THE CITY OF TROUTDALE OREGON
EST. 1907

PLANNING COMMISSION

July 27, 2022

Special Meeting | 7:00 p.m.
Troutdale Police Community Center – Kellogg Room
234 SE Kendall Ct, Troutdale, OR 97060

Agenda

1. Call to Order, Roll Call, & Pledge of Allegiance
2. Public Comment on Non-Agenda Items
3. Election of Chair & Vice-Chair
4. Appointment for the Town Center Advisory Board (TCAB)
5. Discussion of the Transportation System Plan Update
6. Discussion on Senate Bill 458
7. Staff Communications
8. Commissioner Comments
9. Adjournment

Participation
The public may attend the meeting in person or via Zoom using the link below. Full Zoom details, including call-in information is available online here.
https://us02web.zoom.us/j/84064675806?pwd=bjVrZDU3UVN3c3JleElBd1o0bUJDZz09

This meeting location is accessible to persons with disabilities. A request for an interpreter for the hearing impaired or for other accommodations for persons with disabilities should be made at least 48 hours prior to the meeting to the City of Troutdale (comdev@troutdaleoregon.gov or 503-665-5175).

Next Meetings: Wednesday, August 10, 2022 at 7:00 p.m.
Wednesday, August 24, 2022 at 7:00 p.m.

THE CITY OF TROUTDALE OREGON
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MEMORANDUM

DATE: July 21, 2022
FROM: Melissa Johnston, AICP, Associate Planner
Alex Lopez, Assistant Planner
TO: Members of the Planning Commission
CC: Marlee Boxler, Economic Development Coordinator

SUBJECT: July 2022 Planning Commission Meeting – Nominations & Appointments

The new term for committees and commissions begins on July 1st and ends on June 30th, 2023, which is a change from the traditional start matching the calendar year.

APPOINTMENT OF CHAIR AND VICE CHAIR

The first order of business for the July meeting is the nomination and appointment of the chair and vice chair of the commission, which serves in those capacities for a 12-month period beginning at the July meeting ending with the June meeting.

Assuming that the chair from the previous term (2021-2022) remains on the commission, that chair will open the meeting in July and request nominations for chair for the new term and will call for the vote. If the chair remains the same person, they can remain in that position and simply move on to nominations for vice chair. If there is a new chair appointed, then the new chair immediately takes the position and calls for nominations for vice chair.

If the person who was the chair in the previous term is either no longer on the commission or is absent for that meeting, the responsibility falls to the vice chair from the previous term to open the meeting. If the vice chair is no longer on the commission or is absent, then the responsibility to open the meeting falls to the staff liaison.

Commission members who have an interest in chairing or vice-chairing a commission should consider reaching out to the existing chairs and/or staff to discuss the obligations of the position and consider becoming more familiar with procedural rules. The City intends to share a condensed version of Roberts Rules of Order to every commission member in advance of the July meeting

APPOINTMENT OF TOWN CENTER ADVISORY BOARD MEMBER

The City established the Town Center Advisory Board (TCAB, spoken as “tee-cab”) in 2022. The make-up of that committee allows for five directly appointed members that City Council selects on staggered, multi-year terms and one seat reserved for each of the standing committees of the city, which are one-year appointments. It is up to each committee to appoint their designee, which should be done at the July meeting. This designee has full voting rights on TCAB and is expected to fully participate in

proceedings – it is not a liaison or ex-officio position. Any member of a committee can be appointed to TCAB, including the chair or vice-chair.

TCAB is expected to meet between four to six times a year in its first year, with the 2nd Thursday of the month likely being the regular meeting date. Its responsibilities include:

- Performing an annual review of the 2020-2040 Town Center Plan to ensure its vision, goals, and implementation are being followed
- advise on what implementation projects should be pursued
- provide feedback on prospective development in the opportunity sites that were established in the plan to ensure development is consistent with the Plan.
- oversee an upcoming downtown parking study, expected to start in the next 3 to 6 months

Because of the comprehensive nature of the Town Center Plan, it was important that each of the standing committees had representation on TCAB. The designee is expected to regularly report at the PC meeting about items that TCAB is working on and to share PC activities with TCAB.

THE CITY OF TROUTDALE OREGON EST. 1907

MEMORANDUM

Date: July 27, 2022
From: Melissa Johnston, Associate Planner
To: Planning Commission
CC: Alex Lopez, Assistant Planner

Subject: Transportation System Plan, Draft Updates

The Transportation System Plan (TSP) is the City's main long-range transportation plan. The TSP guides future transportation investment and land use decisions. Adopting and periodically updating the TSP is a required for compliance with the State's (Department of Land Conservation and Development) Transportation Planning Rule and fulfills Goal 12 of the City's Comprehensive Land Use Plan. Troutdale's current TSP was adopted in 2014.

The purpose of this TSP amendment is to incorporate new projects, particularly those identified in the 2020-2040 Town Center Plan. Inclusion of these projects in the TSP is necessary to obtain grant funding or to require new developments to install or fund elements of these new projects.

Update Process

Staff is working with Kittelson and Associates to update the TSP. The Citizens Advisory Committee (CAC) served as the main group overseeing the update process and their meetings served as the primary forum for public feedback. The CAC held six meetings to discuss the TSP and consider new projects for inclusion. Technical advisory staff from Kittelson and Associates, City of Troutdale planning and public works departments, and Multnomah County met three times during the update process to review the technical memos and the draft updates. The next stages of review will be to hold public hearings with the Planning Commission and City Council.

Attachments

Five documents are included in this packet for review in preparation for the July 27th briefing and August 24th hearing. The Update Needs Handout is an overview of the projects proposed for inclusion or modification in the Transportation System Plan. The Town Center Plan, Chapter 2.4 describes the opportunity sites and opportunities corridors from which projects were selected for consideration and evaluation by CAC and the technical advisory team. The next two attachments are technical memos prepared by Kittelson and Associates that were informed by and reviewed by CAC and the technical advisory team. The last attachment is the full 2014 Transportation System Plan with redline edits that indicate the proposed 2022 updates.

- **For the July 27th discussion**, I recommend studying the Update Needs Handout and skimming the Town Center Plan, technical memos, and Transportation System Plan redlines.
- **For the August 24th hearing,** I recommend giving the Transportation System Plan redlines a detailed read in preparation for considering the plan for adoption.

Timeline:

- **Introduction |** December 1st, 2021 & January 5th, 2022 CAC meetings
- **Tech Memo #1: Existing Conditions and Future Needs |** March 2nd CAC meeting
  Guest presentation by Kittelson & Associates
- **Tech Memo #2: Alternatives Analysis |** May 4th CAC meeting
  Guest presentation by Kittelson & Associates
- **Review of Draft TSP Updates |** June 1st CAC meeting
  Guest presentation by Kittelson & Associates
- **Additional comments and debrief |** July 6th CAC meeting
- **Planning Commission Briefing |** July 27th
- **City Council Briefing |** Anticipated on August 23rd
- **Planning Commission Hearing |** Anticipated on August 24th
  Guest presentation by Kittelson & Associates
- **City Council Hearings |** Anticipated in September

  Guest presentation by Kittelson & Associates

ATTACHED:

1. Update Needs Handout
2. 2020-2040 Town Center Plan, Chapter 2.4
3. Technical Memo #1: Existing Conditions and Future Needs
4. Technical Memo #2: Alternatives Analysis
5. Transportation System Plan – Redlines, version 7-20-22

Attachment 1

Update Needs Handout

07-20-22

TSP Update Needs	
Corridor A – Halsey Street	• Updated P5: Construct pedestrian facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input • Added B19: Construct bike facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input • Updated M6: Construct facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input.
Corridor C – Historic Columbia River Highway	• Added M16: Prepare a refinement plan for downtown Troutdale and consider changes to the street profile to improve mobility – Project B16 and P37 may be impacted by the refinement plan
Corridor D - E Historic Columbia River Highway	• Added P40: Install sidewalks on the east side of Historic Columbia River Highway from Depot Park to the Beaver Creek Bridge – Also widen sidewalks on the west side • Added B20: Install enhanced on-street bike lanes from Depot Park to east city limits • Added M17: Install traffic calming features along the Historic Columbia River Highway from Depot Park to east city limits
Corridor E – Buxton Road	• Updated B2: Install enhanced on-street bike lanes from Historic Columbia River Highway to Cherry Park Road – added to bicycle action plan • Updated B3: Install on-street bike lanes from Halsey Street to the railroad underpass – added to the bicycle action plan
Corridor H – Downtown URA Connections	• Added P42: Install a bicycle-pedestrian bridge from Historic Columbia River Highway at Harlow Avenue to the Confluence Site • Added M18: Construct a vehicular connection that extends Kibling Avenue and crosses the railroad tracks at-grade and continues into the Confluence site. • Added M19 to "create a vehicular connection that extends Kibling Avenue and crosses the railroad tracks at-grade and continues into the Confluence site"

TSP Update Needs	
Site 1 – Depot Park	• Added B22: Construct a bike/transit hub at Depot Park • Added M19: Install a traffic control device where E Columbia River Highway turns to the south
Site 6 – Four Square Tract Site 7 – Overlook Tract	• Added P43: Install a bicycle-pedestrian bridge over 257th Drive • Added P44: Install a trail from Kendall Avenue at 2nd Street to Halsey Street via the 2nd Street Bridge • Added B21: Install shared roadway signs on 2nd Street from Kendall Avenue to Kibling Avenue and on Kibling Avenue from 2nd Street to Historic Columbia River Highway
Site 11 – Beaver Creek West Tract Site 12 – Peninsula Tract	• Added P45: Install a trail from Depot Park to Glenn Otto Park on or near the west side of Beaver Creek
Confluence Site	• Updated project M13: "Conduct a parking study within the Troutdale Town Center – the study should include an evaluation of potential off-street parking facilities
Other	• Added P41: Install sidewalks on the south side of Historic Columbia River Highway from the Beavercreek Bridge to the Sandy River Bridge

Attachment 2

2020-2040 Town Center Plan

Chapter 2.4

2.4 OPPORTUNITY SITES & CORRIDORS

OPPORTUNITY SITES

GUIDING STATEMENT

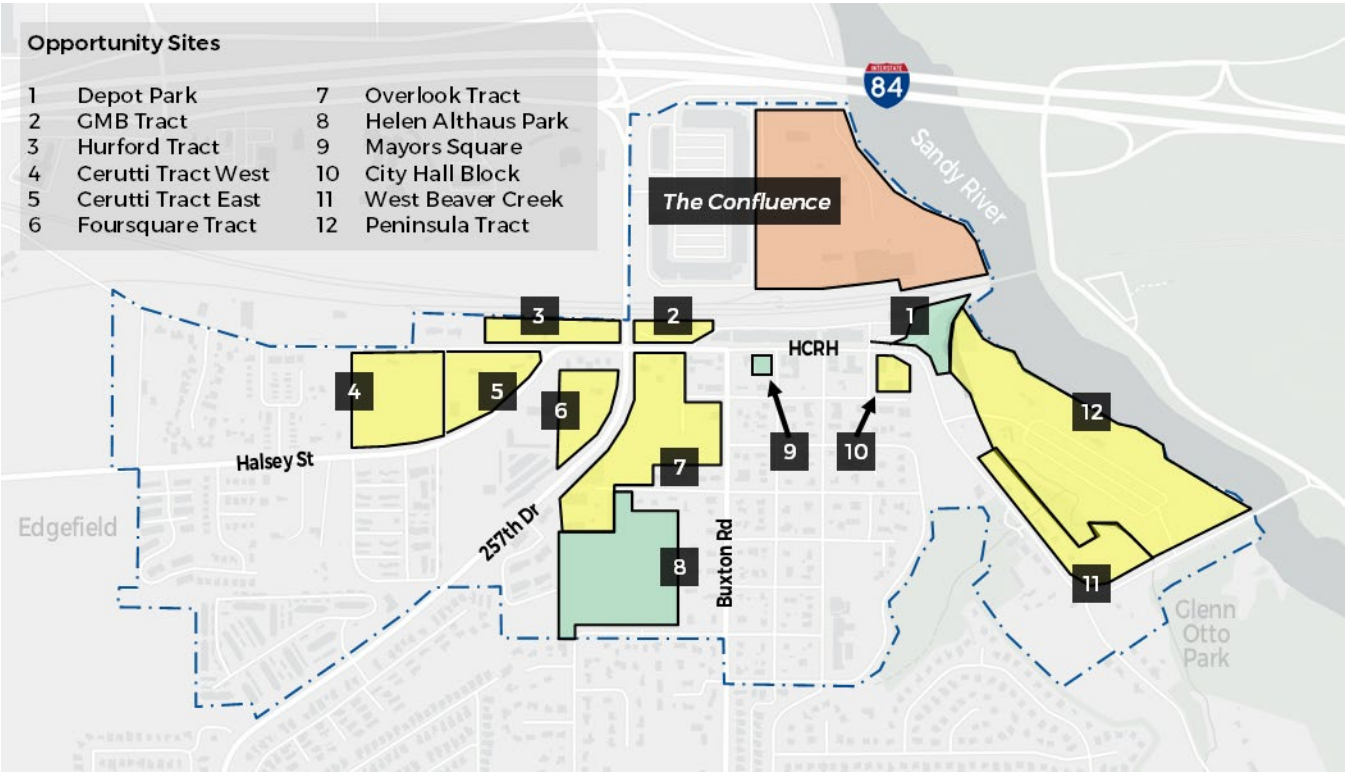
The development (or redevelopment) of an opportunity site has a positive impact not only on the site or its surroundings, but on the Town Center as a whole.

IDENTIFYING THE OPPORTUNITY SITES

How can needed or desired development be added to Town Center without fundamentally changing the characteristics of the district? This is a difficult question that the Committee wrestled with over time. Without a clear strategy on how to deal with the effects of density, the existing built and natural environment would be subject to development that would alter what people appreciate about the District. A strategy to be intentional about how and where development should go began to emerge.

The Plan identifies **12 opportunity sites** and **the Confluence Site** with the Urban Renewal Area where development and investment should be focused to help fulfill the Vision, optimize those parcels to their highest and best use, and conserve the existing built environment.

An opportunity site as defined by this Plan is a property (or collection of properties) where development or redevelopment could be transformative across the entire Town Center district.



LAND USE CATEGORIES

In considering future development or redevelopment opportunities for these sites, the Committee went through a comprehensive exercise that looked at seven broad land use categories to determine the optimal land uses, based on community feedback, site characteristics and surrounding land uses. The following categories were used:

- **Medium density residential**, which averages 8 dwelling units an acre and includes small lot single-family detached dwellings and middle housing types.
- **High density residential**, which averages 24 dwelling units an acre and includes apartment (rented) and condominium (owned) style development.
- **Mixed use**, which averages 16 dwelling units an acre and presumes multi-story structures with ground floor commercial or flexible space and upper floor residential dwelling units.
- **Commercial service**, which do not contain residential uses and are for service uses (including dining establishments), smaller offices (less than 25 employees) indoor entertainment, lodging facilities, and smaller office uses.
- **Commercial office**, which consider offices for 25 or more employees.
- **Community service**, which are for civic-related uses such as educational facilities, government offices, and human services (library, daycare, senior center, etc.), but excluding parks and plazas.
- **Open space & parks,** which include active parks with amenities, passive parks, plazas, recreational and sports facilities, and natural areas.

To determine the carrying capacity of each site for each improvement, a regression model was developed which would help determine the impact that the site could have on the available land left.

In establishing these sites and assigned preferred land uses to each of them, the Plan is not demanding when (or how) a site should develop. Instead, the Plan sets a preference for development when a site is under consideration. The Plan also sets an expectation that development is respective of surroundings and will not fundamentally change the character of the surrounding areas and is consistent with the Town Center Vision.

Although the Committee arrived at a general consensus on preferred land use types, there were strong concerns from some members about the impact of certain development options based on land use, scale, or some combination thereof on opportunity sites 3 and 7. Please refer to those site details in the plan and the corresponding minority report in Appendix A.

Preferred Land Use Tabulation

Each Committee member evaluated the identified opportunity sites along with the feedback provided by the public and attempted to prioritize land uses for each site. They inputed their data into a regression model which provided an estimate on the carrying capacity for each site based on the acreage of the site and the impact of each use. The following results show an aggregated average of the Committee's responses.

PREFERRED LAND USES		Land Use Classifications (in acres)		
Site #	Opportunity Site	First Preference	Second Preference	Third Preference
1	Depot Park	Open Space & Parks	Community Service Use	
2	GMB Tract	Commercial Service	Community Service Use	
3	Hurford Tract	Commercial Service	Community Service Use	Mixed Use
4	Cerruti Tract West	Med Density Residential	High Density Residential	Mixed Use
5	Cerruti Tract East	Commercial Service	Mixed Use	Med Density Residential
6	Foursquare Tract	Community Service Use	Commercial Office	Mixed Use
7	Overlook Tract	Community Service Use	High Density Residential	Mixed Use
8	Helen Althaus Park	Open Space & Parks		
9	Mayors Square	Open Space & Parks		
10	Block 4 Tract (Old City Hall)	Community Service Use	Mixed Use	Hi Dens Res / Com Serv
11	Beaver Creek West Tract	Mixed Use	Med Density Residential	Commercial Service
12	Peninsula Tract	Open Space & Parks	Community Service Use	Commercial Service
URA	The Confluence	Mixed Use	Commercial Service	Open Space & Parks

General Development Preference

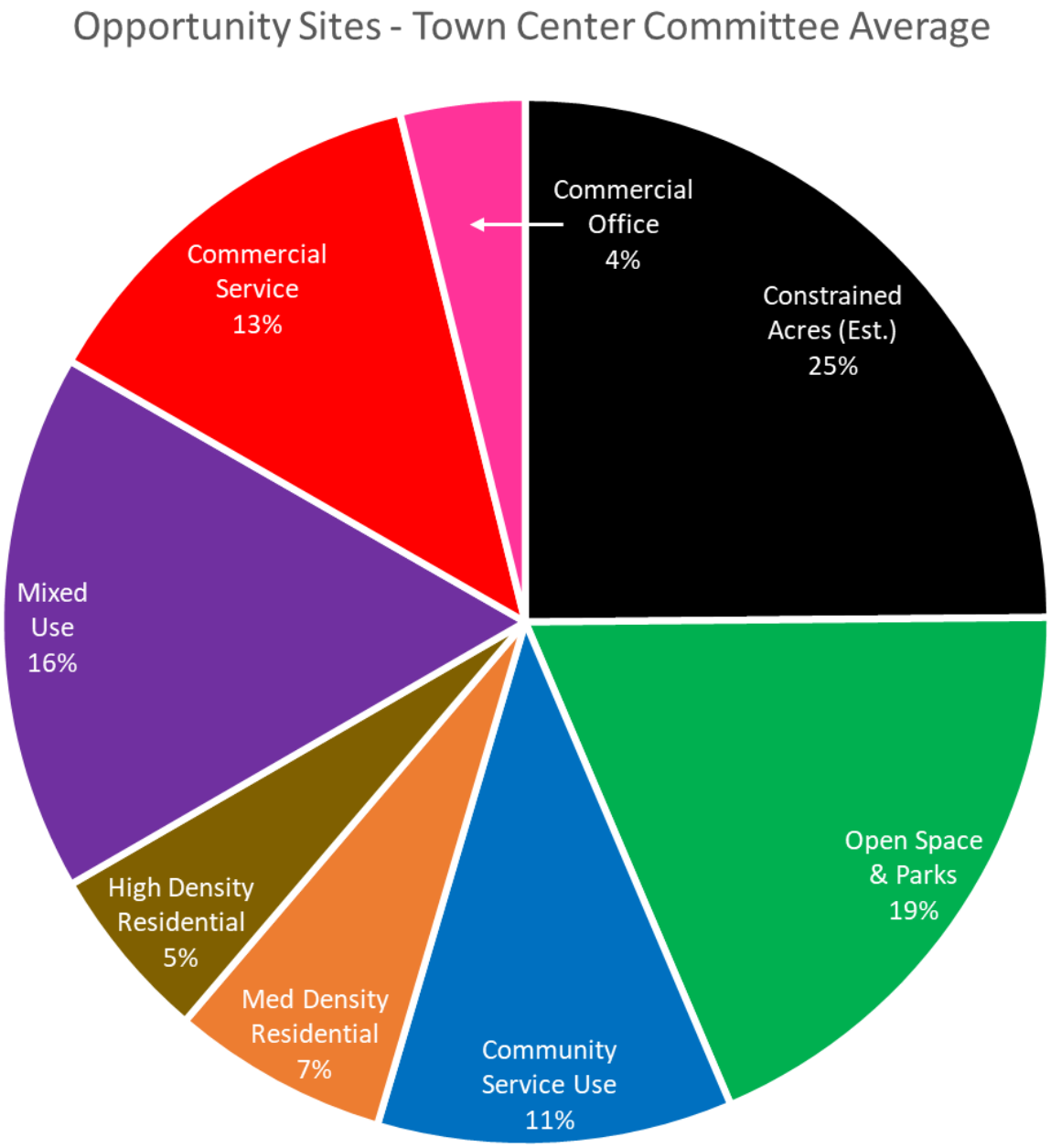
In taking the results of the above table, a calculation was made on how the preferred land uses would be distributed across the available land (roughly 77 acres) among all the opportunity sites. About 25 percent of the available land is removed from the gross acreage as constrained, due to natural conditions like steep slopes, wetlands, or sensitive areas not conducive to development.

The chart above helps underscore the general development preference of the Committee across all the opportunity sites and the Confluence site.

SITE-SPECIFIC ANALYSIS AND PREFERENCES

The following pages go into detail for each opportunity site, listing benefits and drawbacks for considering future development. They also list specific concepts and ideas that were shared with the Committee during public outreach. The listing of preferred land uses or particular ideas should not preclude other ideas or concepts that can emerge over time.

Some of the opportunity sites also have specific details or unique ideas tied to them that prompted general interest and further discussion from the public. Those details are expanded upon herein.



Open Space & Parks (left) and Mixed Use (right) are the most preferred land uses identified in the Committee analysis. (Images: American Planning Association)

SITE 1 – DEPOT PARK

As of 2020, Depot Park is a City-owned property located at the east end of the downtown core. The primary structure on the site is the 1907 Troutdale Rail Depot, which is the historic railroad station of the community. The Depot was relocated to the site in the 1970s and has served as a cultural and historic landmark for the community. The City of Troutdale committed to renovating the Depot in 2017 and began renovation work in 2020 in coordination with the Troutdale Historical Society. The grounds of Depot Park have also had long-term plans for improvement and relocation of existing fixtures, though some will require approval from other entities, including a Blue Star Memorial Byway marker.

Surroundings

The site is bound by the Sandy River and Beaver Creek waterways to the east, the Union Pacific Railroad to the north, and commercial service uses to the west.

Advantages

- Critical location at the nexus of Downtown, The Confluence, and the East End neighborhoods
- Tremendous visibility
- Future City investments to the site and the trail connecting to The Confluence site

Challenges

- Traffic patterns and a sloped curve do not allow for a safe bike and pedestrian environment when entering and exiting the property
- Limited investment in park furnishings
- Limited size and constrained acreage due to slope and floodplain

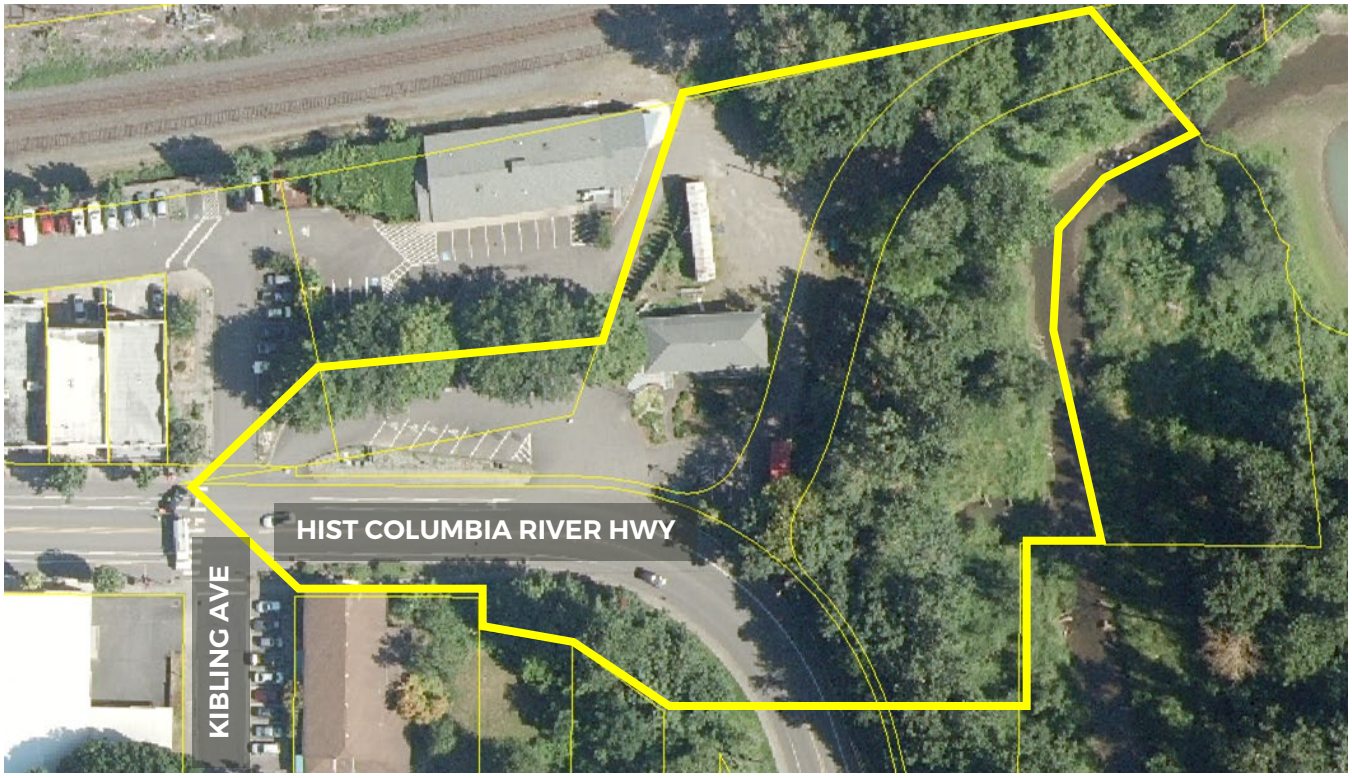
Preferred Future Land Uses

- Parks & Open Space
- Community Service Uses

Future Ideas and Potential Investments

- Installation of park and wayfinding signage
- Completion of the Depot building renovations
- Establishment of the visitor center and re-establishment of the museum in the Depot
- Creation of the bike depot and associated installations
- Relocation of the caboose to establish a mini plaza
- Three-way stop intersection where E HCRH turns at the intersection with parking lot
- Creation of a “veterans plaza” with flagpoles at a terminal vista point
- Dropping the name “Depot Park” if tied to a larger waterfront park (see Opportunity Site 12)

Above: Depot Park in fall 2019, looking northeast from the Historic Columbia River Highway
Below: The Depot Park Opportunity Site (Image: Metro RLIS)



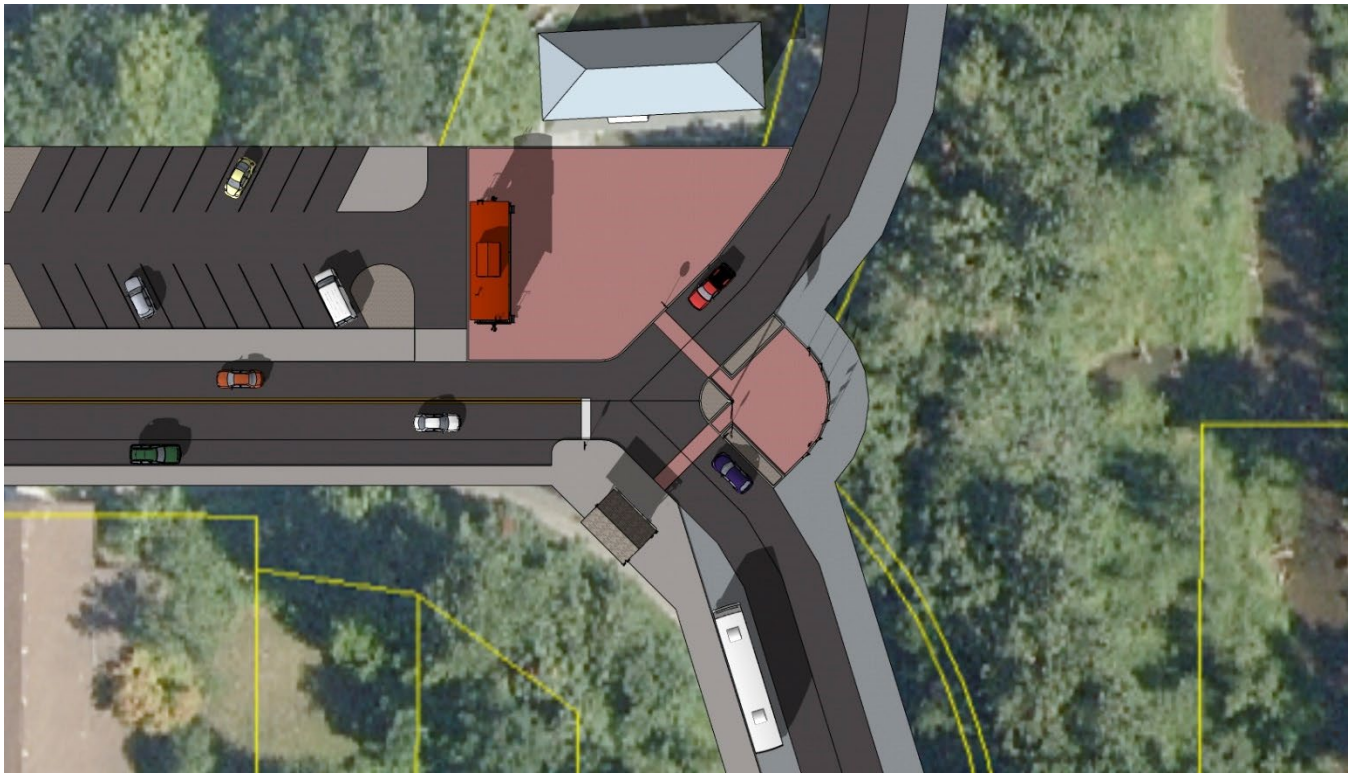
Concept rendering of the Columbia River Gorge Bike Hub at Troutdale (Image: Shapiro/Didway LLC)

Bike Hub

In 2015 the West Columbia Gorge Chamber of Commerce received grant funding to begin planning for a bike hub on the property. The hub, which would be one of six located throughout the Columbia River Gorge would serve as a launch-off point for recreational distance cyclers who would head on expeditions into the Columbia River Gorge or would access the 40 Mile Loop trail network.

The improvements to the grounds include the creation of a plaza, the relocation of the Union Pacific caboose, and the establishment of a more formal parking area on the east and north sides of the Depot. They would include restroom facilities and locker storage.

Regular cyclists in Downtown Troutdale



Changes to the road may help with traffic calming and overall safety. The concept shown above and below imagines a three-way stop that also creates a "veterans plaza" and bus parking zone adjacent to the visitor center and bike hub. This plaza, with a large flagpole can also serve as an eye-catching fixture on a centerline for travelers going either direction on the Historic Columbia River Highway.

SITE 2 – GMB TRACT

The GMB Tract is a 1.05-acre lot that is strategically located on the northeast corner of the Historic Columbia River Highway and 257th Drive. The original history of the building is that it served as a warehouse for produce. In more recent history, the building has served as a gallery, studio, and fabrication shop for local artists. Since about 2012, the building and the grounds have sat empty.

The building is one of the largest existing structures in Downtown, covering approximately 16,000 square feet under roof with significant roof clearance. The property also contains an ample amount of off-street parking, lending itself to a future use that could benefit from that supply.

Surroundings

The property is bound by the Union Pacific railroad to the north, 257th Drive to the west, the Historic Columbia River Highway to the south, and the downtown commercial businesses to the east.

Advantages

- Prominent location at main intersection in Town Center
- Significant off-street parking which is unique in the downtown setting.
- Existing structure with large enclosed area

Challenges

- Direct vehicular access to the lot is awkward for vehicles and not especially safe for pedestrians
- Property ownership has turned down numerous recent efforts to consider future uses
- Building may be too big for a single user
- Grade differential (not directly along the Historic Columbia River Highway)

Preferred Future Land Uses

- Commercial Service
- Community Service

Future Ideas and Potential Investments

- Coordination with City on improved driveway access and pedestrian safety
- Reconfiguration of western parking area
- Indoor farmers/makers market with central food hall or congregation area
- Small-scale grocery store or produce market
- Museum, meeting, or exhibition space
- Railway station for intercity or tourist train service

Above: A bird's eye view of the GMB Tract Opportunity Site, looking northeast (Image: Google Earth)

Below: The eastern façade of the building on the site as of spring 2020, looking west. The building has enormous potential to maintain its footprint yet be resourceful for a variety of uses.

SITE 3 – HURFORD TRACT

The Hurford Tract is a long and somewhat narrow 2.35-acre collection of properties at the northwest corner of the Historic Columbia River Highway and 257th Drive, stretching westward for about 700 linear feet along W HCRH. The majority of the tract is undeveloped, with the exception being a building located right at the intersection of W HCRH and Halsey Street. Most of the properties of the Hurford Tract are owned by the Hurford family. (Disclosure: a member of the family, Dean Hurford, served on the Town Center Committee) The remaining structure on the site was previously a sauerkraut producer.

As of 2020, the Hurford Tract was also listed as an opportunity site by the *Main Streets on Halsey Site Readiness and Code Audit* project and has been subject to further analysis to determine the economic feasibility and regulatory constraints for potential development projects.

Surroundings

The site is surrounded by the railroad to the north, commercial services to the east and south, and low density residential to the west.

Advantages

- Prominent location at two main intersections
- Dramatic views of Downtown, Broughton Bluff, and into the Columbia River Gorge
- The property is generally flat

Challenges

- Wider right-of-way at intersection limits buildable area
- The depth of the parcel may limit flexibility in terms of placement of buildings and parking
- The proximity of two major intersections may limit driveway spacing to enter and exit the tract
- Nearby railroad tracks may deter certain land uses from considering development interest

Preferred Future Land Uses

- Commercial Service
- Community Service Use

Future Ideas and Potential Investments

- Right-of-way reduction and up-to-date street improvements along the road frontages
- A civic-use corner building with a rooftop plaza, park, or gathering space
- A boutique hotel
- Senior housing facility
- Educational facility

Above: The site borders on the most prominent intersection in the community, at the northwest corner of the Historic Columbia River Highway and 257th Drive.

Below: The Hurford Tract Opportunity Site (Image: Google Earth)

Traditional community planning principles often suggest a signature building should anchor a major corner and can help establish (or extend) a feel for downtown. The rendering below shows a hypothetical proposal for commercial and civic uses on site but one that would be controversial due to a need to increase height limits. (refer to minority report in Section 3.4). *(Rendering: Randy Wilson)*

The Hurford Tract was seen by several Committee members as an appropriate area to have a building exceed 35 feet in height, due to its distance from the downtown core (see above). A taller building may allow for impressive views of downtown from a rooftop (see below). Other committee members have expressed concerns contained in a minority report (see Section 3.4). *(Renderings: Chris Damgen)*

SITE 4 – CERRUTI TRACT WEST

The Cerruti Tracts are positioned with dual street frontages on the north (the Historic Columbia River Highway) and south (Halsey Street) and have the potential to be key to strengthen and better define the Halsey neighborhood.

The western tract is comprised of two lots totaling 5.76 acres and are both owned by the Cerruti family. A house sits on the smaller lot (0.28 acres) while the balance of the property is used for agricultural purposes. The tract is generally flat and would appear to have few natural constraints for future development possibilities.

Surroundings

The site is surrounded by industrial and low-density residential to the north, commercial and community service uses to the east (Cerruti Tract east), and medium and high density residential to the south and west

Advantages

- Generally flat terrain with few site constraints (easy to develop)
- Double frontage on arterial streets (optimal street/parking layouts)
- Transition between residential and commercial uses

Challenges

- Property ownership has historically shown little interest in developing or selling site

Preferred Future Land Uses

- Medium Density Residential
- High Density Residential
- Mixed Use

Future Ideas and Potential Investments

- Townhome style development with a small pocket park
- Small lot residential subdivision – neo-traditional style with alleys
- Condominiums
- Grocery store

Above: The Cerruti Tract West Tract as of summer 2019 looking across the tract in a southwest direction from the Historic Columbia River Highway.

Below: The Cerruti Tract West Tract Opportunity Site (Image: Google Earth)

SITE 5 – CERRUTI TRACT EAST

The Cerruti Tracts are positioned with dual street frontages on the north (the Historic Columbia River Highway) and south (Halsey Street) and have the potential to be key to strengthen and better define the Halsey neighborhood.

The eastern Cerruti Tract is comprised of two lots totaling 3.25 acres. It has all the geographic advantages of the western tract, including direct frontage at the intersection of Historic Columbia River Highway and Halsey Street. Unlike the western tract however, this tract has existing development upon it; including the Pounder Oil gas station (Shell and CFN branded facility) and a maintenance shed and lot owned and operated by the Oregon Department of Transportation.

Surroundings

The site is surrounded by low density residential and undeveloped lots to the north, commercial uses to the east and south, and undeveloped areas to the west (Cerruti Tract West).

Advantages

- Double frontage on arterial streets (optimal street/parking layouts)
- Transition between residential and commercial uses

Challenges

- Existing development already exists, including a public agency (ODOT)
- Existing fuel station use may have environmental concerns if redeveloped.

Preferred Future Land Uses

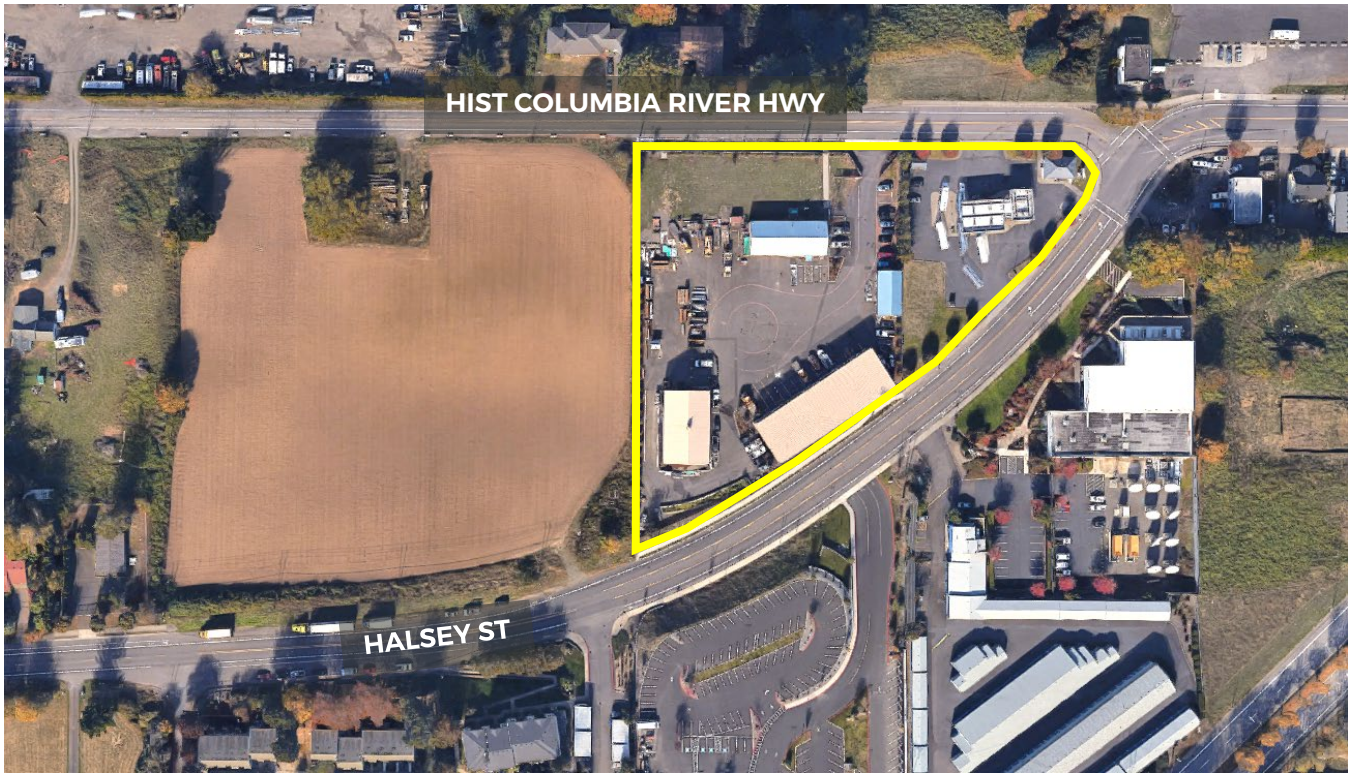
- Commercial Service
- Mixed Use
- Medium Density Residential

Future Ideas and Potential Investments

- Grocery store
- Pharmacy
- Traffic circle
- Civic use – city hall or library specifically mentioned

Above: The Cerruti Tract East Tract as of fall 2019, looking west from the intersection of Halsey Street and the Historic Columbia River Highway. The site contains the service station and ODOT facility.

Below: The Cerruti Tract East Tract Opportunity Site (Image: Google Earth)



SITE 6 – FOURSQUARE TRACT

The Foursquare Tract is a triangularly shaped undeveloped four-lot tract of 2.8 acres positioned on the inside curve of 257th Drive in the southwest quadrant of its intersection with the Historic Columbia River Highway. Although gently sloped, the site has a long frontage along the arterial and could be large enough to have certain property uses be positioned without too much grade being affected.

Surroundings

The site is bound on the north by smaller commercial development, on the east and southeast by 257th Drive, and on the west by a self-storage facility and utility company.

Advantages

- Relatively flat property with lengthy frontage and visibility along 257th Drive.
- Sewer reservations on the property may reduce upfront cost of system development charges

Challenges

- Despite the frontage, full turn access in and out of the site from 257th Drive will be difficult, given the proximity of the intersection of Historic Columbia River Highway, the slope profile of the road, and the speed at which vehicles are typically accustomed to traveling.
- No other obvious road access options exist unless easements or additional acquisitions are made by a development interest.

Preferred Future Land Uses

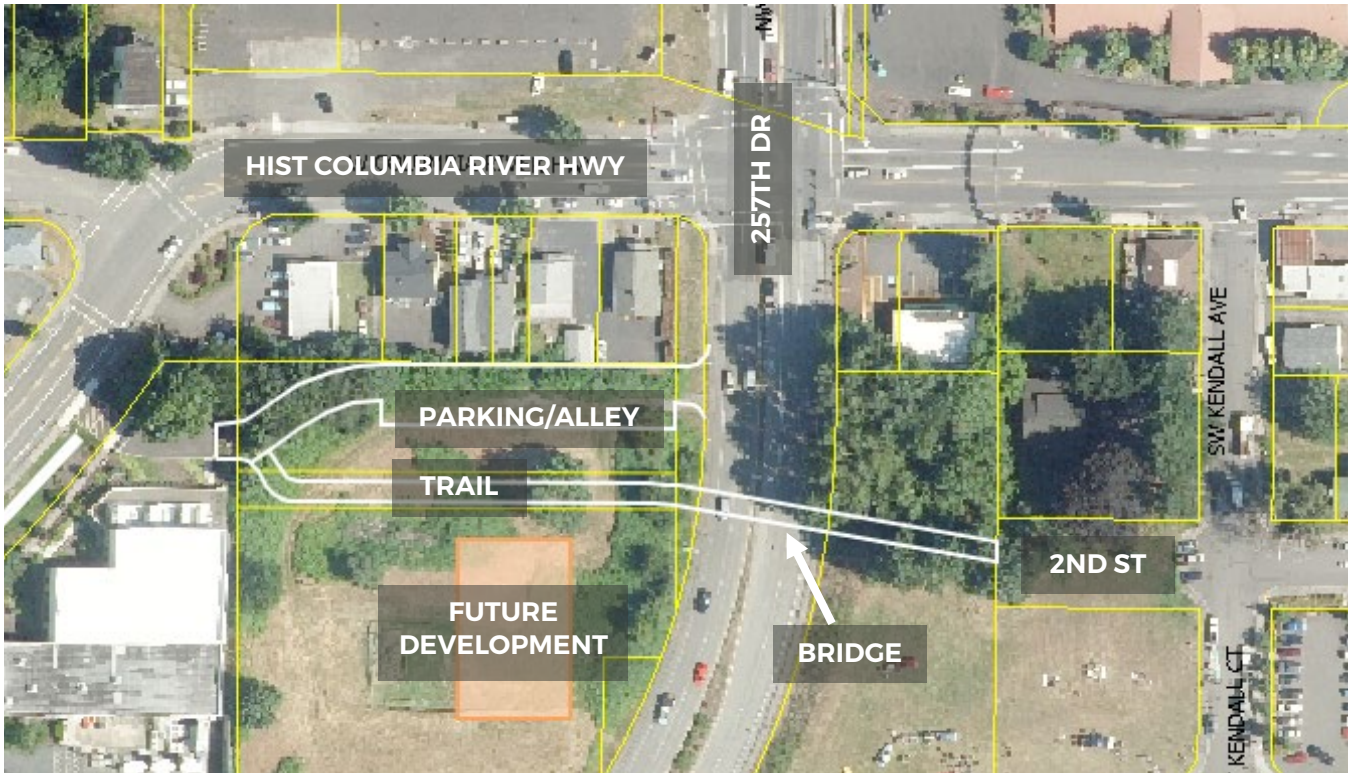
- Community Service Use
- Commercial Office
- Mixed Use

Future Ideas and Potential Investments

- Partial usage of property for future circulation improvements (see image on the right)
- Potential trail access point to connect a trail to downtown via 2nd Street (see image)
- Satellite/overflow parking facility for downtown employees or event attendees
- Public Works facility (moved from current location)
- Relocated ODOT facility (from Cerruti Tract East)
- Fire station
- Food cart pod
- Community garden or foodbank garden
- Outdoor equipment shop and rental facility
- Golf cart hub/rental facility

Above: A birds-eye view of the Foursquare Tract, looking southwest. (Image: Google Earth)

Below: A hypothetical solution to improving access to the site. This concept would use an alley access to allow for full-turn circulation. The site also benefits from a bike/ped bridge to/from downtown.



SITE 7 – OVERLOOK TRACT

The Overlook Tract consists of several public and private-owned lots situated in between 257th Drive, Historic Columbia River Highway, and Buxton Road. Comprised of nine lots totaling 3.25 acres, only a small portion of the site is developed. The largest parcels in this tract (the so-called "Windust property", named after the former property owner) are undeveloped and publicly owned by Multnomah County as of 2020.

Surroundings

The site is bound by commercial uses to the north, community service uses to the east and south, and 257th Drive to the west.

Advantages

- Gently sloping terrain on Windust property in compared to other properties in the vicinity
- High visibility along 257th Drive and at intersection with the Historic Columbia River Highway
- Adjacent to the police facility
- Future development has limited visible impact to residential properties to the south.

Challenges

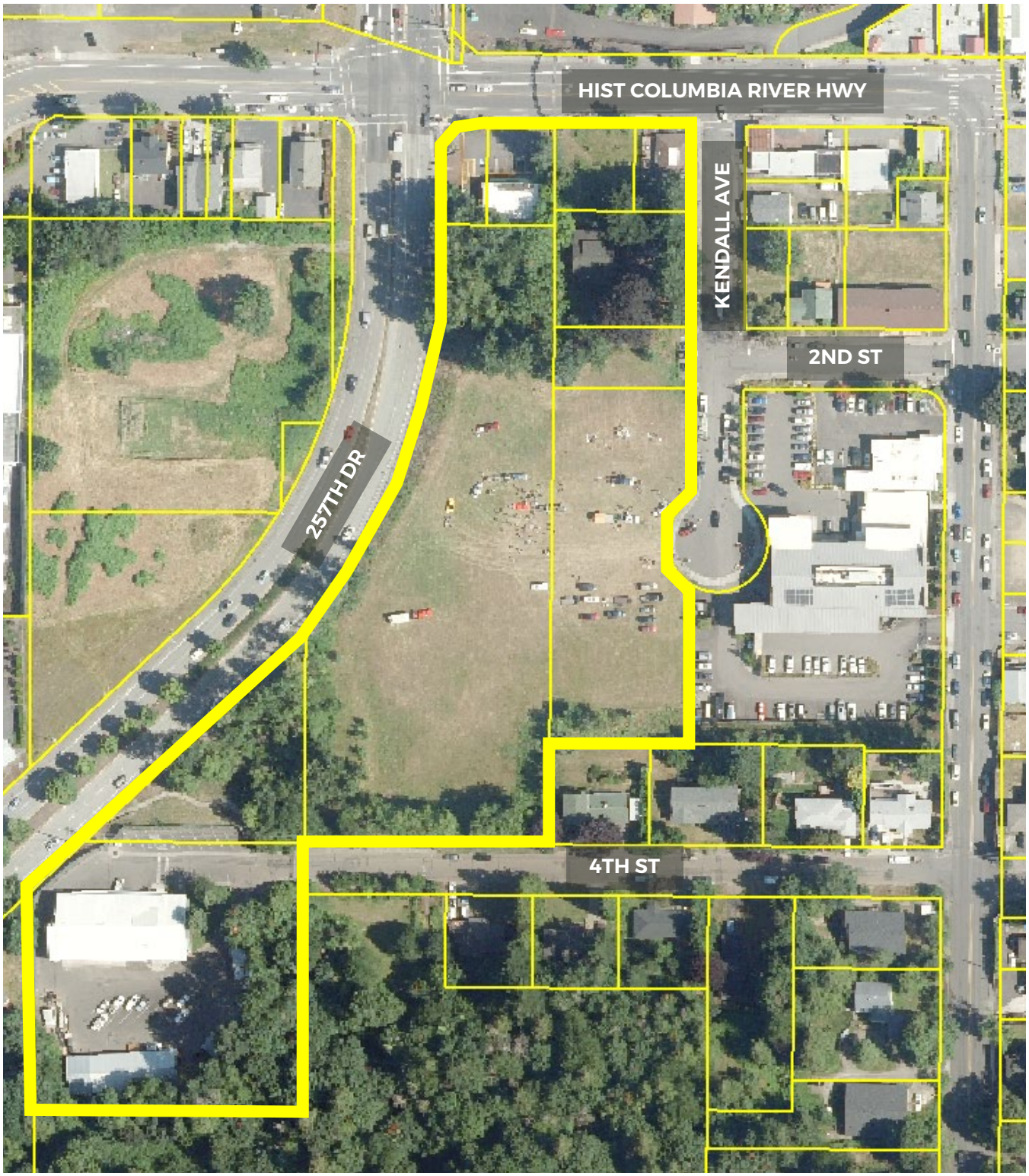
- Development already exists on site, potentially limiting options
- Direct vehicular access off of 257th Drive may not be possible or would limit developable area
- No parking frontages would be allowed along the Historic Columbia River Highway
- Removal of existing trees for development would change site character

Preferred Future Land Uses

- Community Service
- High Density Residential
- Mixed Use

Future Ideas and Potential Investments

- Civic buildings – city hall, fire station, library, senior center, youth center specifically referenced
- Senior housing
- High-end condominiums
- Affordable housing (see next pages)
- Satellite parking lot for downtown overflow, events, or commuters by transit
- Grocery store – potentially mixed use with residences above
- Indoor entertainment center or concert venue
- Bike/ped bridge over 257th to connect to Opportunity Site 6



The Overlook Opportunity Site includes developed parcels and undeveloped lots, The City of Troutdale Public Works Facility is at the bottom left (southwest) corner of the site. (Image: Metro RLIS)

The Windust property at the Overlook Tract, looking west. (Image: Amber Shackelford)

Affordable Housing at this Site

In 2019, Home Forward signaled its particular interest in developing affordable housing on the site to fulfill its regional requirement from the voter-approved affordable housing bond from 2018. While affordable housing has been identified by the Housing Needs Analysis as a critical need for Troutdale, the potential for this site to be developed into it has caused concern for many.

There are several advantages to the site for the purpose of developing affordable housing, including proximity to downtown, transit service, and nearby jobs centers which lend itself well to reducing commutes and auto dependency, which contribute to housing unaffordability. The site is also adjacent to the police facility utilized by the Multnomah County Sheriff's Office and has a limited number of adjacent residential uses, limiting concerns about crime or property values that are often made against apartment proposals.

Still, the site has prominent visibility, and concerns from the Committee about architectural fit and the carrying capacity of the site to accommodate between 100-120 residential units as suggested have merit. Those concerns are articulated in a minority report offered in Appendix A of this Plan. The City Council stated in 2019 a general preference to tie affordable housing (particularly senior housing) to community service uses that could be co-located on site rather than a standalone housing project.

The Overlook Tract commands significant visibility from multiple directions. Two examples include vantages looking south (uphill) on 257th Drive at the intersection with the Historic Columbia River Highway (image above) or looking east on Halsey Street approaching Downtown (image below). Development at three stories or more (in yellow) could be noticeable due to terrain and positioning.

SITE 8 – HELEN ALTHAUS PARK

Helen Althaus Park is one of the largest properties in the Town Center and is largely undeveloped. Access to the site is off 7th Street on the south and 4th Street on the north.

The 9.51-acre city-owned park was at one time a portion of the city's watershed and was originally named Watershed Park. The park is now named after Helen Althaus who served on the City Council and Parks Advisory Committee for almost 20 years from the mid-60's to the 80's. She worked towards establishing a parks and greenways system in the city. The city named it in her honor in 1982.

Currently, the park is only partially developed. Facilities include a full-court basketball court that sits on top of an underground water reservoir, a small open grass area, and about a mile of trails that connects 4th Street to 7th Street. The trail has been extended from the edge of the forest to the sidewalk on 7th Street.

Surroundings

The site is bound by community service, low density residential, and undeveloped lands to the north, low density residential uses to the east and south, and high density residential to the west.

Advantages

- Large undisturbed natural area will likely remain due to environmental and slope constraints

Challenges

- Park is little known and underutilized based on citizen feedback
- Park fixtures and amenities are older and require replacement or refurbishment

Preferred Future Land Use

- Parks & Open Space

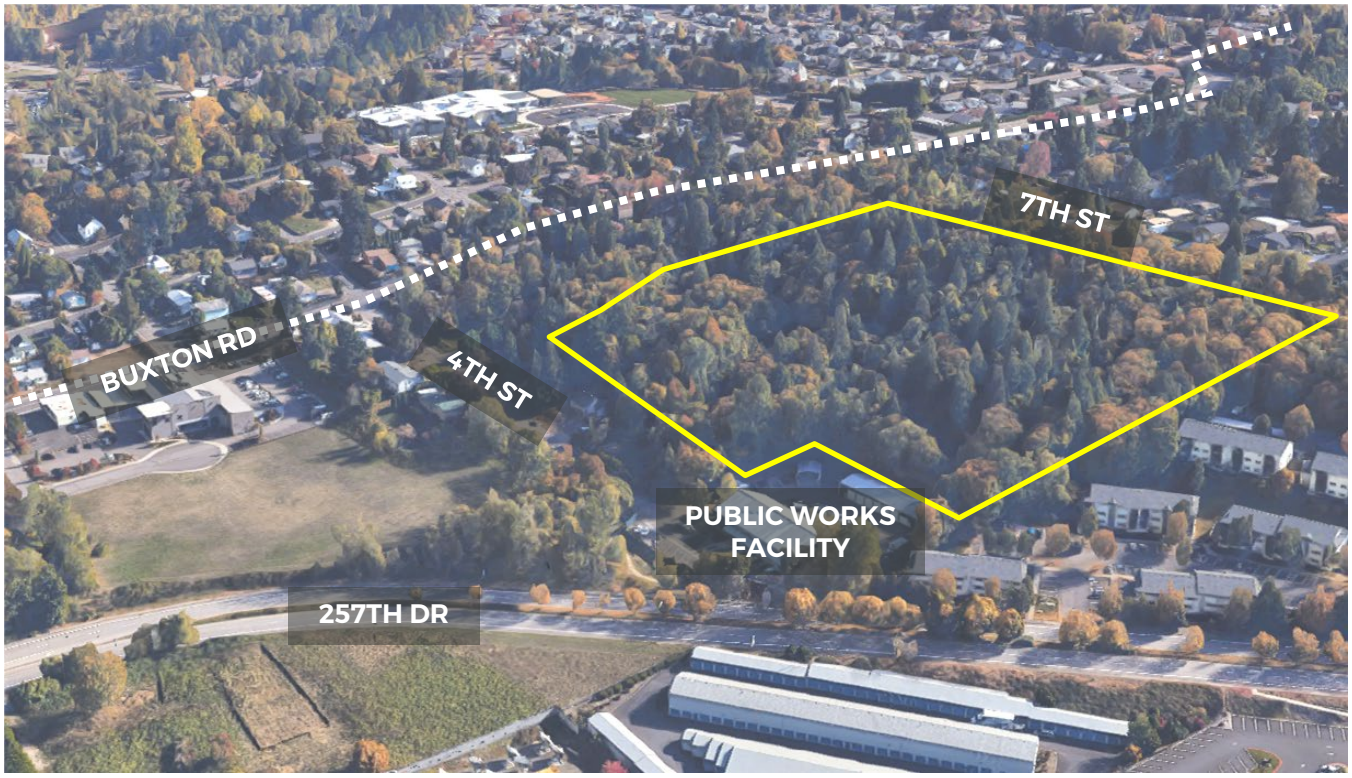
Future Ideas and Potential Investments

A full determination of future ideas and potential investments will be documented in a future update to the Parks Master Plan. Citizen feedback offered the following items for consideration:

- Preservation of the property for natural conservation with low-impact park amenities
- Regular forest maintenance to reduce fire risk
- Regular trail maintenance
- Improved directional signage within the park and along streets
- Renovate the basketball courts
- Relocation of the public works facility could allow for future lower-level parking area

Above: The playground equipment at the top of the park from 7th St.

Below: The layout of the park from a birds-eye view, showing the dense forest canopy and the degree of the hillside when compared to the Hungry Hill neighborhood. (Image: Google Earth)



SITE 9 – MAYORS SQUARE

The heart of Downtown, Mayors Square is a small public plaza (0.17 acres) that provides a relaxing area for pedestrians to sit, dine, and enjoy the streetscape of Downtown.

Surroundings

The site is surrounded by commercial services to the north, west, and east and parking to the south.

Advantages

- Center of Downtown
- Attractive plantings and pubic art displays, including statues and murals
- Parking is immediately adjacent to the square

Challenges

- The park is typically underutilized
- Different elevation tiers do not lend itself to a larger gathering area
- Limited tree canopy

Preferred Future Land Use

- Parks & Open Space

Future Ideas and Potential Investments

A full determination of future ideas and potential investments will be documented in a future update to the Parks Master Plan. Citizen feedback offered the following items for consideration:

- Additional dining tables and seats
- A splash pad for children, perhaps re-purposing the existing fish sculpture
- A small playground or play area on the sides
- A regular farmers or crafters fair that sets up around the perimeter of the block
- A small-scale food stand, particularly for ice cream
- History displays and panels telling Troutdale's story.

Above: Mayors Square as of 2014, looking north to the shops on the Historic Columbia River Highway.

Below: Diners using temporary outdoor seating in Mayors Square during the COVID-19 pandemic in 2020. Additional places to picnic or dine outside proved popular and may have staying power.

SITE 10 – BLOCK 4 TRACT

One of the original blocks that was created when the original community was created, the Block 4 Tract today contains the former city hall, a residential property, and two vacant parcels.

Surroundings

The site is surrounded by commercial and community service uses to the north, a steep hillside to the east, medium density residential to the south, and commercial services to the west.

Advantages

- Excellent visibility and situated across the street from Depot Park
- Multiple street frontages

Challenges

- Controversy over the fate of the former city hall structure
- Steep hillside

Preferred Future Land Uses

- Community Service Use
- Mixed Use
- High Density Residential Use
- Commercial Service Use

Future Ideas and Potential Investments

Opinions for future development of the site varied, depending on the ultimate direction the City of Troutdale will intend to take regarding the status of city hall. A bond referendum to stabilize and renovate the building and return its use to a city hall was soundly rejected by voters in 2019. Listed below are considerations for adaptive reuse of the building or future use of the entire site if the city hall building and residential use are demolished and cleared for new development options.

Adaptive Reuse:

- Community service uses (including library, senior center, youth center, daycare)
- Outdoor equipment shop and rental facility (across the street from bike hub)
- Event space, movie theater or black-box theater
- Food/beverage establishment, including brewpub

New Development:

- Mixed use development (similar to Discovery Block: commercial & townhome residential)
- Civic building (including city hall, library, community center)

Above: The Block 4 Tract, containing the old City Hall building, looking southeast from the corner of Kibling Avenue and the Historic Columbia River Highway

Below: The Block 4 Tract Opportunity Site (Image: Google Earth)

Adaptive reuse efforts to repurpose the old city hall building could be explored and can also be mandated through deed restrictions as a condition of sale if the city intends to sell the property to private development. Other communities have successfully repurposed or newly constructed replicas of older downtown civic-use buildings for commercial purposes. *(Rendering: Randy Wilson)*

Much like other blocks between the Historic Columbia River Highway and 2nd Street, the north-south streets have steep hillsides making some land uses more challenging. If the former city hall were to be demolished, new development should consider a layout similar to the Discovery Block mixed use development (below) where an alley created efficient off-street parking and multi-story level access.

SITE 11 - BEAVER CREEK WEST TRACT

This site contains 14 mostly residential lots situated between the Historic Columbia River Highway and the western edge of Beaver Creek totaling 5.74 acres. Just over half of the lots are developed, though several of the properties could be considered favorable for redevelopment opportunities. The site is also critical in helping continue the visual connection of Downtown with the amenities of the East End neighborhood, including Glenn Otto Park and Harlow House Park.

Surroundings

The site is surrounded by Site 12 to the northeast, medium density residential and commercial services to the south; and low density residential and community service uses to the west.

Advantages

- Adjacent to scenic, historic, and culturally significant sites in Troutdale
- Attractive views
- Positioned in between Downtown, river access and Glenn Otto Park

Challenges

- Natural constraints (flood, slope, soils, wetlands) limit certain types of development
- Limited public infrastructure and connectivity with Downtown
- No cohesive or consistent built environment (lacks a sense of place)

Preferred Future Land Uses

- Mixed Use
- Medium Density Residential
- Commercial Service

Future Ideas and Potential Investments

- Wider sidewalk on both sides of the street or bike/ped trail on/near road
- Continue downtown street lighting and other streetscape features
- Live/work or live/make units, with ground floor non-residential and top floor residential
- Use certain floodplain areas for permeable parking or garages under residential units
- Progressive public art (art that encourages walking down a street – scavenger hunt)

Above: A birds-eye view of the opportunity site. The western edge of the street has a more defined edge and contains community assets like Harlow House (left) and Visionary Park (lower right corner).

Below: The opportunity site outlined. Beaver Creek forms the northeast edge. (Image: Google Earth)

SITE 12 – PENINSULA TRACT

This site contains properties located on the peninsula in between the Sandy River and Beaver Creek, with the Historic Columbia River Highway forming the southern boundary. The site is largely developed, with the biggest property containing an RV resort with other properties being undeveloped or residential in character. It is a large area at just over 17 acres in size, but much of it falls within natural constraints which limit the true developability of the site.

Surroundings

The site is surrounded by the Sandy River to the northeast, community service and commercial service to the southeast, and Beaver Creek (Site 11) to the west.

Advantages

- The natural surroundings of the site are incredibly attractive.
- Is well positioned in between Downtown and Glenn Otto Park

Challenges

- The site is largely constrained due to flooding concerns and sensitive soils given the location at the confluence of Beaver Creek into the Sandy River
- Erosion issues on the Beaver Creek frontage may restrict full utilization of the site
- An under-constructed bridge that connects the northern part of the Tract would either need to be expanded or replaced for full circulation of the site.

Preferred Future Land Uses

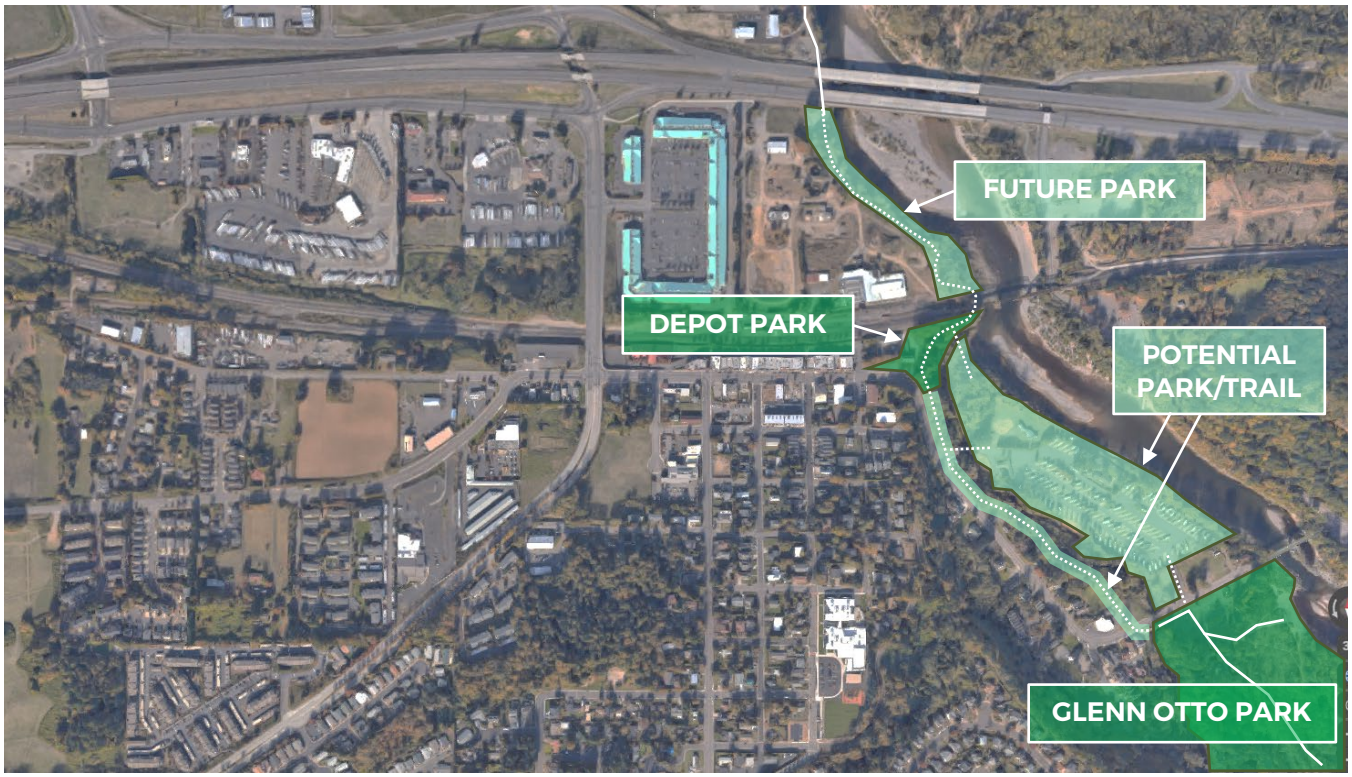
- Open Space and Parks
- Community Service Uses
- Commercial Service

Future Ideas and Potential Investments

- Create a connector park to Glenn Otto Park and the Confluence site – mile long riverfront park
- Dog park
- Additional launch area for Sandy River access
- Outdoor sports complex, potentially a small stadium for a school or travel team
- Outdoor concert venue
- Luxury end housing – condominium development with ground floor retail
- Cottage housing and vacation rentals
- Improve existing bridge on northwest corner to allow for two-lane traffic
- Additional parking for Glenn Otto Park and Sugarpine Drive-In

Top: A birds-eye view of the opportunity site looking southeast. The site is intimately located between hillsides and creeks for an attractive natural setting. The RV resort makes up over half of the site.

Bottom: The opportunity site outlined. Beaver Creek forms the southwest edge. (Images: Google Earth)



A Mile-Long Waterfront Park

An attractive idea that came from several people during public outreach was the concept of connecting current park areas with future or potentail parks to create an effective mile-long waterfront park and/or waterfront trail system.

This would link up Glenn Otto Park to the south with the existing Depot Park (Opportunity Site 1) by establishing a portion of Opportunity Site 12 as a future use for parks and open space. An alternate could be to use parts of Opportunity Site 11 to have a multi-use trail connect the two park areas on the west side of Beaver Creek.

The park would be further connected to The Confluence site via the trail that has already been called for in the redevelopment plan for the site. The park area at The Confluence site would be mostly linear but tie in with development opportunities on the site. The trail would then connect with existing regional trail networks. The first connection would tie into the 40-Mile Loop trail network that connects to existing trail on the Columbia River levee north of the city. The second connection would go across the Sandy River along the Interstate 84 bridges east to the Sandy River Delta, Lewis & Clark State Park, and areas in the Columbia River Gorge.

Opportunity Sites 11 and 12 can play a crucial role in seeing this exciting vision come to life and add substantially to the recreational and mobility possibilities for the Town Center and the city as a whole.

OPPORTUNITY CORRIDORS

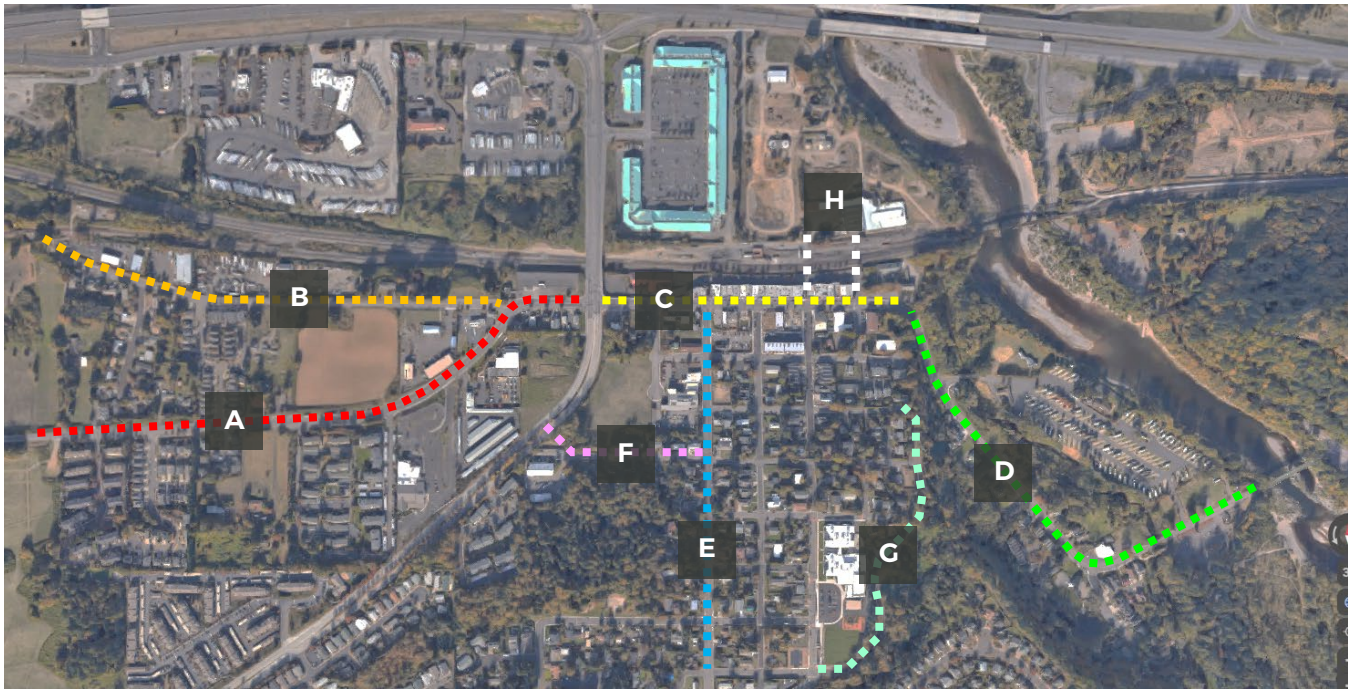
The eight corridors identified in this Plan represent an opportunity to enhance mobility options in support of the Town Center Vision. They are designed to connect the four neighborhoods together with the Downtown, support the development of the identified opportunity sites, and improve connections with other areas of Troutdale.

As of 2020, six of the eight corridors are already constructed transportation facilities, with two hypothetical connections being called out. Five of the eight corridors are Multnomah County-owned right-of-way facilities.

The corridors as listed are:

A. Halsey Street
B. Historic Columbia River Highway – Halsey Neighborhood Segment
C. Historic Columbia River Highway – Downtown Segment
D. Historic Columbia River Highway – Eastside Neighborhood Segment
E. Buxton Road
F. Secondary Access: Buxton Road to 257th Drive
G. Sandy Avenue
H. Downtown/URA Connections

Further details on each corridor are found on the subsequent pages.



CORRIDOR A – HALSEY STREET

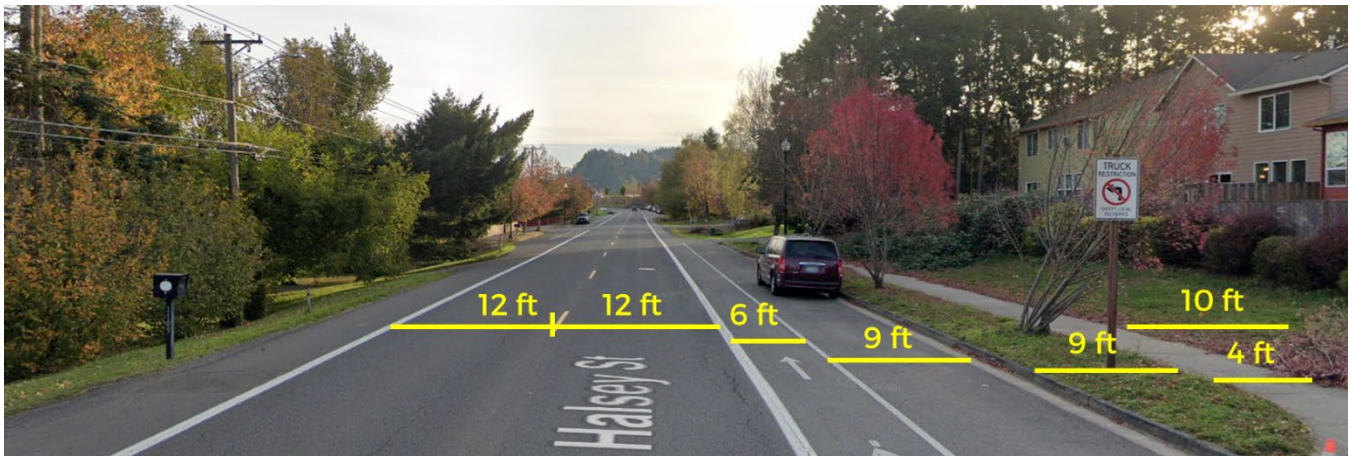
This corridor is the primary arterial that connects residential areas in the Halsey neighborhood with Downtown, consisting mostly of Halsey Street within the Town Center District and a small portion of Historic Columbia River Highway between the Halsey Street terminus and 257th Drive. The corridor is about 3,000 feet in length.

Corridor A is owned and maintained by Multnomah County and is primarily a two-lane road that has shoulder and pedestrian improvements along most of the frontage. The road has a generous right-of-way for most of its length, measuring between 85 to 100 feet in width.

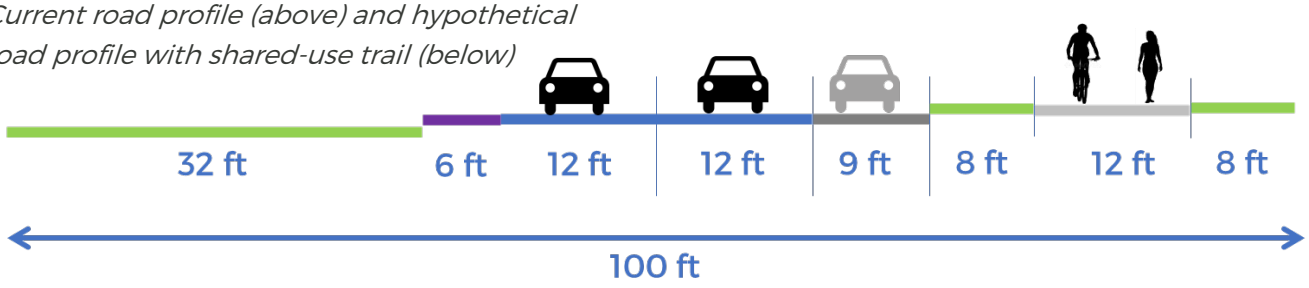
Halsey Street serves as a de facto Main Street that connects Troutdale with the cities of Wood Village and Fairview to the west in addition to the McMenamins Edgefield campus.

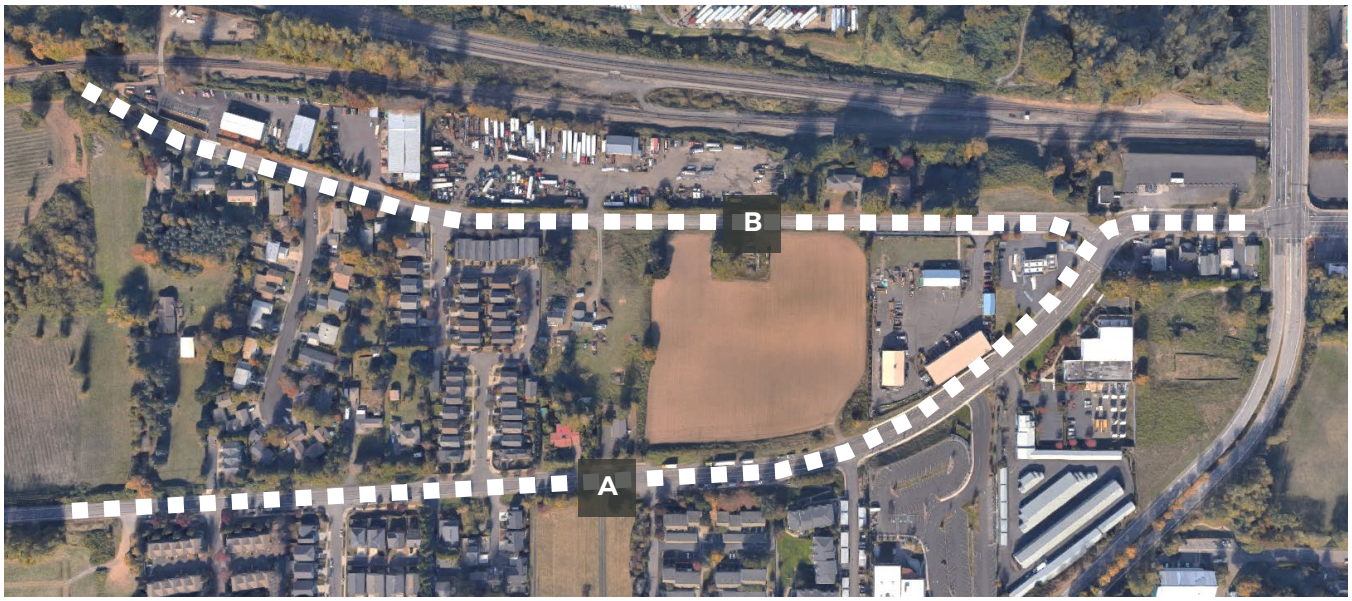
The major challenge for Halsey Street has been continuous pedestrian and bicycle access to better connect the Town Center with the areas to the west. Long-range planning efforts between the three cities through the Main Streets on Halsey corridor plan have indicated a desire to have a continuous and consistent connection that improves mobility choice along the corridor while still recognizing the importance of private vehicle traffic.

The corridor's wide right-of-way may lend itself to an off-street bike/ped trail that parallels the vehicular travel lanes. This path could also in turn connect with a potential bicycle greenway that is being contemplated for 2nd Street (see Corridor C)



Current road profile (above) and hypothetical road profile with shared-use trail (below)





CORRIDOR B – WEST HISTORIC COLUMBIA RIVER HIGHWAY – HALSEY NEIGHBORHOOD SEGMENT

This corridor serves as a secondary access route or collector for some of the residential areas in the Halsey neighborhood as well as access for some industrial properties just outside of the Town Center district. It also connects to the Multnomah County Animal Services shelter and 244th Avenue once passing underneath a railroad trestle. It is about 2,500 feet in length.

Corridor B is owned and maintained by Multnomah County and is primarily a two-lane road that lacks shoulder improvements along a large section of frontage (see below). Corridor B also has a tighter right-of-way than Corridor A, due in part to a lack of substantial development on both sides of the road that would typically require dedication. The right-of-way varies between 55 to 70 feet in width.

Unlike Corridor A, this corridor has not been viewed as a major three city corridor investment. The traffic level of service on this corridor is less than that of Halsey Street. In the event opportunity sites 3, 4, and 5 are developed, there is a possibility that this corridor could take on a heightened role in overall circulation patterns in the Halsey neighborhood. As a result, this corridor has been listed, as future public improvements should be complimentary of development patterns in those opportunity sites.

CORRIDOR C – HISTORIC COLUMBIA RIVER HIGHWAY – DOWNTOWN SEGMENT

This corridor is effectively Troutdale's "Main Street", stretching roughly 1,600 feet from the intersection of 257th Drive to the west to Depot Park (Opportunity Site 1) to the east.

Corridor C is owned and operated by Multnomah County and is primarily a two-lane road that is mostly improved to current road standards. It includes turn lanes at the intersections of 257th Drive and Buxton Road (eastbound only). The street's right-of-way is 70 feet wide for most of the corridor.

The Town Center Committee spent a significant amount of time on contemplating long-range improvements and changes to Corridor C. The prevailing consideration is to make Troutdale's main street become not just a street, but a place. As a result, improving the right-of-way to have it be more pedestrian friendly and reducing the actual speed of vehicles through direct design and visual cues should be the considerations moving forward.

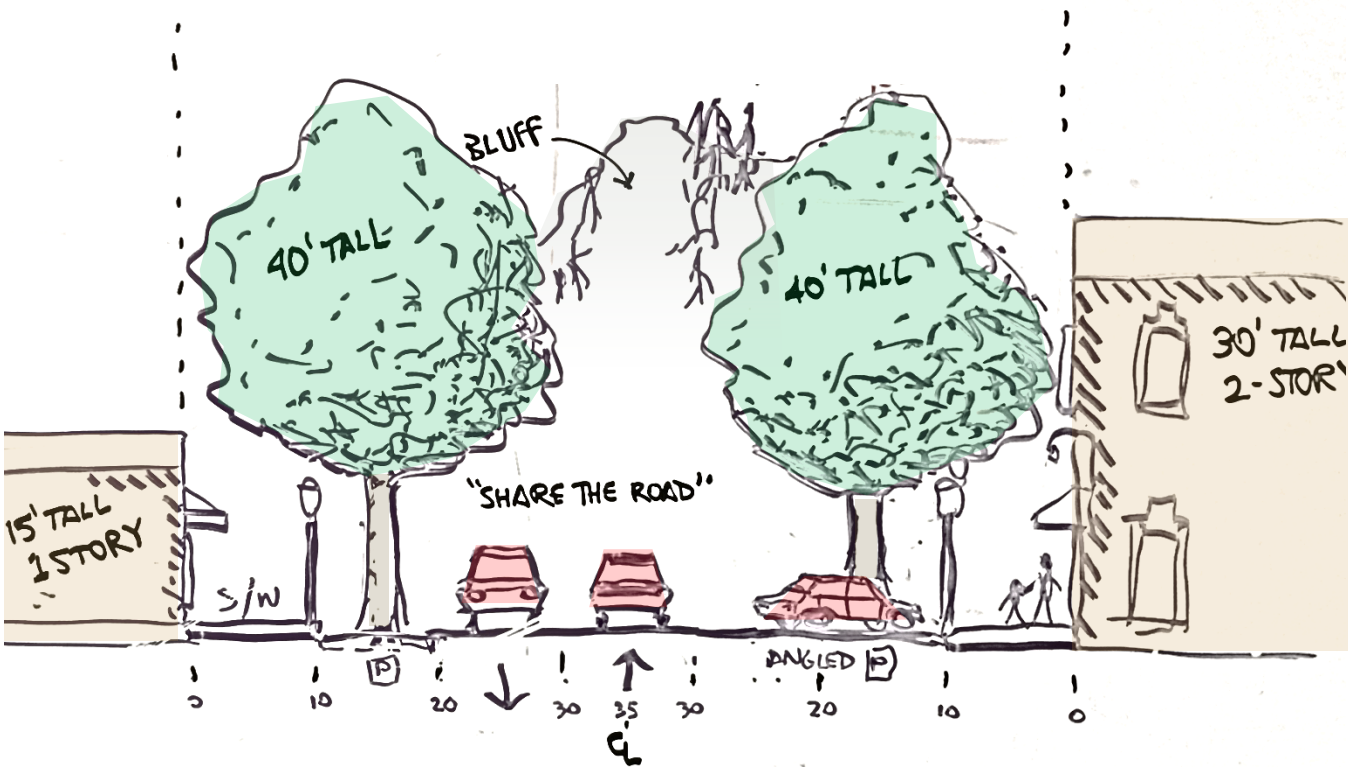
Of significant interest to the Committee include the following possibilities for capital investments and street programming:

- Reducing the through travel lane width from 12 to 11 feet
- Removing dedicated on-street bicycle lanes (requires bicycles to be in standard traffic lanes)
- Establishing a parallel bicycle "greenway" along 2nd Street
- A potential bike-ped bridge spanning 257th Drive to connect 2nd Street with a potential off-road path identified in Corridor A.
- Installing a three way stop at Opportunity Site 1 or potentially at an intersection with Corridor H
- Providing extended pedestrian bump-outs to shorten distances crossing streets
- Increasing the sidewalk width where allowed
- Allowing for potential angled parking (standard or rear-end) on one side of the street
- Enlarging the tree wells to establish a larger tree canopy (potentially use parts of parking strip)
- Establishing convenient loading and drop-off zones

The aforementioned items will require coordination and endorsement from Multnomah County. In the event that the agencies are unable to agree on future improvements the City should investigate if assuming ownership of the road is in the best long-term interest of the community, given the specific level of interest of these investments and the strong belief they will positively contribute to long-term place-making for the Town Center.

Above: The Historic Columbia River Highway as of 2020. (Credit: Kevin Mooney)

Below: A hypothetical street profile of the Historic Columbia River Highway, looking east. This concept removes the bike lanes, allowing for angled parking on one side of the street and expanded sidewalks and tree basins, thus allowing for a larger tree canopy. Narrowing the road and allowing for a larger tree canopy provides a psychological cue for driver to slow down in an area. Slowing (but not eliminating) vehicle traffic can help with pedestrian safety, with wider sidewalks and shorter crossing distances at intersections contribute to creating a more pedestrian friendly environment. The eastbound lane is centered on the street to maintain an unobstructed view of Broughton Bluff.



CORRIDOR D – HISTORIC COLUMBIA RIVER HIGHWAY – EASTSIDE NEIGHBORHOOD SEGMENT

This corridor is the primary arterial that connects residential, local commercial uses, and community assets in the Eastside neighborhood with Downtown. The corridor is about 2,600 feet in length.

Corridor D is owned and maintained by Multnomah County and is primarily a two-lane road that has shoulders along most of its frontage with pedestrian improvements along its western and southern frontages. The road has a 60-foot wide right-of-way for most of its length.

Placemaking will also be somewhat important to this corridor, as there is a desire by the Town Center Committee to have the community assets along this corridor be better connected with those in Downtown. As a result, improving streetscaping and bringing in appropriate infill development along Opportunity Site 11 can provide a better visual cue that the Eastside is a distinct and important part of the Town Center district.

Of particular interest is the possibility for a bus pullout area that could be located at the northwest portion of the corridor closest to Downtown. It could provide an area for tour buses, shuttles, or even standard transit the ability to load and unload passengers who can then walk north and west to Downtown, east towards the river, or south along the street towards the Harlow House park and Visionary Park/Caswell Gardens area.

The possibility to extend an off-road path in Corridor D could occur, however a narrower right of way and additional environmental constraints may require that path to cross Beaver Creek into Opportunity Site 12 and connect back with the street closer to Glenn Otto Park. Therefore, improving pedestrian connectivity, particularly for properties along the north and eastern frontage will be important to improve the streetscape and general safety.

CORRIDOR E – BUXTON ROAD

This corridor is the primary arterial that connects a large portion of Troutdale with the Town Center in general and Downtown in particular. The corridor which is quite steep for much of its length runs through the Hungry Hill neighborhood and is roughly 1,800 feet in length.

Corridor E is owned and maintained by Multnomah County and is primarily a two-lane road that has wide shoulders and curb-edge sidewalks (no planting strips) along its frontages. The road has a consistent 60-foot wide right-of-way for its entire segment.

Buxton is one of the original platted streets of the town and its first addition and has served historically as a Downtown's connection with the balance of the community for generations. The steep slopes of the road do not make it a friendly road for bicycles or pedestrians to use, particularly in winter months when the risks of icing and heavy winds persist. Along certain segments, the slope exceeds standards from the Americans with Disabilities Act (ADA).

For that same reason, most of Buxton Road has not been used heavily for on-street parking, as most of the street fronts along residential properties which largely contain on-site parking.

Buxton has at times been contemplated as a corridor for improved bicycle and pedestrian access, though terrain would be challenging. Buxton has also been a street that is considered for improved streetscaping treatments, similar to efforts made along Halsey Street in the past. The possibility to extend those streetscaping improvements further south to Troutdale Road offer a wonderful chance to link the Town Center to other parts of Troutdale with a consistent streetscape pattern.

Buxton could also serve as an experimental street to encourage alternative transportation including electric-powered bicycles or golf carts that could help non-vehicular travelers go up (or down) Hungry Hill in a safe manner.

CORRIDOR F – SECONDARY ACCESS: BUXTON ROAD TO 257TH DRIVE

Corridor F is not specifically tied to geography, but rather a future access consideration to establish a second connection between Buxton Road and 257th Drive. The main purpose would be to potentially relieve congestion concerns at the intersection of 257th Drive and Historic Columbia River Highway and provide a secondary access point for travelers to reach destinations within the Hungry Hill neighborhood in a more direct way.

The City of Troutdale would likely be the agency tasked with owning and maintaining any future connection, however coordination with Multnomah County will be required, as it would involve the potential for a future intersection at 257th Drive and increased traffic movements at Buxton Road, both of which are owned and maintained by the County.

The likeliest location for this access could be an extension of 4th Street from its current terminus near the City's Public Works Facility, however this would require significant rework of the parking area and a likely widening of 4th Street to accommodate a heavier load of traffic. It would also impact several residences along the street.

Another possibility could be 2nd Street, however the proximity of the intersection with the Historic Columbia River Highway might limit it to a "right-in right-out" intersection, thus limiting potential traffic movements. Further studies should be conducted to evaluate these (and other) possibilities.

CORRIDOR G – SANDY AVENUE

This corridor is a neighborhood collector within the Hungry Hill neighborhood that serves as a secondary route to navigate between upper and lower portions of the neighborhood. The street also serves as an alternate or emergency route for vehicles who may have access issues navigating Buxton Road due to icy conditions on the much steeper slope.

Corridor G is owned and maintained by City of Troutdale and is a two-lane road that has no shoulders and a narrow curb-edge sidewalk on the western frontage of the street.

The major concerns for the corridor revolve around maintenance and the long-term durability of this road being able to accommodate automotive traffic on a hillside that has had previous stabilization issues. There will be little ability to widen the road without significant expense and impact to the hillside, which could further aggrieve the concerns for erosive conditions or landslides.

The concept the City would consider would be to either reduce Sandy Avenue to a one-way access road or to close the road to automobile traffic altogether, with exceptions for emergency vehicles or during weather events. This would reduce the wear and tear of the road and provide a safer means for pedestrians and cyclists to move up and down Hungry Hill.

Closing streets for vehicular access is not an easy nor popular proposition, and it may involve design considerations such as gated entry points and changes to the endpoints of 4th Street and 5th Street, which currently terminate at Sandy Avenue.

CORRIDOR H – DOWNTOWN/URA CONNECTIONS

This corridor is loosely defined geographically. It calls for two likely locations for future access considerations that would directly link Downtown with The Confluence site within the Urban Renewal Area. The two most likely connection possibilities include:

- A bike/ped bridge that begins at the intersection of Harlow Avenue and Historic Columbia River Highway, spans over the rear parking area and railroad tracks, and ends in the Confluence site; potentially on the top floor of a parking structure or an elevator shaft.
- A vehicular connection that extends Kibling Avenue over the existing driveway to the rear parking area and crosses the railroad tracks at-grade and continues into The Confluence site.

Both corridor improvements are expected to be owned and maintained by the City of Troutdale, with coordination required from Multnomah County (for connecting with Historic Columbia River Highway) and Union Pacific Railroad, as they will impact the railway's right-of-way.

A vehicular bridge that extends Kibling Avenue northward could be achieved through engineering, though would appear to be unlikely for several reasons. First, it would be expected to be cost prohibitive for public or private investments. Second, it would require a reconfiguration of the rear parking area, and third, it would likely take up significant land on The Confluence site in order to return the roadway to an at-grade level, given the terrain differential between Downtown and the site.

The Town Center Committee concurred that having both connections would be most optimal solution for ensuring that The Confluence site is well integrated with Downtown. The lack of any direct connection apart from the planned riverfront trail would be harmful to both areas and lead to disjointed or competitive growth that would jeopardize the District as a whole.

The at-grade railroad crossing will be a difficult proposition due to permitting standards with Union Pacific Railroad. Although similar permits would be required for the bridge, that connection will be easier to come by from an approval standpoint but is limited in allowing for full mobility choice without allowing cars on the span. The City would need to prepare for the likelihood that securing this access could take years and that approval is not guaranteed. Lastly, development proposals for The Confluence site should not be singularly reliant on a direct vehicular connection from Downtown.

Above: The location of a bike/ped bridge landing connecting from Downtown over the rear parking area and railroad tracks to a hypothetical connection point in The Confluence site.

Below: The location of an extension of Kibling Avenue to cross the railroad tracks into the site.

URBAN RENEWAL AREA / THE CONFLUENCE SITE

The Troutdale **Urban Renewal Area** (URA)—also known as the Troutdale Riverfront Renewal Area in other plans—is a 48-acre collection of properties of primarily north of the Union Pacific railroad tracks within the Town Center District. It includes the Columbia Gorge Outlets, a railroad-owned siding lot, and Depot Park (Opportunity Site 1 as identified in this Plan).

Also contained within the URA are roughly 20 acres of city-owned properties that have become known as **The Confluence at Troutdale**, also known as **The Confluence site**. For the purposes of this Plan, most of the analysis and ideas for future development will focus on The Confluence site, though several development concepts and resulting impacts will affect the entire URA.

The **Troutdale Urban Renewal Agency** ("the Agency") is a separate legal authority that was established to oversee future planning and public expenditures. The Agency is led by a Board, which is the same body of people as the Troutdale City Council. City Staff provide technical support to the Agency.

HOW URBAN RENEWAL WORKS

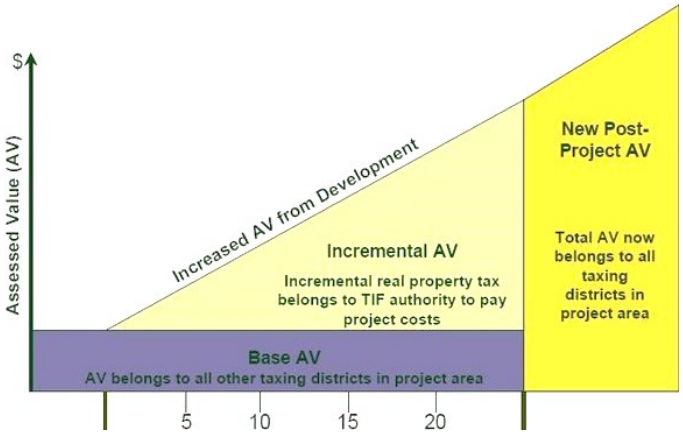
Voters within a jurisdiction formally establish an urban renewal area in a certain geographic area. To oversee the future development and financial responsibilities of the URA, a separate legal authority is also established by the City.

Portions of a city that are designated as URA are considered blighted and/or underdeveloped and are targeted for private redevelopment. An **urban renewal plan** is adopted by a City to establish goals and objectives, list potential projects, and highlight ways of using tax increment financing for future capital projects to serve development.

Within the boundaries of the URA, a **tax-increment financing** (TIF) district is established. TIF consists of using annual tax increment revenues collected by the Agency to make payments on debt incurred by the Agency, usually in the form of tax increment bonds. The proceeds of the bonds are used to pay for the urban renewal projects authorized in the urban renewal plan. Debt, including bonds, may be both long-term and short-term, and does not require voter approval.

Tax increment revenues equal most of the annual property taxes imposed on the cumulative increase in the total assessed value within the URA over the total assessed value at the time an urban renewal plan is adopted.

Upon the conclusion of an urban renewal plan's tenure, the total assessed value is returned to eligibility for all taxing districts as it was prior to the establishment of the URA.



Above: A map showing the boundaries of the Troutdale Urban Renewal Area (URA)

Below: The Bissinger & Co. Wool Pullery was once a major employer in Troutdale and was located on site. The site fell into disrepair after the company left, making it eligible as a URA site. (Image: Hu Nhu)

PREVIOUS PLANNING & PREPARATORY EFFORTS

In 2006, the City of Troutdale adopted an urban renewal plan (The Troutdale Riverfront Renewal Plan). The original plan had a duration of 10 years, meaning no new debt was to be incurred. However, that was amended in 2014 by the Agency and 2015 by the City Council to extend an additional 10 years, thus a total duration of 20 years. The maximum amount of indebtedness (the amount of TIF for projects and programs) that may be issued for the Renewal Plan is seven million dollars ($7,000,000).

The goals that were established by the Renewal Plan help set the parameters for concepts outlined in the Town Center Plan. Future development in the URA should:

- promote the redevelopment of the area for a mix of retail, office, residential and public uses.
- provide a greater level of goods and services for Troutdale.
- increase the awareness of the development community of the opportunities within the area.
- create employment opportunities for Troutdale residents.
- improve transportation linkages.
- improve access to and enjoyment of the Sandy riverfront.
- provide public spaces for events and other uses by Troutdale residents, patrons of area businesses and tenants and residents within the area.
- preserve and enhance Troutdale's natural, cultural, and historic resources.

In the first ten years of the Renewal Plan, there were several development concepts that had emerged, but economic instability, political differences, and changing priorities on public expenditures had resulted in no significant advancement of future development. One exception was the commissioning of a concept plan for a future linear park and trail along the riverfront that was adopted in 2014.

Property Acquisition & Clean-Up

In 2018, following an unsuccessful effort to coordinate development tasks in support of a development scheme proposed by Eastwinds Development, the Agency purchased an additional 7.72 acres of land from the company. This land would complement 11.87 acres of already-owned public property to create nearly 20-acre site for redevelopment, which has since become known as The Confluence site.

In late 2018, the Agency contracted to have the site be largely cleared of all previous development; much of which was in decrepit condition. This site cleanup also removed contaminated material and soils and sought certification from the Oregon Department of Environmental Quality (DEQ) that the site could be redeveloped for commercial and residential uses. The work was completed in 2020 with DEQ certification expected in early 2021.

The Agency has also commissioned surveyors to establish separation of The Confluence site between a 16.1-acre parcel to be sold for private development purposes, with remaining acreage for the future park and trail as envisioned in the 2014 concept plan.

Top: The Confluence site looking north in April 2018, shortly before cleanup of the site began.

Bottom: The Confluence site looking south in October 2020 with a temporary disc golf course placed on the site, six months after cleanup was completed (both photos: Chris Damgen)

THE CONFLUENCE SITE

The Confluence site is a collection of Agency-owned parcels within the Urban Renewal Area. The site provides Troutdale with the most exciting and challenging opportunity site of all; a once-in-a-lifetime chance to transform roughly 20 acres adjacent to Downtown and along the banks of the Sandy River into someplace special.

To the south across the railroad tracks is Downtown Troutdale, which sits roughly 30 to 35 feet higher than the prevailing elevation of the site, which is generally flat. This could allow for taller development that could attract a higher caliber of investment potential through mixed-use opportunities.

To the east is the Sandy River, of which the City has long planned to have a riverfront park and trail along the embankment to connect Downtown with the larger recreational trail networks in the Portland region and the Columbia River Gorge.

To the north is Interstate 84, providing excellent freeway frontage and visibility for future development. And to the west is the Columbia Gorge Outlets, which provide commercial services adjacent to the site along with future redevelopment ideas and possibilities for future expansion or cohesion.

The site is strategically situated to take advantage of its surroundings, though is also hamstrung in some cases by them in terms of access restriction. The major public amenity will be a four-acre linear park along the embankment of the Sandy River, with a multi-use trail connecting the site to Downtown and regional trails to the north and east.

Expectations for Development

Beyond the difficulties of access considerations and cost, perhaps the main community concern remains that this location should complement Downtown, rather than compete with it. As a result, the Committee established certain development expectations that it hopes will be considered as the Urban Renewal Agency engages in solicitation and prospective developers create proposals.

- The **street grid** should be carried over from downtown as an organizing principle
- The **water tower** should be retained as an iconic feature of the site and future development
- The **exchange of property** with the ownership of the outlets should be allowed to provide more direct access to/from the west
- A centralized **parking facility/garage** should be considered
- A direct connection with downtown via a **pedestrian bridge** should be built
- A direct **vehicular connection** with downtown should be studied and pursued
- A consistent and specific **architectural style** should be established
- Building heights should be limited to 55 feet but may go as high as 75 feet but should be **stepped-back** or terraced to lessen visual impact from adjacent public spaces and streets
- Residential development should prioritize **home ownership opportunities**

Above: The Confluence site, shortly after site cleanup was completed in 2020 (Image: Marv Woidyla)

Below: The Confluence site at the southeast corner, looking upstream at the Union Pacific trestle. While most of the site is situated on a bluff, this area is low-lying and susceptible to flooding.

Developing an Initial Concept

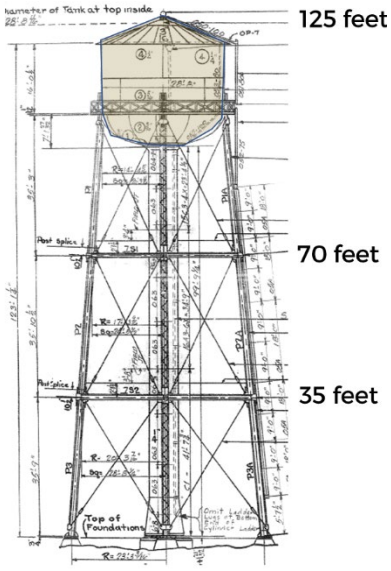
As with the 12 opportunity sites elsewhere in the Town Center District, the Committee sought to establish preferred land uses to The Confluence site, but added an additional exercise to help articulate development expectations and better understand the uniqueness of this site.

An **initial concept** can be used as a starting point for prospective development to consider future development patterns and opportunities that already received a level of community endorsement. It can also lead to additional concepts that can be created and studied from a numbers perspective, as it provides a calculation on available square footage for residential and commercial land uses in determining the economic feasibility of a project.

The **preferred land uses** that were established included mixed-use development as a first preference, followed by commercial service uses and parks & open space. Other major factors that influenced the creation of the initial concept was a desire to improve access points to the site, consider taller height allowances for buildings, and provide options for a centralized parking structure to benefit the site and Downtown. The initial concept addresses all these items (see upper-right image on the next page).

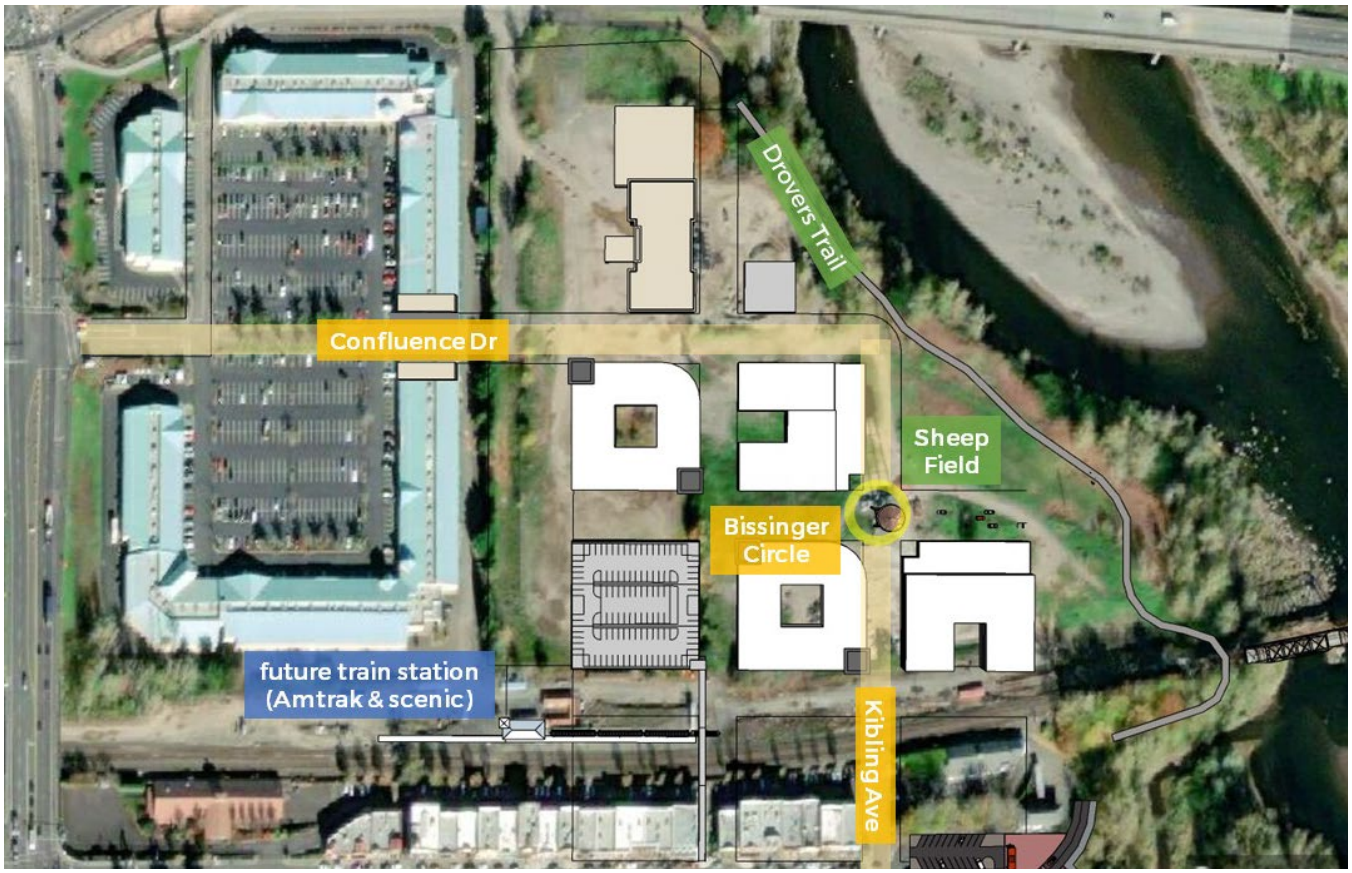
An idea to secure **enhanced access** from the west suggests a property exchange between the outlet mall property owner and the Agency. In exchange for direct access, a portion of property could be exchanged with mall ownership to develop additional commercial property, such as a hotel (which is shown on the concept). It also allows for creating endcap units within the existing layouts of the mall, which may be conducive to enhanced dining options at the facility.

Due in part to the size and positioning of The Confluence site, development can be at **higher densities** and structural heights than what would be appropriate for Downtown or other areas of the District. Site visits to the site by the Committee were conducted in 2018 to help bring these ideas to visual context. The water tower provided a useful "ruler in the sky" in that its features provided a good mark for scale of building heights.



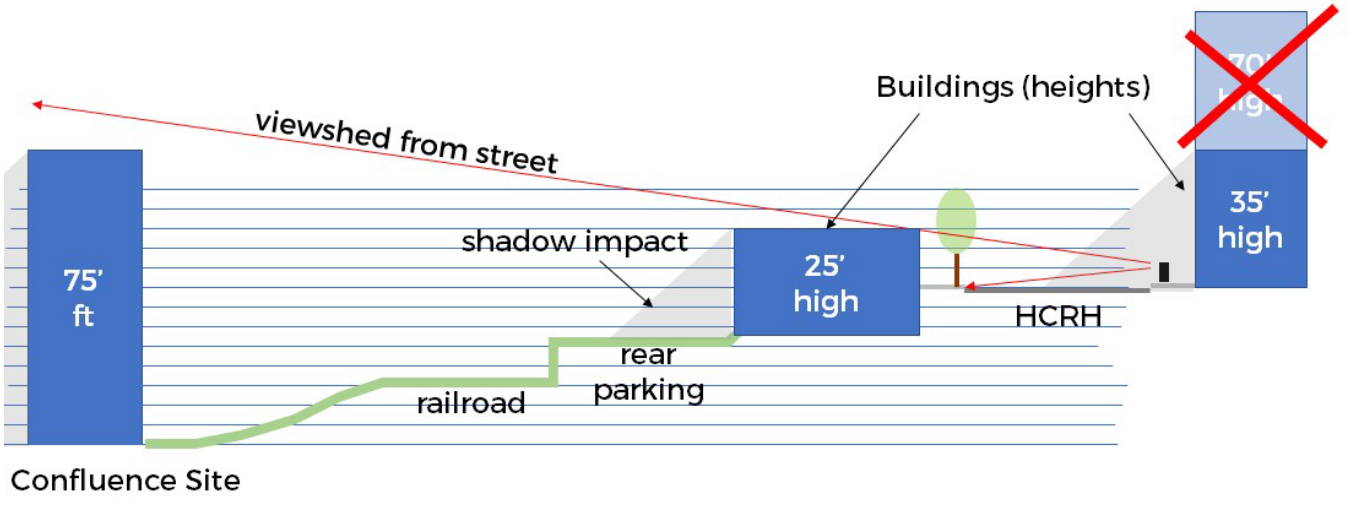
The Committee agreed that it could be appropriate for taller buildings on this site, which are often required for mixed-use projects to be financially successful. This also provides an "out-of-sight but not out-of-mind" approach to increasing residential density near Downtown while allowing Downtown to maintain a small-town feel through the built environment (see lower-right image on the next page).

The **parking** solution offered would consider a centralized parking garage that could directly connect with a bike/ped bridge crossing to Downtown, allowing the Confluence site and Downtown to benefit, in addition to the Outlets which would see through traffic going to and from the garage. It could also tie into a future train station for intercity or scenic rail purposes, increasing visitor traffic and commercial engagements on both sides of the tracks.



Above: An initial concept developed by the Town Center to determine scale and capacity for the site. Actual proposals from development interest could utilize this concept as a starting point.

Below: A scaled profile view looking east shows the terrain differentiation between the Confluence site (left) and downtown (right). The graphic shows that taller structures are not desirable in Downtown due to negative scale and shadow impacts. By using terrain and placement as an advantage in allowing buildings to be taller in the Confluence site, a significant increase in residential density can be achieved without visually disrupting the streetscape in Downtown, thus preserving a small-town feel.



Riverfront Park & Trail

The 2006 Renewal Plan called for continuous public access along the Sandy riverfront, ideally integrated with proposed development on the lot to be sold to private development interests.

In 2014, the City of Troutdale approved the **Sandy River Access Plan** ("Access Plan"), a park and trail concept plan prepared by consultants and funded by a Metro grant as part of the agency's Nature in Neighborhoods program. The program seeks to improve access to nature, particularly for underserved communities to connect people to their watershed.

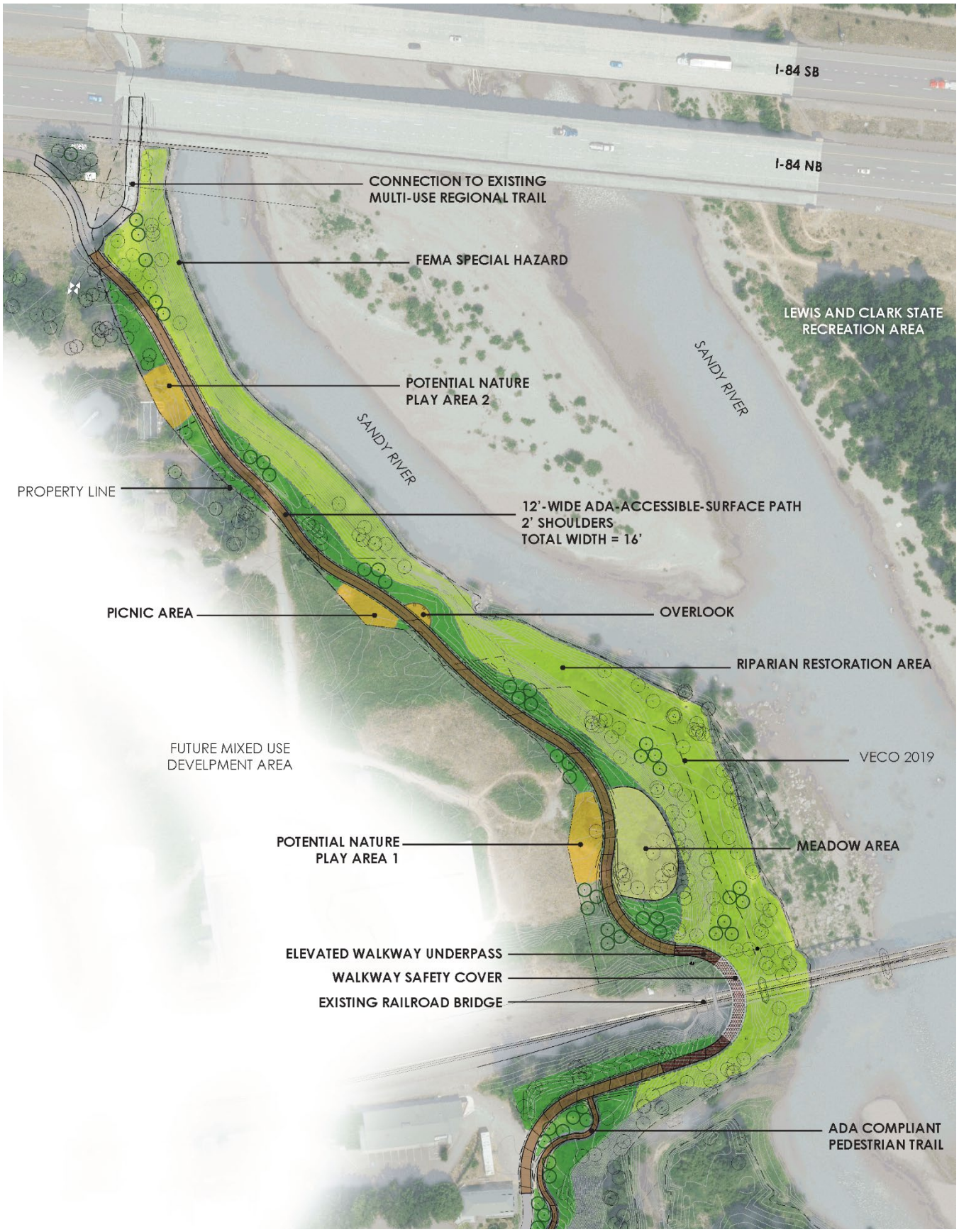
The Access Plan had several public outreach efforts through charrette workshops in 2013 to determine specific interests from the public. A multi-use trail was of chief interest, along with play areas and gathering spaces for social activities.

The Access Plan called for a significant riparian shoreline restoration plan and the establishment of a multi-use trail that would be an essential component of the regional 40-Mile Loop trail system. The Access Plan also called for certain park embellishments, including the possibility of a cantilevered overlook for park users to enjoy the surroundings of the area and to add flourish to the site.

Upon the acquisition of the Eastwinds properties and the passage of the Metro Parks and Nature bond in 2018, the City—along with its consultant team for this project—began work to fulfill the general scope of the Access Plan and began moving towards finalizing a fully engineered design for future construction. This would allow the City to be in a formidable position to compete for competitive grant funding from the Metro bond as well as other public, private, or nonprofit funding sources.

The first stage of planning for construction involved obtaining "**30 percent plan**" (shown on the right). An additional round of public engagement occurred with the Town Center Committee and the Parks Advisory Committee in 2019 to further refine ideas and details from the Access Plan. Along with additional engineering and surveying, this design respects the original intentions of the Access Plan and provides an updated trail layout and further design inspiration for park features (shown below).

As of 2020, the City is in pursuit of "**60 percent plan"** design for the project, which will further solidify plans and add engineered drawings to the undercrossing of the Union Pacific Railroad, which requires an elevated pathway component to achieve slope standards and limit flood zone impacts. It is expected that the City will have full construction plans by 2022 when competitive grant applications are to be applied for from a regional bond program and other potential sources.


I-84 SB
I-84 NB
CONNECTION TO EXISTING MULTI-USE REGIONAL TRAIL
FEMA SPECIAL HAZARD
LEWIS AND CLARK STATE RECREATION AREA
SANDY RIVER
POTENTIAL NATURE PLAY AREA 2
SANDY RIVER
PROPERTY LINE
12'-WIDE ADA-ACCESSIBLE-SURFACE PATH
2' SHOULDERS
TOTAL WIDTH = 16'
PICNIC AREA
OVERLOOK
RIPARIAN RESTORATION AREA
FUTURE MIXED USE DEVELPMENT AREA
VECO 2019
POTENTIAL NATURE PLAY AREA 1
MEADOW AREA
ELEVATED WALKWAY UNDERPASS
WALKWAY SAFETY COVER
EXISTING RAILROAD BRIDGE
ADA COMPLIANT PEDESTRIAN TRAIL

Attachment 3

Tech Memo #1:
Existing Conditions and Future Needs

02-23-22

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Technical Memorandum

February 23, 2022 Project# 26160.0

To: Chris Damgen, Melissa Johnston, AICP
City of Troutdale
219 E Historic Columbia River Highway
Troutdale, Oregon 97060

From: Amy Griffiths, Matt Bell, Matt Hughart, AICP

Project: Troutdale Transportation System Plan Amendment

Subject Tech Memo #1: Existing Conditions and Future Needs

INTRODUCTION

This memorandum summarizes information in Troutdale's 2014 Transportation System Plan (TSP) and 2020-2040 Town Center Plan on existing conditions and future needs within the town center. It includes the following:

- Summary of existing transportation facilities and services
- Summary of existing traffic operations
- Summary of electric vehicle (EV) charging stations (in prep for Climate-Friendly and Equitable Communities [CFEC])
- Equity analysis of existing system (using Metro RTP as a base standard)
- Summary of existing deficiencies and future needs

This memorandum also identifies potential inconsistencies between the TSP and Town Center Plan that need to be addressed by the upcoming TSP amendment.

TOWN CENTER PLAN

The Town Center Plan is a guiding document adopted in 2021 designed to help plan for the next 20 years (2020-2040) of future physical, social, and economic growth in the historic heart of Troutdale. The original Town Center Plan was adopted in 1998 and set the tone for the first generation of intentional development and investment in the Town Center District, comprised of downtown and surrounding neighborhoods. Those efforts helped to establish a sense of place and contributed to a small-town feel that is embraced by residents, businesses, and visitors. The 2020-2040 Town Center Plan is the result of a three-year effort by community stakeholders, planning commission, city council, staff, and consultants to provide a comprehensive plan to achieve a vision for the Town Center District that is endorsed by the community.

The Town Center Plan identifies development projects and investment opportunities at twelve opportunity sites, the Confluence site, and eight corridors that can help achieve the vision for the Town Center District. Many of these community-supported projects that are described in the 2020-2040 Town Center Plan will need to be adopted in the TSP to better allow for implementation.

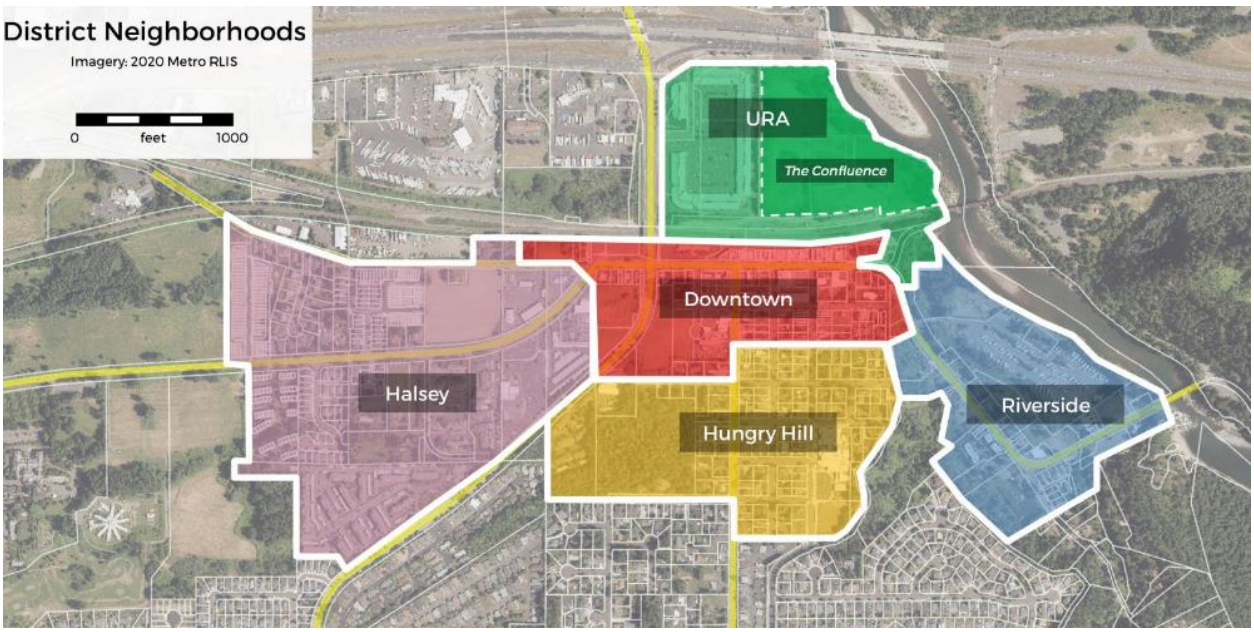
STUDY AREA

The Town Center District, as defined by City of Troutdale and Metro, is shown in Figure 1. The District Neighborhoods are shown in Figure 2. The study area is limited to the Town Center District in Troutdale as the upcoming TSP amendment is intended to resolve inconsistencies between the TSP and Town Center Plan in the town center area.

Figure 1. Town Center District

Source: 2020-2040 Town Center Plan, Page 5

Figure 2. District Neighborhoods



Source: 2020-2040 Town Center Plan, Page 5

EXISTING TRANSPORTATION FACILITIES AND SERVICES AND PLANNED IMPROVEMENTS

The following summarizes information from the 2014 TSP on existing transportation facilities and services in the town center, including facilities that enable people to walk, bike, take transit, and drive. Data related to traffic volumes, pedestrian activity, and bicycling activity is from 2004 while transit ridership data is from 2012. Due to the focused nature of this Technical TSP Update and the volatility of traffic volumes, pedestrian activity, bicycling activity, and transit ridership amidst the COVID-19 pandemic it is recommended that updated data be collected as part of the next full TSP update.

Pedestrian Facilities

Pedestrian facilities in the town center primarily consist of sidewalks, crosswalks, multi-use paths, and trails. Sidewalks are provided on both sides of most streets in the town center and marked crosswalks are provided at most major intersections, particularly in the downtown area and near schools – the County recently installed several marked crosswalks on E Historic Columbia River Highway in downtown. Multi-use paths and trails are also provided in the town center within residential areas. Figure 3 illustrates existing pedestrian facilities in the town center per the 2014 TSP.

Figure 3. Existing Pedestrian Facilities (2014)

Source: 2014 TSP, Figure 3-2, Page 3-4

The 2014 TSP includes an inventory and evaluation of existing pedestrian facilities in the town center. Per the TSP, existing pedestrian facilities are generally well connected, particularly within residential areas and between residential areas and schools, parks, and activity centers. However, there are several streets with gaps in the sidewalks, such as NE Halsey Street, W Historic Columbia River Highway, E Historic Columbia River Highway, SE 3rd Street, and SE Sandy Avenue. There are also several intersections where marked crosswalks could be provided to enhance pedestrian connectivity and areas where additional multi-use paths and trails could be provided to complete the pedestrian system.

Pedestrian activity was recorded in the town center in June 2004. The data includes the total number of pedestrians that crossed at major intersections during the weekday PM peak hour. The data shows relatively high levels of pedestrian activity in the downtown area. It is recommended that updated pedestrian activity data be collected as part of the next full TSP update.

The Town Center Plan provides limited information on existing pedestrian facilities; however, it notes that:

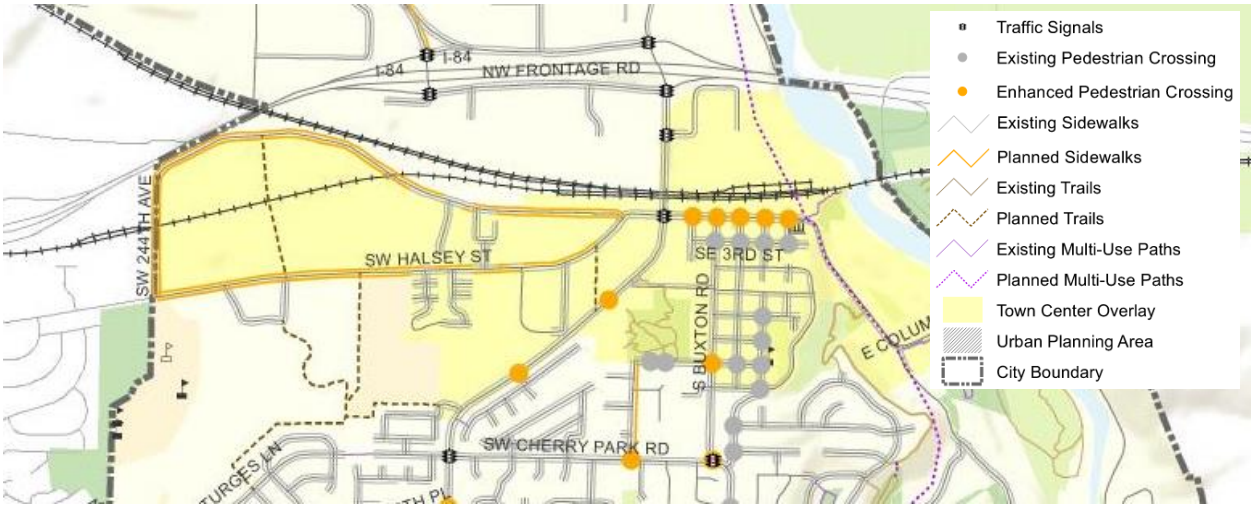
> *"From their concept in the Metro 2040 Regional Framework, town centers were intended to be districts which encouraged walking and bicycling between residential and commercial uses. As of 2020, [the town center] has had some success in fostering active transportation for some, but more can be done to improve this form of mobility to a broader section of the population."*
>
> *Many of the streets in the Town Center contain sidewalks on at least one of the street, though there are some areas where network gaps remain. - Page 87*

This statement identifies an opportunity to improve pedestrian facilities in the town center.

PLANNED IMPROVEMENTS

The 2014 TSP includes several projects that could enhance pedestrian facilities in the town center. The projects are organized into a Pedestrian Master Plan, which consists of all pedestrian projects in the city, and a Pedestrian Action Plan, which consists of projects that are reasonably expected to be funded over the next 20 years. Per the TSP, several strategies were used to select and prioritize projects in the Pedestrian Action Plan.[1] The strategies emphasize key pedestrian corridors that connect residential neighborhoods with schools, parks, and activity centers as well as major recreational facilities and major transit stops. Figure 3 illustrates the planned improvements in the town center.

Figure 4. Pedestrian Plan Projects



Source: 2014 TSP, Figure 4-1, Page 4-3

Some of the projects shown in Figure 3 have been completed since adoption of the TSP. These projects could be removed from the tables and maps in the TSP as part of the upcoming amendment. The remaining projects should be evaluated with consideration to the Town Center Plan and updated as needed to address inconsistencies. *Attachment A identifies the status of the pedestrian plan projects.*

The Town Center Plan identifies the need for enhanced pedestrian facilities at several Opportunity Sites and Corridors in the town center. A summary of the enhancements is provided later in this report along with an assessment of potential discrepancies between the Town Center Plan and the TSP.

[1] The list of strategies used to select and prioritize pedestrian improvement projects is provided on page 4-6 of the 2014 TSP.

Bicycle Facilities

Bicycle facilities in the town center primarily consist of on-street bike lanes, shoulder bikeways, and off-street bike parking. On-street bike lanes are provided on most major streets in the town center and there are few enhanced bicycle crossings at major intersections – the County recently installed an enhanced bicycle crossing on E Historic Columbia River Highway at Buxton Road. Figure 5 illustrates existing pedestrian facilities in the town center per the 2014 TSP.

Figure 5. Existing Bicycle Facilities (2014)

Source: 2014 TSP, Figure 3-3, Page 3-7

The TSP includes an inventory and evaluation of existing bicycle facilities in the town center. Per the TSP, the existing bicycle system currently provides connections from residential 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 be provided to improve the bicycle system. Within the town center, these roads include S Buxton Road, SE 3rd Street, and SE Sandy Avenue.

Bicycle activity was recorded in the town center in June 2004. The data includes the total number of bicyclists that crossed at major intersections during the weekday PM peak hour. The data shows relatively low levels of bicycle activity throughout the town center. It is recommended that updated bicycle activity data be collected as part of the next full TSP update.

The Town Center Plan provides limited information on existing bicycle facilities; however, it notes that:

> *"On-street bike lanes currently exist along portions of 257th Drive, Halsey Street, and the Historic Columbia River Highway. In some areas, short components of off-street alignments exist as well. Although these lanes have had some success for some users, a significant number of residents report a level of discomfort in using bike lanes that are adjacent to travel lanes.*
>
> *A preference for sheltered lanes (those that have a physical barrier or a parking strip in between) or an off-street multi-purpose trail is seen as a preferred improvement that could lead to greater comfort in considering biking, particularly for children and seniors. Another solution that some communities have employed are the designation of preferred bike routes or streets (often called greenways) that parallel busier collector or arterial roads and offer a less busy street for bicyclists.*

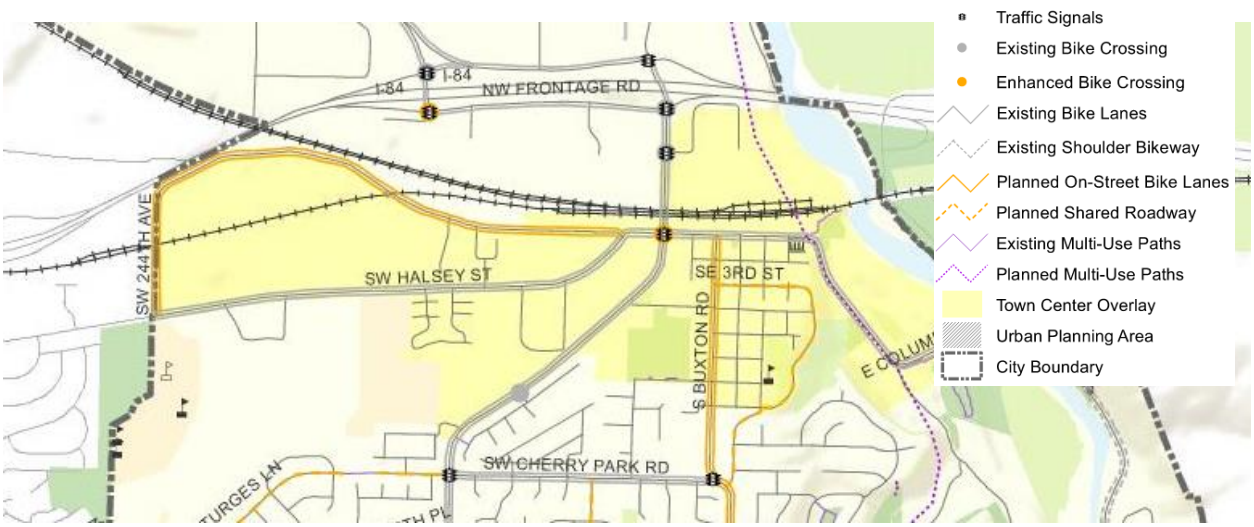
The goal of improving the walking and biking experience for residents and visitors should be tempered with an understanding that the district's topography and climate will likely limit potential users from fully embracing improvements to active transportation facilities. The goal of improved mobility and safety however will increase the prospects for mobility and improve travel choice for those who need to get around town." – Page 87

This statement identifies a lack of facilities that are comfortable for children and seniors to use.

PLANNED IMPROVEMENTS

The TSP includes several projects that could enhance bicycle facilities in the town center. The projects are organized into a Bicycle Master Plan, which consists of all bicycle projects in the City, and a Bicycle Action Plan, which consists of projects that are reasonably expected to be funded over the next 20 years. Per the TSP, several strategies were used to select and prioritize projects in the Bicycle Action Plan.[2] The strategies emphasize key bicycle corridors that connect residential neighborhoods with schools, parks, and activity centers as well as major recreational facilities and retail areas. Figure 5 illustrates the planned improvements in the town center.

Figure 6. Bicycle Plan Projects



Source: 2014 TSP, Figure 4-2, Page 4-10

Some of the projects shown in Figure 5 have been completed since adoption of the TSP. These projects could be removed from the tables and maps in the TSP as part of the upcoming amendment. The remaining projects should be evaluated with consideration to the Town Center Plan and updated as needed to address inconsistencies. *Attachment A identifies the status of the bicycle plan projects.*

Like pedestrian facilities, the Town Center Plan identifies the need for enhanced bicycle facilities at several Opportunity Sites and Corridors in the town center. A summary of the enhancements is provided later in this report along with an assessment of potential discrepancies between the Town Center Plan and the TSP.

[2] The list of strategies used to select and prioritize bicycle improvement projects is provided on page 4-9 of the 2014 TSP.

Public Transportation Facilities and Services

The public transportation system within the town center 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. TriMet is the primary service provider in the area and operates three fixed-route bus lines in the town center, including:

- Line 77, which connects the town center with points west of Troutdale, including Edgefield, Wood Village, Fairview, northern Gresham, and east, northeast, and northwest Portland.
- Line 80, which terminates at Glenn Otto Park and connects the town center with Gresham Transit Center via Buxton Road.
- Line 81, which connects the town center with the Troutdale Reynolds Industrial Park (TRIP) to the north and Gresham to the south along 257th Drive.

Figure 7 illustrates the existing public transportation facilities and services in the town center per the 2014 TSP, including TriMet's fixed-route bus lines and the location of bus stops and shelters. As shown, transit service is currently focused along a few major roadways and transit stops are located adjacent to major intersections along each route with shelters in select locations.

Figure 7. Existing Transit Facilities and Services

Source: 2014 TSP, Figure 3-4, Page 3-9

The TSP evaluated the existing transit facilities and services based on three measures: frequency of service, hours of service, and service coverage. Per the TSP, service frequency on Line 77 provides a reasonable choice of travel times for passengers while Line 80 and Line 81 require passengers to adjust their routines to fit the service provided or spend long periods of time waiting for service. Hours of service on Line 77 allows for a range of trip purposes other than commuting while Line 80 provides some flexibility in one's choice of time for the trip home and Line 81 meets the needs of commuters who do not have to stay late. Service coverage was not evaluated for each individual bus line and the results reflect the overall City, not just the town center. However, it appears service coverage is relatively high, despite low densities in some areas.

Average weekday ridership data was obtained from TriMet for the 2014 TSP. The data reflects the average number of boardings and alightings (ons and offs) that occurred at each stop in Troutdale in Spring 2012. The data shows relatively high levels of ridership at two stops in the town center: Stop 8747 (Historic Columbia River Highway & Kendall Road) and Stop 13532 (257th Drive & Historic Columbia River Highway). Ridership at these stops meets TriMet's minimum threshold for a transit shelter.

The Town Center Plan provides updated information on local transit service within the town center noting that:

> *"Line 81 has had frequency improved since the opening of the Amazon facility in 2018 and the rerouting of the terminus to TRIP but lacks weekend service. A supplemental shuttle service has provided peak-time weekend service since 2020." – Page 88*

Additional information provided by City staff indicates that they will need to work with TriMet to identify a new turnaround for Line 80. The existing turnaround is located at Glenn Otto Park in the surface parking lot on the south side of Historic Columbia River Highway. Line 80 historically has low ridership. It travels through the parking lot, which serves the park and a drive-in restaurant, and is very busy during peak summer months. A locked gate at the park has also prevented the bus from accessing its stop in the park.

PLANNED IMPROVEMENTS

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 (HCT) 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 257th 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 in the TSP includes potential transit improvement projects that focus on the quality of the existing transit service and local service enhancements.

Like the pedestrian and bicycle plans, the projects are organized into a Transit Master Plan, which consists of all transit projects in the City (most of which are expected to be funded by others), and a Transit Action Plan, which consists of projects that are reasonably expected to be funded over the next 20 years. Per the TSP, several strategies were used to select and prioritize projects in the Transit Action Plan.[3] The strategies emphasize projects that provide access to high-capacity transit service (Max stations), employment areas, commercial areas, and activity centers, as well as projects that provide improvements at stop locations. Figure 7 illustrates the planned improvements in the town center.

[3] The list of strategies used to select and prioritize transit improvement projects is provided on page 4-15 of the 2014 TSP.

Figure 8. Transit Plan Projects

Source: 2014 TSP, Figure 4-3, Page 4-14

Some of the projects shown in Figure 7 have been completed since adoption of the TSP. These projects could be removed from the tables and maps in the TSP as part of the upcoming amendment. The remaining projects should be evaluated with consideration to the Town Center Plan. *Attachment A identifies the status of the transit plan projects.*

The Town Center Plan notes that:

> *"There have been previous efforts in the Town Center to consider more localized transit options, often called "last mile" services that can branch from an existing transit stop to serve destinations not along a bus route. Several on the Committee discussed a possibility of a downtown trolley or shuttle that could help ferry residents, visitors, and workers to and from destinations within the Town Center and just beyond, including Edgefield or Glenn Otto Park." – Page 88*

The Town Center Plan also highlights the potential for alternative transportation options to increase mobility in the town center, such as golf carts or neighborhood electric vehicles, low-speed vehicles, electric bikes, and e-scooters. The Plan notes that:

> *"The Town Center District is especially conducive to implement these ideas, given the terrain challenges which has made mobility somewhat difficult. Each of [these] solutions offer a level of mobility that is convenient and can be operated at low speeds. Except for 257th Drive, most other streets within the District can allow for these modes to legally operate on existing infrastructure." – Page 89*

The Town Center Plan identifies the need for enhanced transit facilities and services at several Opportunity Sites and Corridors in the town center. An assessment of potential discrepancies between the planned improvements in the TSP and the Town Center Plan is provided later in this report.

Motor Vehicle Facilities

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

ROADWAY JURISDICTION

Streets within Troutdale have three separate jurisdictions, including Multnomah County (County), the Oregon Department of Transportation (ODOT), and the City of Troutdale (City). Each jurisdiction is responsible for determining the street's functional classifications, defining its major design and multimodal features, and approving construction and access permits. Figure 9 illustrates the jurisdiction of streets within the town center.

Figure 9. Roadway Jurisdiction (2014)

Source: 2014 TSP, Figure 3-7, Page 3-16

The Town Center Plan does not modify the jurisdiction of streets in Troutdale; However, as shown in Figure 8, and described in more detail below, most of the Opportunity Corridors (Corridors A, B, C, D, and E) are under Multnomah County's jurisdiction. Corridor G is under the City's jurisdiction, and Corridors F and H are not existing connections and therefore have no jurisdiction.

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. Figure 10 illustrates the functional classification of streets within the town center.

Figure 10. Functional Classification (2014)

Source: 2014 TSP, Figure 4-6, Page 4-23

The Town Center Plan does not modify the functional classification of streets in Troutdale. As shown in Figure 9, and described in more detail below, most of the Opportunity Corridors (Corridors A, B, C, D, and E) are classified as collector or higher. Corridor G is classified as a neighborhood route, and Corridors F and H are not classified.

EXISTING TRAFFIC OPERATIONS

An inventory of peak hour traffic conditions was performed in the spring of 2004 as part of the 2005 TSP update. The traffic turn movement counts conducted as part of the inventory provided the basis for analyzing problem areas as well as establishing a base condition for future monitoring. Turn movement counts were conducted at two intersections in the town center during the weekday evening (4:00 to 6:00 PM) peak period to determine existing operating conditions. It is recommended that updated traffic data be collected as part of the next full TSP update.

The intersection turn-movement counts conducted during the evening peak period were used to determine the 2004 level of service (LOS) based on the 2000 Highway Capacity Manual (HCM) methodology for signalized and unsignalized intersections. The results of the analysis indicated that each of the study intersections operate acceptably. Table 1 lists the 2004 weekday PM peak hour intersection operations at the study intersections in the town center. Figure 11 provides a visual summary of the study intersection operating conditions.

Table 1. 2004 Weekday PM Peak Hour Intersection Level of Service

Intersection	Level of Service	Average Delay (Sec)	Volume/Capacity
Buxton Road/ Historic Columbia River Highway	A/C	n/a	n/a
257th Drive/ Historic Columbia River Highway	C	31.5	0.68

Unsignalized Intersection: Major Street LOS/Minor street LOS.
Signalized Intersection: Average LOS, Delay, and V/C for entire intersection

Figure 11. Intersection Operations Summary (2004)

Source: 2014 TSP, Figure 3-14, Page 3-29

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 concurrently with the TSP. Findings from the IAMP are included in the future traffic operations summarized below.

The Town Center Plan does not include a technical analysis of traffic operations; however, it states that:

> *"levels of service observed across the town center are generally seen as being within the acceptable range, though a few intersections can be troublesome. The most congested area is the intersection of 257th Drive and the Historic Columbia River Highway, particularly in the P.M. peak hour which corresponds with afternoon commute. The increased reliance on 257th Drive as a freight route to accommodate industrial development has negatively contributed to this situation, however the intersection was experiencing congestion beforehand.*
>
> *Another trouble spot was turning maneuvers at the non-signalized intersection of Buxton Road and the Historic Columbia River Highway. County transportation engineers began working with the City on potential solutions in 2018, including a dedicated right-turn lane which was established in 2019. Further "signal warrant" analysis continues to determine what other improvements could occur, including partial or complete full-way stops or future signalization." – Page 44*

The Town Center Plan highlights the impact of the COVID-19 pandemic on traffic volumes in the town center and notes that updated traffic counts and analysis will occur as the pandemic subsides and may be added for a future update to the TSP

FUTURE TRAFFIC OPERATIONS

Future traffic conditions were analyzed as part of the 2005 TSP as well as the Troutdale Interchange Area Management Plan (IAMP) and the East Metro Connections Plan (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). Within the town center, these facilities include 257th Drive and Buxton Road.

TRAFFIC SAFETY

Collision data was obtained for the 2014 TSP 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 ODOT. 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), including one in the town center: 257th Drive/Historic Columbia River Highway.

The Town Center Plan does not address traffic. However, any transportation improvement projects developed to implement the Town Center Plan should consider traffic safety implications along the corridors and at key intersections. Future updates to the TSP should provide a more comprehensive review of traffic safety.

PLANNED IMPROVEMENTS

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 were removed from the 2014 TSP, including the 242nd Street extension, the 238th Street extension, the 2nd Street extension, and the 257th Avenue/Cherry Park Road intersection.

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. Several strategies were developed to help guide the selection and prioritization of the projects included in the Motor Vehicle Action Plan.[4] 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.

[4] The list of strategies used to select and prioritize motor vehicle improvement projects is provided on page 4-33 of the 2014 TSP.

Figure 12. Motor Vehicle Plan Projects

Source: 2014 TSP, Figure 4-9, Page 4-32

Some of the projects shown in Figure 11 have been completed since adoption of the TSP. These projects could be removed from the tables and maps in the TSP as part of the upcoming amendment. The remaining projects should be evaluated with consideration to the Town Center Plan. An assessment of potential discrepancies between the planned improvements in the TSP and the Town Center Plan is provided later in this report. *Attachment A identifies the status of the motor vehicle plan projects.*

The Town Center Plan notes:

> *"The predominant method of accessing the Town Center and getting between places in the District is by car. This has generally been the case for nearly a century, particularly with the establishment of the Historic Columbia River Highway."* It goes on to say that *"The Town Center's street pattern and interconnectivity with surrounding areas suggest that [declaring war on the car] would not be an appropriate method for encouraging other methods of mobility." – Page 88*
>
> *"For the next 20 years, personal vehicles are still seen as the most convenient option for mobility for a great majority of residents and visitors to the Town Center. Policymakers need to consider options that improve mobility choice. This can be accomplished in productive ways through land use policy and capital improvement investments, though attention should also be given to automation." – Page 88*

The Town Center Plan identifies the need for motor vehicle improvements at several Opportunity Sites and Corridors in the town center, most notably Historic Columbia River Highway at NE Halsey Street (see Opportunity Site 5 below), NE 257th Drive, and NE Buxton Road. An assessment of potential discrepancies between the planned improvements in the TSP and the Town Center Plan is provided later in this report.

EV CHARGING STATIONS

This section includes a summary of the location and types of EV charging stations in Troutdale, Oregon in preparation for climate-friendly and equitable communities (CFEC) rulemaking. Under this reform the Department of land Conservation and Development is supporting EV charging.

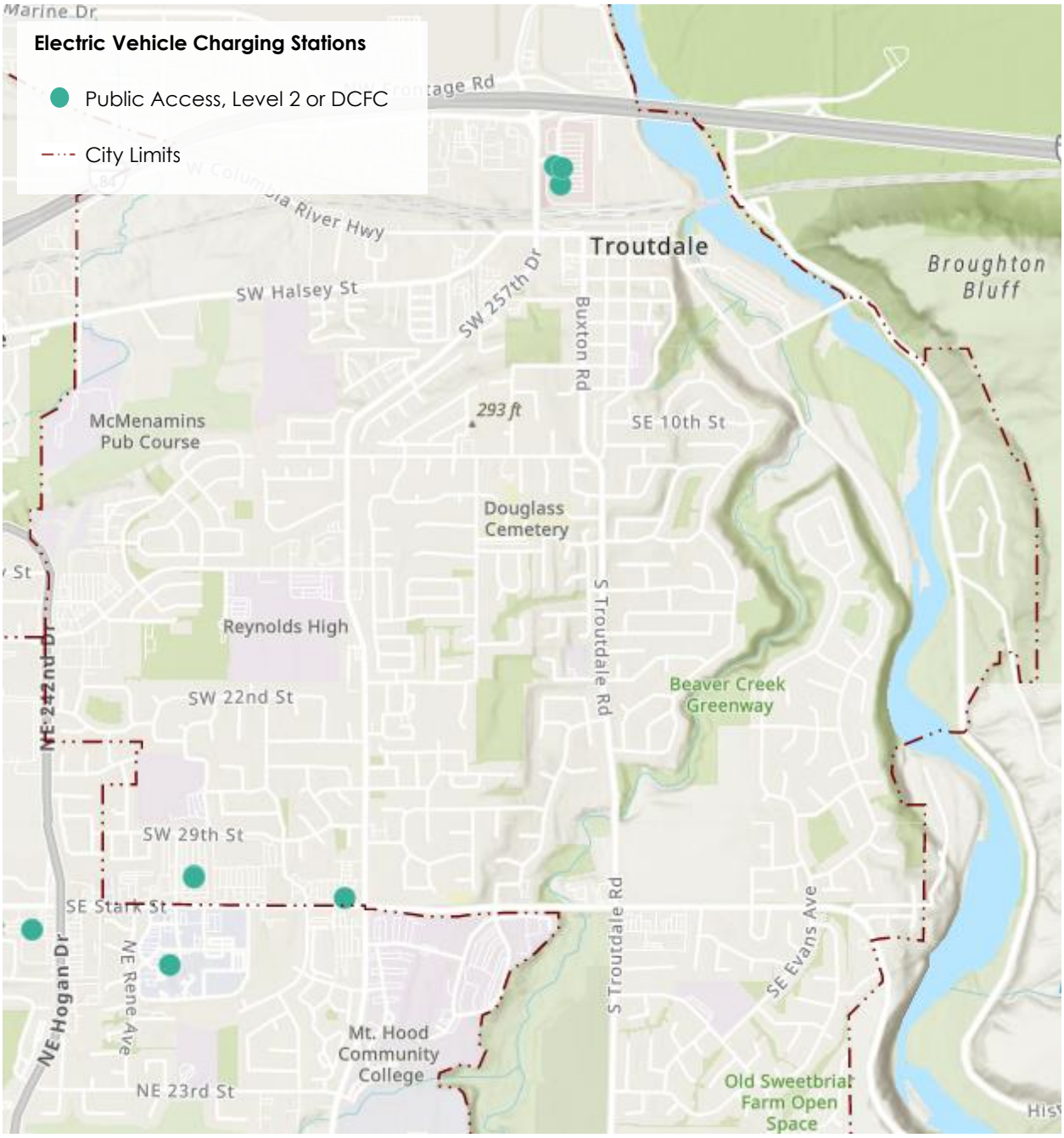
There are three primary levels of electric vehicle charging stations:

- **Level 1 Chargers** can be plugged into any standard 120V outlet; it typically provides 3-5 miles of range per hour connected to an electric vehicle
- **Level 2 Chargers** are plugged into a 240V outlet and can charges cars 3 to 7 times faster than Level 1 chargers
- **DC Fast Chargers (DCFC)** can charge even faster (providing up to 10 miles of range per minute connected) but could have compatibility issues with different connectors used by car manufacturers.

As shown in **Error! Reference source not found.**, there are six public electric vehicle charging stations in Troutdale, Oregon. Four stations have type 2 charging only, one has DCFC charging only, and one has both Type 2 and DCFC charging.

Three of the public charging stations are located within the Town Center Plan study area – all located in the Columbia Gorge Outlets.

Figure 13. Electric Vehicle Charging Stations (2022)



Source: Energy.gov. Exported January 31, 2021

EQUITY ANALYSIS OF EXISTING SYSTEM

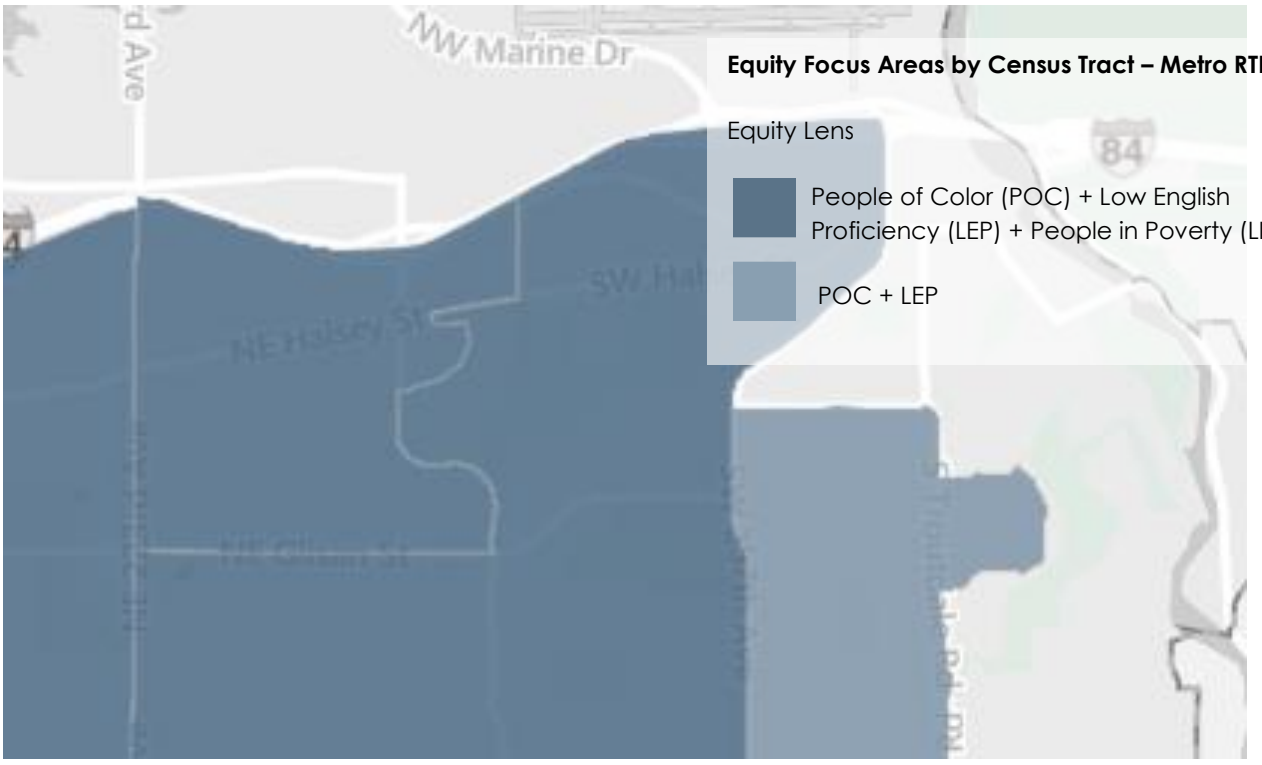
The 2014 TSP prioritized projects from highest to lowest based on modal strategies. These strategies included connecting key corridors to schools, parks, and activity centers, filling in gaps in modal networks, upgrading facilities and crossings, and more. None of the strategies were equity-focused.

Oregon Metro's Regional Transportation Plan (RTP) prioritizes advancing transportation equity by eliminating "disparities related to access, safety, affordability and health outcomes experienced by people of color and other historically marginalized communities." It also aims to "eliminate barriers that people of color, low income people, youth, older adults, people with disparities and other historically marginalized communities face to meeting their travel needs."

The RTP establishes "equity focus areas" which are "census tracts where the rate of people of color [(POC)], people in poverty [(LI)], and people with low English Proficiency [(LEP)] is greater than the regional average and double the density of one or more of these populations." It then considers how many projects are located within those equity focus areas compared to the total number of projects. As shown in Figure 14, most of the City of Troutdale south of I-84 and west of S Troutdale Road is considered equity focus areas. Within the Town Center District, the Halsey neighborhood and portions of the Downtown and Hungry Hill Neighborhoods are located within equity focus areas.

Table 2 lists the opportunity corridors, notes whether or not they are in a Metro RTP equity focus area census tract and provides the sum of the percentage of the population that fits in each of the equity focus groups (since people can be part of more than one of the equity focus categories, this percentage may be greater than 100%). Inclusion in the RTP Equity Focus Areas should be added to the list of strategies used to rank projects in the TSP.

Figure 14. Metro's RTP Equity Focus Areas (2022)



Source: RFFA Map Resources

Table 2. Opportunity Corridors and Equity Focus Areas

Opportunity Corridor	Equity Focus Area?
Corridor A – Halsey Street	Yes
Corridor B – Historic Columbia River Highway - Halsey Neighborhood Segment	Yes
Corridor C – Historic Columbia River Highway – Downtown Segment	No
Corridor D – Historic Columbia River Highway - Eastside Neighborhood Segment	No
Corridor E – Buxton Road	No
Corridor F – Secondary Access: Buxton Road to 257th Drive	No
Corridor G – Sandy Avenue	No
Corridor H – Downtown/URA Connections	No

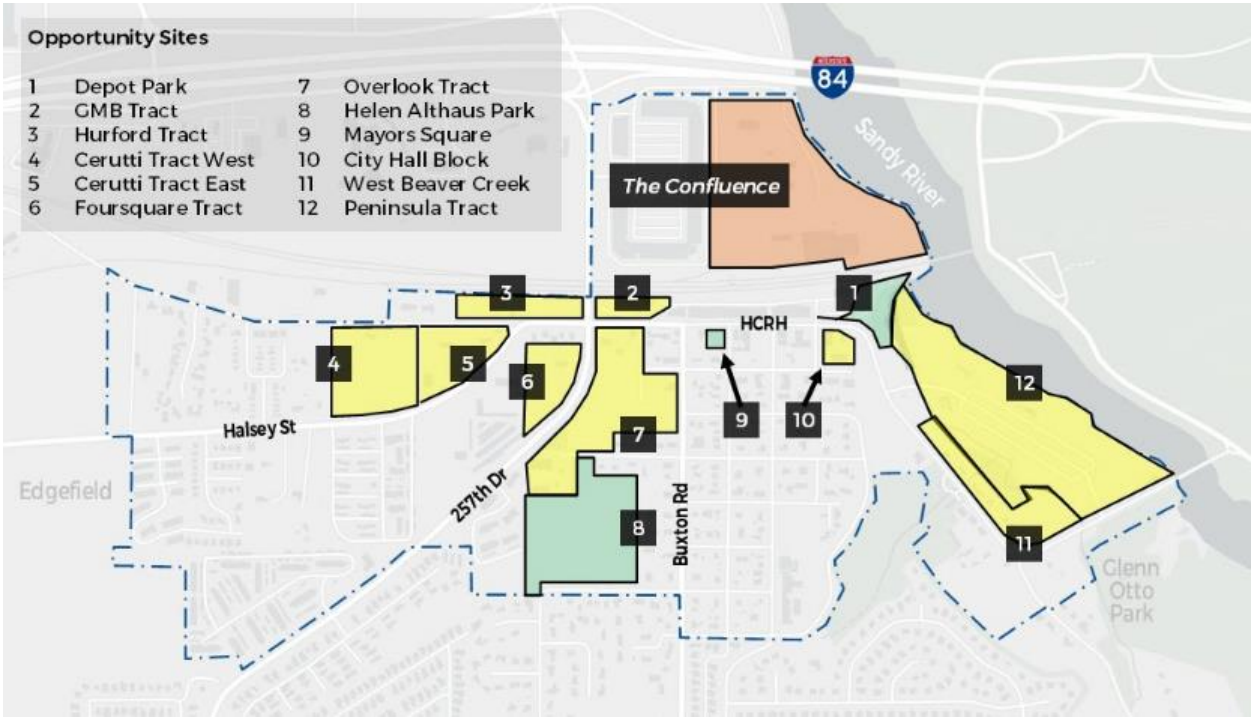
EXISTING DISCREPANCIES BETWEEN THE TOWN CENTER PLAN AND TSP

The Town Center Plan identifies potential infrastructure improvements at 12 opportunity sites, the Confluence Site, and eight Opportunity corridors. The following sections describe the opportunity sites and corridors and compares the recommendations in the Town Center Plan to the planned improvements in the TSP.

Opportunity Sites

The Town Center Plan identifies 12 opportunity sites and the Confluence Site where development and investment should be focused to help fulfill the vision, optimize those parcels to their highest and best use, and conserve the existing built environment. An opportunity site, as defined by the Town Center Plan, is a property (or collection of properties) where development or redevelopment could be transformative across the entire Town Center district. Figure 3 illustrates the location of the opportunity sites.

Figure 15. Opportunity Sites



Source: Town Center Plan

The Town Center Plan identifies potential infrastructure improvements at many of the opportunity sites and the Confluence site that need to be added to the TSP to be implementation. Table 1 identifies the sites, the potential infrastructure improvements, and any related project in the TSP. Table 1 also identifies potential discrepancies between the infrastructure improvements identified in the Town Center Plan and the TSP. These discrepancies will be reviewed by the project advisor committees and addressed in the TSP amendment as appropriate.

Table 3. Town Center Plan Infrastructure Improvements – Opportunity Sites

2020-2040 Town Center Plan	2014 Transportation System Plan	Needs to Address with 2022 Technical TSP Update
Site 1 – Depot Park		
• Create a bike depot (includes installing a bike hub and mobility hub) • Construct a three-way stop intersection where E Historic Columbia River Highway (HCRH) turns at the intersection with parking lot	• The TSP does not identify a bike hub or mobility hub at this site • The TSP does not identify changes in traffic control at this site	• The TSP does not include projects at this site • Confirm approach with the Citizens Advisory Committee. • Update the TSP to include a new bike depot • Consider impacts to Line 80 • Update the TSP to reflect modifications at the intersection where E HCRH turns at the intersection with parking lot • Consider alternative intersection configurations (three-way stop, roundabout, etc.)

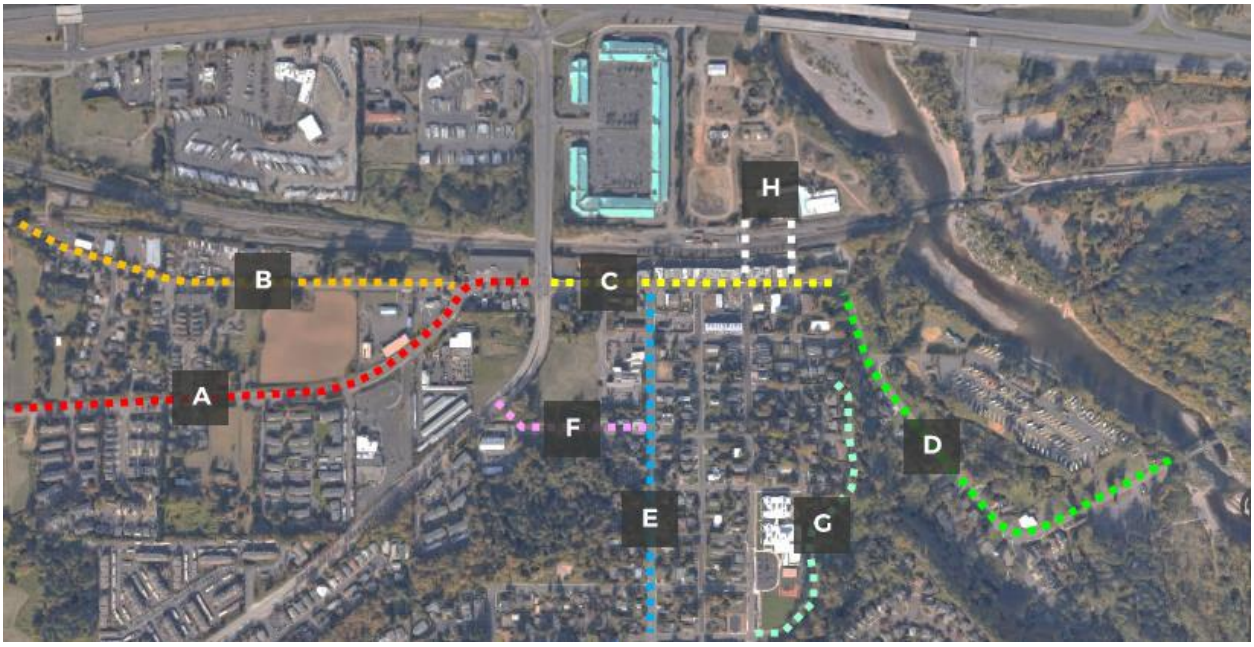
2020-2040 Town Center Plan	2014 Transportation System Plan	Needs to Address with 2022 Technical TSP Update
Site 3 – Hurford Tract		
• Reduce right-of-way and construct up-to-date street improvements along the road frontage	The TSP identifies several pedestrian and bicycle projects, including two projects at this site: • P6: Install sidewalks on both sides of Columbia River Highway from 244th Avenue to Halsey Street • B3: Install on-street bike lanes [on Historic Columbia River Highway] from Halsey Street to 244th Avenue	• The TSP projects appear consistent with the Town Center Plan • Confirm approach with the Citizens Advisory Committee • Update the TSP as necessary to reflect the preferred cross-section
Site 5 – Cerruti Tract East		
• Traffic Circle (NE Halsey Street/Historic Columbia River Highway)	• The TSP does not identify a traffic circle at this location	• The TSP does not include a project at this site • Confirm approach with the Citizens Advisory Committee • Update the TSP to include a traffic circle as appropriate
Site 6 – Four Square Tract		
• Potential trail access point to connect a trail to downtown via 2nd Street • Construct a satellite/overflow parking facility for downtown employees or event attendees • Create a golf cart hub/rental facility	• The TSP does not identify a trail access point at this location • The TSP does not identify a satellite/overflow parking facility at this location • The TSP does not identify a golf cart hub at this location	• The TSP does not include projects at this site • Confirm approach with the Citizens Advisory Committee • Update the TSP to include trail connections, overflow parking facilities, and a golf cart hub
Site 7 – Overlook Tract		
• Connect bike/ped bridge over 257th to Opportunity Site 6	• This TSP does not identify a bike/ped bridge at this location	• The TSP does not include projects at this site • Confirm approach with the Citizens Advisory Committee • Update the TSP to include a bike/ped bridge connection
Site 11 – Beaver Creek West Tract		
• Widen sidewalk on both sides of the street (Historic Columbia River Highway) or construct a bike/ped trail on/near road • Continue downtown street lighting and other streetscape features	• The TSP identifies a multi-use path on the east side of the Columbia River Highway from the Columbia/Sandy River Trail to downtown Troutdale (P29); however, the City is planning to relocate the project to the confluence site as part of the amendment • The TSP does not identify street lighting or streetscape features at this site	• There are inconsistencies between some projects in the TSP and the Town Center Plan • The street lighting and streetscape projects are not identified in the TSP • Confirm approach with the Citizens Advisory Committee and update the TSP accordingly

2020-2040 Town Center Plan	2014 Transportation System Plan	Needs to Address with 2022 Technical TSP Update
Site 12 – Peninsula Tract		
• Create a connector park to Glenn Otto Park and the Confluence site – mile long riverfront park • Improve existing bridge on northwest corner to allow for two-lane traffic • Construct additional parking for Glenn Otto Park and Sugarpine Drive-In	• The TSP does not identify a trail at this site, although it could be identified as part of the park plan • The TSP does not identify improvements to the existing bridge at this site • The TSP does not identify additional parking at this site	• The TSP does not include projects at this site • Confirm approach with the Citizens Advisory Committee • Update the TSP to include a trail, bridge improvements, and additional parking facilities
Confluence Site		
• Connect site to regional trails and to a multi-use trail to downtown • Carry over street grid from downtown as organizing principle • Construct centralized parking facility/garage • Construct pedestrian bridge to connect directly to downtown • Identify a direct vehicular connection to downtown	• The TSP does not include projects that would address the potential improvements identified in the Town Center Plan at this site	• The TSP does not include projects at this site • Confirm approach with the Citizens Advisory Committee • Update the TSP to include regional trail connections, street grid organization, centralized parking, a pedestrian bridge connection, and a vehicular connection to downtown

Opportunity Corridors

The Town Center Plan identifies eight opportunity corridors where enhanced mobility options should be provided to support the vision. The opportunity corridors are designed to connect the four neighborhoods together with the Downtown, support the development of the identified opportunity sites, and improve connections with other areas in Trousdale. As of 2020, six of the eight corridors are already constructed transportation facilities, with two hypothetical connections being called out. Five of the eight corridors are Multnomah County-owned right-of-way facilities. Figure 4 illustrates the location of the opportunity corridors.

Figure 16. Opportunity Corridors



Source: Town Center Plan

The Town Center Plan identifies potential infrastructure improvements along each of the opportunity corridors that need to be added to the TSP to be implemented. Table 2 identifies the corridors, the potential infrastructure improvements, and any related project in the TSP. Table 2 also identifies potential discrepancies between the infrastructure improvements identified in the Town Center Plan and the TSP. These discrepancies will be reviewed by the Citizens Advisory Committee and addressed in the TSP amendment as applicable.

Table 4. Town Center Plan Infrastructure Improvements – Opportunity Corridors

2020-2040 Town Center Plan	2014 TSP	Needs to Address with 2022 Technical TSP Update
Corridor A – Halsey Street		
• Install a continuous off-street ped-bike path • No discussion of widening the road to three lanes	• P5: Install sidewalks on both sides of Halsey Street from the west city limits to Historic Columbia River Highway • M6: Widen to 3 lanes from 238th Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes. [Note that there are existing bike lanes on Halsey Street, and the TSP does not identify any bicycle facility improvements on Halsey Street] • T7: Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey [Street], 257th Avenue, and Stark Street	• The existing TSP projects are inconsistent with the Town Center Plan • Confirm the preferred cross-section with the Citizens Advisory Committee • Update the TSP to reflect the preferred cross-section and approach to providing multimodal facilities on Halsey Street • Maintain coordination project with TriMet and Multnomah County to implement transit signal priority on Halsey Street

2020-2040 Town Center Plan	2014 TSP	Needs to Address with 2022 Technical TSP Update
Corridor B – Historic Columbia River Highway - Halsey Neighborhood Segment		
• Potential that this corridor could take on a heightened role in overall circulation patterns in the Halsey neighborhood based on development of opportunity sites • Plan states that public improvements should be complimentary of development patterns in those opportunity sites	• P6: Install sidewalks on both sides of Columbia River Highway from 244th Avenue to Halsey Street • B3: Install on-street bike lanes [on Historic Columbia River Highway] from Halsey Street to 244th Avenue	• The existing TSP projects appear consistent with the Town Center Plan • Confirm approach with the Citizens Advisory Committee • Update the TSP as necessary to reflect the preferred cross-section
Corridor C – Historic Columbia River Highway – Downtown Segment		
Plan identifies ten possibilities for capital investments and street programing along the corridor. These include: • Reduce the through travel lane width from 12 to 11 feet • Remove dedicated on-street bicycle lanes • Establish a parallel bicycle "greenway" along 2nd street • Construct a bike-ped bridge spanning 257th Drive • Install a three-way stop at Opportunity Site 1 or at an intersection with Corridor H • Provide extended pedestrian bump-outs to shorten distances crossing streets • Increase sidewalk width • Allow angled parking on one side of the street • Enlarge tree wells to establish a larger tree canopy • Establish loading and drop-off zones	• P37: Install curb extensions along historic Columbia River Highway at Kendal[l] Avenue, Buxton Avenue, Dora Street, Harlow Avenue, and Kibling Avenue • B16: Improve existing crossing conditions [at 257th/Columbia River Highway] with combined bike lane/turn lane pavement markings and signs • T3: Coordinate with TriMet to provide bus shelters at Stop 8747: Historic Columbia River Highway & SW Kendall Road [and] Step 13532: 257th Avenue & Historic Columbia River Highway • M11: Signalize Historic Columbia River Highway/Buxton Road in coordination with 257th Avenue/Historic Columbia River Highway	• There are inconsistencies between some projects in the TSP and the Town Center Plan • Confirm preferred cross section and street design elements with the Citizens Advisory Committee • Update the TSP to reflect the preferred cross-section on HCRH and parallel bike facilities on 2nd Street
Corridor D – Historic Columbia River Highway - Eastside Neighborhood Segment		
• Possibility for a bus pullout area that could be located at the northwest portion of the corridor closest to Downtown to provide an area for tour buses, shuttles, and standard transit to load and unload passengers • Potential to extend an off-road path into this segment	• No pedestrian, bicycle, or transit facility improvements identified along this segment	• The TSP does not include projects along this corridor • Confirm approach with the Citizens Advisory Committee • Update the TSP to reflect a new bus center located at the northwest portion of the corridor closest to Downtown • Update the TSP to include an off-street trail along this segment
Corridor E – Buxton Road		
• Corridor could serve as experimental street to encourage alternative	• P18: Reconfigure existing crossing on Buxton Road at 7th	• The existing TSP projects appear consistent with the

2020-2040 Town Center Plan	2014 TSP	Needs to Address with 2022 Technical TSP Update
transportation including electric-powered bicycles or golf carts that could help non-vehicular travelers go up (or down) Hungry Hill	Street consistent with the Troutdale Elementary SRTS Plan • B2: Install on-street bike lanes [on Buxton Road] from Historic Columbia River Highway to Cherry Park Road • M11: Signalize Historic Columbia River Highway/Buxton Road in coordination with 257th Avenue/Historic Columbia River Highway	Town Center Plan, with the exception that it does not address special needs for electric-powered bikes or golf carts • Confirm needs with the Citizens Advisory Committee and update the TSP as needed to address special needs for electric-powered bikes and golf carts
Corridor F – Secondary Access: Buxton Road to 257th Drive		
• Multiple opportunities to extend roadway to provide a secondary access, potentially relieves congestion concerns at the intersection of 257th Drive and Historic Columbia River Highway and provides a secondary access point for travelers to reach destinations within the Hungry Hill Neighborhood	• New connection not identified in local street connectivity plan	• The TSP does not include this new connection • Confirm needs and preferred location for a secondary access point to destinations within the Hungry Hill Neighborhood with the Citizens Advisory Committee • Update the TSP to reflect this new roadway connection
Corridor G – Sandy Avenue		
• Consider converting the corridor to one-way access road or closing the corridor to automobile traffic with exceptions for emergency vehicles or during weather events • The project would reduce wear and tear of the road and provide a safer means for pedestrians and cyclists to move up and down Hungry Hill	• B15: Install Shared roadway pavement markings and signs on 3rd Street and Sandy Avenue consistent with MUTCD standards	• The existing TSP projects are inconsistent with the Town Center Plan • Confirm preferred access change with the Citizens Advisory Committee • Update the TSP to reflect reduced vehicle access along Sandy Avenue
Corridor H – Downtown/URA Connections		
Project identifies two likely locations for future access considerations that would directly link Downtown with The Confluence site within the Urban Renewal Area. The most likely connections are: • A bike-ped bridge that begins at the intersection of Harlow Avenue and Historic Columba River Highway, spans over the rear parking area and railroad tracks, and ends in the Confluence site • A vehicular connection that extends Kibling Avenue over the existing driveway to the rear parking area and crosses the railroad tracks at-grade and continues into The Confluence site	• New connection not identified in local street connectivity plan	• The TSP does not include this new connection • Confirm approach with the Citizens Advisory Committee • Update the TSP to reflect a new ped-bike and vehicular connections

NEXT STEPS

The project team will revise *Draft Memo #1: Existing Conditions and Future Needs* based on input from the Project Management Team (comprised by staff representatives from the City and the County) and Citizens Advisory Committee (comprised of Troutdale residents). The project team will then use the information presented in the memo to develop *Draft Tech Memo #2: Transportation System Alternatives* that reflects the updated vision for the area identified in the Town Center Plan.

Attachment A

TSP Project Status

Completed Since 2014 TSP

Table 4-1: Pedestrian Master Plan

Project ID	Location	Type	Description	Status
Pl	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 257th 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	Project may need future modification
P6	Historic Columbia River Highway /244th	Complete Sidewalks	Install sidewalks on both sides of Historic Columbia River Highway from 244th 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 Laura Court to Hensley Road (N/S)	Complete
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	
P9	Kings Byway	Complete Sidewalks	Install sidewalks on the east side of Kings Byway from Cherry Park Road to 7th Street consistent with the Troutdale Elementary SRTS Plan	
P10	Evans Road	Complete Sidewalks	Install sidewalks on the northwest side of Evans Road from Sweetbriar Lane to 36th Street consistent with the Sweetbriar Elementary SRTS Plan	
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	257th Avenue at Hampton Heights Apartments Driveway	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th Avenue at the Hampton Heights Apartments Driveway	
Pl5	257th Avenue at Jennings Lane	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th Avenue at Jennings Lane	
P16	257th Avenue at 13th Place	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th Avenue at 13th Place	
P17	257th Avenue at 26th Street	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th Avenue at 26th Street	
P18	Buxton Road at 7th Street	Pedestrian Crossing	Reconfigure existing crossing on Buxton Road at 7th Street consistent with the Troutdale Elementary SRTS Plan	Complete
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	Complete

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	Project to be removed from the Action Plan
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	Complete
P24	Cherry Park Road at Imagination Way	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on Cherry Park Road at Imagination Way	Partially complete
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	Project to be removed from the Action Plan
P27	Troutdale Road at 21st Street	Pedestrian Crossing	Improve existing crossing on Troutdale Road at 21st Street consistent with the Sweetbriar Elementary SRTS Plan	Complete
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	Project may need future modification Project to be removed from the Action Plan
P30	Columbia Park Trail	Trail	Improve existing trail from 18th Way to 22nd Street	
P31	Sturges Trail	Trail	Install a trail from Sturges Lane to 257th Avenue	Partially complete
P32	Edgefield Trail (North of Halsey Street)	Trail	Install a trail from Edgefield's east access driveway to Historic Columbia River Highway	Project not viable, delete project
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/257th Connector Trail	Trail	Install a trail from Halsey Street to 257th Avenue	Project may be modified to be relocated along Halsey Loop
P36	Sandy River and Springwater Area Connections Trail	Trail	Install a trail from Mt. Hood Community College to Historic Columbia River Highway	Project to be removed from the Action Plan
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	Partially complete
P38	Sandy River and Springwater Area Connections Trail Master Plan	Trail	Develop a master plan for the Beavercreek Trails to determine the alignment/recommended design treatments	Project to be removed from the Action Plan
P39	Hewitt Neighborhood Trail	Multi-Use Path	Complete the multi-use path that connects the Hewitt neighborhood to Stark Street to the south and 257th to the west.	

Table 4-3: Bicycle Master Plan

Project ID	Location	Type	Description	Status
B1	Stark Street	Bike lane	Install on-street bike lanes from 257th 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 244th Avenue	Project may need future modification
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	238th Avenue	Bike lane	Install on-street bike lanes from Cherry Park Road to the west City limits	Complete
B11	Hensley Road (EW/NS)	Shared Roadways	Install shared roadway pavement markings and signs on Hensley Road (EW/NS) consistent with MUTCD standards	
B12	21st Avenue	Shared Roadway	Install shared roadway pavement markings and signs on 21st Avenue consistent with MUTCD standards	
B13	Sturges lanes	Shared Roadways	Install shared roadway pavement markings and signs on Sturges lane consistent with MUTCD standards	
B14	Sweetbriar lane	Shared Roadways	Install shared roadway pavement markings and signs on Sweetbriar lane consistent with MUTCD standards	
B15	3rd Street/Sandy Avenue	Shared Roadways	Install shared roadway pavement markings and signs on 3rd Street and Sandy Avenue consistent with MUTCD standards	This project may need refinement based on the Town Center Plan
B16	257th Avenue at Historic Columbia River Highway	Bike Crossing	Improve existing crossing conditions with combined bike lane/turn lane pavement markings and signs	This project may be superseded by the 2nd Street Bridge
B17	257th 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	
B18	Troutdale Town Center	Bicycle Parking	Install covered bicycle parking in the Troutdale Town Center	Project may need future modification

Table 4-5: Transit Master Plan

Project ID	Location	Description	Status
Tl	Halsey/Graham Road	Coordinate with TriMet to provide a new route connecting the Outlet Mall to Rockwood MAX Station.	Complete
T2	Cherry Park Road	Coordinate with TriMet to provide a new route between 242nd and 257th Avenue.	
T3	Bus Stop Enhancements	Coordinate with TriMet to provide bus shelters at the following transit stop: • Stop 8747: Historic Columbia River Highway & SW Kendall Road • Stop 9792: Stark Street & SW Sundial Avenue • Stop 5398: Stark Street & McGinnis Avenue • Stop 13532: 257th Avenue & Historic Columbia River Highway	Project may need future modification
T4	Park-and-Ride Lot	Coordinate with TriMet to study the feasibility of a Park-and-ride lot in the 1-84 interchange area that would serve Troutdale and communities to the east. This lot should provide access to the planned 40-Mile Regional Multiuse Trail.	Project may need future modification
T5	Transit Signal Priority	Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Avenue, 257th Avenue and Stark Street.	
T6	Marine/Sundial/Graham	Coordinate with TriMet to provide a new route serving the north industrial area.	Partially complete
T7	Troutdale Road/17th Street/Cochran Road	Coordinate with TriMet to provide a new route serving the southeast Troutdale area.	
TS	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).	
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.	

Table 4-12: Motor Vehicle Master Plan

Project ID	Location	Description	Status
Ml	Troutdale Road	Widen to 3 lanes from Beavercreek 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 257th Avenue and Troutdale Road. Includes sidewalks and bike lanes.	
MS	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 238th 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 1-84.	
MS	Graham Road	Reconstruct Graham Road.	Complete
M9	Marine Drive	Construct the Marine Drive Extension.	
M10	Marine Drive/Sundial Road	Improvement intersection of Marine Drive/Sundial Road. Includes widening Marine Drive fromapproximately 500 feet west of intersection to existing five-lane section.	
M11	Historic Columbia River Highway/Buxton Avenue	Signalize in coordination with 257th Avenue/Historic Columbia River Highway	
M12	257th Way	Extend 257th Way to the urban renewal area.	
M13	Parking Study	Conduct a parking study within the Troutdale Town Center	
M14	Dunbar Avenue	Reconstruct Dunbar Avenue.	
M15	Swigert Way Extension	Extend Swigert Way to the Graham Road	Complete

Attachment 4

Tech Memo #2: Alternatives Analysis

04-26-22

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Technical Memorandum

April 26, 2022

Project# 26160.0

To: Chris Damgen, Melissa Johnston, AICP
City of Troutdale
219 E Historic Columbia River Highway
Troutdale, Oregon 97060

From: Amy Griffiths, Matt Bell, Matt Hughart, AICP

Project: Troutdale Transportation System Plan Amendment

Subject Tech Memo #2: Alternatives Analysis

INTRODUCTION

This memorandum summarizes an evaluation of potential transportation infrastructure improvement projects identified in the *2020-2040 Town Center Plan* for several opportunity sites and corridors located in the Town Center District. These potential projects were evaluated along with corresponding projects in the Troutdale *Transportation System Plan (TSP)* and other projects identified by the project team, as applicable. Collectively, this memorandum refers to these projects as alternatives. This memorandum summarizes an evaluation of the alternatives and identifies the preferred list for inclusion in the TSP. *The preferred alternatives list will be reviewed and approved by the Project Management Team (PMT), Multnomah County staff, and the Citizens Advisory Committee (CAC), for inclusion in the TSP.*

The following sections provide a summary of the evaluation criteria used to evaluate the alternatives and the alternatives analysis, which is a qualitative assessment of how well the alternatives meet the criteria. The following sections also provide a summary of equity considerations for the TSP, based on the Metro Regional Transportation Plan (RTP), and a summary of potential electric vehicle (EV) capacity upgrades.

EVALUATION CRITERIA

Evaluation criteria were developed for the alternatives analysis based on information provided in the existing TSP and other relevant planning documents as well as discussions with the project team. Table 1 presents the evaluation criteria.

Table 1: Evaluation Criteria

Metric	Definition
Safety	The alternative improves safety. Safety is assessed qualitatively, based on an alternative's ability to reduce motor vehicle speeds and/or conflicts between travel modes.
Equity	The alternative supports equity. Equity is assessed based on an alternative's ability to improve mobility for transportation disadvantaged populations.
Climate	The alternative supports climate friendly goals. Climate is assessed based on improvements to mobility for people walking, biking, and taking transit – which can reduce environmental impacts.
Cost	The alternative provides a high-value benefit given the cost. Cost is assessed based on engineering challenges and the level of work associated with the alternative (e.g., restriping a roadway would be assessed higher than widening a roadway).

Public Input	The alternative is supported by the community. Public input is assessed based on feedback from the PMT, CAC, Multnomah County, the Troutdale Planning Commission, City Council, and public.

A qualitative process using the evaluation criteria was used to evaluate the alternatives. The rating method used to evaluate the alternatives is described in Table 2 below.

Table 2: Rating Method

Symbol	Category
●	Most desirable: The alternative substantially meets the criteria and/or makes substantial improvements in the criteria category.
◕	Desirable: The alternative meets the criteria or makes improvements in the criteria category.
◑	No net effect: The criterion does not apply to the alternative or the alternative has no net effect on the criteria category (e.g., benefits are offset by drawbacks).
◔	Less Desirable: The alternative negatively impacts the criteria category.
○	Least Desirable: The alternative negatively impacts the criteria category in s substantial way.

At this level, the ratings will be used to inform discussions with the project team about how well the alternatives meet the intent of the evaluation criteria.

ALTERNATIVES EVALUATION

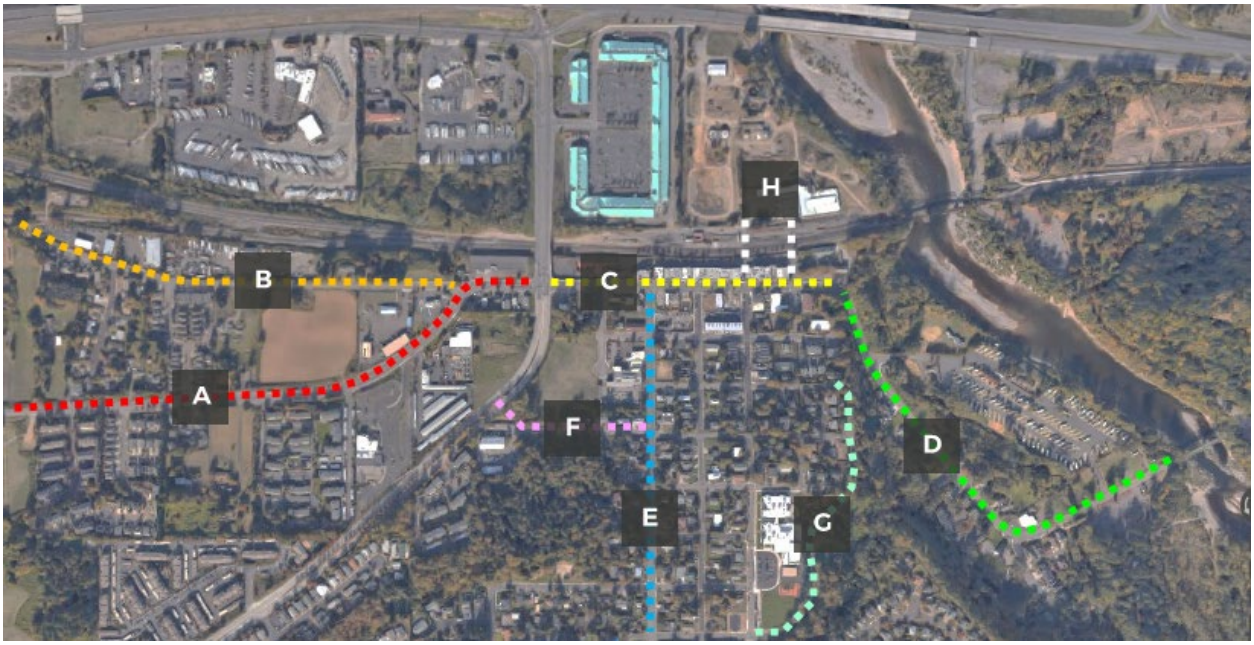
The *Town Center Plan* provides a vision for the opportunity sites and corridors in the Town Center District and in most cases identifies potential transportation infrastructure improvement projects to help implement the Plan. The TSP includes projects throughout the city, including projects at some of the opportunity sites and corridors. As documented in the *Tech Memo #1: Existing Conditions and Future Needs*, some of the infrastructure improvement projects identified in the *Town Center Plan* conflict with projects in in the TSP while others do not. These conflicts were discussed with the project team and in some instances, members expressed their preferences; in others, they identified new alternatives for consideration.

The following sections identify the potential transportation infrastructure improvement projects identified in the *2020-2040 Town Center Plan*, any corresponding or conflicting projects in the TSP, and other projects identified by the project team for consideration. The following sections also provide an evaluation of the project alternatives, where applicable. The alternatives that most closely meet the intent of the evaluation criteria are presented as the preferred alternatives and will be confirmed or modified based on input from the PMT, Multnomah County, and the CAC.

Opportunity Corridors

The *2020-2040 Town Center Plan* identifies eight opportunity corridors designed to connect the four neighborhoods together with the downtown core area, support the development of the opportunity sites, and improve connections with other areas in Troutdale. Figure 1 illustrates the location of the opportunity corridors.

Figure 1. Opportunity Corridors



Source: Town Center Plan, page 127

The *2020-2040 Town Center Plan* identifies potential transportation infrastructure improvement projects along each of the opportunity corridors that need to be reconciled with the TSP. The following describes the physical characteristics of the opportunity corridors and their role in Troutdale's transportation system. This information provides context for the alternatives identified in the various planning documents. The following also summarizes the potential infrastructure improvement projects identified in the *Town Center Plan*, any corresponding or conflicting projects in the TSP, and other projects identified by the project team for consideration. Finally, the following summarizes the evaluation of the alternatives. The alternatives that most closely meet the intent of the evaluation criteria are identified as the preferred alternatives.

CORRIDOR A – HALSEY STREET

Corridor A includes the segment of NE Halsey Street from the west limits of the Town Center District to 257th Drive. The segment from the west limits to SW Edgefield Meadows Avenue has a two-lane cross section with on-street bike lanes. This segment also contains on-street parking and bus pull-outs in some areas while others appear to be designed to accommodate a future three-lane cross section[1]. The segment from SW Edgefield Meadows Avenue to 257th Drive has a three-lane cross section with on-street bike lanes and a center turn lane. This segment also contains sidewalks on both sides.

Per the *Town Center Plan*, NE Halsey Street serves as a de facto main street that connects Troutdale with the cities of Wood Village and Fairview to the west in addition to the McMenamins Edgefield campus. The plan provides a vision for the corridor that includes continuous pedestrian and bicycle facilities to better connect the Town Center District with areas to the west. The plan includes potential transportation infrastructure improvements along the corridor that conflict with planned improvements in the TSP.

Transportation Alternatives

- **Town Center Plan** – The *2020-2040 Town Center Plan* identifies a potential cross section for NE Halsey Street that maintains the two-lane cross section and provides an off-street bike/ped trail (or shared-use path) that parallels the vehicle travel lanes – This path could connect with a potential bicycle greenway on 2nd Street (See Corridor C).
- **Transportation System Plan** – The TSP includes three projects on the corridor. The projects include widening NE Halsey Street from 238th Avenue to Historic Columbia River Highway to provide a center turn lane (M6), providing continuous sidewalks on both sides of the roadway from the west city limits to Historic Columbia River Highway (P5), and implementing transit signal priority on NE Halsey Steet in coordination with TriMet and Multnomah County (T7). This alternative is assumed to maintain existing on-street bike lanes.
- **No-Build** – While both the *Town Center Plan* and TSP identify potential improvements for the corridor, a no-build alternative was considered in the evaluation below. The no-build alternative assumes that the city does not drive any changes to the corridor, but the corridor may continue to develop. For the purposes of this assessment, and due to the uncertain timeline of development, it is assumed that no changes occur under the no-build alternative.
- **Other** – No other alternatives were identified for the corridor. However, the next phase of the Main Streets on Halsey project[2] will evaluate additional alternatives and provide conceptual design plans for a preferred concept along the corridor.

Table 3. Corridor A Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Town Center Plan	Two-lane cross section with shoulders and an off-street bike/ped trail on one side	◕	◕	●	●	◕
★ Transportation System Plan	Three-lane cross section with on-street bike lanes and sidewalks on both sides	●	●	◕	◕	◕
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◑	◔

[1] Multnomah County's Design and Construction Manual identifies a three-lane cross section as the preferred cross section for collectors in urban areas.
[2] Troutdale, Wood Village and Fairview recently received a grant from the Oregon Department of Transportation (ODOT) Transportation Growth Management (TGM) program to develop a concept plan for NE Halsey Street.

Preferred Alternative

Both alternatives have a similar cumulative scoring according to the evaluation criteria and are preferred to the no-build alternative. There are advantages to both the TSP and *Town Center Plan* alternatives. The TSP alternative may be easier to construct incrementally through development and provides better flexibility for future regional growth, while the *Town Center Plan* is likely to cost less overall. Therefore, the final decision on project components is deferred to be decided based on additional analysis and the outcome of the Main Streets on Halsey project.

CORRIDOR B – W HISTORIC COLUMBIA RIVER HIGHWAY

Corridor B includes the segment of W Historic Columbia River Highway from the west limits of the Town Center District to NE Halsey Street. This segment has a two-lane cross section with narrow to no shoulders. This segment contains on-street parking in some areas while others appear to be designed to accommodate a future three-lane cross section. This segment also contains landscape strips and sidewalks in some areas.

Per the *Town Center Plan*, this corridor serves as a secondary access route or collector for some of the residential areas in the Halsey neighborhood as well as access for some industrial properties outside the Town Center District. With development of opportunity sites 3, 4, and 5, there is a possibility that this corridor could take on a heightened role in overall circulation patterns in the Halsey neighborhood. The Plan provides a vision for the corridor and indicates that public improvements should be complimentary of development patterns in the adjacent opportunity sites. The plan does not include potential transportation infrastructure improvements along the corridor.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* does not identify potential infrastructure improvement projects for the corridor, but provides a vision for the corridor and indicates that public improvements should be complimentary of development patterns in the adjacent opportunity sites.
- **Transportation System Plan** – The TSP identifies two projects for the corridor. The projects include installing sidewalks on both sides of the roadway (P6) and installing on-street bike lanes on both sides of the roadway (B3).
- **No-Build** –The no-build alternative assumes that the city does not drive any changes to the corridor, but the corridor may continue to develop. For the purposes of this assessment, and due to the uncertain timeline of development, it is assumed that no changes occur under the no-build alternative.

Since the TSP projects are consistent with the *Town Center Plan* vision, the TSP alternative is evaluated with respect to the No-Build alternative, as shown below.

Table 4. Corridor B Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Transportation System Plan	Install sidewalks and bike lanes on both sides of the roadway	●	●	●	◕	◕
Transportation System Plan	N/A	◑	◑	◑	◑	◑
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◑	◔

Preferred Alternative

Given that the *Town Center Plan* does not include potential projects for this corridor and the projects in the TSP provide enough flexibility to meet the vision of the plan, the TSP projects are the preferred alternatives for this corridor.

CORRIDOR C – HISTORIC COLUMBIA RIVER HIGHWAY

Corridor C includes the segment of Historic Columbia River Highway from 257th Drive to Depot Park. This segment currently has a two-lane cross section with separate left and right turn lanes at 257th Drive and a separate right-turn lane at Buxton Road. This segment also contains on-street bike lanes, on-street parking, and sidewalks on both sides. This segment is generally considered Troutdale's main street.

Per the *Town Center Plan*, the prevailing consideration is to make Troutdale's main street become not just a street, but a place. As a result, improving the right-of-way to have it be more pedestrian friendly and reducing the actual speed of vehicles through direct design and visual cues should be the considerations moving forward. The plan includes several potential transportation infrastructure improvements along the corridor, including some that conflict with planned improvements in the TSP.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* includes several alternatives to improve the pedestrian environment. The alternatives primarily impact the segment of Historic Columbia River Highway from Buxton Road to Depo Park and include:
  - Reducing the through travel lane width from 12 to 11 feet
  - Removing dedicated on-street bicycle lanes (requires bicycles to be in standard traffic lanes)
  - Establishing a parallel bicycle "greenway" along 2nd Street
  - Installing a potential bike-ped bridge spanning 257th Drive to connect 2nd Street with a potential off-road path identified in Corridor A (See Site 7 for an evaluation of this alternative)
  - Installing a three way stop at Opportunity Site 1 or potentially at an intersection with Corridor H
  - Providing extended pedestrian bump-outs to shorten distances crossing streets
  - Increasing the sidewalk width, where allowed
  - Allowing for potential angled parking (standard or rear-end) on one side of the street
  - Enlarging the tree wells to establish a larger tree canopy (potentially use parts of parking strip)
  - Establishing convenient loading and drop-off zones
- **Transportation System Plan** – The TSP identifies four projects for the corridor. The projects primarily impact the segment of Historic Columbia River Highway from 257th Drive to Buxton Road and include:
  - Installing curb extensions along Historic Columbia River Highway at Kendal Avenue, Buxton Road, Dora Street, Harlow Avenue, and Kibling Avenue (P37) – Curb extensions at Dora Street and Harlow Avenue are complete
  - Improving existing crossing conditions at 257th Drive with combined bike lane/turn lane pavement markings and signs (B16)
  - Coordinating with TriMet to provide bus shelters at Stop 8747: Historic Columbia River Highway & SW Kendall Road and Stop 13532: 257th Drive & Historic Columbia River Highway (T3)
  - Installing a traffic signal at Historic Columbia River Highway/Buxton Road in coordination with 257th Drive/Historic Columbia River Highway (M11)
- **Other** – Another option is proposed to provide the benefits desired from the *Town Center Plan* without the major costs and drawbacks. This alterative includes reducing the through lane and parking lane widths, maintaining bike facilities, maintaining parallel parking, and increasing the sidewalk width in addition to many of the select projects described in the *Town Center Plan* and TSP.
- **No-Build** – The no-build alternative assumes that the corridor maintains existing conditions.

Table 5. Corridor C Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
Town Center Plan	Multimodal Improvements – Buxton Road to Depot Park	◑	◑	◑	○	◔
Transportation System Plan	Multimodal improvements – 257th Drive to Buxton Road	◕	◕	◕	◕	◕
★ Other	Multimodal improvements	◕	●	●	◕	●
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◑	◑

Preferred Alternative

Neither the *Town Center Plan* nor the TSP met the full range of intended outcomes associated with the evaluation criteria and needs desired by the public. Therefore, the *other* alternative was created to address those goals and is the preferred alternative.

CORRIDOR D – E HISTORIC COLUMBIA RIVER HIGHWAY

Corridor D includes the segment of E Historic Columbia River Highway from Depot Park to the east city limits. This segment has a two-lane cross section with on-street bike-lanes on both sides. The segment from Depot Park to the Beaver Creek Bridge has a continuous (curb-tight) sidewalk on the west side – the sidewalk transitions to a shared bike/ped path that crosses Beaver Creek and terminates in the Glenn Otto Park parking lot.

Per the *Town Center Plan*, this corridor is the primary route that connects residential, local commercial uses, and community assets in the Eastside neighborhood with downtown and there is a desire to have the community assets along this corridor be better connected with those in downtown. There are also several opportunity sites located along this corridor, and therefore, there is overlap with alternatives identified later in this report. The plan includes potential transportation infrastructure improvements along the corridor while the TSP does not include any planned improvements due to potential constraints.

Transportation Alternatives

- **Town Center Plan** – The *2020-2040 Town Center Plan* identifies several alternatives for this corridor. The alternatives include a bus pullout in the northwest portion of the corridor (See Site 1 for an evaluation of this alternative) and an off-road path (See Site 11 for an evaluation of this alternative), and pedestrian improvements along the east side of the road.
- **Transportation System Plan** – The TSP does not include any projects along this corridor. This was due, in part, to an understanding of potential constraints along the corridor; therefore, a no-build alternative is included in the evaluation below.
- **Other** – The CAC identified a number of additional alternatives for consideration, including traffic calming, protected bike lanes, wider sidewalks, pedestrian-scale lighting, and improved pedestrian connections in the Glen Otto Park parking lot. The CAC also expressed a desire to continue the bus service to Glen Otto Park.
- **No-Build** - The no-build alternative assumes that the corridor maintains existing conditions.

Table 6. Corridor D Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
Town Center Plan	Pedestrian sidewalk improvements along the east side of the road	◕	◕	◕	◔	◕
Transportation System Plan	N/A	◑	◑	◑	◑	◑
★ Other	Traffic calming, separated bike lanes, and wider sidewalks	●	●	●	◔	●
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◑	◔

Preferred Alternative

The CAC recommended alternatives score higher than the *Town Center Plan* or TSP alternatives – it has the same design challenges associated with the *Town Center Plan* but provides greater separation between people biking and people driving, provides more accessible sidewalk facilities for people of all ages and abilities on both sides of the roadway, and reduces travel speeds of people driving. Therefore, the CAC alternative is the preferred alternative.

CORRIDOR E – BUXTON ROAD

Corridor E includes the segment of Buxton Road from Historic Columbia River Highway to the south limits of the Town Center District. This segment currently has a two-lane cross section with wide shoulders/on-street parking and continuous sidewalks on both sides. This segment has a steep grade that is challenging for people walking and biking, particularly in winter months.

Per the *Town Center Plan*, this corridor connects a large portion of Troutdale with the Town Center District in general and downtown in particular. Bicycle and pedestrian improvements have been considered along Buxton Road, as well as streetscape improvements like NE Halsey Street. The Plan identifies the potential to extended streetscape improvements further south to Troutdale Road to link the Town Center District to other parts of Troutdale with a consistent streetscape pattern. The Plan also identifies the potential for Buxton Road to serve as an experimental street to encourage alternative transportation, including electric bicycles, scooters, micro-transit, and golf carts.

Transportation Alternatives

- **Town Center Plan** – The *2020-2040 Town Center Plan* does not identify specific alternatives for Buxton Road, rather it identifies the potential for Buxton Road to serve as an experimental street to encourage alternative transportation.
- **Transportation System Plan** – The TSP includes three projects along Buxton Road. The projects include reconfiguring existing crossing on Buxton Road at 7th Street consistent with the Troutdale Elementary SRTS Plan (P18), installing on-street bike lanes [on Buxton Road] from Historic Columbia River Highway to Cherry Park Road (B2), and installing a traffic signal at the Historic Columbia River Highway/Buxton Road in coordination with 257th Avenue/Historic Columbia River Highway (M11).
- **No-Build** – The no-build alternative assumes that the corridor maintains existing conditions.

Table 7. Corridor E Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Town Center Plan	Streetscape improvements including providing an experimental street to encourage electronic bicycles and golf carts	◕	◕	●	◑	◑
★ Transportation System Plan	Reconfigure existing crossing, Install on street bike lanes, install a traffic signal	●	●	●	◕	◕
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◑	◑

Preferred Alternative

The *Town Center Plan* and TSP elements do not conflict with each other and can both be advanced as a preferred alternative.

CORRIDOR F – SECONDARY ACCESS

Corridor F is a potential future street connection between Buxton Road and 257th Drive. The main purpose of the corridor would be to relieve congestion at 257th Drive/Historic Columbia River Highway and provide a secondary route to/from the Hungry Hill neighborhood.

Per the *Town Center Plan*, the likeliest location for the corridor is an extension of 4th Street from its current terminus near the City's Public Works facility to 257th Drive. However, this would require significant rework of the parking areas and likely widening of 4th Street to accommodate an increase in traffic. The Plan also identifies 2nd Street as a possible location, but notes that the proximity of 2nd Street to Historic Columbia River highway might limits its effectiveness.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* identifies the potential to extend 4th Street to 257th Drive to relieve congestion at 257th Drive/Historic Columbia River Highway and provide a secondary route to/from the Hungry Hill neighborhood.
- **Transportation System Plan** – The TSP does not include the Corridor F street connection.
- **No-Build** – Given the challenges associated with providing this new street connection a no-build alternative is included in the evaluation below.

Table 8. Corridor F Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
Town Center Plan	4th Street Extension	◔	◑	◔	○	○
Transportation System Plan	N/A	◑	◑	◑	◑	◑
★ No-Build	No new connections to 257th Drive	◑	◑	◑	◑	◕

Preferred Alternative

Based on initial conversations with the PMT, there was reduced interest in the *Town Center Plan* project based on adjacent development conflicts and required public improvements on existing facilities. Therefore, a no-build alternative was considered. The secondary access would provide additional connectivity to 257th Drive but would be expensive due to the likely need to signalize the intersection and relocate the public works department. The alternative also creates concerns about safety due to sight distance and vehicle speeds and does not improve access to walking, biking, or transit facilities. Therefore, the no-build alternative is the preferred alternative.

CORRIDOR G – SANDY AVENUE

Corridor G includes the segment of SE Sandy Avenue from SE 3rd Street to SE Harlow Avenue. This segment currently has a two-lane cross section with no shoulders and a continuous (curb-tight) sidewalk on the west side. This segment does not provide direct access to adjacent land uses; however, it serves as a secondary route to navigate between upper and lower portions of the Hungry Hill neighborhood, particularly during inclement weather conditions.

Per the *Town Center Plan*, major concerns for the corridor include maintenance and the long-term durability of the road being able to accommodate vehicle traffic due to stabilization issues on the hillside. The Plan states that there will be little ability to widen the road without significant expense. While the TSP does not discuss issues with the roadway, they are implicit in the nature of the improvements identified in the TSP.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* identifies two alternatives for the corridor. The alternatives include reduce Sandy Avenue to a one-way access road or close the road to automobile traffic with exceptions for emergency vehicles or during weather events.
  - A study conducted by Portland State University (PSU) students in Spring of 2021 evaluated several alternatives and recommends creating a one-way street with a two-way cycle track – preliminary designs of the recommendations show the cycle track in the west lane.
  - The CAC discussed these alternatives and stated a preference toward using the east lane for pedestrian/bicycle traffic.
- **Transportation System Plan** – The TSP identifies one project for the corridor. The project includes installing shared roadway pavement markings (or "sharrows") and signs on 3rd Street and Sandy Avenue consistent with MUTCD standards (Project B15).
- **No-Build** – The no-build alternative assumes that the corridor maintains existing conditions.

Table 9. Corridor G Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Town Center Plan (PSU Alternative)	Reduce the road to one-way access road and provide multimodal facilities (in the west lane)	◕	◕	◕	◕	◑
★ Town Center Plan	Close the road with exceptions for emergency vehicles and weather	●	●	●	●	◔
Transportation System Plan	Shared lane pavement marking ("Sharrows")	◑	◑	◑	◔	◑

Other (CAC Alternative)	Reduce the road to one-way access road and provide multimodal facilities in the east lane	◕	◕	◕	◔	◕
No-Build	Maintains existing conditions on the corridor	◑	◑	◑	◔	◔

Preferred Alternative

There are major cost implications for maintaining vehicular access along Sandy Boulevard. The CAC's primary concerns with closing the road to vehicular access were that there are not many parallel through routes. In the near-term, the preferred alternative is to reduce the road to one-way access road and provide multimodal facilities. In the medium term, once parallel routes are improved, the preferred alternative is to close the road with exceptions for emergency vehicles and weather.

Neither of these alternativities preclude the long-term potential to reconstruct the roadway according to city standards if needed and pending funding availability.

CORRIDOR H – DOWNTOWN/URA CONNECTIONS

Corridor H includes two potential connections that would directly link downtown with the Confluence site within the Urban Renewal Area. Per the *Town Center Plan*, the two most likely connections include:

- A bike/ped bridge that begins at the intersection of Harlow Avenue and Historic Columbia River Highway, spans over the rear parking area and railroad tracks, and ends in the Confluence Site; potentially on the top floor of a parking structure or an elevator shaft.
- A vehicular connection that extends Kibling Avenue over the existing driveway to the rear parking area and crosses the railroad tracks at-grade and continues into The Confluence site.

The *Town Center Plan* notes that a vehicular bridge could be achieved through engineering, though it would be cost prohibitive for public or private investment, it would require a reconfiguration of the rear parking area, and it would take up significant land on the Confluence Site. However, both connections would be optimal for ensuring that the Confluence Site is well integrated with downtown.

Transportation Alternatives

- **Town Center Plan** – The Town Center Plan identifies a bike/ped bridge and a vehicular connection providing multimodal access between the Town Center and the Confluence site.
- **Transportation System Plan** – The Transportation System Plan does not identify a project along this corridor.
- **No-Build** – Given the challenges associated with providing this new street connection a no-build alternative is included in the evaluation below.

Table 10. Corridor H Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Town Center Plan	Bike/ped bridge and vehicular connection	●	●	●	◕	●
Transportation System Plan	N/A	◑	◑	◑	◑	◑
No-Build	No new connections to the Confluence Site	◑	◑	◑	◑	◔

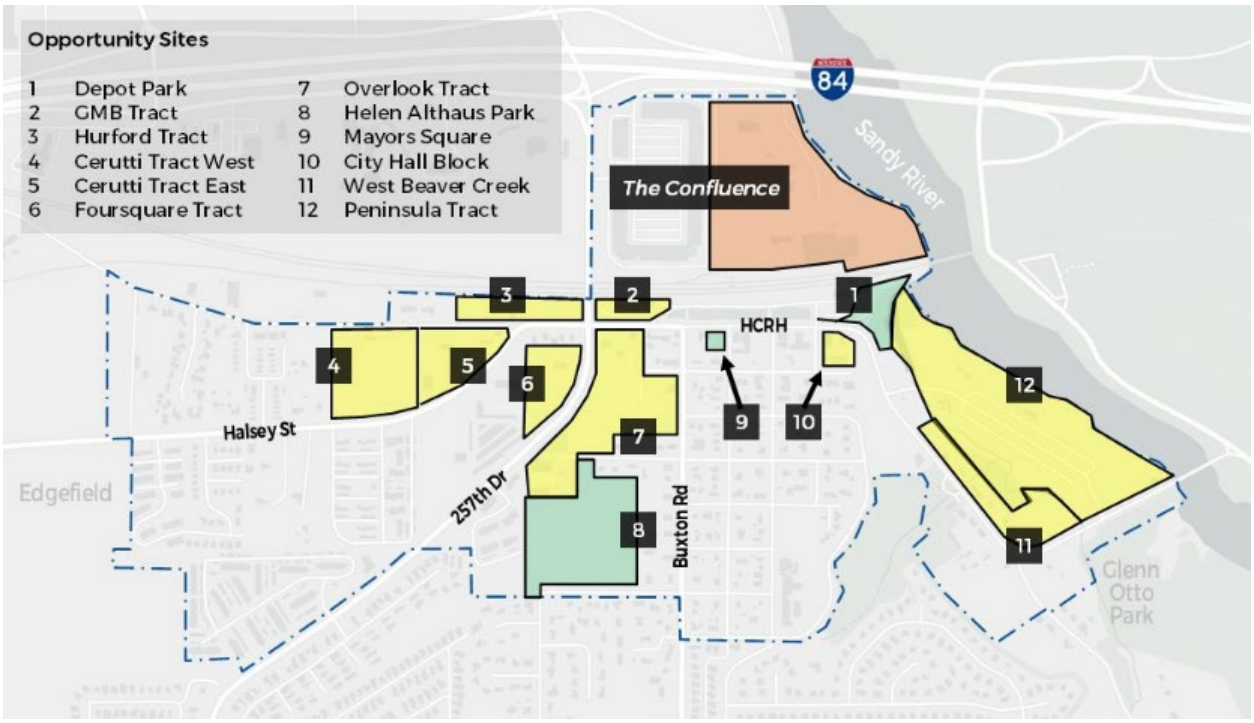
Preferred Alternative

The alternatives identified in the *Town Center Plan* for the bike/ped bridge and the vehicle bridge are generally supported. The Plan notes that a lack of any direct connections apart from the planned riverfront would be harmful to both areas and lead to disjointed or competitive growth that would jeopardize the Town Center District as a whole. Given that the TSP does not include any planned improvements that would conflict with those in the *Town Center Plan* and no additional alternatives were identified by the CAC, the *Town Center Plan* bridges are the preferred alternative.

Opportunity Sites

The *Town Center Plan* identifies 12 opportunity sites and the Confluence Site where development and investment should be focused to help fulfill the vision, optimize those parcels to their highest and best use, and conserve the existing built environment. An opportunity site, as defined by the *Town Center Plan*, is a property (or collection of properties) where development or redevelopment could be transformative across the entire Town Center District. Figure 2 illustrates the location of the opportunity sites.

Figure 2. Opportunity Sites



Source: Town Center Plan

The *Town Center Plan* identifies potential transportation infrastructure improvement projects at seven of the 12 opportunity sites and the Confluence site that need to be reconciled with the TSP. The following identifies the location of the sites, summarizes the potential infrastructure improvement projects identified in the *Town Center Plan*, any corresponding or conflicting projects in the TSP, and other projects considered by the project team, as applicable. Finally, the following summarizes the evaluation of the alternatives. The alternatives that most closely meet the intent of the evaluation criteria are identified as the preferred alternatives.

SITE 1 – DEPOT PARK

Site 1 is located at the east end of the downtown core and is currently occupied by Depot Park. The site is bounded by the Sandy River and Beavercreek waterways to the east, the Union Pacific Railroad to the north, and commercial uses to the west. It is at the nexus of downtown, the Confluence site, and the East End neighborhoods.

The *Town Center Plan* provides a vision for the site that maintains it as parks and open space and incorporates other community services uses. As indicated below, there are aspects of the vision that include improvements to transportation infrastructure. Also, the vision and improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

The *Town Center Plan* includes two potential infrastructure improvements at the site. The improvements include creating a bus and bike depot and associated installations and installing a three-way stop where E Historic Columbia River Highway turns to the south with a parking lot. There are no other alternatives identified for this site. Therefore, the alternatives in the *Town Center Plan* are the preferred alternatives.

It should also be noted that constructing a bus and bike depot at this location does not preclude the ability to continue service to Glen Otto Park – which was identified by the CAC as an important service need. However, TriMet is considering shortening this route, now looping around Frontage Road and lining up with the Columbia Area Transit (CAT) shuttle to the Columbia Gorge. The City may need to consider last mile service to keep Glen Otto connected. TriMet has had too many issues turning around in Glen Otto parking lot and they say ridership is low.

SITE 3 – HURFORD TRACT

Site 3 is located at the northwest corner of Historic Columbia River Highway and 257th Drive and is mostly vacant. The site is bounded by the railroad to the north, commercial services to the east and south, and low density residential to the west. It is in a prominent location at two major intersections (NE Halsey Street/Historic Columbia River Highway and 257th Drive/Historic Columbia River Highway).

The *Town Center Plan* indicates that wider right-of-way at the intersection limits buildable area, and the proximity of two major intersections may limit driveways spacing to enter and exit the tract. The Plan provides a vision for the site that includes commercial service and community service uses. The vision also includes improvements to transportation infrastructure on the adjacent street(s) that includes reducing the right-of-way and providing up-to-date street improvements along the site frontage. As indicated below, the vision and improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

The TSP includes two projects adjacent to this site. The projects include installing sidewalks on both sides of W Historic Columbia River Highway (P6) and installing on-street bike lanes on both sides of W Historic Columbia River Highway (B3). Given that the vision in the *Town Center Plan* is generally consistent with projects in the TSP, the TSP alternative is the preferred alternative.

SITE 5 – CERRUTI TRACT EAST

Site 5 is positioned with dual street frontages and includes W Historic Columbia River Highway to the north and NE Halsey Street to the south. The site is surrounded by low density residential and undeveloped lots to the north, commercial uses to the east and south, and undeveloped areas to the west. The site is mostly developed.

The *Town Center Plan* provides a vision for the site that includes commercial services, mixed-use development, and medium density development. The vision also includes improvements to transportation infrastructure on the adjacent street(s). As indicated below, the vision and improvements do not conflict with plans or projects in the TSP; however, they may not be feasible to construct.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* identifies the potential for a traffic circle at the W Historic Columbia River Highway/NE Halsey Street intersection.
- **Transportation System Plan** – The TSP does not include any projects at this site.
- **No-Build** – No other alternatives were identified for the corridor. However, given the close proximity of the traffic circle to the 257th Drive/Historic Columbia River Highway intersection, a no-build alternative was evaluated as indicated below.

Table 11. Site 5 Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
Town Center Plan	Traffic circle at NE Halsey Street/ W Historic Columbia River Highway	◕	◑	◑	○	◑
Transportation System Plan	N/A	◑	◑	◑	◑	◑
★ No-Build	Maintains existing conditions adjacent to the site	◑	◑	◑	◑	◑

Preferred Alternative

Both alternatives have a similar cumulative scoring according to the evaluation criteria. However, the cost to implement the alternative in the *Town Center Plan* is relatively high given the potential benefit. Therefore, the no-build alternative is the preferred alternative.

It should be noted that this does not preclude the potential for installing a roundabout or other form of traffic control at the intersection when it becomes warranted. Future updates to the TSP should include an evaluation of the intersection and potential improvements as needed.

SITE 6 – FOUR SQUARE TRACT

Site 6 is positioned on the inside curve of 257th Drive in the southwest quadrant of the 257th Drive/Historic Columbia River Drive intersection. The site is bound on the north by smaller commercial development, on the east and southeast by 257th Drive, and on the west by a self-storage facility and utility company.

The *Town Center Plan* provides a vision for the site that includes community service uses, commercial office uses, and mixed-use development. The vision also includes improvements to transportation infrastructure. As indicated below, the vision and improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

The *Town Center Plan* identifies a potential trail access point to connect a trail to downtown via 2nd Street, a satellite/overflow parking facility for downtown employees or event attendees, and a golf cart hub/rental facility. No alternatives were identified for this site in the TSP or by the CAC. Therefore, the *Town Center Plan* alternative is the preferred alternative.

SITE 7 – OVERLOOK TRACT

Site 7 is situated in between 257th Drive, Historic Columbia River Highway, and Buxton Road and is mostly vacant. The site is bound by commercial uses to the north, community service uses to the east and south, and 257th Drive to the west.

The *Town Center Plan* provides a vision for the site that includes community service uses, high density residential, and mixed-use development. The vision also includes improvements to transportation infrastructure. The potential improvements do not conflict with plans or projects in the TSP.

Transportation Alternatives

- **Town Center Plan** – The *Town Center Plan* identifies several potential uses for the site, including a satellite parking lot for downtown overflow, events, or commuters by transit and a bike/ped bridge over 257th Drive
- **Transportation System Plan** – The TSP does not include any projects at this site.
- **No-Build** – A no-build alternative is included in the evaluation below.

Table 12. Site 7 Alternatives Evaluation

Alternative	Key Features	Safety	Equity	Climate	Cost	Public Input
★ Town Center Plan	Satellite parking lot and a bike/ped bridge over 257th Drive	◕	●	◕	◕	◕
Transportation System Plan	N/A	◑	◑	◑	◑	◑
No-Build	No new parking lot or bike/ped bridge over 257th Drive	◑	◑	◑	◑	◑

Preferred Alternative

The *Town Center Plan* identifies several potential uses for the site, including a satellite parking lot for downtown overflow, events, or commuters by transit and a bike/ped bridge over 257th Drive. These projects improve safety, equity, and climate, and are considered valuable additions to the transportation system. Therefore, the *Town Center Plan* alternative is the preferred alternative.

SITE 11 – BEAVER CREEK WEST TRACT

Site 11 is situated between the Historic Columbia River Highway and the western edge of Beaver Creek. The site is surrounded by Site 12 to the northeast, medium density residential and commercial services to the south; and low density residential and community service uses to the west. The site is critical in helping continue the visual connection of downtown with the amenities on the east end neighborhood, including Glenn Otto Park and Harlow House Park.

The *Town Center Plan* provides a vision for the site that includes mixed-use development, medium density residential, and commercial service. The vision also includes improvements to transportation infrastructure. As indicated below, the improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

The *Town Center Plan* identifies the potential for wider sidewalks on both sides of E Historic Columbia River Highway or a bike/ped trail on/near the roadway. It also identifies the potential to continue downtown street lighting and other streetscape features. Traffic calming, separated bike lanes, and wider sidewalks were confirmed as part of Corridor D. There are no other alternatives for this site. Therefore, the *Town Center Plan* alternative is the preferred alternative for Site 11.

SITE 12 – PENINSULA TRACT

Site 12 is located on the peninsula in between the Sandy River and Beaver Creek, with the Historic Columbia River Highway forming the southern boundary. The site is largely developed. The site is surrounded by the Sandy River to the northeast, community service and commercial service to the southeast, and Beaver Creek to the west.

The *Town Center Plan* provides a vision for the site that includes open space and parks, community service uses, and commercial service. The vision also includes improvements to transportation infrastructure. As indicated below, the improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

The *Town Center Plan* identifies the potential for a connector park to Glen Otto Park and the Confluence site with a trail along the west side of Beaver Creek. The Plan also includes improvements to existing bridge in northwest corner to allow for two-lane traffic and additional parking for Glenn Otto Park and Sugarpine Drive-in. There are no other alternatives for this site. Therefore, the *Town Center Plan* alternative is the preferred alternative for Site 12.

CONFLUENCE SITE

The Confluence site is located north of the Town Center District. The site is undeveloped and is located immediately adjacent to the Columbia Gorge Outlets. The site is strategically situated to take advantage of its surroundings, though there is a lack of connections to the site across the railroad tracks and Sandy River.

The *Town Center Plan* envisions the Confluence Site as a complement to Downtown. This vision includes a street grid, pedestrian access, a consistent architectural style, and maintenance of the iconic water tower. As indicated below, the improvements do not conflict with plans or projects in the TSP.

Preferred Alternative

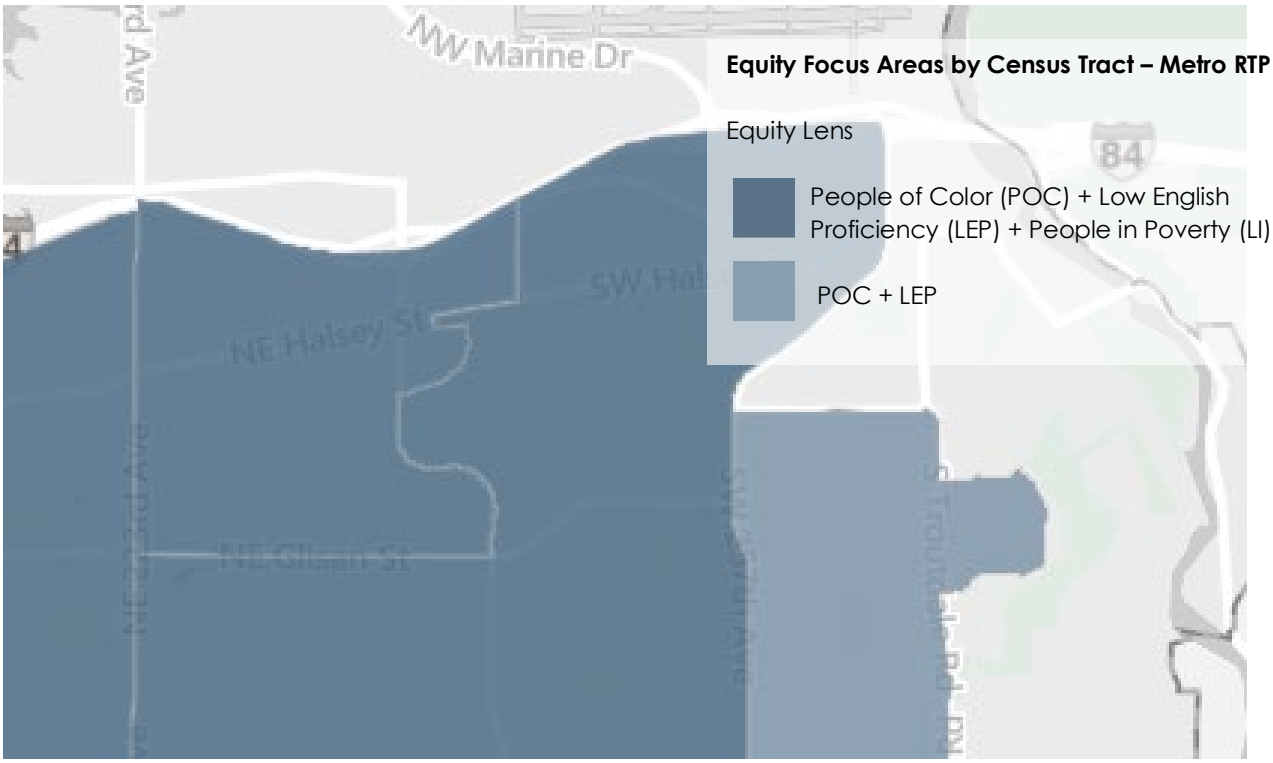
The *Town Center Plan* includes connections to regional trails, construction of a centralized parking facility, and construction of ped/bike and vehicular bridges. The ped/bike and vehicular bridges are confirmed as part of Corridor H. There are no other alternatives for this site and the alternatives in the *Town Center Plan* are generally well supported. Therefore, the *Town Center Plan* alternative is the preferred alternative for the Confluence Site.

EQUITY ANALYSIS OF EXISTING SYSTEM

Oregon Metro's Regional Transportation Plan (RTP) prioritizes advancing transportation equity by eliminating "disparities related to access, safety, affordability and health outcomes experienced by people of color and other historically marginalized communities."

The RTP establishes "equity focus areas" which are "census tracts where the rate of people of color [(POC)], people in poverty [(LI)], and people with low English Proficiency [(LEP)] is greater than the regional average and double the density of one or more of these populations." It then considers how many projects are located within those equity focus areas compared to the total number of projects. As described in *Tech Memo #1: Existing Conditions and Future Needs*, most of the City of Troutdale south of I-84 and west of S Troutdale Road is considered equity focus areas. Within the Town Center District, the Halsey neighborhood and portions of the Downtown and Hungry Hill Neighborhoods are located within equity focus areas. Figure 3 illustrates Metro's RTP equity focus areas within the Town Center District.

Figure 3. Metro's RTP Equity Focus Areas (2022)



Source: RFFA Map Resources

The TSP includes action plans by mode, which consists of projects that are reasonably expected to be funded over the next 20 years. The TSP amendment will confirm that there is an equitable share of projects within, and supporting access to, equity focus areas.

EV CHARGING STATIONS

Tech Memo #1: *Existing Conditions and Future Needs* documented the existing locations of different types of electric vehicle charging stations in Troutdale. According to the federal inventory provided by Energy.gov, there are six public electric vehicle charging stations in Troutdale.

Climate-Friendly and Equitable Communities (CFEC) rulemaking calls for new buildings to support the growing electric vehicle transformation. According to the CFEC six-page overview, "the rules propose new housing and mixed-use development would include electrical conduit (pipes) at 50% of spots, ready for adding wiring and charging stations to support electric vehicles as the market expands. Those providing faster chargers could provide conduit to fewer spaces."

The City of Troutdale Comprehensive Plan includes policies related to energy conservation. This includes a policy to "promote and facilitate the retrofitting of homes and commercial/industrial facilities for energy conservation" and to "promote the use of alternative energy sources" with recognition that "the Oregon Department of Energy indicate[s] that the roof of a typical house is sufficient to produce all electrical needs for the house with enough left over to recharge an electric car." The City of Troutdale Comprehensive Plan does not provide explicit policies about providing electric vehicle charging; The Comprehensive Plan should be amended to be consistent with CFEC rulemaking.

Opportunity Sites 6, 12, and the Confluence Site include provisions to construct public parking facilities. Where feasible, these sites should include EV charging stations or conduit to support the addition of EV charging stations in the future. Other Opportunity Sites may also present opportunities to construct parking facilities with EV charging stations, although they may be privately owned and maintained. Opportunity Site 7, for example, will include residential uses and could be equipped with EV charging stations to support those uses.

NEXT STEPS

The project team will revise *Draft Tech Memo #2: Alternatives Analysis* based on input from the Project Management Team (comprised by staff representatives from the City and the County) and Citizens Advisory Committee (comprised of Troutdale residents). The project team will then use the information presented in Tech Memo #1 and Tech Memo #2 to amend the TSP.

Attachment 5

Transportation System Plan – Redlines

Version 7-20-22

CITY OF TROUTDALE TRANSPORTATION SYSTEM PLAN

Adopted April 8th, 2014 by Ordinance no. 820
Amended ___, 2022 by Ordinance no. ___

Prepared for:

City of Troutdale
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Oregon Department of Transportation

THE CITY OF TROUTDALE OREGON

KITTELSON & ASSOCIATES

Transportation System Plan

Troutdale Transportation System Plan

Troutdale, Oregon

Public Hearing Draft

For consideration by the Troutdale Planning Commission
on August 24, 2022~~As recommended to the Troutdale City Council by the Troutdale Planning Commission on February 19, 2014~~

July 2022~~March 2014~~

Transportation System Plan

Troutdale Transportation System Plan

Troutdale, Oregon

Prepared For:
City of Troutdale
219 E Historic Columbia River Highway
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Project No. 26160.0~~12560.0~~

July 2022~~March 2014~~

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CHAPTER 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 March 2014~~August 2005~~, making it relatively current. However,~~Therefore,~~ analysis of the entire transportation system and modeling of the roadway network was not conducted~~necessary~~ as part of the ~~this~~ update due to~~. In addition,~~ extensive modeling of many streets and intersections in the Troutdale area ~~was recently~~ performed as part of two long-range planning studies, including~~;~~ the 2011 I-84 Troutdale Interchange Area Management Plan (IAMP) and the 2012 East Metro Connections Plan (EMCP). As indicated below, the conclusions and recommendations of these studies were used to help guide the development of the~~this~~ update. Future updates to the TSP will provide a more comprehensive review and update of the multimodal transportation system.

The March 2014 TSP~~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 previous~~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.

The March 2014 TSP ~~This~~ update also include~~d~~s 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.

The March 2014 TSP~~This~~ update ~~is~~ was 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

The March 2014 TSP~~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.

2022 TSP Amendment

In 2022 the TSP was amended to incorporate the *2020-2040 Town Center Plan*, including:

- Incorporating the vision and goals for several opportunity sites and corridors in the Town Center District.
- Incorporating guidance from Metro's *2018 Regional Transportation Plan* on implementation of planned improvements in equity focused areas.
- Incorporating policy analysis and guidance on emerging and future trends in transportation and mobility, specifically on electric vehicle charging stations.

The amendment revises the Master Plan and Action Plan projects and project maps to remove projects that are complete or no longer needed and add projects that reflect the vision and goals of the *2020-2040 Town Center Plan* as well as other projects identified within the Town Center District.

The following sections summarize the findings of the overall TSP~~this update~~. ~~The 2010 most recent Metro RTP was complied with for every mode and existing deficiencies were addressed.~~

Goals and Policies

The goals and policies of the~~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 the 2010~~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.

The 2010~~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.

Pedestrian Master Plan

Figure 1-1

H:\26\26160 - Troutdale TSP Technical Update\gis\Figure 1-1_Pedestrian_Update.mxd - agriffiths - 9:02 AM 7/18/2022

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Troutdale and 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 257th DriveAvenue 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 HighwayConstruct pedestrian facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	To Be Determined
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	257th DriveAvenue at 26th Street	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at 26th 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 18th Way to 22nd Street	$75
P31	Sturges Trail	Trail	Install a trail from the Halsey Street/Sturges Connector TrailLane to 257th DriveAvenue	$50230
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 RoadAvenue, Dora Street, Harlow Avenue, and Kibling StreetAvenue	$190240
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 257th to the west.	$25
P40	Historic Columbia River Highway	Sidewalk	Install sidewalks on the east side of Historic Columbia River Highway from Depot Park to the Beaver Creek Bridge – Also widen sidewalks on the west side	-
P41	Historic Columbia River Highway	Sidewalks	Install sidewalks on the south side of Historic Columbia River Highway from the Beavercreek bridge to the Sandy River Bridge	-
P42	Downtown/Urban Renewal	Pedestrian/Bicycle	Install a bicycle-pedestrian bridge from Historic Columbia	$250**

Project ID	Location	Type	Project Description	Cost ($1,000)
	Area Connections	Bridge	River Highway at Harlow Avenue to the Confluence Site	
P43	2nd Street Bridge	Pedestrian/Bicycle Bridge	Install a bicycle-pedestrian bridge over 257th Drive	$125**
P44	2nd Street Trail	Trail	Install a trail from Kendall Avenue at 2nd Street to Halsey Street via the 2nd Street Bridge	$135
P45	Beaver Creek West Trail	Trail	Install a trail from Depot Park to Glenn Otto Park on or near the west side of Beaver Creek	$175
			Total	**$1,375~~965~~**

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.
** The City of Troutdale's contribution to these project costs is assumed to be 10% of the overall project costs.

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, and off-street multi-use paths could improve the overall bicycle system.

The 2010 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 and the 40-mile loop. 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.

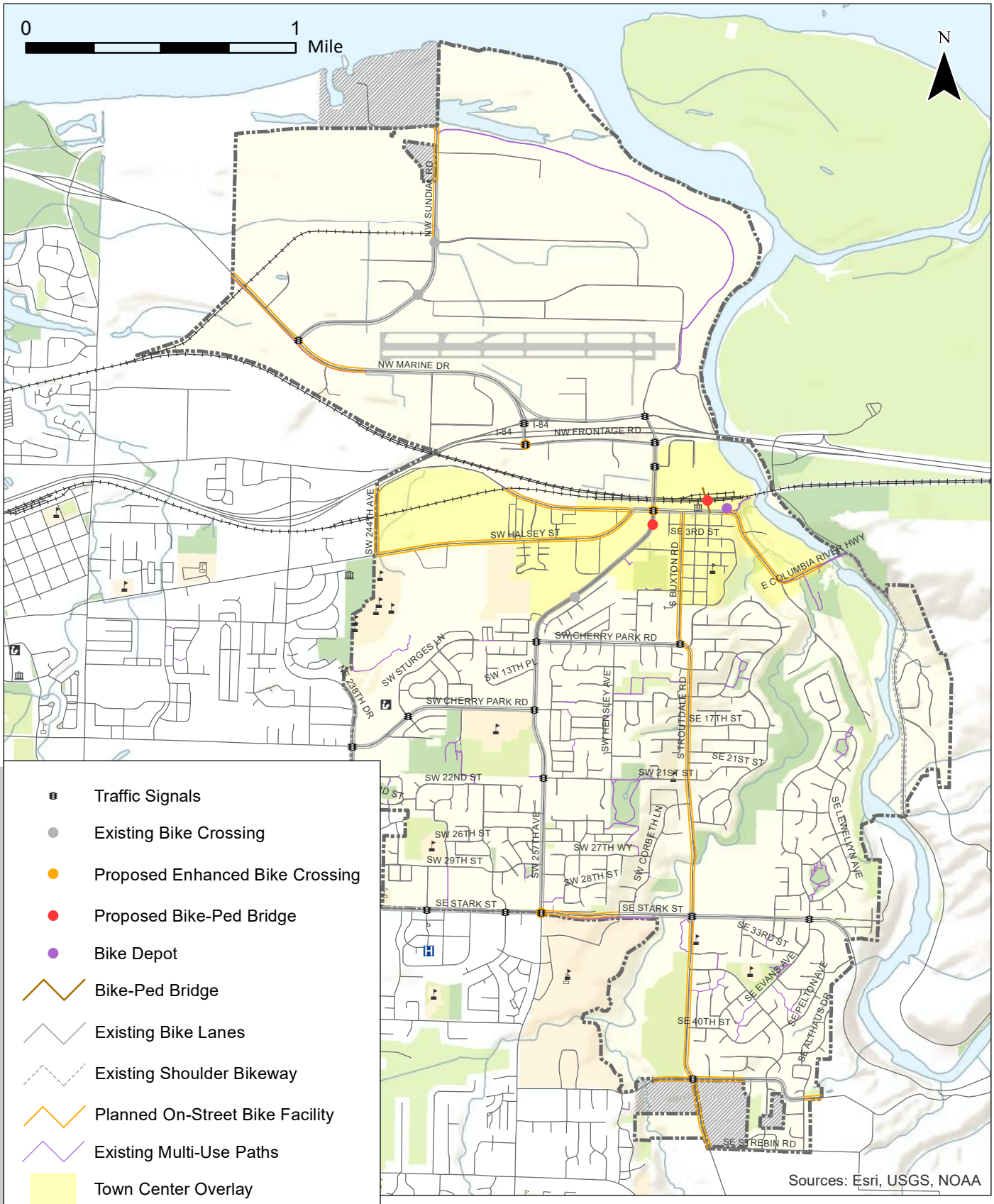
Several strategies were developed to help guide the selection and prioritization of the projects included in the Bicycle Action Plan. The strategies were used to rank the projects identified in the Bicycle Master Plan from highest to lowest in terms of priority. The highest--ranking City projects were 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 257th Avenue to Troutdale Road.	-*
B2	Buxton Road	Enhanced Bike Lane	Install enhanced 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 the railroad underpass	-

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~~	~~238th 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~~	~~21st Avenue~~	~~Shared Roadway~~	~~Install shared roadway pavement markings and signs on 21st 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~~	~~3rd Street/Sandy Avenue~~	~~Shared Roadways~~	~~Install shared roadway pavement markings and signs on 3rd 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~~
B19	Halsey Street	Bike Lanes	Construct bike facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	To be Determined
B20	Historic Columbia River Highway	Enhanced Bike Lane	Install enhanced on-street bike lanes from Depot Park to east city limits	-
B21	2nd Street/Kibling Avenue	Shared Roadways	Install shared roadway signs on 2nd Street from Kendall Avenue to Kibling Avenue and on Kibling Avenue from 2nd Street to Historic Columbia River Highway	$25
B22	Depot Park	Other	Construct a bike/transit hub at Depot Park	$250
			Total	**$275~~95~~**

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 Master Plan

Figure **1-2**

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

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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.

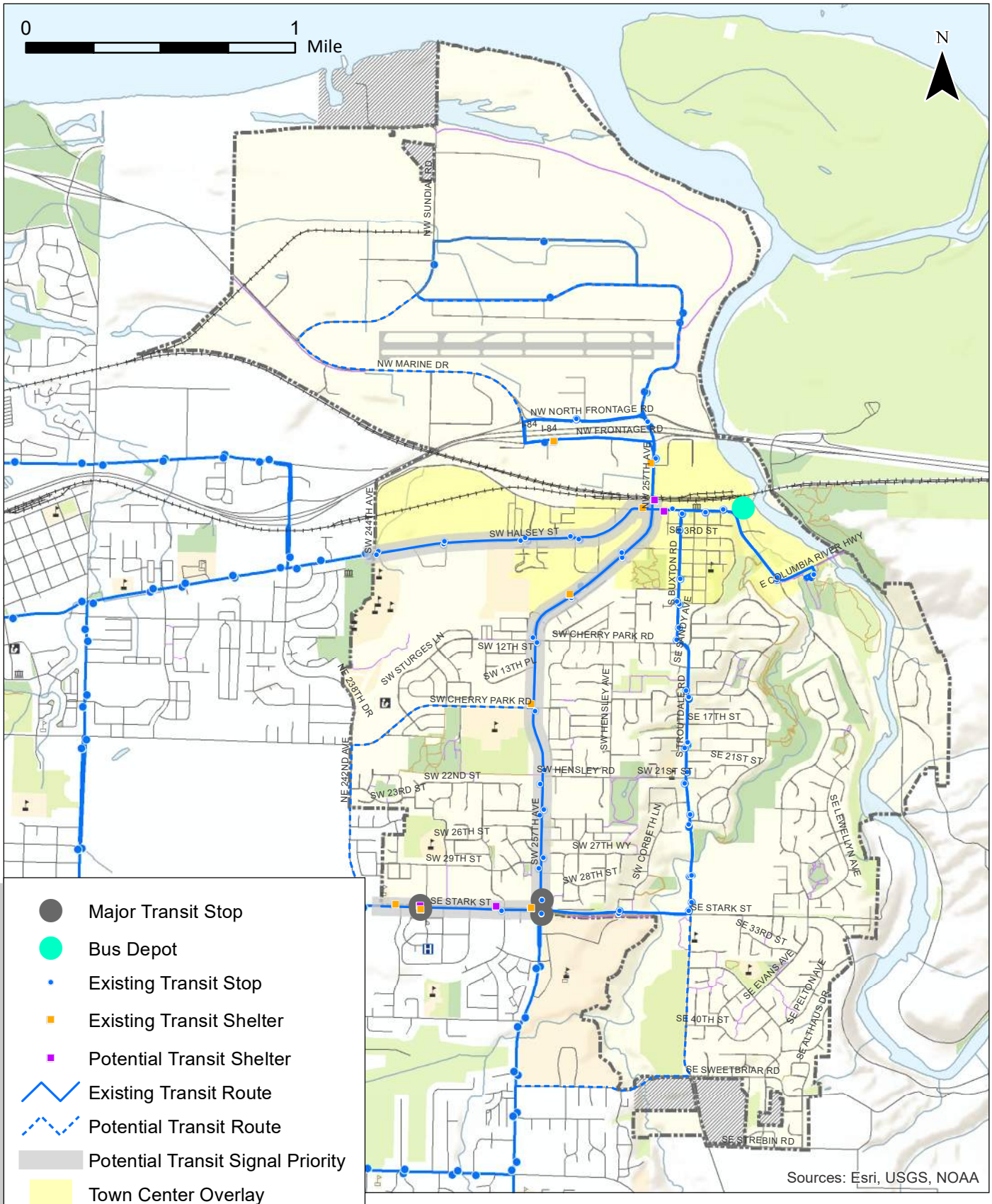
The 2035 High--Capacity Transit System Plan identifies 257th Avenue as a Developing Regional Priority Corridor, which is a corridor where projected 2035 land use and commensurate ridership potential are not supportive of HCT implementation, but which have long-term potential due to political aspirations. 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 242nd and 257th Drive~~Avenue~~.	-
T3	Bus Stop Enhancements	Coordinate with TriMet to provide bus shelters at the following transit stops that meet TriMet's minimum thresholds and support community goals for local transit service~~:~~ • ~~Stop 8747: Historic Columbia River Highway & SW Kendall Road~~ • ~~Stop 9792: Stark Street & SW Sundial Avenue~~ • ~~Stop 5398: Stark Street & McGinnis Avenue~~ • ~~Stop 13532: 257th Avenue & Historic Columbia River Highway~~	-
T5	Transit Signal Priority	Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Street, 257th Drive~~Avenue~~, and Stark Street.	-
T6	Marine/Sundial/Graham	Coordinate with TriMet to ~~provide a new route serving~~ further enhance service to the north industrial area.	-
T7	Troutdale Road/17th 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 (the amount of time between transit vehicle arrivals at a stop).	-
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	-
		Total	**$0**

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**

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

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Motor Vehicle System

Future traffic conditions were analyzed as part of the 2005 TSP as well as the 2011 IAMP and the 2012 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

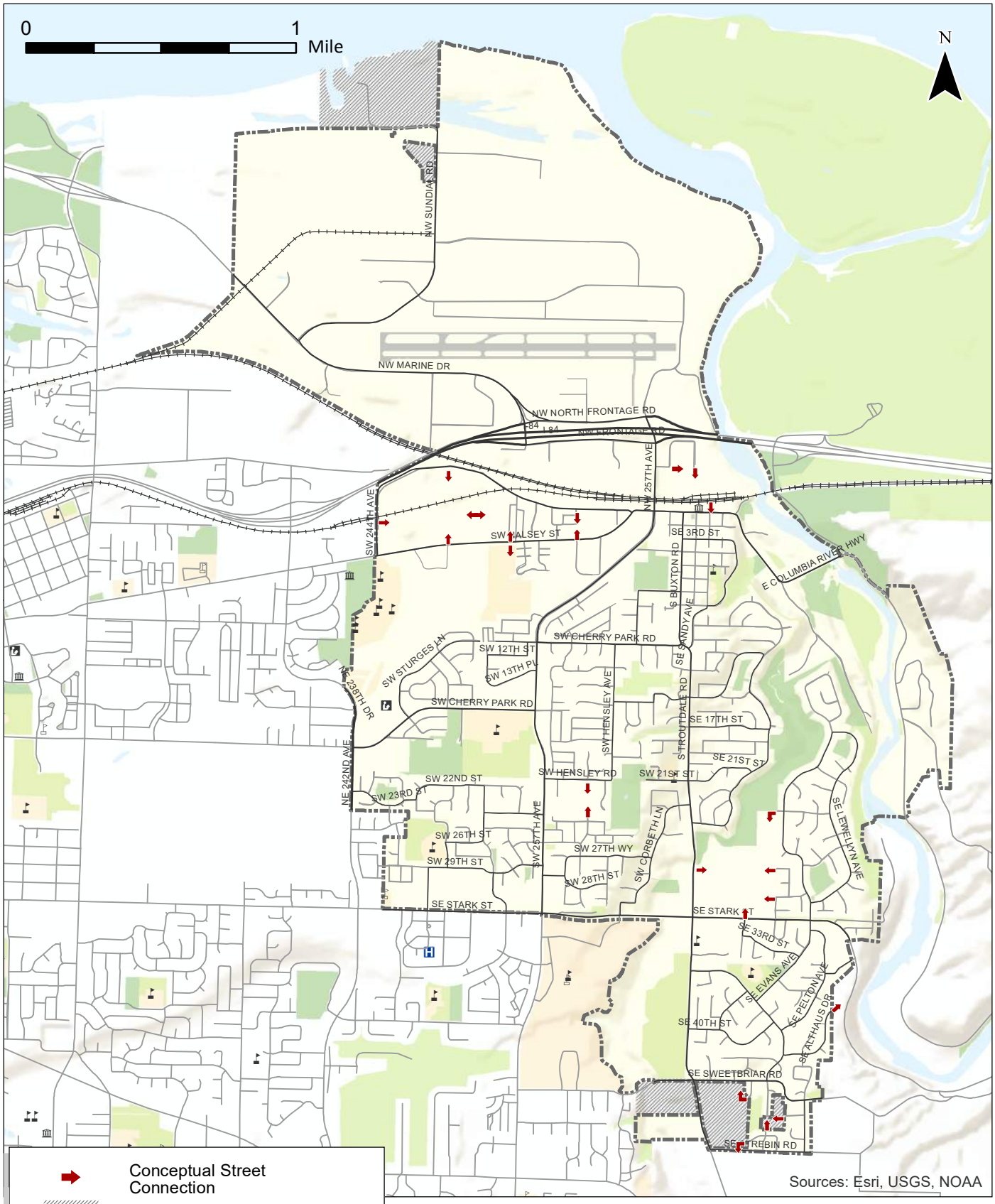
Street Facility	Maximum spacing of roadways	Minimum spacing of roadways and driveways
Arterials	1,000 Feet	530 Feet
Collector	530 Feet	150 Feet
Neighborhood/Local	530 Feet	-
All Roads	Require an access report for new access points stating that the driveway/roadway is safe as designed meeting adequate 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.



Local Street Connectivity Plan

Figure **1-4**

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

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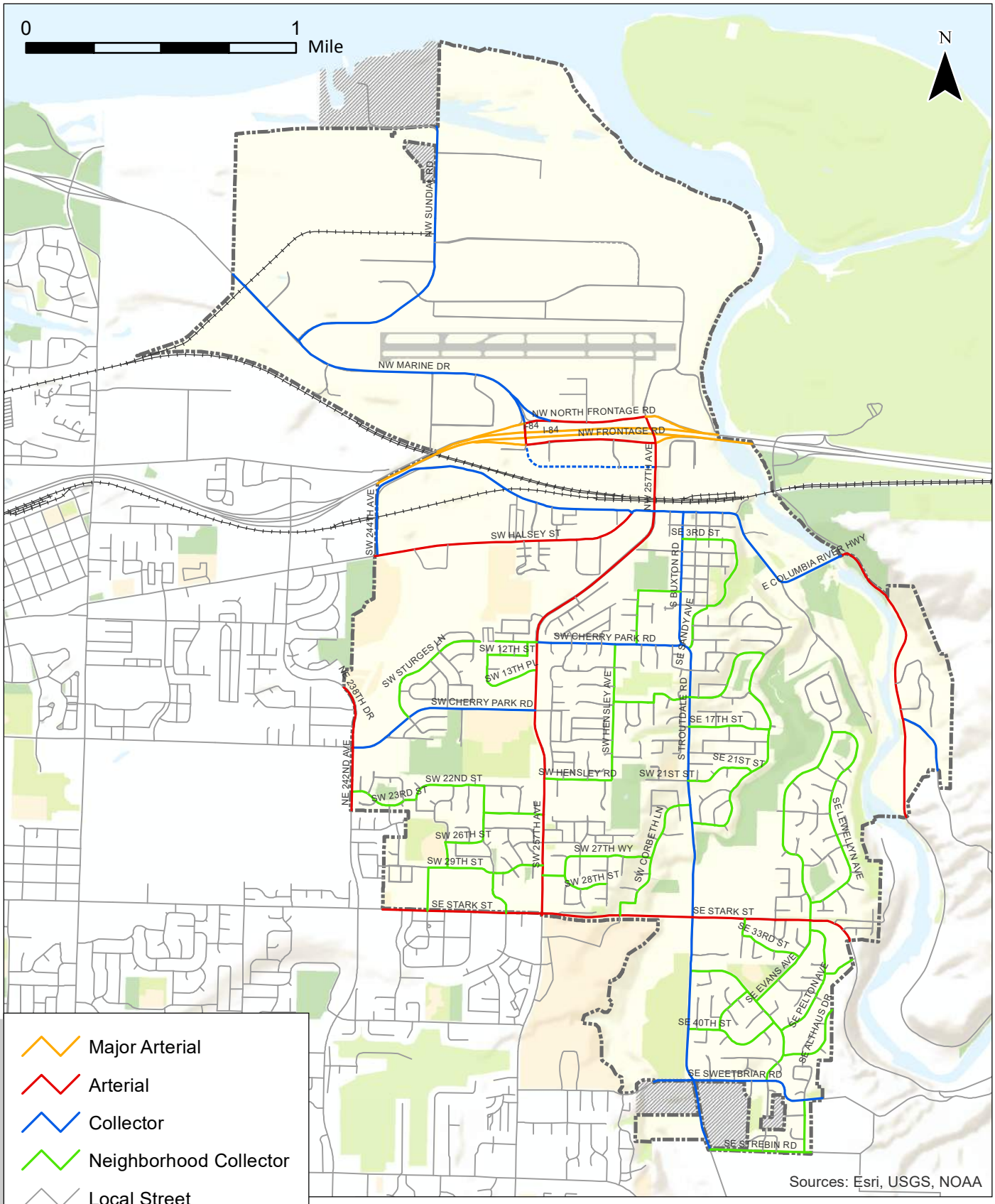


Functional Classification Plan

Figure **1-5**

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Troutdale and 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.

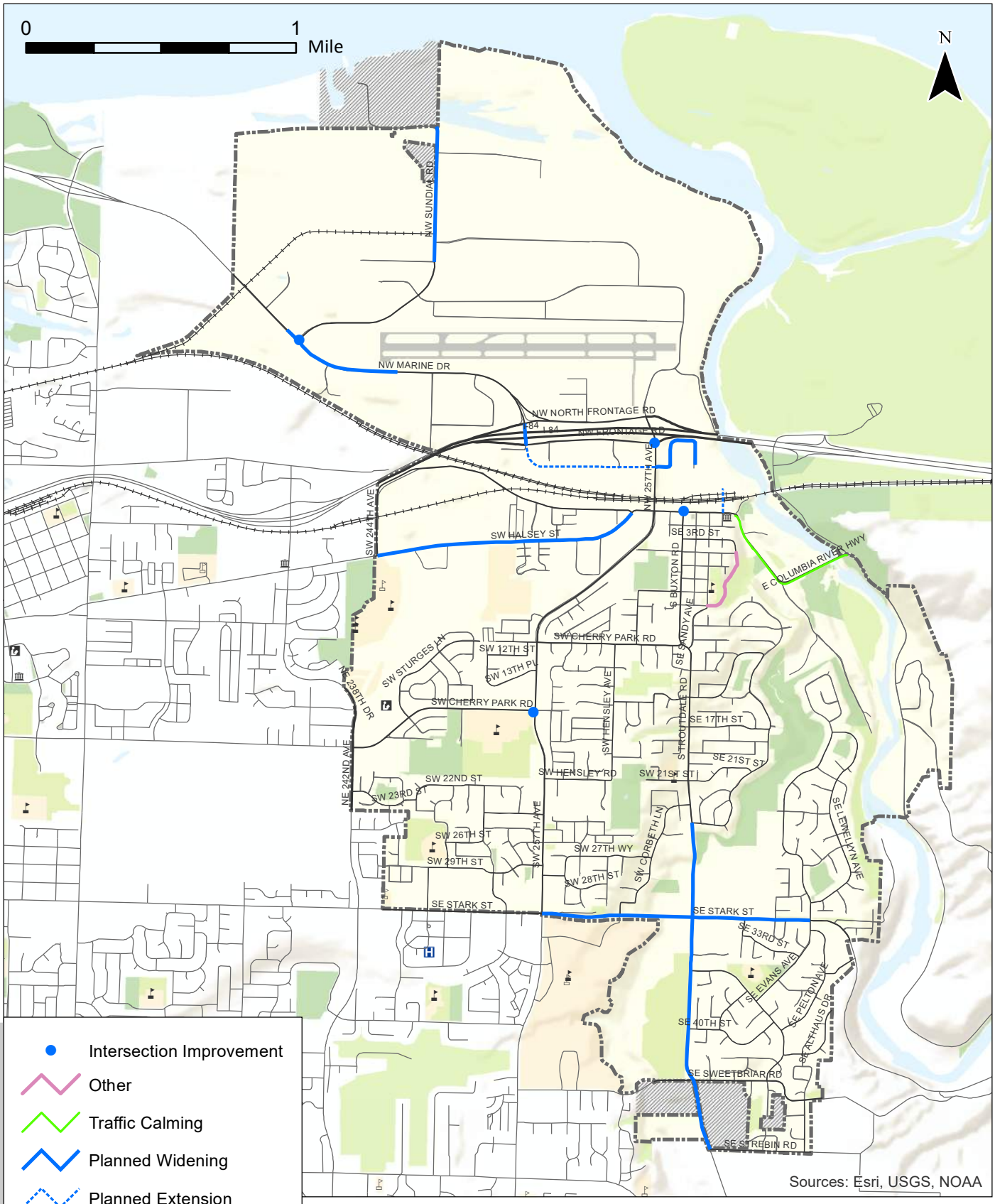
Roadway Improvements

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 257th Avenue. Although 242nd/238th 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-84/257th Avenue interchange, which in some cases includes travel via ~~under-improved~~ Graham Road. An alternative access is the I-84/207th Avenue interchange, to Sandy Boulevard, to 223rd 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 2011 IAMP and the 2012 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 242nd Street extension, the 238th Street extension, the 2nd Street extension, and the 257th 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.



Motor Vehicle Master Plan

Figure **1-6**

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

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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 Drive~~Avenue~~ and Troutdale Road. Includes sidewalks and bike lanes.	$300
M6	Halsey Street Widening	~~Widen to 3 lanes from 238th Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes.~~Construct facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input.	To Be Determined~~-~~
~~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 257th Drive~~Avenue~~/Historic Columbia River Highway.	$200
M12	257th Way	Extend 257th Way to the urban renewal area.	-
M13	Parking Study	Conduct a parking study within the Troutdale Town Center – the study should include an evaluation of potential off-street parking facilities, including a parking structure at the Confluence site.	$50
M14	Dunbar Avenue	Reconstruct Dunbar Avenue.	$450
M16	Historic Columbia River Highway	Prepare a refinement plan for downtown Troutdale and consider changes to the street profile to improve mobility – Project B16 and P37 may be impacted by the refinement plan	$50
M17	Historic Columbia River Highway	Install traffic calming features along the Historic Columbia River Highway from Depot Park to east city limits	$150
M19	Historic Columbia River Highway/Depot Park	Install a traffic control device where E Columbia River Highway turns to the south	$150
		Total	**$2,330~~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.

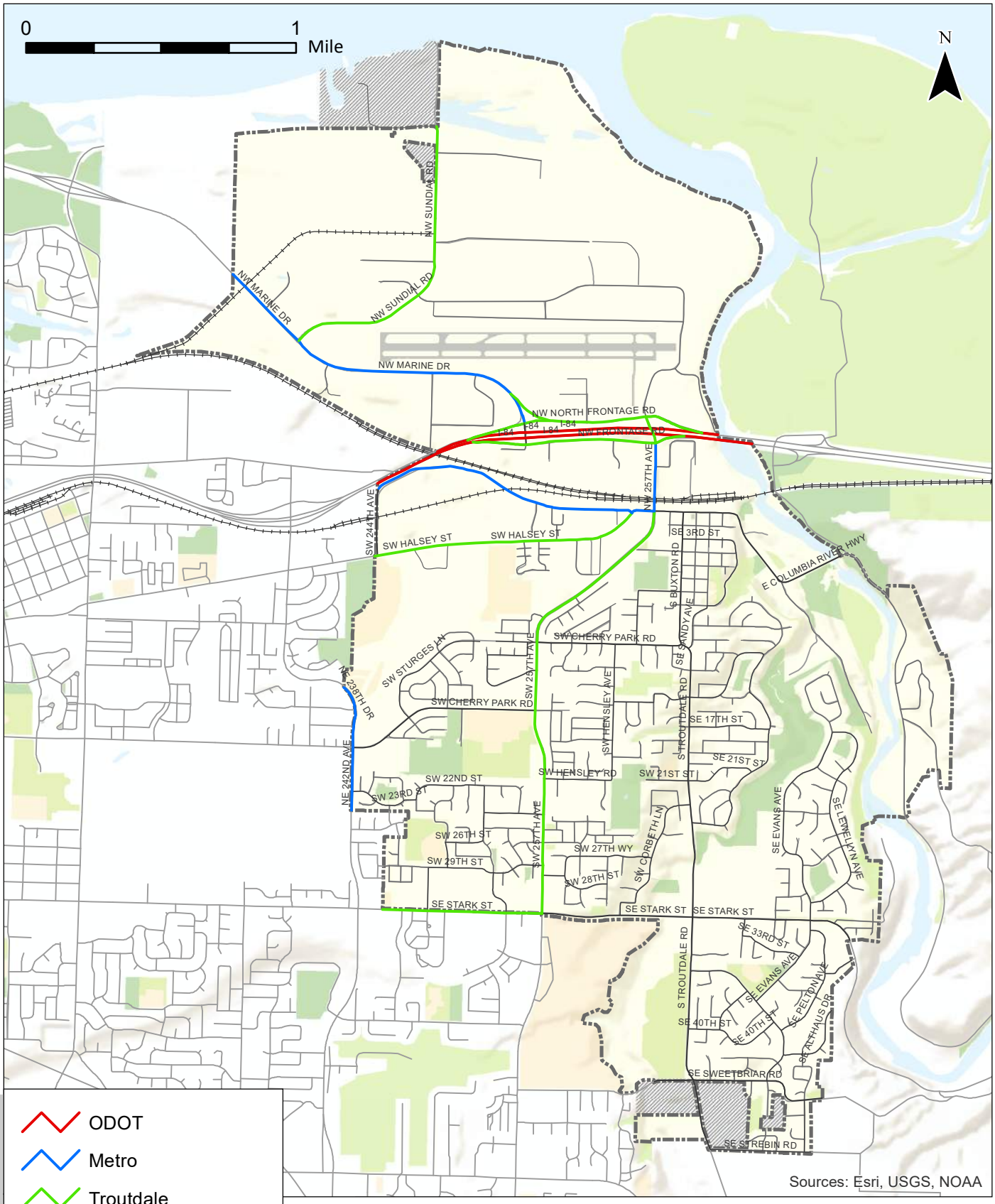
Other Modes

~~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

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.



Freight Plan

Figure **1-7**

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

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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 $4.0~~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 $31.7~~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)
System Improvement Projects (Action Plans projects to be funded by City)	
Motor Vehicle	$2,330~~2,530~~
Bicycle	$275~~95~~
Transit	$0
Pedestrian	$1,375~~965~~
Total Capital Projects	**$3,980~~590~~**
Operations and Maintenance Programs and Services (2013 Dollars)	
Road Operation and Maintenance ($1,075,000 per year, increasing annually)	$21,500
Additional Pavement Preservation Need (300,000 per year)[1]	$6,000
Neighborhood Traffic Management ($10,000/year)	$200
Total Operations and Maintenance Programs	**$27,700**
20 Year Total	**$31,680~~290~~**

[1]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 $22.2~~$20.9~~ million (See Chapter 5) by approximately $5.5~~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, Transportation~~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 Capital Improvements

Transportation Funding Source	Estimated Additional Annual Revenues ($1,000)
Transportation Utility Fee or Local Gas Tax	$300
Annual New Revenues	**$300**
20 Year Total	**$6,000**

Chapter 2 Goals & Policies

CHAPTER 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 257th Drive~~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 and minimize use of local 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.

Policy h. Support implementation of regional policies and strategies to reduce SOV trips, including Climate Smart Strategies aimed at reducing green-house-gas emissions.

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.

Policy c. Provide travel options that improve access and circulation for all members of the community, including transportation disadvantaged populations.

Policy D. Engage transportation disadvantaged populations in the planning process and in making decisions about transportation investments.

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 2010 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

2010 RTP Performance Target[1]	TSP Performance Measure	System Deficiency	TSP Project
Safety - By 2035, reduce the number of pedestrian, bicyclist, and motor vehicle occupant fatalities plus serious injuries each by 50% compared to 2005	Reduce the frequency and severity of crashes for all travel modes Address known deficiencies and high accident areas as high priority projects	Troutdale has four intersections on the most recent Multnomah County SPIS list (2000-2002) The four intersections are: 242nd Avenue/Cherry Park Road, 257th Drive~~Avenue~~/Historic Columbia River Highway, 257th Drive~~Avenue~~/Stark Street, and Troutdale Road/Stark Street	The pedestrian, bicycle, and motor vehicle master plans identify a variety of projects that are intended to reduce the potential for conflicts between movements 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
Congestion - By 2035, reduce vehicle hours of delay (VHD) per person by 10 percent compared to 2005	Ensure that all City, County, and State facilities meet their respective mobility standards	The 2005 TSP update identified two intersections that are expected to exceed their respective mobility standards in the future The two intersections are: 257th Drive~~Avenue~~/Cherry Park Road (south) and Troutdale Road/Stark Street	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 Similarly, the pedestrian bicycle, and transit improvement projects are intended to help reduce vehicle demand on congested roadways
Freight reliability - By 2035, reduce vehicle hours of delay truck trip by 10 percent compared to 2005	Reduce vehicle delay and improve reliability on identified truck routes	A number of freight routes within the City currently experience delay during peak time periods Travel times are not predictable, and delay can vary from day to day, increasing transportation costs for businesses that rely on shipping	Several of the intersection capacity and signal optimization projects included in the motor vehicle master plan are located along major freight routes. These projects are also intended to improve traffic flow and help reduce delay for heavy vehicles
Climate change - By 2035, reduce transportation-related carbon dioxide emissions by 40 percent below 1990 levels	Strive to reduce VMT per capita by 10 percent compared to 2010	A majority of Troutdale residents commute to areas outside the City limits, which increases VMT per capita.	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

2010 RTP Performance Target[1]	TSP Performance Measure	System Deficiency	TSP Project
Active Transportation - By 2035, triple walking, biking and transit mode share compared to 2005	Implement policies and strategies that work towards achieving non SOV mode share targets as identified in the 2010~~2035~~ RTP Identify projects that support active transportation throughout the City	There are currently a number of gaps in the pedestrian, bicycle, and transit systems within Troutdale	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

1. The 2018 RPT includes updates to the performance measures and targets used throughout the region. Some of the new measures include affordability, mode share, system completeness, carbon emissions, and vehicle miles traveled. The updates should be reviewed by City staff, as well as the Troutdale Citizens Advisory Committee, Planning Commission, and City County, and incorporated into the next full TSP update, as applicable.

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 2010 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

CHAPTER 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. This~~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 257th Avenue at 257th Way.

Study Area

Figure **3-1**

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

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- 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.

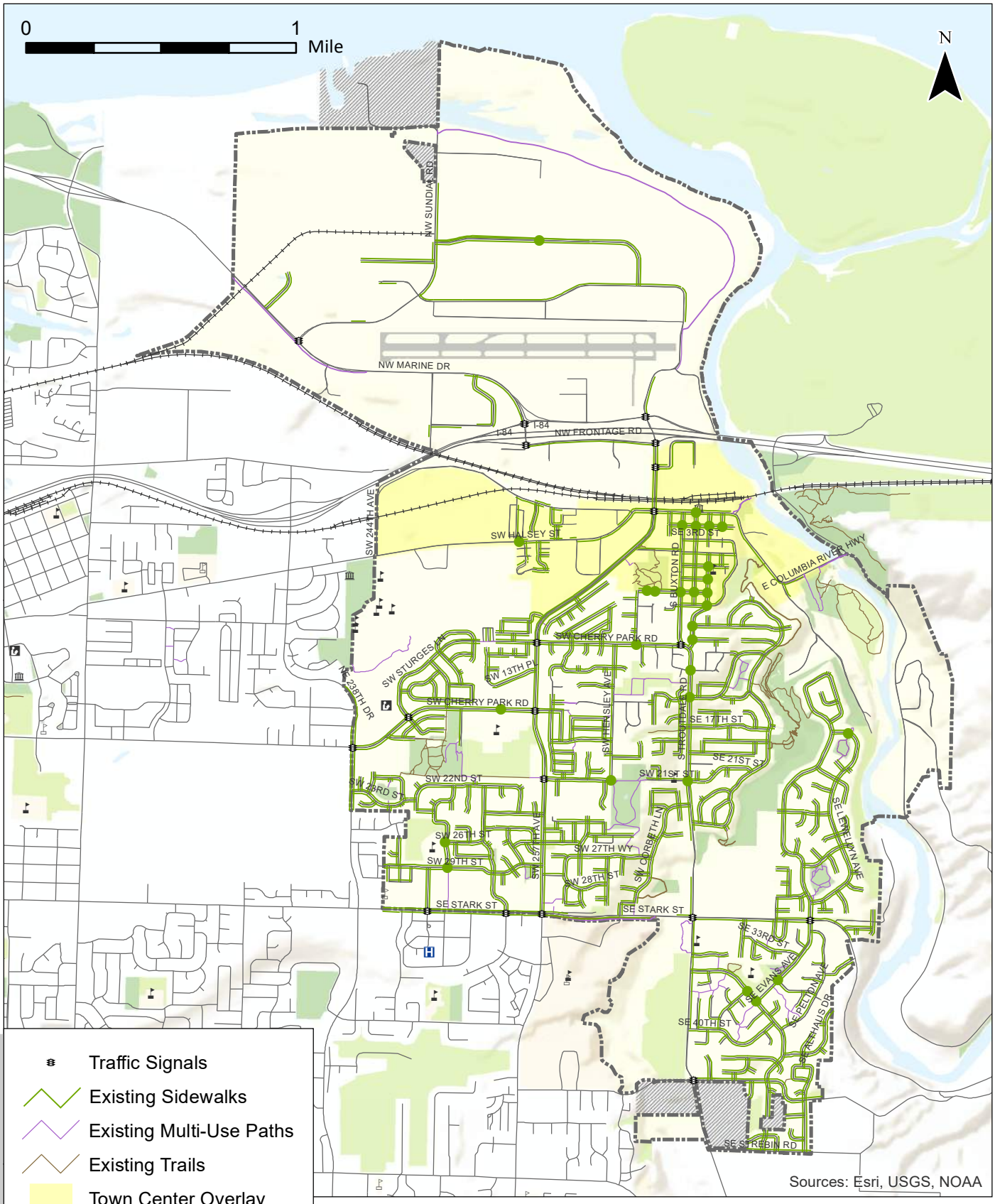
Safety: Transportation infrastructure must be safe and reliable for users of all modes, including pedestrians, bicyclists and motor vehicles. Identified safety issues in the existing conditions analysis include:

- Pedestrian crossings along 257th 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 257th 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**

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

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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. Based 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 proximately 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
257th Drive/Cherry Park Road (south)	22	I-84 westbound ramps/Graham Road	2
257th 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 257th Avenue. Along major roadways, such as Halsey Street and 257th 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. Additional~~The TSP should examine providing additional~~ crossings and connections to the pedestrian system could be provided to improve crossing spacing along 257th 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

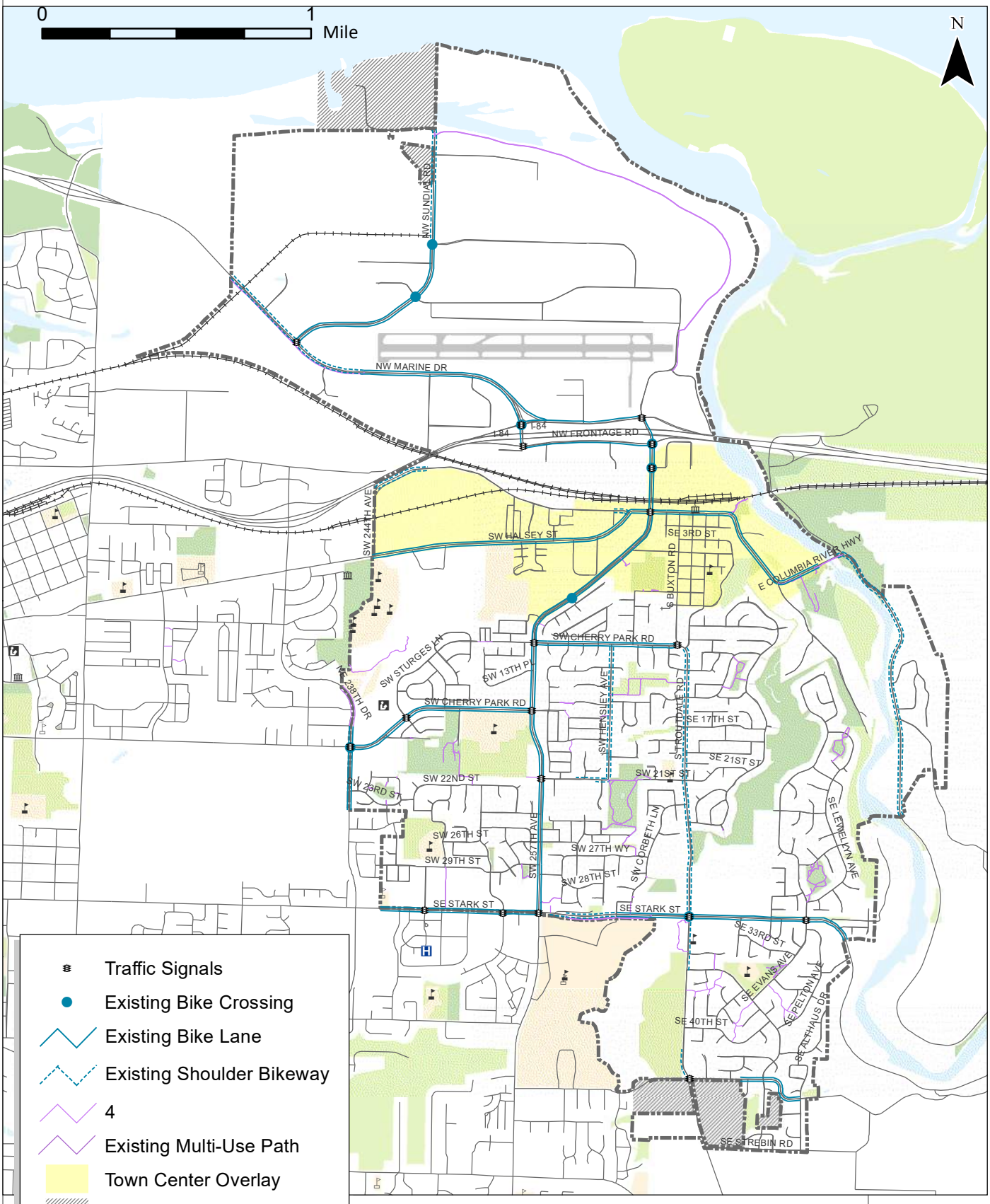
As shown in Figure 3-3, a majority of the collector and arterial streets in Troutdale currently provide on-street bike lanes or shoulder bikeways. Also shown, several major intersections currently provide bicycle crossings; these primarily consist of intersections with separate right-turn lanes where 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 signs~~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
257th Drive/Cherry Park Road (south)	0	I-84 westbound ramps/Graham Road	0
257th 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		



Existing Bicycle System

Figure **3-3**

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

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TRANSIT SYSTEM

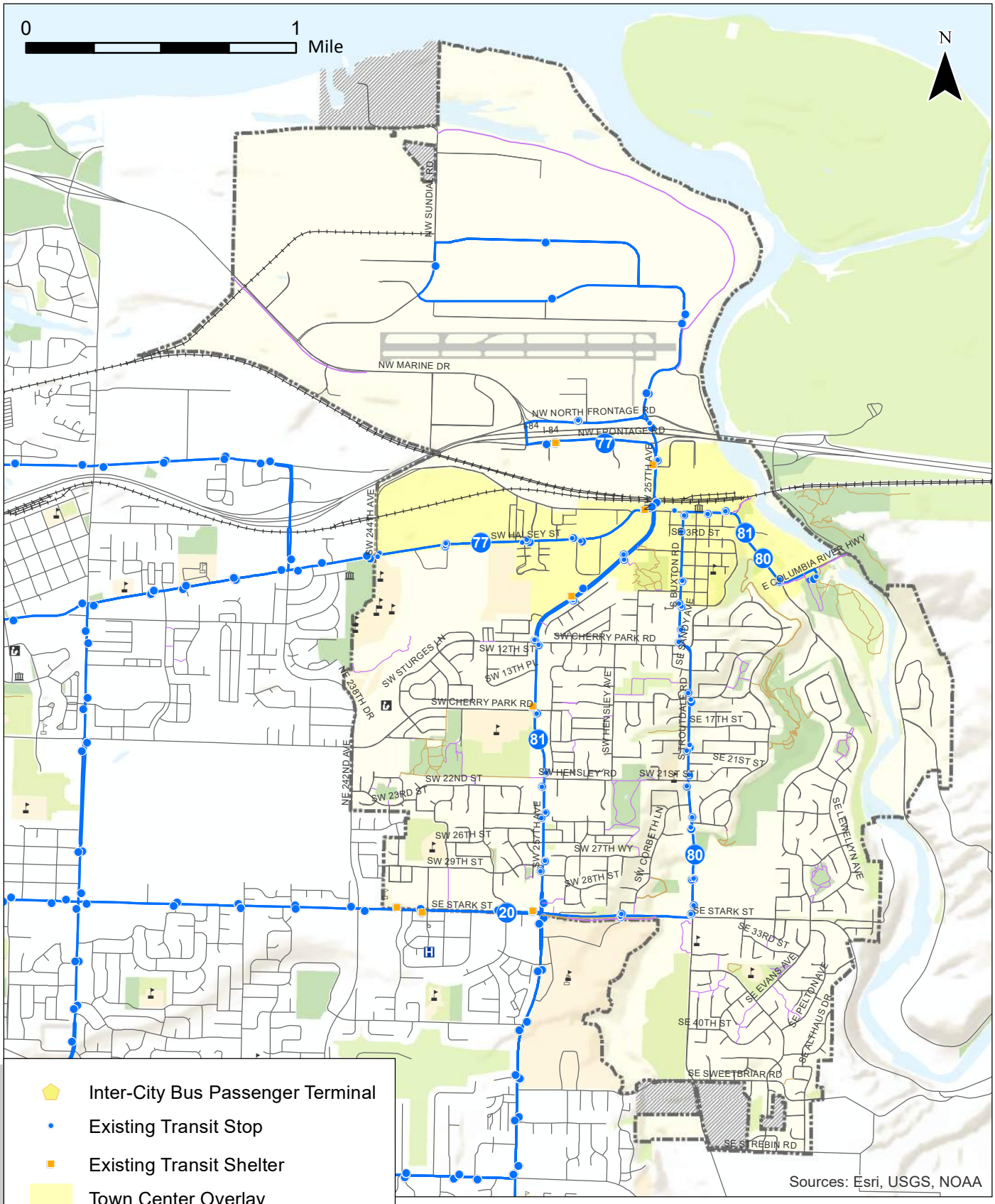
The public transportation system within Troutdale consists of fixed-route and dial-a-ride service. Frequent morning and evening peak hour service provides residents with the ability to use public transportation for daily commuting, while less frequent mid-day, Saturday, and Sunday service provides residents 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/257th, and to a lesser extent, Line 20-Burnside Stark. A brief description of each route is provide below:

- Line 77 provides service between the northern portion of Troutdale and the Portland City Center via the I-84 Frontage Roads, 257th Avenue, and Halsey Street. Service is provided Monday through Friday from 6:005:30 a.m. to 10:0011:30 p.m. on approximately 2015 minute headways (the amount of time between transit vehicle arrivals at a stop) 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 7:005:30 a.m. to 6:008:30 p.m. on approximately 6030-minute headways. Service is also provided on Saturday and Sunday on a more limited basis.
    - TriMet identified a need to change the route due to low ridership to Glen Otto Park and difficulty turning around in the parking lot.
- Line 81 also provides service between the northern portion of TroutdaleGlenn Otto Park and the Gresham Transit Center via the I-84 Frontage RoadsColumbia River Highway and 257th Avenue. Service is provided Monday through Friday from 5:006:30 a.m. to 11:006:00 p.m. on approximately 15-minute headways during peak time periods and on 30 to 60-minute1 hour headways during all other times of the day. 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, and Multnomah County's Troutdale Reynolds Industrial Park (TRIP) shuttle.
- 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 45:00 a.m. to 11:00 p.m.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.



Existing Transit System

Figure **3-4**

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

Transit Level of Service

The transit level-of-service analysis was performed in accordance with the methodology described in Transit Cooperative Research Program (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 (rider who choose to take transit) 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	20~~15~~-30 minutes	C-D
TriMet	80	60~~30~~ minutes	E~~D~~
TriMet	81	15, 30-60 minutes	C-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 a 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	16~~18~~ hours	C~~B~~
TriMet	80	11~~15~~ hours	E~~C~~
TriMet	81	18~~12~~ hours	B~~D~~
TriMet	20	19~~22~~ hours	A~~A~~

As shown, existing services currently operate at LOS A-E~~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 E~~D~~, midday service is limited or non-existent and/or commuters have limited choice of travel times~~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

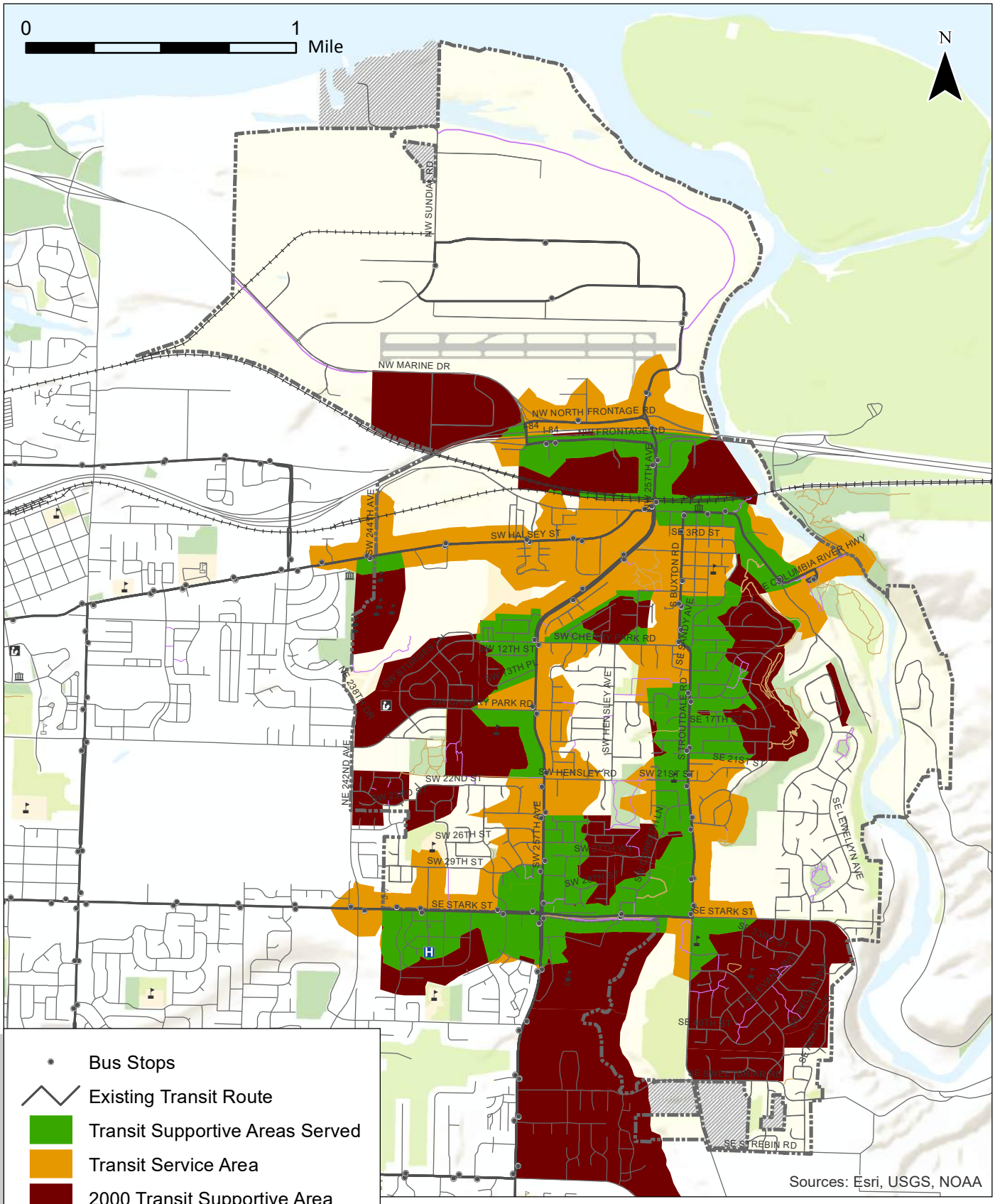
Area Type	Households	Employment
Transit Supportive Areas (TSA)[1]	2,699	5,260
Transit Supportive Areas Served[2]	1,339	2,485
Transit Supportive Areas NOT Served[3]	1,360	2,775
Percent TSA Served by Transit	49.6	47.2
Level of Service	F	F

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.



Existing Transit Coverage Level of Service

Figure **3-5**

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

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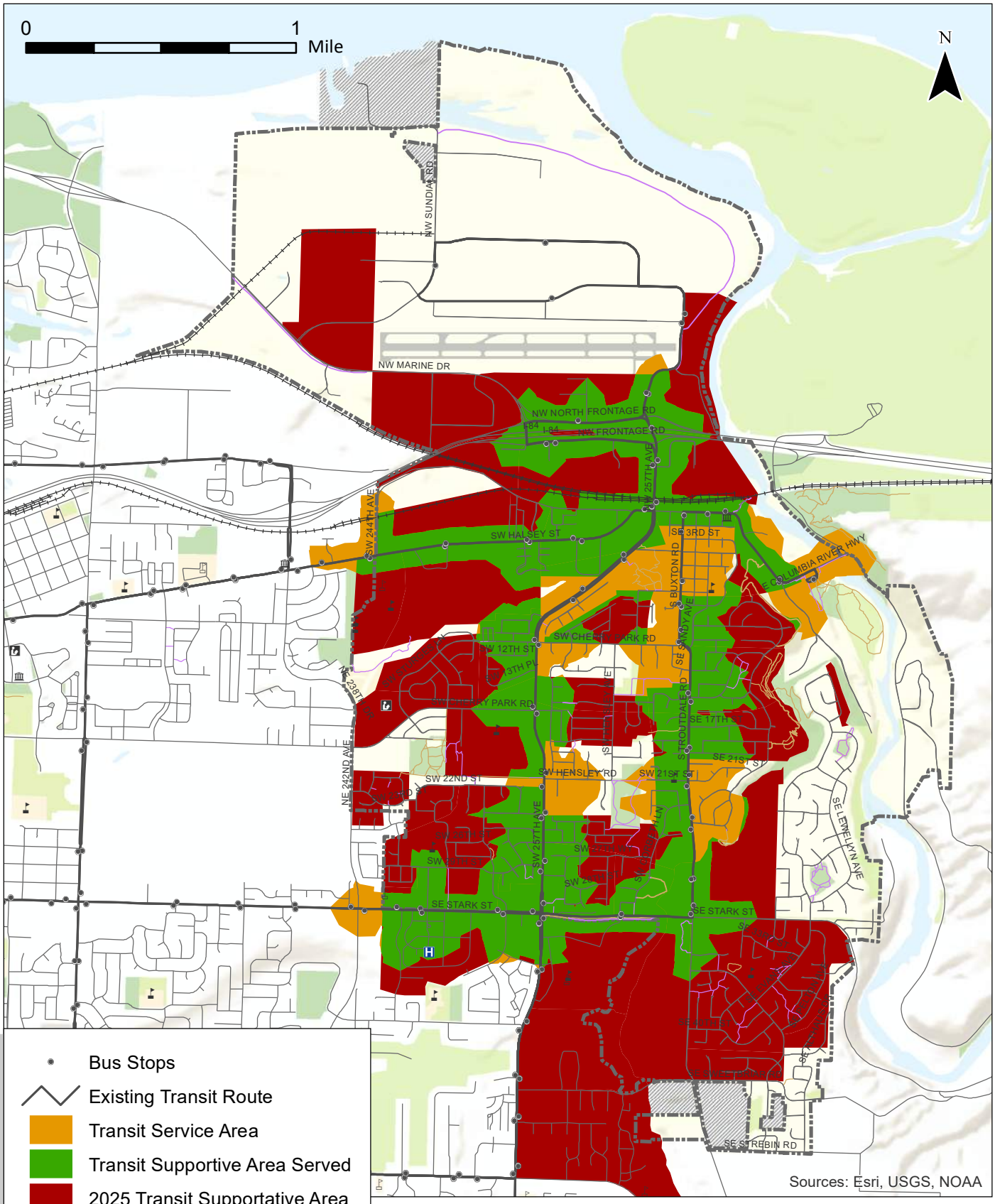

Future (2025) Transit Coverage Level of Service

Figure **3-6**

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

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Ridership

Average weekday ridership data was obtained from TriMet that reflects the average number of boardings and alightings (ons and offs) 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: 257th Avenue & Historic Columbia River Highway

Dial-a-Ride Service

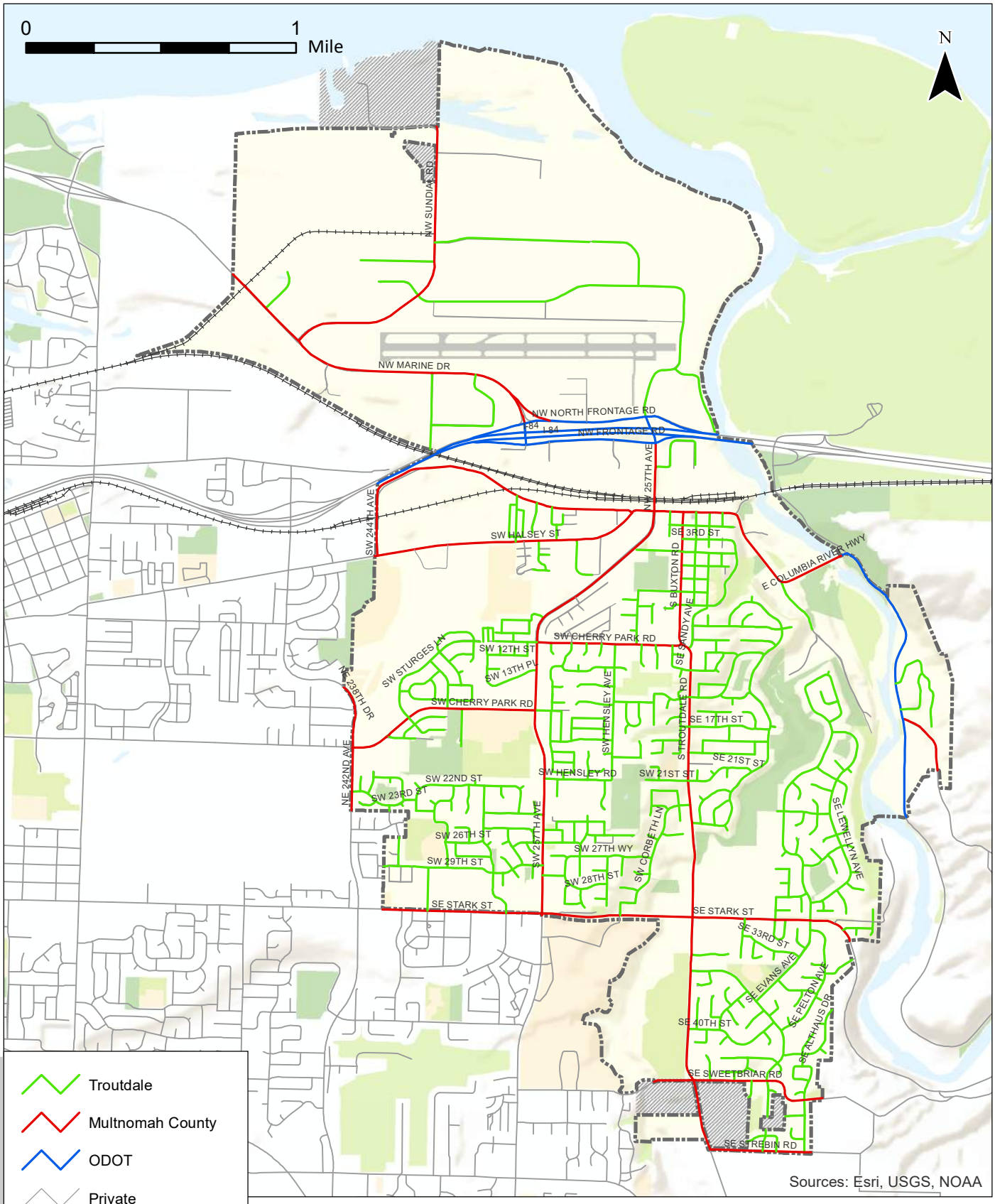
TriMet's LIFT Paratransit Program provides dial-a-ride service to residents who are unable to use regular fixed-route services due to disabilities or disabling health conditions. The service is offered within the service area and hours of service provide by the fixed-route lines.

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.



Roadway Jurisdiction

Figure **3-7**

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

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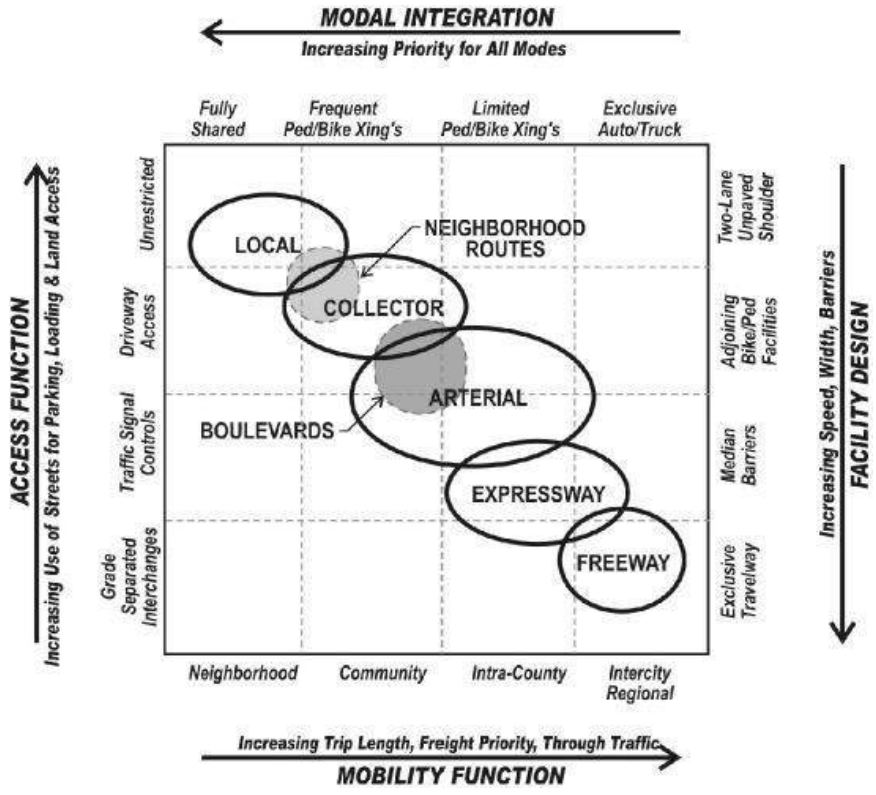
Functional Classification

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 relationship between~~competing functional nature of roadway facilities as it relates to~~ access, mobility, multi-modal transport, and facility design for roadway facilities. 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.

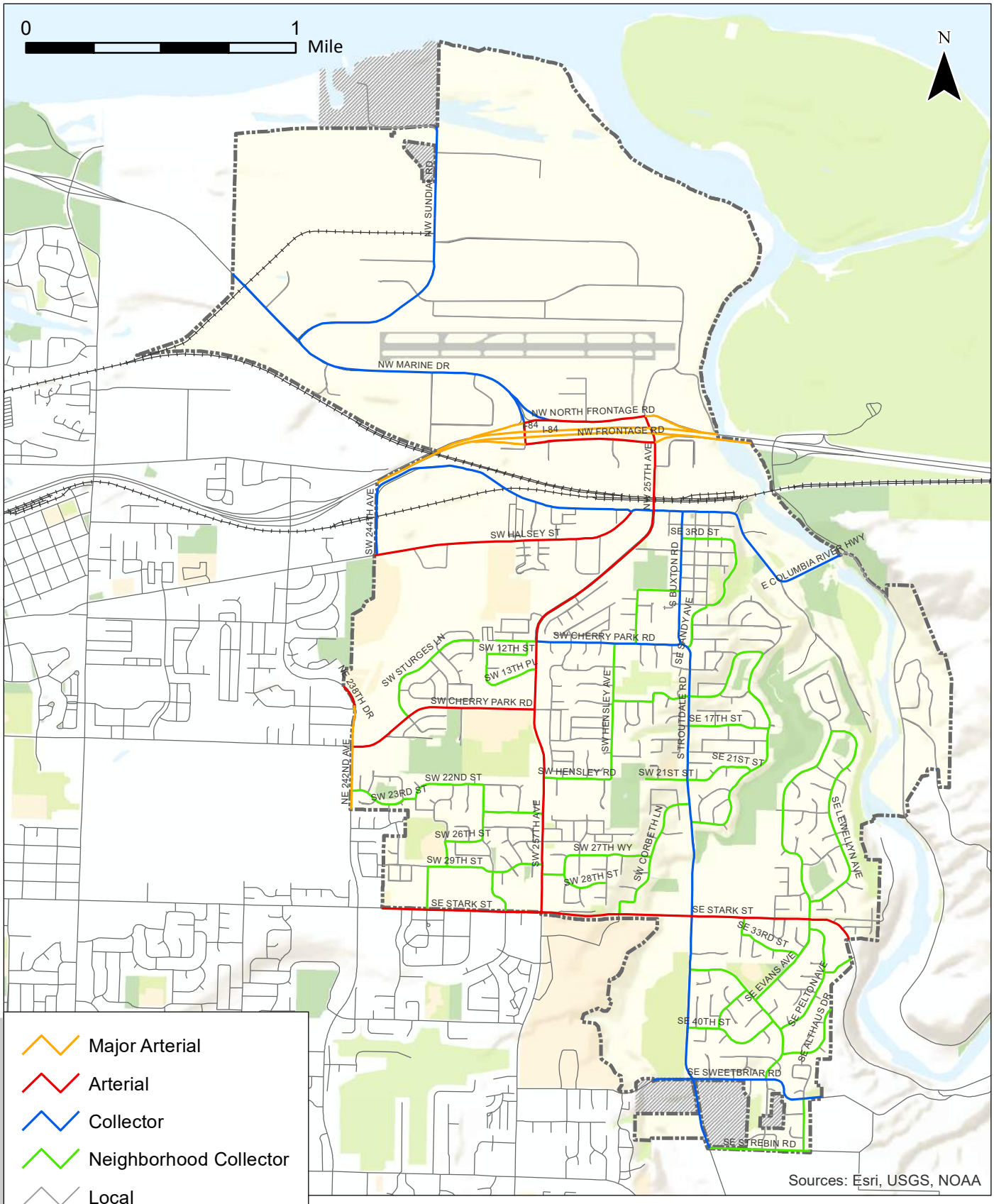
Table 3-7 summarizes the functional classifications of the arterial and collector streets within Troutdale and illustrates the overlapping ownership/maintenance and jurisdictional relationships that exist.

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

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



Existing Troutdale Functional Classification

Figure **3-8**

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

- 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 21st Street, the TSP update should reclassify 21st 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 242nd Avenue, SW 257th Avenue, SW Halsey Street, SW Cherry Park Road – west of SW 257th 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 257th Avenue and SE Stark Street – west of SW 257th Avenue are the only major arterials, NE Halsey Street, SW Cherry Park Drive – west of SW 257th Avenue, and SE Stark Street – east of SW 257th 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 257th 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.

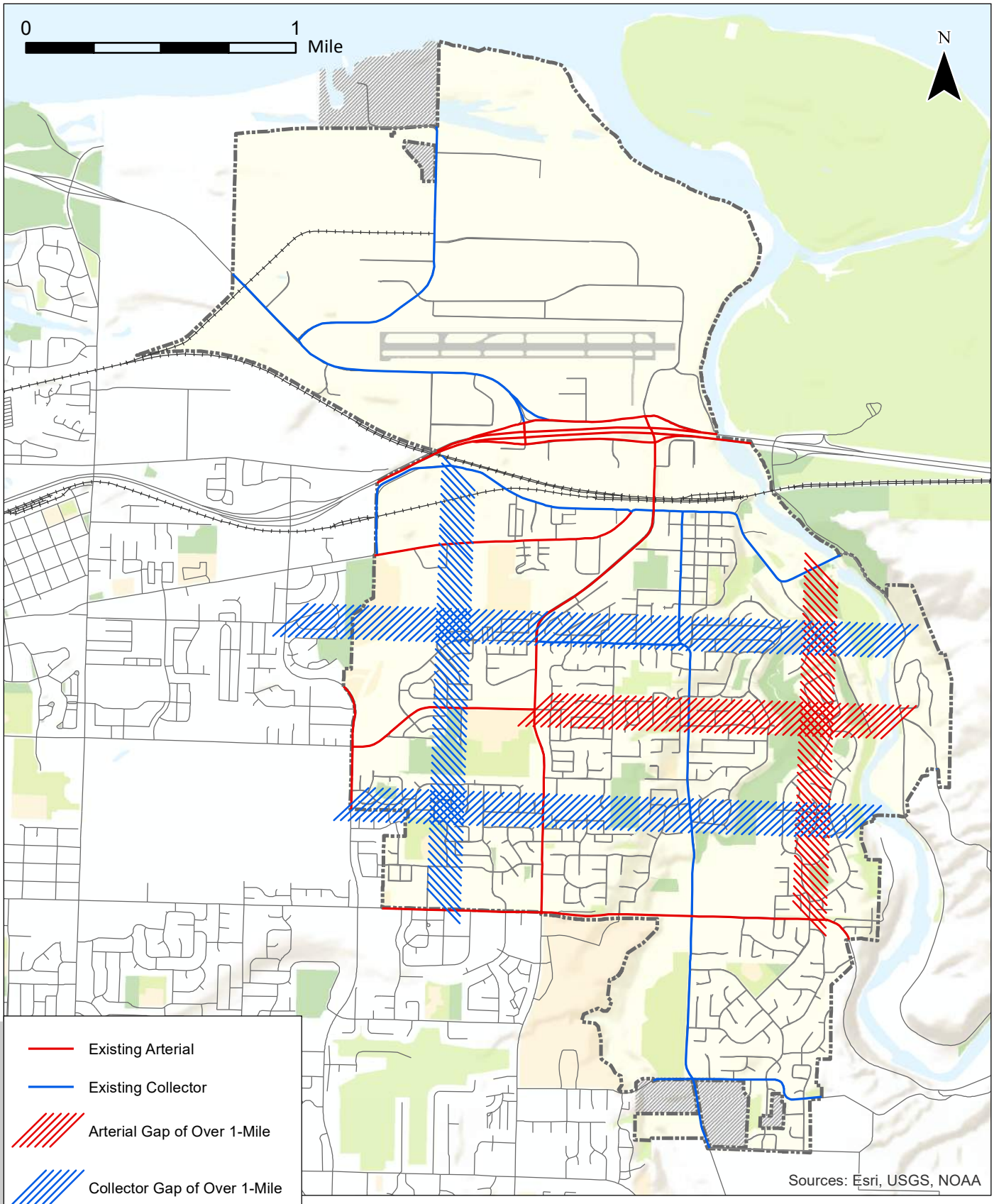
Collector Streets

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 257th 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 lLocal sStreet cConnectivity.



RTP Spacing Standards

Figure **3-9**

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

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Roadway Characteristics

Field inventories were conducted in 2004 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 257th 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 257th 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 257th Avenue, Stark Street and Marine Drive, which generally have 5-lane cross sections. A small section of 242nd Drive has a 4-lane cross section and 238th Drive, the I-84 eastbound frontage road, and the section of Cherry Park Road from the west City limits to 257th Drive, each have a 3-lane cross section. The remaining roads in the City of Troutdale have 2-lane cross sections.

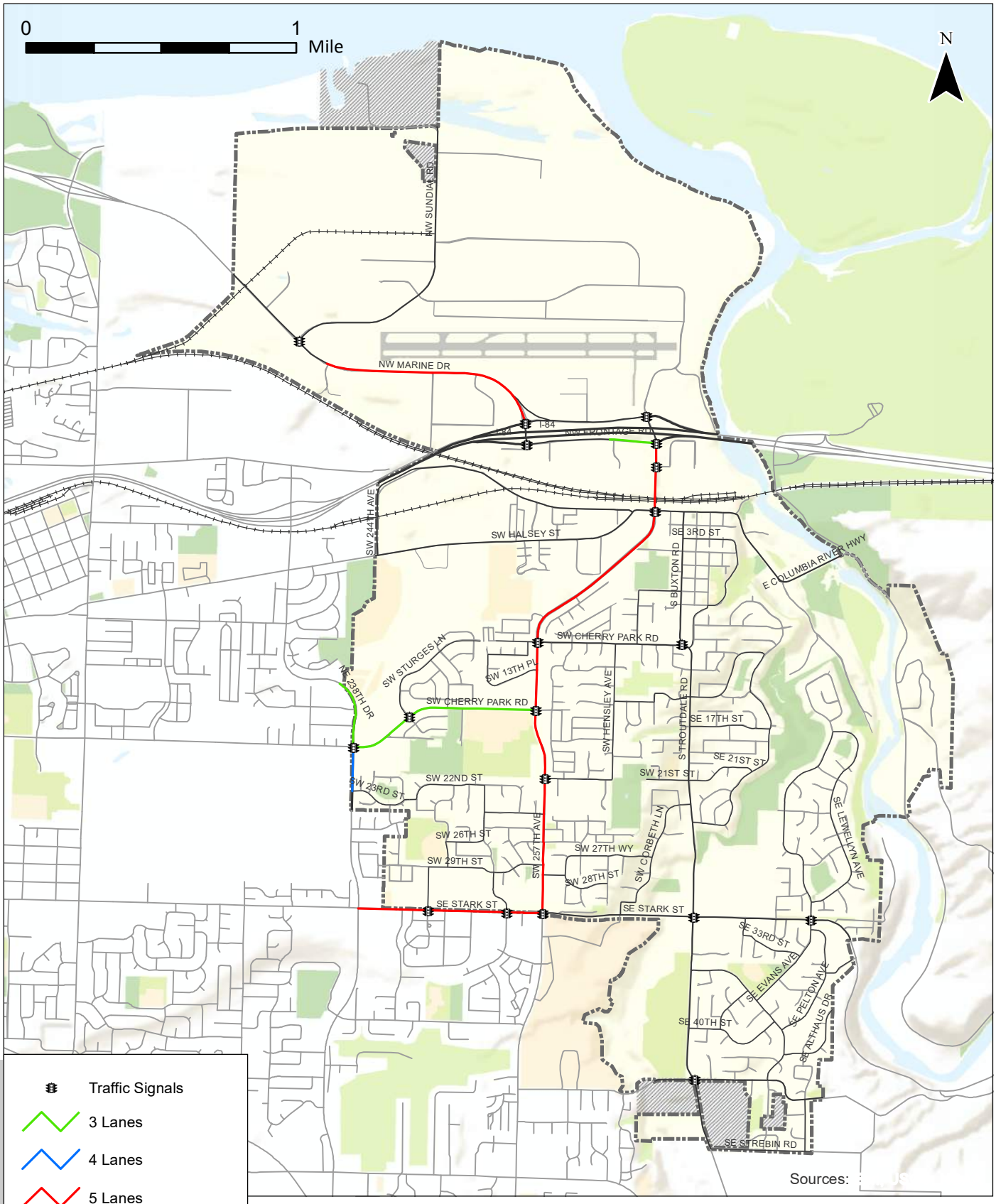
Figure 3-10 also shows the existing intersection controls at the study intersections. As shown, traffic signals exist along all of the major roadways within Troutdale, including Stark Street, 257th Avenue, Cherry Park Road, Troutdale Road, and the north and south Frontage Roads.

Emergency Response Routes

Emergency fire services are provided in Troutdale by Gresham Fire and Emergency Services (GFES). 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

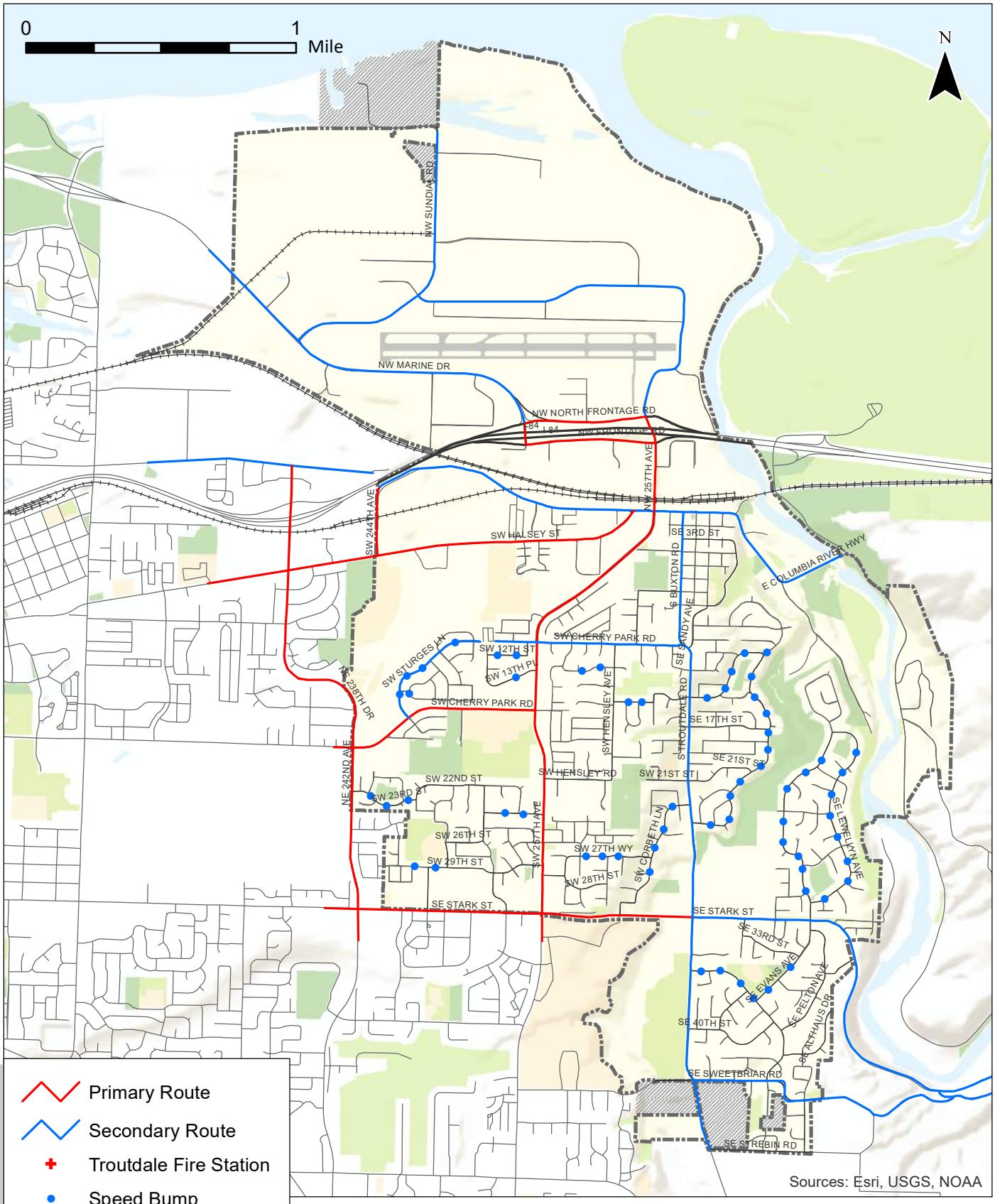
An inventory of peak hour traffic conditions was performed in the spring of 2004 as part of the 2005 TSP update and was augmented by traffic conditions calculated for the Troutdale Industrial Zoning District Traffic Study completed in August 2002. The traffic turn movement counts conducted as part of 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



Existing Travel Lanes and Traffic Control

Figure **3-10**

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



Emergency Response Routes

Figure 3-11

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

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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.

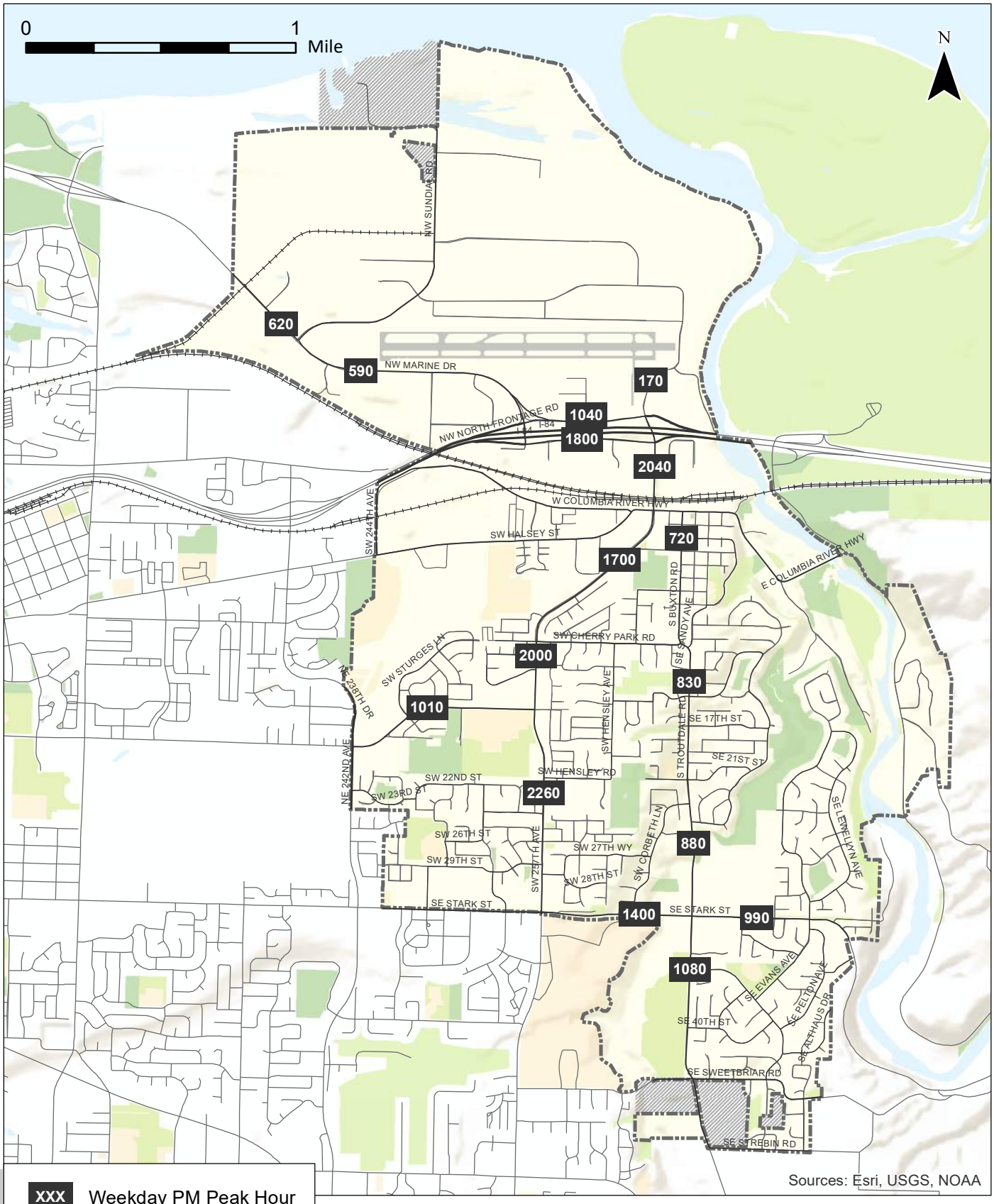
Land use plays a large role in driving transportation choices. Consequently, land use within the City of Troutdale is a key ingredient in understanding current transportation patterns and roadway traffic volumes. Figure 3-13 shows the land use zoning designations in the Troutdale area.

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.



2004 Two-Way Traffic Volumes Weekday PM Peak Hour

Figure **3-12**

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

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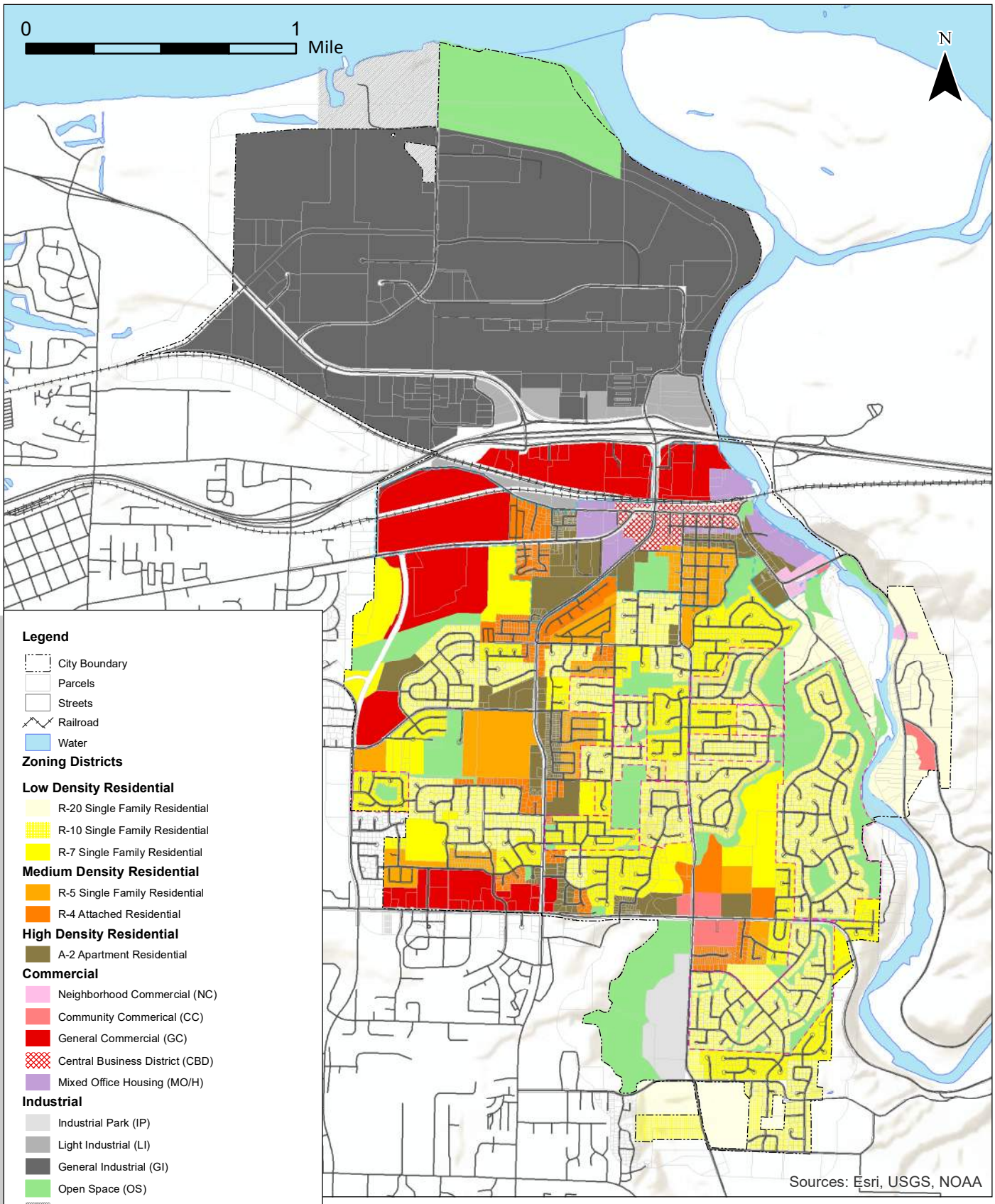

Land Use Zoning Classifications

Figure **3-13**

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

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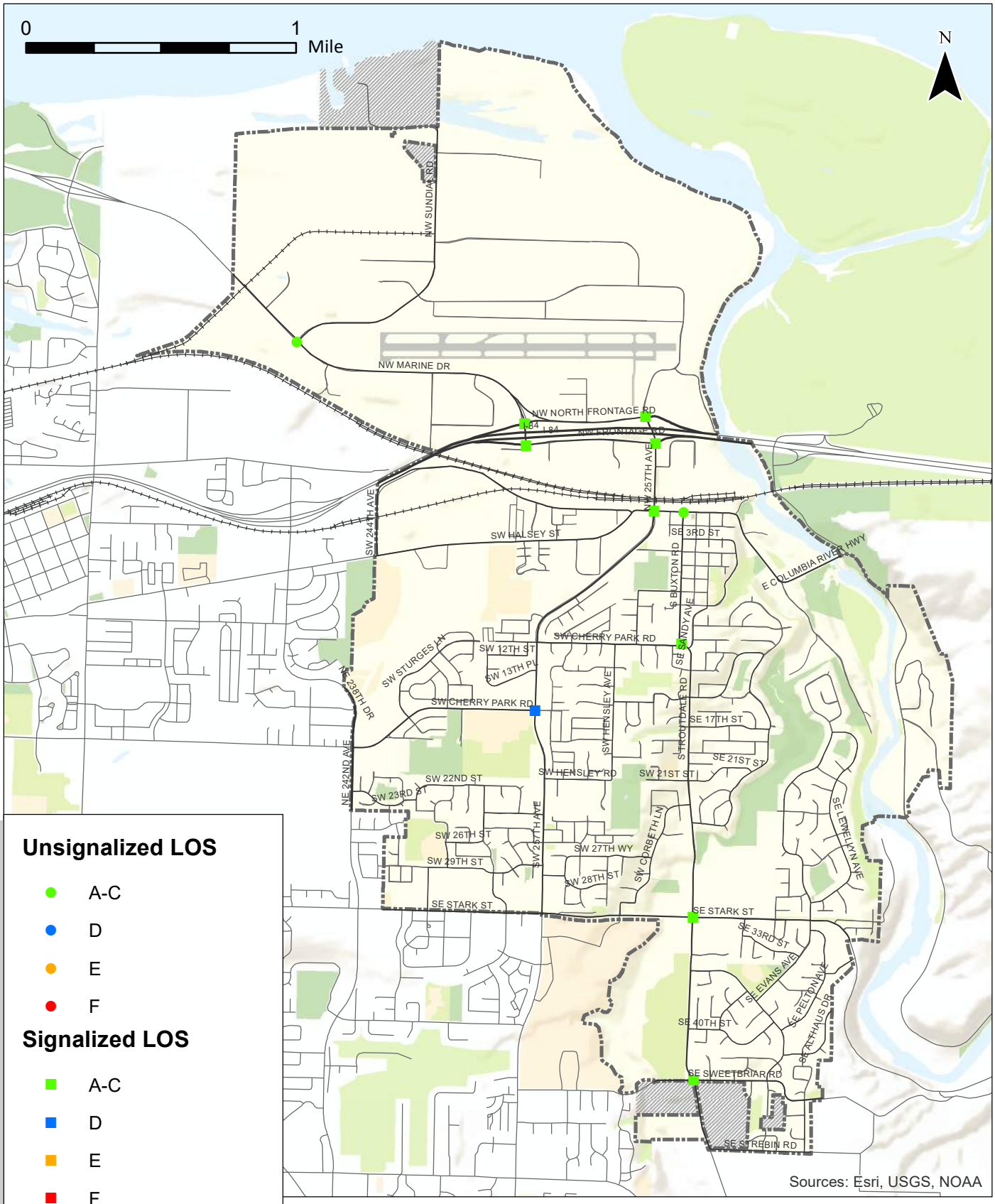

Unsignalized LOS

- A-C
- D
- E
- F

Signalized LOS

- A-C
- D
- E
- F

Urban Planning Area

City Boundary

2004 Intersection Operations Weekday PM Peak Hour

Figure **3-14**

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

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

Intersection	Level of Service	Average Delay (Sec.)	Volume/Capacity
Unsignalized Intersection			
Buxton Road/Historic Columbia River Highway	A/C		
Marine Drive/Sundial Road	A/B		
Signalized Intersections			
257th Drive/Cherry Park Road (south)	D	39.4	0.91
257th 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 257th 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
Signalized Intersections			
I-84 eastbound ramps/Graham Road	B	14.6	0.73
I-84 westbound ramps/Graham Road	B	12.4	0.48
257th 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 2011 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	257th Drive	Historic Columbia River Highway	20	0	7
23	Stark Street	Troutdale Road	21	0	9
19	Stark Street	257th Drive	42	0	19
17	Cherry Park Road	242nd Avenue	31	0	13

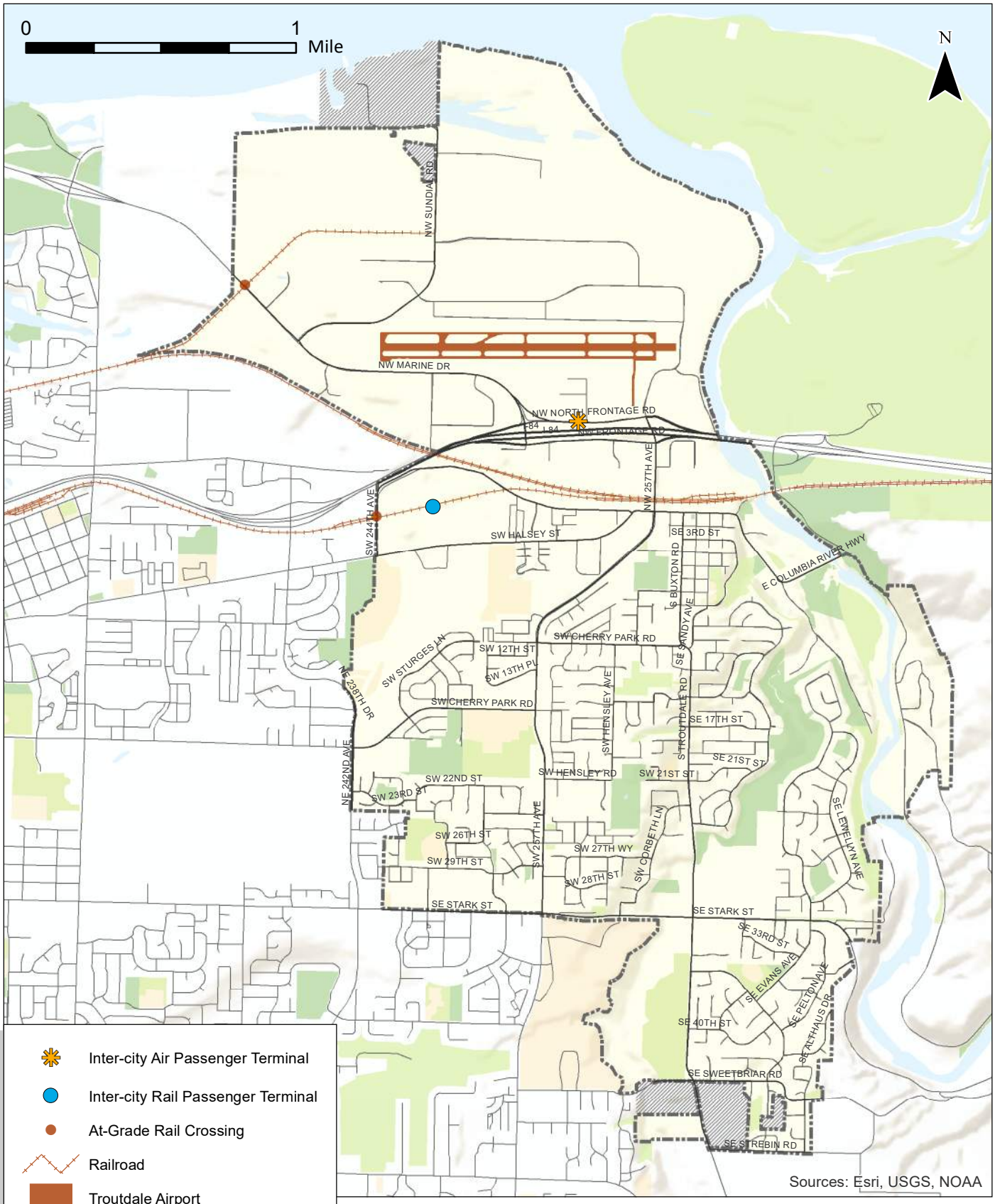
OTHER TRAVEL MODES

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 257th Drive and a small section of Historic Columbia River Highway as freight routes. Metro also classifies Historic Columbia River Highway between I-84 and 257th Drive as a freight route. The City of Troutdale identifies through truck routes in Troutdale such as Stark Street, 257th 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.



Other Modes

Figure **3-15**

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

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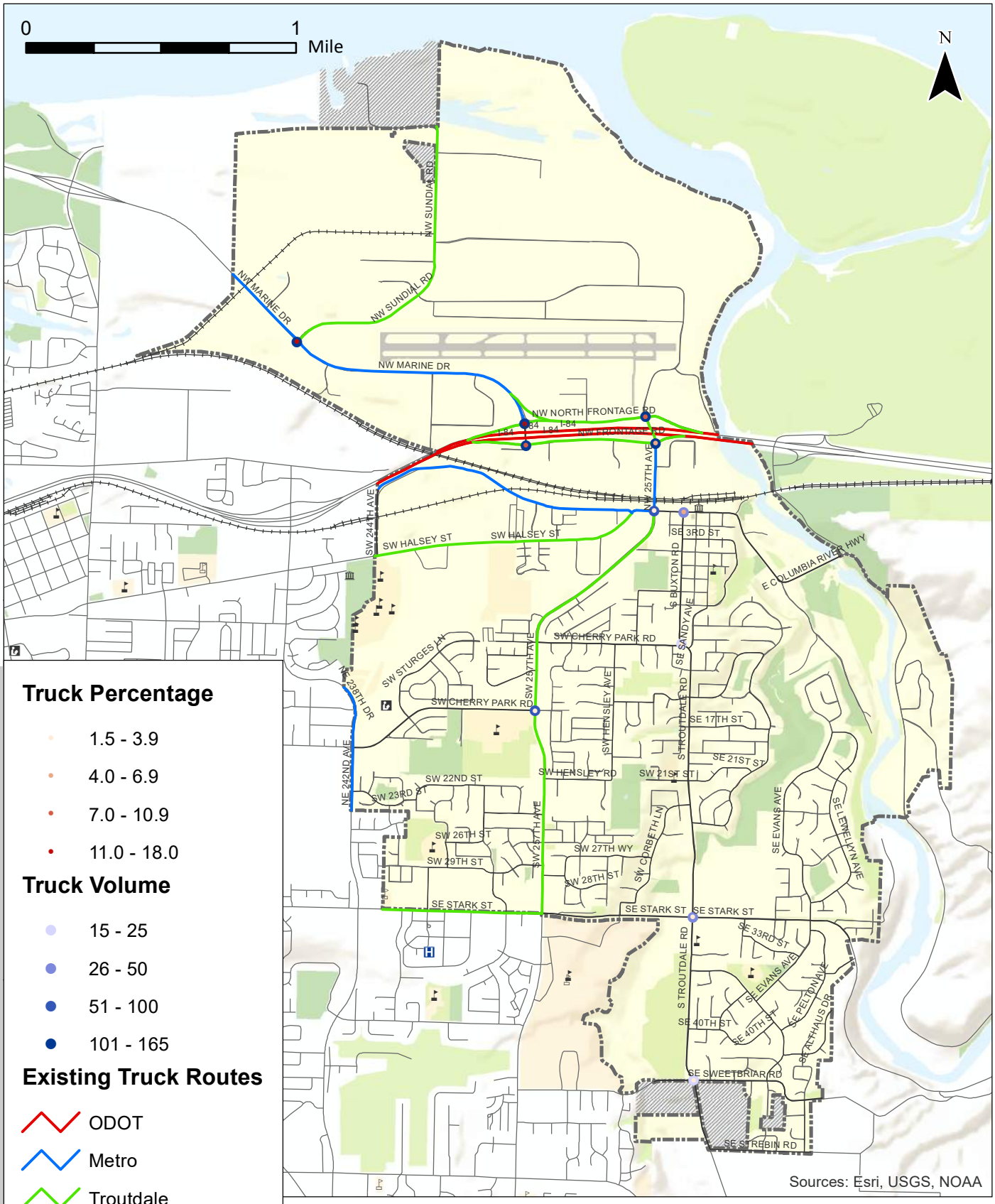

Existing Truck Routes w/ 2004 PM Peak Hour Truck Percentages & Volumes

Figure **3-16**

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Source: City of Troutdale and 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 244th 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 242nd 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

CHAPTER 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.

TheAs 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 adoption2005 as well as to incorporate the vision and goals of the City's existing TSP in 2005*2020-2040 Town Center Plan*. 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 2011 Troutdale Interchange Area Management Plan (IAMP) and the 2012 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~~ 2010 Regional Transportation Plan (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.

Pedestrian Master Plan

Figure **4-1**

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

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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 257th DriveAvenue 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 HighwayConstruct pedestrian facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	-To Be Determined
P6	Historic Columbia River Highway/244th	Complete Sidewalks	Install sidewalks on both sides of Historic Columbia River Highway from 244th 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 7th 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 36th 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	257th DriveAvenue at Hampton Heights Apartments Driveway	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at the Hampton Heights Apartments Driveway	-
P15	257th DriveAvenue at Jennings Lane	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at Jennings Lane	-
P16	257th DriveAvenue at 13th Place	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at 13th Place	-
P17	257th DriveAvenue at 26th Street	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at 26th Street	-
P18	Buxton Road at 7th Street	Pedestrian Crossing	Reconfigure existing crossing on Buxton Road at 7th 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 additional 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 21st Street~~	~~Pedestrian Crossing~~	~~Improve existing crossing on Troutdale Road at 21st 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 18th Way to 22nd Street	$75
P31	Sturges Trail	Trail	Install a trail from the Halsey Street/Sturges Connector Trail~~Lane~~ to 257th Drive~~Avenue~~	$50~~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/257th Connector Trail~~	~~Trail~~	~~Install a trail from Halsey Street to 257th 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~~Road, Harlow Avenue, and Kibling ~~Avenue~~Street	$190~~240~~
P38	Sandy River and Springwater Area Connections Trail Master Plan	Trail	Develop a master plan for the Beavercreek 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 257th to the west.	$25
P40	Historic Columbia River Highway	Sidewalk	Install sidewalks on the east side of Historic Columbia River Highway from Depot Park to the Beaver Creek Bridge – Also widen sidewalks on the west side	-
P41	Historic Columbia River Highway	Sidewalks	Install sidewalks on the south side of Historic Columbia River Highway from the Beavercreek bridge to the Sandy River Bridge	-
P42	Downtown/Urban Renewal Area Connections	Pedestrian/Bicycle Bridge	Install a bicycle-pedestrian bridge from Historic Columbia River Highway at Harlow Avenue to the Confluence Site	$250**
P43	2nd Street Bridge	Pedestrian/Bicycle Bridge	Install a bicycle-pedestrian bridge over 257th Drive	$125**
P44	2nd Street Trail	Trail	Install a trail from Kendall Avenue at 2nd Street to Halsey Street via the 2nd Street Bridge	$135
P45	Beaver Creek West Trail	Trail	Install a trail from Depot Park to Glenn Otto Park on or near the west side of Beaver Creek	$175
			Total	**$~~1,120~~1,470**

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.
** The City of Troutdale's contribution to these project costs is assumed to be 10% of the overall project costs.

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 257th DriveAvenue 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

Projects in the Pedestrian Action Plan were also reviewed to ensure an equitable distribution of projects throughout the community, including areas with high concentrations of transportation disadvantaged populations.

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.Transportation Planning Rule (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 257th DriveAvenue 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 HighwayConstruct pedestrian facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	To Be Determined
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	257th DriveAvenue at 26th Street	Pedestrian Crossing	Install enhanced pedestrian crossing treatments on 257th DriveAvenue at 26th 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 18th Way to 22nd Street	$75
P31	Sturges Trail	Trail	Install a trail from the Halsey Street/Sturges Connector TrailLane to 257th DriveAvenue	$50230
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 StreetRoad, Harlow Avenue, and Kibling AvenueStreet	$190240
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 257th to the west.	$25
P40	Historic Columbia River Highway	Sidewalk	Install sidewalks on the east side of Historic Columbia River Highway from Depot Park to the Beaver Creek Bridge – Also widen sidewalks on the west side	-
P41	Historic Columbia River Highway	Sidewalks	Install sidewalks on the south side of Historic Columbia River Highway from the Beavercreek bridge to the Sandy River Bridge	-
P42	Downtown/Urban Renewal Area Connections	Pedestrian/Bicycle Bridge	Install a bicycle-pedestrian bridge from Historic Columbia River Highway at Harlow Avenue to the Confluence Site	$250**
P43	2nd Street Bridge	Pedestrian/Bicycle Bridge	Install a bicycle-pedestrian bridge over 257th Drive	$125**
P44	2nd Street Trail	Trail	Install a trail from Kendall Avenue at 2nd Street to Halsey Street via the 2nd Street Bridge	$135

P45	Beaver Creek West Trail	Trail	Install a trail from Depot Park to Glenn Otto Park on or near the west side of Beaver Creek	$175
			Total	**$~~965~~1,375**

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~~single occupancy vehicle (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~~2010 RTP includes designations within Troutdale for ~~Regional Bikeways, Community Bikeways~~regional bikeways, community bikeways, and ~~Regional~~regional trails as defined below:

- Regional ~~Bikeways~~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~~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~~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~~2010 RTP also includes a designation for ~~Regional Bicycle Parkways~~regional bicycle parkways, although it has not yet been applied to any roadways. However, ~~Regional Bicycle Parkways~~regional

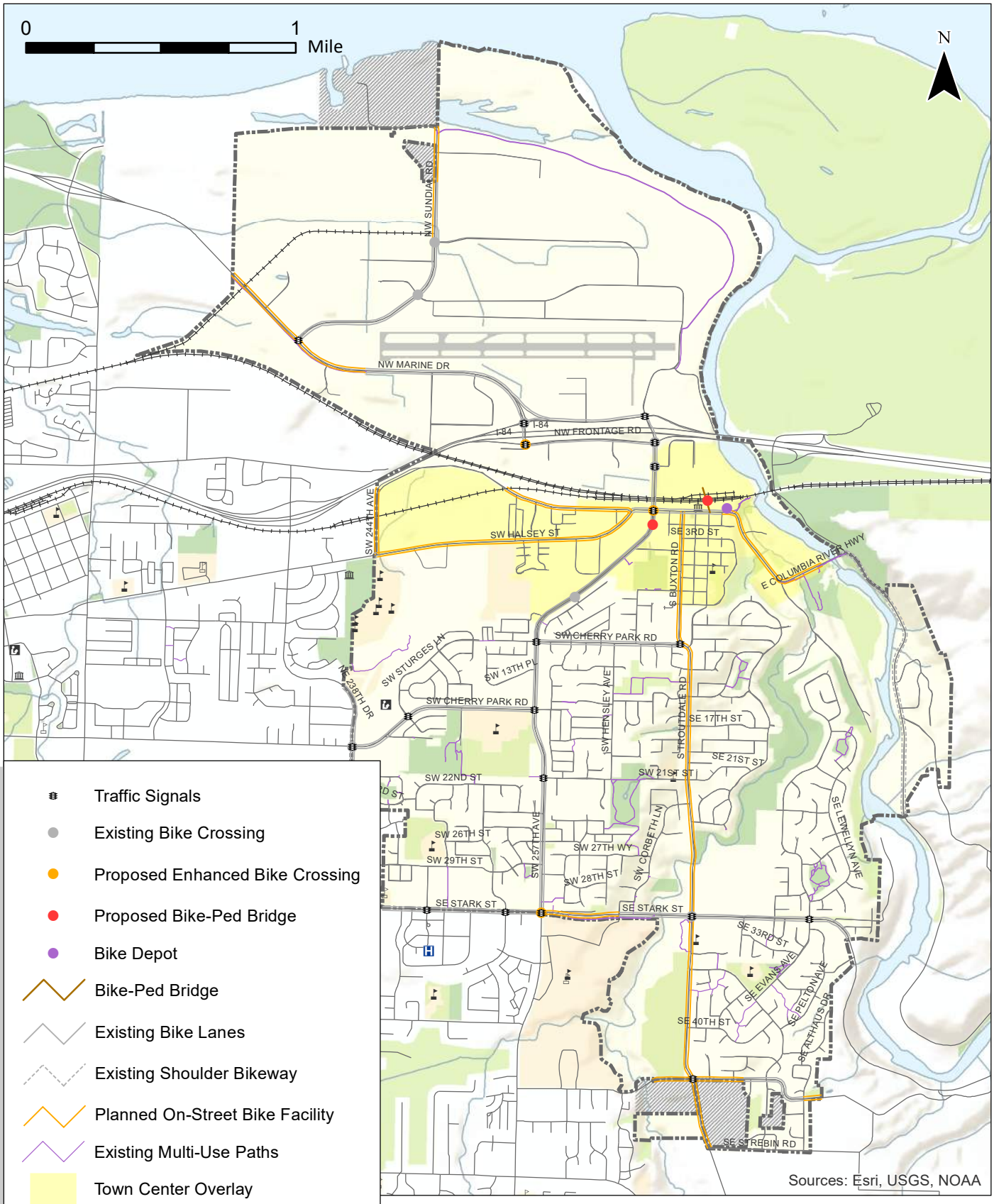
bicycle parkways will likely be comprised of routes currently designated as ~~Regional~~regional bikeways, ~~Community Bikeways~~community bikeways, and ~~Regional~~regional trails. Based on the RTP:

- Regional ~~Bicycle Parkways~~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.



Bicycle Master Plan

Figure **4-2**

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

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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 257th Drive~~Avenue~~ to Troutdale Road~~.~~	-
B2	Buxton Road	Enhanced Bike Lane	Install enhanced 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 ~~244th Avenue~~the railroad underpass	-
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~~	~~238th 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~~	~~21st Avenue~~	~~Shared Roadway~~	~~Install shared roadway pavement markings and signs on 21st 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~~	~~3rd Street/Sandy Avenue~~	~~Shared Roadways~~	~~Install shared roadway pavement markings and signs on 3rd Street and Sandy Avenue consistent with MUTCD standards~~	~~$15~~
B16	257th Drive~~Avenue~~ at Historic Columbia River Highway	Bike Crossing	Improve existing crossing conditions with combined bike lane/turn lane pavement markings and signs	$5
B17	257th Drive~~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~~
B19	Halsey Street	Bike Lanes	Construct bike facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	To be Determined
B20	Historic Columbia River Highway	Enhanced Bike Lane	Install enhanced on-street bike lanes from Depot Park to east city limits	-
B21	2nd Street/Kibling Avenue	Shared Roadways	Install shared roadway signs on 2nd Street from Kendall Avenue to Kibling Avenue and on Kibling Avenue from 2nd Street to Historic Columbia River Highway	$25
B22	Depot Park	Other	Construct a bike/transit hub at Depot Park	$250
			Total	**$~~105~~285**

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~~, enhanced bike lanes (e.g., buffered bike lanes, cycle tracks), shared roadway ~~pavement markings~~signage 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):

- 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

Projects in the Bicycle Action Plan were also reviewed to ensure an equitable distribution of projects throughout the community, including areas with high concentrations of transportation disadvantaged populations.

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 257th Drive~~Avenue~~ to Troutdale Road~~.~~	-*
B2	Buxton Road	Enhanced Bike Lane	Install enhanced 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 the railroad underpass	-
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~~	~~238th 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~~	~~21st Avenue~~	~~Shared Roadway~~	~~Install shared roadway pavement markings and signs on 21st 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~~	~~3rd Street/Sandy Avenue~~	~~Shared Roadways~~	~~Install shared roadway pavement markings and signs on 3rd 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~~
B19	Halsey Street	Bike Lanes	Construct bike facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input	To be Determined
B20	Historic Columbia River Highway	Enhanced Bike Lane	Install enhanced on-street bike lanes from Depot Park to east city limits	-
B21	2nd Street/Kibling Avenue	Shared Roadways	Install shared roadway signs on 2nd Street from Kendall Avenue to Kibling Avenue and on Kibling Avenue from 2nd Street to Historic Columbia River Highway	$25
B22	Depot Park	Other	Construct a bike/transit hub at Depot Park	$250
			Total	**$~~95~~275**

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~~TriMet 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~~maintain the quality of the existing system; ~~Expand~~expand the high~~-~~capacity transit system (MAX Light rail or bus rapid transit); ~~Expand~~expand the ~~Frequent Service~~frequent service system; and ~~Improve Local~~improve local service.

Troutdale is not served by high~~-~~capacity transit or frequent service routes. The 2035 HCT System Plan identifies 257th Drive~~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~~2010 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.

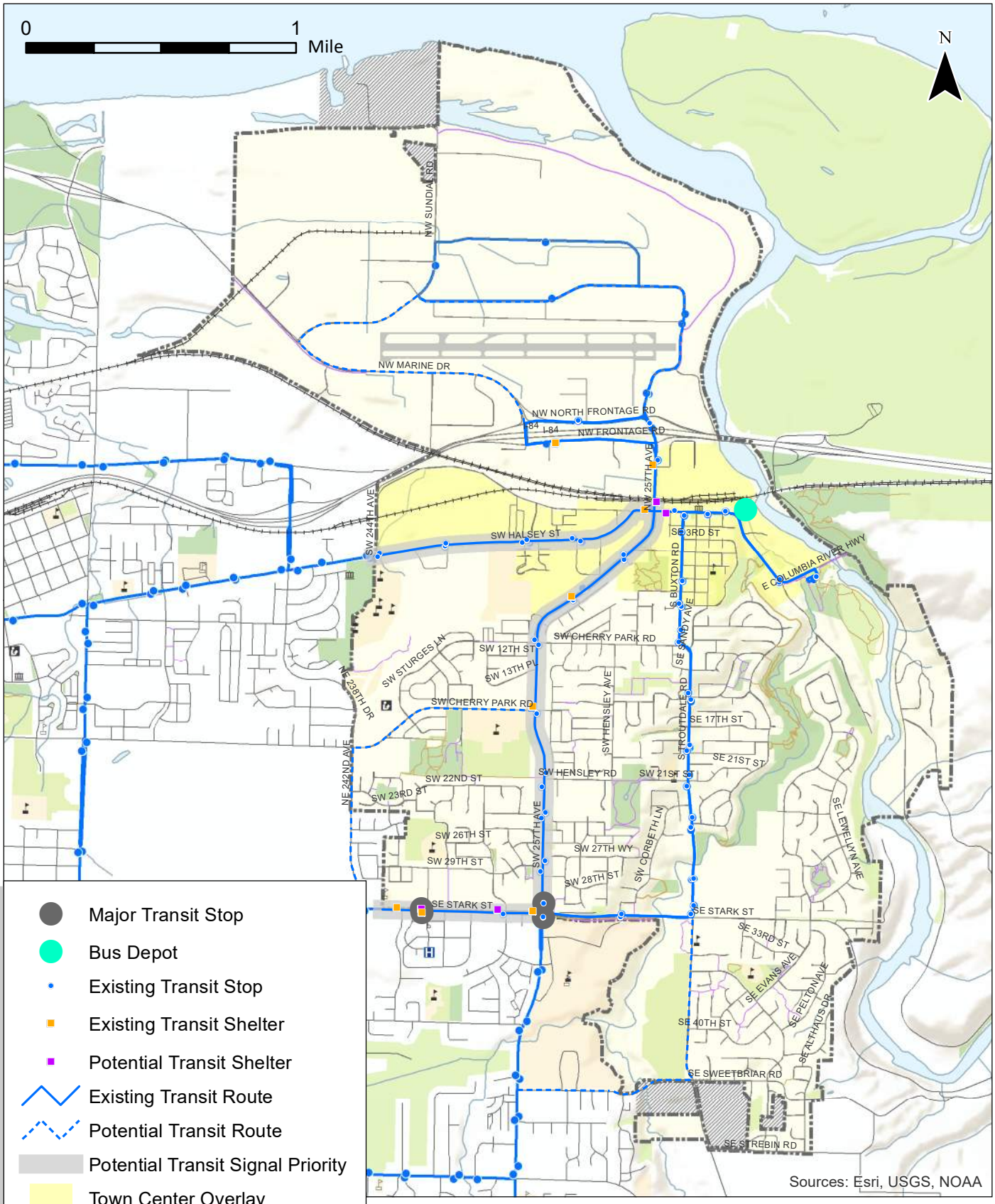
Table 4-5: Transit Master Plan

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 242nd and 257th Drive~~Avenue~~.	-
T3	Bus Stop Enhancements	Coordinate with TriMet to provide bus shelters at ~~the following transit~~ transit stops that meet TriMet's minimum thresholds and support community goals for local transit service~~stop:~~ ~~Stop 8747: Historic Columbia River Highway & SW Kendall Road~~ ~~Stop 9792: Stark Street & SW Sundial Avenue~~ ~~Stop 5398: Stark Street & McGinnis Avenue~~ ~~Stop 13532: 257th Avenue & Historic Columbia River Highway~~	-
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~~.~~ and in potential conjunction with a parking structure facility at The Confluence site. This lot should provide access to the ~~planned~~ 40-Mile Loop Regional ~~Multiuse~~ Trail, the Sandy Riverfront Trail, and the bike/transit hub at Depot Park.	$50
T5	Transit Signal Priority	Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Avenue, 257th Drive~~Avenue~~ and Stark Street.	-
T6	Marine/Sundial/Graham	Coordinate with TriMet to ~~provide a new route serving~~further enhance service to the north industrial area.	-
T7	Troutdale Road/17th 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~~.~~ (the amount of time between transit vehicle arrivals at a stop).	-
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.	-
		Total	**$100**

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):



Transit Master Plan

Figure **4-3**

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

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- 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 242nd and 257th Drive~~Avenue~~.	-
T3	Bus Stop Enhancements	Coordinate with TriMet to provide bus shelters at ~~the following~~transit stops that meet TriMet's minimum thresholds and support community goals for local transit service~~ stops:~~ ~~Stop 8747: Historic Columbia River Highway & SW Kendall Road~~ ~~Stop 9792: Stark Street & SW Sundial Avenue~~ ~~Stop 5398: Stark Street & McGinnis Avenue~~ ~~Stop 13532: 257th Avenue & Historic Columbia River Highway~~	-
T5	Transit Signal Priority	Coordinate with TriMet and Multnomah County to implement transit signal priority on Halsey Street, 257th Drive~~Avenue~~, and Stark Street.	-

T6	Marine/Sundial/Graham	Coordinate with TriMet to ~~provide a new route serving~~further enhance service to the north industrial area.	-
T7	Troutdale Road/17th 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~~.~~ (the amount of time between transit vehicle arrivals at a stop).	-
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	-
		Total	**$0**

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 238th/242nd, 257th/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~~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.

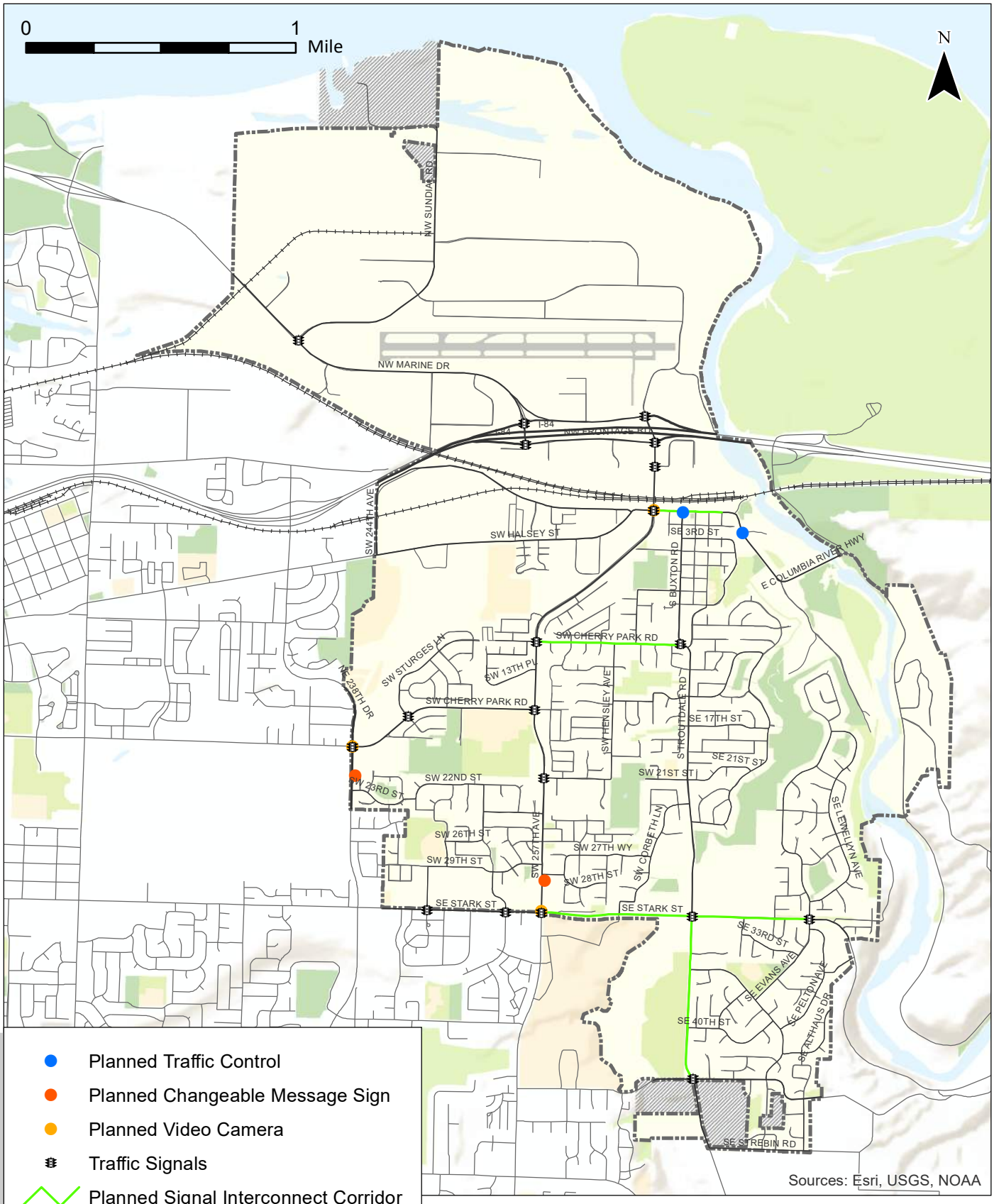
The Speed Hump Program could be updated to consider other traffic calming measures and work with the community to find the traffic calming solution that best meets their needs and maintains roadway function. Table 4-7 lists common NTM applications and suggests which devices might be supported by Gresham 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[1]

Traffic Calming Measure	Roadway Classification		
	Arterial	Collector	Neighborhood/Local Street
Curb ~~Extensions~~Extension			Calming measures are okay on Lesser response routes that have connectivity (more than
~~Medians~~Raised Median Island			
Pavement Texture			

Speed Hump	Not Supported	Not Supported	two accesses) and are accepted and field tested by Gresham Fire and Emergency Services.
Roundabout			
Raised Crosswalk	Not Supported	Not Supported	
Speed Cushion (provides emergency pass-through with no vertical deflection)	Not Supported		
Choker[2]	Not Supported	Not Supported	
Narrow Travel Lanes			
On-Street Parking			
Pedestrian and Bicycle Facilities			
Traffic Circle	Not Supported	Not Supported	
Diverter (with emergency vehicle pass through)	Not Supported	Not Supported	
Signage			
Street Trees			

[1]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.
[2]Chokers are not supported when they do not shadow parking. If parking is shadowed, see curb extensions.



Traffic Control Master Plan

Figure **4-4**

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

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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 ~~Countyhave~~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~~left turn ~~Lanes~~lanes where warranted for access onto cross streets
- Work with ~~Land~~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

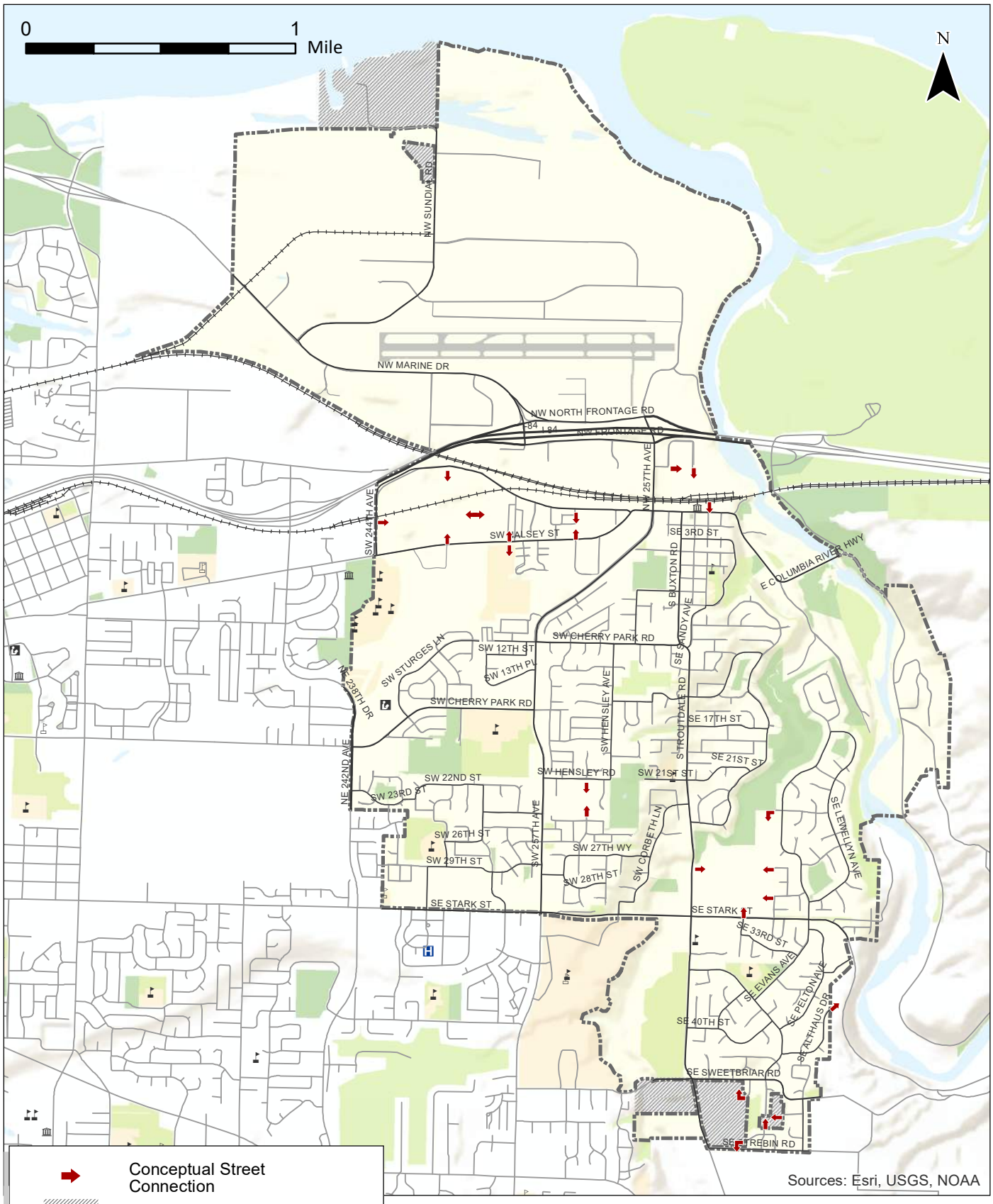
- Limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections
- Includes no close-end street longer than 200 feet or having no more than 25 dwelling units
- Includes street cross-sections demonstrating dimensions of ROW improvements, with 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
- Arterial streets typically carry less traffic volume ~~then~~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 ~~then~~than neighborhood streets. Collector streets are also utilized to access industrial and employment areas and other locations with large truck and over-sized 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.



Local Street Connectivity Plan

Figure **4-5**

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

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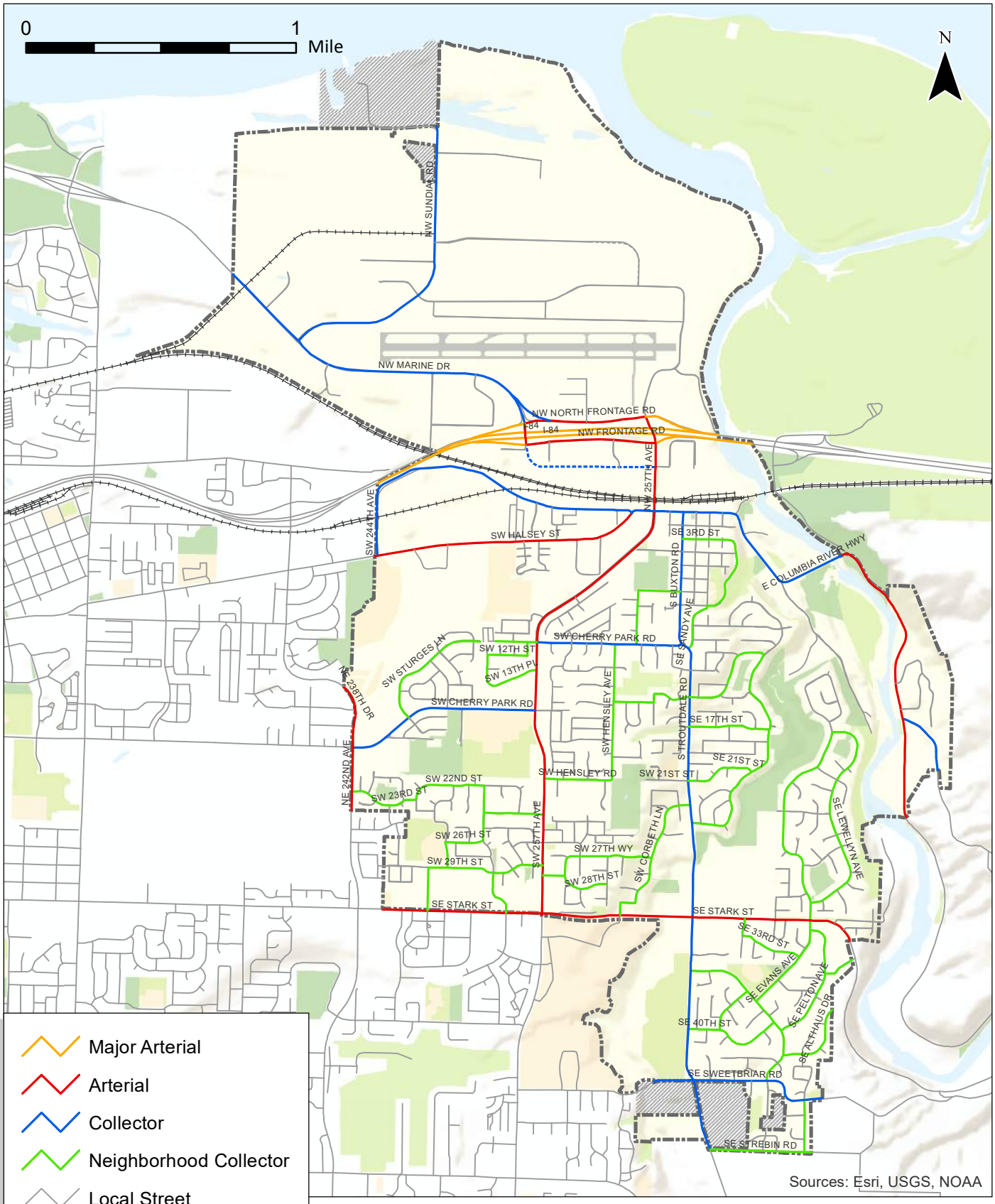

Functional Classification Plan

Figure **4-6**

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

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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.

Parking Requirements

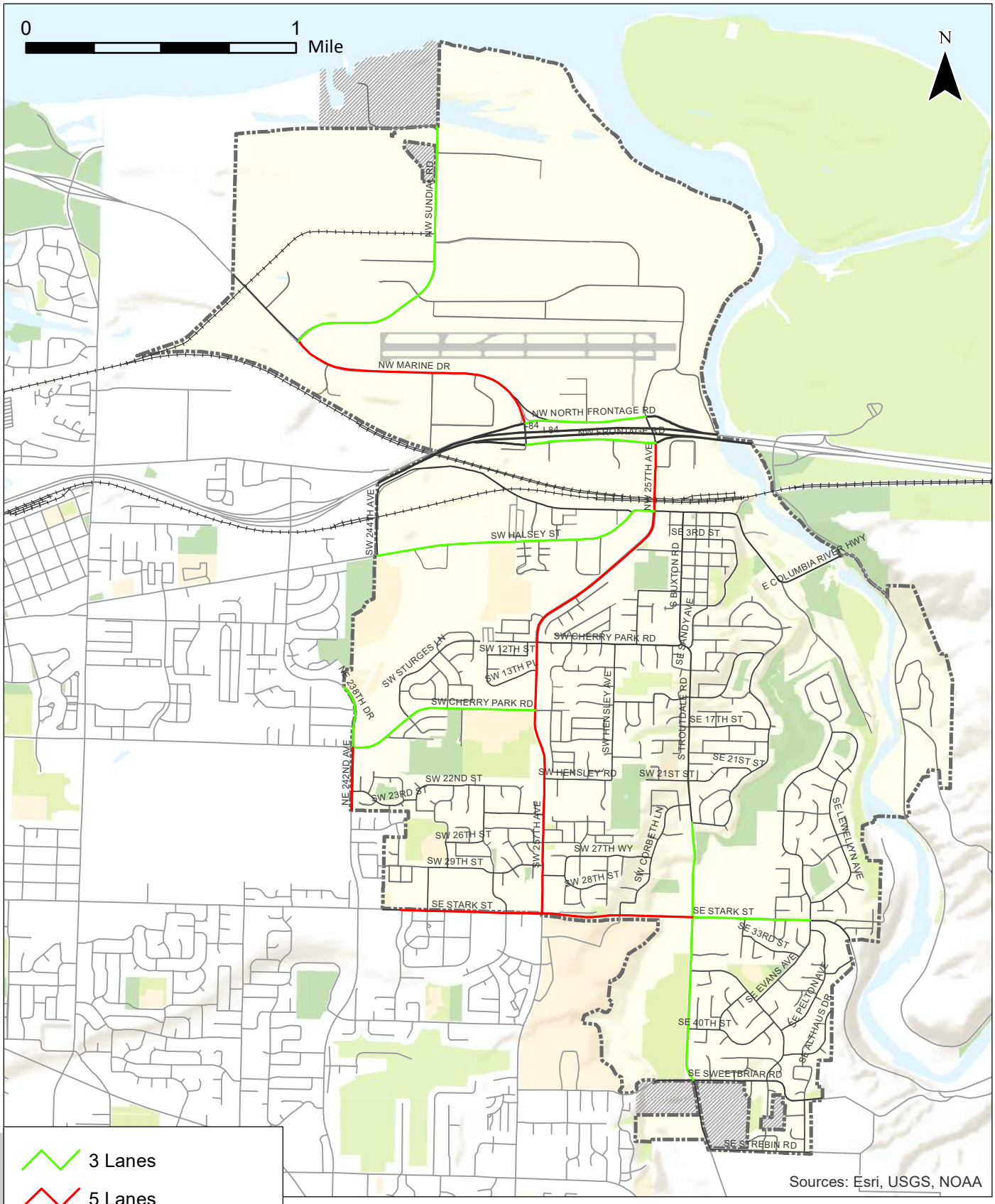
The City of Troutdale has off-street parking ratios (minimum and maximum) in Chapter 9 of the Development Code. These ratios are consistent with the TPR and RTP parking ratio requirements.

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.



Streets with Right-of-Way of More than 2-Lanes

Figure **4-7**

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

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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) 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) 16-18% (4 day/40 hour) 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) 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 Transit 8-20% High 5-9% Medium 2-4% 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) 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% (without support strategies 6-8% (with support strategies)
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) 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%.[1]

Metro's ~~Regional Demand Model~~regional travel 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.

Table 4-10: TDM Improvements included in the ~~2025~~2004 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 Drive~~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
				Total	**$324,423**

Note: These improvements are assumed in Metro's ~~2025~~2004 RTP Financially Constrained System and do not necessarily correspond with the action plan of this TSP.

[1] *Based on the 2000 Metro Regional Transportation Plan*, Ordinance No. 00-869A (August 10, 2000), page 1-62.

Table 4-11: Additional TDM Improvements included in the ~~2025~~2004 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
				Total	**$842,114**

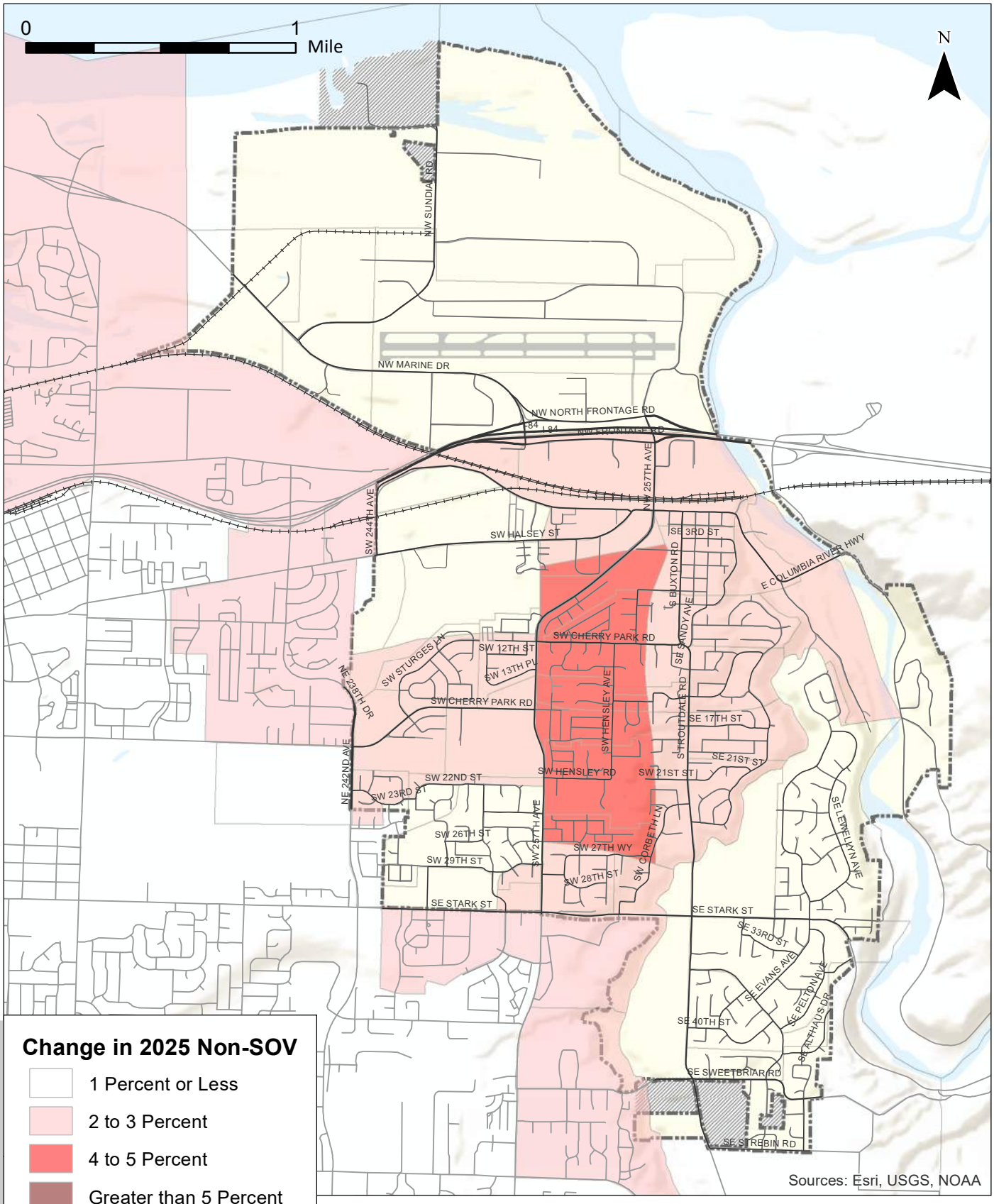
Note: These improvements are assumed in Metro's ~~2025~~2004 RTP Priority System and do not necessarily correspond with the action plan of this TSP.

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.



Growth in Non-SOV Use

Figure **4-8**

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

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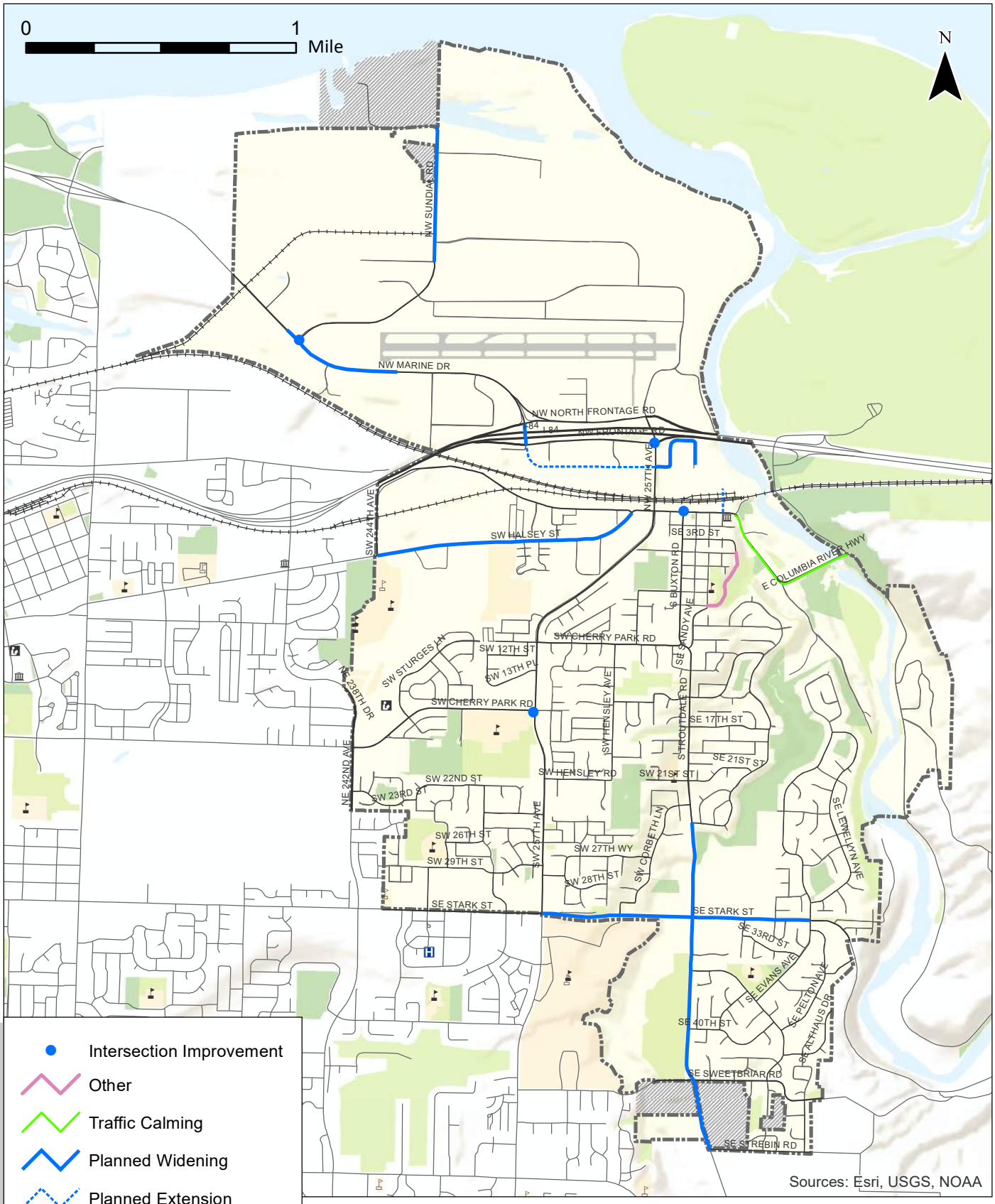
- Implementation of bicycle, pedestrian, motor vehicle and transit system action plan.
- Monitor and manage the parking needs in the Troutdale Town Center, which could include long-term strategies such as parking pricing.

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 2011 IAMP and the 2012 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:

- 242nd Street Extension ~~–~~ This extension was removed from the Motor Vehicle Master Plan as part of the EMCP planning effort.
- 238th 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.
- 2nd Street Extension – This extension was removed from the Motor Vehicle Master Plan due access management concerns along 257th Drive~~Avenue~~.
- 257th Drive~~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.



Motor Vehicle Master Plan

Figure **4-9**

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

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Table 4-12: Motor Vehicle Master Plan

No.	Location	Description	Cost ($1,000)
M1	Troutdale Road	Widen to 3 lanes from Beavercreek 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 257th Drive~~Avenue~~ and Troutdale Road. Includes sidewalks and bike lanes.	$300
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 238th Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes.~~Construct facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input.	-To Be Determined
~~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 257th Drive~~Avenue~~/Historic Columbia River Highway	$200
M12	257th Way	Extend 257th Way to the urban renewal area.	-
M13	Parking Study	Conduct a parking study within the Troutdale Town Center – the study should include an evaluation of potential off-street parking facilities, including a parking structure at the Confluence site.	$50
M14	Dunbar Avenue	Reconstruct Dunbar Avenue.	$450
~~M15~~	~~Swigert Way Extension~~	~~Extend Swigert Way to the Graham Road~~	~~-~~
M16	Historic Columbia River Highway	Prepare a refinement plan for downtown Troutdale and consider changes to the street profile to improve mobility – Project B16 and P37 may be impacted by the refinement plan.	$50
M17	Historic Columbia River Highway	Install traffic calming features along the Historic Columbia River Highway from Depot Park to east city limits	$150
M18	Downtown/Urban Renewal Area Connections	Construct a vehicular connection that extends Kibling Avenue and crosses the railroad tracks at-grade and continues into the Confluence site.	$170**
M19	Historic Columbia River Highway/Depot Park	Install a traffic control device where E Columbia River Highway turns to the south	$150
		Total	**$~~2,530~~2,500**

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 Pedestrian and Bicycle Plans.
** The City of Troutdale's contribution to these project costs is assumed to be 10% of the overall project costs.

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~~left turning ~~Lanes~~lanes on collectors
- Regional ~~Circulation~~circulation
- Adopt TSM measures to improve system efficiency (including ITS, NTM, access management, ~~Local~~local street connectivity, and functional classification)
- Circulation ~~Enhancements~~enhancements
- Mitigate all ~~Intersections~~intersections to ~~Level~~level of ~~Service~~service D in the PM ~~Peak Hour~~peak hour
- Intersection ~~Modifications~~modifications
- Additional ~~Signals~~signals on ~~Arterial/Collector Intersections~~arterial/collector intersections
- Improve ~~Circulation~~circulation of ~~Residential Areas~~residential areas
- Develop TDM ~~Programs~~programs to ~~Reduce Peak Traffic~~reduce peak traffic for ~~Employers~~employers in Troutdale
- Neighborhood ~~Traffic Management~~traffic management

Projects in the Motor Vehicle Action Plan were also reviewed to ensure an equitable distribution of projects through the community, including areas with high concentration of transportation disadvantaged populations.

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 Drive~~Avenue~~ and Troutdale Road. Includes sidewalks and bike lanes.	$300
M6	Halsey Street Widening	~~Widen to 3 lanes from 238th Avenue to Historic Columbia River Highway. Includes sidewalks and bike lanes.~~Construct facilities according to the Main Streets on Halsey Plan with Planning Commission and City Council input.	-To Be Determined
~~M7~~	~~Marine Drive~~	~~Widen Marine Drive to a two-way five-lane cross-section under I-84.~~	-
~~M8~~	~~Graham Road~~	~~Reconstruct Graham Road.~~	~~$550~~

No.	Location	Description	Cost ($1,000)
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 257th Drive~~Avenue~~/Historic Columbia River Highway	$200
M12	257th Way	Extend 257th Way to the urban renewal area.	-
M13	Parking Study	Conduct a parking study within the Troutdale Town Center – the study should include an evaluation of potential off-street parking facilities, including a parking structure at the Confluence site.	$50
M14	Dunbar Avenue	Reconstruct Dunbar Avenue.	$450
M16	Historic Columbia River Highway	Prepare a refinement plan for downtown Troutdale and consider changes to the street profile to improve mobility – Project B16 and P37 may be impacted by the refinement plan.	$50
M17	Historic Columbia River Highway	Install traffic calming features along the Historic Columbia River Highway from Depot Park to east city limits	$150
M19	Historic Columbia River Highway/Depot Park	Install a traffic control device where E Columbia River Highway turns to the south	$150
		Total	$~~2,530~~2,330

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 Pedestrian and Bicycle Plans.

OTHER MODES

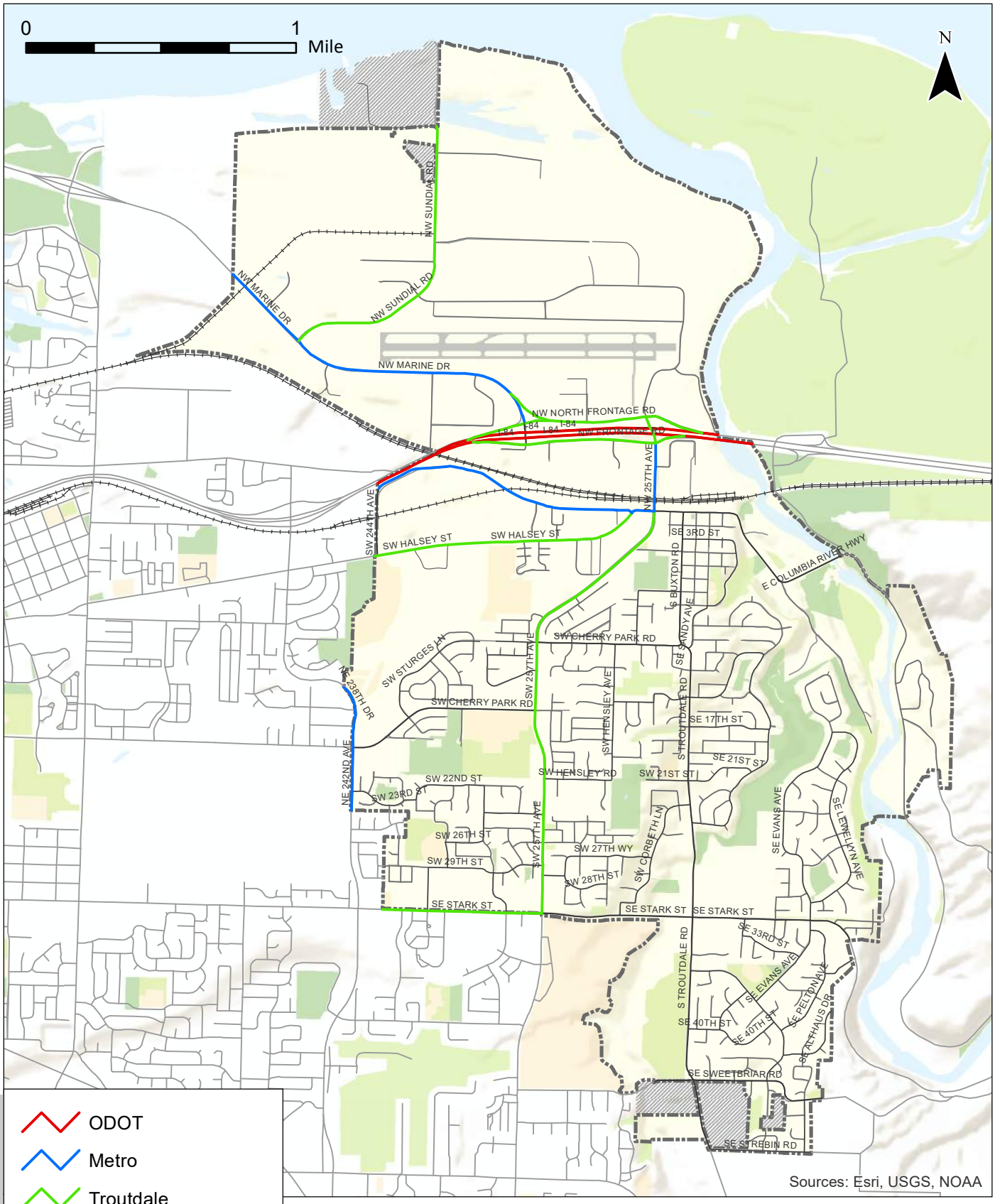
~~While pedestrian, bicycle, transit, and motor vehicle transportation modes have a more significant effect on the quality of life in Troutdale, other modes of transportation must be considered.~~ Future needs for freight, air and pipeline infrastructure are identified by their providers and are summarized 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 257th Drive~~Avenue~~ as a road connection on the regional freight network. This change was ~~in part,~~partially due to the cancellation of the 242nd Avenue extension as previously identified in the RTP. Given the existing ~~characterizes~~character of 257th Drive~~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.



Freight Plan

Figure **4-10**

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

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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~~Railroad (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 244th 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 242nd 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.

Chapter 5 Financing & Implementation

CHAPTER 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 38~~30~~ cents per gallon. There is an additional tax of 3 cents per gallon within Multnomah County and 3 cents per gallon within Troutdale. 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 for passenger vehicles range from $126 to $316 depending on the age of the vehicle, the estimated miles per gallon (MPG), and the fuel type~~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 $112~~$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 $1,181~~$723~~ per trip end, which is among the lowest transportation SDC rates in the State of Oregon. By comparison, the City of Troutdale charges $1,169 per single-family home (SFH) whereas City of Gresham charges $2,565 per SFH~~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[1] 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 $1,181~~$723~~ to that amount of growth would generate $3.4~~$2.1~~ million over 20 years, or about $170,000~~$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 conditioned~~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

[1] This estimate was generated during the 2005 TSP update. An update of this estimate was not within the scope of the 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) **	$170~~$105~~
County Road	$15
Other (Interest, etc.)	$35
Total Revenues	**$1,110~~$1,045~~**
20 Year Total	
Estimated 20 Year Revenues	**$22,200~~$20,900~~**

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.[2] 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.

[2] 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 $4.0~~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 $31.7~~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

Transportation Element	Approximate Cost ($1,000)
System Improvement Projects (Action Plans projects to be funded by City)	
Motor Vehicle	$2,330~~530~~
Bicycle	$275~~95~~
Transit	$0
Pedestrian	$1,375~~965~~
Total Capital Projects	**$3,980~~590~~**
Operations and Maintenance Programs and Services (2013 Dollars)	
Road Operation and Maintenance ($1,075,000 per year, increasing annually)	$21,500
Additional Pavement Preservation Need (300,000 per year)[1]	$6,000
Neighborhood Traffic Management ($10,000/year)	$200
Total Operations and Maintenance Programs	**$27,700**
20 Year Total	**$31,680~~290~~**

The estimated $27.7 million for operations and maintenance exceeds the expected 20-year revenue estimate of $22.2~~$20.9~~ million (see Table 5-1) by approximately $5.5~~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 $1,181~~723~~ per trip end, 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 257th 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
Annual New Revenues	**$300**
20 Year Total	**$6,000**

THE CITY OF TROUTDALE OREGON EST. 1907

MEMORANDUM

Date: July 27, 2022
From: Melissa Johnston, Associate Planner
Alex Lopez, Assistant Planner
To: Troutdale Planning Commission

Subject: Senate Bill 458 – Code Revisions and Next Steps

Senate Bill 458 is a companion bill to House Bill 2001 that was established to allow for ownership of middle housing. For any city or county subject to the requirements of House Bill 2001, Senate Bill 458 requires those jurisdictions to allow middle housing lot divisions for any middle housing type (duplexes, triplexes, quadplexes, townhouses, and cottage clusters) built in accordance with ORS 197.758. The bill was passed with a near unanimous support in both the house and senate and came into effect on July 1, 2022.

Intent of Bill

SB 458 is meant to compliment HB 2001 by allowing for fee simple ownership of middle housing units and the land around the unit. The intent is to allow the middle housing units to be owned (not just rented) which may help more families and individuals build wealth through home ownership.

Resulting Lots

The lots created in accordance with the middle housing land division process enabled by SB 458 have restrictions. They are considered "child" lots or "middle housing lots" of the "parent" lot. For example, the units in a subdivided cottage cluster will not become single family detached homes; they will remain cottage cluster units for the purpose of applying development code. This means that cities will not be obligated to allow ADUs on the resulting small individual cottage lots or to allow the resulting lots to be further divided.

Expedited Land Division Process

The expedited land division process is outlined in ORS 197.360 to 197.380. It is an alternative procedure application intended to streamline the review of land divisions under state law. An expedited land division application must be processed within 63 days rather than 120 days (unless extended).

Actions to Consider

- Update TDC Chapter 7
  - Adopt a set of procedures for submitting middle housing land division applications or adopt a reference State rules.
  - Adopt approval criteria and conditions of approval.
  - Consider prohibiting concurrent review of building permits and land division permits.
- Update TDC 8.170 and 1.020 regarding Accessory Dwelling Units (ADUs)
  - Specify that ADUs are only allowed in conjunction with detached single-family dwellings.
- Establish application fees for an expedited land division/middle housing land division.
- Staff will develop accompanying application materials and Standard Operating Procedures.

ATTACHED:

- Department of Land Conservation and Development (DLCD) Guidance Document on SB 458 (Included for review from last month's packet)
- City of Milwaukie Planning Commission Work Session on SB 458, Feb 22, 2022
    - Watch: https://www.youtube.com/watch?v=fyfgVI3AmNw (14 min 9 sec – 40 min)
    - Packet: https://www.milwaukieoregon.gov/bc-pc/planning-commission-90

(YouTube, City of Milwaukie Planning Commission, 2/22/22)

OREGON
Department of Land Conservation & Development

Senate Bill 458 Guidance

(Updated July 8, 2021)

Background

Senate Bill 458 was adopted by the Oregon Legislature in 2021. The bill is a follow-up to House Bill 2001 - the bill that legalizes middle housing in many cities throughout the state - and allows lot divisions for middle housing that enable them to be sold or owned individually.

Senate Bill 458 Summary

For any city or county subject to the requirements of House Bill 2001, Senate Bill 458 requires those jurisdictions to allow middle housing lot divisions for any HB 2001 middle housing type (duplexes, triplexes, quadplexes, townhouses, and cottage clusters) built in accordance with ORS 197.758. Senate Bill 458 only applies to middle housing land divisions permitted on or after June 30, 2022.

The bill sets forth a series of parameters on how a city must process middle housing lot division applications. The city must apply an "expedited land division" process defined in ORS 197.360 through 197.380, and the applicant must submit a tentative plan for the division including the following:

- A proposal for development of middle housing in compliance with the Oregon residential specialty code and applicable middle housing land use regulations,
- Separate utilities for each dwelling unit,
- Easements necessary for utilities, pedestrian access, common use areas or shared building elements, dedicated driveways/parking, and dedicated common area,
- One dwelling unit per each resulting lot or parcel (except common areas), and
- Demonstration that the buildings will meet the Oregon residential specialty code.

Additionally, cities retain the ability to require or condition certain things, including further division limitations, street frontage improvements, and right-of-way dedication if the original parcel did not make such dedications. They *may not* subject applications to approval criteria outside of what is provided in the bill, including that a lot or parcel require driveways, vehicle access, parking, or min/max street frontage, or requirements inconsistent with House Bill 2001, including OAR Chapter 660, Division 046.

Guidance

DLCD staff have received a significant number of questions regarding Senate Bill 458 and how cities or counties can best prepare to comply with the law. Below are answers to commonly asked questions. If you find that you have a question that has not been addressed in this document, please reach out to the Housing Team at housing.dlcd@dlcd.oregon.gov.

SB 458 Deadline

Question: This bill applies to middle housing lot divisions permitted on or after June 30, 2022. Will cities or counties need to incorporate these standards before this deadline?

Answer: *It is highly advisable, but not required, for cities or counties to incorporate middle housing lot division standards into their development codes. On the June 30, 2022 deadline, a city or county that has not incorporated lot division standards within their development codes would utilize the bill language directly to process middle housing lot divisions under SB 458.*

Question: Medium cities need to allow duplexes on lots/parcels that allow single-family detached dwellings by June 30, 2021 (i.e. this year). Are duplexes built between this deadline and the SB 458 deadline eligible for a middle housing lot division?

Answer: *A duplex built pursuant to ORS 197.758 (i.e. House Bill 2001) during this time period would be eligible to apply for a middle housing land division under SB 458 on June 30, 2022, provided it met the applicable requirements outlined in the bill.*

Question: Do cities or counties need to allow lot divisions for middle housing built prior to House Bill 2001?

Answer: *SB 458 requires a middle housing lot division application submit: "A proposal for development of middle housing in compliance with the Oregon residential specialty code and land use regulations applicable to the original lot or parcel allowed under ORS 197.758 (5)". This means that any lot division proposal will need to demonstrate compliance with both applicable building code and HB 2001 middle housing code in order to be eligible for a lot division under SB 458.*

There is a potential hypothetical scenario in which a pre-HB 2001 middle-housing type could make this demonstration, but 1.) this is an unlikely scenario and 2.) a jurisdiction retains the ability to require the applicant demonstrate the middle housing type complies with applicable building code and middle housing code before approving a middle housing lot division proposal.

Applicability, Application Process, and Submittal Requirements

Question: What middle housing types are eligible for division under SB 458?

Answer: *The bill specifies any lot or parcel that allows middle housing under ORS 197.758 (2) or (3) qualifies for a middle housing land division under SB 458. This includes duplexes, triplexes, quadplexes, townhouses, and cottage clusters in applicable cities and unincorporated, urban portions of Metro counties. Accessory dwelling units are not eligible for lot division under SB 458.*

Question: SB 458 requires cities or counties to apply the expedited land division process. What is this?

Answer: *The expedited land division process is outlined in ORS 197.360 to 197.380. It is an alternative procedure application intended to streamline the review of land divisions under state law. While typical land use applications must be completed within 120 days (ORS 227.178), an expedited land division must be processed within 63 days or extended by the governing body of a local jurisdiction (not to exceed 120 days).*

Question: The expedited land division process under ORS 197.360(1)(b) seems to only include divisions of three or fewer parcels. Does this mean that a middle housing land division is limited to three total parcels?

Answer: *No. First, ORS 197.360(1)(a) allows an expedited land division to be any size, while ORS 197.360(1)(b) clarifies that the expedited land division process is also extended to divisions of three or fewer parcels.*

Additionally, SB 458 requires that local jurisdictions apply the expedited land division procedure outlined in ORS 197.360 to 197.380, a "middle housing land division" is distinct from an "expedited land division" and may contain more than three parcels, provided that each resultant lot or parcel contains one unit.

Question: Can a city or county apply a typical land division process to a middle housing land division application?

Answer: *SB 458 specifies that a city or county "shall apply the procedures under ORS 197.360 to 197.380". This means that a city or county cannot require a middle housing land division to undergo a standard land division pathway.*

Question: This bill seems to suggest that the jurisdiction must approve an application for middle housing land division after or concurrent with the issuance of a building permit, which is backwards in comparison to typical subdivisions. Can you clarify when an applicant may submit an application for a middle housing lot division?

Answer: *Senate Bill 458 does not state that a middle housing land division must occur either before or after the issuance of a building permit. We anticipate that most middle housing land divisions will occur before the application for a building permit, similar to other housing land division processes. However, we also anticipate that there may be circumstances in which an applicant submits a land division application after developing a middle housing type. In both scenarios, the applicant must demonstrate that the proposal meets applicable building code and middle housing code as well as the requirements outlined in SB 458.*

Additionally, the bill specifies that a city or county may allow the submission of a middle housing land division at the same time as submission of an application for a building permit, but they are not required to.

Lot Division Standards and Conditions for Approval

Question: SB 458 sets out several requirements that applicants must demonstrate outlined in the summary above. What else are jurisdictions allowed to require or condition?

Answer: *The bill allows jurisdictions to require or condition the following:*

- *Prohibition of further division of the resulting lots or parcels*
- *Require notation in the final plat indicating approval was provided under SB 458 (later on, this will be the resultant ORS reference)*
- *Require street frontage improvements where a lot or parcel abuts a street (consistent with House Bill 2001)*
- *Require right-of-way dedication if the original parcel did not previously provide a dedication*

Question: Will jurisdictions be able to require applicants to submit tentative and final plats consistent with local platting standards?

Answer: *Yes, jurisdictions may require that the applicant submit tentative and final plats in a manner consistent with their applicable platting standards.*

Question: Can jurisdictions require that easements be submitted in a form approved by the City Attorney and address specific issues like maintenance and repair, cost-sharing, access, notice, damage, disputes, etc.?

Answer: *Yes, cities are permitted to specify the format and issues an easement addresses, provided that they are specific to the types of easements specified in Section 2(2)(c) of the bill, including:*

A. Locating, accessing, replacing and servicing all utilities;
B. Pedestrian access from each dwelling unit to a private or public road;
C. Any common use areas or shared building elements;
D. Any dedicated driveways or parking; and
E. Any dedicated common area;

Question: What requirements are jurisdictions limited in requiring for a middle housing lot division?

Answer: *The bill specifies that a jurisdiction may not subject a middle housing lot division application to approval criteria except as provided in Section 2 of the bill. The bill specifies that this includes the following:*

- *Require that a lot or parcel provide driveways, vehicle access, parking or minimum or maximum street frontage*
- *Subject an application to procedures, ordinances or regulations adopted under ORS 92.044 or 92.046 that are inconsistent with Section 2 of the bill or ORS 197.360 to 197.380.*

Question: Does that mean jurisdictions cannot require off-street parking for middle housing?

Answer: *Jurisdictions are still permitted to require off-street parking and all other land use regulations in accordance with the parameters set forth in administrative rule, OAR Chapter 660, Division 046, but they may not require that each resultant lot or parcel have off-street parking. Such a lot or parcel would be provided access to off-street parking via easement.*

Question: Cities or counties cannot require street frontage under SB 458, but can they limit how many lots within a land division do not have street frontage? For example, could a city limit the number of cottages in a cottage cluster development that only have street access from an access easement?

Answer: *The bill states that a city or county "may not subject an application to approval criteria except as provided in this section". The restriction on minimum or maximum frontage is an explicit example of this prohibition. Because there is nothing in this section specifying the number of units that may only have street access from an access easement, a local jurisdiction would not be able to include such a limitation as a standard or condition of approval.*

Question: Section 2 (4)(b) allows cities or counties to require street frontage improvements. Would this enable them to require frontage improvements that might otherwise be exempted for single-family detached dwellings, which is prohibited in OAR Chapter 660, Division 046?

> ***Answer:*** *Yes. This provision would enable a city to require street frontage improvements in situations where it might not otherwise be permitted under administrative rule. We also think this can be a compelling incentive to better address the street frontage deficiencies that persist today in older single-family neighborhoods.*

Question: Does SB 458 require local jurisdictions to approve vertical divisions (i.e. divisions in which one or more units of middle housing is not on the ground floor) of middle housing in addition to horizontal divisions?

> ***Answer:*** *Senate Bill 458 does not speak to vertical divisions of middle housing and requires that each resultant lot or parcel contain exactly one unit. Therefore, cities are not required to allow vertical divisions of middle housing.*

Townhouses

Question: Does SB 458 apply to lot divisions for townhouses allowed under HB 2001?

> ***Answer:*** *The bill applies to any lot or parcel that allows middle housing under ORS 197.758, including townhouses. Local jurisdictions must allow townhouse proposals to undergo the lot division process outlined in SB 458, including the application of the procedures outlined in ORS 197.360 through 197.380.*

Question: The bill restricts cities or counties from applying minimum or maximum frontage requirements to lots or parcels created under SB 458. This seems to conflict with OAR 660-046-0220(3)(b) regarding minimum street frontages applied to townhouses. Are jurisdictions permitted to apply minimum street frontages to townhouses?

> ***Answer:*** *Yes, SB 458 specifies that in order for a middle housing proposal to be eligible for a land division, it must comply with all of the land use regulations applicable to the original lot or parcel allowed under ORS 197.758 (5), which includes the full scope of administrative rules outlined in OAR Chapter 660, Division 046. Therefore, local governments are able to, but are not required to, apply minimum street frontages to townhouses as permitted in OAR 660-046-0220(3)(b).*
>
> *Local governments will not be able to apply minimum street frontage requirements for individual units for plexes and cottage clusters. However, they may apply lot dimensional standards to the parent lot as provided in OAR 660-046-0220. We recommend that local jurisdictions carefully consider the incentives and resulting form for each middle housing type when developing middle housing land use regulations.*