

**MINUTES**  
**TROUTDALE PLANNING COMMISSION**  
**Regular Meeting**  
Council Chamber  
217 E. Historic Columbia River Highway  
Troutdale, Oregon 97060  
**January 15, 2014**

**1. Roll Call/ Pledge of Allegiance** – The session was called to order at **7:00** p.m.

Commissioners Present: Frank Grande, Shirley Prickett, Brian Sheets, Tanney Staffenson and Marv Woidyla

Commissioners Absent: Kevin Coulton

Staff: Craig Ward, City Manager  
Elizabeth McCallum, Senior Planner

Guests (see list): Anneke Van der Mast, DEA, Inc., 2100 SW River Pkwy.,  
Portland 97201  
Glenn A. Leier, Eastwind Development, LLC, 8440 NE  
Alderwood Rd., Ste. A, Portland 97220  
Julia Harmer, 53215 Marmot Rd., Sandy 97055  
Shane Conrad, 53215 E. Marmot Rd., Sandy 97055  
Rachel Ferdaszewski, Multnomah County, 1600 SE 190<sup>th</sup> Ave.,  
Portland 97233  
Bill Bailey, 419 SW 11<sup>th</sup>, #200, Portland 97205

**2. Election of Officers. Commissioner Prickett nominated Tanney Staffenson for 2014 Chair, seconded by Commissioner Glantz. Commissioner Woidyla moved that the nominations for Chair be closed; the vote was unanimous to close them.** Commissioner Grande mentioned that at one time the Commission had said they would “pass the Chair position around” so that they all would have a shot at it. Commissioner Woidyla said that since they were revamping the Code, they needed continuity.

**Commissioner Sheets seconded the motion for Chair; the motion passed unanimously (6/0). Chair Staffenson continued as Chair of the Planning Commission for 2014.**

**Commissioner Grande nominated Commission Glantz for Vice-Chair for 2014, with a second from Commission Woidyla.** There were no more nominations; **Commissioner Prickett moved the nominations be closed, seconded by Commissioner Glantz; this vote passed unanimously. The vote was unanimous to elect Commissioner Glantz as the 2014 Vice-Chair.**

**3. Agenda Update.** None.

**4. Approval of Minutes – December 18, 2013. Commissioner Woidyla moved to approve the minutes as written, and Commissioner Glantz seconded the motion. The motion passed unanimously.**

5. **Citizen Communications – Non-Agenda Items.** None.
6. **Hearing Procedure.** Chair Staffenson read the public hearing procedure to the audience and then opened the public hearing on the following agenda item.
7. **File No. 13-047** **Type III Quasi-Judicial Hearing**  
**ODOT Multi-Use Trail Extension SDR/FHP/VAR**

**Construct a multi-use trail extension within ODOT right-of-way within the Special Flood Hazard Area and the Vegetation Corridor and Slope District of the Sandy River. Variances are requested from the dimensional standards for trails within the vegetation corridor and slope district. Application also includes concurrent approval for the installation of a City water main under the multi-use trail.**

Ms. McCallum presented a summary of her staff report and PowerPoint presentation (see **Exhibit A**) stating that the criteria are met; staff recommends approval of both requested variances. She also spoke of the documents submitted that were received this date and that were distributed to the Commission and interested parties (see **Exhibits B and C**).

**Discussion.** Commissioner Glantz asked about the pervious material being used and also how much of the path will have retaining wall. Ms. McCallum said she would defer to Mr. Evans from ODOT for those answers.

Commissioner Grande asked if access from the Outlet Mall was still usable here. Craig Ward said in an agreement between the City and ODOT the roadway immediately north of the Mall will become City property as a right-of-way. It can only be used as a right-of-way and ODOT has a design and a budget, as he understands this, for continuation of the pedestrian bridge/walkway that was built on the south side of the south bridge. There will be a trail that will connect that down to 257<sup>th</sup>; it all fits like a hand in a glove.

The memo received from Multnomah County (**Exhibit B**) states two concerns: access to the trail and parking for the trail. Those are out of the scope of the submittal, and Ms. McCallum said Rachel Ferdaszewski, Transportation Planner for the County, said her expressed concerns are not requested Conditions but that she would like the County's concerns included in the record; Ms. McCallum said she believed ODOT would speak to these.

Mr. Ward said a representative from Eastwind Development is also present this evening; this was an important part of a meeting held last week for urban renewal in the city.

Additional comments in the County's memo were also pointed out by Ms. McCallum, and she proposed, as requested, that these comments and concerns as well as any additional ones from this hearing be included in the final version of the Findings of Fact in the Final Order.

Commissioner Sheets asked if there were any comments or concerns received from the Corps of Engineers or other State agencies. Ms. McCallum said this has been vetted with all appropriate agencies.

**Applicant.** Doug Johnson, David Evans and Associates, consultant for ODOT on this project, 530 center Street, NE, Suite 605, Salem, Oregon 97301, replied to Commissioner Glantz's question, saying there will be both asphalt and concrete pavement on the trail that will be specifically engineered to be impervious so the rain will trickle through the pavement into the

ground to mimic the activity of rainfall so there will not be runoff. He also explained the retaining wall, answering her other question. There was a short discussion on these. Commissioner Prickett asked if there will be lighting and if there are any blind spots where bikers could be harmed; Mr. Johnson said there will be no lighting and he did not see any blind spots. Another question that was raised by Multnomah County was on parking and access; ODOT's response and intent is to provide connectivity from the path that is going to be on the I-84 river crossing to the community here, so parking was not included in this part of the project. There is parking at Lewis & Clark State Park. Once the bridge path opens across the Sandy River there will be connection from that parking to this part of the trail. This path is also part of the eventual 40-Mile Loop, he added. Commissioner Glantz asked about some barricades placed to keep motorized vehicles out; Mr. Johnson said there are bollards at Harlow Road and where the trail comes off 257<sup>th</sup>, where the T is. Commissioner Sheets asked about drainage structures or gutters; Mr. Johnson said it is correct that there are none.

**Proponent Testimony.** Glenn Leier, General Counsel, Eastwind Development, 8440 NE Alderwood Rd., Suite A, Portland 97220, submitted a copy of comments from Eastwind Development (see **Exhibit C**) and said he spoke in support of ODOT's path. He addressed the Eastwind objectives/concerns listed in Exhibit C referring to the projected map, and said Eastwind is very much in favor of this proposal. They are working with Metro on trail connectivity in this area and would like to be included in notices that involve this area. Commissioner Glantz asked him for specifics on Eastwind's involvement in this area and he complied.

**Opponent Testimony.** None.

**Neutral Testimony.** Rachel Ferdaszewski, Transportation Planner, Multnomah County, 1600 SE 190<sup>th</sup> Avenue, Portland, 97233, stated that she had no specific testimony to offer but wanted to make herself available if the Commission had any questions after reading her memo (see **Exhibit B**). Commissioner Prickett asked if Mr. Johnson's testimony regarding parking was a satisfactory response to the County's concern; Ms. Ferdaszewski said the County, in general, is not opposed to this project but was hoping to get more information about the parking issue and she elaborated which led to a short discussion. Mr. Ward said the County has a fair point and the City, Eastwind Development and ODOT will need to come up with a fair plan to address and/or solve it.

**Commissioner Prickett moved to close the public hearing; Commissioner Glantz seconded the motion; the vote was unanimous and the hearing was closed.**

**Commissioner Woidyla moved to approve the Findings of Fact and Final Order which will include the memorandum from Multnomah County Exhibit B) and the comments from Eastwind Development (Exhibit C), amending the Findings of Fact.** Ms. McCallum verified the amendment to the Findings of Fact with the Commission: a new Condition 3 with the previous Condition 3 becoming Condition 4, and the Multnomah County document (**Exhibit B**) becoming Attachment A and the Eastwind Development submitted document (**Exhibit C**) becoming Attachment B to the Findings of Fact and Final Order. **Commissioner Glantz seconded the motion. The vote was unanimous and the amended Findings of Fact and Final Order with Conditions was unanimously approved (6/0) for File No. 13-047.**

*At this time, the Commission took a 10 minute break.*

**8. File No. 13-060** **Type III Quasi-Judicial Hearing**  
**Basecamp Fitness Major Conditional Use Modification**

**Expansion of an existing conditional use approval for a commercial sports facility from 4,300 square feet to 10,307 square feet through tenant improvements within an industrial flex-space building at the I-84 Corporate Center.**

Chair Staffenson asked if any Commissioner had any ex parte contact or conflict interest; there were none. He opened the public hearing.

Ms. McCallum said her January 8, 2014, staff report is replaced by the staff report of January 10, 2014, and that all appropriate parties have received a copy of the corrected report. She then gave her report accompanied by a PowerPoint presentation (see **Exhibit D**). No comments have been received from any adjacent property owners; comments from City departments and Gresham Fire are included as attachments 1, 2 and 3 to the staff report.

**Applicant:** Shane Conrad, Basecamp Fitness, 53215 E. Marmot Rd., Sandy 97055, responded to a question from Commissioner Woidyla saying the facility has no association with the Boy Scouts of America, that their focus is on fitness first and then using that fitness to utilize the outdoor fitness opportunities in and around Troutdale. One side of the facility will focus on fitness and the other on skills training and he elaborated. Commissioner Grande asked Mr. Conrad if he had any problem with the staff recommendation; Mr. Conrad said he did not. Chair Staffenson asked about music playing after 5:00 p.m. and if it would be loud enough to cause problems with the neighbors. Mr. Conrad replied that they have been working closely with the neighbors to be sure there is no negative impact on them.

**Proponent Testimony.** None.

**Opponent Testimony.** None.

**Neutral Testimony.** None.

**Commissioner Prickett moved to close the public hearing; the motion was seconded; the vote was unanimous and the hearing was closed.**

With no further discussion, **Commission Woidyla moved, with a second from Commissioner Sheets, to approve the Findings of Fact and Final Order for File No. 13-060.**

**Discussion.** Ms. McCallum said the version dated January 8, 2014, of the Draft Findings of Fact and Final Order is the one with the corrected annotation of the Light Industrial zoning district, but she said she also noticed that since the staff report date was corrected to January 10<sup>th</sup>, so this should also be corrected to reflect that date instead of January 8<sup>th</sup>. **Commissioner Woidyla included that correction of the date of the report from January 8, 2014, to January 10, 2014, in his motion; Commissioner Sheets seconded that; the vote was unanimous (6/0) and the motion passed.**

- 9. Department Reports.** Mr. Ward reminded the Commission of their meeting with the City Council next Tuesday evening, January 21, 2014, at 6:30 p.m. at the Troutdale Police Facility in the Community Room, to address flood plain enforcement requirements of the Department of Land Conservation and Development (DLCD). The Commissioners should already have those agenda packets.

- 10. Commission Initiatives and Concerns.** Commissioner Woidyla said the Port of Portland is going to start a Master Plan for the Troutdale Airport and he spoke of the future of the airport and the impact of this on the users.

Commissioner Sheets wished everyone a Happy New Year.

- 11. Adjourn.** Commissioner Prickett moved, with a second by Commissioner Glantz, to adjourn. **The motion passed unanimously and the meeting adjourned at 8:47 p.m.**

\_\_\_\_\_  
Tanney Staffenson, Chair

\_\_\_\_\_  
Date

Attest:

\_\_\_\_\_  
Rooney Barker, Secretary  
Transcriptionist

## AGENDA ITEM 6

**CITY OF TROUTDALE  
PLANNING COMMISSION STAFF REPORT  
Periodic Review Amendments to the  
Troutdale Comprehensive Land Use Plan  
Adoption of Transportation System Plan**

**TYPE HEARING:** IV Legislative Hearing

**FILE NUMBER:** 08-071D

**HEARING DATE:** February 19, 2014

**STAFF REPORT DATE:** February 12, 2014

**STAFF CONTACT:** Craig Ward, City Manager, Acting Community Development Director

**APPLICANT:** City of Troutdale

**PROJECT NAME:** Adopt Troutdale Transportation System Plan as part of Periodic Review Task 4

**SUMMARY:** Adopt an updated and revised Transportation System Plan as an implementing element of the Troutdale Comprehensive Land Use Plan relating to Statewide Land Use Goal 12 (Transportation) in fulfillment of Task 4 of the City's Periodic Review Work Program

**ATTACHMENT:**

- A. Draft Planning Commission Final Order, Findings of Fact and Recommendation and draft Transportation System Plan prepared by Kittelson & Associates, Inc. dated September 2013.

**BACKGROUND**

The City has been in periodic review since the initial notification from the Oregon Department of Land Conservation and Development (DLCD) on May 20, 2008. The tasks that the City must complete as part of periodic review are governed by its approved periodic review work program. DLCD approved the City's work program on April 15, 2010. The approved work program includes tasks related to statewide planning Goal 12, Transportation. Specifically identified as

Task 4 of the work program, the City is required to update its current Transportation System Plan (TSP) for compliance with 660-012 and to adopt the updated TSP and any implementing ordinances.

With funding from a DLCD periodic review assistance grant, the City hired a consultant to perform several remaining tasks of our work program, including Task 4. Since June 2012, the City's consultant, Kittelson and Associates, has been working on the TSP update by researching and gathering information, preparing technical memoranda, and preparing drafts of the document. A technical advisory committee comprised of representatives from state, regional, county and local agencies with vested interest in the TSP provided technical review and comment on the document as it was being developed. The consultant presented major findings and recommendations to the Citizens Advisory Committee for review and recommendation at the CAC's October 2012 and February 2013 meetings.

Between 2012 and 2013 the City of Troutdale completed the technical analysis and policy/code revisions needed to update its existing Transportation System Plan (2005 TSP). The primary purpose of the TSP Update is to ensure consistency with Oregon's Transportation Planning Rule (TPR), Metro's Regional Transportation Plan (RTP), and Metro's Regional Transportation Functional Plan (RTFP) as well as incorporate the findings and conclusions from the I-84 Troutdale Interchange Area Management Plan (IAMP) and the East Metro Connections Plan (EMCP).

Troutdale's current Transportation System Plan (TSP) was adopted in 2005. The TSP is the City's primary policy document in guiding decisions relating to its overall transportation system, including streets, sidewalks, pedestrian and bicycle trails, and transit service. The plan provides specific information regarding transportation needs to guide future transportation investment decisions in the City. It helps determine how land use and transportation decisions can be better coordinated for the most efficient movement of people and goods.

Beyond being a required period review task, a number of actions at the state and regional level have occurred since 2005 making it necessary and desirable to update the TSP. The following four actions are particularly significant in affecting this TSP update:

- Compliance with the Transportation Planning Rule (TPR – OAR Chapter 660-012), including revisions to the TPR since the current TSP was adopted in 2005. Compliance deficiencies identified in the Troutdale Development Code must also be addressed with the TSP update.
- Compliance with the 2035 Regional Transportation Plan (RTP) adopted by Metro in June 2010. Local TSPs must be consistent with the RTP.

- Incorporating the conclusions and recommendations of the I-84 Troutdale Interchange Area Management Plan (IAMP). This IAMP was completed in early 2011 and was adopted in July 2011 by the Oregon Highway Commission as part of the Oregon Highway Plan.
- Incorporating the conclusions and recommendation of the East Metro Connections Plan (EMCP). This regional planning effort was completed in June 2012.

This update is primarily intended to bring the City's TSP into compliance with the TPR and RTP along with revising it for consistency with the IAMP and EMCP.

At the May 29, 2013 Planning Commission hearing, there was some discussion/concern regarding references to the population/employment projections included in the draft document. While it is recognized that changes in population/employment do influence the preparation of most TSPs, the population/employment projections included in the draft document have little to no impact on the quality/accuracy of the TSP Update for the following reasons:

- The population/employment projections included in the introduction to Chapter 4 of the draft TSP Update were carried over from the City's existing 2005 TSP for reference only. The projections have little to no impact on the projects included in the TSP Update because they are needed to meet City and County infrastructure needs.
- The projections were used in the 2005 TSP to identify deficiencies in the then transportation system as well as identify potential capacity based improvement projects. Similar to most TSP updates, each of the capacity based improvement projects identified in the 2005 TSP were evaluated as part of the TSP update. Several of the projects were removed from the project lists based on discussions with City staff; several more were removed due to inconsistencies with the IAMP and the EMCP, which are both based on more recent models. Each of the projects that were carried over from the 2005 TSP were fully vetted with the City.

The draft TSP Update has been modified to remove all references to the modeling completed as part of the 2005 TSP and the introduction was expanded to better explain the TSP update process. It is felt that these changes will help clear up the confusion about the TSP Update as well as address the concerns expressed at the May 29, 2013 hearing.

## **SUMMARY OF THE MAJOR PLAN ELEMENTS**

The plan in its entirety provides an abundance of background and statistical information that supports its conclusions and recommendations. As required by the State Transportation Planning

Rule, the TSP addresses all modes of transportation – pedestrian, bicycle, transit, and motor vehicle.

Chapter 4 is the crux of the TSP; it identifies future needs, capital improvements and their costs for each travel mode. A master plan for each of the various travel modes depicts all of the long-term improvement projects that meet planning requirements. A prioritized project list, called the “action plan”, identifies those projects that are reasonably expected to be funded over the next twenty years. The action plan lists conform to the Transportation Planning Rule, which requires the TSP to specify projects that are likely to be constructed based on reasonably expected funding. The significance of these action plan lists is that they can be used in determining compatibility of land use decisions with the transportation system (i.e. approval of conditional uses, zone changes, etc.). Chapter 5 of the TSP evaluates current funding mechanisms and recommends strategies for financing the action plan projects outlined in the Plan.

The major elements of the Plan are consolidated within Chapter 1, Executive Summary. For purposes of discussion and evaluation, the Executive Summary contains the principal recommendations for each of the transportation modes addressed by the TSP. The following is a list of the major plan elements and recommendations as presented in the Executive Summary.

### **General**

- \* A synopsis of the complete goals and policies from Chapter 2 to guide development of Troutdale's transportation system and to develop strategies and implementing measures for each travel mode.

### **Pedestrians**

- \* A pedestrian master plan map (Figure 1-1) showing all necessary improvements to provide a fully connected pedestrian network that meets state and regional transportation planning guidelines.
- \* A pedestrian system action plan (Table 1-1) listing those projects that are reasonably expected to be completed over the next 20 years. Sixteen projects are listed, the majority of which were identified in the East Metro Connections Plan. Ten of the sixteen projects come under the jurisdiction of Multnomah County or other providers (projects without a cost shown for it are not city projects). These noncity projects are presumed to be funded by the County or other agency when they are built.

The six city pedestrian projects total \$965,000, with the majority of the cost spread among three projects: P8 -- installing sidewalks on the east side of Hensley Road; P31 -- the proposed Sturgis Trail between 257<sup>th</sup> Ave and McMenamins golf course below Sedona Park and Cherry Ridge subdivisions; and P37 -- curb extensions at all intersections along Historic Columbia River Highway in the downtown.

**Bicycles**

- \* A master plan map (Figure 1-2) showing all necessary bicycle-related improvements in Troutdale.
- \* A bicycle action plan (Table 1-2) consisting of specific projects that are reasonably expected to be funded over the next twenty years. Eleven projects are listed. Five of these projects come under the jurisdiction of Multnomah County and it is presumed they will be funded by that agency. Five of the city bicycle projects consist of shared roadway markings and signs and have an estimated total cost of \$65,000. The final city project is installing covered bicycle parking in the downtown area at an estimated cost of \$30,000.

**Transit**

- \* The transit master plan map (Figure 1-3) shows potential future transit routes and transit shelters while the action plan lists both projects and coordination strategies to meet existing and future transit service needs of the community. Most of the action plan projects are taken from the East Metro Connections Plan. Because Tri-Met is expected to shoulder the cost for transit improvements, or the strategy carries no cost, only one of the listed projects shows a cost to the City (T5 Transit System Priority, \$100,000).

**Motor Vehicles**

- \* A discussion of various transportation system management strategies and programs that when combined with specific road improvement projects will help meet the demands of future growth and will comply with local and regional transportation planning requirements. Transportation management focuses on low cost strategies to enhance operational performance of the transportation system.
- \* A discussion of transportation demand management strategies which are actions that remove single occupant vehicle trips from the roadway network during peak travel demand periods. TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area.
- \* A local street connectivity map (Figure 1-4), which shows generally where existing streets should be extended or where new streets should be constructed. The map uses arrows to conceptually indicate where street extensions and connections should occur.
- \* A master plan map (Figure 1-6) showing needed motor vehicle projects for increasing capacity to meet projected future demands on the roadway system in Troutdale. A few notable projects identified in the previous TSP have been removed, including the 242nd Avenue connector west of McMenamins, the 238th Avenue extension north of I-84, and the 2nd Street extension.

- \* A motor vehicle action plan (Table 1-5) listing the highest priority projects for funding by the year 2035. Eleven projects are listed, most of which would come under either the County's or ODOT's jurisdiction; however, the City intends to provide a local match for many of the County road projects listed on the action plan. The City's estimated total cost to complete its projects together with its match for noncity projects is \$2.53 million.

### **Freight**

- \* A freight plan (Figure 1-7) to show where existing roadways should be designed and upgraded to accommodate a larger share of truck traffic. Design criteria for these roadways should be "truck friendly"; i.e. 12-foot travel lanes, longer access spacing, 35-foot (or larger) curb returns, and pavement design that accommodates a larger share of trucks. The designated freight routes shown in Figure 1-7 are consistent with recent changes to the Regional Freight Plan as identified in the EMCP.

### **Financing**

- \* The combined cost estimate for all City action plan capital improvement projects is approximately \$3.7 million (Table 1-6). When transportation operations and maintenance programs and services of \$27.7 million over the next 20 years are included, the total projected cost to the City to implement the TSP is estimated to be \$31.5 million.
- \* Potential funding sources to make up some of the approximately \$6.8 million deficit between transportation improvement/maintenance costs and the expected revenue from current funding sources (Table 1-7).

## **PROJECTS OF SPECIAL NOTE**

Although each transportation project identified in the plan could, to some degree, affect individual properties, surrounding neighborhoods, or the community as a whole, there are several notable transportation improvement projects that have either received significant attention in the past or are new projects for consideration. The notable projects are:

- 1) Construction of the I-84 Frontage Road by-pass (Marine Drive Extension) south of the truck stops between the eastbound off-ramp and Graham Road/257<sup>th</sup> Ave to relieve traffic congestion on the South Frontage Road. This future project is carried over from the current TSP and is also reflected in the I-84 Troutdale Interchange Area Management Plan.
- 2) Other street extensions generally depicted on the Local Street Connectivity Map (Figure 4-7). Most of these are carried over from the current TSP, but a few are new connections. In the past, some proposed street extensions have resulted in strong opposition from residents objecting to more traffic coming through their neighborhood.

- 3) The addition of curb extensions at each intersection along Historic Columbia River Highway in the downtown (Kendall, Buxton, Dora, Harlow and Kibling Avenues) to provide more pedestrian friendly crossings and for “traffic calming” purposes.

### Financial Considerations

The \$3.7 million of City capital improvement costs identified in the TSP can be funded with transportation system development charge (SDC) fees that are charged to new development. However, at the current SDC rate, the City only anticipates collecting \$2.1 million over the next twenty years. Troutdale’s current transportation SDC fee would have to be increased significantly over the current rate to collect sufficient funds to cover these additional project costs.

The TSP discusses various funding options available to the City to fill the gap in ongoing maintenance costs and current revenues. The City council has studied this issue and has already decided against implementing a street utility fee at this time. The Council prefers to pursue a local fuel tax in 2014 when the statutory ban on local fuel taxes comes to an end.

### SPECIAL NOTE ON THE DRAFT TSP

Chapter 5, Financing and Implementation, is still a work in progress as analysis of current and potential funding sources is fine tuned. Financial information in this chapter will be revised as the analysis is completed. Consequently, the TSP document that is forwarded to the city council may include nonsubstantive changes resulting from this refined analysis. In addition, other modifications may be needed to correct errors, for consistency within the document, and for clarity of meaning.

### **RELEVANT CRITERIA:**

Adoption of the Transportation System Plan as the transportation element of the Troutdale Comprehensive Plan is equivalent to amending the text of the Comprehensive Plan. Section 15.050 of the Troutdale Development Code establishes the following approval criteria for evaluating comprehensive plan amendments.

1. *For Comprehensive Plan text amendments, compliance with the Statewide Land Use goals and related Administrative Rules.*

Adoption of an updated Transportation System Plan is a required task of the City’s periodic review work program. The document has been prepared in accordance with Statewide Land Use Planning Goal 12 and the Transportation Planning Rule; therefore, it logically and necessarily satisfies this approval criterion.

2. *Public need is best satisfied by this particular change.*

Public need is best satisfied by the recommended actions of the TSP, including various action plans that identify and prioritize capital improvement projects and investment decisions for each mode of transportation over the next twenty years.

3. *The change will not adversely affect the health, safety and welfare of the community.*

Adoption of this Plan provides further guidance for the City to accommodate future growth and will not adversely affect the health, safety and welfare of the community. The Plan addresses current conditions and future needs in order to foster positive benefits for the community.

4. *In the case of Development Code amendments, the particular change does not conflict with applicable comprehensive plan goals or policies.*

The proposed Plan pertains only to the Comprehensive Plan and not to the Troutdale Development Code; therefore, this criterion does not apply.

**RECOMMENDATION:**

This proposed Transportation System Plan has been developed to satisfy a required task of the City's periodic review work program. The Citizens Advisory Committee reviewed and discussed the major elements of this Plan in October 2012 and February 2013. The CAC supported the Plan and has referred it to the Planning Commission for approval. Staff recommends that the Planning Commission forward the Transportation System Plan to the City Council with a recommendation for adoption. A draft final order containing findings to that effect has been prepared for the Planning Commission's consideration (Attachment A).

**PLANNING COMMISSION**  
**FINDINGS of FACT and RECOMMENDATION**  
**February 19, 2014**  
**Periodic Review Legislative Amendments to the Troutdale**  
**Comprehensive Land Use Plan, Goal 12 Transportation**  
**Proposed Transportation System Plan**

The Troutdale Planning Commission held public hearings on May 29, 2013 and February 19, 2014, to take public testimony and to make a recommendation to the City Council concerning adoption of a proposed Transportation System Plan as the transportation element of the Troutdale Comprehensive Land Use Plan and to satisfy requirements of the City's periodic review work program. Having provided the opportunity for the public to express their views on the proposal, the Planning Commission now makes and enters the following findings of fact together with its recommendation to the Council for action.

**FINDINGS OF FACT:**

1. The City has been in periodic review since the initial notification from the Oregon Department of Land Conservation and Development (DLCD) on May 20, 2008. The tasks that the City must complete as part of periodic review are governed by its approved periodic review work program. DLCD approved the City's work program on April 15, 2010.
2. The City's approved work program includes tasks related to statewide planning Goal 12, Transportation. Specifically identified as Task 4 of the work program, the City is required to update its current Transportation System Plan, adopted in 2005, in accordance with Statewide Land Use Planning Goal 12 and the Transportation Planning Rule (Oregon Administrative Rule 660-012).
3. The City hired a consultant to update the current Transportation System Plan based on the following transportation planning requirements: 1) Compliance with the Transportation Planning Rule as amended; 2) Compliance with Metro's 2035 Regional Transportation Plan (RTP); 3) Incorporating the conclusions and recommendations of the I-84 Troutdale Interchange Area Management Plan (IAMP); and, 4) Incorporating the conclusions and recommendation of the East Metro Connections Plan (EMCP).
4. A technical advisory committee comprised of representatives from state, regional, county and local agencies with vested interest in the TSP provided technical review and comment on the Plan as it was being developed. The Citizens Advisory Committee reviewed and discussed the

major elements of this Plan in October 2012 and February 2013. The CAC supported the Plan and has referred it to the Planning Commission for approval.

5. Adoption of the Transportation System Plan is a required task of the City's periodic review work program. The document has been prepared in accordance with Statewide Land Use Planning Goal 12 and its related administrative rule; therefore, it logically and necessarily complies with this State Planning Goal.

6. Public need is best satisfied by the recommended actions of the TSP, including various action plans that identify and prioritize capital improvement projects and investment decisions for each mode of transportation over the next twenty years.

7. Adoption of this Plan provides further guidance for the City to accommodate future growth and will not adversely affect the health, safety and welfare of the community. The Plan addresses current conditions and future needs in order to foster positive benefits for the community.

8. Notice of the public hearing has been provided in accordance with applicable law.

**RECOMMENDATION:**

In view of the above findings of fact, the Planning Commission recommends that the Troutdale City Council adopt the proposed Transportation System Plan (Exhibit A) as the transportation element of the Comprehensive Land Use Plan and to satisfy Task 4 of the City's periodic review work program. The Planning Commission recognizes and affirms that Chapter 5 of the Plan is still a work in progress as analysis of current and potential funding sources is being refined. Financial information in this chapter will be revised as the analysis is completed. In addition, there may be need to modify the Plan to correct spelling errors, for improved consistency throughout the document, and for clarity of meaning. Consequently, the document that is forwarded to the City Council may include a number of nonsubstantive changes from what the Planning Commission has reviewed. The Plan that ultimately goes to the City Council for adoption, shall be in substantial form with the one approved by the Planning Commission.

---

Tanney Staffenson, Chair  
Troutdale Planning Commission  
February 19, 2014

**CITY OF TROUTDALE**

**DRAFT TRANSPORTATION SYSTEM PLAN**  
**Presented to the Planning Commission on**  
**February 19, 2014**

Transportation System Plan

# **City of Troutdale**

Troutdale, Oregon

# **Public Hearing Draft**

September 2013



# Transportation System Plan

## City of Troutdale

Troutdale, Oregon

Prepared For:

**City of Troutdale**

219 E Historic Columbia River Highway

Troutdale, Oregon 97060

(503) 665-5175

Prepared By:

**Kittelson & Associates, Inc.**

610 SW Alder, Suite 700

Portland, OR 97205

(503) 228-5230

Project Manager: Matt Hughart, AICP

Project Principal: Mark Vandehey, P.E.

Project No. 12560.0

September 2013





# TABLE OF CONTENTS

Chapter 1. Executive Summary ..... 1-1

    Introduction..... 1-1

    Goals and Policies..... 1-2

    Transportation Plans ..... 1-3

    Financing ..... 1-19

Chapter 2. Goals & Policies ..... 2-1

    Overview ..... 2-1

    Goals and Policies..... 2-1

    Performance Targets ..... 2-7

Chapter 3. Existing Conditions ..... 3-1

    Overview ..... 3-1

    Findings and Conclusions ..... 3-1

    Pedestrian System ..... 3-3

    Bicycle System ..... 3-6

    Transit System ..... 3-8

    Motor Vehicles ..... 3-15

    Other Travel Modes..... 3-31

Chapter 4. Future Needs & Improvements..... 4-1

    Overview ..... 4-1

    Travel Demand and Land Use..... 4-1

    Pedestrian System ..... 4-1

    Bicycle System ..... 4-7

    Transit System ..... 4-12

    Motor Vehicles ..... 4-16

    Other Modes ..... 4-34

    Environmental Justice ..... 4-35

Chapter 5. Financing & Implementation..... 5-1

    Current Funding Strategies..... 5-1

    Projects and Programs ..... 5-3

    New Funding Sources and Opportunities ..... 5-5

# LIST OF FIGURES

Figure 1-1: Pedestrian Master Plan .....1-4

Figure 1-2: Bicycle Master Plan .....1-7

Figure 1-3: Transit Master Plan .....1-9

Figure 1-4: Local Street Connectivity Plan ..... 1-12

Figure 1-5: Functional Classification Plan..... 1-13

Figure 1-6: Motor Vehicle Master Plan ..... 1-16

Figure 1-7: Freight Plan ..... 1-18

Figure 3-1: Study Area .....3-2

Figure 3-2: Existing Pedestrian System .....3-4

Figure 3-3: Existing Bicycle System .....3-7

Figure 3-4: Existing Transit System .....3-9

Figure 3-5: Existing Transit Coverage Level of Service ..... 3-13

Figure 3-6: Future (2025) Transit Coverage Level of Service ..... 3-14

Figure 3-7: Roadway Jurisdictions ..... 3-16

Figure 3-8: Existing Troutdale Functional Classifications ..... 3-19

Figure 3-9: RTP Spacing Standards ..... 3-22

Figure 3-10: Existing Travel Lanes and Traffic Control ..... 3-24

Figure 3-11: Emergency Response Routes ..... 3-25

Figure 3-12: 2004 Two-Way Traffic Volumes – Weekday PM Peak Hour ..... 3-27

Figure 3-13: Land Use Zoning Classifications ..... 3-28

Figure 3-14: 2004 Intersection Operations - Weekday PM Peak Hour ..... 3-29

Figure 3-15: Other Modes ..... 3-32

Figure 3-16: Existing Freight Routes..... 3-33

Figure 4-1: Pedestrian Master Plan .....4-3

Figure 4-2: Bicycle Master Plan ..... 4-10

Figure 4-3: Transit Master Plan ..... 4-14

Figure 4-4: Traffic Control Master Plan ..... 4-18

Figure 4-5: Local Street Connectivity Plan ..... 4-22

Figure 4-6: Functional Classification Plan..... 4-23

Figure 4-7: Streets with Right-of-Way of More than 2-Lanes ..... 4-25

Figure 4-8: Growth in Non-SOV Use .....4-29

Figure 4-9: Motor Vehicles Master Plan .....4-32

Figure 4-10: Freight Plan .....4-36

# LIST OF TABLES

Table 1-1: Pedestrian Action Plan .....1-5

Table 1-2: Bicycle Action Plan .....1-6

Table 1-3: Transit Action Plan .....1-8

Table 1-4: Access Management Standards ..... 1-11

Table 1-5: Motor Vehicle Action Plan ..... 1-17

Table 1-6: Troutdale Transportation Action Plans Costs over 20 years ..... 1-20

Table 1-7: Potential Funding Sources for Troutdale Transportation ..... 1-20

Table 2-1: 2040 Regional Metro Target Non-Single Occupant Vehicles .....2-4

Table 2-2: Performance Targets .....2-8

Table 3-1: PM Peak Hour Pedestrian Crossing Volumes at Study Intersections.....3-5

Table 3-2: PM Peak Hour Bicycle Crossing Volumes at Study Intersections .....3-6

Table 3-3: Transit Capacity and Quality of Service Manual - Level of Service (LOS) Measures ..... 3-10

Table 3-4: Service Frequency Level-of-Service Analysis..... 3-10

Table 3-5: Hours of Service Level-of-Service Analysis..... 3-11

Table 3-6: Service Coverage Analysis ..... 3-12

Table 3-7: Functional Classification Comparison of Collector and Higher Streets by Jurisdiction .. 3-18

Table 3-8: 2004 Weekday PM Peak Hour Intersection Level of Service ..... 3-30

Table 3-9: 2004 Weekend PM Peak Hour Intersection Level of Service ..... 3-30

Table 3-10: SPIS Ranking of Troutdale TSP Study Area Intersections (1999-2001) ..... 3-31

Table 4-1: Pedestrian Master Plan .....4-4

Table 4-2: Pedestrian Action Plan .....4-6

Table 4-3: Bicycle Master Plan .....4-8

Table 4-4: Bicycle Action Plan ..... 4-11

Table 4-5: Transit Master Plan ..... 4-13

Table 4-6: Transit Action Plan ..... 4-15

Table 4-7: Traffic Calming Measures by Roadway Functional Classification<sup>1</sup> ..... 4-19

Table 4-8: Access Spacing Standards for City Street Facilities ..... 4-20

Table 4-9: Transportation Demand Management Strategies ..... 4-26

Table 4-10: TDM Improvements included in the 2025 RTP Financially Constrained System ..... 4-28

Table 4-11: Additional TDM Improvements included in the 2025 RTP Priority System ..... 4-28

Table 4-12: Motor Vehicle Master Plan .....4-31

Table 4-13: Motor Vehicle Action Plan .....4-33

Table 5-1: Summary of Current Revenues for Transportation .....5-3

Table 5-2: Troutdale Transportation Action Plans Costs over 20 years (2004 Dollars) .....5-5

Table 5-3: Recommended New Funding Sources for Troutdale Transportation.....5-9



## Chapter 1 Executive Summary



# 1. EXECUTIVE SUMMARY

## INTRODUCTION

In July, 1995 the City of Troutdale adopted the first Transportation System Plan (TSP) in the Portland Metropolitan area. Since that time there have been significant changes in regional planning efforts and requirements as well as significant changes in growth and planned growth in the Troutdale area. The TSP was last updated in August 2005, making it relatively current. Therefore, analysis of the entire transportation system and modeling of the roadway network was not necessary as part of this update. In addition, extensive modeling of many streets and intersections in the Troutdale area was recently performed as part of two long-range planning studies; the I-84 Troutdale Interchange Area Management Plan (IAMP) and the East Metro Connections Plan (EMCP). As indicated below, the conclusions and recommendations of these studies were used to help guide the development of this update.

There are four areas that this update is focused on:

- Compliance with Transportation Planning Rule (TPR – OAR Chapter 660-012), including revisions adopted since the current TSP was adopted in 2005. Compliance deficiencies identified in the Troutdale Development Code were also addressed along with this update.
- Compliance with the 2035 Regional Transportation Plan (RTP) adopted by Metro in June 2010.
- Incorporating the conclusions and recommendations of the I-84 Troutdale Interchange Area Management Plan (IAMP). This IAMP was completed in early 2011 and was adopted in July 2011 by the Oregon Highway Commission as part of the Oregon Highway Plan.
- Incorporating the conclusions and recommendation of the East Metro Connections Plan (EMCP). This regional planning effort was completed in June 2012.

This update also includes an evaluation of the existing multi-modal transportation system within Troutdale, including the pedestrian, bicycle, transit, and local street systems. The plans associated with each of these systems were updated to reflect any new developments that have occurred since 2005 as well as to ensure compliance with the policy and regulatory requirements of the TPR and the RTP. A brief description of the information updated precedes each section of the TSP.

This update is aimed at fulfilling TPR requirements for comprehensive transportation planning in Oregon and presents the investments and priorities for the pedestrian, bicycle, transit, and motor vehicle systems along with new transportation programs to correct existing shortfalls and enhance critical services. For each travel mode, a Master Plan project map and list are identified to support the City's transportation goals and policies. Projects that are reasonably expected to be funded over the next 20 years were also identified and are referred to as Action Plans.

The TSP is intended to guide future transportation investment in the City and determine how land use and transportation decisions can be brought together beneficially for the City and is based on needs required to meet transportation demand in the future. This executive summary provides the goals and policies, modal plans and financing summaries. For a more detailed analysis, Chapters 2, 3, 4 and 5 provide more in-depth information.

## Plan Process and Committees

This update was developed in close coordination with Troutdale City staff as well as key representatives from the surrounding community. Two formal committees were formed to participate in the plan development:

- Technical Advisory Committee (TAC) – Agency staff from Metro, Oregon Department of Transportation, Multnomah County, the City of Troutdale, the City of Gresham, the City of Wood Village, and the City of Fairview participated in reviewing the technical information used to develop the TSP update. The focus of this group was on consistency with the plans and past decisions in adjoining jurisdictions, and consensus on new recommendations.
- Citizens Advisory Committee (CAC) – The Troutdale Citizens Advisory Committee served as the representatives for citizens and community members. A series of meetings were held with the CAC to report interim study findings and any outstanding policy issues that required their direction. The meetings were open to participation by the general public.

TAC members were provided the opportunity to review and comment on interim work products throughout the TSP update process. The CAC met on several occasions to assist in developing and ranking transportation solutions and to refine master plan elements to ensure consistency with community goals.

The following sections summarize the findings of this update. The most recent Metro RTP was complied with for every mode and existing deficiencies were addressed.

## Goals and Policies

The goals and policies of this TSP are presented in Chapter 2. Goals are defined as brief guiding statements that describe a desired result. Policies associated with each of the individual goals describe the actions needed to move the community in the direction of completing each goal. These goals and policies were used in the development of this update to develop strategies and implementing measures for each travel mode.

- Goal 1. Transportation facilities shall be designed and constructed in a manner which enhances the livability of Troutdale.
- Goal 2. Provide a transportation system in Troutdale which is safe, reduces length of travel and limits congestion.

- Goal 3. Provide a balanced, multi-modal transportation system and reduce the number of trips by single occupant vehicles.
- Goal 4. Provide for efficient movement of goods.
- Goal 5. Develop transportation facilities which are accessible to all members of the community.
- Goal 6. Develop a transportation system that is consistent with the City's adopted comprehensive land use plan, and with the adopted plans of state, local and regional jurisdictions.
- Goal 7. Establish a clear and objective set of transportation design and development regulations that addresses all elements of the city transportation system and promote access to and utilization of a multi-modal transportation system.
- Goal 8: Protect the function of the I-84 Troutdale interchange and support the recommendations of the I-84 Troutdale Interchange Area Management Plan (IAMP).

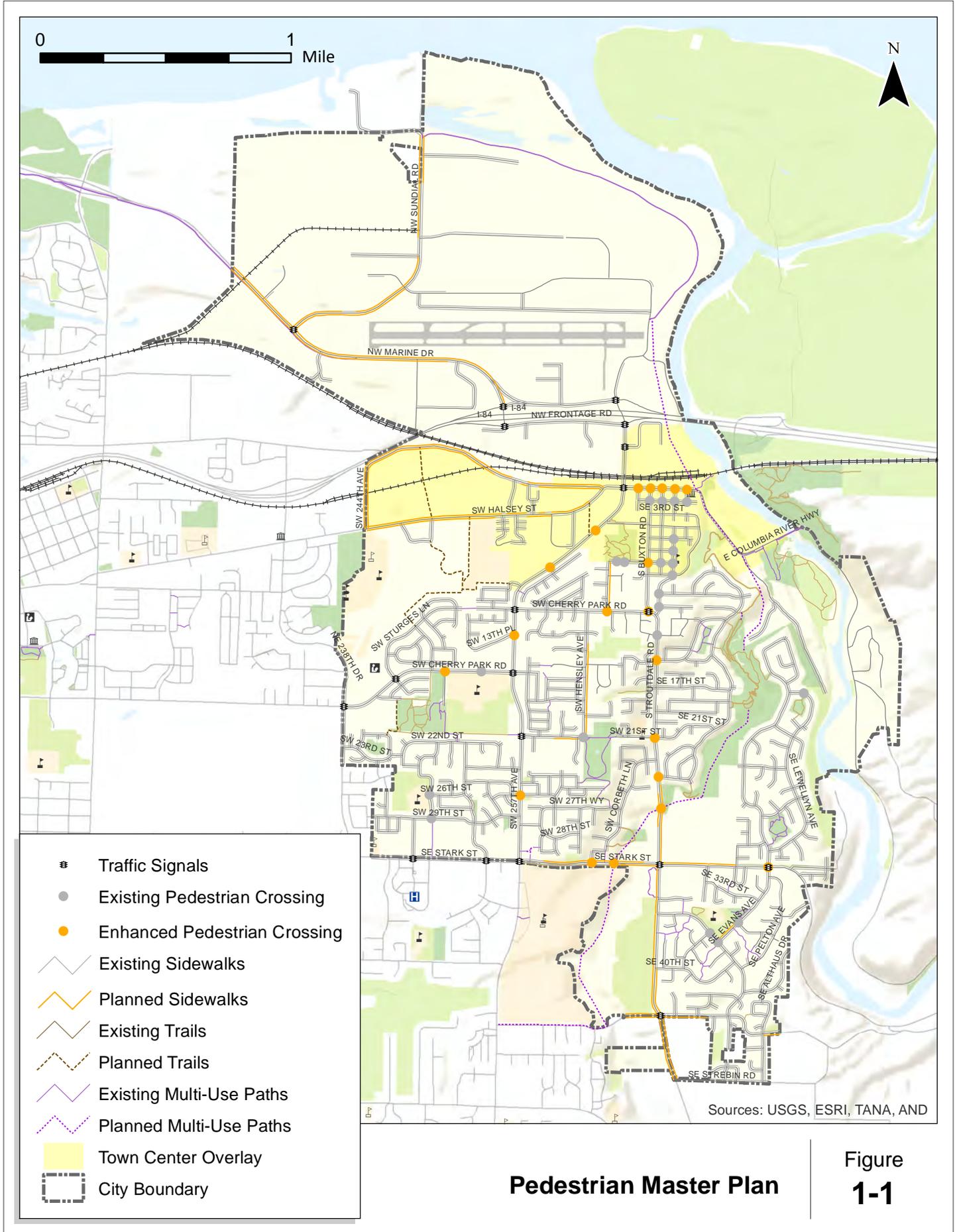
## Transportation Plans

As indicated previously, the pedestrian, bicycle, and transit system plans have been updated along with sections of the motor vehicle system plan to reflect all of the policy changes, regulatory requirements, and developments that have occurred since the adoption of the City's existing TSP in 2005. A Master Plan (long term project goals that meet planning requirements) and an Action Plan (projects that are reasonably expected to be funded over the next 20 years) were compiled for each transportation mode. These plans are designed to comply with Metro's RTP as well as relevant State and adjoining jurisdictions' planning documents. The following sections summarize the Master Plan and Action Plan for each mode.

### Pedestrian System

The existing conditions analysis presented in Chapter 3 identifies the pedestrian system needs within Troutdale and reflects all of the pedestrian system improvements that have occurred since 2005. An inventory of the existing pedestrian system was conducted to identify locations where new or in-fill facilities would be required. The inventory identified a variety of locations in need of new sidewalks connections, new pedestrian crossings, and new multi-use paths and trails.

Metro's RTP includes designations within Troutdale for pedestrian districts, transit/mixed use corridors, and regional trails. The Pedestrian Master Plan identifies a number of potential projects that would improve pedestrian connectivity within the RTP designated areas. The City of Troutdale Development Code identifies the area near downtown as a Town Center, which generally corresponds to the area designated as a pedestrian district in the RTP, and requires new development in these areas to comply with the RTP designations. Figure 1-1 illustrates the Pedestrian Master Plan.



0 1 Mile



-  Traffic Signals
-  Existing Pedestrian Crossing
-  Enhanced Pedestrian Crossing
-  Existing Sidewalks
-  Planned Sidewalks
-  Existing Trails
-  Planned Trails
-  Existing Multi-Use Paths
-  Planned Multi-Use Paths
-  Town Center Overlay
-  City Boundary

Sources: USGS, ESRI, TANA, AND

# Pedestrian Master Plan

## Figure 1-1

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 1-1\_Pedestrian.mxd - mbeff - 9:54 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

Several strategies were developed to help guide the selection and prioritization of the projects included in the Pedestrian Action Plan. The strategies were used to rank the projects identified in the Pedestrian Master Plan from highest to lowest in terms of priority. The highest ranking City projects were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 1-1, which are organized by location and type.

**Table 1-1: Pedestrian Action Plan**

| Project ID   | Location   | Type                | Project Description   | Cost (\$1,000) |
|--------------|--|---------------------|---|----------------|
| P1           | Troutdale Road   | Complete Sidewalks  | Install sidewalks on both sides of Troutdale Road from Beaver Creek Lane to Stark Street  | -              |
| P2           | Troutdale Road   | Complete Sidewalks  | Install sidewalks on both sides of Troutdale Road from Stark Street to the south city limits  | -              |
| P3           | Stark Street   | Complete Sidewalks  | Install sidewalks on both sides of Stark Street from 257 <sup>th</sup> Avenue to Troutdale Road   | .*             |
| P5           | Halsey Street  | Complete Sidewalks  | Install sidewalks on both sides of Halsey Street from the west city limits to Historic Columbia River Highway   | -              |
| P7           | Hensley Road   | Complete Sidewalks  | Install sidewalks on the south side of Hensley Road (E/W) from 150-foot west of Laurel Court to Hensley Road (N/S)  | \$45           |
| P8           | Hensley Road   | Complete Sidewalks  | Install sidewalks on the east side of Hensley Road (N/S) from Hensley Road (E/W) to Cherry Park Road consistent with the Troutdale Elementary SRTS Plan. Includes minor pavement widening and drainage. | \$350          |
| P17          | 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street            | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street  | -              |
| P22          | Troutdale Road at Planned Regional Trail                       | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Troutdale Road at the planned Regional Trail   | -              |
| P26          | Stark Street at Planned Regional Trail                         | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Stark Street at the planned Regional Trail   | -              |
| P29          | 40 Mile Regional Trail   | Multi-Use Path      | Install a multi-use path from Columbia/Sandy River Levy Trail to downtown Troutdale   | -              |
| P30          | Columbia Park Trail  | Trail               | Improve existing trail from 18 <sup>th</sup> Way to 22 <sup>nd</sup> Street   | \$75           |
| P31          | Sturges Trail  | Trail               | Install a trail from Sturges Lane to 257 <sup>th</sup> Avenue   | \$230          |
| P36          | Sandy River and Springwater Area Connections Trail             | Trail               | Install a trail from Mt. Hood Community College to Historic Columbia River Highway  | -              |
| P37          | Historic Columbia River Highway                                | Curb Extension      | Install curb extensions along Historic Columbia River Highway at Kendall Avenue, Buxton Avenue, Dora Street, Harlow Avenue, and Kibling Avenue  | \$240          |
| P38          | Sandy River and Springwater Area Connections Trail Master Plan | Trail               | Develop a master plan for the Sandy River and Springwater Area Connections Trail to determine the alignment/recommended design treatments   | -              |
| P39          | Hewitt Neighborhood Trail                                      | Multi-Use Path      | Complete the multi-use path that connects the Hewitt neighborhood to Stark Street to the south and 257 <sup>th</sup> to the west.   | \$25           |
| <b>Total</b> |  |                     |   | <b>\$965</b>   |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City.

\* The City of Troutdale's contributions to these project costs are included in the Motor Vehicle Action Plan.

## Bicycle System

The existing conditions analysis presented in Chapter 3 identifies the bicycle system needs within Troutdale and reflects all of the bicycle system improvements that have occurred since 2005. The analysis indicates that although a majority of the collector and arterial streets in Troutdale currently provide on-street bike lanes or shoulder bikeways, there are a few locations where new on-street bike lanes or other bicycle treatments, such as shared roadway pavement markings, could improve the overall bicycle system.

The RTP includes designations within Troutdale for Regional Bikeways, Community Bikeways, and Regional Trails. The Bicycle Master Plan identifies a number of potential projects that would improve bicycle connectivity along the RTP designated roadways. By complying with the RTP designations and completing the arterial/collector bicycle system, the Bicycle Master Plan is consistent with plans developed by Metro, Multnomah County, and the State. Figure 1-2 illustrates the Bicycle Master Plan.

Several strategies were developed to help guide the selection and prioritization of the projects included in the Bicycle Action Plan. The strategies were used to rank the projects identified in the Bicycle Master Plan from highest to lowest in terms of priority. The highest ranking City projects were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 1-2, which are organized by location and type.

**Table 1-2: Bicycle Action Plan**

| Project ID   | Location                            | Type            | Project Description   | Cost (\$1,000) |
|--------------|-------------------------------------|-----------------|---|----------------|
| B1           | Stark Street                        | Bike Lane       | Install on-street bike lanes from 257 <sup>th</sup> Avenue to Troutdale Road.   | ~*             |
| B4           | Troutdale Road                      | Bike Lane       | Install on-street bike lanes from Cherry Park Road to Stark Street  | -              |
| B5           | Troutdale Road                      | Bike Lane       | Install on-street bike lanes from Stark Street to the south City limits   | -              |
| B10          | 238 <sup>th</sup> Avenue            | Bike Lane       | Install on-street bike lanes from Cherry Park Road to the west City limits  | -              |
| B11          | Hensley Road (EW/NS)                | Shared Roadways | Install shared roadway pavement markings and signs on Hensley Road (EW/NS) consistent with MUTCD standards                    | \$15           |
| B12          | 21 <sup>st</sup> Avenue             | Shared Roadway  | Install shared roadway pavement markings and signs on 21 <sup>st</sup> Avenue consistent with MUTCD standards                 | \$5            |
| B13          | Sturges Lane                        | Shared Roadways | Install shared roadway pavement markings and signs on Sturges Lane consistent with MUTCD standards                            | \$15           |
| B14          | Sweetbriar Lane                     | Shared Roadways | Install shared roadway pavement markings and signs on Sweetbriar lane consistent with MUTCD standards                         | \$15           |
| B15          | 3 <sup>rd</sup> Street/Sandy Avenue | Shared Roadways | Install shared roadway pavement markings and signs on 3 <sup>rd</sup> Street and Sandy Avenue consistent with MUTCD standards | \$15           |
| B18          | Troutdale Town Center               | Bicycle Parking | Install covered bicycle parking in the Troutdale Town Center  | \$30           |
| <b>Total</b> |                                     |                 |   | <b>\$95</b>    |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City’s estimated contribution. Projects shown in white are under the jurisdiction of the City..

\* The City of Troutdale’s contributions to these project costs are included in the Motor Vehicle Action Plan.



- Traffic Signals
- Existing Bike Crossing
- Enhanced Bike Crossing
- Existing Bike Lanes
- Existing Shoulder Bikeway
- Planned On-Street Bike Lanes
- Planned Shared Roadway
- Existing Multi-Use Paths
- Planned Multi-Use Paths
- Town Center Overlay
- City Boundary

Sources: USGS, ESRI, TANA, AND

# Bicycle Master Plan

## Figure 1-2

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw\TSP\Figure 1-2\_Bicycle.mxd - mbevill - 9:55 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

## Transit System

TriMet is the primary regional transit service provider for the Portland metropolitan area and operates fixed-route and dial-a-ride service in Troutdale, which is located in the northeast corner of TriMet’s service area. Due to its location, Troutdale is an end point for the regional service system. Troutdale is not served by high capacity transit or frequent service routes.

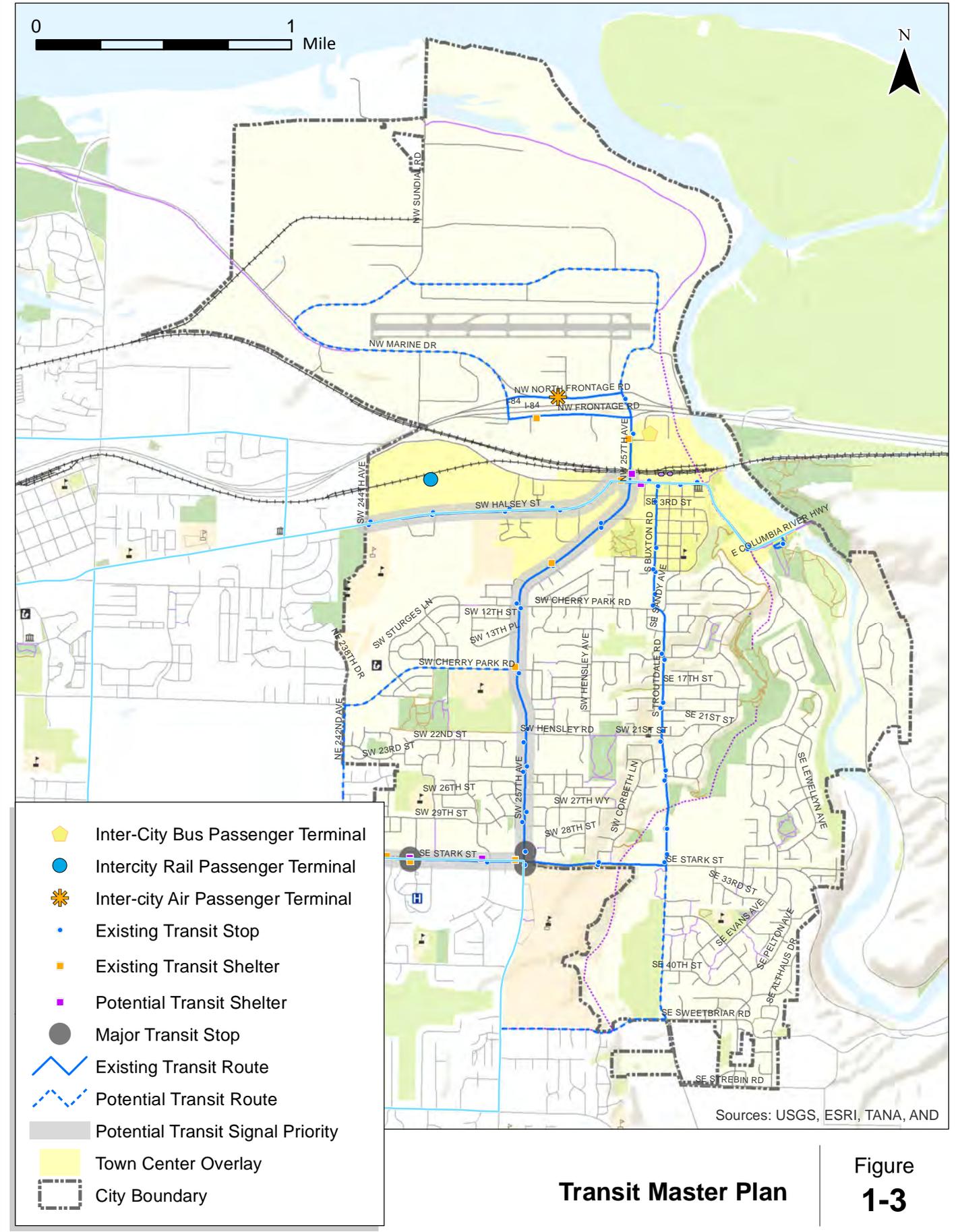
The 2035 High Capacity Transit System Plan identifies 257<sup>th</sup> Avenue as a Developing Regional Priority Corridor, which is a corridor where projected 2035 land use and commensurate ridership potential are not supportive of HCT implementation, but which have long-term potential due to political aspirations. Metro’s RTP transit route designations in Troutdale include Regional Bus. The existing transit routes in Troutdale are consistent with the Metro designations. Additional needs were identified for the quality of service in Troutdale, including transit route coverage, transit route frequency, reliability, and user amenities. Based on these needs, a Transit Master Plan was created that is shown in Figure 1-3.

Several strategies were developed to help guide the selection and prioritization of the projects included in the Transit Action Plan. The strategies were used to rank the projects identified in the Transit Master Plan from highest to lowest in terms of priority. The highest ranking City projects were combined with projects identified in previous planning studies to create the project list shown in Table 1-3, which are organized by location and type.

**Table 1-3: Transit Action Plan**

| Project ID   | Location  | Description   | Cost (\$1,000) |
|--------------|---|---|----------------|
| T1           | Halsey/Graham Road                                  | Coordinate with TriMet to provide a new route connecting the Outlet Mall to Rockwood MAX Station.   | -              |
| T2           | Cherry Park Road                                    | Coordinate with TriMet to provide a new route between 242 <sup>nd</sup> and 257 <sup>th</sup> Avenue.   | -              |
| T3           | Bus Stop Enhancements                               | Coordinate with TriMet to provide bus shelters at the following stops: <ul style="list-style-type: none"> <li>• Stop 8747: Historic Columbia River Highway &amp; SW Kendall Road</li> <li>• Stop 9792: Stark Street &amp; SW Sundial Avenue</li> <li>• Stop 5398: Stark Street &amp; McGinnis Avenue</li> <li>• Stop 13532: 257th Avenue &amp; Historic Columbia River Highway</li> </ul> | -              |
| T5           | Transit Signal Priority                             | Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Street, 257 <sup>th</sup> Avenue, and Stark Street.  | \$100          |
| T6           | Marine/Sundial/Graham                               | Coordinate with TriMet to provide a new route serving the north industrial area.  | -              |
| T7           | Troutdale Road/17 <sup>th</sup> Street/Cochran Road | Coordinate with TriMet to provide a new route serving the southeast Troutdale area.   | -              |
| T9           | Existing Transit Routes                             | Coordinate with TriMet to reduce transit route headways.  | -              |
| T10          | Transit Corridors                                   | Direct growth to increase the density of development along transit routes in the City of Troutdale in an effort to support regional transit service goals   | -              |
| <b>Total</b> |   |   | <b>\$100</b>   |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City’s estimated contribution. Projects shown in white are under the jurisdiction of the City..



Transit Master Plan

Figure 1-3

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draft TSP\Figure 1-3\_Transit.mxd - mbell - 9:56 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

## Motor Vehicle System

Future traffic conditions were analyzed as part of the 2005 TSP as well as the IAMP and the EMCP in an effort to identify motor vehicle system needs in Troutdale. Based on the analyses, it was determined that without a significant investment in Transportation System Management (TSM), Travel Demand Management (TDM), and other roadway improvements, several key facilities in the City would fail (or continue to fail) in the future. The following sections summarize the elements of the motor vehicle system plan, which meet the demands of future growth and comply with local and regional planning requirements.

### **Transportation System Management (TSM)**

Transportation System Management (TSM) focuses on low cost strategies to enhance operational performance of the transportation system by seeking solutions to immediate transportation problems, finding ways to better manage transportation, maximizing urban mobility, and treating all modes of travel as a coordinated system. TSM measures focus primarily on region wide improvements, however there are a number of TSM measures that are recommended for use in Troutdale, which include:

- **Intelligent Transportation Systems (ITS):** ITS focuses on increasing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add capacity (e.g. travel lanes). Efficiency is achieved by providing services and information to travelers so they can (and will) make better travel decisions and to transportation system operators so they can better manage the system and improve system reliability. Figure 4-7 in Chapter 4 illustrates the Traffic Control Master Plan, which includes ITS devices and communications in the Troutdale area.

**Neighborhood Traffic Management (NTM):** The City of Troutdale has a Speed Hump Program that establishes a process to guide speed hump installation through neighborhood involvement. This program includes considerations of street classification and emergency response needs, but it does not provide the opportunity for application of other NTM devices. The Speed Hump Program could be updated to consider other traffic calming measures, such as those identified in Table 4-14, and work with the community to find the traffic calming solution that best meets their needs and maintains roadway function. Additional NTM measure descriptions that include diagrams, benefits, and costs are included in the technical appendix. Any NTM project should include coordination with emergency agency staff to assure public safety.

**Access Management:** Access Management is a broad set of techniques that balance the need to provide efficient, safe and timely travel with the ability to allow access to the individual destination. Proper implementation of Access Management techniques should reduce congestion, reduce accident rates, lessen the need for highway widening, conserve energy, and reduce air pollution.

New development and roadway projects should meet the requirements summarized in Table 1-4. The minimum spacing of roadways and driveways listed in this table is consistent with Multnomah County's access spacing standards.

**Table 1-4: Access Management Standards**

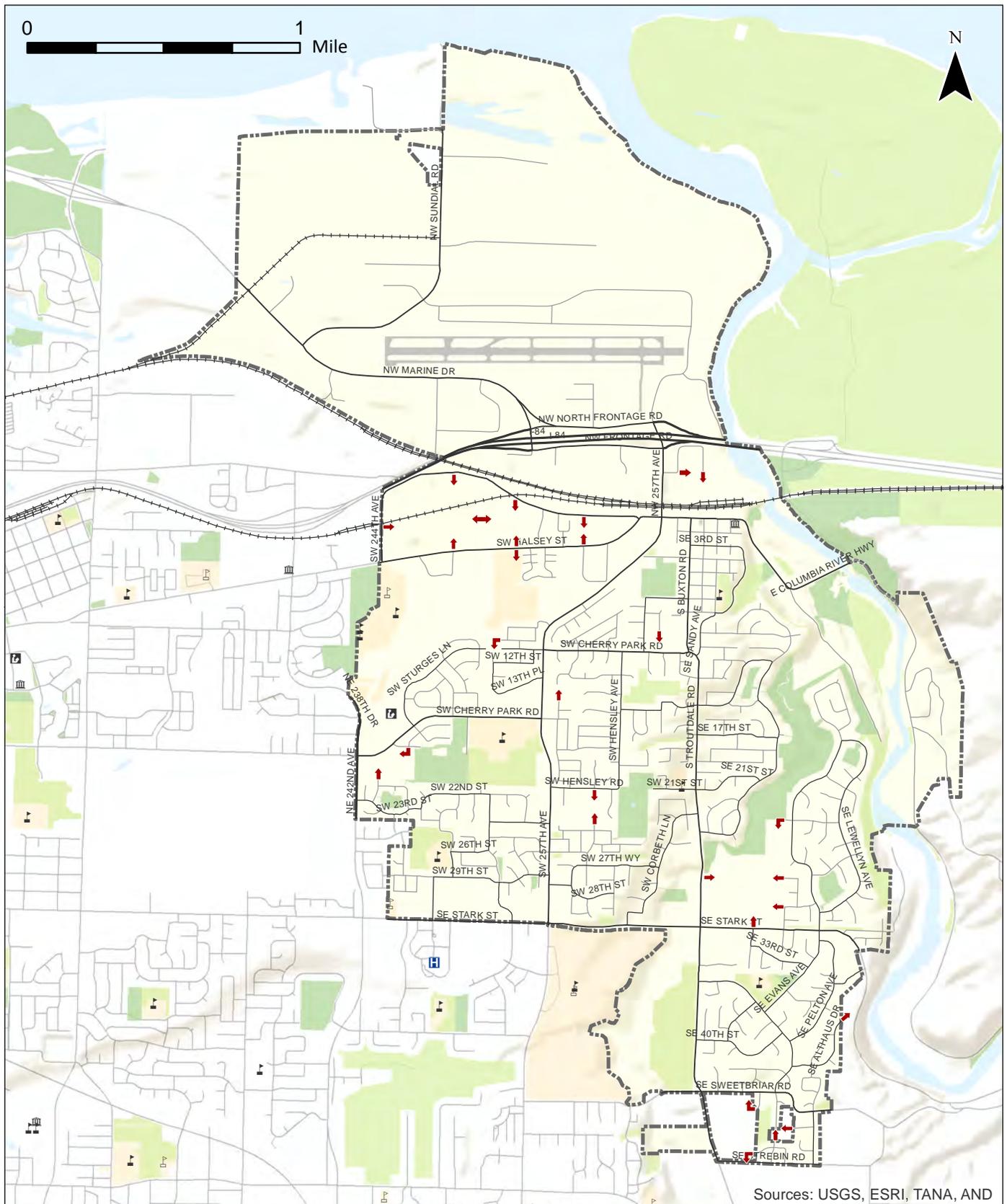
| Street Facility    | Maximum spacing of roadways   | Minimum spacing of roadways and driveways |
|--------------------|---|---|
| Arterials          | 1,000 Feet  | 530 Feet                                  |
| Collector          | 530 Feet  | 150 Feet                                  |
| Neighborhood/Local | 530 Feet  | -   |
| All Roads          | Require an access report for new access points stating that the driveway/roadway is safe as designed meeting adequate stacking, sight distance and deceleration requirements as set by ODOT, Multnomah County and AASHTO. |   |

**Local Street Connectivity:** Much of the local street network in Troutdale is built out and, in many cases, fairly well connected. In other words, multiple access opportunities exist for entering or exiting neighborhoods. However, there are still a number of locations where the majority of neighborhood traffic is funneled onto one single street. This results in out-of-direction travel for motorists and an imbalance of traffic volumes that impacts residential frontage.

A Local Street Connectivity Plan was developed for Troutdale, which is shown in Figure 1-4. In most cases, the connector alignments are not specific and are aimed at reducing potential neighborhood traffic impacts by better balancing traffic flows on neighborhood routes. To protect existing neighborhoods from potential traffic impacts of extending stub end streets, connector roadways should incorporate NTM into their design and construction. All stub streets should have signs indicating the potential for future connectivity. Additionally, any new development that involves the construction of a new street or street extension is required by the current development code to meet the following connectivity standards:

- Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers
- Provides bike and pedestrian access ways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers
- Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections
- Includes no close-end street longer than 200 feet or serving more than 25 dwelling units
- Includes street cross-sections demonstrating dimensions of ROW improvements, with streets designed for posted or expected speed limits

**Functional Classification:** A street's functional classification defines its role in the transportation system and reflects desired operational and design characteristics such as right-of-way requirements, pavement widths, pedestrian and bicycle features, and driveway (access) spacing standards. Figure 1-5 illustrates the functional classification plan for Troutdale, which has been updated to ensure consistency with surrounding jurisdictions.



Sources: USGS, ESRI, TANA, AND

|   |                              |
|---|------------------------------|
|  | Conceptual Street Connection |
|  | City Boundary                |

### Local Street Connectivity Plan

Figure 1-4

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 1-4\_Local Streets.mxd - mbeff - 9:56 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Int  
 Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center



**Street Standards:** The City of Troutdale has adopted standards for street cross sections that apply citywide to local streets (32' curb-to-curb), neighborhood streets (36' curb-to-curb), and commercial/industrial streets (36' curb-to-curb). In addition, there is a special local street cross section for the Town Center area that allows narrower widths (28' curb-to-curb). These cross sections are detailed in the *City of Troutdale Construction Standards for Public Works Facilities*. Refer to ODOT and Multnomah County standards for additional information related to all collector and arterial cross sections.

**Parking Requirements:** The City of Troutdale has off-street parking ratios (minimum and maximum) in Chapter 9 of the Development Code, which were adopted in 1998. These ratios are consistent with the TPR and RTP parking ratio requirements.

### ***Transportation Demand Management (TDM)***

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the Troutdale area occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this growth.

Generally, TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area. This is due in part to the Employee Commute Options (ECO) rules that were passed by the Oregon Legislature in 1993 to help protect the health of Portland area residents from air pollution and to ensure that the area complied with the Federal Clean Air Act.

The City of Troutdale should coordinate with Multnomah County and TriMet to implement strategies to assure that the TDM assumptions in the RTP are implemented. The TDM action plan includes:

- Support continued efforts by TriMet, Metro, ODOT, and Multnomah County to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.
- Continued implementation of motor vehicle minimum and maximum parking ratios for new development.
- Continued implementation of street connectivity requirements.
- Require new development to install bicycle racks.
- Implementation of bicycle, pedestrian, motor vehicle and transit system action plan.
- Monitor and manage the parking needs in the Troutdale Town Center, which could include long-term strategies such as parking pricing.

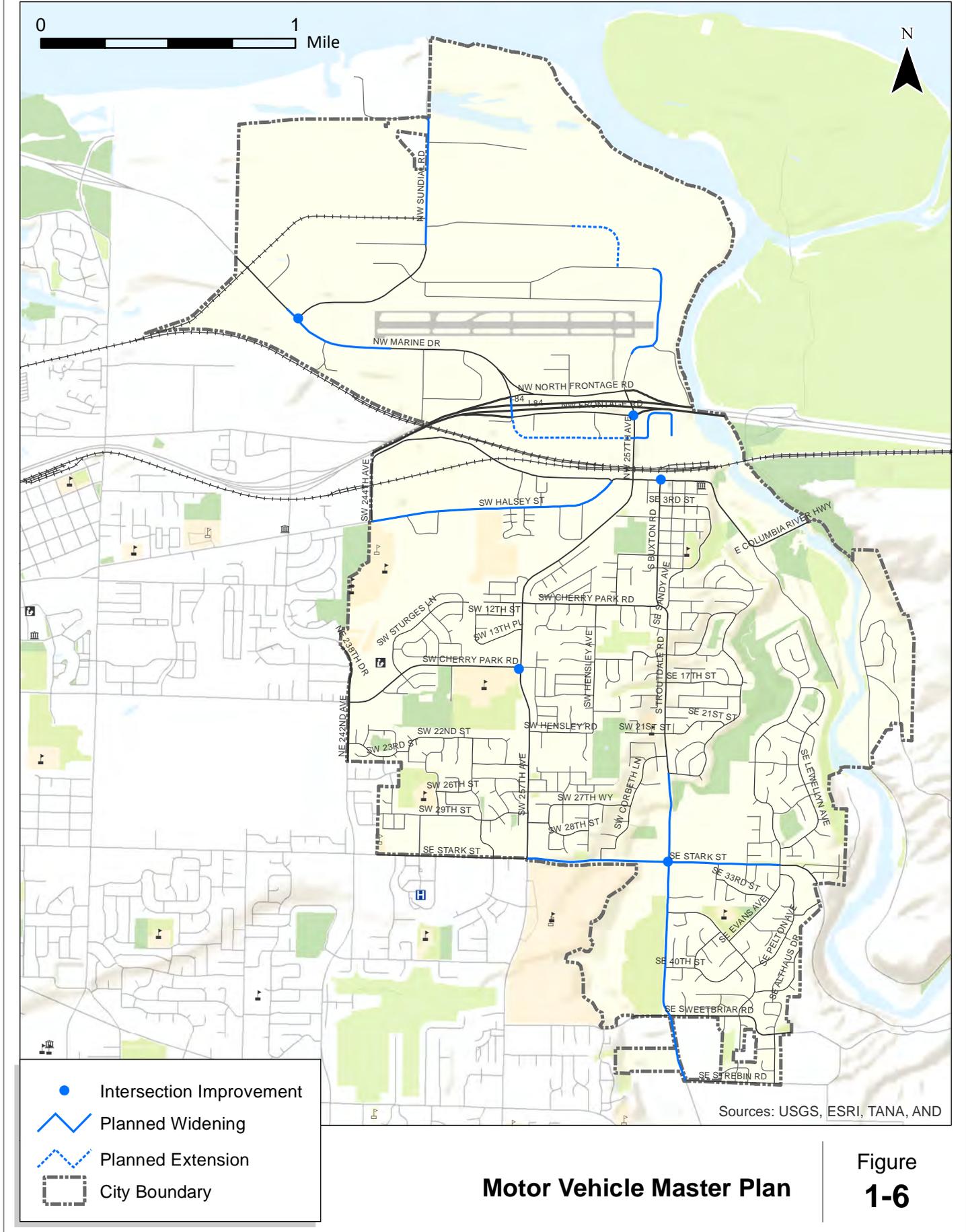
## Roadway Improvements

Based on an evaluation of intersection capacity, some roadways in Troutdale are not expected to meet future demands without capacity improvements. Key issues to address include:

- Lack of north-south capacity. The only north-south arterial route to I-84 in Troutdale is via 257<sup>th</sup> Avenue. Although 242<sup>nd</sup>/238<sup>th</sup> Drive does provide an alternative route to I-84, the lack of parallel routes for travel to or from the freeway system is a constraint for the existing transportation system.
- Frontage Road Congestion. The existing configuration of the Troutdale interchange and the adjoining access provisions for fronting commercial properties is far below the capacity required to support peak period demands today and in the future. The interaction between truck traffic and motor vehicles significantly reduces the frontage road capacities.
- Lack of direct access to the north-industrial area. Access to the north-industrial area is provided through the congested I-84/257<sup>th</sup> Avenue interchange, which in some cases includes travel via under-improved Graham Road. An alternative access is the I-84/207<sup>th</sup> Avenue interchange, to Sandy Boulevard, to 223<sup>rd</sup> Avenue, to Marine Drive. However, this alternative includes significant out of direction travel.
- Lack of east-west capacity. The Stark Street corridor is expected to be significantly congested in the future. The Halsey Street/Historic Columbia River Highway corridor is the only other route passing east-west through Troutdale. The lack of alternative east-west connections between neighborhoods in Troutdale increases delay on the arterial roadways and increases neighborhood cut-through traffic.

The transportation improvement projects identified in the 2005 TSP were update to reflect the conclusions and recommendations from the IAMP and the EMCP. While many of the projects from the 2005 TSP update are included in the Motor Vehicle Master Plan, a few notable projects have been removed, including the 242<sup>nd</sup> Street extension, the 238<sup>th</sup> Street extension, the 2<sup>nd</sup> Street extension, and the 257<sup>th</sup> Avenue/Cherry Park Road (south) intersection improvements; the details of which are provided in Chapter 4. Figure 1-6 illustrates the Motor Vehicle Master Plan.

Several strategies were developed to help guide the selection and prioritization of the projects included in the Motor Vehicle Action Plan. The strategies were used to rank the projects identified in the Motor Vehicle Master Plan from highest to lowest in terms of priority. The highest ranking City projects were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 1-5, which are organized by location and type.



H:\p\10125660 - Troutdale TSP Update & Facilities Plan\GIS\Draft TSP\Figure 1-6\_Motor Vehicle.mxd - mbeill - 9:58 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

**Table 1-5: Motor Vehicle Action Plan**

| Project ID   | Location                                    | Project Description   | Cost (\$1,000) |
|--------------|---|---|----------------|
| M2           | Troutdale Road                              | Widen to 3 lanes from Stark Street to the south City limits. Includes sidewalks and bike lanes.   | --             |
| M4           | Stark Street Widening (West)                | Widen to 5 lanes between 257th Avenue and Troutdale Road. Includes sidewalks and bike lanes.  | \$300          |
| M6           | Halsey Street Widening                      | Widen to 3 lanes from 238 <sup>th</sup> Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes.   | -              |
| M7           | Marine Drive                                | Widen Marine Drive to a two-way five-lane cross-section under I-84.   | -              |
| M8           | Graham Road                                 | Reconstruct Graham Road.  | \$550          |
| M9           | Marine Drive                                | Construct the Marine Drive Extension.   | \$980          |
| M10          | Marine Drive/Sundial Road                   | Improve intersection of Marine Drive/Sundial Road. Includes widening Marine Drive from approximately 500 feet west of intersection to existing five-lane section. | -              |
| M11          | Historic Columbia River Highway/Buxton Road | Signalize in coordination with 257 <sup>th</sup> Avenue/Historic Columbia River Highway.  | \$200          |
| M13          | 257 <sup>th</sup> Way                       | Extend 257 <sup>th</sup> Way to the urban renewal area.   | -              |
| M14          | Parking Study                               | Conduct a parking study within the Troutdale Town Center  | \$50           |
| M15          | Dunbar Avenue                               | Reconstruct Dunbar Avenue.  | \$450          |
| <b>Total</b> |   |   | <b>\$2,530</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..

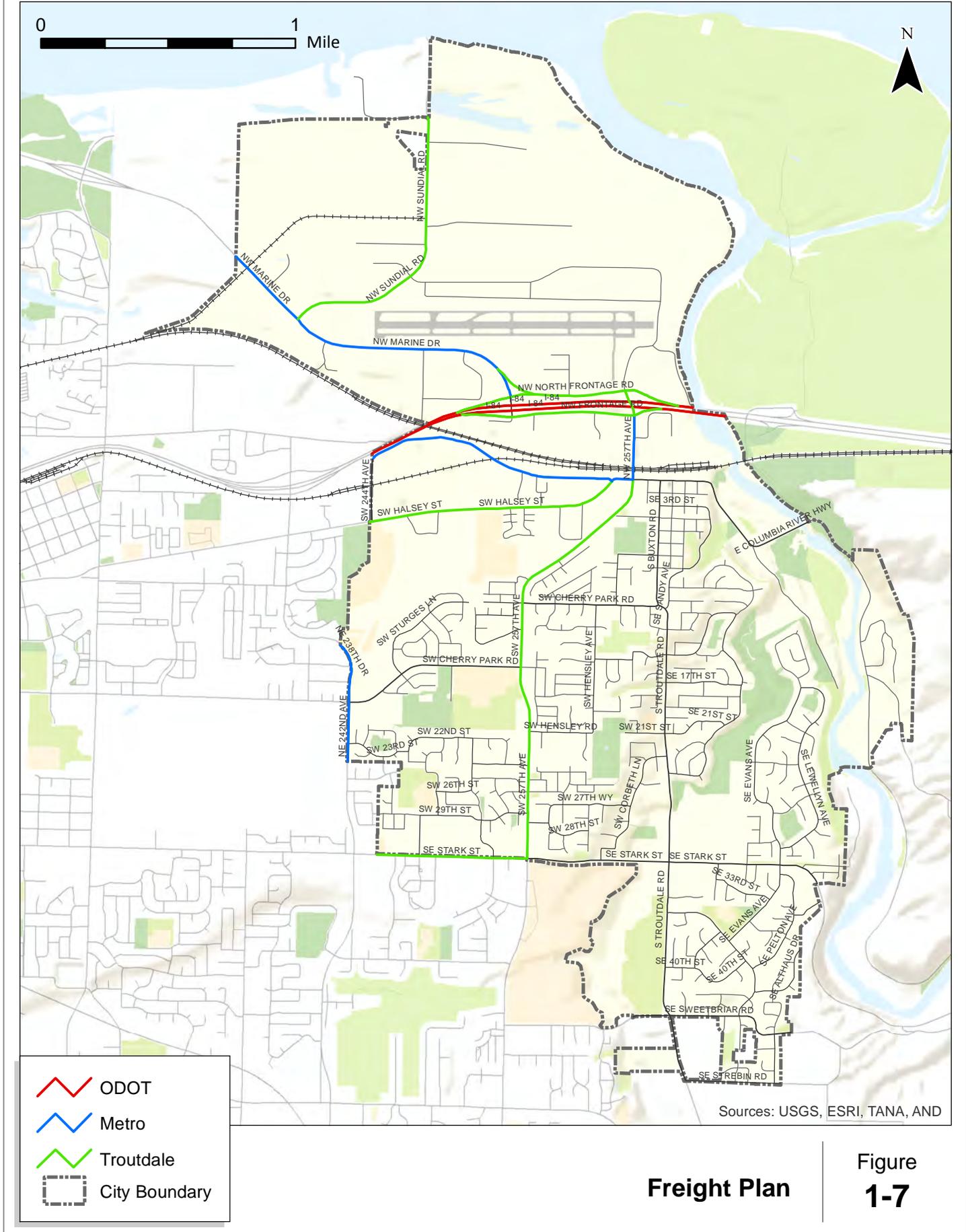
## Other Modes

While pedestrian, bicycle, transit, and motor vehicle transportation modes have a more significant effect on the quality of life in Troutdale, other modes of transportation must be considered. Future needs for freight, air and pipeline infrastructure are identified by their providers and are summarized below.

### **Freight**

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The establishment of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The freight plan is shown in Figure 1-7. The objective of this plan is to allow these streets to focus on design criteria that are "truck friendly"; i.e. 12-foot travel lanes, longer access spacing, 35-foot (or larger) curb returns, and pavement design that accommodates a larger share of trucks. The designated truck routes shown in Figure 1-7 are consistent with recent changes to the Regional Freight Plan as identified in the EMCP.

There are two rail freight lines, the Graham (2A) and the Kenton (2AE) that currently traverse the City of Troutdale, combining to transport over 53 million gross tons of freight in 2002. There are no passenger trains currently running through Troutdale. The volume, length and schedule of the freight trains are not expected to change significantly over the 20 year planning horizon.



H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 1-7\_Freight.mxd - mbeil - 10:01 AM 9/30/2013

## **Gas Pipelines**

Two high-pressure natural gas pipelines serve Troutdale. The future service of gas pipelines are not expected to change significantly over the 20 year planning horizon.

## **Air**

The Troutdale Airport is located north of I-84 and is classified as a Category 2 – Business or High Activity General Aviation Airport. The Troutdale Airport Master Plan predicts a modest 2 percent growth in both the number of operations and number of aircraft based in Troutdale over the next 10 years, concluding that current infrastructure is adequate to meet demand.

## **Financing**

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure improvements through motor vehicle fees such as state and local gas taxes and vehicle registrations. However, virtually all of motor vehicle user fees go to road maintenance, operation, and preservation of the system rather than construction of new facilities. Much of what the public views as new construction is commonly funded (partially or fully) through property tax levies, traffic impact fees (Transportation System Development Charges) and transportation improvements required of private developers. The City of Troutdale utilizes a number of mechanisms to fund construction of its transportation infrastructure, including:

- State and Local Fuel Tax and Vehicle License Fees,
- System Development Charges, and
- Exactions (Developer Required Improvements).

The City of Troutdale currently collects approximately \$890,000 in motor fuel taxes and license fees for street construction and repair each year. Annual System Development Charge revenue is highly variable, depending on the pace of development activity, and rates are adjusted in conjunction with updates to the City's Capital Improvement Plan to concur with projected costs of transportation improvement projects.

The costs outlined in the Transportation System Plan to implement the Action Plans for Motor Vehicles, Bicycles, Pedestrians, and Transit total \$3.7 million, while the costs of ongoing transportation operations and maintenance programs and services total \$27.7 million. The total cost of funding the transportation system over the next 20 years is then \$31.4 as shown in Table 1-6. Note that additional projects are listed in the Action Plans that are expected to be funded by Multnomah County or ODOT, with contributions from the City in some cases (i.e. Stark Street, Graham Road, Marine Drive, and Dunbar Avenue). The City's expected contributions to these projects are included in the estimates in Table 1-6 and should be considered in development of the City's Capital Improvement Plan and associated SDC rates.

**Table 1-6: Troutdale Transportation Action Plans Costs over 20 years**

| Transportation Element  | Approximate Cost (\$1,000) |
|---|----------------------------|
| <i>System Improvement Projects (Action Plans projects to be funded by City)</i> |                            |
| Motor Vehicle   | \$2,530                    |
| Bicycle   | \$95                       |
| Transit   | \$100                      |
| Pedestrian  | \$965                      |
| <b>Total Capital Projects</b>   | <b>\$3,690</b>             |
| <b>Operations and Maintenance Programs and Services</b>                         |                            |
| Road Operation and Maintenance (\$1,075,000 per year, increasing annually)      | \$21,500                   |
| Additional Pavement Preservation Need (300,000 per year) <sup>1</sup>           | \$6,000                    |
| Neighborhood Traffic Management (\$10,000/year)                                 | \$200                      |
| <b>Total Operations and Maintenance Programs</b>                                | <b>\$27,700</b>            |
| <b>20 Year Total</b>  | <b>\$31,390</b>            |

<sup>1</sup>Based on further evaluation of the Operations and Maintenance Programs and Services, there is currently a need for an additional 6.6 million over the next ten years to fully fund the pavement preservation program in addition to the existing costs/expenditures for operation, maintenance and preservation.

The estimated \$27.7 million for operations and maintenance exceeds the expected 20-year revenue estimate of \$20.9 million (See Chapter 5) by approximately \$6.8 million. Alternative solutions to address this funding deficit as well as provide funding for the Action Plan projects were analyzed, including General Fund Revenues, Street Utility Fee Revenues, Expanded Transportation SDC, and Debt Financing. A transportation utility fee or local gas tax could be enacted that would generate the roughly \$300,000 per year of additional revenue needed, or \$6.0 million over the next 20 years as shown in Table 1-7 below. These additional funds along with appropriately set and adjusted SDC rates would be sufficient to fully capitalize the Action Plan projects and maintenance programs.

**Table 1-7: Potential Funding Sources for Troutdale Transportation**

| Transportation Funding Source               | Estimated Additional Annual Revenues (\$1,000) |
|---|--|
| Transportation Utility Fee or Local Gas Tax | \$300  |
| <b>Annual New Revenues</b>                  | <b>\$300</b>                                   |
| <b>20 Year Total</b>                        | <b>\$6,000</b>                                 |

## Chapter 2 Goals & Policies



## 2. GOALS AND POLICIES

### OVERVIEW

The transportation-related goals and policies established by the 2005 TSP were adopted to guide transportation system development in Troutdale. Since 2005, there have been several changes to state and regional transportation plan policies and regulations. The following goals and policies include those that have been carried over from the 2005 TSP as well as new and modified ones to address changes to state and regional plan policies and regulations.

### GOALS AND POLICIES

**Goal 1. Transportation facilities shall be designed and constructed in a manner which enhances the livability of Troutdale.**

Policy a. Minimize the “barrier” effect of large arterial streets (for example 257<sup>th</sup> Avenue).

*Action: The City shall develop and maintain pedestrian crossing spacing, traffic signal spacing and landscape standards for large arterial streets in Troutdale, in coordination with Multnomah County and Metro.*

Policy b. Make streets as “unobtrusive” to the community as possible.

*Action: The City shall maintain design standards for local streets which address landscaping, cross section width, and provision of alternative modes for each functional classification.*

Policy c. Build neighborhood streets to minimize speeding.

*Action: The City shall allow for neighborhood traffic management in new development as well as existing neighborhoods for City streets. Measures to be developed may include narrower streets, humps, traffic circles, curb/sidewalk bulbs, curving streets, diverters and/or other measures.*

Policy d. Encourage pedestrian and bicycle accessibility by providing safe, secure and desirable walkway routes, with a preferred spacing of no more than 330 feet, between elements of the pedestrian network.

*Action: The City shall develop and maintain a “pedestrian grid” in Troutdale, outlining pedestrian routes. Sidewalk standards shall be developed to define various widths, as necessary, for City street types.*

Policy e. In residential areas, discourage extended use of on-street parking.

*Action: The City shall maintain code provisions addressing extended on-street parking and on-street parking of vehicles used for commercial use or non-residential-type purposes (i.e. semi trucks or home businesses with extensive use of on-street parking).*

**Goal 2. Provide a transportation system in Troutdale which is safe, reduces length of travel and limits congestion.**

Policy a. Design of streets should relate to their intended use.

*Action: The City shall maintain a functional classification system that meets the City's needs and respects needs of other agencies (Multnomah County, ODOT, Metro, City of Gresham, City of Wood Village). Appropriate design standards for these roadways shall be developed by the appropriate jurisdictions.*

*Action: A primary emergency response route system shall be developed for roadways within Troutdale in coordination with the Gresham Fire Department and the County's Office of Emergency Management. Appropriate traffic calming guidelines for these routes shall be developed in coordination with the Gresham Fire Department and other agencies (City of Troutdale, Multnomah County, ODOT).*

Policy b. Local streets shall be designed to encourage a reduction in trip length by providing connectivity and limiting out-of-direction travel. Provide connectivity to activity centers and designations with a priority for pedestrian connections. Wherever necessary, new streets built to provide connectivity shall incorporate traffic management design elements, particularly those which inhibit speeding. New or improved local streets should comply with adopted street spacing standards.

*Action: The purpose of this policy is to provide accessibility to various designations within Troutdale without creating a grid-type network with long, straight streets which encourage speeding or through traffic.*

Policy c. No City of Troutdale street (excluding County and State roads) shall exceed one travel lane in each direction, with turn lanes allowed to accommodate demand.

*Action: To avoid impacts of land use on roadway capacity, land uses in the comprehensive plan should be followed. Unless designated and built as part of a transit oriented development (TOD), large retail land uses (greater than 20,000 SF) in areas not zoned commercial should be avoided (allowing for some commercial for adjacent uses) due to the significantly larger vehicle traffic generation. Retail developments would be responsible for improvements required to accommodate their associated traffic.*

Policy d. Safe and secure pedestrian and bicycle ways shall be designed between parks and other activity centers in Troutdale.

Policy e. Monitor and participate in regional planning efforts, including the development of the Regional Transportation Plan (RTP), to secure funding for safety and capacity improvements to the City of Troutdale's arterial and collector street system that are necessary to maintain acceptable levels of service for local and through traffic.

Policy f. Meet regional mobility targets within the designated Town Center and along roadways identified as Corridors through system management techniques and strategic capacity improvements, consistent with the adopted TSP.

**Goal 3. Provide a balanced, multi-modal transportation system and reduce the number of trips by single occupant vehicles.**

Policy a. Commercial, community service and high employment industrial uses shall be developed and sited to be supportive and convenient to pedestrians, bicyclists and transit riders. Pedestrians and bicycle amenities, transit facilities, ride-share programs or similar commute trip reduction measures shall be incorporated in commercial and industrial development to the maximum extent possible.

*Action: The City will maintain standards for development adjacent to transit streets. Consistency with site design requirements will be required for such development. Pedestrian accessways, without vehicle conflicts, will need to be identified for every site for access to public right-of-way and the pedestrian system.*

Policy b. Recreational trails, including the 40-Mile Loop, shall link to Troutdale's bicycle and pedestrian plans.

*Action: The City shall develop and maintain standards for pedestrian connectivity to activity centers, residential areas, and recreational trails.*

Policy c. Consistent with the Multnomah County Bicycle Master Plan, bicycle ways should be constructed on all arterials and collectors within Troutdale (with construction or reconstruction projects). All schools, parks, public facilities and retail areas shall have direct access to a bicycle lane or route.

*Action: Standards for bicycle facilities within Troutdale shall be developed and maintained including guidelines for placement on sites. Where activity centers are on local streets, connections to bicycle lanes shall be designated.*

Policy d. The City shall coordinate with TriMet to improve transit service to Troutdale. Fixed route TriMet transit service shall use arterial and collector streets in Troutdale.

*Action: The TriMet service plan shall be the guiding transit plan for Troutdale. Adding elements such as park-and-ride lots near I-84, circulation routes linking retail to residential in Troutdale and direct service to downtown Portland (or Columbia Corridor) are samples of the input to be provided to TriMet.*

*Action: The City shall adopt and maintain a Transit System Master Plan that designates existing and potential transit routes, as well as transit signal priority corridors in coordination with Multnomah County.*

*Action: The City shall coordinate with TriMet to provide additional rider amenities (shelters, lighting, trash cans, route information) at transit stops within the City that are consistent with TriMet guidelines.*

Policy e. The City shall participate with other agencies in trip reduction strategies developed regionally, including employment, tourist and recreational trip programs.

Policy f. Establish local non-Single Occupant Vehicle (SOV) modal targets, subject to new data and methodology made available to local governments, for all relevant design types identified in the RTP. Targets will meet or exceed the regional modal targets for the 2040 Growth Concept land use design types as illustrated in the following table:

**Table 2-1: 2040 Regional Metro Target Non-Single Occupant Vehicles**

| 2040 Design Type   | Modal Target     |
|--|------------------|
| Regional centers, town centers, main streets, station communities, corridors | 45 to 55 percent |
| Industrial areas, employment areas, inner neighborhoods, outer neighborhoods | 40 to 45 percent |

Policy g. It shall be the shared responsibility of the City, County, State, and developers to provide safe and regular pedestrian and bicycle crossings on arterials and on streets with major transit stops.

**Goal 4. Provide for efficient movement of goods.**

Policy a. Grade separation or gate control should be considered for all railroad crossings.

*Action: Support the upgrade of railroad grade crossings to current design standards.*

Policy b. The City shall coordinate and cooperate with the Port of Portland on its plans for the Troutdale Airport.

Policy c. Designated arterial routes and freeway access areas in Troutdale are essential for efficient movement of goods. Design of these facilities and adjacent land uses should reflect the needs of goods movement.

*Action: Work with ODOT to improve the Frontage Road area to reduce conflicts between truck maneuvering and through moving residents and tourists.*

Policy d. Access control standards shall be preserved on arterial routes to reduce conflicts between vehicles and trucks, as well as conflicts between vehicles and pedestrians.

**Goal 5. Develop transportation facilities which are accessible to all members of the community.**

Policy a. Construct transportation facilities to meet the requirements of the Americans with Disabilities Act (ADA).

Policy b. Improve ADA accessibility, including increasing the availability of ADA parking in the Town Center.

**Goal 6: Develop a transportation system that is consistent with the City's adopted comprehensive land use plan, and with the adopted plans of state, local and regional jurisdictions.**

Policy a. The City shall implement the transportation plan based on the functional classification of streets shown in Figure 4-10.

Policy b. The City transportation system plan shall be consistent with the city's adopted land use plan and with transportation plans and policies of other local jurisdictions, especially Multnomah County, City of Wood Village, City of Fairview and the City of Gresham.

Policy c. The City shall coordinate with Metro regarding implementation of the Regional Transportation Plan, the Regional Transportation Functional Plan and related transportation sections of the Urban Growth Management Functional Plan.

Policy d. The City shall work with Metro and other regional transportation partners to identify and implement effective transportation demand management programs, such as rideshare and employer vanpool programs, where appropriate.

Policy e. The City shall work cooperatively with the Port of Portland and local governments in the region to ensure sufficient air and marine passenger access.

Policy f. The City shall work cooperatively with Multnomah County, ODOT, and the Federal Highway Administration (FHWA) to support Intelligent Transportation System (ITS) implementation.

**Goal 7: Establish a clear and objective set of transportation design and development regulations that address all elements of the city transportation system and promote access to and utilization of a multi-modal transportation system.**

Policy a. The City shall evaluate land development projects to determine possible adverse traffic impacts and to ensure that all new development contributes a fair share toward on-site and off-site transportation system improvements.

Policy b. The City shall require dedication of land for future streets when development is approved. The property developer shall be required to make street improvements for their portion of the street commensurate with the proportional benefit that the improvement provides the development.

Policy c. The City shall require applicable developments to prepare a traffic impact analysis.

Policy d. The City shall adopt a uniform set of design guidelines that provide one or more typical cross sections associated with those functional street classifications under its jurisdiction. For example, the City may allow for a standard roadway cross-section and a boulevard cross-section for arterial and collector streets.

Policy e. The City shall adopt roadway design guidelines and standards that ensure sufficient right-of-way is provided for necessary roadway, bikeway, and pedestrian improvements.

Policy f. The City shall adopt roadway design guidelines and standards that ensure sidewalks be provided on all streets and bikeways be provided on all arterial and collector streets under its jurisdiction for the safe and efficient movement of pedestrians and bicyclists between residential areas, schools, employment, commercial, industrial and recreational areas.

Policy g. The City shall generally favor granting property access from the street with the lowest functional classification, including alleys. Where practicable, single family dwellings shall access from local streets; access to arterials and collectors for single family units shall be prohibited unless no other reasonable access exists.

Policy h. The City shall adopt access control and spacing standards for all arterial and collector streets under its jurisdiction to improve safety and promote efficient through street movement. Access control measures shall be generally consistent with Multnomah County access guidelines to ensure consistency on city and county roads.

Policy i. The City shall adopt parking control regulations for streets as needed. On-street parking shall not be permitted on any street designated as an arterial, unless allowed by special provision within the Town Center area. Parking regulations should allow the formation of a residential permit parking district.

Policy j. The City shall adopt off-street parking regulations, as needed, to provide guidelines for large lots (over 3 acres) to incorporate street-like features such as sidewalks, street lights, etc.

Policy k. Prior to, or in conjunction with the next TSP update, the City shall conduct a parking study for the Town Center. The parking study shall include an inventory and recommendations related to the need for a comprehensive parking management plan and management strategies such as permit parking, structured parking, ADA parking, and priced parking.

Policy l. The City shall adopt design standards that require new retail, office, and institutional buildings on sites at RTP designated major transit stops to meet RTP design requirements.

Policy m. The City supports innovative street design that balances multiple transportation objectives, ensuring that roadway facilities are safe and attractive to pedestrians, bicyclists, transit riders, and motor vehicle users.

Policy n. The City encourages integration of natural stormwater collection and treatment into street designs, provided that the associated design elements can be consistently applied and executed in construction, can be reasonably maintained, and allow emergency access.

**Goal 8: Protect the function of the I-84 Troutdale interchange and support the recommendations of the I-84 Troutdale Interchange Area Management Plan (IAMP).**

Policy a. It is the policy of the City to work with ODOT to protect the primary function of the I-84 Troutdale interchange as the key facility that provides access to industrial land between I-84 and the Columbia River and facilitates goods movement and access to the Troutdale Town Center.

Policy b. The City will inform ODOT of proposed land use actions, including development applications and legislative amendments such as Comprehensive Plan updates, or transportation improvements that could affect the function of the interchange. The City will ensure that any such amendments are consistent with the function of the interchange, as defined in the IAMP and the TSP, and are consistent with the Access Management Plan in the IAMP.

Policy c. Updates of the City of Troutdale's Transportation System Plan shall be reviewed for consistency with the IAMP.

Policy d. When proposing amendments to the land use designations or permitted uses in the IAMP management area, the applicant will be required to demonstrate that the proposed amendment will be consistent with the planned improvements in the IAMP.

Policy e. Because the Access Management Plan (AMP) in the IAMP is based on property configurations, development application approvals, and ownership existing at the time of the IAMP adoption, land use actions will be reviewed for consistency with the AMP.

## PERFORMANCE TARGETS

### Overview

The Regional Transportation Plan (RTP) includes performance targets that track the region's progress in developing an integrated, multi-modal, transportation system. Based on the RTP, the targets provide policy direction for developing the investment strategy recommended in the RTP and for updating local TSPs. Table 2-2 summarizes the performance targets considered as part of the Troutdale TSP along with specific performance measures, related system deficiencies, and associated TSP projects that help address the deficiencies.

**Table 2-2: Performance Targets**

| RTP Performance Target   | TSP Performance Measure   | System Deficiency   | TSP Project   |
|--|---|---|---|
| <p><b>Safety</b> - By 2035, reduce the number of pedestrian, bicyclist, and motor vehicle occupant fatalities plus serious injuries each by 50% compared to 2005</p> | <p>Reduce the frequency and severity of crashes for all travel modes</p> <p>Address known deficiencies and high accident areas as high priority projects</p>  | <p>Troutdale has four intersections on the most recent Multnomah County SPIS list (2000-2002)</p> <p>The four intersections are: 242<sup>nd</sup> Avenue/Cherry Park Road, 257<sup>th</sup> Avenue/Historic Columbia River Highway, 257<sup>th</sup> Avenue/Stark Street, and Troutdale Road/Stark Street</p> | <p>The pedestrian, bicycle, and motor vehicle master plans identify a variety of projects that are intended to reduce the potential for conflicts between movements</p> <p>Several new pedestrian crossings, sidewalks connections, and on-street bicycle lanes are proposed along roadways throughout Troutdale while new separate left and right turn lanes are proposed at a few intersections</p> |
| <p><b>Congestion</b> - By 2035, reduce vehicle hours of delay (VHD) per person by 10 percent compared to 2005</p>  | <p>Ensure that all City, County, and State facilities meet their respective mobility standards</p>  | <p>The 2005 TSP update identified two intersections that are expected to exceed their respective mobility standards in the future</p> <p>The two intersections are: 257<sup>th</sup> Avenue/Cherry Park Road (south) and Troutdale Road/Stark Street</p>  | <p>The intersection capacity and signal optimization projects included in the motor vehicle master plan are intended to improve traffic flow and minimize congestion along major roadways</p> <p>Similarly, the pedestrian bicycle, and transit improvement projects are intended to help reduce vehicle demand on congested roadways</p>   |
| <p><b>Freight reliability</b> - By 2035, reduce vehicle hours of delay truck trip by 10 percent compared to 2005</p>   | <p>Reduce vehicle delay and improve reliability on identified truck routes</p>  | <p>A number of freight routes within the City currently experience delay during peak time periods</p> <p>Travel times are not predictable, and delay can vary from day to day, increasing transportation costs for businesses that rely on shipping</p>   | <p>Several of the intersection capacity and signal optimization projects included in the motor vehicle master plan are located along major freight routes.</p> <p>These projects are also intended to improve traffic flow and help reduce delay for heavy vehicles</p>   |
| <p><b>Climate change</b> - By 2035, reduce transportation-related carbon dioxide emissions by 40 percent below 1990 levels</p>                                       | <p>Strive to reduce VMT per capita by 10 percent compared to 2010</p>   | <p>A majority of Troutdale residents commute to areas outside the City limits, which increases VMT per capita.</p>  | <p>The TDM/TSM programs and strategies identified in the TSP along with improvements to the pedestrian, bicycle, and transit systems will help decrease per capita VMT and the associated transportation-related emissions to meet this performance measure</p>   |
| <p><b>Active Transportation</b> - By 2035, triple walking, biking and transit mode share compared to 2005</p>  | <p>Implement policies and strategies that work towards achieving non SOV mode share targets as identified in the 2035 RTP</p> <p>Identify projects that support active transportation throughout the City</p> | <p>There are currently a number of gaps in the pedestrian, bicycle, and transit systems within Troutdale</p>  | <p>The TDM/TSM programs and strategies identified in the TSP along with improvements to the pedestrian, bicycle, and transit systems will also help provide incentives and increase opportunities for Troutdale residents to choose active transportation</p>   |

The goals and policies identified above along with the transportation improvement projects identified in Chapter 4 will help Metro work towards achieving the performance targets listed in the RTP by addressing safety concerns, reducing congestion, improving freight reliability, and providing more alternatives for active transportation that help affect mode split and VMT per capita. Combined with other cities in the Portland metropolitan area, actions and projects contained in Troutdale's TSP will help the region reach its 2035 Performance Targets.



## Chapter 3 Existing Conditions



## 3. EXISTING CONDITIONS

### OVERVIEW

This chapter summarizes the existing physical, geometric, and operational characteristics of the pedestrian, bicycle, transit, motor vehicle, freight, water, air, and pipeline systems in Troutdale. An inventory was conducted of these systems in Fall 2012 to establish base year conditions for the TSP. Much of this data provides a benchmark (basis of comparison) for future assessment of transportation performance in Troutdale relative to desired policies.

The study area is shown in Figure 3-1. Eleven intersections within the study area were selected for operational evaluation. Traffic data was gathered at these locations and analyzed in order to evaluate area traffic conditions including volumes and levels of service. In addition, regional transportation system inventories were used to map existing facilities. The following sections describe the existing systems, usage, and performance in the City of Troutdale.

### FINDINGS AND CONCLUSIONS

This section highlights specific transportation issues that should be addressed with the TSP. It outlines the deficiencies that are present under existing conditions and identifies areas that should be considered in subsequent steps of this process.

The existing conditions analysis includes an assessment of current transportation facilities in meeting travel demand based on agency standards. The major issues found after analyzing the existing transportation conditions in the Troutdale community fall into three distinct categories: connectivity, capacity and safety.

**Connectivity:** A well connected transportation system provides three distinct advantages. First, it reduces travel time and miles of driving required as origins and destinations are connected through more direct routes. Secondly, local traffic is able to make trips to in-town destinations using well connected local streets as opposed to clogging up arterials. Thirdly, emergency vehicles have shorter response times to residential neighborhoods. Current connectivity issues that need to be addressed include:

- The southern I-84 frontage road has recurring issues with queuing and heavy traffic congestion. A parallel route should be considered to relieve the congestion and excessive queues along this route.
  - The Troutdale I-84 Interchange Area Management Plan (IAMP) identifies a new route that extends south from the Marine Drive/I-84 Eastbound Off-Ramp/South Frontage Road intersection to 257<sup>th</sup> Avenue at 257<sup>th</sup> Way.



- There is a lack of adequate north/south connectivity to I-84 and the north-industrial area.
- Additional multi-use paths and trails connecting parks, retail centers and other trip generators with residential areas, increasing the opportunities for non-motorized trips and reducing single occupant vehicle trips.
  - The East Metro Connection Plan (EMCP) identifies new multi-use path and trail systems within Troutdale, including an extension of the 40-mile loop (RTP ID 99149) and the Beaver Creek Trail (RTP ID 10409).

**Capacity:** Deficiencies of existing conditions must be addressed so the transportation system can handle the future increase in vehicular volume. The major issue affecting future capacity concerns in the City of Troutdale is:

- Development of the former Alcoa Aluminum property now owned by the Port of Portland, which includes over 300 acres of developable land located north of the Troutdale Airport. Surrounding infrastructure must be improved to provide adequate access to these lands as they are developed.

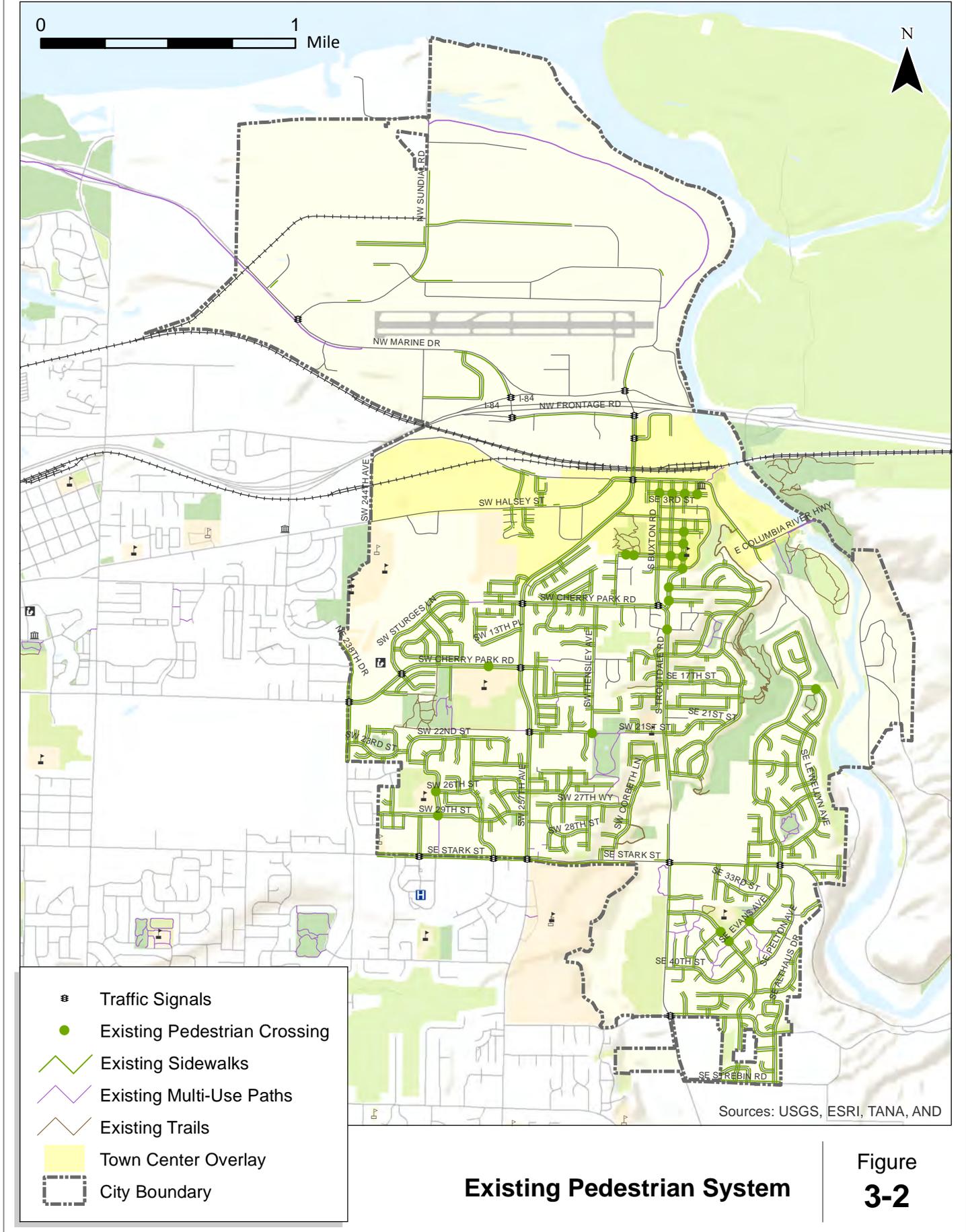
**Safety:** Transportation infrastructure must be safe and reliable for users of all modes, including pedestrians, bicyclists and motor vehicles. Identified safety issues in the existing conditions analysis include:

- Pedestrian crossings along 257<sup>th</sup> Avenue, within the town center area, and along all other corridors where pedestrian crossing opportunities are limited.
  - The EMCP identifies new pedestrian crossings improvements along 257<sup>th</sup> Avenue at intersections and mid-block crossing (RTP ID 10403).
- Four intersections are on the most recent County Safety Priority Index System (SPIS) rankings, meaning that these intersections have more severe safety issues than many other intersections in the County.

The following sections review existing conditions associated with each travel mode including pedestrian, bicycle, transit, motor vehicle and other modes (such as rail, marine and pipeline).

## PEDESTRIAN SYSTEM

The pedestrian system within Troutdale consists of sidewalks, multi-use paths and trails as well as marked and unmarked, signalized and unsignalized pedestrian crossings. Figure 3-2 illustrates the existing pedestrian system along with the location of major pedestrian generators and attractors such as schools and parks.



Existing Pedestrian System

Figure 3-2

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw\TSP\Figure 3-2\_Pedestrian.mxd - mbel - 10:03 AM 9/30/2013

## Pedestrian Facilities

As shown in Figure 3-2, a majority of the arterial and collector streets in Troutdale currently have continuous sidewalks on at least one side of the street. There are some locations where sidewalks are not connected; however, connectivity and pedestrian linkages are relatively good, particularly to parks and schools. A majority of the residential streets also have sidewalks on at least one side of the street, providing connections to major roadways and other neighborhoods.

A majority of the signalized intersections shown in Figure 3-2 currently have pedestrian push buttons that activate the traffic signals, signal heads that indicate when it is safe to cross, and striped crosswalks on two or more legs of the intersections, while a majority of the enhanced pedestrian crossings have signed and striped crosswalks. There are two regional multi-use paths shown in Figure 3-2; one that travels from Blue Lake Park along the south side of Marine Drive, terminating east of Sundial Road, and one that travels north of the Troutdale Airport along the flood control levee, terminating at Graham Road. Although there are several other multi-use paths and trails located throughout Troutdale, additional multi-use path connections between neighborhoods would help to complete the pedestrian grid system, and therefore should be considered in the TSP.

The area shown in yellow in Figure 3-2 has a Town Center overlay. Base on the Troutdale Development Code, town centers typically function as local activity areas and provide a range of local retail and service opportunities within a close proximity to each other and residents within a few miles of the designated area. Town centers offer special attractions of regional interest, simultaneously requiring and supporting a high-quality public transportation system and strong multi-modal arterial street access to regional centers and other major destinations. Troutdale's town center is characterized by a variety of small specialty retail shops, store front businesses and a historic grid street network. There are two parks and one school within the town center boundary. The majority of streets have sidewalks on both sides. Additional information on the town center is provided in Chapter 4.

## Pedestrian Activity

Pedestrian activity was recorded at the 11 study intersections in June 2004. The total number of pedestrians that crossed each intersection during the weekday p.m. peak hour are shown in Table 3-1.

**Table 3-1: PM Peak Hour Pedestrian Crossing Volumes at Study Intersections**

| Intersection  | Pedestrian PM Peak Hour Volume | Intersection                     | Pedestrian PM Peak Hour Volume |
|---|--------------------------------|----------------------------------|--------------------------------|
| Buxton Road/Historic Columbia River Highway             | 38                             | I-84 eastbound ramps/Marine Road | 0                              |
| Marine Drive/Sundial Road                               | 0                              | I-84 eastbound ramps/Graham Road | 0                              |
| 257 <sup>th</sup> Drive/Cherry Park Road (south)        | 22                             | I-84 westbound ramps/Graham Road | 2                              |
| 257 <sup>th</sup> Drive/Historic Columbia River Highway | 19                             | Troutdale Road/Stark Street      | 44                             |
| Cherry Park Road/Buxton Street                          | 2                              | Troutdale Road/Cochran Road      | 0                              |
| I-84 westbound ramps/Marine Road                        | 2                              |                                  |                                |

The most significant pedestrian movements occur near retail, recreational, educational and town center areas, including Buxton Road, Troutdale Road, Cherry Park Road, and 257<sup>th</sup> Avenue. Along major roadways, such as Halsey Street and 257<sup>th</sup> Avenue, and heavy freight routes, such as Marine Drive, pedestrian crossings are limited to locations with traffic signal controls due to high motor vehicle volumes and speeds. The TSP should examine providing additional crossings and connections to the pedestrian system to improve crossing spacing along 257<sup>th</sup> Avenue and Stark Street.

## BICYCLE SYSTEM

The bicycle system within Troutdale consists of on-street bike lanes, shoulder bikeways, and off-street bike facilities, such as parking and wayfinding signs. Figure 3-3 illustrates the existing bicycle system along with the location of major bicycle generators and attractors such as schools and parks.

### Bicycle Facilities

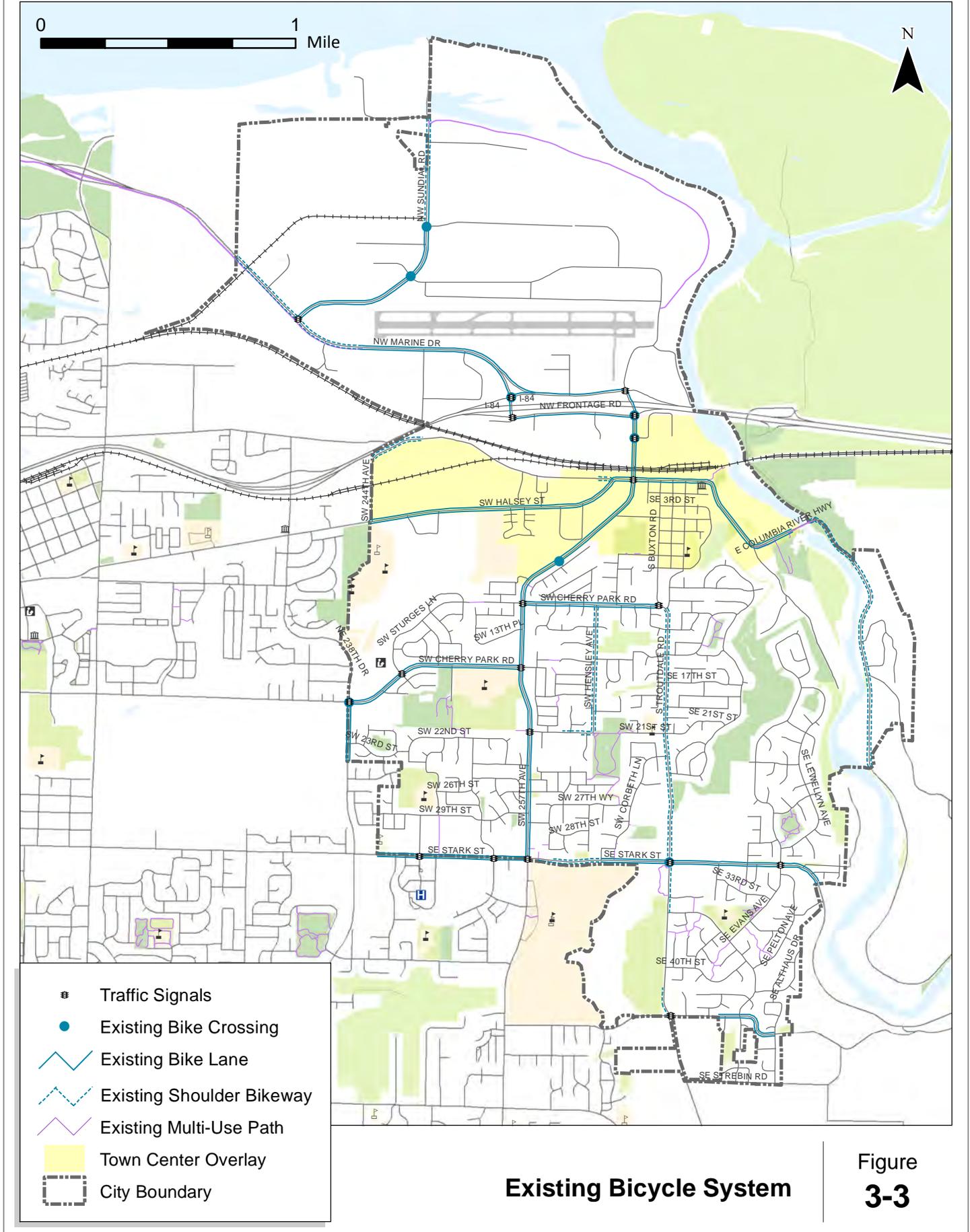
As shown in Figure 3-3, a majority of the collector and arterial streets in Troutdale currently provide on-street bike lanes or shoulder bikeways. Also shown, several major intersections currently provide bicycle crossings; these primarily consist of intersections with separate right-turn lanes where the on-street bike lane continues through the intersection. In general, the existing bicycle system currently provides adequate connections from neighborhoods to schools, parks, retail centers, and transit stops. Cyclists desiring to travel through the City can use the designated routes on the major streets or can share the road with motor vehicles on the lower volume, neighborhood streets to reach destinations. However, there are a few locations where new on-street bicycle lanes or other bicycle treatments, such as shared roadway pavement markings (sharrows) could improve the overall bicycle system.

### Bicycle Activity

Bicycle activity was recorded at the study intersections in June 2004. The total number of cyclists that travel through each intersection during the weekday p.m. peak hour is shown in Table 3-2.

**Table 3-2: PM Peak Hour Bicycle Crossing Volumes at Study Intersections**

| Intersection  | Bike PM Peak Hour Volume | Intersection                     | Bike PM Peak Hour Volume |
|---|--------------------------|----------------------------------|--------------------------|
| Buxton Road/Historic Columbia River Highway             | 0                        | I-84 eastbound ramps/Marine Road | 0                        |
| Marine Drive/Sundial Road                               | 0                        | I-84 eastbound ramps/Graham Road | 6                        |
| 257 <sup>th</sup> Drive/Cherry Park Road (south)        | 0                        | I-84 westbound ramps/Graham Road | 0                        |
| 257 <sup>th</sup> Drive/Historic Columbia River Highway | 0                        | Troutdale Road/Stark Street      | 7                        |
| Cherry Park Road/Buxton Street                          | 0                        | Troutdale Road/Cochran Road      | 2                        |
| I-84 westbound ramps/Marine Road                        | 0                        |                                  |                          |



H:\projects\125660 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 3-3\_Bicycle.mxd - mbell - 10:03 AM 9/30/2013

## TRANSIT SYSTEM

The public transportation system within Troutdale consists of fixed-route and dial-a-ride service. Frequent morning and evening peak hour service provides residents with the ability to use public transportation for daily commuting, while less frequent mid-day, Saturday, and Sunday service provides residents with the ability to use public transportation during non-commute times.

### Fixed-Route Service

TriMet is the primary service provider in the Portland metropolitan area and operates four fixed-route bus lines in Troutdale, including Line 77-Broadway/Halsey, Line 80-Kane/Troutdale Road, Line 81-Kane/257<sup>th</sup>, and to a lesser extent, Line 20-Burnside Stark. A brief description of each route is provided below:

- Line 77 provides service between the northern portion of Troutdale and the Portland City Center via the I-84 Frontage Roads, 257<sup>th</sup> Avenue, and Halsey Street. Service is provided Monday through Friday from 5:30 a.m. to 11:30 p.m. on approximately 15-minute headways during peak time periods and on 30-minute headways during all other times of the day. Service is also provided on Saturday and Sunday on a more limited basis.
- Line 80 provides service between Glenn Otto Park and the Gresham Transit Center via the Columbia River Highway, Buxton Road-Troutdale Road, and Stark Street. Service is provided Monday through Friday from 5:30 a.m. to 8:30 p.m. on approximately 30-minute headways. Service is also provided on Saturday and Sunday on a more limited basis.
- Line 81 also provides service between Glenn Otto Park and the Gresham Transit Center via the Columbia River Highway and 257<sup>th</sup> Avenue. Service is provided Monday through Friday from 6:30 a.m. to 6:00 p.m. on approximately 1-hour headways. Line 81 does not operate on Saturday and Sunday.
  - Lines 80 and 81 connect to several other fixed-route bus lines at the Gresham Transit Center as well as TriMet's Max Blue Line and Sandy Area Metro's Sandy to Gresham Bus Line.
- Line 20 provides service between the Beaverton Transit Center and the Gresham Transit Center via Stark Street in Troutdale. Service is provided Monday through Friday from 5:00 a.m. to 3:00 a.m. on approximately 15-minute headways. Service is also provided on Saturday and Sunday on a more limited basis.

Figure 3-4 illustrates the existing transit system, including TriMet's fixed-route bus lines and the location of bus stops and shelters. As shown in Figure 3-4, transit service is currently focused along a few major roadways and transit stops are located adjacent to all of the major intersections along each route with shelters in select locations.



### Transit Level of Service

The transit level-of-service analysis was performed in accordance with the methodology described in *TCRP Report 100: Transit Capacity and Quality of Service Manual (TCQSM)*. Of the six available measures, three were selected for this analysis as being most relevant to a long-range planning effort. Table 3-3 summarizes the TCQSM measures used and the ranges of values used to determine the LOS result for each measure.

**Table 3-3: Transit Capacity and Quality of Service Manual - Level of Service (LOS) Measures**

| Level of Service | Transit Capacity and Quality of Service Measures |                  |                  |
|------------------|--|------------------|------------------|
|                  | Service Frequency (minutes)                      | Hours of Service | Service Coverage |
| LOS A            | <10  | 19-24            | 90.0-100.0%      |
| LOS B            | 10-14  | 17-18            | 80.0-89.9%       |
| LOS C            | 15-20  | 14-16            | 70.0-79.9%       |
| LOS D            | 21-30  | 12-13            | 60.0-69.9%       |
| LOS E            | 31-60  | 4-11             | 50.0-59.9%       |
| LOS F            | >60  | 0-3              | <50.0%           |

### Service Frequency

From the user’s perspective, *service frequency* determines how many times an hour a user has access to transit service, assuming that service is provided within acceptable walking distance and at the times the user wishes to travel. Service frequency also measures the convenience of transit service to choice riders and is one component of overall transit trip time. Table 3-4 summarizes the transit level-of-service analysis results for service frequency.

**Table 3-4: Service Frequency Level-of-Service Analysis**

| Provider | Routes | Service Frequency | LOS |
|----------|--------|-------------------|-----|
| TriMet   | 77     | 15-30 minutes     | C-D |
| TriMet   | 80     | 30 minutes        | D   |
| TriMet   | 81     | 60 minutes        | E   |
| TriMet   | 20     | 15 minutes        | C   |

As shown, existing services currently operate at LOS C-E. At LOS C, service frequencies provide a reasonable choice of travel times, but the wait involved if a bus is missed becomes long. At LOS D, service is only available about twice per hour and requires passengers to adjust their routines to fit the transit service provided. At LOS E, service is provided approximately once per hour and puts passengers in the position of potentially spending long periods of time waiting for service and/or rearranging schedules to be able to take transit.

### Hours of Service

*Hours of service*, also known as “service span,” is the number of hours during the day when transit service is provided along a route, a segment of a route, or between two locations. It plays an important role in determining the availability of transit service to potential users. If transit service is not provided at the time of day a potential passenger needs to take a trip, it does not matter where or how often transit service is provided the rest of the day. Table 3-5 summarizes the transit level-of-service analysis results for hours of service.

**Table 3-5: Hours of Service Level-of-Service Analysis**

| Provider | Routes | Service Frequency | LOS |
|----------|--------|-------------------|-----|
| TriMet   | 77     | 18 hours          | B   |
| TriMet   | 80     | 15 hours          | C   |
| TriMet   | 81     | 12 hours          | D   |
| TriMet   | 20     | 22 hours          | A   |

As shown, existing services currently operate at LOS A-D. At LOS A service is available for most or all of the day. Workers who do not work traditional 8-to-5 jobs receive service and all riders are assured that they will not be stranded until the next morning if a late-evening bus is missed. At LOS B service is available late into the evening, which allows a range of trip purposes other than commute trips to be served. At LOS C, service runs only into the early evening, but still provides some flexibility in one’s choice of time for the trip home. At LOS D, service meets the needs of commuters who do not have to stay late and still provides service during the middle of the day for others.

### Service Coverage

*Service Coverage* is a measure of the area within walking distance of transit service. Areas must be within 1/4-mile of a bus stop or 1/2 mile of a transit station to be considered an area served by transit. As with the other availability measures, service coverage does not provide a complete picture of transit availability by itself, but when combined with frequency and hours of service, it helps identify the number of opportunities people have to access transit from different locations. Service coverage LOS evaluates the percentage of transit-supportive areas—areas that would typically produce the majority of a system’s ridership—that are served by transit.

To qualify as a transit-supportive area (TSA) one of the following thresholds must be met:

- Minimum population density of 3 households/gross acre; or
- Minimum job density of 4 employees/gross acre.

Service coverage is an all-or-nothing issue for transit riders—either service is available for a particular trip or it is not. As a result, there is no direct correlation between service coverage LOS and what a passenger would experience for a given trip. Rather, service coverage LOS reflects the number of potential trip origins and destinations available to potential passengers.

Figure 3-5 displays the transit level-of-service analysis results for service coverage based on population and employment estimates for 2000.. Areas defined as transit supportive that have service are shown in green. Areas defined as transit supportive that are lacking service are shown in red. Areas that have transit service, but do not qualify as a TSA, are shown in orange. A majority of the areas shown in red would require additional transit routes or the development of new pathway connections to existing transit routes in order to be served.

The percentage of TSA’s served in Troutdale and the corresponding level of service has been identified using the Transit Level of Service (TLOS) methodology. As shown in Table 3-6, the percent of transit supportive areas served is less than 50 percent in terms of both households and employment areas. The corresponding LOS is F.

**Table 3-6: Service Coverage Analysis**

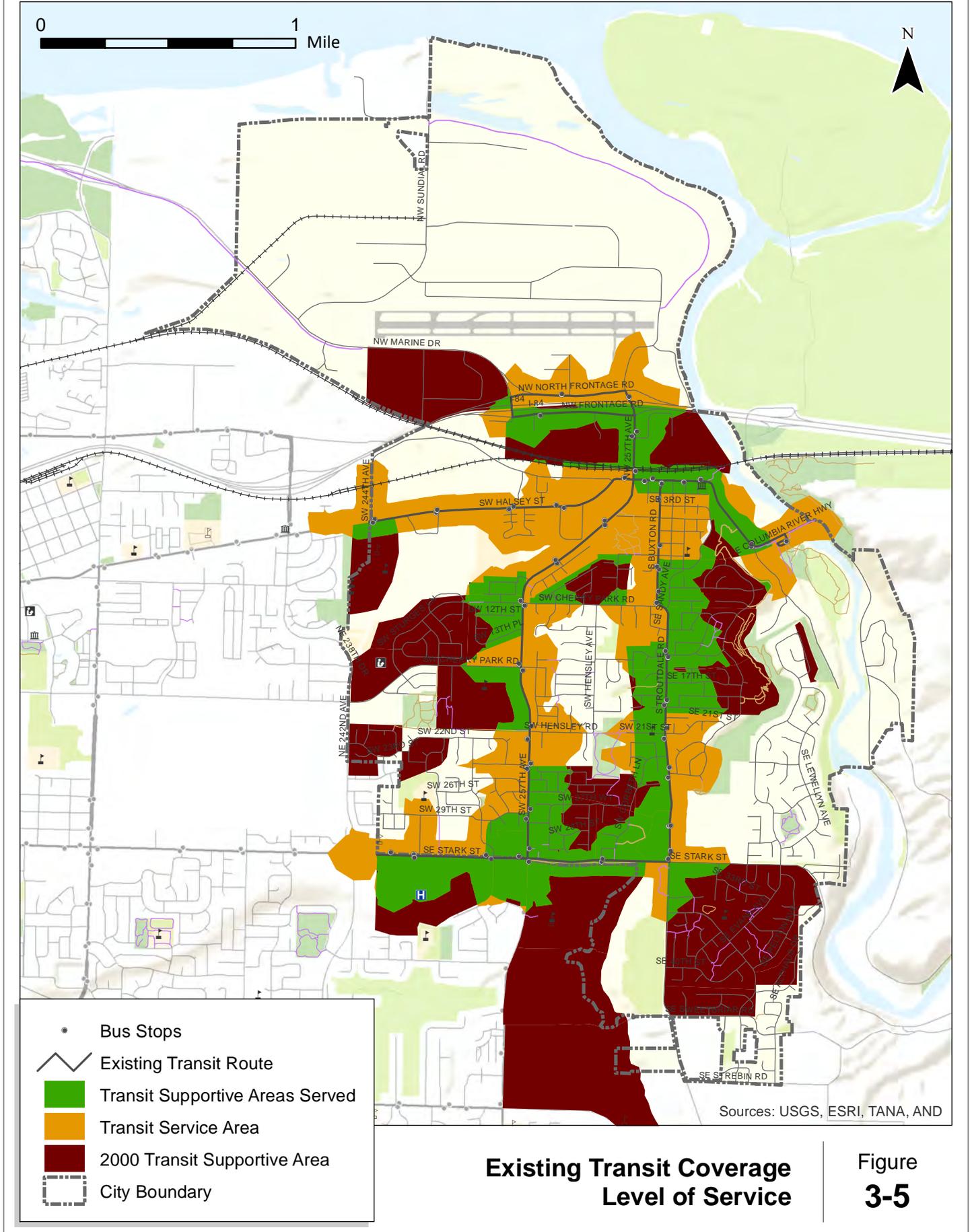
| Area Type  | Households | Employment |
|--|------------|------------|
| Transit Supportive Areas (TSA) <sup>1</sup>      | 2,699      | 5,260      |
| Transit Supportive Areas Served <sup>2</sup>     | 1,339      | 2,485      |
| Transit Supportive Areas NOT Served <sup>3</sup> | 1,360      | 2,775      |
| Percent TSA Served by Transit                    | 49.6       | 47.2       |
| Level of Service                                 | F          | F          |

- 1. Areas shown in green and red in Figure 3-5.
- 2. Areas shown in green in Figure 3-5.
- 3. Areas shown in red in Figure 3-5.

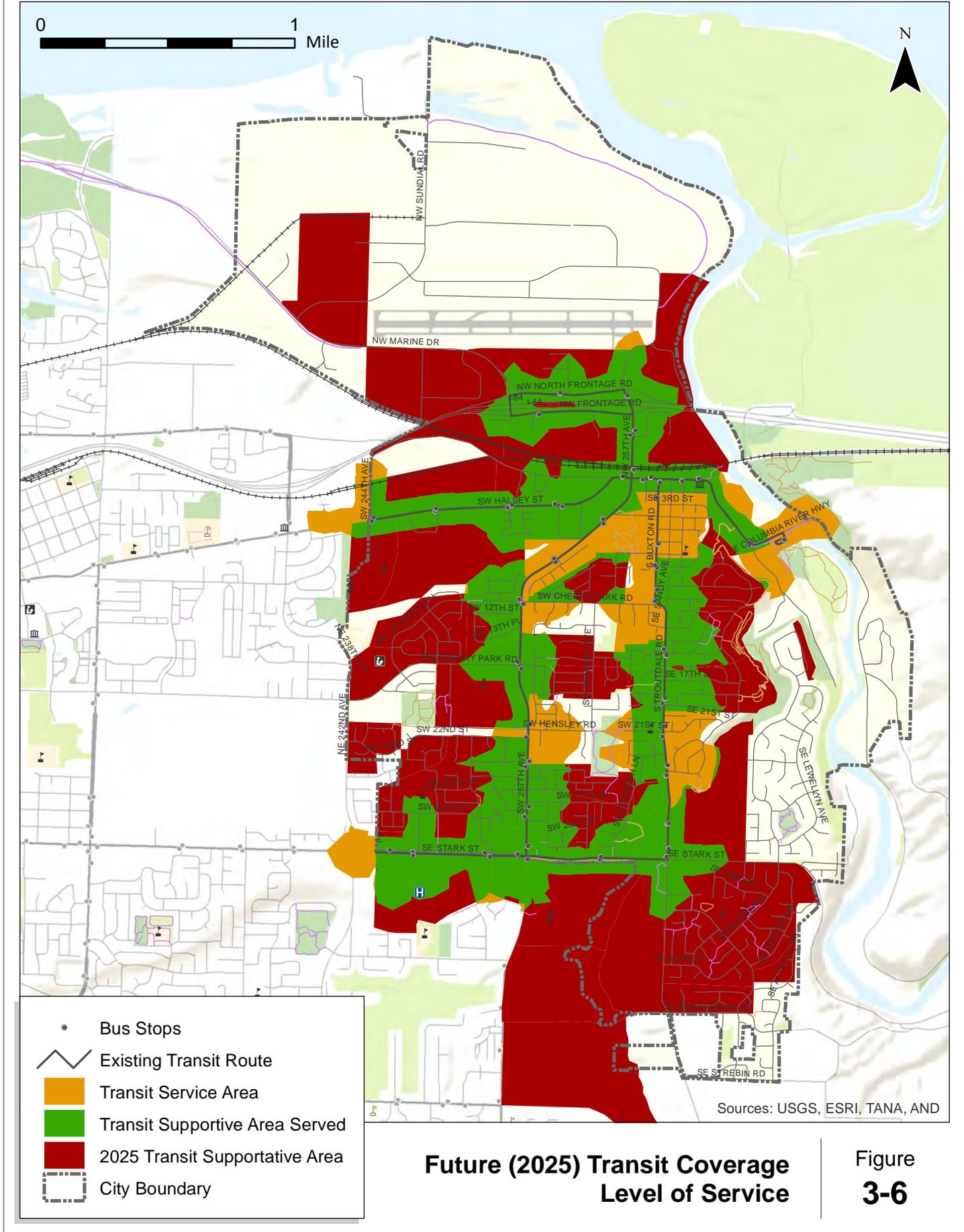
As shown in Table 3-6, 1,360 households and 2,775 jobs are located within areas that do not have transit service. These areas currently have a household and/or employment density that can support transit service and therefore should be included in future efforts to improve service routes and stop locations.

***Future Transit Service Coverage***

The future transit level-of-service analysis assumes that existing service frequencies, service hours, and service coverage is the same in the future. The only difference is the population and employment growth assumptions included in the 2025 regional traffic model and the resulting transit supportive areas. Figure 3-6 displays the transit level-of-service analysis results for service coverage. As shown, the number of transit supportive areas is expected to increase throughout most of Troutdale. While many of these areas are expected to be served by existing transit services, the remaining areas will require additional service routes or connections to existing routes in order to be served.



H:\proj\125660 - Troutdale TSP Update & Facilities Plan\GIS\Draft TSP\Figure 3-5\_Transit.mxd - mbell - 10:04 AM 9/30/2013



**Future (2025) Transit Coverage Level of Service**

**Figure 3-6**

H:\p\file\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draft TSP\Figure 3-6\_FT\_Transit.mxd - mbell - 10:05 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

## **Ridership**

Average weekday ridership data was obtained from TriMet that reflects the average number of boardings and alightings that occurred at each stop in Troutdale in Spring 2012. TriMet typically considers locating transit shelters at stops with 35 or more boarding's per day. Based on a review of the TriMet ridership data, Troutdale has a few stops that meet this threshold, but do not currently have shelters. These stops include:

- Stop 8747: Historic Columbia River Highway & SW Kendall Road
- Stop 9792: Stark Street & SW Sundial Avenue
- Stop 5398: Stark Street & McGinnis Avenue
- Stop 13532: 257<sup>th</sup> Avenue & Historic Columbia River Highway

## **Dial-a-Ride Service**

TriMet's LIFT Paratransit Program provides dial-a-ride service to residents who are unable to use regular fixed-route services due to disabilities or disabling health conditions. The service is offered within the service area and hours of service provide by the fixed-route lines.

## **MOTOR VEHICLES**

The street system within Troutdale serves a majority of all trips over multiple modes. In addition to motorists, pedestrians, bicyclists, and public transit riders all use the street system to access areas locally and regionally.

## **Jurisdiction**

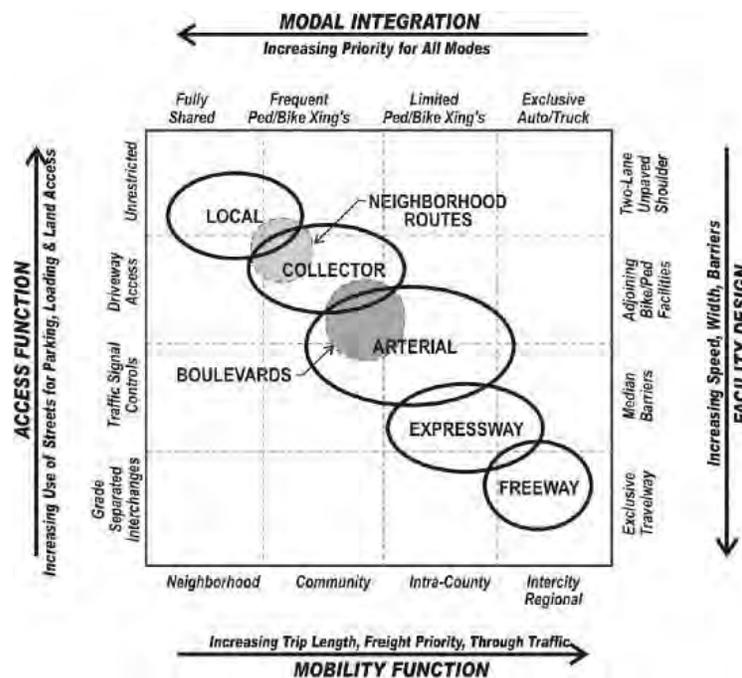
Streets within Troutdale are owned and operated by three separate jurisdictions, including Multnomah County, the Oregon Department of Transportation (ODOT), and the City of Troutdale. Each jurisdiction is responsible for determining the street system's functional classifications, defining its major design and multimodal features, and approving construction and access permits. Coordination is required among the three jurisdictions to ensure that the street system is planned, operated, maintained, and improved to safely meet public needs. Figure 3-7 illustrates the jurisdiction of the streets within Troutdale. As described below, all of the arterial and collector streets are owned and operated by either ODOT or Multnomah County, while all the neighborhood and local streets are owned and operated by the City of Troutdale.



### Functional Classification

A street’s functional classification reflects its role in the transportation system and defines desired operational and design characteristics such as right-of-way requirements, pavement widths, pedestrian and bicycle features, and driveway (access) spacing standards. The functional classification system within Troutdale is designed to serve transportation needs within the community.

The schematic diagram illustrates the competing functional nature of roadway facilities as it relates to access, mobility, multi-modal transport, and facility design. The diagram is useful to understand how worthwhile objectives can have opposing effects. For example, as mobility is increased (bottom axis), the provision for non-motor vehicle modes (top axis) is decreased accordingly. Similarly, as access increases (left axis), the facility design (right axis) dictates slower speeds, narrower travelways, and non-exclusive facilities. The goal of selecting functional classes for particular roadways is to provide a suitable balance of these four competing objectives. The diagram shows that as street classes progress from local to collector to arterial to freeway (top left corner to bottom right corner) the following occurs:



- Mobility Increases – Longer trips between destinations, greater proportion of freight traffic movement, and a higher proportion of through traffic.
- Integration of Pedestrian and Bicycle Decreases – Provisions for adjoining sidewalks and bike facilities are required up through the arterial class, however, the frequency of intersection or mid-block crossings for non-motorized vehicles steadily decreases with higher functional classes. The expressway and freeway facilities typically do not allow pedestrian and bike facilities adjacent to the roadway and any crossings are grade-separated to enhance mobility and safety.

- Access Decreases– The shared uses for parking, loading, and direct land access is reduced. This occurs through parking regulation, access control and spacing standards (see opposite axis).
- Facility Design Standards Increase – Roadway design standards require increasingly wider, faster facilities leading to exclusive travelways for autos and trucks only. The opposite end of the scale is the most basic two-lane roadway with unpaved shoulders.

Two additional areas are noted on the diagram for Neighborhood Routes and Boulevards that span two conventional street classes.

The existing Troutdale functional class system for roadway facilities is shown in Figure 3-8. As shown, a majority of the streets classified as collector or higher offer continuous connections throughout the city. The only exceptions are in areas where the street network has not yet been completed/connected. This TSP should address the limitations of the existing functional classifications and establish a system that better meets City and regional policy issues. A functional classification system based primarily on connectivity would allow the design flexibility to handle each of the issues identified above.

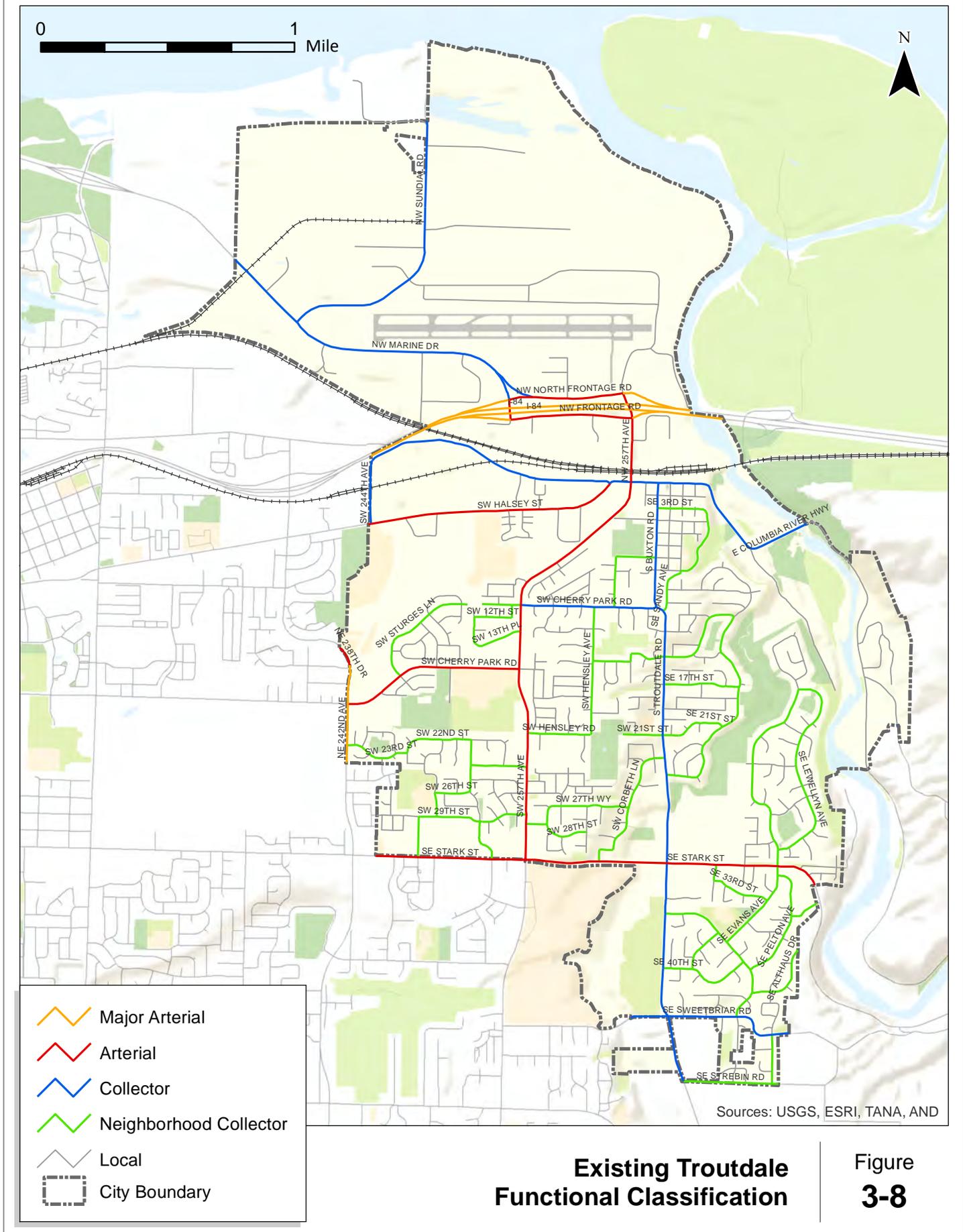
Table 3-7 summarizes the functional classifications of the arterial and collector streets within Troutdale and illustrates the overlapping ownership/maintenance and jurisdictional relationships that exist.

**Table 3-7: Functional Classification Comparison of Collector and Higher Streets by Jurisdiction**

| Roadway   | ODOT                  | Multnomah County              | Troutdale      | Metro              |
|---|-----------------------|-------------------------------|----------------|--------------------|
| I-84  | <b>Interstate</b>     | -                             | Major Arterial | Principal Arterial |
| Marine Drive  | -                     | <b>Major Collector</b>        | Collector      | -                  |
| Frontage Roads                                      | <b>Minor Arterial</b> | -                             | Arterial       | -                  |
| Sundial Road  | -                     | <b>Major Collector</b>        | Collector      | -                  |
| Columbia River Highway (west of the Sandy River)    | -                     | <b>Major Collector</b>        | Collector      | -                  |
| Columbia River Highway (east of the Sandy River)    | <b>Minor Arterial</b> | -                             | Local Street   | Rural Arterial     |
| Halsey Street                                       | -                     | <b>Minor Arterial</b>         | Arterial       | Minor Arterial     |
| Cherry Park Road (west of 257 <sup>th</sup> Avenue) | -                     | <b>Major Collector</b>        | Arterial       | Minor Arterial     |
| Cherry Park Road (east of 257 <sup>th</sup> Avenue) | -                     | <b>Major Collector</b>        | Collector      | -                  |
| Woodard Road  | -                     | <b>Neighborhood Collector</b> | Local Street   | -                  |
| Stark Street (west of Troutdale Road)               | -                     | <b>Major Arterial</b>         | Arterial       | Major Arterial     |
| Stark Street (east of Troutdale Road)               | -                     | <b>Minor Arterial</b>         | Arterial       | Minor Arterial     |
| Sweetbriar Road                                     | -                     | <b>Neighborhood Collector</b> | Collector      | -                  |
| 257 <sup>th</sup> Avenue                            | -                     | <b>Major Arterial</b>         | Arterial       | Major Arterial     |
| Troutdale Road                                      | -                     | <b>Major Collector</b>        | Collector      | -                  |
| Buxton Road   | -                     | <b>Major Collector</b>        | Collector      | -                  |

Note: Roadways shown in bold indicate ownership/maintenance responsibilities. Sources: Oregon Department of Transportation, Multnomah County Functional Classification of Trafficways, 2005 City of Troutdale Transportation System Plan, Metro 2035 Regional Transportation Plan.

As shown in Table 3-7, the following streets currently have conflicting classifications:



- Historic Columbia River Highway (east of the Sandy River) – This segment of the Historic Columbia River Highway is an ODOT facility and is currently classified as a minor arterial by ODOT, a rural arterial by Metro, and as a local street by the City of Troutdale. For consistency purposes, the TSP update should reclassify this segment of the Historic Columbia River Highway to an arterial.
- Cherry Park Road (west of 257th Avenue) – This segment of Cherry Park Road is a Multnomah County facility and is currently classified as a major collector by Multnomah County, an arterial by the City of Troutdale, and a minor arterial by Metro. For consistency purposes, the TSP update should reclassify this segment of Cherry Park Road as a collector.
- Woodard Road is a Multnomah County facility and is currently classified as a major collector by Multnomah County and as a local street by Troutdale. For consistency purposes, the TSP update should reclassify Woodard Road as a collector.

In addition, given the lack of a continuous east-west connection between Hensley Road and 21<sup>st</sup> Street, the TSP update should reclassify 21<sup>st</sup> Street as a local street west of Troutdale.

A general functional classification issue not related to Troutdale specifically involves when developments are proposed within the allowed range of uses in a comprehensive plan, but the estimated added demand exceeds functional class parameters for the fronting county streets. For example, a high intensity use such as a regional shopping center, sports facility, or medical center may require more travel lanes on a collector facility than the three lanes typically allowed.

## Street Connectivity

A well-connected transportation network minimizes the need for out-of-direction travel while supporting an efficient distribution of travel demand among multiple parallel roadways. The most common example of an efficient transportation network is the traditional grid system, with north-south and east-west streets spaced at generally equal distances. SW 242<sup>nd</sup> Avenue, SW 257<sup>th</sup> Avenue, SW Halsey Street, SW Cherry Park Road – west of SW 257<sup>th</sup> Avenue, and SE Stark Street are all part of a larger grid system that provides connectivity on a regional level as well as access within Troutdale. There are currently several exceptions to the grid within Troutdale, primarily due to topographical or other natural constraints as well as existing development patterns.

### **Arterial Street Connectivity**

The RTP provides designations for four types of arterials, including principal arterials, major arterials, minor arterials, and rural arterials; each of which are located within Troutdale. As shown in Table 3-7, I-84 is the only principal arterial that travels through Troutdale, SW 257<sup>th</sup> Avenue and SE Stark Street – west of SW 257<sup>th</sup> Avenue are the only major arterials, NE Halsey Street, SW Cherry Park Drive – west of SW 257<sup>th</sup> Avenue, and SE Stark Street – east of SW 257<sup>th</sup> Avenue are the only minor arterials, and the small portion of the E Columbia River Highway that travels through Troutdale east of the Sandy River is the only rural arterial.

Based on the RTP, arterials are intended to provide general mobility for travel within the region as well as connect major commercial, residential, industrial, and institutional centers. Arterials are usually spaced about 1-mile apart and are designed to accommodate motor vehicle and truck traffic as well as pedestrians, bicyclists, and transit riders. Figure 3-9 illustrates the existing deficiencies in the arterial street system spacing within Troutdale.

As shown in Figure 3-9, many of the arterials located within Troutdale meet the RTP's arterial spacing guidelines. However, there is a need for at least two new arterials within the city, including one located approximately 1-mile east of SW 257<sup>th</sup> Avenue and one located approximately 1-mile north of SE Stark Street. These potential connections could provide the needed north-south and east west connectivity between areas located within Troutdale and those located throughout the region. However, in addition to significant right-of-way and development costs, other constraints include existing development patterns, topography and the natural environment.

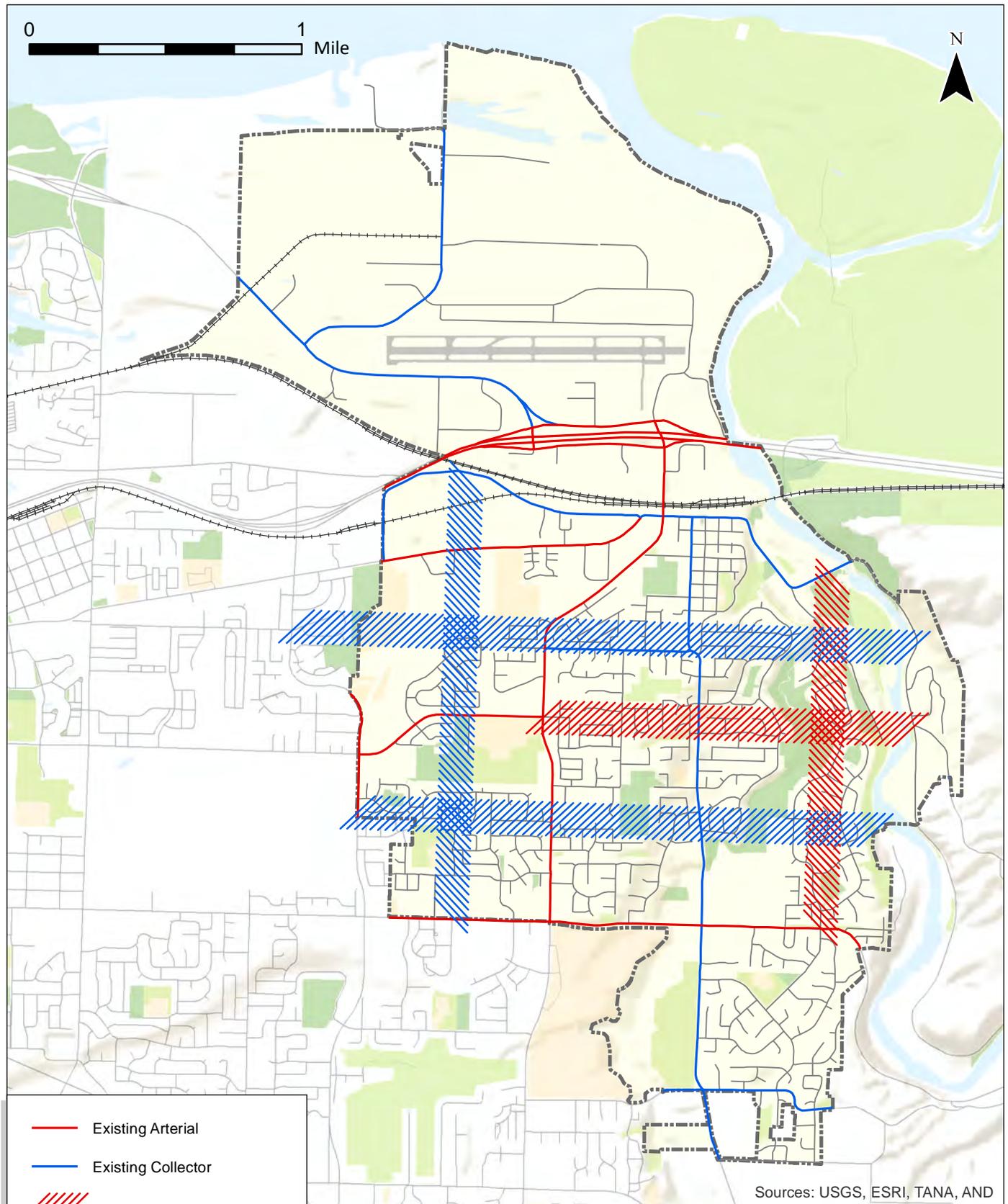
### **Collector Streets**

The RTP identifies collector streets as general access streets for neighborhood circulation and as support streets for the regional transportation network. Connectivity at this level is especially important for pedestrian and bicycle trips. The RTP recommends a maximum spacing of 1/2 mile for collectors in order to encourage local traffic to use them instead of higher order facilities. Figure 3-9 illustrates the existing deficiencies in the collector street system.

As shown in Figure 3-9, there is a need for at least three new collectors within the city, including one located approximately ½ mile north and one located ½ mile south of Cherry Park Road and one located approximately ½ mile west of SW 257<sup>th</sup> Avenue. Each of these potential connections would enhance the north-south and east-west connectivity within the city and reduce reliance on the arterial street system. However, development of additional collector corridors is difficult due to significant right-of-way and development costs, existing development patterns, topography and the natural environment.

### **Local Street**

Based on the RTP, local streets primarily provide direct access to adjacent land uses and therefore serve an important role for supporting pedestrian and bicycle travel. The RTP recommends a maximum spacing of 1/10 mile for local streets and suggests limiting cul-de-sacs to 200 feet in length. Much of the local street system within Troutdale is characterized by short, indirect streets with numerous cul-de-sacs. Although this type of system can have the effect of limiting traffic speeds and volumes on local streets, it can also result in indirect travel paths and a reliance on arterials for local trips. Based on a review of the local street system, opportunities to improve and expand local street connectivity exist in several areas throughout Troutdale. The Needs, Opportunities, Constraints, and tools report provided in the Appendix provides additional information related to Local Street Connectivity.



-  Existing Arterial
-  Existing Collector
-  Arterial Gap of Over 1-Mile
-  Collector Gap of Over 1-Mile

Sources: USGS, ESRI, TANA, AND

**RTP Spacing Standards**

**Figure 3-9**

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 3-9\_Spacing.mxd - mball - 10/07 AM 9/30/2013

## Roadway Characteristics

Field inventories were conducted to determine the characteristics of the major roadways in Troutdale. Data collected includes posted speed limit limits, number of travel lanes, and intersection controls. These characteristics define roadway capacity and operating speeds throughout the street system, which affects travel path choices for drivers in Troutdale.

The majority of roadways in Troutdale are posted at 25 miles per hour (mph) as they are local access roads. Arterial roadways such as 257<sup>th</sup> Avenue, Halsey Street, Cherry Park Road and Stark Street are posted at higher speeds ranging from 40 to 45 mph. Collector roadways such as Troutdale Road, Sweetbriar Road and Historic Columbia River Highway are posted at 35 to 40 mph. The segment of Historic Columbia River Highway between 257<sup>th</sup> Avenue and the Sandy River, which is the primary street through the central business district, is posted at 25 mph.

Figure 3-10 shows the existing number of travel lanes along each roadway in Troutdale. As shown, the widest roadways are 257<sup>th</sup> Avenue, Stark Street and Marine Drive, which generally have 5-lane cross sections. A small section of 242<sup>nd</sup> Drive has a 4-lane cross section and 238<sup>th</sup> Drive, the I-84 eastbound frontage road, and the section of Cherry Park Road from the west City limits to 257<sup>th</sup> Drive, each have a 3-lane cross section. The remaining roads in the City of Troutdale have 2-lane cross sections.

Figure 3-10 also shows the existing intersection controls at the study intersections. As shown, traffic signals exist along all of the major roadways within Troutdale, including Stark Street, 257<sup>th</sup> Avenue, Cherry Park Road, Troutdale Road, and the north and south Frontage Roads.

## Emergency Response Routes

Emergency fire services are provided in Troutdale by Gresham Fire and Emergency Services. GFES's Troutdale fire station is located at the corner of Cherry Park Road and Hensley Road. Response times are a high priority for emergency services, as patient care is time-sensitive. Arterial and collector roadways are utilized by GFES as emergency routes in providing service to Troutdale. Figure 3-11 shows the primary and secondary emergency response routes in Troutdale in conjunction with existing traffic calming devices. Generally, restrictive or deflective traffic calming devices (e.g. speed humps, raised intersections, and diverters) should not be located on primary emergency response routes.

## Motor Vehicle Volume

An inventory of peak hour traffic conditions was performed in the spring of 2004 as part of the 2005 TSP update and was augmented by traffic conditions calculated for the Troutdale Industrial Zoning District Traffic Study completed in August 2002. The traffic turn movement counts conducted as part of this inventory provided the basis for analyzing problem areas as well as establishing a base condition for future monitoring. Turn movement counts were conducted at 11 intersections during the weekday evening (4-6 PM) peak period to determine existing operating conditions. In addition, counts were conducted at three intersections during the weekend peak period. Study intersections were chosen in

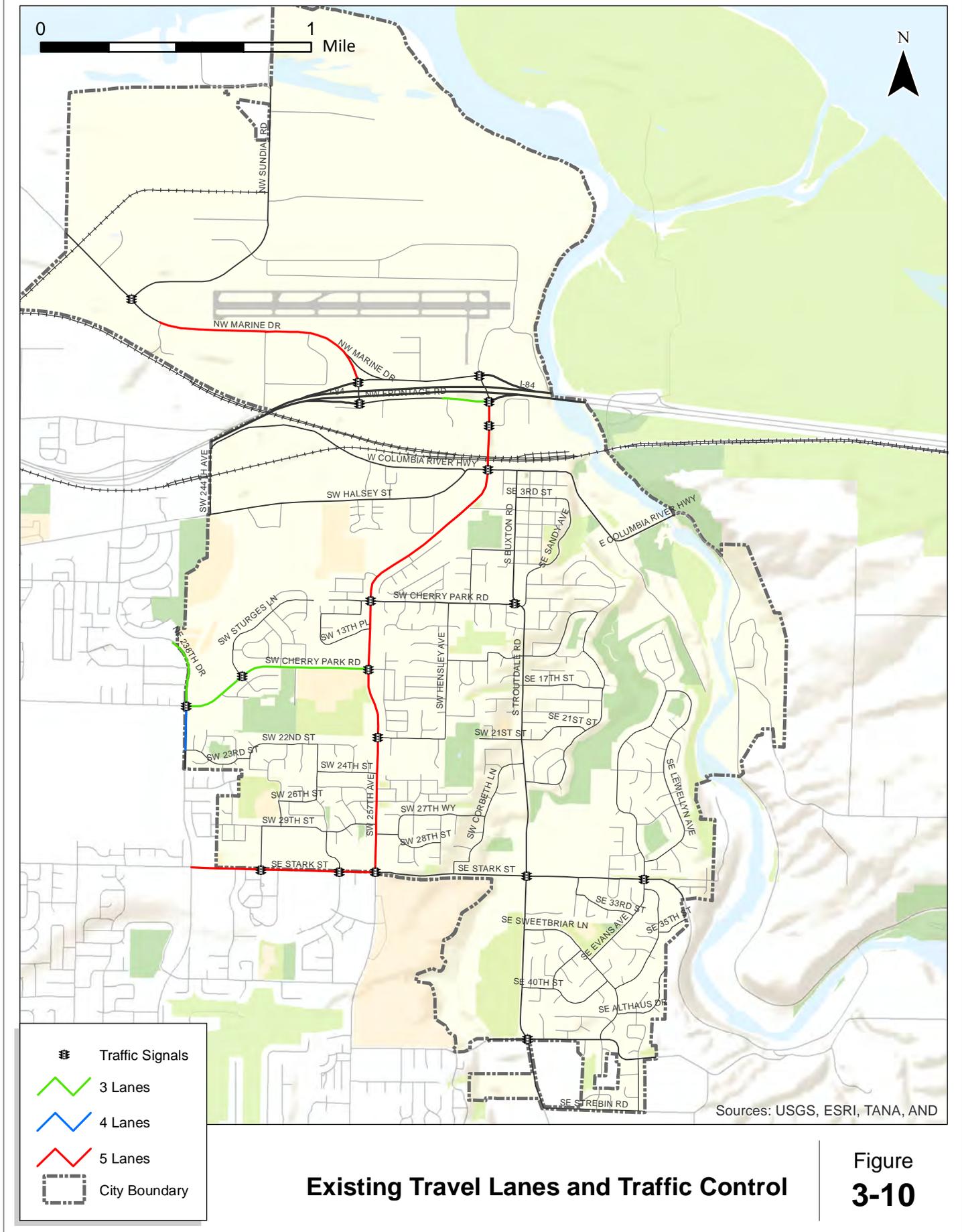


Figure 3-10

H:\proj\125660 - Troutdale TSP Update & Facilities Plan\GIS\Draw\TSP\Figure 3-10\_Lanes.mxd - rmbell - 10:07 AM 9/30/2013



coordination with the City of Troutdale staff in order to address major roadways and noted areas of concern.

Figure 3-12 shows the 2004 two-way traffic volumes in the Troutdale area. These volumes can vary from day to day and month to month based on weather, surrounding roadway conditions, and holidays. In addition, seasonal recreational traffic can vary the traffic volumes in the City.

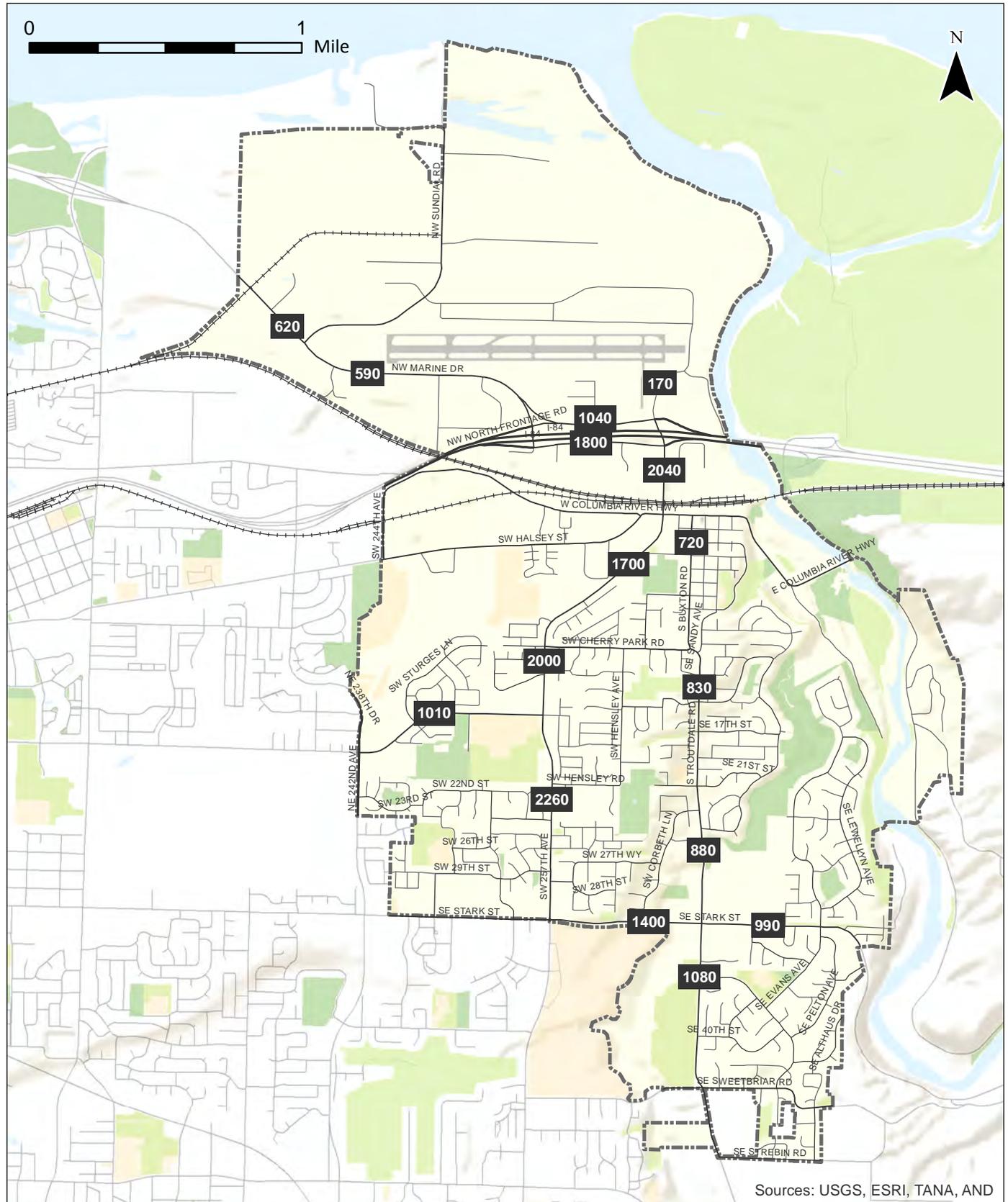
Land use plays a large role in driving transportation choices. Consequently, land use within the City of Troutdale is a key ingredient in understanding current transportation patterns and roadway traffic volumes. Figure 3-13 shows the land use zoning designations in the Troutdale area.

### Traffic Levels of Service

Level of Service (LOS) and volume to capacity (v/c) ratios are used as a measure of effectiveness for intersection operation. LOS is similar to a “report card” rating based upon average vehicle delay. Level of Service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of Service D and E are progressively worse peak hour operating conditions. Level of Service F represents conditions where average vehicle delay exceeds 80 seconds per vehicle entering a signalized intersection and demand has exceeded capacity. This condition is typically evident in long queues and delays. Unsignalized intersections provide levels of service for major and minor street turning movements. For this reason, LOS E and even LOS F can occur for a specific turning movement; however, the majority of traffic may not be delayed (in cases where major street traffic is not required to stop). LOS E or F conditions at unsignalized intersections generally provide a basis to study intersections further to determine availability of acceptable gaps, safety and traffic signal warrants.

A volume to capacity ratio (v/c) is the peak hour traffic volume at an intersection divided by the maximum volume that intersection can handle. For example, when a v/c is 0.80, peak hour traffic is using 80 percent of the intersections capacity. If traffic volumes exceed capacity, queues will form and will lengthen until demand subsides below the available capacity. When v/c is less than, but close to 1.0, intersection operation becomes unstable and small disruptions can cause traffic flow to break down.

The intersection turn movement counts conducted during the evening peak periods were used to determine the 2004 LOS based on the 2000 Highway Capacity Manual methodology for signalized and unsignalized intersections. Table 3-8 lists the 2004 weekday PM peak hour intersection operation at the 11 study intersections. Each of the study intersections operated at a LOS of D or better and had an acceptable v/c ratio. Figure 3-14 provides a visual summary of the study intersection operating conditions.



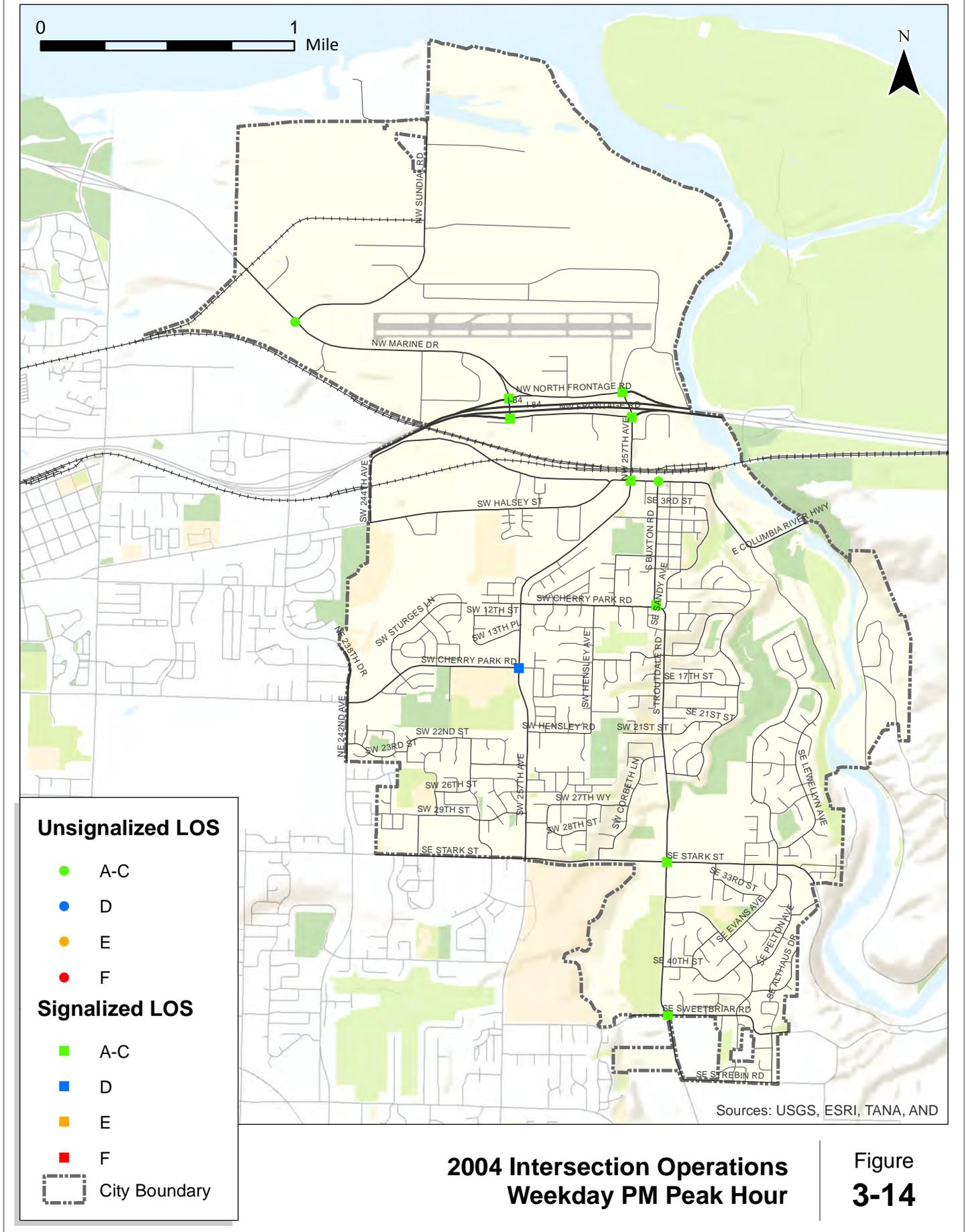
Sources: USGS, ESRI, TANA, AND

**XXX** Weekday PM Peak Hour  
 [Dashed Line] City Boundary

### 2004 Two-Way Traffic Volumes Weekday PM Peak Hour

Figure  
**3-12**





H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 3-14\_LOS.mxd - mball - 10:11 AM 9/30/2013

**Table 3-8: 2004 Weekday PM Peak Hour Intersection Level of Service**

| Intersection  | Level of Service | Average Delay (Sec.) | Volume/Capacity |
|---|------------------|----------------------|-----------------|
| <i>Unsignalized Intersection</i>                        |                  |                      |                 |
| Buxton Road/Historic Columbia River Highway             | A/C              |                      |                 |
| Marine Drive/Sundial Road                               | A/B              |                      |                 |
| <i>Signalized Intersections</i>                         |                  |                      |                 |
| 257 <sup>th</sup> Drive/Cherry Park Road (south)        | D                | 39.4                 | 0.91            |
| 257 <sup>th</sup> Drive/Historic Columbia River Highway | C                | 31.5                 | 0.68            |
| Cherry Park Road/Buxton Street                          | B                | 11.8                 | 0.44            |
| I-84 westbound ramps/Marine Road                        | B                | 11.0                 | 0.45            |
| I-84 eastbound ramps/Marine Road                        | B                | 15.4                 | 0.69            |
| I-84 eastbound ramps/Graham Road                        | B                | 18.3                 | 0.88            |
| I-84 westbound ramps/Graham Road                        | B                | 12.6                 | 0.45            |
| Troutdale Road/Stark Street                             | C                | 31.0                 | 0.76            |
| Troutdale Road/Cochran Road                             | B                | 13.8                 | 0.53            |

Notes: Unsignalized Intersection Level of Service:  
 A/A=Major Street turn LOS/Minor street turn LOS  
 Signalized and All-Way Stop Intersections:  
 Delay = Average vehicle delay in the peak hour for entire intersection in seconds.

Data was also collected for the weekend peak period for I-84 eastbound ramps/Graham Road, I-84 westbound ramps/Graham Road and 257<sup>th</sup> Drive/Historic Columbia River Highway intersections. Table 3-9 lists the existing weekend PM peak hour intersection operation at the 3 study intersections mentioned above.

**Table 3-9: 2004 Weekend PM Peak Hour Intersection Level of Service**

| Intersection  | Level of Service | Average Delay | Volume/Capacity |
|---|------------------|---------------|-----------------|
| <i>Signalized Intersections</i>                         |                  |               |                 |
| I-84 eastbound ramps/Graham Road                        | B                | 14.6          | 0.73            |
| I-84 westbound ramps/Graham Road                        | B                | 12.4          | 0.48            |
| 257 <sup>th</sup> Drive/Historic Columbia River Highway | C                | 29.5          | 0.58            |

The analysis conducted for the 2005 TSP update did not include adequate detail or simulation to address the I-84 interchange/frontage road/outlet mall access and queuing issues that commonly occur during midday or weekend periods. This issue was addressed in the I-84 Troutdale Interchange Area Management Plan (IAMP), which was conducted concurrent with the TSP. Findings from the IAMP are included in the future systems plans within this TSP.

**Traffic Safety**

Collision data was obtained from Multnomah County and used to create a high collision intersection list for intersections within Troutdale. The County ranks intersections in their Safety Priority Index System (SPIS) based on the most current three years of collision data. The SPIS rankings are derived from factors such as the number of collisions, the type of collisions, the collision severity, and traffic volumes.

The collision data only includes those collisions reported to the Oregon Department of Transportation. In addition, the County SPIS list only includes intersections that have at least one county controlled approach. Troutdale has four intersections on the County SPIS list (2000-2002). Table 3-10 lists each intersection.

**Table 3-10: SPIS Ranking of Troutdale TSP Study Area Intersections (1999-2001)**

| Ranking | Street                  | Cross Street                    | Number of Collisions | Fatal Collisions | Injury Collisions |
|---------|-------------------------|---------------------------------|----------------------|------------------|-------------------|
| 24      | 257 <sup>th</sup> Drive | Historic Columbia River Highway | 20                   | 0                | 7                 |
| 23      | Stark Street            | Troutdale Road                  | 21                   | 0                | 9                 |
| 19      | Stark Street            | 257 <sup>th</sup> Drive         | 42                   | 0                | 19                |
| 17      | Cherry Park Road        | 242 <sup>nd</sup> Avenue        | 31                   | 0                | 13                |

## OTHER TRAVEL MODES

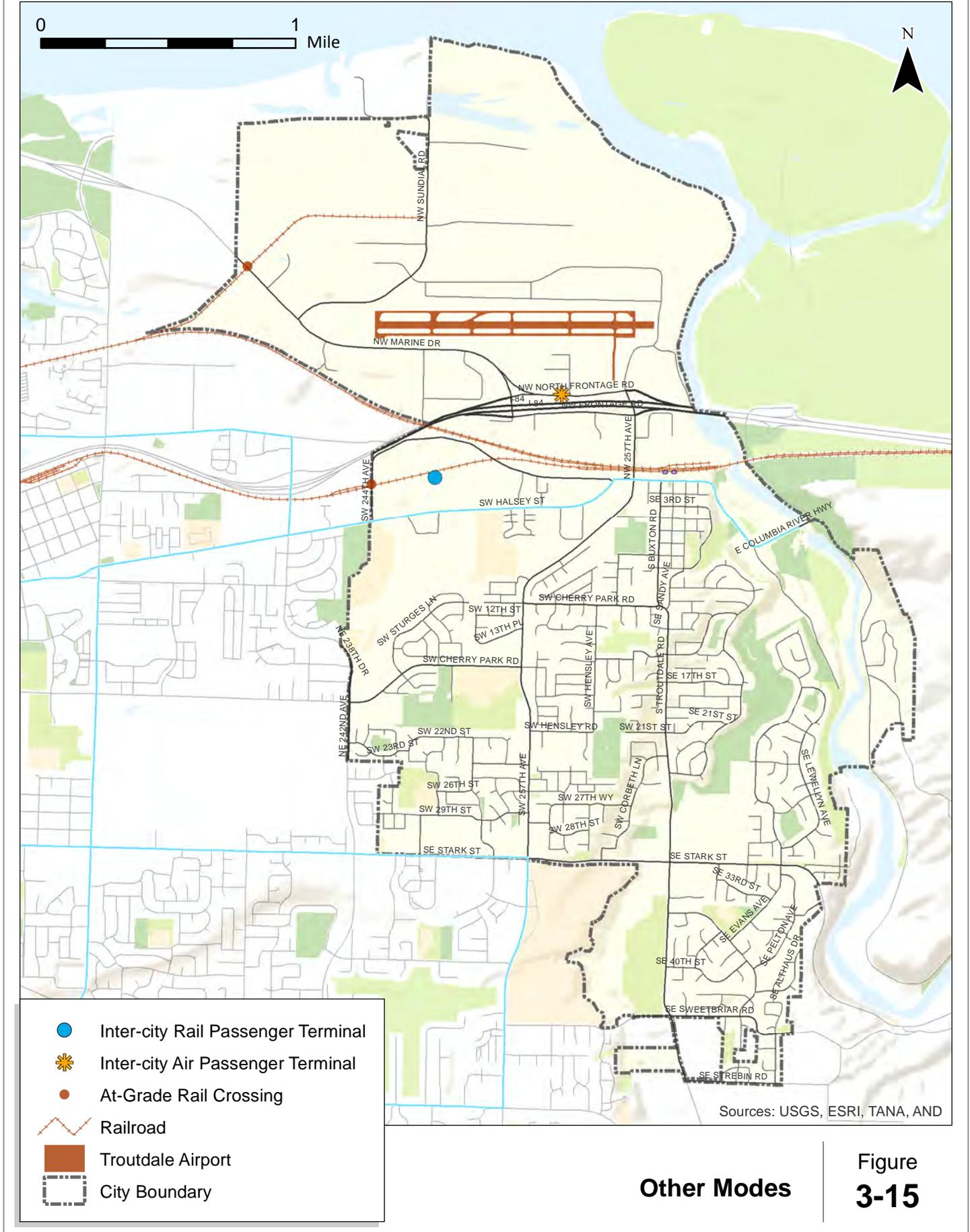
There are four other modes of transportation in Troutdale included in the TSP: freight, pipeline, air, and water. The Columbia River is located immediately north of the Troutdale city limits and serves as a major freight movement waterway. However, there is no port facility located within the Troutdale TSP study area. Figure 3-15 shows the rail, and air facilities in Troutdale.

### Freight

#### Truck

Efficient truck movement plays a vital role in the economical movements of raw materials and finished products. The designation of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. ODOT, Metro and the City of Troutdale all identify I-84 as a freight route. Metro and the City of Troutdale both identify Marine Drive, a small section of 257<sup>th</sup> Drive and a small section of Historic Columbia River Highway as freight routes. Metro also classifies Historic Columbia River Highway between I-84 and 257<sup>th</sup> Drive as a freight route. The City of Troutdale identifies through truck routes in Troutdale such as Stark Street, 257<sup>th</sup> Drive, Sundial Road and Graham Road.

The truck (heavy vehicle) volumes and percentages of the traffic stream were collected as part of the intersection turn movement counts. Figure 3-16 shows the PM peak hour truck volume and percentages at each of the study intersections. Truck volumes exceed 100 vehicles per hour (vph) along Marine Drive and the I-84 interchange intersections.



H:\proj\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draft TSP\Figure 3-15\_Other.mxd - mbell - 10:12 AM 9/30/2013

### Other Modes

### Figure 3-15

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center



## Rail

There are two rail lines, the Graham (2A) and the Kenton (2AE) that currently traverse the City of Troutdale, combining to transport over 53 million gross tons of freight in 2002. Both lines are owned and operated as a Class 1 Railroad by Union Pacific Rail Road (UPRR). The Graham (2A) line runs 17 trains a day with a maximum authorized speed of 50 mph. It has one at-grade rail crossing in the study area at 244<sup>th</sup> Avenue. The Kenton (2AE) line runs 30 trains a day at a maximum authorized speed of 50 mph. The Kenton has one at-grade rail crossing in the study area located along a spur track off of the main line that serves the former aluminum plant. There are no passenger trains currently running through Troutdale.

## Gas Pipelines

Two high-pressure natural gas pipelines serve Troutdale. One line runs north-south adjacent to 242<sup>nd</sup> Drive, crossing I-84 and continuing across the Columbia River into Washington. The second line runs east-west along Sandy Boulevard, until turning north at I-84 before terminating at the Kenton (2AE) UPRR rail line.

## Airport

The Troutdale Airport is located north of I-84 and is classified as a Category 2 – Business or High Activity General Aviation Airport. The runway is 150 feet wide by 5,400 feet long, and has over 30,000 annual aircraft operations (take offs and landings).

Pavement condition varies over the length of the runway and was found to be deficient in meeting runway pavement strength by the Oregon Aviation Plan. However, reconstruction is not planned for several years. The Troutdale Airport Master Plan predicts a modest 2 percent growth in both the number of operations and number of aircraft based in Troutdale over the next 10 years, concluding that current infrastructure is adequate to meet demand. Consequently, the airport is considering leasing some of the land it does not currently require to be “airport conducive” land uses.

## Chapter 4 Future Needs & Improvements



## 4. FUTURE NEEDS & IMPROVEMENTS

### OVERVIEW

This chapter presents the major elements of the Transportation System Plan (TSP) for the City of Troutdale, which addresses the City's existing transportation system needs and identifies additional facilities that will be needed to serve future growth in travel demand.

As indicated throughout this chapter, the pedestrian, bicycle, and transit system plans have been updated along with sections of the motor vehicle system plan to reflect all of the policy changes, regulatory requirements, and developments that have occurred since the adoption of the City's existing TSP in 2005. The revisions include updated Master Plans and Action Plans that reflect the current and future needs of the City.

### TRAVEL DEMAND AND LAND USE

Metro's urban area transportation forecast model was used in the development of the 2005 TSP, and more recently, in the Troutdale Interchange Area Management Plan (IAMP) and the East Metro Connections Plan (EMCP) to determine future traffic volumes in the Troutdale area. Metro's forecast model translates assumed land uses into person travel, selects modes, and assigns motor vehicles to the roadway network. These traffic volume projections form the basis for identifying potential roadway deficiencies and for evaluating alternative circulation improvements. As described throughout this chapter, the transportation improvement projects identified in the 2005 TSP were updated to reflect the conclusions and recommendations of a number of regional and local planning efforts, including the IAMP and the EMCP. The result is updated project lists that reflect the most recent modeling efforts by Metro using the latest population and employment forecasts as well as the most recent needs and perspectives of the City.

### Pedestrian System

*This section has been revised as part of a targeted effort to update the City's TSP to comply with recent changes to the Oregon Transportation Planning Rule (TPR) and the 2035 Regional Transportation Plan (RTP) as well as to incorporate the conclusions and recommendations of the Troutdale and Sweetbriar elementary Safe Routes to School plans along with a number of other regional and local planning documents. The revisions include an updated Pedestrian Master Plan and Pedestrian Action Plan that reflect the current and future needs of the City.*

The existing conditions analysis presented in Chapter 3 identifies the pedestrian system needs within Troutdale, including new sidewalk connections, new pedestrian crossings, and new multi-use paths and trails that augment and support the pedestrian system. The Pedestrian Master Plan presented in this section includes all of the potential pedestrian improvement projects identified within Troutdale while

the Pedestrian Action Plan includes all of the projects that are reasonably expected to be funded over the next 20 years.

### Coordination with Regional Plan Designations

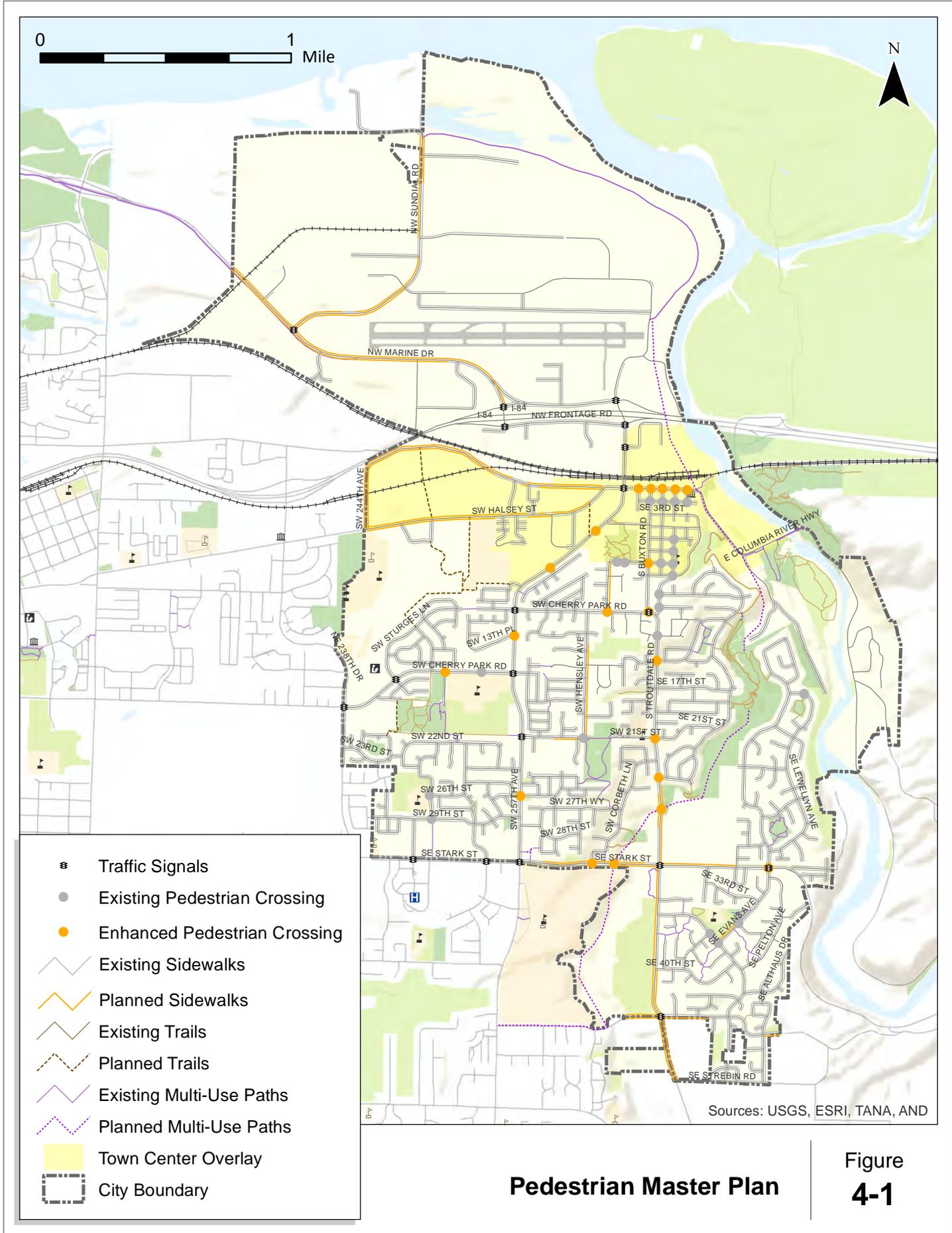
The 2035 RTP includes designations within Troutdale for pedestrian districts, transit/mixed use corridors, and regional trails as defined below:

- Pedestrian districts are areas of high or potentially high pedestrian activity where the region has placed a priority on creating a walkable environment. These areas should be designed to reflect an urban development and design pattern where walking is a safe, convenient, and enjoyable travel mode.
- Transit/mixed-use corridors are priority areas for pedestrian improvements. These corridors generate substantial pedestrian traffic near neighborhood retail developments, schools, parks, and bus stops. These corridors should be designed to promote pedestrian travel with features such as wide sidewalks with buffering from adjacent vehicle traffic, street crossings with special crossing amenities at select locations, special lighting, benches, bus shelters, awnings and street trees. Mid-block pedestrian crossings should also be used along these corridors to provide full access to transit stops.
- Regional trails are paved off-street regional facilities that accommodate pedestrian and bicycle travel and are used by people walking or bicycling to work, school, to access transit or travel to a store or library.

The 2040 Growth Concept Map includes Town Center and Corridor design types that correspond with the pedestrian district and transit/mixed-use corridors identified in the RTP. The City of Troutdale Development Code also includes a Town Center overlay that generally corresponds to the area designated as a pedestrian district in the RTP and requires new development in the area to comply with RTP guidelines. Figure 4-1 illustrates the area with a Town Center overlay in yellow. This area should include continuous sidewalk connections, pedestrian crossings, and other pedestrian amenities to be consistent with the RTP. By complying with the RTP designations and completing the pedestrian system within these areas, the Pedestrian Master Plan is consistent with plans developed by Metro, Multnomah County, and the State.

### Pedestrian Master Plan

The Pedestrian Master Plan was developed based on the pedestrian system needs identified in the existing conditions analysis and reflects all of the potential pedestrian improvement projects within Troutdale. The projects shown in Table 4-1 and on Figure 4-1 were evaluated based on the strategies identified below to create the Pedestrian Action Plan. Several of the projects identified in Table 4-1 and on Figure 4-1 are incorporated into the projects shown in the motor vehicle master plan.



- Traffic Signals
- Existing Pedestrian Crossing
- Enhanced Pedestrian Crossing
- Existing Sidewalks
- Planned Sidewalks
- Existing Trails
- Planned Trails
- Existing Multi-Use Paths
- Planned Multi-Use Paths
- Town Center Overlay
- City Boundary

Sources: USGS, ESRI, TANA, AND

### Pedestrian Master Plan

Figure 4-1

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 4-1\_Pedestrian.mxd - mbel - 10:15 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
 Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

**Table 4-1: Pedestrian Master Plan**

| Project ID | Location  | Type                | Project Description   | Cost (\$1,000) |
|------------|---|---------------------|---|----------------|
| P1         | Troutdale Road  | Complete Sidewalks  | Install sidewalks on both sides of Troutdale Road from Beaver Creek Lane to Stark Street  | -              |
| P2         | Troutdale Road  | Complete Sidewalks  | Install sidewalks on both sides of Troutdale Road from Stark Street to the south City limits  | -              |
| P3         | Stark Street  | Complete Sidewalks  | Install sidewalks on both sides of Stark Street from 257 <sup>th</sup> Avenue to Troutdale Road   | _*             |
| P4         | Stark Street  | Complete Sidewalks  | Install sidewalks on the north side of Stark Street from Troutdale Road to Hampton Avenue   | -              |
| P5         | Halsey Street   | Complete Sidewalks  | Install sidewalks on both sides of Halsey Street from the west city limits to Historic Columbia River Highway   | -              |
| P6         | Historic Columbia River Highway/244 <sup>th</sup>               | Complete Sidewalks  | Install sidewalks on both sides of Historic Columbia River Highway from 244 <sup>th</sup> Avenue to Halsey Street   | -              |
| P7         | Hensley Road  | Complete Sidewalks  | Install sidewalks on the south side of Hensley Road (E/W) from 150-feet west of Laurel Court to Hensley Road (N/S)  | \$45           |
| P8         | Hensley Road  | Complete Sidewalks  | Install sidewalks on the east side of Hensley Road (N/S) from Hensley Road (E/W) to Cherry Park Road consistent with the Troutdale Elementary SRTS Plan   | \$350          |
| P9         | Kings Byway   | Complete Sidewalks  | Install sidewalks on the east side of Kings Byway from Cherry Park Road to 7 <sup>th</sup> Street consistent with the Troutdale Elementary SRTS Plan      | \$50           |
| P10        | Evans Road  | Complete Sidewalks  | Install sidewalks on the northwest side of Evans Road from Sweetbriar Lane to 36 <sup>th</sup> Street consistent with the Sweetbriar Elementary SRTS Plan | \$45           |
| P11        | Sweetbriar Road   | Complete Sidewalks  | Install sidewalks on the south side of Sweetbriar Road from Troutdale Road to the east City limits  | -              |
| P12        | Marine Drive  | Complete Sidewalks  | Install sidewalks on both sides of Marine Drive from the west City limits to North Frontage Road  | -              |
| P13        | Sundial Road  | Complete Sidewalks  | Install sidewalks on both sides of Sundial Road from the north City limits to Marine Drive  | -              |
| P14        | 257 <sup>th</sup> Avenue at Hampton Heights Apartments Driveway | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at the Hampton Heights Apartments Driveway                                    | -              |
| P15        | 257 <sup>th</sup> Avenue at Jennings Lane                       | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at Jennings Lane  | -              |
| P16        | 257 <sup>th</sup> Avenue at 13 <sup>th</sup> Place              | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at 13 <sup>th</sup> Place   | -              |
| P17        | 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street             | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street  | -              |
| P18        | Buxton Road at 7 <sup>th</sup> Street                           | Pedestrian Crossing | Reconfigure existing crossing on Buxton Road at 7 <sup>th</sup> Street consistent with the Troutdale Elementary SRTS Plan                                 | -              |
| P19        | Buxton Road at Cherry Park Road                                 | Pedestrian Crossing | Reconfigure existing crossing on Buxton Road at Cherry Park Road consistent with the Troutdale Elementary SRTS Plan                                       | -              |
| P20        | Troutdale Road at Chapman Avenue                                | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Troutdale Road at Chapman Avenue consistent with the Troutdale Elementary SRTS Plan                    | -              |
| P21        | Troutdale Road at Beaver Creek Lane                             | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Troutdale Road at Beaver Creek Lane  | -              |
| P22        | Troutdale Road at Planned Regional Trail                        | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Troutdale Road at the planned Regional Trail   | -              |
| P23        | Cherry Park Road at Kings Byway                                 | Pedestrian Crossing | Install enhanced pedestrian crossings treatments on Cherry Park Road at Kings Byway consistent with the Troutdale Elementary SRTS Plan                    | -              |
| P24        | Cherry Park Road at Imagination Way                             | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Cherry Park Road at Imagination Way  | -              |

|              |  |                     |   |                |
|--------------|--|---------------------|---|----------------|
| P25          | Stark Street at Corbeth Lane                                   | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Stark Street at Corbeth Way  | -              |
| P26          | Stark Street at Planned Regional Trail                         | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Stark Street at the planned Regional Trail   | -              |
| P27          | Troutdale Road at 21 <sup>st</sup> Street                      | Pedestrian Crossing | Improve existing crossing on Troutdale Road at 21 <sup>st</sup> Street consistent with the Sweetbriar Elementary SRTS Plan                    | \$60           |
| P28          | Evans Avenue at Stark street                                   | Pedestrian Crossing | Improve existing crossing at the Evans Avenue/Stark Street intersection consistent with the Sweetbriar Elementary SRTS Plan                   | -              |
| P29          | 40 Mile Regional Trail   | Multi-Use Path      | Install a multi-use path from Columbia/Sandy River Trail to downtown Troutdale  | --             |
| P30          | Columbia Park Trail  | Trail               | Improve existing trail from 18 <sup>th</sup> Way to 22 <sup>nd</sup> Street   | \$75           |
| P31          | Sturges Trail  | Trail               | Install a trail from Sturges Lane to 257 <sup>th</sup> Avenue   | \$230          |
| P32          | Edgefield Trail (North of Halsey Street)                       | Trail               | Install a trail from Edgefield's east access driveway to Historic Columbia River Highway  | -              |
| P33          | Edgefield Trail (South of Halsey Street)                       | Trail               | Install a trail from Edgefield's east access driveway to the planned Sturges Trail  | -              |
| P34          | Halsey Street/Sturges Connector Trail                          | Trail               | Install a trail from Halsey Street to the planned Sturges Trail   | -              |
| P35          | Halsey/257 <sup>th</sup> Connector Trail                       | Trail               | Install a trail from Halsey Street to 257 <sup>th</sup> Avenue  | -              |
| P36          | Sandy River and Springwater Area Connections Trail             | Trail               | Install a trail from Mt. Hood Community College to Historic Columbia River Highway  | -              |
| P37          | Historic Columbia River Highway                                | Curb Extension      | Install curb extensions along Historic Columbia River Highway at Kendal Avenue, Buxton Avenue, Dora Street, Harlow Avenue, and Kibling Avenue | \$240          |
| P38          | Sandy River and Springwater Area Connections Trail Master Plan | Trail               | Develop a master plan for the Beaver Creek Trails to determine the alignment/recommended design treatments                                    | -              |
| P39          | Hewitt Neighborhood Trail                                      | Multi-Use Path      | Complete the multi-use path that connects the Hewitt neighborhood to Stark Street to the south and 257 <sup>th</sup> to the west.             | \$25           |
| <b>Total</b> |  |                     |   | <b>\$1,120</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..  
 \* The City of Troutdale's contributions to these project costs are included in the Motor Vehicle Action Plan.

As shown in Table 4-1, the pedestrian improvement projects consist of installing new sidewalk connections, pedestrian crossings, and multi-use paths and trails. While several of the projects can be constructed within existing City right-of-way, others will require additional right-of-way to be developed. In addition, while several of the projects are located along Multnomah County streets, there are a few located along City streets.

It is important to note that several of the pedestrian crossing projects are located along streets with volumes and speeds that could require significant crossing enhancements. Crossings on 257<sup>th</sup> Avenue and Stark Street, for example, could require flashing beacons or traffic signals, while crossings on Troutdale Road and Buxton Road could require striped crosswalks and crosswalk signs. The Needs, Opportunities, Constraints, and tools report provided in the Appendix provides a brief description of potential crossing treatments at each location.

## Strategies

Several strategies have been identified to help guide the selection and prioritization of the pedestrian improvement projects included in the Pedestrian Action Plan. These strategies are intended to focus community investment on those projects that are most effective at meeting critical needs, while deferring other projects of lesser value. The following strategies were used to select and prioritize the pedestrian improvement projects (listed in order of importance):

- Connect key pedestrian corridors to schools, parks, and activity centers
- Pedestrian corridors that connect neighborhoods
- Arterial crossing enhancements
- Pedestrian corridors that connect to major transit Locations
- Fill in gaps in the network where some sidewalks exist
- Reconstruct all sidewalks to City of Troutdale standards
- Pedestrian corridors that connect to major recreational uses
- Pedestrian corridors that commuters might use

## Pedestrian Action Plan

The Pedestrian Action Plan identifies the pedestrian system improvement projects that are reasonably expected to be funded over the next 20 years, which meets the requirements of the updated TPR. The strategies identified above were used to rank the pedestrian projects identified in the Pedestrian Master Plan from highest to lowest in terms of priority. The highest ranking City projects that are reasonably expected to be funded were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 4-2, which are organized by location and type.

**Table 4-2: Pedestrian Action Plan**

| Project ID | Location       | Type               | Project Description   | Cost (\$1,000) |
|------------|----------------|--------------------|---|----------------|
| P1         | Troutdale Road | Complete Sidewalks | Install sidewalks on both sides of Troutdale Road from Beaver Creek Lane to Stark Street  | -              |
| P2         | Troutdale Road | Complete Sidewalks | Install sidewalks on both sides of Troutdale Road from Stark Street to the south City limits  | -              |
| P3         | Stark Street   | Complete Sidewalks | Install sidewalks on both sides of Stark Street from 257 <sup>th</sup> Avenue to Troutdale Road   | .*             |
| P5         | Halsey Street  | Complete Sidewalks | Install sidewalks on both sides of Halsey Street from the west city limits to Historic Columbia River Highway   |                |
| P7         | Hensley Road   | Complete Sidewalks | Install sidewalks on the south side of Hensley Road (E/W) from 150-feet west of Laurel Court to Hensley Road (N/S)  | \$45           |
| P8         | Hensley Road   | Complete Sidewalks | Install sidewalks on the east side of Hensley Road (N/S) from Hensley Road (E/W) to Cherry Park Road consistent with the Troutdale Elementary SRTS Plan. Includes minor pavement widening and drainage. | \$350          |

|              |  |                     |  |              |
|--------------|--|---------------------|--|--------------|
| P17          | 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street            | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on 257 <sup>th</sup> Avenue at 26 <sup>th</sup> Street   | -            |
| P22          | Troutdale Road at Planned Regional Trail                       | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Troutdale Road at the planned Regional Trail  | -            |
| P26          | Stark Street at Planned Regional Trail                         | Pedestrian Crossing | Install enhanced pedestrian crossing treatments on Stark Street at the planned Regional Trail  | -            |
| P29          | 40 Mile Regional Trail   | Multi-Use Path      | Install a multi-use path from Columbia/Sandy River Levy Trail to downtown Troutdale  | -            |
| P30          | Columbia Park Trail  | Trail               | Improve existing trail from 18 <sup>th</sup> Way to 22 <sup>nd</sup> Street  | \$75         |
| P31          | Sturges Trail  | Trail               | Install a trail from Sturges Lane to 257 <sup>th</sup> Avenue  | \$230        |
| P36          | Sandy River and Springwater Area Connections Trail             | Trail               | Install a trail from Mt. Hood Community College to Historic Columbia River Highway   | -            |
| P37          | Historic Columbia River Highway                                | Curb Extension      | Install curb extensions along Historic Columbia River Highway at Kendall Avenue, Buxton Avenue, Dora Street, Harlow Avenue, and Kibling Avenue | \$240        |
| P38          | Sandy River and Springwater Area Connections Trail Master Plan | Trail               | Develop a master plan for the Sandy River and Springwater Area Connections Trail to determine the alignment/recommended design treatments      | -            |
| P39          | Hewitt Neighborhood Trail                                      | Multi-Use Path      | Complete the multi-use path that connects the Hewitt neighborhood to Stark Street to the south and 257 <sup>th</sup> to the west.              | \$25         |
| <b>Total</b> |  |                     |  | <b>\$965</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..

\* The City of Troutdale's contributions to these project costs are included in the Motor Vehicle Action Plan.

As development occurs, streets are rebuilt, and other opportunities (such as grant programs) arise, the projects identified in the Pedestrian Master Plan should be completed as well. It should be noted that development of any of the projects identified in the Pedestrian Master Plan or Pedestrian Action Plan will ultimately help the City make progress toward achieving its non-SOV modal targets.

## BICYCLE SYSTEM

*This section has been revised as part of a targeted effort to update the City's TSP to comply with recent changes to the Oregon TPR and the 2035 RTP as well as to incorporate the conclusions and recommendations of the Troutdale and Sweetbriar elementary Safe Routes to School plans along with a number of other regional and local planning documents. The revisions include an updated Bicycle Master Plan and Bicycle Action Plan that reflect the current and future needs of the City.*

The existing conditions analysis presented in Chapter 3 identifies the bicycle system needs within Troutdale, including new on-street bike lanes, new bicycle crossings, and new multi-use paths and trails that augment and support the bicycle system. The Bicycle Master Plan presented in this section identifies all of the potential bicycle improvement projects identified within Troutdale while the Bicycle Action Plan identifies all of the projects that are reasonably expected to be funded over the next 20 years.

### Coordination with Regional Plan Designations

The 2035 RTP includes designations within Troutdale for Regional Bikeways, Community Bikeways, and Regional trails as defined below:

- Regional Bikeways provide for travel to and within the central city, regional centers, and town centers. Travel time is an important factor as these bikeways generally have high volumes.
- Community Bikeways provide for travel to and within main streets, corridors, and industrial and employment areas. These routes provide access to regional attractions such as schools and parks, and connect neighborhoods to the rest of the regional bicycle network.
- Regional Trails are paved, off-street facilities serving bicyclists and other non-motorized uses. They typically serve as longer distance routes connecting neighborhoods to 2040 target areas, often providing access to parks, schools, and natural areas.

The 2035 RTP also includes a designation for Regional Bicycle Parkways, although it has not yet been applied to any roadways. However, Regional Bicycle Parkways will likely be comprised of routes currently designated as Regional bikeways, Community Bikeways, and Regional trails. Based on the RTP:

- Regional Bicycle Parkways will form the backbone of the regional bicycle network, providing for direct and efficient travel with minimal delays in different urban environments and to destinations outside the region.

There are several routes in Troutdale with RTP designations. These routes should include on-street bicycle lanes, multi-use paths, and other bicycle amenities to be consistent with the RTP. By complying with the RTP designations and completing the bicycle system along these routes, the Bicycle Master Plan is consistent with plans developed by Metro, Multnomah County, and the State.

### Bicycle Master Plan

The Bicycle Master Plan was developed based on the bicycle system needs identified in the existing conditions analysis and reflects all of the potential bicycle improvement projects within Troutdale. The projects shown in Table 4-3 and on Figure 4-2 were evaluated based on the strategies identified below to create the Bicycle Action Plan. Several of the projects identified in Table 4-3 and on Figure 4-2 are incorporated into the projects shown in the motor vehicle master plan.

**Table 4-3: Bicycle Master Plan**

| Project ID | Location                        | Type      | Project Description   | Cost (\$1,000) |
|------------|---------------------------------|-----------|---|----------------|
| B1         | Stark Street                    | Bike Lane | Install on-street bike lanes from 257 <sup>th</sup> Avenue to Troutdale Road.         | -              |
| B2         | Buxton Road                     | Bike Lane | Install on-street bike lanes from Historic Columbia River Highway to Cherry Park Road | -              |
| B3         | Historic Columbia River Highway | Bike Lane | Install on-street bike lanes from Halsey Street to 244 <sup>th</sup> Avenue           | -              |

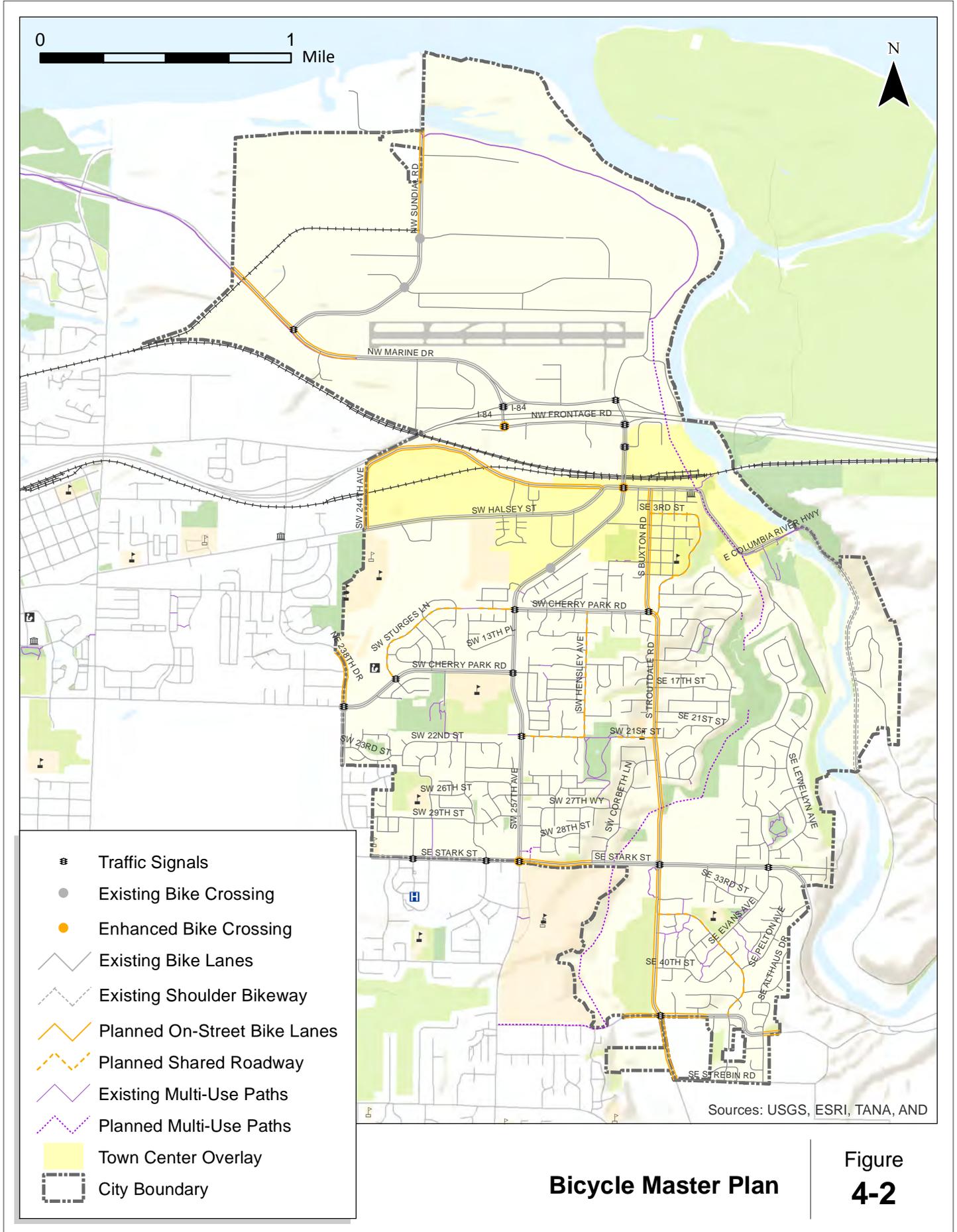
|              |   |                 |   |              |
|--------------|---|-----------------|---|--------------|
| B4           | Troutdale Road  | Bike Lane       | Install on-street bike lanes from Cherry Park Road to Stark Street  | -            |
| B5           | Troutdale Road  | Bike Lane       | Install on-street bike lanes from Stark Street to the south City limits   | -            |
| B6           | Cochran Road  | Bike Lane       | Install on-street bike lanes from the west City limits to Troutdale Road  | -            |
| B7           | Sweetbriar Road   | Bike Lane       | Install on-street bike lanes from Troutdale Road to the east City limits  | -            |
| B8           | Marine Drive  | Bike Lane       | Install on-street bike lanes from west City limits to approximately 1,500-feet east of Sundial Road                                 | -            |
| B9           | Sundial Road  | Bike Lane       | Install on-street bike lanes from the north City limits to Swigert Way  | -            |
| B10          | 238 <sup>th</sup> Avenue                                    | Bike Lane       | Install on-street bike lanes from Cherry Park Road to the west City limits  | -            |
| B11          | Hensley Road (EW/NS)  | Shared Roadways | Install shared roadway pavement markings and signs on Hensley Road (EW/NS) consistent with MUTCD standards                          | \$15         |
| B12          | 21 <sup>st</sup> Avenue                                     | Shared Roadway  | Install shared roadway pavement markings and signs on 21 <sup>st</sup> Avenue consistent with MUTCD standards                       | \$5          |
| B13          | Sturges Lanes   | Shared Roadways | Install shared roadway pavement markings and signs on Sturges Lane consistent with MUTCD standards                                  | \$15         |
| B14          | Sweetbriar Lane   | Shared Roadways | Install shared roadway pavement markings and signs on Sweetbriar lane consistent with MUTCD standards                               | \$15         |
| B15          | 3 <sup>rd</sup> Street/Sandy Avenue                         | Shared Roadways | Install shared roadway pavement markings and signs on 3 <sup>rd</sup> Street and Sandy Avenue consistent with MUTCD standards       | \$15         |
| B16          | 257 <sup>th</sup> Avenue at Historic Columbia River Highway | Bike Crossing   | Improve existing crossing conditions with combined bike lane/turn lane pavement markings and signs                                  | \$5          |
| B17          | 257 <sup>th</sup> Avenue at Stark Street                    | Bike Crossing   | Improve existing crossing conditions with continuous bicycle lane striping along the north side of the east leg of the intersection | \$5          |
| B18          | Troutdale Town Center                                       | Bicycle Parking | Install covered bicycle parking in the Troutdale Town Center  | \$30         |
| <b>Total</b> |   |                 |   | <b>\$105</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..  
 \* The City of Troutdale's contributions to these project costs are included in the Motor Vehicle Action Plan.

As shown in Table 4-3, the bicycle improvement projects consist of installing on-street bike lanes and shared roadway pavement markings and improving existing bicycle crossings. While several of the bike lane projects can be completed by striping the existing roadway, others will require widening and potentially additional right-of-way to be developed. Each of the shared roadway projects can be completed within the existing right-of-way, but will need to be accompanied by signs located along the roadway shoulders per the MUTCD. In addition, while each of the bike lane projects (and bicycle crossing projects) are located along Multnomah County streets, each of the shared roadway projects are located along City streets.

### Strategies

Several strategies have been identified to help guide the selection and prioritization of the bicycle improvement projects included in the Bicycle Action Plan. These strategies are intended to focus community investment on those projects that are most effective at meeting critical needs, while deferring other projects of lesser value. The following strategies were used to select and prioritize the bicycle improvement projects (listed in order of importance):



H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw\TSP\Figure 4-2\_Bicycle.mxd - mbevell - 10:16 AM 9/30/2013

### Bicycle Master Plan

### Figure 4-2

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

- Connect key bicycle corridors to schools, parks, and activity centers
- Finish the 40-mile Loop in Troutdale
- Bicycle corridors that connect neighborhoods
- Bicycle corridors that connect to major recreational facilities
- Fill in gaps in the network where some bikeways exist (arterials and collectors)
- Arterial Crossing Enhancements
- Bicycle corridors that commuters might use
- Bicycle corridors that access retail areas
- Upgrade existing bikeways to Multnomah County standards

### Bicycle Action Plan

The Bicycle Action Plan identifies the bicycle improvement projects that are reasonably expected to be funded over the next 20 years, which meets the requirements of the updated TPR. The strategies identified above were used to rank the bicycle projects from highest to lowest in terms of priority. The highest ranking City projects that are reasonably expected to be funded were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 4-4, which are organized by location and type.

**Table 4-4: Bicycle Action Plan**

| Project ID   | Location                            | Type            | Project Description   | Cost (\$1,000) |
|--------------|-------------------------------------|-----------------|---|----------------|
| B1           | Stark Street                        | Bike Lane       | Install on-street bike lanes from 257 <sup>th</sup> Avenue to Troutdale Road.   | .*             |
| B2           | Buxton Road                         | Bike Lane       | Install on-street bike lanes from Historic Columbia River Highway to Cherry Park Road   | -              |
| B4           | Troutdale Road                      | Bike Lane       | Install on-street bike lanes from Cherry Park Road to Stark Street  | -              |
| B5           | Troutdale Road                      | Bike Lane       | Install on-street bike lanes from Stark Street to the south City limits   | -              |
| B10          | 238 <sup>th</sup> Avenue            | Bike Lane       | Install on-street bike lanes from Cherry Park Road to the west City limits  | -              |
| B11          | Hensley Road (EW/NS)                | Shared Roadways | Install shared roadway pavement markings and signs on Hensley Road (EW/NS) consistent with MUTCD standards                    | \$15           |
| B12          | 21 <sup>st</sup> Avenue             | Shared Roadway  | Install shared roadway pavement markings and signs on 21 <sup>st</sup> Avenue consistent with MUTCD standards                 | \$5            |
| B13          | Sturges Lane                        | Shared Roadways | Install shared roadway pavement markings and signs on Sturges Lane consistent with MUTCD standards                            | \$15           |
| B14          | Sweetbriar Lane                     | Shared Roadways | Install shared roadway pavement markings and signs on Sweetbriar lane consistent with MUTCD standards                         | \$15           |
| B15          | 3 <sup>rd</sup> Street/Sandy Avenue | Shared Roadways | Install shared roadway pavement markings and signs on 3 <sup>rd</sup> Street and Sandy Avenue consistent with MUTCD standards | \$15           |
| B18          | Troutdale Town Center               | Bicycle Parking | Install covered bicycle parking in the Troutdale Town Center  | \$30           |
| <b>Total</b> |                                     |                 |   | <b>\$95</b>    |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..

\* The City of Troutdale's contributions to these project costs are included in the Motor Vehicle Action Plan.

As development occurs, streets are rebuilt, and other opportunities (such as grant programs) arise, the projects identified in the Bicycle Master Plan should be completed as well. It should be noted that development of any of the projects identified in the Bicycle Master Plan or Bicycle Action Plan will ultimately help the City make progress toward achieving its non-SOV modal targets.

## TRANSIT SYSTEM

*This section has been revised as part of a targeted effort to update the City's TSP to comply with recent changes to the Oregon TPR, the 2035 RTP, and the 2035 High Capacity Transit (HCT) System Plan. The revisions include an updated Transit Master Plan and Transit Action Plan that reflect the current and future needs of the City.*

Tri-Met is the primary regional transit service provider for the Portland metropolitan area. TriMet provides both fixed-route and dial-a-ride service in Troutdale, which is located in the northeast corner of their service area. Due to its location, Troutdale is an end point for the regional transit system. TriMet's Transit Investment Plan (TIP) identifies strategies for meeting regional public transportation needs, focusing on investments and improvements to the total transit system, such as improvements on existing lines. Therefore the TIP focuses on targeted, strategic improvements to the system, with priorities in the following order: Maintain the quality of the existing system; Expand the high capacity transit system (MAX Light rail or bus rapid transit); Expand the Frequent Service system; and Improve Local service

Troutdale is not served by high capacity transit or frequent service routes. The 2035 HCT System Plan identifies 257<sup>th</sup> Avenue as a Developing Regional Priority Corridor, which is a corridor where projected 2035 land use and commensurate ridership potential are not supportive of HCT implementation, but which have long-term potential due to political aspirations. Therefore, the Transit Master Plan includes potential transit improvement projects that focus on the quality of the existing transit service and local service enhancements.

### Coordination with Regional Plan Designations

The 2035 RTP includes designations within Troutdale for Frequent Bus Service and Regional Bus Service as defined below:

- Frequent Bus service offers local and regional bus service with stops approximately every 750 to 1,000 feet, providing corridor service rather than nodal service along selected arterial streets. This service typically runs at least every 15 minutes throughout the day and on weekends. Frequency may increase based on demand, and can include transit preferential treatments such as reserved bus lanes and signal preemption and enhanced passenger

infrastructure along the corridor and at major bus stops, such as covered bus shelters, curb extensions, special lighting and median stations.

- Regional Bus service operates on arterial streets with typical frequencies of 15 minutes during most of the day, though midday headways may drop to 30 minutes. Regional bus may operate seven days per week, but not necessarily, based on demand or policy. Stops are generally spaced every 750 to 1,000 feet. Transit preferential treatments and passenger infrastructure such as bus shelters, special lighting, transit signal priority and curb extensions are appropriate at some locations such as those with high ridership.

### Transit Master Plan

The Transit Master Plan was developed based on the transit system needs identified in the existing conditions analysis and reflects all of the potential transit improvement projects within Troutdale. The projects shown in Table 4-5 and on Figure 4-3 were evaluated based on the strategies identified below to create the Transit Action Plan.

**Table 4-5: Transit Master Plan**

| Project ID   | Location  | Description  | Cost (\$1,000's) |
|--------------|---|--|------------------|
| T1           | Halsey/Graham Road                                  | Coordinate with TriMet to provide a new route connecting the Outlet Mall to Rockwood MAX Station.  | -                |
| T2           | Cherry Park Road                                    | Coordinate with TriMet to provide a new route between 242 <sup>nd</sup> and 257 <sup>th</sup> Avenue.  | -                |
| T3           | Bus Stop Enhancements                               | Coordinate with TriMet to provide bus shelters at the following transit stop: <ul style="list-style-type: none"> <li>Stop 8747: Historic Columbia River Highway &amp; SW Kendall Road</li> <li>Stop 9792: Stark Street &amp; SW Sundial Avenue</li> <li>Stop 5398: Stark Street &amp; McGinnis Avenue</li> <li>Stop 13532: 257th Avenue &amp; Historic Columbia River Highway</li> </ul> | -                |
| T4           | Park-and-Ride Lot                                   | Coordinate with TriMet to study the feasibility of a Park-and-ride lot in the I-84 interchange area that would serve Troutdale and communities to the east. This lot should provide access to the planned 40-Mile Regional Multiuse Trail.   | \$50             |
| T5           | Transit Signal Priority                             | Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Avenue, 257 <sup>th</sup> Avenue and Stark Street.  | \$100            |
| T6           | Marine/Sundial/Graham                               | Coordinate with TriMet to provide a new route serving the north industrial area.   | -                |
| T7           | Troutdale Road/17 <sup>th</sup> Street/Cochran Road | Coordinate with TriMet to provide a new route serving the southeast Troutdale area.  | -                |
| T8           | Stark/Sweetbriar/Evans                              | Study the feasibility of a local shuttle service to serve neighborhoods not covered by TriMet routes (including the Stark/Sweetbriar/Evans area).  | \$50             |
| T9           | Existing Transit Routes                             | Coordinate with TriMet to reduce transit route headways.   | -                |
| T10          | Transit Corridors                                   | Direct growth to increase the density of development along transit routes in the City of Troutdale in an effort to support regional transit service goals.   | -                |
| <b>Total</b> |   |  | <b>\$200</b>     |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City's estimated contribution. Projects shown in white are under the jurisdiction of the City..



## Strategies

Several strategies have been identified to help guide the selection and prioritization of the transit improvement projects included in the Transit Action Plan. These strategies are intended to focus community investment on those projects that are most effective at meeting critical needs, while deferring other projects of lesser value. The following strategies, which rely on coordination with TriMet, were used to select and prioritize the transit improvement projects (listed in order of importance):

- Provide direct/express access to MAX
- Provide access to employment areas
- Provide park-and-ride lots
- Provide express routes to regional employment centers
- Provide frequent service in peak commute periods
- Provide access to commercial areas
- Provide access to activity and service centers
- Provide bus shelters

Transit system enhancements with the TriMet service area are ultimately decided based on regional transit goals. As such, Troutdale has limited control over dictating the expansion of local service or increasing route frequency. These decisions can be influenced if the proper density is achieved along transit corridors or if roadway infrastructure is built to serve transit routes, a decision over which the City has more control. Another tactic for increasing transit service to the City is through inter-governmental agreements and funding strategies between Troutdale and TriMet in order to leverage transit dollars for local projects, providing better connections to transit facilities and supply transit amenities at transit locations.

## Transit Action Plan

The Transit Action Plan identifies the transit improvement projects that are reasonably expected to be funded over the next 20 years, which meets the requirements of the updated TPR. The strategies identified above were used to rank the transit projects from highest to lowest in terms of priority. The highest ranking City projects that are reasonably expected to be funded were combined with projects from other agencies identified in previous planning efforts to create the project list shown in Table 4-6, which are organized by location and type.

**Table 4-6: Transit Action Plan**

| Project ID | Location           | Description   | Cost (\$1,000) |
|------------|--------------------|---|----------------|
| T1         | Halsey/Graham Road | Coordinate with TriMet to provide a new route connecting the Outlet Mall to Rockwood MAX Station. | -              |

|              |   |   |              |
|--------------|---|---|--------------|
| T2           | Cherry Park Road                                    | Coordinate with TriMet to provide a new route between 242 <sup>nd</sup> and 257 <sup>th</sup> Avenue.   | -            |
| T3           | Bus Stop Enhancements                               | Coordinate with TriMet to provide bus shelters at the following stops: <ul style="list-style-type: none"> <li>• Stop 8747: Historic Columbia River Highway &amp; SW Kendall Road</li> <li>• Stop 9792: Stark Street &amp; SW Sundial Avenue</li> <li>• Stop 5398: Stark Street &amp; McGinnis Avenue</li> <li>• Stop 13532: 257th Avenue &amp; Historic Columbia River Highway</li> </ul> | -            |
| T5           | Transit Signal Priority                             | Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Street, 257 <sup>th</sup> Avenue, and Stark Street.  | \$100        |
| T6           | Marine/Sundial/Graham                               | Coordinate with TriMet to provide a new route serving the north industrial area.  | -            |
| T7           | Troutdale Road/17 <sup>th</sup> Street/Cochran Road | Coordinate with TriMet to provide a new route serving the southeast Troutdale area.   | -            |
| T9           | Existing Transit Routes                             | Coordinate with TriMet to reduce transit route headways.  | -            |
| T10          | Transit Corridors                                   | Direct growth to increase the density of development along transit routes in the City of Troutdale in an effort to support regional transit service goals   | -            |
| <b>Total</b> |   |   | <b>\$100</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City’s estimated contribution. Projects shown in white are under the jurisdiction of the City..

## Motor Vehicles

*This section has been revised as part of a targeted effort to update to the City’s TSP to comply with recent changes to the Oregon TPR and the 2035 RTP as well as to incorporate the conclusions and recommendations from the Troutdale IAMP and the EMCP. The revisions include an updated Motor Vehicle Master Plan and Motor Vehicle Action Plan that reflect the current and future needs of the City.*

The existing conditions analysis presented in Chapter 3 identifies several corridors within Troutdale that do not meet performance standards, including 238<sup>th</sup>/242<sup>nd</sup>, 257<sup>th</sup>/Kane, Troutdale/Buxton, Stark, and the Troutdale Interchange. To meet performance standards and serve future growth, the future transportation system needs significant multi-modal improvements and strategies to manage the forecasted travel demand.

The following sections outline the type of improvements that would be necessary as part of a long-range master plan. Phasing of implementation will be necessary since all of the improvements cannot be done at once. This will require prioritization of projects and periodic updating to reflect current needs. Most importantly, it should be understood that the improvements outlined in the following sections are a guide to managing growth in Troutdale.

### Transportation System Management (TSM)

Transportation System Management (TSM) focuses on low cost strategies to enhance operational performance of the transportation system by seeking solutions to immediate transportation problems, finding ways to better manage transportation, maximizing urban mobility, and treating all modes of travel as a coordinated system. These types of measures include such things as signal improvements, ramp metering, traffic calming, access management, local street connectivity, intelligent transportation systems (ITS) and programs that enhance and smooth transit operations. Typically, the most significant measures that can provide tangible benefits to the traveling public are traffic signal coordination and

systems. Measures that are more difficult to measure but provide system reliability to maintain transportation flows include transit signal priority and incident management.

TSM measures focus primarily on region wide improvements, however there are a number of TSM measures that could be used in a smaller scale environment such as the Troutdale area. The following sections discuss TSM measures that could be appropriate for the Troutdale area.

### ***Intelligent Transportation Systems (ITS)***

ITS involves the application of advanced technologies and proven management techniques to relieve congestion, enhance safety, provide services to travelers, and assist transportation system operators in implementing suitable traffic management strategies. ITS focuses on increasing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add capacity (e.g. travel lanes). Efficiency is achieved by providing services and information to travelers so they can (and will) make better travel decisions and to transportation system operators so they can better manage the system and improve system reliability. Multnomah County has developed an ITS deployment plan that includes projects in the Troutdale area, such as:

- Traffic monitoring and Surveillance
- Signal coordination and optimization
- Signal priority
- Information availability
- Incident management

The devices and communications planned to implement these projects are shown in the Traffic Control Master Plan on Figure 4-4. Signal priority corridors are shown in the Transit Master Plan (Figure 4-3).

### ***Neighborhood Traffic Management (NTM)***

The City of Troutdale has a Speed Hump Program that establishes a process to guide speed hump installation through neighborhood involvement. This program includes considerations of street classification and emergency response needs, but it does not provide the opportunity for application of other NTM devices.

The Speed Hump Program could be updated to consider other traffic calming measures and work with the community to find the traffic calming solution that best meets their needs and maintains roadway function. Table 4-7 lists common NTM applications and suggests which devices might be supported by Gresham Fire and Emergency Services. Additional NTM measure descriptions that include diagrams, benefits, and costs are included in the technical appendix. Any NTM project should include coordination with emergency agency staff to assure public safety.



**Table 4-7: Traffic Calming Measures by Roadway Functional Classification<sup>1</sup>**

| Traffic Calming Measure   | Roadway Classification |               |   |
|---|------------------------|---------------|---|
|   | Arterial               | Collector     | Neighborhood/Local Street   |
| Curb Extensions   |                        |               | Calming measures are okay on Lesser response routes that have connectivity (more than two accesses) and are accepted and field tested by Gresham Fire and Emergency Services. |
| Medians   |                        |               |   |
| Pavement Texture  |                        |               |   |
| Speed Hump  | Not Supported          | Not Supported |   |
| Roundabout  |                        |               |   |
| Raised Crosswalk  | Not Supported          | Not Supported |   |
| Speed Cushion (provides emergency pass-through with no vertical deflection) | Not Supported          |               |   |
| Choker <sup>2</sup>   | Not Supported          | Not Supported |   |
| On-Street Parking   |                        |               |   |
| Traffic Circle  | Not Supported          | Not Supported |   |
| Diverter (with emergency vehicle pass through)                              | Not Supported          | Not Supported |   |

<sup>1</sup>It is desired to have all traffic calming measures meet Gresham Fire Department guidelines including minimum street width, emergency vehicle turning radius, and accessibility/connectivity.

<sup>2</sup>Chokers are not supported when they do not shadow parking. If parking is shadowed, see curb extensions.

*Access Management*

Access Management is a broad set of techniques that balance the need to provide efficient, safe and timely travel with the ability to allow access to the individual destination. ODOT and Multnomah County have clear access management policies and the supporting documentation to ensure that the highway system is managed as wisely as possible for the traveling public. Proper implementation of Access Management techniques should guarantee reduced congestion, reduced accident rates, less need for highway widening, conservation of energy, and reduced air pollution.

Access management involves controlling or limiting of access on arterial and collector facilities to preserve their functional capacity. Numerous driveways erode the capacity of arterial and collector roadways. Preservation of capacity is particularly important on higher volume roadways for maintaining traffic flow and mobility. Whereas local and neighborhood streets function to provide access, collector and arterial streets serve greater traffic volume. Numerous driveways or street intersections increase the number of conflicts and potential for accidents and decrease mobility and traffic flow.

Troutdale, as with every city, needs a balance of streets that provide access with streets that serve mobility. The following access management strategies are identified to improve access and mobility in Troutdale:

- Provide Left turn Lanes where warranted for access onto cross streets
- Work with Land use development applications to consolidate driveways where feasible
- Meet Multnomah County access requirements on arterials and collectors
- Establish City access standards for new developments on collectors and arterials

- New development and roadway projects should meet the requirements summarized in Table 4-8. The minimum spacing of roadways and driveways listed in this table is consistent with Multnomah County’s access spacing standards.

**Table 4-8: Access Spacing Standards for City Street Facilities**

| Street Facility    | Maximum spacing of roadways and driveways   | Minimum spacing of roadways and Driveways |
|--------------------|---|---|
| Arterials          | 1,000 Feet  | 530 Feet                                  |
| Collector          | 530 Feet  | 150 Feet                                  |
| Neighborhood/Local | 530 Feet  | -   |
| All Roads          | Require an access report for new access points stating that the driveway/roadway is safe as designed meeting adequate stacking, sight distance and deceleration requirements as set by ODOT, Multnomah County and AASHTO. |   |

Access management is not easy to implement and requires long institutional memory of the impacts of short access spacing – increased collisions, reduced capacity, poor sight distance and greater pedestrian exposure to vehicle conflicts. The most common opposition response to access control is that “there are driveways all over the place at closer spacing than mine – just look out there”. These statements are commonly made without historical reference. Many of the pre-existing driveways that do not meet access spacing requirements were put in when traffic volumes were substantially lower and no access spacing criteria were mandated. With higher and higher traffic volume in the future, the need for access control on all arterial roadways is critical – the outcome of not managing access properly is additional wider roadways which have much greater impact than access control.

*Local Street Connectivity*

Much of the local street network in Troutdale is built out and, in many cases, fairly well connected. In other words, multiple access opportunities exist for entering or exiting neighborhoods. However, there are still a number of locations where the majority of neighborhood traffic is funneled onto one single street. This results in out-of-direction travel for motorists and an imbalance of traffic volumes that impacts residential frontage. The outcome can result in the need for wider roads, traffic signals and turn lanes (all of which negatively impact traffic flow and degrade safety). By providing connectivity between neighborhoods, out-of-direction travel and vehicle miles traveled (VMT) can be reduced, accessibility between various modes can be enhanced and traffic levels can be balanced out between various streets. Additionally, public safety response time is reduced.

In Troutdale, some of these local connections can contribute with other street improvements to mitigate capacity deficiencies by better dispersing traffic. Several roadway connections will be needed within neighborhood areas to reduce out of direction travel for vehicles, pedestrians and bicyclists. This is most important in the areas where a significant amount of new development is possible.

Figure 4-5 shows the Local Street Connectivity Plan for Troutdale. In most cases, the connector alignments are not specific and are aimed at reducing potential neighborhood traffic impacts by better

balancing traffic flows on neighborhood routes. The arrows shown in the figures represent potential connections and the general direction for the placement of the connection. In each case, the specific alignments and design will be better determined upon development review. The criteria used for providing connections are as follows:

- Every 300 feet, a grid for pedestrians and bicycles
- Every 530 feet, a grid for automobiles

To protect existing neighborhoods from potential traffic impacts of extending stub end streets, connector roadways should incorporate NTM into their design and construction. All stub streets should have signs indicating the potential for future connectivity. Additionally, any new development that involves the construction of a new street or street extension is required by the current development code to meet the following connectivity standards:

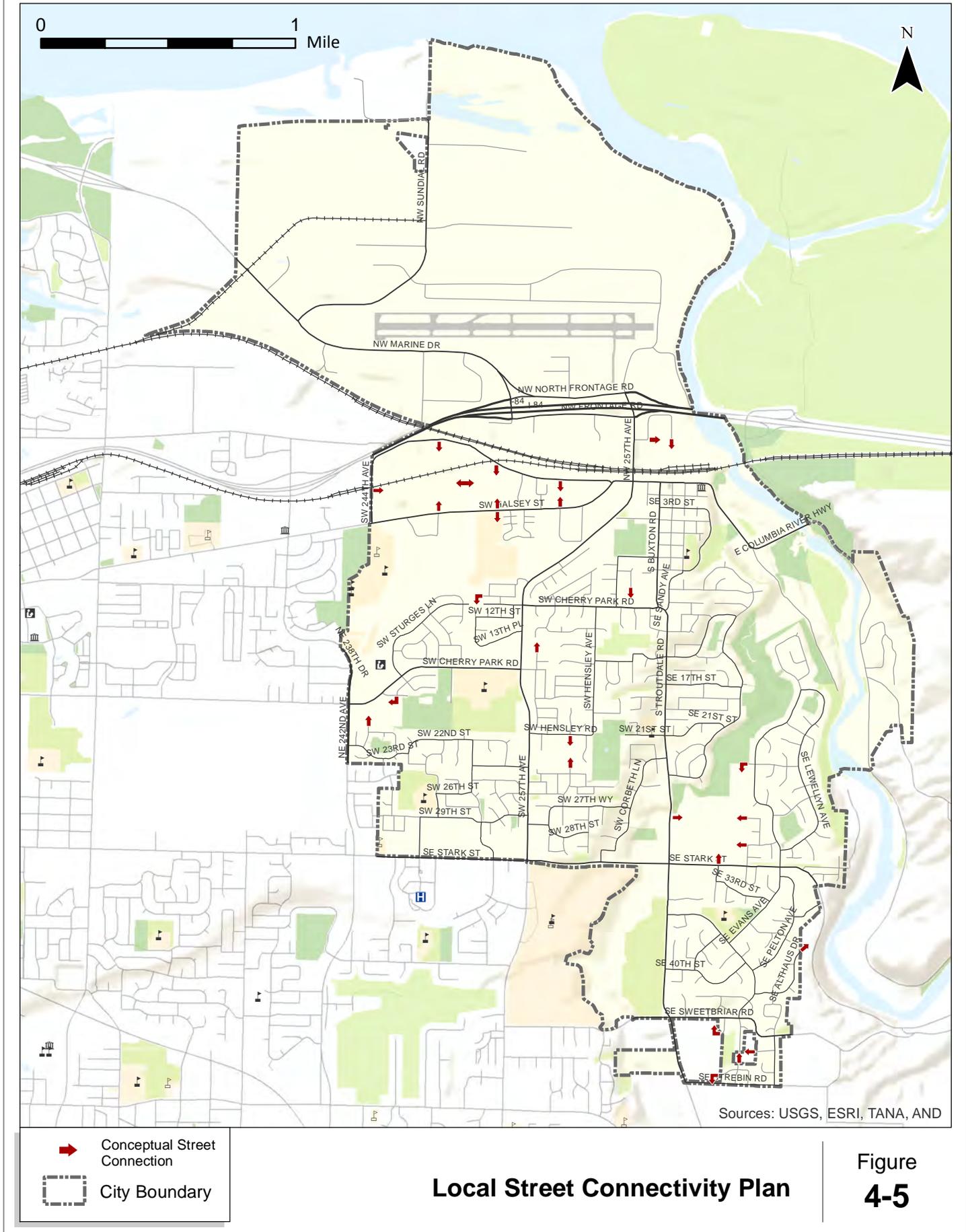
- Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers
- Provides bike and pedestrian access ways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers
- Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections
- Includes no close-end street longer than 200 feet or having no more than 25 dwelling units
- Includes street cross-sections demonstrating dimensions of ROW improvements, with streets designed for posted or expected speed Limits

The arrows shown on Figure 4-5 indicate priority connections only. Topography, railroads and environmental conditions limit the level of connectivity in some areas of Troutdale. Other stub end streets in the City's road network may become cul-de-sacs, extended cul-de-sacs or provide local connections. Pedestrian connections from the end of any stub end street that results in a cul-de-sac should be considered mandatory as future development occurs. The goal would continue to be improved city connectivity for all modes of transportation.

### *Functional Classification*

A street's functional classification defines its role in the transportation system and reflects desired operational and design characteristics such as right-of-way requirements, pavement widths, pedestrian and bicycle features, and driveway (access) spacing standards. Figure 4-6 illustrates the functional classification plan for Troutdale, which includes the following designations:

- Major Arterials Streets carry high volumes of traffic between cities as part of the regional transportation system. Priority may be given to transit- and pedestrian-oriented land uses by way of regional boulevard design treatments. Design and management of major arterial streets emphasizes preservation of the ability to move auto and transit traffic



Sources: USGS, ESRI, TANA, AND

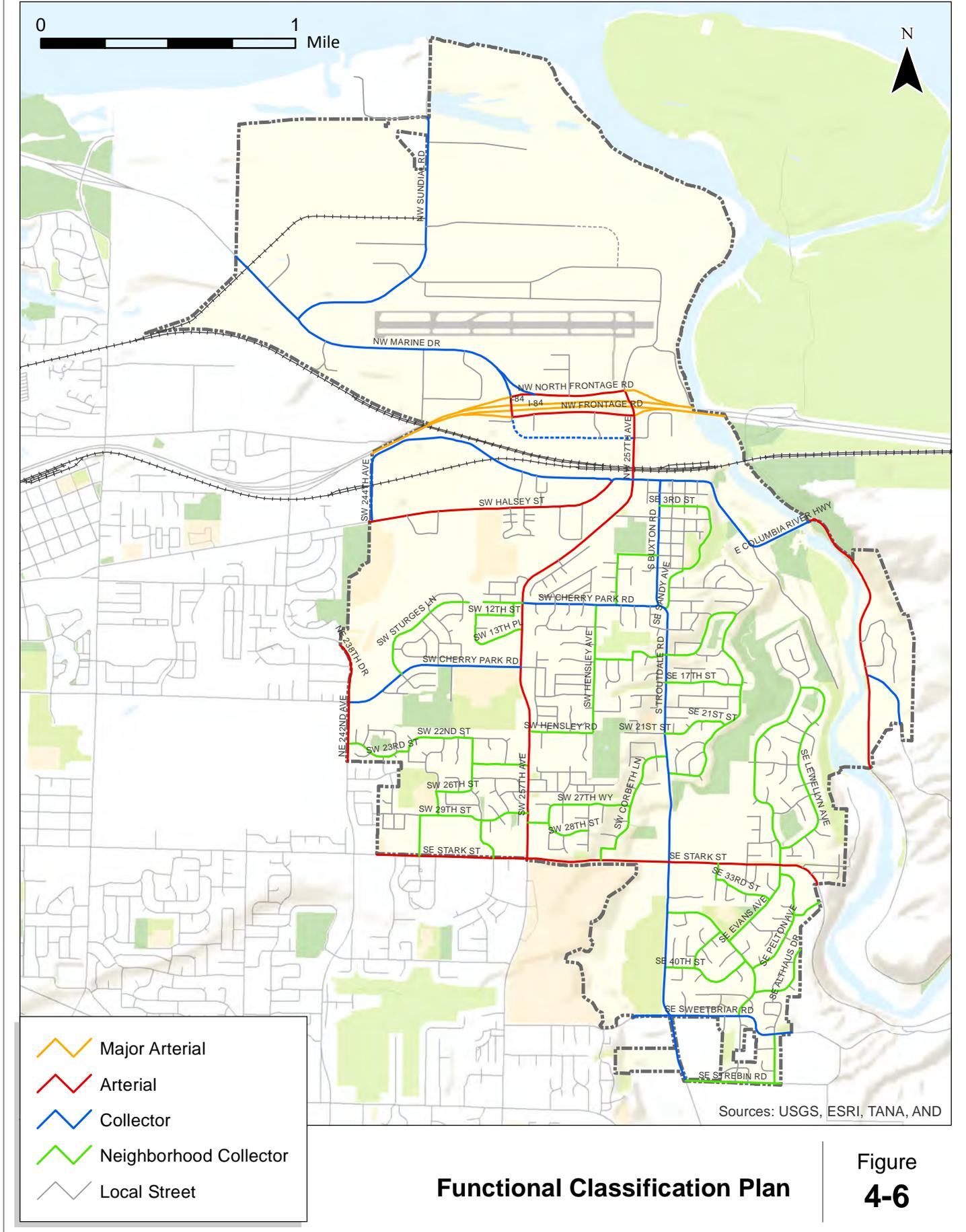
-  Conceptual Street Connection
-  City Boundary

### Local Street Connectivity Plan

Figure 4-5

H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 4-5\_Local Streets.mxd - mbeif - 10:19 AM 9/20/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center



H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 4-6\_Classification.mxd - mbell - 10/27 AM 9/30/2013

Sources: USGS, ESRI, TANA, AND

Functional Classification Plan

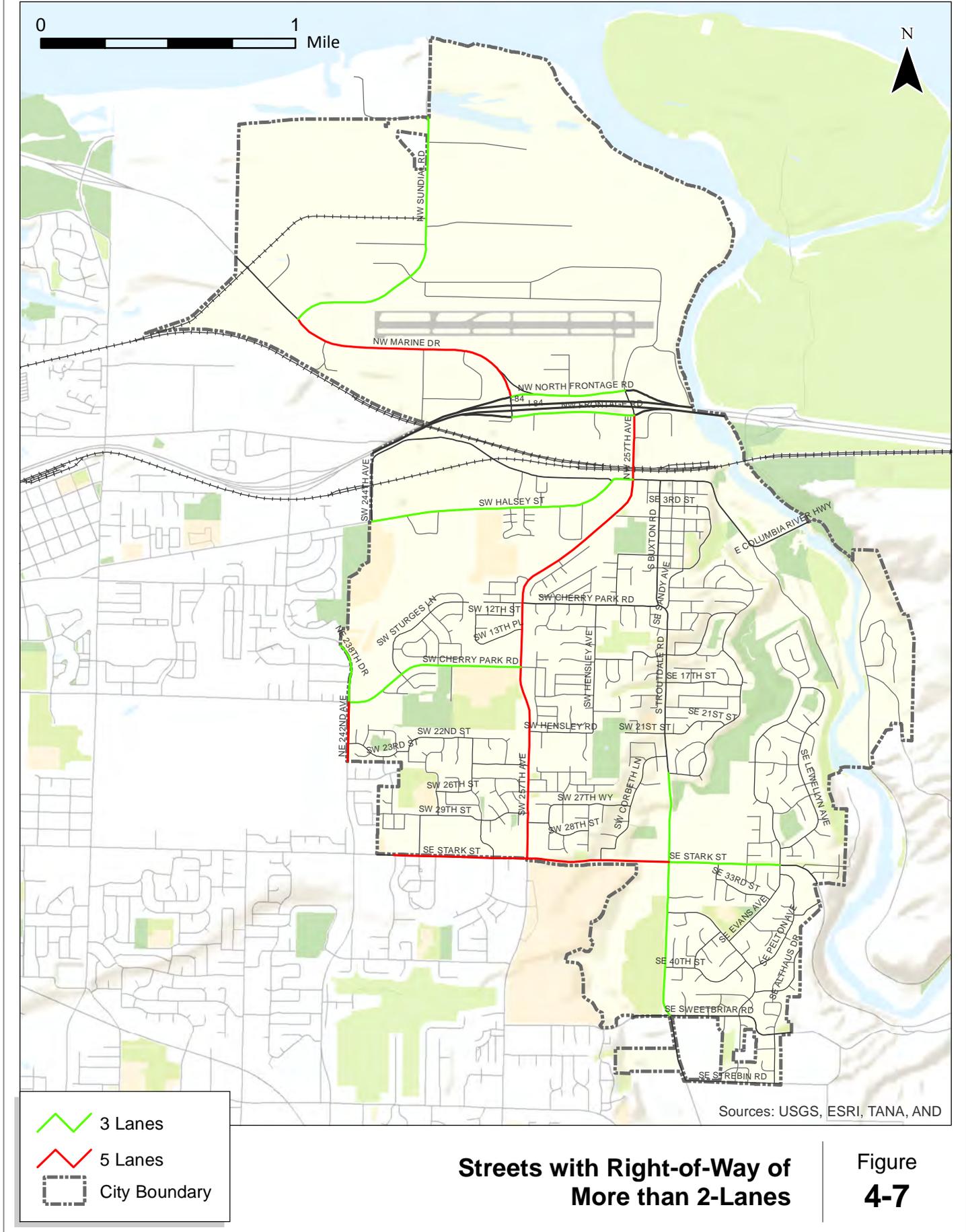
Figure 4-6

- Arterial streets typically carry less traffic volume than major arterials, but have a higher degree of connectivity between communities. Access management may be implemented to preserve traffic capacity. Land uses along the corridor are a mixture of community and regional activities. Arterial streets provide major links in the regional road and bikeway networks; provide for truck mobility and transit corridors; and are significant links in the local pedestrian system.
- Collector streets serve several purposes including linking neighborhoods to the regional system of bicycle and automobile streets, and basic transit services. They typically provide direct access between residential and commercial developments, schools and parks and carry higher volumes of traffic than neighborhood streets. Collector streets are also utilized to access industrial and employment areas and other locations with large truck and oversized load volumes.
- Neighborhood collector streets provide access primarily to residential land uses and link neighborhoods to higher order roads. They generally have higher traffic volumes than local streets.
- Local streets provide access to abutting land uses on low traffic volume and low speed facilities. Their primary purpose is to serve local pedestrian, bicycle and automobile trips and limited public transportation use in urban areas; and auto and farm vehicle circulation with local pedestrian, bicycle and equestrian use in rural areas.

The City of Troutdale has adopted standards for street cross sections that apply citywide to local streets (32' curb-to-curb), neighborhood collector streets (36' curb-to-curb), and commercial/industrial streets (36' curb-to-curb). In addition, there is a special local street cross section for the town center area that allows narrower widths (28' curb-to-curb). These cross sections are detailed in the *City of Troutdale Construction Standards for Public Works Facilities*. Refer to ODOT and Multnomah County standards for additional information related to all collector and arterial cross sections.

#### *Street Right-of-Way Needs*

Wherever arterial or collectors cross each other, planning for additional right-of-way to accommodate turn lanes should be considered within 500 feet of the intersection. Figure 4-7 summarizes the Troutdale streets that are anticipated within the Transportation System Plan horizon to require right-of-way for more than two lanes. Planning level right-of-way needs can be determined utilizing street cross-sections and the lane geometry outlined later in this chapter. Specific right-of-way needs will need to be monitored continuously through the development review process to reflect current needs and conditions. This will be necessary since more specific detail may become evident in development review which requires improvements other than these outlined in this 20 year general planning assessment of street needs.



H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw\TSP\Figure 4-7\_Street Width.mxd - mbehf - 10:27 AM 9/30/2013

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

*Parking Requirements*

The City of Troutdale has off-street parking ratios (minimum and maximum) in Chapter 9 of the Development Code. These ratios are consistent with the TPR and RTP parking ratio requirements.

**Transportation Demand Management (TDM)**

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the Troutdale area occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user’s travel behavior and provide alternative mode choices will help accommodate this growth.

Generally, TDM focuses on reducing vehicle miles traveled and promoting alternative modes of travel for large employers of an area. This is due in part to the Employee Commute Options (ECO) rules that were passed by the Oregon Legislature in 1993 to help protect the health of Portland area residents from air pollution and to ensure that the area complied with the Federal Clean Air Act.

Research has shown that a comprehensive set of complementary policies implemented over a large geographic area can have an effect on the number of vehicle miles traveled to/from that area. However, the same research indicates that in order for TDM measures to be effective, they should go beyond the low-cost, uncontroversial measures commonly used such as carpooling, transportation coordinators/associations, priority parking spaces, etc.

The more effective TDM measures include elements related to parking and congestion pricing, improved services for alternative modes of travel, and other market-based measures. However, TDM includes a wide variety of actions that are specifically tailored to the individual needs of an area. Table 4-9 provides a list of several strategies outlined in the ECO program that could be applicable to the Troutdale area.

**Table 4-9: Transportation Demand Management Strategies**

| Strategy                      | Description  | Potential Trip Reduction   |                                  |
|-------------------------------|--|--|----------------------------------|
| Telecommuting                 | Employees perform regular work duties at home or at a work center closer to home, rather than commuting from home to work. This can be full time or on selected workdays. This can require computer equipment to be most effective.                            | 82-91% (Full Time)<br>14-36% (1-2 day/week)  |                                  |
| Compressed Work Week          | Schedule where employees work their regular scheduled number of hours in fewer days per week.  | 7-9% (9 day/80 hour)<br>16-18% (4 day/40 hour)<br>32-36% (3 day/36 hour)                   |                                  |
| Transit Pass Subsidy          | For employees who take transit to work on a regular basis, the employer pays for all or part of the cost of a monthly transit pass.  | 19-32% (full subsidy, high transit service)<br>2-3% (half subsidy, medium transit service) |                                  |
| Cash Out Employee Parking     | A n employer that has been subsidizing parking (free parking) discontinues the subsidy and charges all employees for parking. An amount equivalent to the previous subsidy is then provided to each employee, who then can decide which mode of travel to use. | Reduction<br>8-20%<br>5-9%<br>2-4%   | Transit<br>High<br>Medium<br>Low |
| Reduced Parking Cost for HOVs | Parking costs charged to employees are reduced for high occupancy vehicles (HOV) such as carpools and vanpools.  | 1-3%   |                                  |

|  |  |  |
|--|--|--|
| Alternative Mode Subsidy                   | For employees that commute to work by modes other than driving alone, the employer provides a monetary bonus to the employee.  | 21-34% (full subsidy of cost, high alternative modes)<br>2-4% (half subsidy of cost, medium alternative modes) |
| Bicycle Program                            | Provides support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities and subsidy of commute bicycle purchase.   | 0-10%  |
| On-site Rideshare Matching for HOVs        | Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator regarding their work hours, availability of a vehicle and place of residence. The coordinator then matches employees who can reasonably rideshare together. | 1-2%   |
| Provide Vanpools                           | Employees that live near each other are organized into a vanpool for their trip to work. The employer may subsidize the cost of operation and maintaining the van.   | 15-25% (company provided van with fee)<br>30-40% (company subsidized van)                                      |
| Gift/Awards for Alternative Mode Use       | Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone.  | 0-3%   |
| Walking Program                            | Provide support services for those who walk to work. This could include buying walking shoes or providing lockers and showers.   | 0-3%   |
| Company Cars for Business Travel           | Employees are allowed to use company cars for business-related travel during the day   | 0-1%   |
| Guaranteed Ride Home Program               | A company owned or leased vehicle or taxi fare is provided in the case of an emergency for employees that use alternative modes.   | 1-3%   |
| Time off with Pay for Alternative Mode Use | Employees are offered time off with pay as an incentive to use alternative modes.  | 1-2%   |

Source: Guidance for Estimating Trip Reductions from Commute Options, Oregon Department of Environmental Quality, August 1996.

Employment development north of I-84 will allow for TDM friendly development. Setting TDM goals and policies for new development will be necessary to help implement TDM measures in the future. With many regional trips destined to, or traveling through, the Troutdale area, region wide TDM measures should help to reduce congestion. Metro has established non-SOV (Single Occupancy Vehicle) mode share targets to be achieved by 2040. The 2040 non-SOV model target for town centers and main streets (downtown Troutdale) is 45-55%.<sup>1</sup>

Metro’s Regional Demand Model provides an analysis tool for monitoring non-SOV trip percentages between the various RTP funding scenarios. The forecasted non-SOV trip percentages take into account all RTP improvement projects (including transit, pedestrian, and bicycle system improvements), as well as the TAZ performance factors (which includes an increase in parking pricing and a decrease in transit pass fees paid by individual riders). Parking factors are based on a ratio of parking costs in comparison to a South/North Draft Environmental Impact Study (DEIS) parking survey. Transit Pass factors represent the amount of full transit fare that a transit rider is expected to pay (considering ECO rule and discount downtown fares). The RTP projects included in the 2025 financially constrained and priority models are shown in Table 4-10 and Table 4-11, respectively.

<sup>1</sup> Based on the 2000 Metro Regional Transportation Plan, Ordinance No. 00-869A (August 10, 2000), page 1-62.

**Table 4-10: TDM Improvements included in the 2025 RTP Financially Constrained System**

| RTP#         | Location  | Improvement  | Jurisdiction            | Time-Line | Cost (\$1,000s)  |
|--------------|---|--|-------------------------|-----------|------------------|
| -            | Troutdale Town Center                               | Implement Parking Pricing  | Troutdale               | -         | -                |
| 2120         | Sandy Boulevard Bicycle and Pedestrian Improvements | Retrofit bike lanes and sidewalks on existing street between 162nd to Troutdale Road.                      | Multnomah Co.           | 2016-25   | \$8,316          |
| 2124         | Halsey Street Improvements -Troutdale               | Improve Halsey Street to 3 lanes and complete boulevard design improvements                                | Multnomah Co.           | 2010-15   | \$3,742          |
| 2125         | Troutdale TC Pedestrian Improvements                | Improve sidewalks, lighting, crossings, bus shelters and benches   | Multnomah Co./Troutdale | 2016-25   | \$116            |
| 2126         | 257th Avenue Pedestrian Improvements                | Improve sidewalks, lighting, crossings, bus shelters and benches   | Troutdale               | 2004-09   | \$1,155          |
| 8028         | Region-wide   | Vehicle purchases to provide for expanded service – 1.5% per year  | TriMet                  | 2004-25   | \$169,785        |
| 8032         | Region-wide   | Bus operating facilities   | TriMet                  | 2004-25   | \$75,000         |
| 8043         | Region-wide   | Bus stop improvements  | TriMet                  | 2004-25   | \$7,939          |
| 8046         | Region-wide   | Transit Signal Priority  | TriMet                  | 2004-25   | \$19,892         |
| 8049         | Region-wide   | Construct improvements that enhance pedestrian access to transit – sidewalks, crosswalks, ADA improvements | TriMet                  | 2004-25   | \$20,000         |
| 8050         | Region-wide   | Regional employer outreach, transit marketing, vanpool and carpool, station cars and car sharing program   | TriMet                  | 2004-25   | \$1,500          |
| 8052         | Region-wide   | Regional Travel Options TDM Program  | TriMet                  | 2004-25   | \$16,978         |
| <b>Total</b> |   |  |                         |           | <b>\$324,423</b> |

Note: These improvements are assumed in Metro’s 2025 RTP Financially Constrained System and do not necessarily correspond with the action plan of this TSP.

**Table 4-11: Additional TDM Improvements included in the 2025 RTP Priority System**

| RTP#         | Location    | Improvement  | Jurisdiction | Time-Line | Cost (\$1,000s)  |
|--------------|-------------|--|--------------|-----------|------------------|
| -            | Troutdale   | 50% increase of parking costs in the Town Center                   | Troutdale    | 2004-25   | -                |
| -            | Troutdale   | Increase in street connectivity (from >8 per mile to >10 per mile) | Troutdale    | 2004-25   | -                |
| 8030         | Region-wide | Vehicle purchases to provide for expanded service – 3.8% per year  | TriMet       | 2004-25   | \$546,000        |
| 8033         | Region-wide | Bus operating facilities   | TriMet       | 2004-25   | \$152,062        |
| 8045         | Region-wide | Bus stop improvements  | TriMet       | 2004-25   | \$13,212         |
| 8048         | Region-wide | Transit Signal Priority  | TriMet       | 2004-25   | \$83,746         |
| 8051         | Region-wide | Regional Travel Options TDM Program                                | TriMet       | 2004-25   | \$47,124         |
| <b>Total</b> |             |  |              |           | <b>\$842,114</b> |

Note: These improvements are assumed in Metro’s 2025 RTP Priority System and do not necessarily correspond with the action plan of this TSP.

The overall Troutdale study area forecasted non-SOV percentage with the RTP financially constrained improvements is 37.6%. Additional improvements in the RTP priority scenario increase the overall non-SOV percentage to 39.4%, which corresponds to an increase of approximately 2%.

Figure 4-8 shows the non-SOV percentage increase at the TAZ level, which shows the areas with the greatest growth toward meeting the 2040 targets.



These forecasted non-SOV percentages can only be achieved with significant improvements to the transportation system and implementation of trip reduction strategies. The City of Troutdale should coordinate with Multnomah County and TriMet to implement strategies to assure that the TDM assumptions in the RTP are implemented. The TDM action plan includes:

- Support continued efforts by TriMet, Metro, ODOT, and Multnomah County to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage the expansion of high speed communication in all part of the city (fiber optic, digital cable, DSL, etc.). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.
- Continued implementation of motor vehicle minimum and maximum parking ratios for new development.
- Continued implementation of building orientation and transit planning requirements for new development.
- Continued implementation of street connectivity requirements.
- Require new employment development to install bicycle racks.
- Implementation of bicycle, pedestrian, motor vehicle and transit system action plan.
- Monitor and manage the parking needs in the Troutdale Town Center, which could include long-term strategies such as parking pricing.

### Motor Vehicle Master Plan

The transportation improvement projects identified in the 2005 TSP were updated to reflect the conclusions and recommendations of a number of regional and local planning efforts, including the IAMP and the EMCP. The result is an updated project list that reflects the most recent modeling efforts by Metro as well as the most recent needs and perspectives of the City. As a result, a few notable projects from the 2005 TSP have been removed from this latest TSP update, including:

- 242<sup>nd</sup> Street Extension - This extension was removed from the Motor Vehicle Master Plan as part of the EMCP planning effort.
- 238<sup>th</sup> Street Extension - This extension was removed from the Motor Vehicle Master Plan as it is no longer consistent with other local and regional planning efforts.
- 2<sup>nd</sup> Street Extension – This extension was removed from the Motor Vehicle Master Plan due access management concerns along 257<sup>th</sup> Avenue.

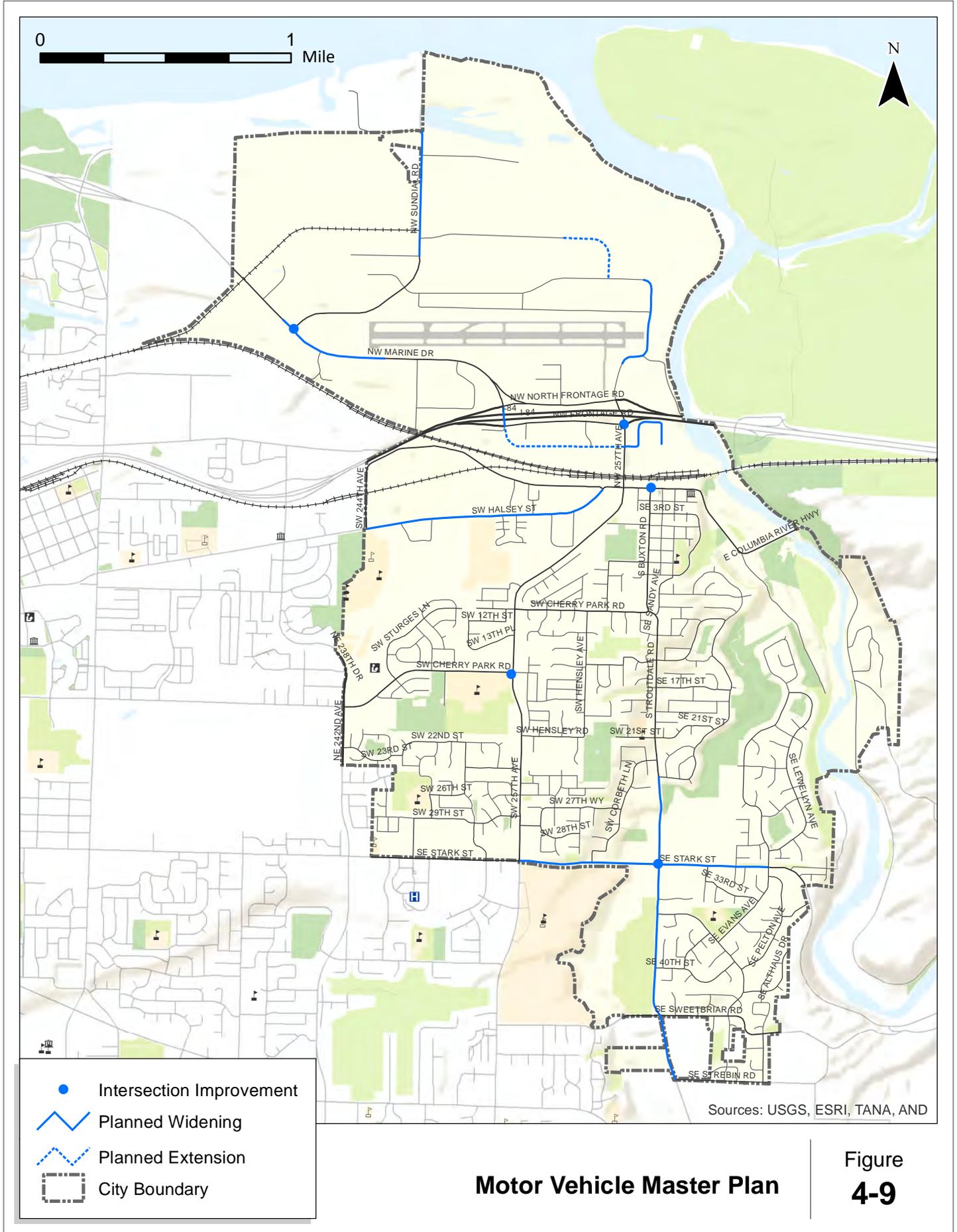
- 257<sup>th</sup> Avenue/Cherry Park Road (south) – the addition of dual left turn lanes was removed from the Motor Vehicle Master Plan due to right of way constraints and long-term need.

The Motor Vehicle Master plan was developed based on the motor vehicle system needs identified in the existing conditions analysis, the I-84 IAMP, and the EMCP and reflects all of the potential motor vehicle improvement projects within Troutdale. The projects shown in Table 4-12 and on Figure 4-9 were evaluated based on the strategies identified below to create the Motor Vehicle Action Plan. Several of the projects identified in Table 4-12 and on Figure 4-9 incorporate improvements shown in other mode master plans, including the pedestrian and bicycle master plans. The cost estimates shown in the table were taken from prior plan documents, or are estimated using standard assumptions for new facilities. Further refinements should be made of these estimates prior to capital budgeting.

**Table 4-12: Motor Vehicle Master Plan**

| No.          | Location                                      | Description   | Cost (\$1,000) |
|--------------|---|---|----------------|
| M1           | Troutdale Road                                | Widen to 3 lanes from Beaver Creek Road to Stark Street. Includes sidewalks and bike lanes.   | -              |
| M2           | Troutdale Road                                | Widen to 3 lanes from Stark Street to the south City limits. Includes sidewalks and bike lanes.   | --             |
| M3           | Sundial Road Widening                         | Widen to 3 lanes from Rogers Circle to the North City limits. Includes sidewalks and bike lanes.  | -              |
| M4           | Stark Street Widening (West)                  | Widen to 5 lanes between 257 <sup>th</sup> Avenue and Troutdale Road. Includes sidewalks and bike lanes.  | -              |
| M5           | Stark Street Widening (East)                  | Widen to 3 lanes between Troutdale Road and Evans Avenue. Includes sidewalks and bike lanes.  | -              |
| M6           | Halsey Street Widening                        | Widen to 3 lanes from 238 <sup>th</sup> Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes.   | -              |
| M7           | Marine Drive                                  | Widen Marine Drive to a two-way five-lane cross-section under I-84.   | -              |
| M8           | Graham Road                                   | Reconstruct Graham Road.  | \$550          |
| M9           | Marine Drive                                  | Construct the Marine Drive Extension.   | \$980          |
| M10          | Marine Drive/Sundial Road                     | Improvement intersection of Marine Drive/Sundial Road. Includes widening Marine Drive from approximately 500 feet west of intersection to existing five-lane section. | -              |
| M11          | Historic Columbia River Highway/Buxton Avenue | Signalize in coordination with 257 <sup>th</sup> Avenue/Historic Columbia River Highway   | \$200          |
| M12          | Stark Street/Troutdale Road                   | Add a southbound right-turn lane  | \$250          |
| M13          | 257 <sup>th</sup> Way                         | Extend 257 <sup>th</sup> Way to the urban renewal area.   | -              |
| M14          | Parking Study                                 | Conduct a parking study within the Troutdale Town Center  | \$50           |
| M15          | Dunbar Avenue                                 | Reconstruct Dunbar Avenue.  | \$450          |
| M16          | Swigert Way Extension                         | Extend Swigert Way to the Graham Road   | -              |
| <b>Total</b> |   |   | <b>\$2,480</b> |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City’s estimated contribution. Projects shown in white are under the jurisdiction of the City..



H:\p\102560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 4-9\_Motor Vehicle.mxd - mbeill - 10:30 AM 9/30/2013

### Motor Vehicle Master Plan

### Figure 4-9

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl  
Data Source: DKS Associates, City of Troutdale, Metro Data Resource Center

## Strategies

Several strategies have been identified to help guide the selection and prioritization of the motor vehicle improvement projects included in the Motor Vehicle Action Plan. These strategies are intended to focus community investment on those projects that are most effective at meeting critical needs, while deferring other projects of lesser value. The following strategies were used to select and prioritize the motor vehicle improvement projects (listed in order of importance):

- Provision of Left turning Lanes on collectors
- Regional Circulation
- Adopt TSM measures to improve system efficiency (including ITS, NTM, access management, Local street connectivity, and functional classification)
- Circulation Enhancements
- Mitigate all Intersections to Level of Service D in the PM Peak Hour
- Intersection Modifications
- Additional Signals on Arterial/Collector Intersections
- Improve Circulation of Residential Areas
- Develop TDM Programs to Reduce Peak Traffic for Employers in Troutdale
- Neighborhood Traffic Management

## Motor Vehicle Action Plan

The Motor Vehicle Action Plan identifies the motor vehicle improvement projects that are reasonably expected to be funded over the next 20 years, which meets the requirements of the updated Transportation Planning Rule. The strategies identified above were used to rank the motor vehicle projects from highest to lowest in terms of priority. The highest ranking City projects that are reasonably expected to be funded were combined with projects from other agencies identified in previous planning studies to create the project list shown in Table 4-13, which are organized by location and type.

**Table 4-13: Motor Vehicle Action Plan**

| No. | Location                     | Description   | Cost (\$1,000) |
|-----|------------------------------|---|----------------|
| M2  | Troutdale Road               | Widen to 3 lanes from Stark Street to the south City limits. Includes sidewalks and bike lanes.                       | -              |
| M4  | Stark Street Widening (West) | Widen to 5 lanes between 257th Avenue and Troutdale Road. Includes sidewalks and bike lanes.                          | \$300          |
| M6  | Halsey Street Widening       | Widen to 3 lanes from 238 <sup>th</sup> Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes. | -              |
| M7  | Marine Drive                 | Widen Marine Drive to a two-way five-lane cross-section under I-84.   | -              |
| M8  | Graham Road                  | Reconstruct Graham Road.  | \$550          |
| M9  | Marine Drive                 | Construct the Marine Drive Extension.   | \$980          |

| No.          | Location                                    | Description   | Cost (\$1,000) |
|--------------|---|---|----------------|
| M10          | Marine Drive/Sundial Road                   | Improve intersection of Marine Drive/Sundial Road. Includes widening Marine Drive from approximately 500 feet west of intersection to existing five-lane section. | -              |
| M11          | Historic Columbia River Highway/Buxton Road | Signalize in coordination with 257 <sup>th</sup> Avenue/Historic Columbia River Highway   | \$200          |
| M13          | 257 <sup>th</sup> Way                       | Extend 257 <sup>th</sup> Way to the urban renewal area.   | -              |
| M14          | Parking Study                               | Conduct a parking study within the Troutdale Town Center  | \$50           |
| M15          | Dunbar Avenue                               | Reconstruct Dunbar Avenue.  | \$450          |
| <b>Total</b> |   |   | \$2,530        |

Note: Cost estimates indicate the estimated funding to be provided by the City of Troutdale. The projects shown in grey are under the jurisdiction of other agencies. Cost estimates are provided for these outside agency projects only where it is anticipated that the City will contribute funding to the project, and the cost figures shown represent only the City’s estimated contribution. Projects shown in white are under the jurisdiction of the City..

## OTHER MODES

While pedestrian, bicycle, transit, and motor vehicle transportation modes have a more significant effect on the quality of life in Troutdale, other modes of transportation must be considered. Future needs for freight, air and pipeline infrastructure are identified by their providers and are summarized below.

### Freight

This update incorporates the conclusions and recommendations of the 2012 East Metro Connections Plan. The projects identified in this planning effort have been incorporated into the updated Master Plans as well as the designation of 257<sup>th</sup> Avenue as a road connection on the regional freight network. This change was in part, due to the cancellation of the 242<sup>nd</sup> Avenue extension as previously identified in the RTP. Given the existing characterizes of 257<sup>th</sup> Avenue as a de-facto freight route, this change will have little impact on the TSP.

### Trucks

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The establishment of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The freight plan is shown in Figure 4-10. The objective of this plan is to allow these streets to focus on design criteria that are “truck friendly”; i.e. 12-foot travel lanes, longer access spacing, 35-foot (or larger) curb returns, and pavement design that accommodates a larger share of trucks. The designated truck routes shown in Figure 4-10 are consistent with recent changes to the Regional Freight Plan as identified in the East Metro Connections Plan.

### Rail

There are two rail lines, the Graham (2A) and the Kenton (2AE) that currently traverse the City of Troutdale, combining to transport over 53 million gross tons of freight in 2002. Both lines are owned

and operated as a Class 1 Railroad by Union Pacific Rail Road (UPRR). The Graham (2A) line runs 17 trains a day with a maximum authorized speed of 50 mph. It has one at-grade rail crossing in the study area at 244<sup>th</sup> Avenue. The Kenton (2AE) line runs 30 trains a day at a maximum authorized speed of 50 mph. The Kenton has one at-grade rail crossing in the study area located along a spur track off of the main line that serves the former aluminum plant. There are no passenger trains currently running through Troutdale. The volume, length and schedule of the freight trains are not expected to change significantly over the 20 year planning horizon.

### Gas Pipelines

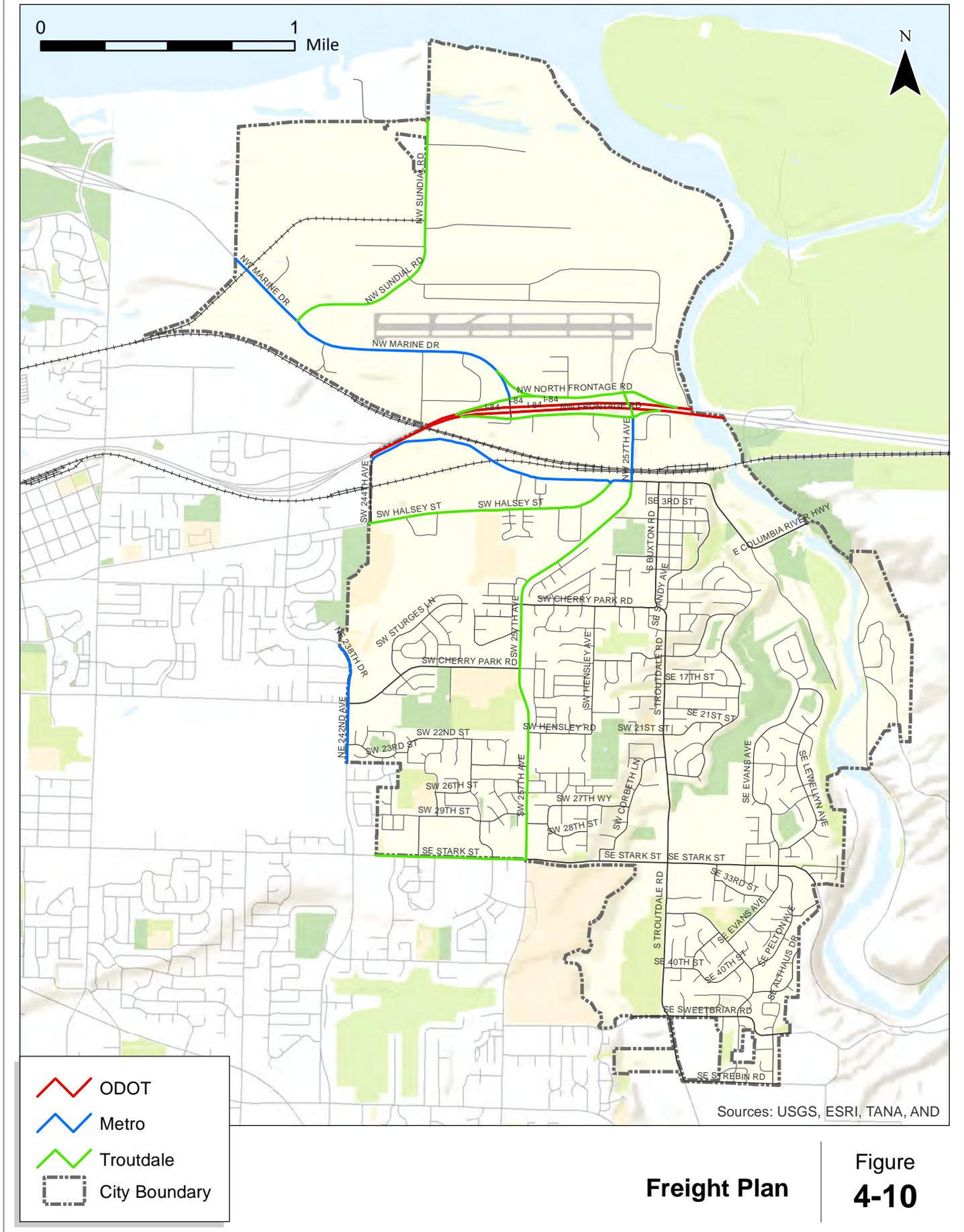
Two high-pressure natural gas pipelines serve Troutdale. One line runs north-south adjacent to 242<sup>nd</sup> Drive, crossing I-84, then turning eastward and northeasterly through the Troutdale Reynolds Industrial Park to the NE corner of the City, and continuing across the Columbia River into Washington. The second line runs east-west along Sandy Boulevard, until turning north at I-84 before terminating at the Kenton (2AE) UPRR rail line. The future service of gas pipelines are not expected to change significantly over the 20 year planning horizon.

### Air

The Troutdale Airport is located north of Interstate 84 and is classified as a Category 2 – Business or High Activity General Aviation Airport. The runway is 150 feet wide by 5,400 feet long, and has over 30,000 annual aircraft operations (take offs and landings). Pavement condition varies over the length of the runway and was found to be deficient in meeting runway pavement strength by the Oregon Aviation Plan. However, reconstruction is not planned for several years. The Troutdale Airport Master Plan predicts a modest 2 percent growth in both the number of operations and number of aircraft based in Troutdale over the next 10 years, concluding that current infrastructure is adequate to meet demand. Consequently, the airport is considering leasing some of the land it does not currently require for their operations. The RTP designates the Troutdale airport as an Inter-city air passenger terminal.

## ENVIRONMENTAL JUSTICE

Socioeconomic conditions within the City of Troutdale were considered in the development of the TSP update to ensure that the future transportation system meets the needs of the entire population. The transportation improvement projects identified in the pedestrian, bicycle, transit, and motor vehicle plans were selected to ensure that the transportation system meets the needs while not creating adverse conditions for select segments of the population. These projects will ensure that the transportation disadvantaged will have equal access to public facilities and services located throughout Troutdale as well as in neighboring communities.



H:\projects\12560 - Troutdale TSP Update & Facilities Plan\GIS\Draw TSP\Figure 4-10\_Freight.mxd - mbeil - 10:30 AM 9/30/2013

## Chapter 5 Financing & Implementation



## 5. FINANCING & IMPLEMENTATION

This chapter outlines the City's current funding strategies and presents several potential new funding sources and opportunities that can be used to meet the needs of the transportation system. The costs associated with each element of the transportation system plan are compared to potential revenue sources. Options are discussed regarding how costs of the plan and revenues can be balanced.

### CURRENT FUNDING STRATEGIES

Transportation funding is commonly viewed as a user fee system where the users of the system pay for infrastructure improvements through motor vehicle fees such as state and local gas taxes and vehicle registrations. However, virtually all of motor vehicle user fees go to road maintenance, operation, and preservation of the system rather than construction of new facilities. Much of what the public views as new construction is commonly funded (partially or fully) through property tax levies, traffic impact fees (Transportation System Development Charges) and transportation improvements required of private developers.

The City of Troutdale utilizes a number of mechanisms to fund construction of its transportation infrastructure as described below. The first two sources collect revenue each year that is used to repair street facilities or construct new streets, with some restrictions on the type and location of projects. The last program is different in that it does not generate on-going revenue, but is a means to acquire needed property (Exaction) as development occurs.

#### Fuel Tax and Vehicle License Fee

The State of Oregon Highway Trust Fund collects various taxes and fees on fuel, vehicle licenses, and permits. A portion is paid to cities annually on a per capita basis. By statute, the money may be used for any road-related purpose. Troutdale uses it for street operating needs.

Oregon gas taxes are collected as a fixed amount per gallon of gasoline served. The Oregon gas tax is currently 30 cents per gallon. There is an additional tax of 3 cents per gallon within Multnomah County. Gas taxes do not vary with changes in gasoline prices and there is no adjustment for inflation, so the net revenue collected has gradually eroded over time as the cost to construct and repair transport systems increase. Fuel efficiency in new vehicles has further reduced the total dollars collected through this system.

Oregon vehicle registration fees are collected as a fixed amount at the time a vehicle is registered with the Department of Motor Vehicles. Vehicle registration fees in Oregon have recently increased to \$43 per vehicle per year for passenger cars, with similar increases for other vehicle types. There is an additional fee for vehicles registered in Multnomah County or \$19 per vehicle per year. There is no adjustment for inflation tied to vehicle registration fees.

In fiscal year 2012/2013, Troutdale will receive approximately \$890,000 in gas tax and vehicle license fee revenue for streets, bikeways and sidewalks. Essentially all of these funds will be spent on operation and pavement preservation of local streets.

### System Development Charge

The System Development Charge (SDC) fee for streets is used as a funding source for all capacity adding projects for the transportation system. The funds can be used to construct or improve portions of the 42 miles of local streets within the city, or be used as a partial match on county street projects within the city limits. The SDC fee is collected from developers based on the PM peak hour vehicle trips that are expected from a proposed development. The current SDC rate is \$723 per trip, which is among the lowest transportation SDC rates in the State of Oregon. By comparison, the City of Gresham charges \$2,822.95 per 1.01 trip end for their transportation SDC, which is about average for the Portland-Vancouver Metropolitan area.

For fiscal year 2012/2013, the estimated income from the Street SDC is \$27,000. However, the estimated growth in vehicle trips in the horizon of the TSP is 2,872<sup>1</sup> within the City of Troutdale based on land use forecasts for build-out (assuming annexation of land within the Troutdale Urban Planning Boundary). Applying the SDC fee rate of \$723 to that amount of growth would generate \$2.1 million over 20 years, or about \$105,000 each year for the next 20 years. This is slightly higher than the current year's estimate, but it accounts for substantial available land development, particularly north of I-84. The higher rate was used to estimate future revenues since it reflects average expected land development over the next 20 years, and not just the rate of development over the current year, which is the basis used for the current fiscal year estimate.

### Exactions

These are improvements that are obtained when development is permitted. Developers are required to improve their frontage and, in some cases, provide off-site improvements depending upon their level of traffic generation and the impact to the transportation system.

### Summary

Under the above funding programs, the City of Troutdale will collect approximately \$890,000 for street construction and repair each year, with the previously noted restrictions. Total revenues collected over 20 years would be \$19.9 million with the current sources. Table 5-1 summarizes the current funding sources available to fund the transportation system. As shown, it is reasonable to expect that adding

---

<sup>1</sup> This estimate was generated during the 2005 TSP update. An update of this estimate was not within the scope of the 2013 TSP update, but should be updated based on current Metro projects prior to calculating an updated SDC rate.

more capital or maintenance responsibilities to the city will require new or expanded revenue sources since there is already a funding deficit for these services.

**Table 5-1: Summary of Current Revenues for Transportation**

| Funding Category   | Annual Amount (\$1,000) |
|--|-------------------------|
| State and Local Fuel Apportionment & Vehicle License Fee | \$890                   |
| System Development Charge (Streets) **                   | \$105                   |
| County Road  | \$15                    |
| Other (Interest, etc.)                                   | \$35                    |
| <b>Total Revenues</b>                                    | <b>\$1,045</b>          |
| <i>20 Year Total</i>                                     |                         |
| <b>Estimated 20 Year Revenues</b>                        | <b>\$20,900</b>         |

## PROJECTS AND PROGRAMS

This section presents the recommended projects and programs developed for the City of Troutdale to serve local travel for the next 20 years. The Pedestrian, Bicycle, Transit, and Motor Vehicle projects were identified in the Action Plan for each mode, and represent those projects that have the highest short-term need for implementation to satisfy performance standards, or other policies established for the Troutdale Transportation System Plan. Other projects on the Master Plan list require additional funding, and they are expected to be built beyond the 20 year horizon.

### Project Cost Estimates

Cost estimates (general, order of magnitude) were developed for the projects identified in the pedestrian, bicycle, transit, and motor vehicle plans. Cost estimates from the City's Capital Improvement Plan were used in this study, if available. Other projects were estimated using general unit costs for transportation improvements, but do not reflect the unique project elements that can significantly add to project costs.<sup>2</sup> Development of more detailed project costs can be prepared in the future with more refined financial analysis. Since many of the projects overlap elements of various modes, the costs were developed at a project level incorporating all modes, as appropriate. It may be desirable to break project mode elements out separately, however, in most cases, there are greater cost efficiencies of undertaking a combined, overall project. Each of these project costs will need further refinement to detail right-of-way requirements and costs associated with special design details as projects are pursued.

---

<sup>2</sup> General plan level cost estimates do not reflect specific project construction costs, but represent an average estimate. Further preliminary engineering evaluation is required to determine impacts to right-of-way, environmental mitigation and/or utilities. Experience has shown that individual projects costs can increase by 25 to 75 percent as a result of the above factors.

## Other Transportation Programs and Services

In addition to the physical system improvements identified in the previous section, the transportation facilities will require on-going operation and maintenance improvements across a variety of areas. These other transportation programs are recommended to respond to the specific policies and needs in maintaining roadway pavement quality, allocations for implementing neighborhood traffic management, and on-going update and support of related planning documents.

### **Roadway Maintenance**

The annual cost of operations and maintenance programs and services for the 42 miles of streets within Troutdale was estimated at \$1,075,000 with an additional need of 300,000 for pavement preservation, the bulk of which is paid for by gas tax revenues. This does not include road maintenance responsibilities on the arterial streets that are serviced by Multnomah County. Over 20 years, the City's road maintenance responsibility accounts for \$21.5 million, which is the highest cost component of the transportation plan. The actual maintenance costs could vary from this estimate.

### **Neighborhood Traffic Management (NTM)**

Specific NTM projects are not defined. These projects will be subject to neighborhood consensus based upon City placement and design criteria. A City-wide NTM program, if desired, should be developed with criteria and policies adopted by the City Council. Speed humps can cost \$2,000 to \$4,000 each and traffic circles can cost \$3,000 to \$8,000 each. A speed trailer can cost about \$10,000. It is important, where appropriate, that any new development incorporate elements of NTM as part of its on-site mitigation of traffic impacts. Annual allocation of \$10,000 is identified for the program development, and implementation of NTM projects.

### Troutdale Costs for TSP Action Plans

The costs outlined in the Transportation System Plan to implement the Action Plans for Streets, Transit, Bicycles, and Pedestrians total \$3.7 million, and several other recommended transportation operations and maintenance programs would add \$27.7 million for a total cost over 20 years of \$31.4 million. Refer to Chapter 4 for details on the individual projects by travel mode. Note that additional projects are listed in the Action Plans that are expected to be funded by Multnomah County, or ODOT. These non-City costs have not been included in the estimates in Table 5-2, but are identified in Chapter 4.

**Table 5-2: Troutdale Transportation Action Plans Costs over 20 years (2004 Dollars)**

| Transportation Element  | Approximate Cost (\$1,000) |
|---|----------------------------|
| <i>System Improvement Projects (Action Plans projects to be funded by City)</i> |                            |
| Motor Vehicle   | \$2,530                    |
| Bicycle   | \$95                       |
| Transit   | \$100                      |
| Pedestrian  | \$965                      |
| <b>Total Capital Projects</b>   | <b>\$3,690</b>             |
| <b>Operations and Maintenance Programs and Services</b>                         |                            |
| Road Operation and Maintenance (\$1,075,000 per year, increasing annually)      | \$21,500                   |
| Additional Pavement Preservation Need (300,000 per year) <sup>1</sup>           | \$6,000                    |
| Neighborhood Traffic Management (\$10,000/year)                                 | \$200                      |
| <b>Total Operations and Maintenance Programs</b>                                | <b>\$27,700</b>            |
| <b>20 Year Total in 2004 Dollars</b>  | <b>\$31,390</b>            |

The estimated \$27.7 million for operations and maintenance exceeds the expected 20-year revenue estimate of \$20.9 million (see Table 5-1) by approximately \$6.8 million. Alternative solutions to address this funding deficit as well as provide funding for the Action Plan projects are discussed in the next section.

## NEW FUNDING SOURCES AND OPPORTUNITIES

The recommended transportation improvement projects and programs included in the TSP update will require funding beyond the levels currently collected by the City. There are, however, several potential funding sources for transportation improvements, many of which have been used in the past by agencies in Oregon. In most cases, these funding sources, when used collectively, are sufficient to fund transportation improvements for local communities. Due to the complexity of today’s transportation projects, it is necessary to seek several avenues of funding projects. Unique or hybrid funding of projects generally will include these funding sources combined in a new package.

Within the Portland region, funding for major transportation projects often is brought to a vote of the public for approval. This is usually for a large project or list of projects. Examples of this public funding include the Major Streets Transportation Improvement Program (MSTIP) in Washington County or the Westside Light Rail Project. Because of the need to gain public approval for transportation funding, it is important to develop a consensus in the community that supports needed transportation improvements. That is the value of the Transportation System Plan. In most communities where time is taken to build a consensus regarding a transportation plan, funding sources can be developed to meet the needs of the community.

Transportation program funding options range from local taxes, assessments, and charges to state and federal appropriations, grants, and loans. All of these resources can be constrained based on a variety of factors, including the willingness of local leadership and the electorate to burden citizens and

businesses; the availability of local funds to be dedicated or diverted to transportation issues from other competing City programs; and the availability and competitiveness of state and federal funds. Nonetheless, it is important for the City to consider all of its options and understand where its power may exist to provide and enhance funding for its Transportation programs.

The following funding sources have been used by cities to fund the capital and maintenance aspects of their transportation programs. There may be means to begin to or further utilize these sources, as described below, to address new needs identified in the Transportation System Plan.

### General Fund Revenues

At the discretion of the City Council, the City can allocate General Fund revenues to pay for its Transportation program. (General Fund revenues primarily include property taxes, use taxes, and any other miscellaneous taxes and fees imposed by the City.) This allocation is completed as a part of the City's annual budget process, but the funding potential of this approach is constrained by competing community priorities set by the City Council. General Fund resources can fund any aspect of the program, from capital improvements to operations, maintenance, and administration. Additional revenues available from this source to fund new aspects of the Transportation program are only available to the extent that either General Fund revenues are increased or City Council directs and diverts funding from other City programs.

### Voter-Approved Local Gas Tax

Communities such as Sandy, Woodburn, and Tillamook have adopted local gas taxes by public vote. In Sandy, the tax is 1 cent per gallon, paid to the city monthly by distributors of fuel. The process for presenting such a tax to voters will need to be consistent with Oregon State law as well as the laws of the City of Troutdale. Currently, state law prohibits adoption of any new local gas tax until 2014.

### Street Utility Fee or Local Gas Tax Revenue

A number of Oregon cities supplement their street funds with street utility fees and/or local gas taxes. Local cities with adopted street utility fees include Lake Oswego, Wilsonville and Tualatin. Establishing user fees to fund applicable transportation activities and/or capital construction ensures that those who create the demand for service pay for it proportionate to their use. The street utility fees are recurring monthly or bi-monthly charges that are paid by all residential, commercial, industrial, and institutional users. The fees are typically charged proportionate with the amount of traffic generated, so a retail commercial user pays a higher rate than a residential user.

From a system health perspective, forming a utility also helps to support the ongoing viability of the program by establishing a source of reliable, dedicated funding for that specific function. Fee revenues can be used to secure revenue bond debt used to finance capital construction. A street utility can be formed by Council action and does not require a public vote.

A transportation utility fee or local gas tax could be enacted that would generate the roughly \$300,000 per year of additional revenue needed, or \$6,000,000 over the next 20 years. A specific fee study would be required to establish a fee program for the City of Troutdale to determine specific allocations to its residents and businesses.

### Expanded SDC Rate for Transportation

As noted previously, the City's transportation SDC rate is among the lowest in the State of Oregon. At the current rate of \$723 per trip, the SDC program would not provide adequate funding for the Action Plans. It is suggested that the SDC program and rate be re-examined to adjust for the additional TSP recommended Action Plans and changes in population and employment growth projections.

### Other Funding Sources

#### ***Urban Renewal District***

An Urban Renewal District (URD) is a tax-funded district within the City. An URD is funded with the incremental increases in property taxes that result from construction of applicable improvements. This type of tax increment financing has been used in Oregon since 1960. Uses of the funding include, but are not limited to, transportation. It is tax-increment funded rather than fee funded and the URD could provide for renewal that includes, but is not limited to, transportation projects. In 2006 Troutdale created an URD encompassing properties between 257<sup>th</sup> Avenue and the Sandy River and between the Troutdale Town Center and I-84. Although tax increment funds can be used for transportation improvements within the district, the funds have been earmarked for other public improvements to benefit this specific redevelopment area.

#### ***Local Improvement District Assessment Revenue***

The City may set up Local Improvement Districts (LIDs) to fund specific capital improvement projects within defined geographic areas, or zones of benefit. LIDs impose assessments on properties within its boundaries. LIDs may not fund ongoing maintenance costs. They require separate accounting, and the assessments collected may only be spent on capital projects within the geographic area. Citizens representing 33% of the assessment can terminate a LID and overturn the planned projects so projects and costs of a LID must meet with broad approval of those within the boundaries of the LID.

#### ***Direct Appropriations***

The City can seek direct appropriations from the State Legislature and / or U.S. Congress for transportation capital improvements. There may be projects identified in the Motor Vehicle Action Plan for which the City may want to pursue these special, one-time appropriations.

### **Special Assessments**

A variety of special assessments are available in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking and CBD or commercial zone transportation improvements. These assessments would likely fall within the Measure 50 limitations. A regional example would be the Westside LRT where the local share of funding was voter approved as an addition to property tax.

### **Employment Taxes**

TriMet collects a tax for transit operations in the Portland region through payroll and self employment taxes. Approximately \$145 million are collected annually in the Portland region for transit.

### **Debt Financing**

Also, while not direct funding sources, debt financing can be used to mitigate the immediate impacts of significant capital improvement projects and spread costs over the useful life of a project. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but is also viewed as an equitable funding strategy, spreading the burden of repayment over existing and future customers who will benefit from the projects. The obvious caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations.

- **Voter-Approved General Obligation Bond Proceeds:** Subject to voter approval, the City can issue General Obligation (G.O.) bonds to debt finance capital improvement projects. G.O. bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property City-wide (a property tax increase). Depending on the critical nature of any projects identified in the Transportation Plan, and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved G.O. bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.
- **Revenue Bonds:** Revenue bonds are debt instruments secured by rate revenue. In order for the City to issue revenue bonds for transportation projects, it would need to identify a stable source of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds, due to the perceived stability offered by the “full faith and credit” of a jurisdiction.

### **Recommendations for New Transportation Funds**

It is recommended that the City consider establishing a transportation, or street, utility as the backbone of its operations and maintenance funding approach. Street utility fees can provide a stable source of dedicated revenue useable for transportation system operations and maintenance and / or capital construction. Rate revenues can also secure revenue bond debt if used to finance capital

improvements. Street utilities can be formed by Council action, and billed through the City utility billing system.

It is also recommended that the City consider updating its transportation SDC to cover the new City funded non-auto capital projects identified in the TSP. This would help to ensure that local growth pays its fair share of new transportation facilities that are required to serve this planned development.

In addition, the City should actively pursue grant and other special program funding in order to mitigate the costs to its citizens of transportation capital construction.

A transportation utility fee could generate roughly 300,000 per year, or \$6.0 million over the next 20 years, as shown in Table 5-3. These additional funds along with appropriately set and adjusted SDC rates would be expected to generate sufficient revenues to fully capitalize the Action Plan projects and maintenance programs.

**Table 5-3: Recommended New Funding Sources for Troutdale Transportation**

| Transportation Funding Source               | Estimated Additional Annual Revenues (\$1,000) |
|---|--|
| Transportation Utility Fee or Local Gas Tax | \$300  |
| <b>Annual New Revenues</b>                  | <b>\$300</b>                                   |
| <b>20 Year Total</b>                        | <b>\$6,000</b>                                 |

**CITY OF TROUTDALE  
PLANNING COMMISSION STAFF REPORT  
Periodic Review Amendment to the  
Troutdale Comprehensive Land Use Plan,  
Goal 12 Transportation**

**TYPE HEARING:** IV Legislative Hearing

**FILE NUMBER:** 08-071D

**HEARING DATE:** February 19, 2014

**STAFF REPORT DATE:** February 12, 2014

**STAFF CONTACT:** Craig Ward, Acting Community Development Director

**APPLICANT:** City of Troutdale

**PROJECT NAME:** Amend Troutdale Comprehensive Land Use Plan, Goal 12 Transportation, as part of Periodic Review Task 4

**SUMMARY:** Adopt amendment to the Troutdale Comprehensive Land Use Plan relating to Statewide Land Use Goal 12 (Transportation) in conjunction with adopting an updated Transportation System Plan as part of Task 4 of the City's Periodic Review Work Program

**ATTACHMENT:**

A. Draft Findings of Fact and Recommendation with proposed amendment language.

**BACKGROUND**

The City has been in periodic review since the initial notification from the Oregon Department of Land Conservation and Development (DLCD) on May 20, 2008. The tasks that the City must complete as part of periodic review are governed by its approved periodic review work program. DLCD approved the City's work program on April 15, 2010. The approved work program includes tasks related to statewide planning Goal 12, Transportation. Specifically identified as

Staff Report Periodic Review Task 4 Comprehensive Land Use Plan Goal 12 Transportation Amendment

Task 4 of the work program, the City is required to update its Transportation System Plan (TSP) in accordance with Statewide Land Use Planning Goal 12 and Oregon Administrative Rule 660-012, referred to as the Transportation Planning Rule.

The TSP will be adopted as the transportation element of the Comprehensive Plan. It will be the City's primary policy document in guiding decisions relating to its overall transportation system, including streets, sidewalks, pedestrian and bicycle trails, and transit service. The plan provides specific information regarding transportation needs to guide future transportation investment decisions in the City. It helps determine how land use and transportation decisions can be better coordinated for the most efficient movement of people and goods.

Because the TSP presents detailed information about existing and future transportation needs and contains goals and policies to guide the City in providing an efficient and effective transportation system, it serves as the City's policy document for addressing statewide planning Goal 12. For this reason, Goal 12 of the Comprehensive Plan only needs to reference the TSP.

### **EXPLANATION of PROPOSED AMENDMENT**

The Oregon Transportation Planning Rule (ORS 660-012) states that cities and counties must adopt local transportation system plans as part of their comprehensive plans, which the City will be doing by separate action. In conjunction with adopting the TSP, the proposed amendment to Goal 12 of the Comprehensive Plan is very basic and straight forward. It consists of eliminating all current text and substituting it with a short reference to the City's adopted Transportation System Plan for more detailed information about existing and future transportation needs.

### **RELEVANT CRITERIA:**

Section 15.050 of the Troutdale Development Code establishes the following approval criteria for evaluating comprehensive plan amendments.

1. *For Comprehensive Plan text amendments, compliance with the Statewide Land Use goals and related Administrative Rules.*

This text amendment goes hand in hand with adoption of a Transportation System Plan (TSP), which is a required task of the City's periodic review work program. That Plan was prepared in accordance with Statewide Land Use Planning Goal 12 and its related administrative rule. This text amendment is necessary in order for Goal 12 of the Comprehensive Plan to complement and support the TSP. Therefore, it satisfies this approval criterion.

2. *Public need is best satisfied by this particular change.*

The public need that is addressed by adoption of this amendment is to avoid overlap and redundancies between the Comprehensive Plan and the TSP. Because the latter document is part of the Comprehensive Plan, Goal 12 to the Comp Plan only needs to reference the TSP. This text change also satisfies public need by clarifying the relationship of the two documents.

3. *The change will not adversely affect the health, safety and welfare of the community.*

Adoption of this text change to Goal 12 of the Comprehensive Plan supports other required work under periodic review Task 4, which by its very nature is intended to promote and positively affect the health, safety and welfare of the community.

4. *In the case of Development Code amendments, the particular change does not conflict with applicable comprehensive plan goals or policies.*

The proposed amendment pertains only to the Comprehensive Plan and not to the Troutdale Development Code; therefore, this criterion does not apply.

**RECOMMENDATION:**

The proposed amendment is an integral part of satisfying the required task of the City's periodic review work program relating to statewide planning goal 12 and Goal 12 of the Comprehensive Plan. The amendment complements and supports the City's adoption of a Transportation System Plan as required by Statewide Land Use Planning Goal 12 and Oregon Administrative Rule 660-012. Staff recommends that the Planning Commission forward the amendment to the City Council with a recommendation for adoption (Attachment A).

THIS PAGE INTENTIONALLY BLANK

**ATTACHMENT A**  
**DRAFT FINDINGS of FACT and RECOMMENDATION**

**PLANNING COMMISSION**  
**FINDINGS of FACT and RECOMMENDATION**  
**FEBRUARY 19, 2014**

**Periodic Review Task 4**  
**Amendment to the Troutdale Comprehensive Land Use Plan**  
**Goal 12 Transportation**

The Troutdale Planning Commission held public hearings on May 29, 2013 and February 19, 2014, to take public testimony, and to make a recommendation to the City Council, concerning adoption of a proposed amendment to the Troutdale Comprehensive Land Use Plan relating to Statewide Land Use Goal 12 (Transportation) as part of Task 4 of the City's Periodic Review Work Program. Having provided the opportunity for the public to express their views on the proposal, the Planning Commission now makes and enters the following findings of fact together with its recommendation to the Council for action.

**FINDINGS OF FACT:**

1. The City has been in periodic review since the initial notification from the Oregon Department of Land Conservation and Development (DLCD) on May 20, 2008. The tasks that the City must complete as part of periodic review are governed by its approved periodic review work program. DLCD approved the City's work program on April 15, 2010.
2. The City's approved work program includes tasks related to statewide planning Goal 12, Transportation. Specifically identified as Task 4 of the work program, the City is required to update its Transportation System Plan (TSP) in accordance with Statewide Land Use Planning Goal 12 and Oregon Administrative Rule 660-012.
3. The TSP will be adopted as the transportation element of the Comprehensive Plan. It will be the City's primary policy document in guiding decisions relating to its overall transportation system, including streets, sidewalks, pedestrian and bicycle trails, and transit service. Because the TSP presents detailed information about existing and future transportation needs and contains goals and policies to guide the City in providing an efficient and effective transportation system, it serves as the City's policy document for addressing statewide planning Goal 12. For this reason, Goal 12 of the Comprehensive Plan only needs to reference the TSP.

4. The proposed amendment to Goal 12 of the Comprehensive Plan (Exhibit A) consists of eliminating all current text and replacing it with a short reference to the City's adopted Transportation System Plan for more detailed information about existing and future transportation needs.

5. This text amendment goes hand in hand with adoption of a Transportation System Plan (TSP), which is a required task of the City's periodic review work program. That Plan was prepared in accordance with Statewide Land Use Planning Goal 12 and its related administrative rule. This text amendment is necessary in order for Goal 12 of the Comprehensive Plan to complement and support the TSP.

6. The public need that is addressed by adoption of this amendment is to avoid overlap and redundancies between the Comprehensive Plan and the TSP. This text change also satisfies public need by clarifying the relationship of the two documents.

7. Adoption of this text change to Goal 12 of the Comprehensive Plan supports other required work under periodic review Task 4, which by its very nature is intended to promote and positively affect the health, safety and welfare of the community.

8. Notice of the public hearing has been provided in accordance with applicable law.

**RECOMMENDATION:**

In view of the above findings of fact, the Planning Commission recommends that the Troutdale City Council adopt the proposed amendment (Exhibit A) to Goal 12 of the Comprehensive Land Use Plan as part of Task 4 of the City's periodic review work program.

---

Tanney Staffenson, Chair  
Troutdale Planning Commission

February 19, 2014

**EXHIBIT A**  
**Planning Commission Findings and Recommendation**  
**Periodic Review Task 4 Comp Plan Goal 12 Transportation Proposed Amendment**



**CITY OF TROUTDALE**

**Proposed Amendment to the  
Troutdale Comprehensive Land Use Plan**

**Amending:**

**Troutdale Comprehensive Plan Goal 12 Transportation**

**Relating to:**

**Task 4 of the City's Periodic Review Work Program**

*This project is funded by Oregon general fund dollars through the Department of Land Conservation and Development. The contents of this document do not necessarily reflect the views or policies of the State of Oregon.*

**EXHIBIT A**

**Planning Commission Findings and Recommendation**  
**Periodic Review Task 4 Comp Plan Goal 12 Transportation Proposed Amendment**

Page 2 of 2

*Explanation of Amendment. The text of current Goal 12 of the Troutdale Comprehensive Land Use Plan is being eliminated in its entirety and replaced with the following text.*

## **Goal 12 -- Transportation**

### **Transportation System Plan**

The City of Troutdale has prepared and adopted a Transportation System Plan (TSP) as the transportation planning element of the Comprehensive Plan. The TSP contains policies related to the provision of transportation facilities and services, as well as information about current and needed future transportation facilities, costs and funding. The TSP should be referenced for policies and other specific information about transportation facilities in Troutdale.