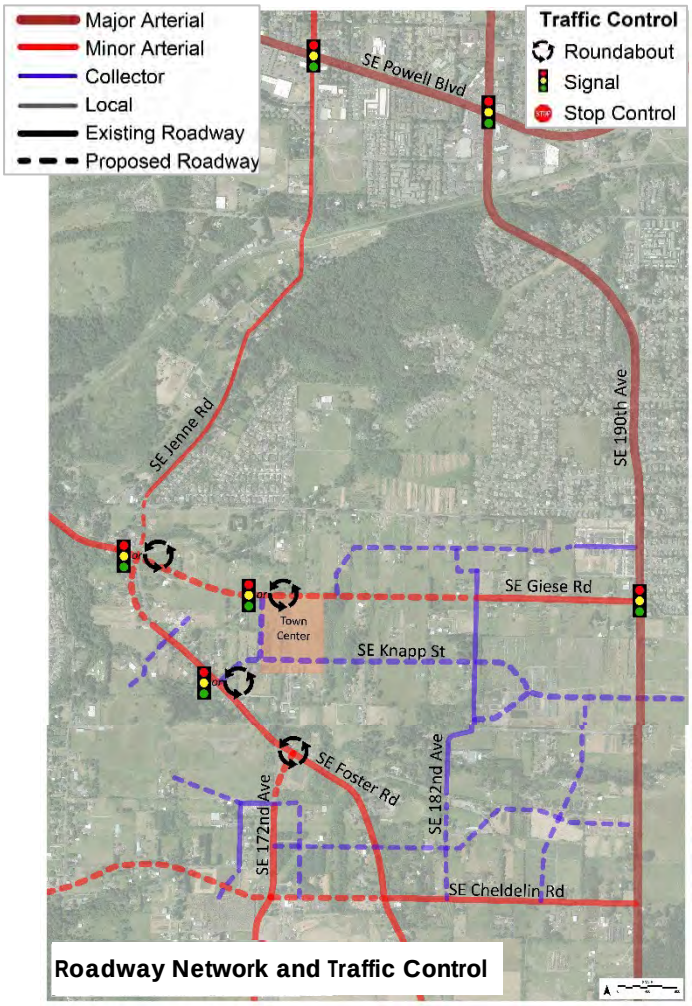
**Weaknesses:**

- Wetland impacts along Foster Road
- Lacks direct north-south connectivity to town center
- Property impacts with four-legged intersection at SE Jenne Road/SE Giese Road

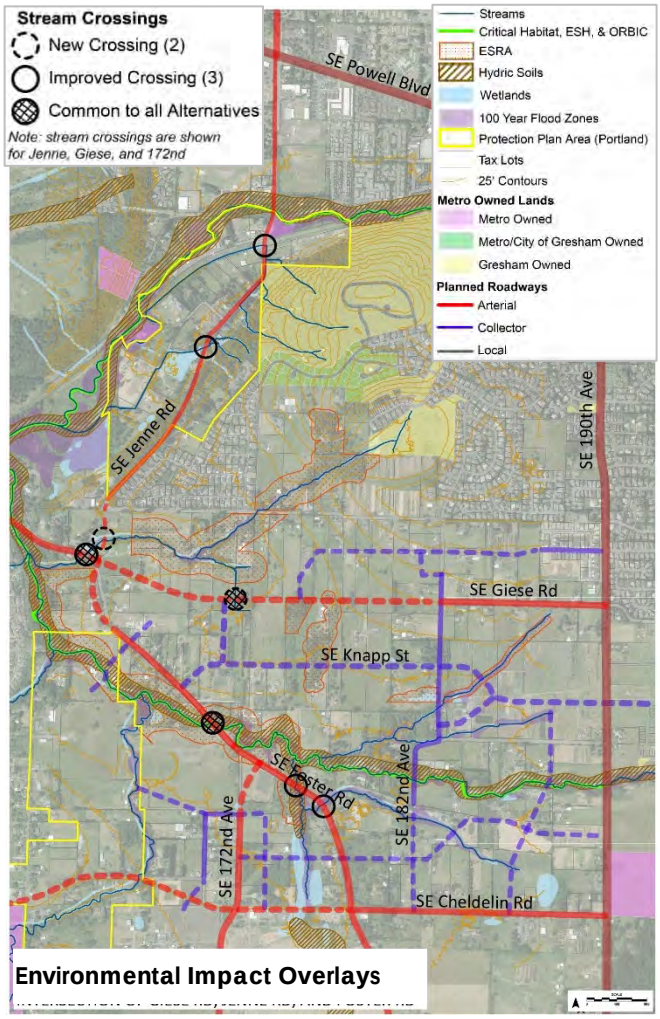
# ALTERNATIVE 3B

**Key Features:**

- Giese Road Extension to Foster Road at Jenne Road (creates east-west through route)
- Improved SE Jenne Road, SE Foster Road, and SE 172nd as north-south through route
- Creation of a four-way intersection of SE Jenne Road, SE Giese Road, SE 172nd Avenue, and SE Foster Road
- Maintain Foster Road as an arterial roadway between SE 172nd Avenue and SE Cheldelin Road




**Roadway Network and Traffic Control**




**Environmental Impact Overlays**

**Strengths:**

- Utilizes existing alignments
- Provides pedestrian, bicycle, and safety improvements on Jenne Road
- Several culvert replacements or improvements needed, potential for improved stream crossings on Jenne Road
- Potential for Kelley Creek crossing improvements
- Grid network

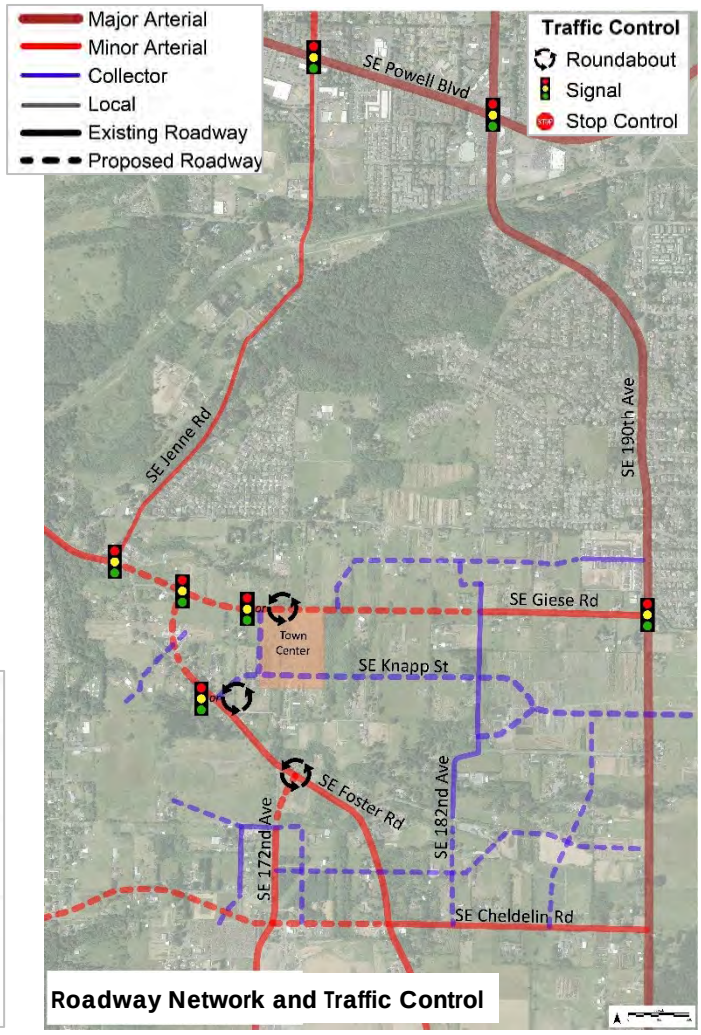
**Weaknesses:**

- Wetland impacts along Foster Road
- Lacks direct north-south connectivity to town center
- Property impacts with four-legged intersection at SE Jenne Road/SE Giese Road

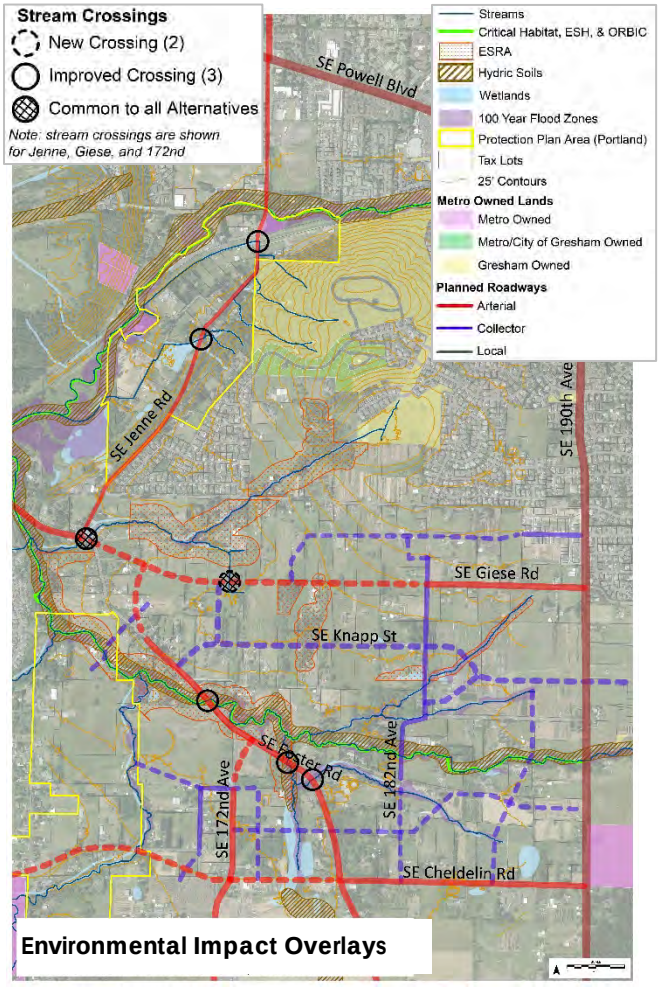
# ALTERNATIVE 4

**Key Features:**

- Giese Road Extension to Foster Road at Jenne Road (creates east-west through route)
- Improved SE Jenne Road and SE Foster Road
- Offset intersections of SE Jenne Road and SE Foster Road with SE Giese Road




**Roadway Network and Traffic Control**




**Environmental Impact Overlays**

**Strengths:**

- Utilizes existing alignments
- Provides pedestrian, bicycle, and safety improvements on Jenne Road
- Several culvert replacements or improvements needed, potential for improved stream crossings on Jenne Road
- Potential for Kelley Creek crossing improvements
- Grid network

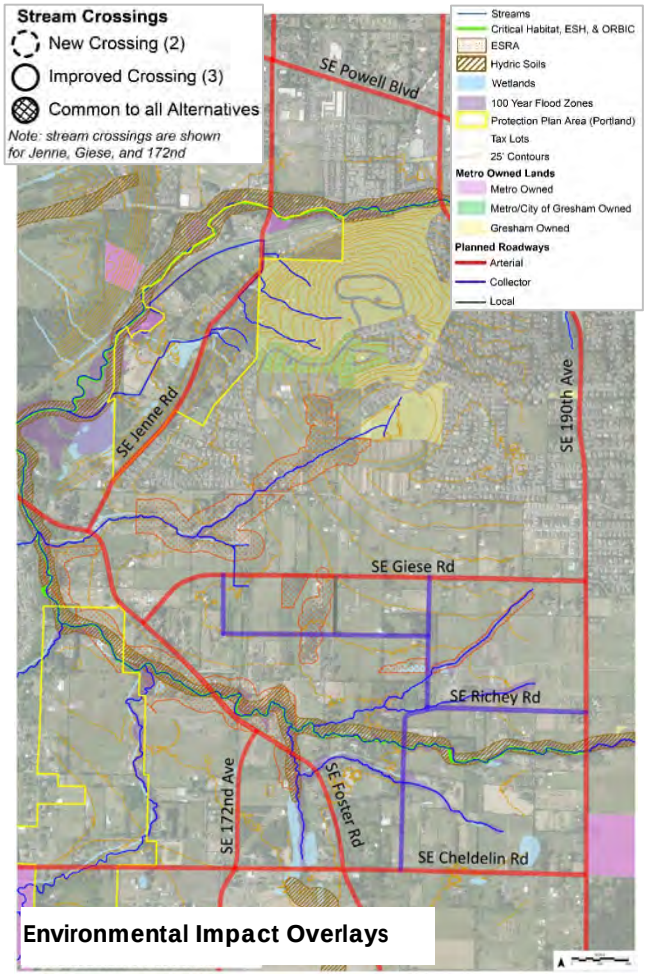
**Weaknesses:**

- Wetland impacts along Foster Road
- Lacks direct north-south connectivity to town center

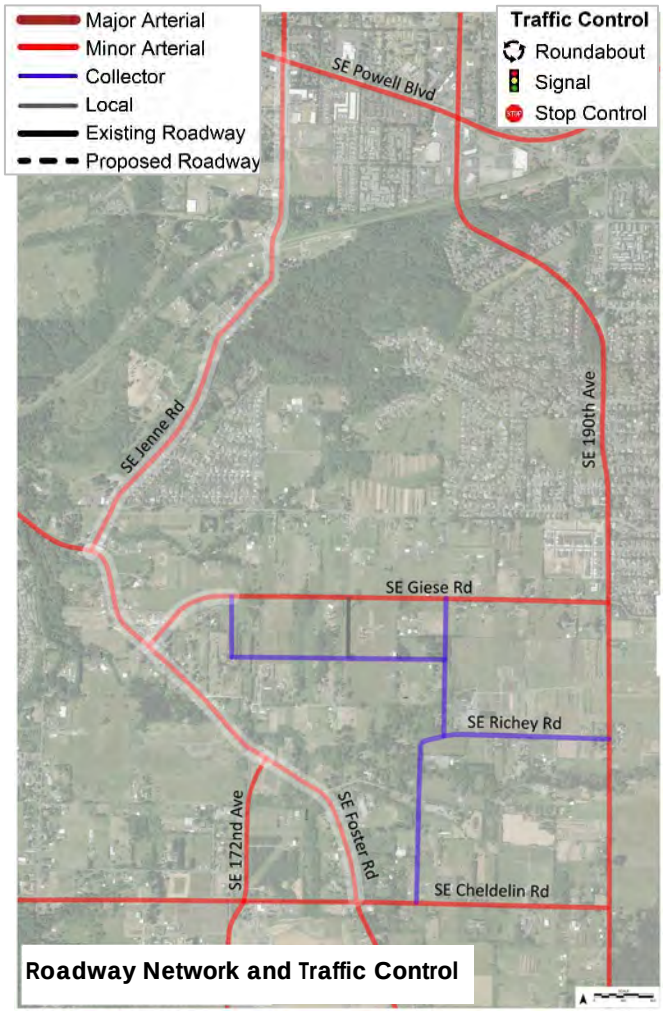
# ALTERNATIVE 5

**Key Features:**

- Giese Road Extension to Foster Road east of Jenne Road (no east-west through route)
- Improved SE Jenne Road and SE Foster Road
- SE Giese Road T-ed into SE Foster Road




**Environmental Impact Overlays**




**Roadway Network and Traffic Control**

**Strengths:**

- Utilizes existing alignments
- Provides pedestrian, bicycle, and safety improvements on Jenne Road
- Several culvert replacements or improvements needed, potential for improved stream crossings on Jenne Road
- Potential for Kelley Creek crossing improvements

**Weaknesses:**

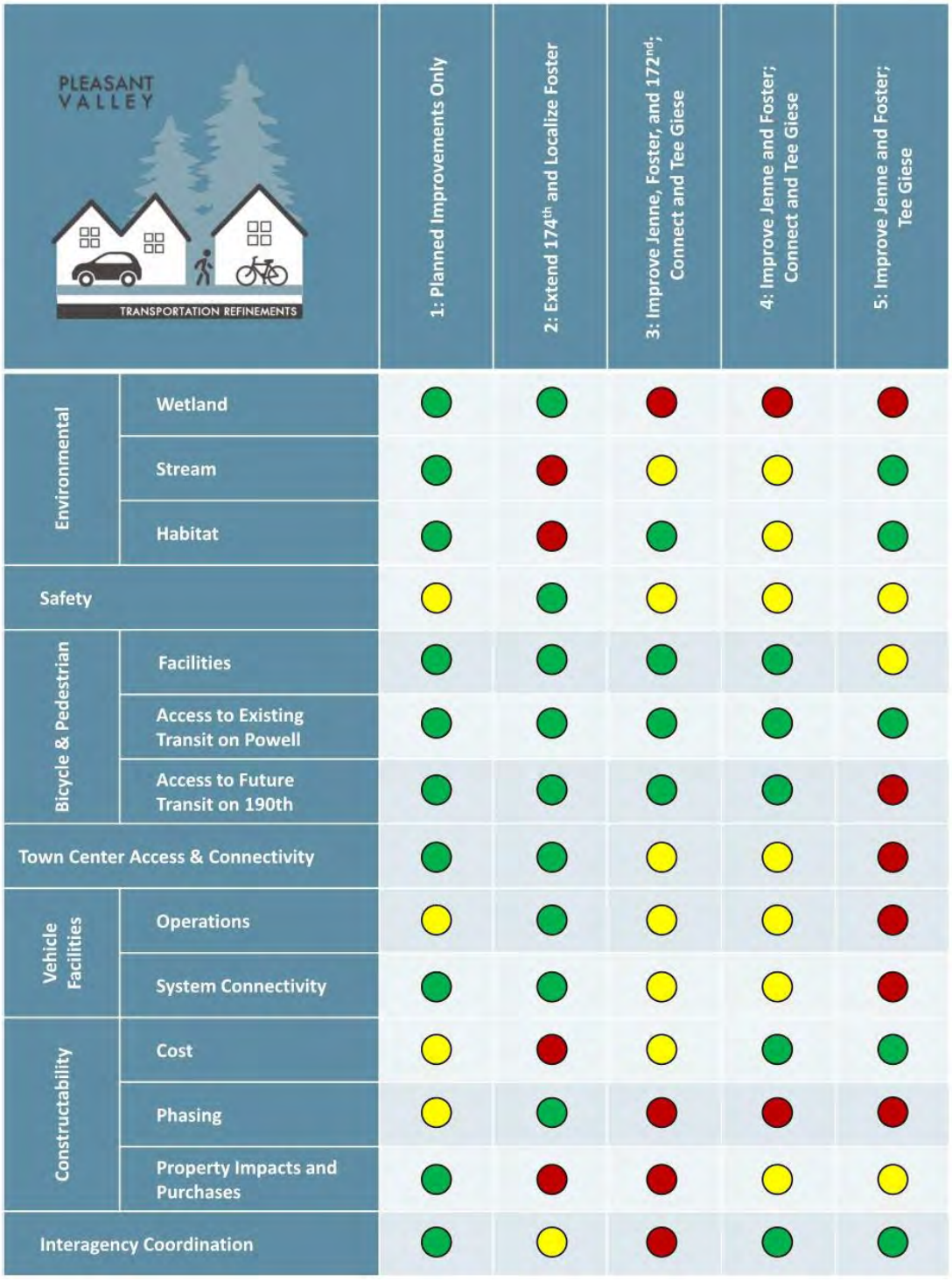
- Wetland impacts along Foster Road
- Lacks grid network and direct north-south and east-west connectivity to town center
- May not reduce cut-through traffic on McKinley Road

*Due to the high-level evaluation and feedback from the public, TAC, and CAC, Alternative 5 was removed from consideration during the initial screening due to not achieving enough of the project goals, in particular the lack of both a continuous east-west and north-south route through the study area.*

# 5.4 OVERVIEW OF SCREENING

The following section summarizes the environmental, property impacts, traffic operations, and cost estimate evaluation that led to the selection of Alternative 1 as the preferred alternative. A high-level evaluation of the alternatives, including the factors described further below, is shown in Figure 9.

**Figure 9. Evaluation Overview**



## ENVIRONMENTAL

Environmental impacts of each roadway segment in the alternatives was analyzed based on the extent of the earthwork area to construct and improve each roadway. Acreage and/or linear feet of impact were measured for wetland, stormwater treatment, stream crossings, mature trees, riparian wildlife habitat, upland wildlife habitat, and habitat fragmentation. In addition, the acreages of impacted Environmentally Sensitive Restoration Area (ESRA) lands and the pleasant valley natural resources overlay zone (Portland "v" Overlay) were considered in understanding potential mitigation costs and road construction constraints. Based on the total range of impact for each category, scores were assigned to indicate lower impact (1), moderate impact (5), and higher impact (10) compared to other roadway segments.

The roadway segments with the higher impacts in several environment categories included the SE 174th Extension from Giese Road to Jenne Road (e.g. impacts to streams, mature trees, upland wildlife habitat, and habitat fragmentation in Alternative 2) and widening Foster Road from Jenne Road to SE 174th Avenue (wetland, stormwater, stream, riparian wildlife habitat, ESRA and Portland "v" Overlay mitigation in Alternatives 3, 4, and 5). Alternative 1 had the lowest environmental impact compared to the other alternatives. Table 6 shows the summary impacts for each alternative.

While a separate analysis of Alternative 3B was not completed, environmental impacts would be similar to Alternatives 3 and 4, though slightly worse due to having the 4-leg intersection at Jenne Road/Foster Road/Giese Road and widening Foster Road, both of which are within environmentally-sensitive areas.

**Table 6. Compiled Natural Resource Impact Rankings for each Alternative**

| Alternative | Wetland | Stream | Habitat | Potential Mitigation Cost (Wetland/Upland/Riparian) |
|---|---|---|---|---|
| **Alternative 1** | 1 | 1 | 1 | 1 |
| **Alternative 2** | 1 | 10 | 10 | 10 |
| **Alternative 3** | 10 | 5 | 1 | 10 |
| **Alternative 4** | 10 | 5 | 5 | 10 |
| **Alternative 5** | 10 | 1 | 1 | 10 |

## PROPERTY IMPACTS

Property impacts were evaluated for the remaining four alternatives. Table 7 shows the potential property impacts of the four alternatives. Bolded values in the table denote the highest number of impacts across each category. Categories of impact include the following:

- **Structure Impact:** a roadway is likely to require the demolition of a building on the parcel.
- **Land Impact:** a roadway is likely to take a portion of a parcel

**Table 7. Potential for Property Impacts**

| Alternative | Structure Impact | Land Impact |
|---|---|---|
| Common to All | 1 | 58 |
| 1 | +0 | +34 |
| 2 | +5 | +13 |
| 3 | +3 | +58 |
| 4 | +3 | +63 |

Key findings from the assessment include:

- All alternatives have 1 structure impact in common. Alternative 1 has no additional structure impacts. This is primarily due to the consistency between the roadway alignments and the land use plan; the land use plan considered existing parcel boundaries when planning future parcels and planned roadways accordingly.
- Alternative 2 impacts several additional structures along the 174th Avenue alignment. Alternatives 3 and 4 impact several additional properties due to new roadways/alignments connecting to Foster Road between Jenne Road and 172nd Avenue.
- The alternatives have 58 of the same land impacts, which are primarily along eastern Giese Road, Richey Road, Knapp Street, and 182nd Avenue. *It should be noted that the collector system shown in the Pleasant Valley TSP update study area were outdated, the preferred alternative figure identifies the up-to-date collector network. Much of the Giese Road extension and collector network is anticipated to be built by development, minimizing the amount of right-of-way to be purchased.*
- Alternatives 3 and 4 have the most land impacts due to widening along Jenne Road and Foster Road.
- While a separate analysis of Alternative 3B was not completed, property impacts would be similar to those of Alternatives 3 and 4.

## FUTURE TRAFFIC OPERATIONS

An operational analysis was conducted for the study intersections to assess how well they are able to accommodate the future traffic demands in each alternative. Future traffic volumes and operations at key locations are summarized in Table 8. While a separate analysis of Alternative 3B was not completed, the operational results of the northern elements of Alternative 3 and the southern elements of Alternative 4 provide estimates for how Alternative 3B would perform.

**Table 8. Key Facility Results**

| Intersection | Weekday PM Peak Hour Operations Results | | | |
|---|---|---|---|---|
| | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
| 174th Avenue/ Powell Boulevard | LOS E V/C > 1.0 | LOS E V/C > 1.0 | LOS E V/C > 1.0 | LOS E V/C > 1.0 |
| 182nd Avenue/ Powell Boulevard | LOS E V/C = 0.98 | LOS E V/C = 0.97 | LOS E V/C =0.99 | LOS E V/C =0.99 |
| Jenne Road/ Foster Road | LOS C V/C = 0.83 | LOS B V/C = 0.63 | LOS C[1] V/C = 0.83 | LOS C V/C = 0.91 |
| **Roadway Segment** | **Weekday PM Peak Hour Traffic Volumes** | | | |
| | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 |
| Foster Road – West of Jenne Road | 1,046 EB 818 WB | 894 EB 682 WB | 1,038 EB 828 WB | 1,038 EB 828 WB |
| Powell Boulevard – West of Jenne Road | 1,334 EB 993 WB | 1,378 EB 1038 WB | 1,347 EB 1,016 WB | 1,347 EB 1,016 WB |

[1]*Jenne Road/Foster Road intersects with the Giese Road extension as a four-leg intersection in Alternative 3*

As shown, Alternative 2 results in the lowest traffic volumes on Foster Road west of Jenne Road and Alternative 1 results in the lowest traffic volumes on Powell Boulevard west of Jenne Road. SE 174th Avenue/Powell Boulevard is forecasted to operate over capacity during the weekday PM peak hour for all alternatives. Volumes on SE 174th Avenue at Powell Boulevard are higher under Alternative 2 than the other alternatives (weekday PM peak hour segment volume of 2,093 south of Powell Boulevard, compared to 1,931 in Alternative 1), resulting in a slightly higher average delay at the intersection. Volumes at SE 182nd Avenue/Powell Boulevard are slightly lower under Alternative 2 than the other alternatives, but the difference is not as significant as at SE 174th Avenue/Powell Boulevard.

The SE 174th Avenue/Powell Boulevard and SE 182nd Avenue/Powell Boulevard intersections are not projected to meet jurisdictional operational standards during the future weekday PM peak hour under all alternatives. All other study intersections operate acceptably and meet their respective LOS and/or v/c ratio standards with the assumed intersection control shown in the Existing and Future Planned Conditions Memorandum.

## COST ESTIMATES

The four alternatives were evaluated to determine planning-level cost estimates. Detailed costs for the Jenne Road improvements and SE 174th extension and planning-level costs for the remaining arterial roadways were developed. The cost estimates include roadway construction and environmental mitigation. A summary of the total cost of the elements considered is shown in Table 9.

**Table 9. Total Costs**

| Alternative | Jenne Road or 174th Cost | Other Arterial Roadway Costs | Stream Crossings | | Environmental Mitigation Costs | Total Preliminary Costs (Stream Crossings New/ Replaced) |
|---|---|---|---|---|---|---|
| | | | New | Replaced | | |
| 1 | $12,837,000 (Jenne) | $36,600,000 | 1 | 4 | $474,000 | $49,910,000 (2/3) |
| 2 | $25,270,000 (174th Extension)* | $36,600,000 | 6 | 3 | $618,000 | $62,487,000 (7/2) |
| 3 | $13,317,000 (Jenne) | $38,584,000 | 2 | 4 | $550,000 | $52,271,000 (2/4) |
| 3B | $13,317,000 (Jenne) | $43,676,000 | 2 | 6 | $560,000 | $57,553,000 (2/6) |
| 4 | $12,837,000 (Jenne) | $43,676,000 | 1 | 6 | $560,000 | $57,073,000 (1/6) |

**174th between Giese and Jenne Rd. (Metro RTP)*

In addition to the costs by alternative, planning-level cost estimates were developed for the near-term roundabout with eastbound right-turn bypass lane at the SE 172nd Avenue/Foster Road intersection. Total cost was estimated at $2,170,000, which includes $1,500,000 of construction cost and additional costs for design engineering, construction engineering and inspection, and a 20% contingency cost.

## Jenne Road and 174th Extension Costs

Due to the geometric challenges associated with improving Jenne Road or developing the 174th Avenue extension between Giese and Jenne, these projects were evaluated in greater detail. Alternatives 1, 3 and 4 include improving Jenne Road to provide a separated multi-use path, northbound left-turn lane at Jenne Lane, southbound left-turn lane at SE McKinley Road, and two-way left turn lane between SE McKinley Road and SE Foster Road. Alternative 2 includes developing the 174th Avenue extension, which was assumed to include two vehicle travel lanes, center turn lane where needed, bike lanes, planter strips, and sidewalks.

Jenne Road has two stream crossings that would need to be replaced and improved in Alternatives 1 and 4. Alternative 3 has the two replaced stream crossings and one new stream crossing near its intersection with Foster Road. The SE 174th Extension in Alternative 2 has five new stream crossings and one improved stream crossing on the north end of Jenne Road near its intersection with SE 174th Extension.

Major cost items for both projects include the retaining walls and bridges needed to address the steep grades in and around Powell Butte. Other major cost items on the 174th Avenue extension included clearing and grubbing, landscape buffers/treatment planters, aggregate base, and pavement. Cost estimates also include a 30% construction contingency, 10% preliminary design, and 11% inspection and construction management on top of the construction items. These cost estimates do not include right-of-way purchases or environmental mitigation. The cost estimate for the 174th extension between Jenne Road and Giese Road is approximately $25,270,000. The cost estimate for the Jenne Road improvements between the Springwater Trail crossing and Foster Road is approximately $12,837,000.

Considering the above evaluation and feedback from the public, TAC, and CAC, the City Council selected **Alternative 1 as the preferred alternative** with a request for further consideration of the Foster Road functional classification and construction phasing. Alternatives 2, 3, 3B, and 4 were removed from consideration.

# 5.5 INITIAL PREFERRED ALTERNATIVE

Alternative 1 was selected as the preferred alternative with a request for further consideration of the Foster Road functional classification and construction phasing. The initial alternative shows signalized intersections at SE 174th Avenue/SE Powell Boulevard, SE 182nd Avenue/SE Powell Boulevard, SE Jenne Road/SE Giese Road/SE Foster Road, and SE Giese Road/SE 190th Avenue. The intersections of SE Giese Road/SE 172nd Avenue and SE Knapp Street/SE 172nd Avenue are identified as signalized or roundabout intersections. Remaining intersections are anticipated to be two-way or all-way stop-controlled. Figure 11 shows Alternative 1.

## MITIGATIONS

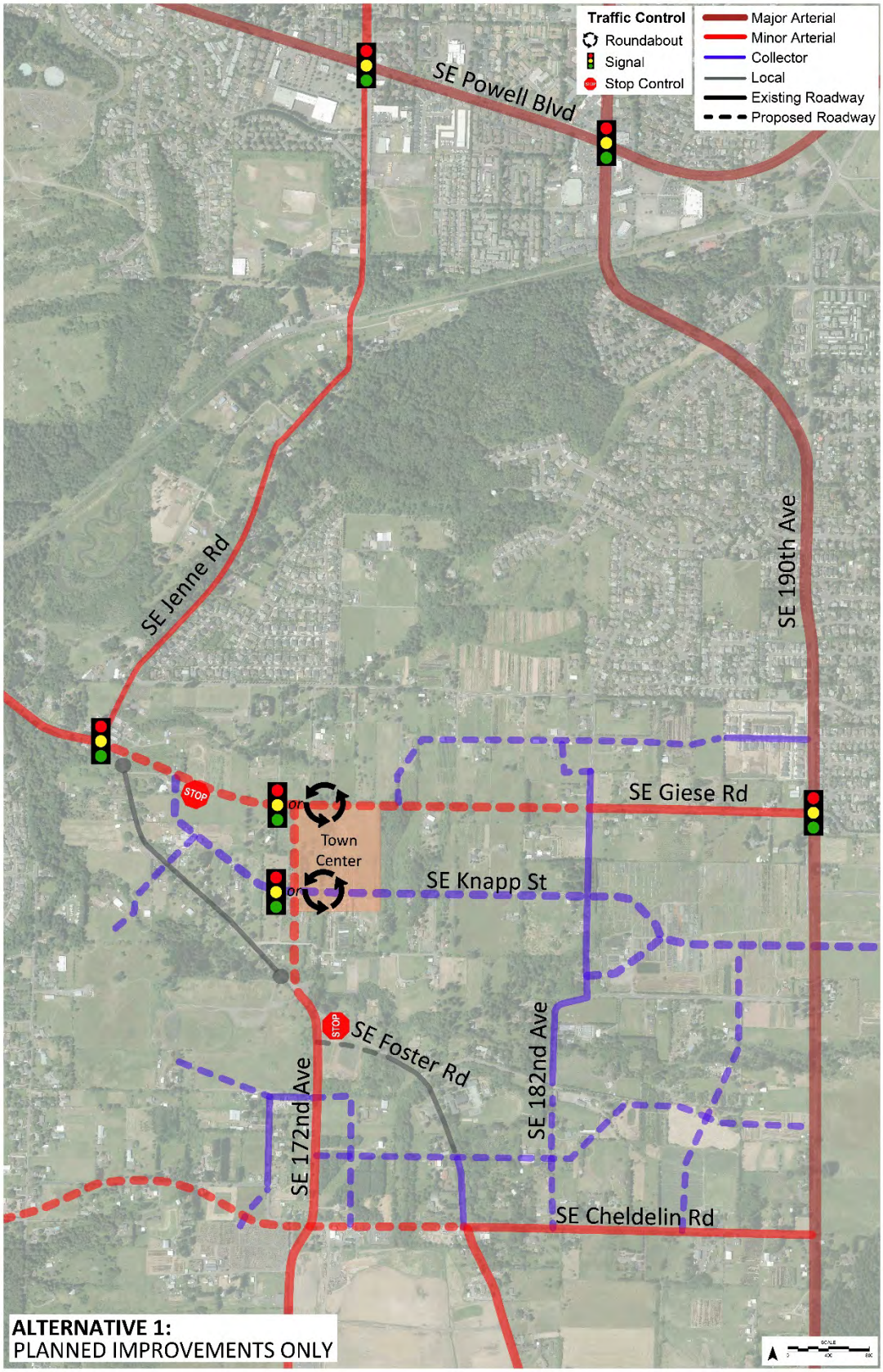
Mitigations were identified for the SE 174th Avenue/Powell Boulevard and SE 182nd Avenue/Powell Boulevard intersections, which are not projected to meet jurisdictional operational standards during the future weekday PM peak hour under all alternatives.

At the intersection of SE 174th Avenue/Powell Boulevard, an additional northbound left-turn lane and signal retiming would improve operations, meeting operational standards for the intersection. Two receiving lanes would need to be provided on westbound Powell Boulevard, which could be merged before impacting buildings along Powell Boulevard.

At the intersection of SE 182nd Avenue/Powell Boulevard, an additional northbound left-turn lane and signal retiming would improve operations, meeting operational standards for the intersection. However, the intersection is not projected to operate over capacity and additional turn lanes would have several property impacts.

**Figure 10. SE 174th Avenue/Powell Boulevard Mitigations**

**Figure 11. Initial Preferred Alternative**

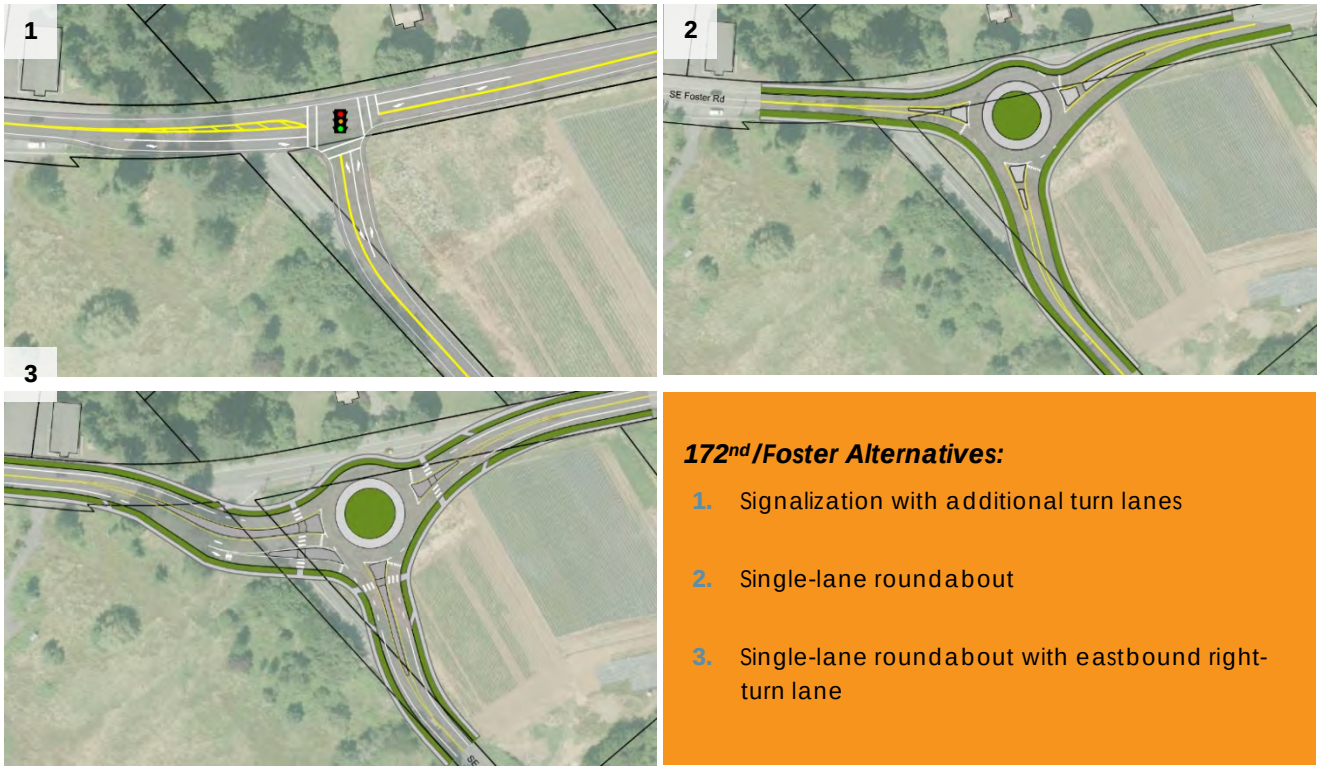


# 5.6 172ND/FOSTER REFINEMENT

Multnomah County is currently evaluating near-term safety and operational improvements at the intersection of SE 172nd Avenue/Foster Road. As such, the preferred alternative was refined to consider forward-compatibility with near-term improvements. These alternatives are shown in Figure 12.

The signal and single-lane roundabout with eastbound right-turn lane are projected to accommodate 50-55% growth in traffic volumes before reaching LOS D, while the single-lane roundabout can accommodate 10% growth before reaching LOS D. As such, the following will consider the signal and single-lane roundabout alternatives with eastbound right-turn lane as viable options to advance.

**Figure 12. SE 172nd Avenue/Foster Road Near-Term Alternatives**




The ultimate network configuration was considered in evaluating near-term improvements. Figure 13 shows the ultimate network configuration possibilities. As shown, Network 1 includes the planned network with both segments of Foster road operating as local streets and has one option for the SE 172nd Avenue/Foster Road intersection. Network 2 has Foster Road operating as a local street only between Giese Road and SE 172nd Avenue with Foster Road remaining an arterial or collector between SE 172nd Avenue and SE Cheldelin Road and includes two 3-leg roundabout options. Network 3 keeps Foster Road as an arterial or collector and creates a four-leg intersection with SE 172nd Avenue and includes two 4-leg roundabout options. The detailed option drawings are shown in Figures 14 through 18.

Based on its lack of forward-compatibility, Option A was removed from further consideration. Based on higher environmental impacts and cost constraints, Options D and E were removed from further consideration. Options B and C will be advanced for consideration and coordination with Multnomah County. As such, the ultimate network configuration will be Network 2.

**Figure 13. Ultimate Network Configuration Options**




***Ultimate Network Configurations***

1. Planned Network with both segments of Foster Road functioning as local streets

   Option A: Planned Network

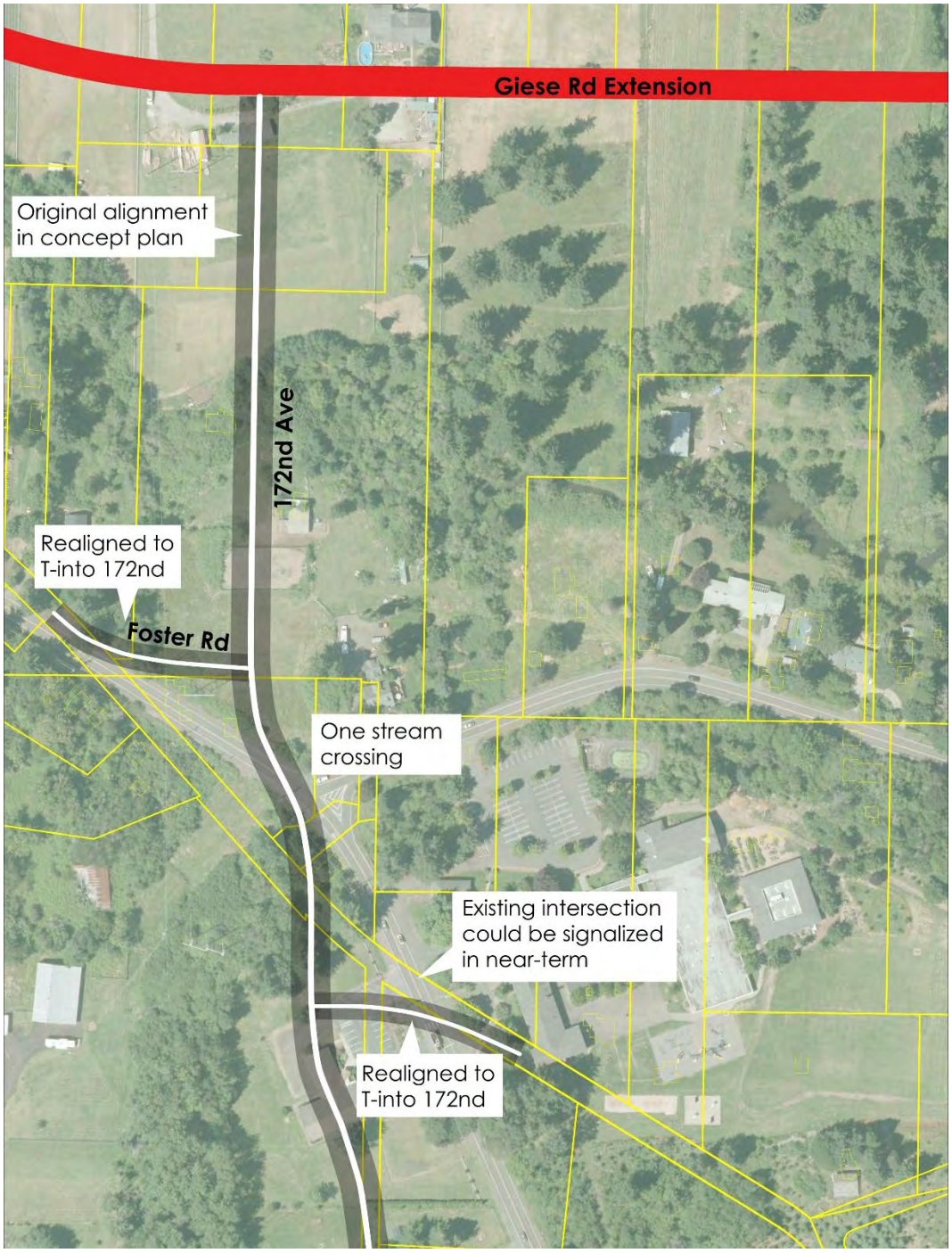
2. Foster Road functioning as a local street between Giese Road and SE 172nd Avenue. Foster Road remaining an arterial or collector between SE 172nd Avenue and SE Cheldelin Road

   Options B and C: 3-leg roundabouts

3. Foster Road remains an arterial or collector and creates a four-leg intersection with SE 172nd Avenue

   Options D and E: 4-leg roundabouts

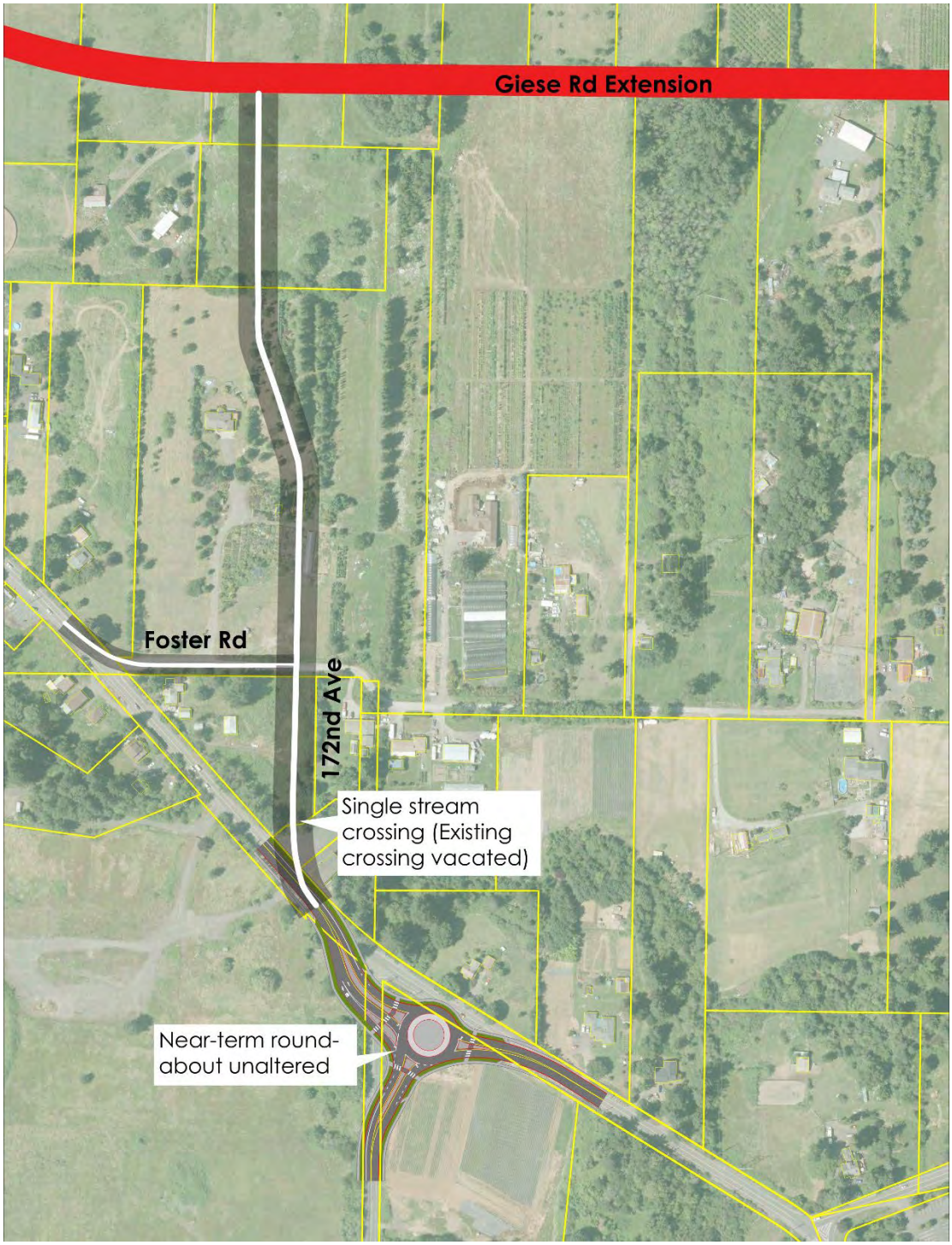
**Figure 14. SE 172nd Avenue/Foster Road Option A**




**Key Features and Considerations:**

- Both segments of Foster Road operating as local streets and T-into SE 172nd Avenue
- Option A decommissions the existing Kelley Creek crossing and creates a shorter crossing on SE 172nd Avenue.
- Near-term intersection improvement not likely to be forward-compatible

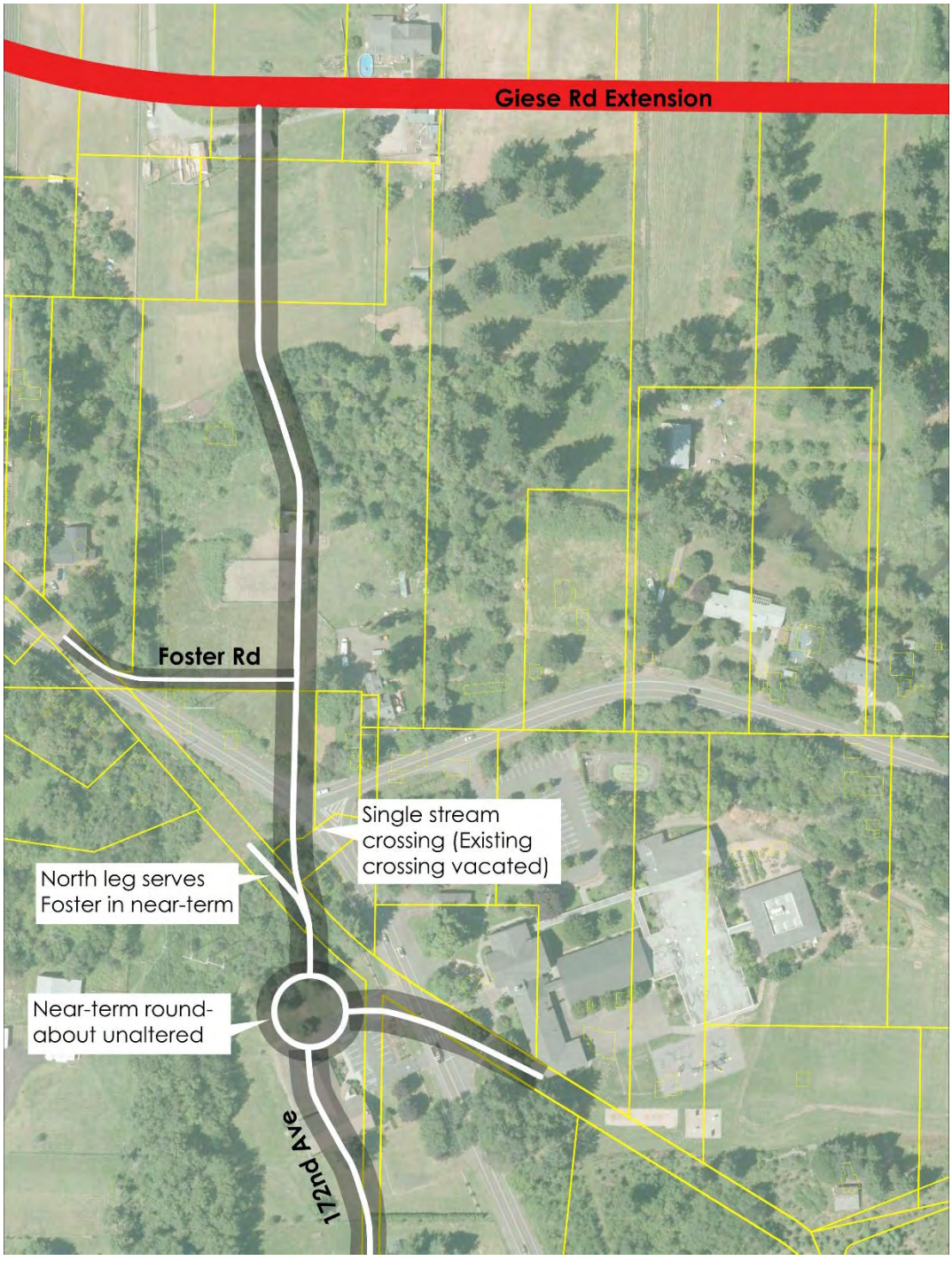
**Figure 15. SE 172nd Avenue/Foster Road Option B**




**Key Features and Considerations:**

- Foster Road operating as a local street between Giese Road and SE 172nd Avenue. Foster Road remains an arterial or collector between SE 172nd Avenue and SE Cheldelin Road
- Option B decommissions the existing Kelley Creek crossing and creates a shorter crossing on SE 172nd Avenue.
- Near-term roundabout improvement is forward-compatible

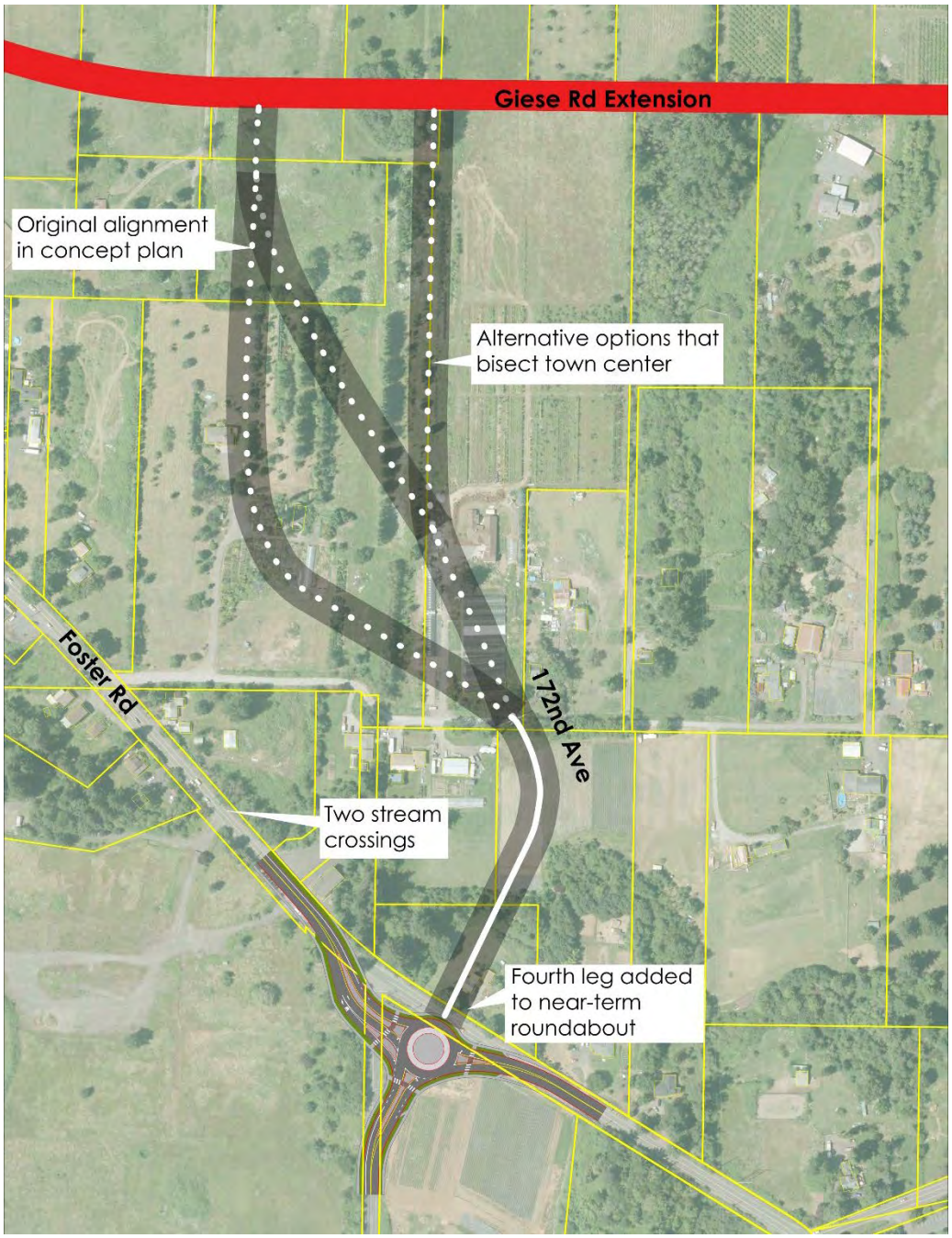
**Figure 16. SE 172nd Avenue/Foster Road Option C**




**Key Features and Considerations:**

- Foster Road operating as a local street between Giese Road and SE 172nd Avenue. Foster Road remains an arterial or collector between SE 172nd Avenue and SE Cheldelin Road
- Option C decommissions the existing Kelley Creek crossing and creates a shorter crossing on SE 172nd Avenue.
- Near-term improvement is forward-compatible
- Presents a near-term roundabout to the west of the existing intersection, which was not yet evaluated by Multnomah County but would operate similarly to their current roundabout option.

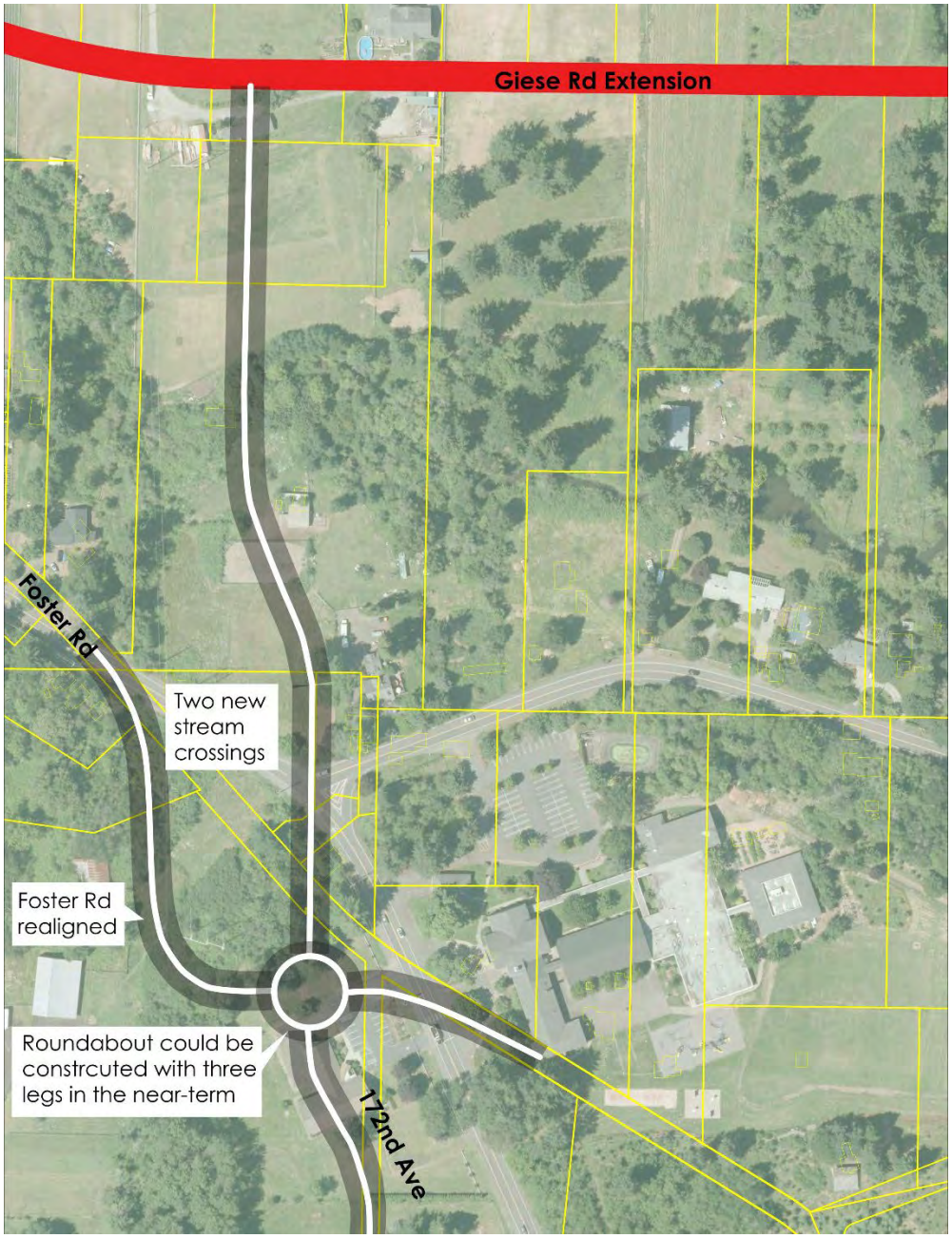
**Figure 17. SE 172nd Avenue/Foster Road Option D**




**Key Features and Considerations:**

- Foster Road operating as a local street between Giese Road and SE 172nd Avenue. Foster Road remains an arterial or collector between SE 172nd Avenue and SE Cheldelin Road
- Creates two crossings of Kelley Creek, increasing environmental impacts and costs.
- Encourages vehicular traffic to use Foster Road/Giese Road intersection, which may create operational challenges and need for signal or roundabout in close proximity to Jenne Road.
- Near-term improvement is forward-compatible

**Figure 18. SE 172nd Avenue/Foster Road Option E**




**Key Features and Considerations:**

- Foster Road operating as a local street between Giese Road and SE 172nd Avenue. Foster Road remains an arterial or collector between SE 172nd Avenue and SE Cheldelin Road
- Creates two crossings of Kelley Creek, increasing environmental impacts and costs.
- Encourages vehicular traffic to use Foster Road/Giese Road intersection, which may create operational challenges and need for signal or roundabout in close proximity to Jenne Road.
- Near-term improvement is forward-compatible
- Presents a near-term roundabout to the west of the existing intersection, which was not yet evaluated by Multnomah County but would operate similarly to their current roundabout option.

# 06 | PREFERRED ALTERNATIVE


***In this section:***

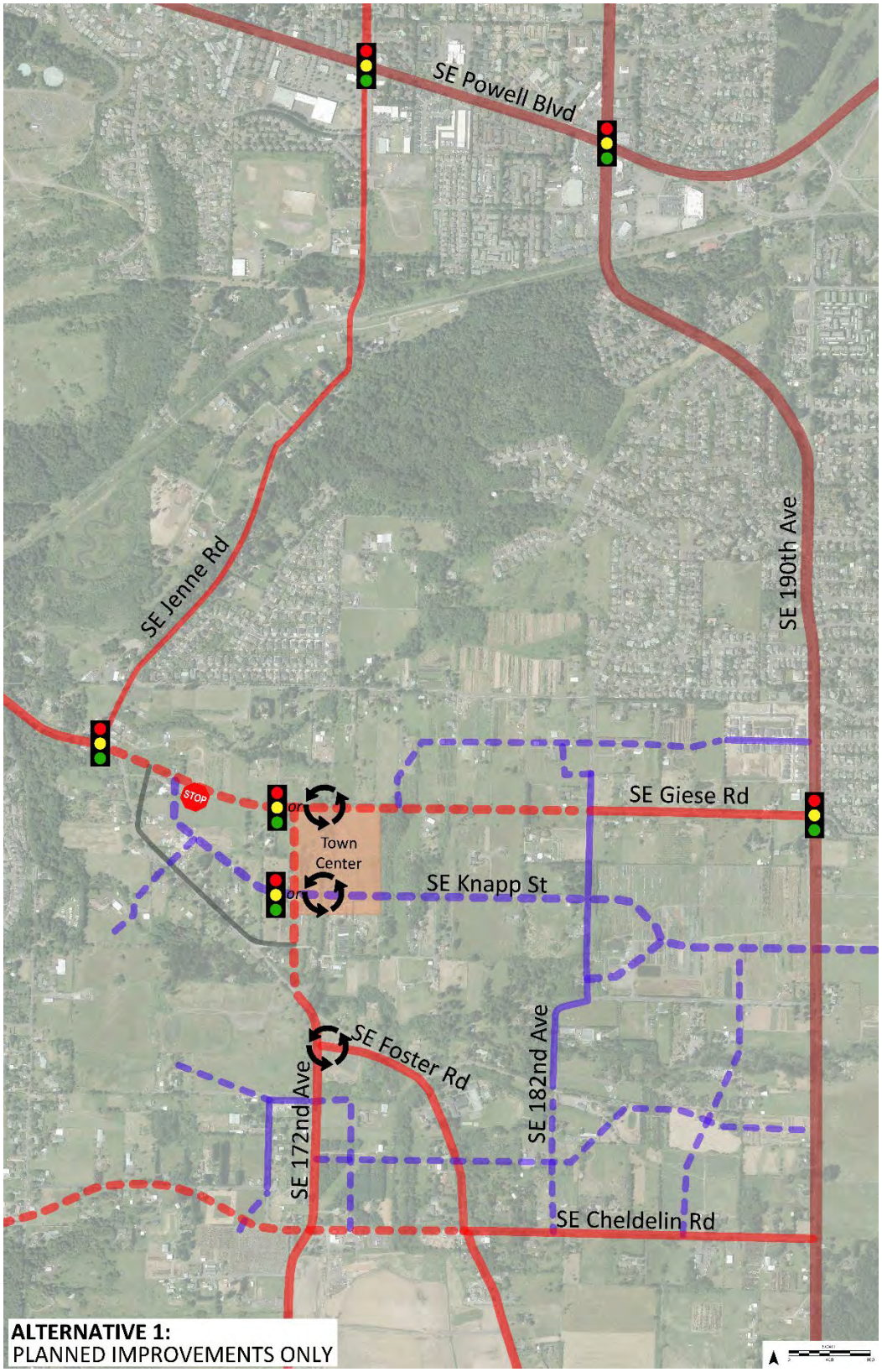
Refined Preferred Alternative key features and the cross-sections for study area roadways.



## 6.1 REFINED PREFERRED ALTERNATIVE

The preferred alternative was refined to consider the near-term improvement at SE 172nd Avenue/Foster Road, resulting in Foster Road between SE 172nd Avenue and SE Cheldelin Road remaining as an arterial or as a collector and a roundabout at the SE 172nd Avenue/Foster Road intersection. Figure 19 shows the preferred alternative.

**Figure 19. Refined Preferred Alternative**



# 6.2 CROSS-SECTIONS

Figures 20 through 25 show the planned cross-sections for the study area roadways. As shown, all cross-sections include sidewalks or a multi-use path with a landscaped buffer. Bicycle lanes are provided on Powell Boulevard, SE 190th Avenue, minor arterials, and collectors and a multi-use path is provided on SE Jenne Road. Vehicular turn lanes are provided on Powell Boulevard, SE 190th Avenue, minor arterials, and as-needed on SE Jenne Road.

**Figure 20. Powell Boulevard - West of SE 174th Avenue**

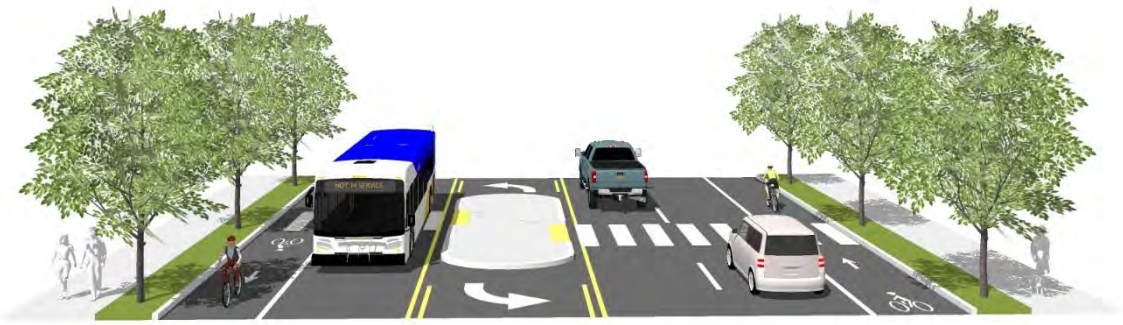


**Figure 21. SE Jenne Road**

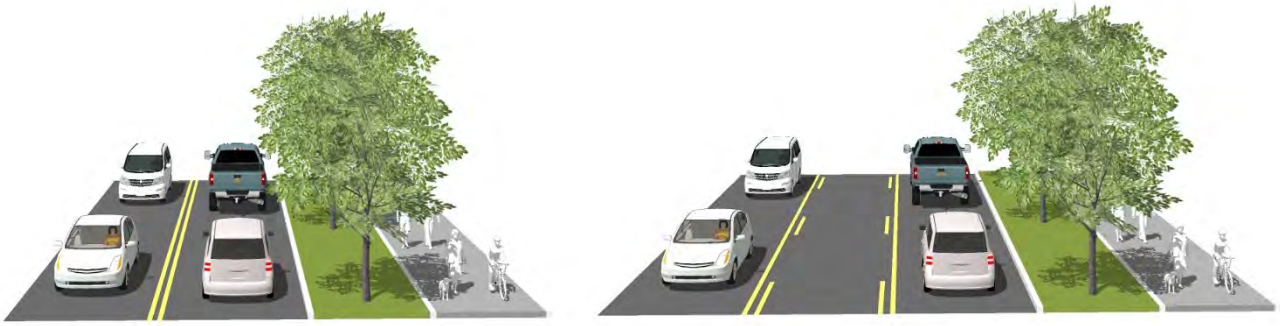


**Figure 22. SE 190th Avenue**

**Figure 23. Minor Arterials: SE 172nd Avenue, SE Giese Road, SE Cheldelin Road, Foster Road (SE 172nd Ave to Cheldelin Rd), etc.**

**Figure 24. Collectors: SE Knapp Street, SE 182nd Avenue, etc.**

**Figure 25. Local Roads: Foster (Jenne Road to SE 172nd Ave)**

# 07 | IMPLEMENTATION PLAN

***In this section:***

Implementation plan including project details, phasing, permitting, capital projects, and funding opportunities to implement the Pleasant Valley TSP



## 7.1 ARTERIAL ROADWAY PROJECTS

Table 10 shows the arterial roadways in the Pleasant Valley TSP study area and includes the roadway length, number of stream crossings, estimated costs, and key environmental impacts. Detailed costs for Jenne Road were developed as part of the *Cost Estimate Summary Memorandum* and other roadways' cost estimates were estimated at $3,100 per linear foot (LF) for new roadways and at $2,600 per LF for reconstructed roadways. Cost estimates were revised based on the refined preferred alternative to reflect Foster Road serving as a collector or arterial from 172nd Avenue to Cheldelin Road. The full cost of riparian, wetland, stream and floodplain mitigation have not been included.

**Table 10. Roadway Project Details**

| Roadway (Extents) | New/ Improved | Length | Stream Crossings | Cost | Environmental Impacts |
|---|---|---|---|---|---|
| **City of Portland Jurisdiction** | | | | | |
| SE 174th Avenue/ Powell Boulevard Auxiliary NBL | Improved | 500-1000 | 0 | Requires Further Study | Requires Further Study |
| Jenne Road (174th Ave to Foster Rd) | Improved | 4,600 | 2 Improved | $12,837,000 + 2 stream crossings | Moderate Mature Tree Impact |
| **City of Gresham Jurisdiction (Present and Future)** | | | | | |
| SE 190th Avenue (Powell Blvd to Cheldelin Rd) | Improved | 11,700 | 3 Improved | $51,333,000 | Stream Benefit at Kelley Creek, Moderate Wetland Impact |
| Foster Road (Jenne Rd to 172nd Ave, realigned segments) | New | 1,150 | -1 (Decommission) | $3,565,000 | Moderate Stormwater Impact |

| Roadway (Extents) | New/ Improved | Length | Stream Crossings | Cost | Environmental Impacts |
|---|---|---|---|---|---|
| Foster Road (172nd Ave to Cheldelin Rd) | Improved | 2,700 | 2 Improved | $7,020,000 + 2 stream crossings | Higher Wetland Impact |
| Giese Road (Jenne Rd to 182nd Ave) | New | 4,880 | 1 New, 1 Improved | $15,128,000 + 2 stream crossings | Lower Impacts Across Categories |
| Giese Road (182nd Ave to 190th Ave) | Improved | 2,253 | 0 | $5,857,800 | Lower Impacts Across Categories |
| 172nd Avenue (Giese Rd to Foster Rd) | New | 2,340 | 1 New | $7,254,000 + 1 stream crossing | Moderate Wetland Impact |
| 172nd Avenue (Foster Rd to Cheldelin Rd) | Improved | 1,840 | 0 | $4,784,000 | Moderate Wetland Impact |
| | ***Total*** | $107,778,800 + 2 New, 8 Improved, 1 Decommissioned Stream Crossings | | | |

## 7.2 PROJECT PHASING

The project phasing considers potential near-term improvements by Multnomah County to the SE 172nd Avenue/SE Foster Road intersection, anticipated timing of availability of utilities, development potential, and provision of traffic detours during construction. Anticipated project phasing is depicted in Figure 24 through Figure 27 and is as follows:

1. Near-Term SE 172nd Avenue/ SE Foster Road Improvements
2. SE Giese Road Extension to SE Foster Road
    a. Sewer is currently available or anticipated to become available to parcels near SE McKinley and SE Richey Road in the near-term, spurring development and potentially extending SE Giese Road from the east to the west.
    b. The western segment of SE Giese Road will need to be connected to the SE Foster Road/SE Jenne Road intersection, with the existing east leg of SE Foster Road being disconnected and intersecting SE Giese Road. The SE Foster Road/SE Jenne Road intersection lies within the City of Portland, and therefore will require multijurisdictional coordination. Therefore, this segment will likely need to be a capital project.
    c. The extension provides an alternative route during construction of the SE 172nd Avenue extension and construction impacts at SE Foster Road/SE 172nd Avenue.
    d. Several options are available for the interaction between the SE Foster Road/SE Jenne Road and SE Foster Road/SE Giese Road intersections.
        i. Eastbound queues at SE Foster Road/SE Jenne Road are anticipated to be near 400 feet during the 2040 PM peak hour. Metro's Regional Transportation Plan (RTP) identifies a local street spacing of no more than 530 feet. With these two constraints, spacing between 400 and 530 feet is recommended.
        ii. If other roadway projects are constructed that decrease pressure on Foster Road (172nd-190th Connector, Cheldelin Road extension, Powell Boulevard expansion), the SE Foster Road/SE Giese Road intersection could be stop-controlled for Foster Road as the side street, with turn lanes for two-stage left-turns. If other roadway projects are not in-place, a temporary traffic signal may need to be installed until the extension of SE 172nd Avenue.
3. SE 172nd Avenue Extension to SE Giese Road
    a. Includes reconfiguration of the SE 172nd Avenue/SE Foster Road intersection. As described in *Section 5.6 172nd/Foster Refinement*, the 3-leg roundabout options are the preferred options for

this intersection. The southbound SE Foster Road approach will need to be disconnected and the SE 172nd Avenue extension connected in its place.

4. Collector roadways built as development occurs

**Figure 24. Phase 1 - Near-Term SE 172nd Avenue/ SE Foster Road Improvements**

**Figure 25. Phase 2 - SE Giese Road Extension to SE Foster Road**

**Figure 26. Phase 3 – SE 172nd Avenue Extension to SE Giese Road**

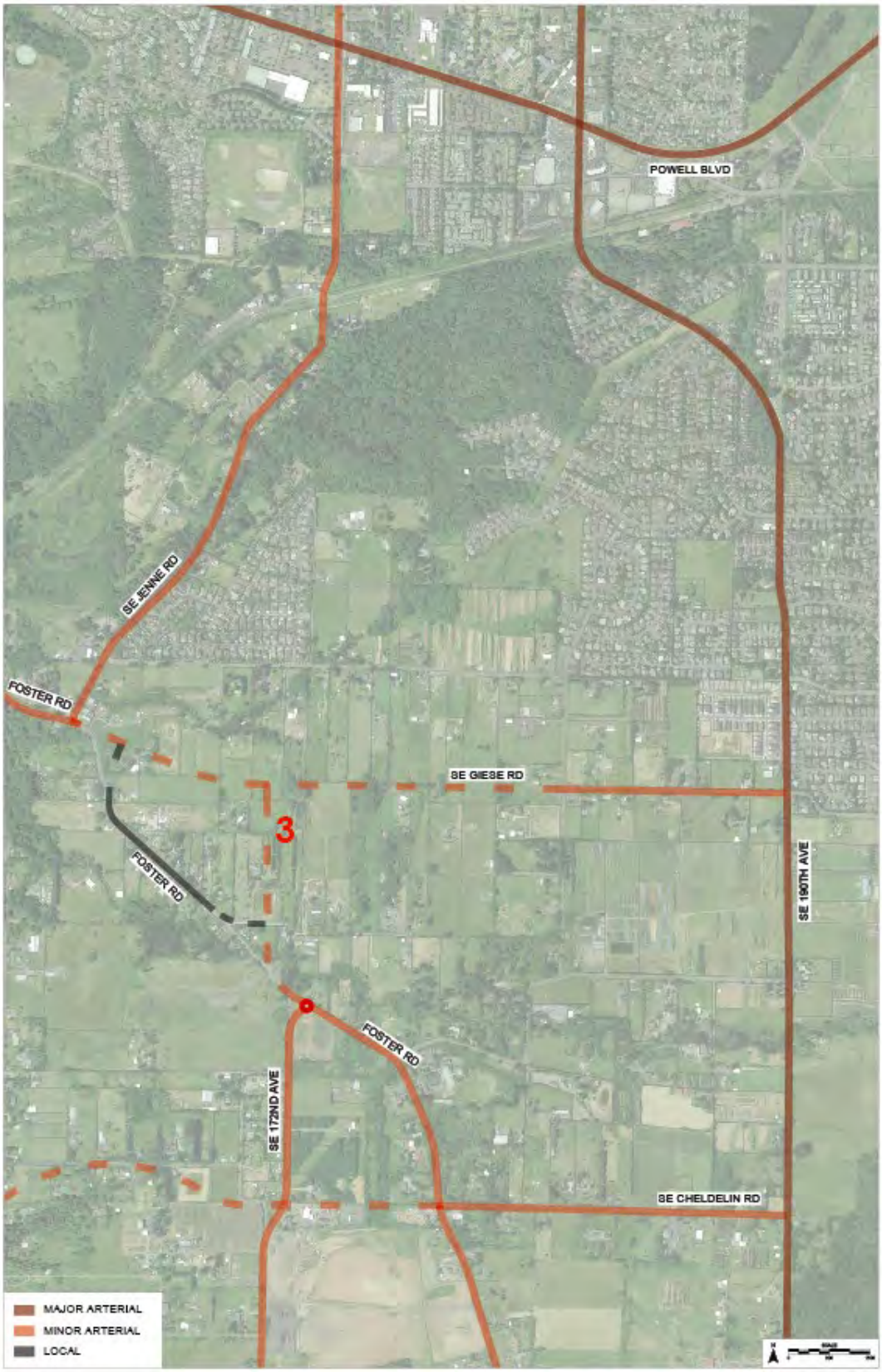
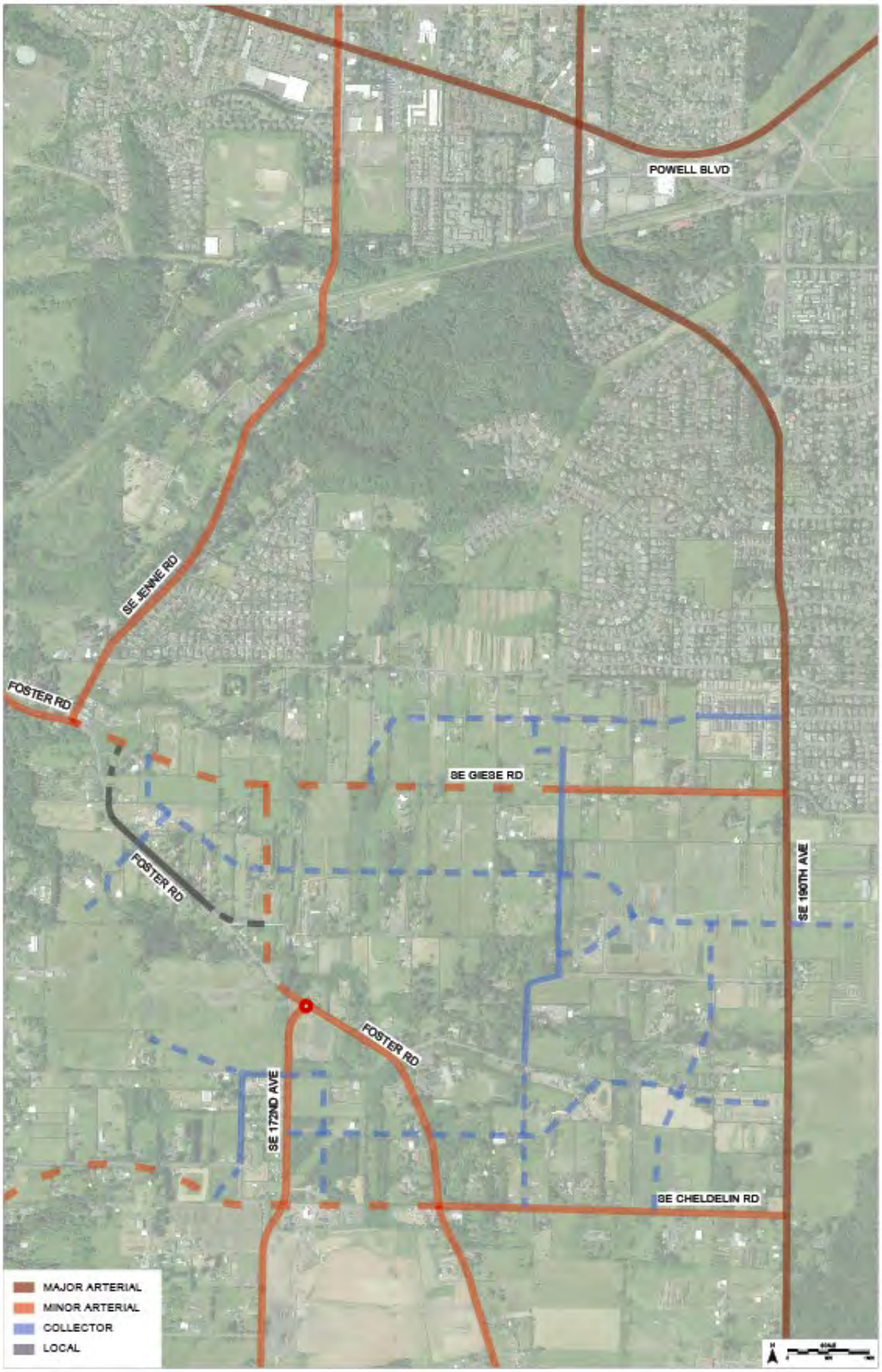


**Figure 27. Phase 4 - Collector roadways built as development occurs**



# 7.3 ENVIRONMENTAL PERMITTING

Environmental permitting for the below-listed transportation projects will need to be considered in tandem with related utility improvements as Pleasant Valley develops. The first street or utility project to impact an environmental resource, such as streams, wetlands, regulated floodplains, or riparian buffers, will inherit the responsibility for mitigating for the impacts to those resources. Mitigation planning will need to be completed and approved by State and Federal agencies in advance of the project that impacts environmental resources.

Due to environmental review and mitigation requirements there is a risk that some development sites in Pleasant Valley could be delayed. Development permits for sites that impact environmental resources cannot be issued by Gresham until the applicant has received approval from State and Federal agencies. State and Federal agency review timelines are long and mitigation requirements that require large land area reduces the economic payoff of specific Pleasant Valley sites.

A comprehensive strategy for mitigation is recommended as the most cost-effective approach for both City and private led street and utility projects. This approach would consider the aggregate impacts to environmental resources and the likely timing of impacts by all City utilities. A comprehensive approach can better account for the overall costs of mitigation and include these costs in Pleasant Valley System Development Charges. A comprehensive strategy can also be more attractive to permitting agencies as it can plan for overall betterment of environmental resources, even if some impacts are not mitigated one for one at the project level.

The following section describes the types of mitigation needed and recommendations on current best practices.

Mitigation Types

Any crossing of a Pleasant Valley water feature may require mitigation. Some stream crossing projects will be "self-mitigating" as the end result of rehabilitating an existing crossing will have improved fish passage and improved riparian conditions. New stream crossings will need to be mitigated for by improvements to stream function in the general vicinity of the new crossing. Projects can be planned to avoid stream impacts entirely by avoiding any work below the Ordinary High Water Line, which is the recommended approach for new crossings. Projects impacting Kelley Creek mainstem will take the longest to permit as endangered salmonids are present and the stream is designated "critical habitat" by Federal agencies. Any given project on Kelley Creek may need 12 months to complete the permitting process, and will need to be completed during summer "in-water work windows", so long lead times are advised. While the original Pleasant Valley Concept Plan stated all stream crossings were envisioned to be bridges, current best practice with open bottom, full-span culverts will meet regulations. These culverts may better avoid adjacent resources and/or better accommodate utilities in a manner that lessens overall impact on sensitive resources.

Floodplains line the entire stream network in Pleasant Valley, providing necessary storage of water during heavy rain events. Floodplain mitigation is triggered if a project would result in a decrease of floodplain storage such that engineering models show there will be a downstream "rise" in the floodplain, or an increase in erosive velocities from a project. For instance, replacing an existing undersized culvert with a full span bridge may reduce upstream flood storage and increase downstream flooding and/or stream velocities. New stream crossings should avoid the regulated and functional floodplains where possible. Any stream crossing rehabilitation or replacement that does not result in a full spanning of the regulated floodplain, or that causes a net increase of fill within the floodplain will require mitigation. Evaluating the transportation projects below through a comprehensive look at overall floodplain impacts will reduce future conflicts as well as redundancy in the modeling, permitting and mitigation planning required for each project.

Wetlands occur across Pleasant Valley on private property and along public rights of way as water seeps down the basalt buttes and into low lying areas. The central theme for State and Federal regulations is a no-net-loss of wetland function. Since many existing rights of way in Pleasant Valley have wetland indicators where streets are

going to be widened or where sidewalks will be built, acquiring property for mitigation is inevitable. Proposed right of way areas have not been surveyed for wetland presence, therefore, unanticipated project delays and unforeseen expense is possible. A comprehensive evaluation of likely wetland impacts due to future streets is recommended to allow the City to plan and implement mitigation projects prior to street construction. It is a time consuming process to find, acquire, permit, and implement advance wetland mitigation, so a process to identify mitigation options should begin at the time formal approval is given to the PV TSP. In addition, whenever City Staff are negotiating utility easements with private landowners, Staff should request permission to survey for wetlands prior to signing easement agreements.

A riparian buffer is a forested area near a stream which helps shade and partially protect the stream from the impact of adjacent land uses. Riparian buffer impacts and mitigation are regulated at the local level, and implemented by the City according to riparian condition goals developed in the City's Natural Resources Master Plan. Riparian buffer mitigation will be required for impacts to streamside slopes and vegetation within the Environmentally Sensitive Restoration Area (ESRA). The City will need to have natural resource easement rights in perpetuity or donated ownership by the adjacent landowner in order to accommodate mitigation. Once land acquisition or easements are developed, this type of mitigation is typically the least costly and least time-consuming type of permit obligation to fulfill. Design choices during street and ultility projects should prioritize riparian impacts over wetland, stream, or floodplain impacts, unless staff have found a unique riparian feature within the project site that merits special consideration, i.e., an old growth tree stand.

## 7.4 CAPITAL PROJECTS

Capital projects were identified based on development potential (zoning and utilities availability), phasing, and the environmental permitting approach. Table 11 and Figure 28 summarize which projects are likely to be development-driven and which are likely to be capital projects that the City of Gresham would have to fund through grants, bonds, or other mechanisms.

**Table 11. Capital v. Development Projects**

| Roadway (Extents) | Capital/ Development | Reasoning |
|---|---|---|
| Jenne Road (174th Ave to Foster Rd) | Capital | Includes widening on a roadway with low development potential (zoned for residential farm, open space) and environmentally-sensitive areas. |
| SE 190th Avenue (Powell Blvd to Cheldelin Rd) | Combination | Includes build-out along a corridor that's partially built-out and less likely for redevelopment. City of Gresham pursuing funding through the T2020 Bond Measure, which could provide funding for the 172nd-190th Connector and widen 190th to a 5-lane cross-section. |
| Foster Road (Jenne Rd to 172nd Ave, realigned segments) | Combination | Intersection of Foster Road with Jenne Road and the Giese Road Extension will likely need to be a capital project as would the near-term improvement at Foster Road/172nd Avenue. |
| Foster Road (172nd Ave to Cheldelin Rd) | Combination | Portions of Foster Road that are along environmentally-sensitive/ restoration areas and that would be realigned for the SE 172nd/Foster intersection improvement would likely need to be capital projects. Portions zoned for residential could be frontage improvements with redevelopment. |
| Giese Road (Jenne Rd to 182nd Ave) | Combination | Development may construct part of the Giese Road extension, but portions that include stream crossings and the reconfiguration of the Foster Road/Jenne Road/Giese Road intersections would likely need to be capital projects. |

| Roadway (Extents) | Capital/ Development | Reasoning |
|---|---|---|
| Giese Road (182nd Ave to 190th Ave) | Development | Could be accomplished with frontage improvements with redevelopment. |
| 172nd Avenue (Giese Rd to Foster Rd) | Combination | Bridge over Kelley Creek would likely need to be a capital project due. |
| 172nd Avenue (Foster Rd to Cheldelin Rd) | Development | Could be accomplished with frontage improvements with redevelopment. |
| Collector System | Development | Could be accomplished as development occurs. |

**Figure 28. Capital and Development Projects**

# 7.5 FUNDING OPPORTUNITIES

Funding mechanisms include system development charges (SDCs), urban renewal/local improvement districts, private developer requirements, state fuel tax and vehicle license fees, grants, and capital bonds. The following sections further describe these sources.

## SYSTEM DEVELOPMENT CHARGES (SDCS)

By adding Pleasant Valley TSP Update projects to the System Development Charge (SDC) list, the City can use SDCs to collect a one-time charge when issuing a development permit. SDCs can be used to fund capital projects identified in *Section 7.4*. Gresham collects SDCs for the Pleasant Valley area at a higher rate than the rest of the City in order to fund the future transportation infrastructure of Pleasant Valley.

## URBAN RENEWAL AND LOCAL IMPROVEMENT DISTRICTS (LIDS)

Urban renewal districts are established in areas where property tax revenues have increased over time due to the increased property valuation without increasing the tax rate. Local improvement districts may be formed to fund specific improvement within a defined geographic district and includes special assessments on properties within that district. The Pleasant Valley area has the potential to become either an urban renewal district or a local improvement district.

## PRIVATE DEVELOPER REQUIREMENTS

New development can result in frontage improvements if at a location with a planned public street improvement or off-site mitigation where development may impact a location with safety, circulation, or capacity issues. Requirements are determined by a traffic impact study, prepared by the developer and reviewed by the City. Where a requirement is included in the City's SDC Program, the cost to the development is offset by an SDC credit.

## STATE FUEL TAX AND VEHICLE LICENSE FEE

The state of Oregon distributes state gas tax and license fees to municipalities. By statute, the money must be used for any road-related purpose, with one percent dedicated to bicycle and pedestrian facilities. The State of Oregon Highway Trust Fund collects taxes and fees on fuel, vehicle licenses, and permits, and pays a portion to cities annually on a per capita basis. Oregon gas taxes are collected as a fixed amount per gallon of gasoline served. As of 2018, the State gas tax was $0.34 per gallon. The tax does not vary with gas price changes, nor does it adjust for inflation. The net revenue collected from this source has gradually decreased as the cost to construct and repair transportation systems has increased and as new vehicles become increasingly fuel efficient.

The State collects Oregon vehicle registration fees as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. The State recently increased vehicle registration fees in Oregon to $112 per two-year term for light vehicle renewals and created a 0.5 percent privilege tax on new vehicle purchases as well as a $15 fee on new adult bicycles that cost $200 or more. The State does not adjust for inflation with all registration fees. If revenues received from the state increase in future years, then the anticipated need for other revenue sources explained in this chapter (i.e. fees, etc.) may decrease.

## GRANTS AND LOANS

Historically, state and federal grants have been a key source of revenue for major transportation capital projects. Dwindling state and federal transportation revenues have limited the number of grant funded projects and have increased competition among state and local agencies. Grant sources that are currently available for transportation-related projects include, but are not limited to:

- Metro Regional Flexible Funds. Every two years, the Metro Council and the Joint Policy Advisory Committee on Transportation select programs and projects for federal flexible funds. These funds come from three federal grant programs: the Surface Transportation Program, the Congestion Mitigation/Air Quality Program and the Transportation Alternatives Program. These programs allow Metro greater discretion on how to spend the funds, allowing for greater focus on local priorities and innovative solutions to transportation challenges.
- Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants. BUILD grants are used to invest in road, rail, transit and port projects to achieve critical national objectives. In 2018, the federal government awarded $1.5 billion in grants to projects nationwide. To highlight the high degree of competition for these funds and strong demand and need for additional transportation investments nationwide, in 2018, the program received 851 eligible grant applications requesting a total amount of more than $11 billion.
- Transportation Infrastructure Finance and Innovation Act (TIFIA). While not a grant, these funds provide federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. The goal of this program is to leverage federal funds by attracting substantial private and other non-federal co-investment in critical improvements to the nation's surface transportation system. Projects eligible to receive TIFIA funding include international bridges and tunnels; intercity passenger bus and rail facilities and vehicles; publicly owned freight rail facilities; private facilities that provide public benefit for highway users; and, service improvements on or adjacent to the National Highway System, which Powell Boulevard is classified as.
- Safe Routes to Schools Program (SRTS). SRTS encourages children to walk and bicycle to school; to make walking and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety, and reduce traffic, fuel consumption, and air pollution near schools. Funding is available for a variety of programs and projects that encourage children and their parents to walk to school.

## CAPITAL BONDS

Bonds are commonly used to finance large public facility improvements, including transportation projects. General Obligation (GO) Bonds are repaid from increased property tax rate. The authority to issue general obligation bonds and raise property taxes to retire the debt must be granted by voters.