



CITY OF PHILOMATH TRANSPORTATION SYSTEM PLAN

JULY 2018

VOLUME 1



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THE PROCESS

THE PROCESS

Why create a Transportation System Plan?

A TSP is a long-range plan that sets the vision for a community's transportation system for the next 20 years. This vision is developed through community and stakeholder input and is based on the system's existing needs, opportunities, and anticipated available funding.

A TSP is required by the State of Oregon. In compliance with State requirements, the City of Philomath updated the City's TSP, replacing the previous TSP adopted in 1999. This Philomath TSP update establishes a new 2015 baseline condition and identifies transportation improvements needed through the year 2040. The TSP addresses compliance with new or amended federal, state, and local plans, policies, and regulations including the Oregon Transportation Plan, the State's Transportation Planning Rule, and the Oregon Highway Plan.

How was this TSP created?

The best way to build a community-supported TSP is through an open, inclusive process. The decision-making structure for this TSP was developed to establish clear roles and responsibilities throughout the project.

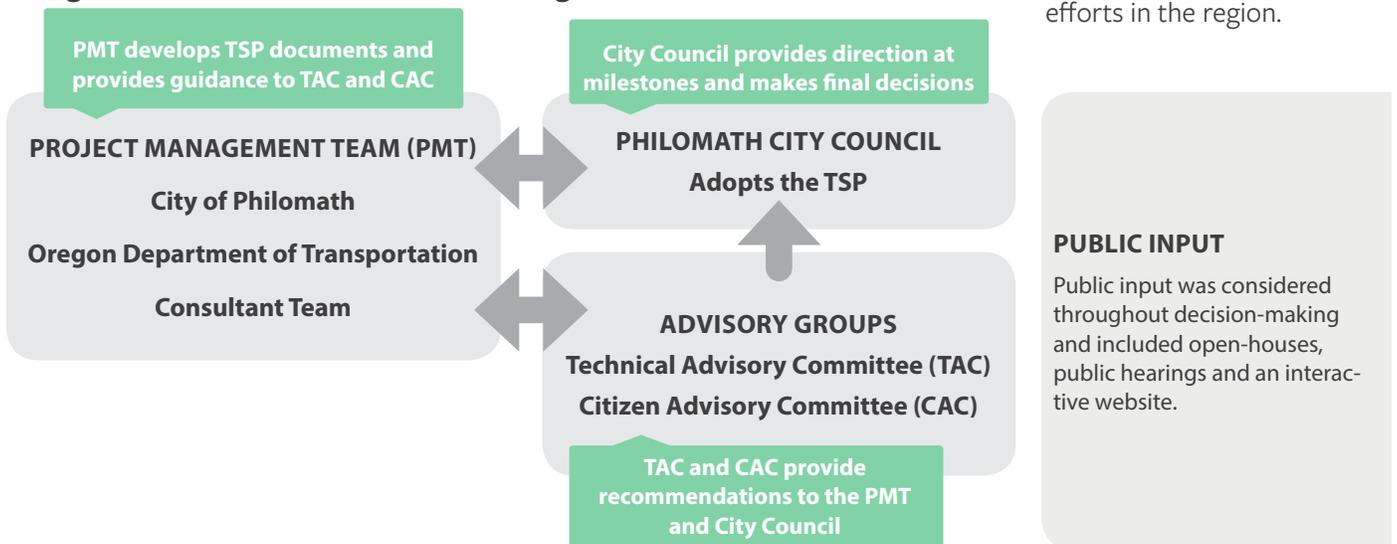
Philomath City Council was responsible for all final decisions for this TSP project.

Citizen Advisory Committee (CAC) was approved by the City Council to provide community-based recommendations. The CAC was the primary recommendation body for the project team. CAC meetings were open to the public.

Project Management Team (PMT) made recommendations to the City Council based on technical analysis and stakeholder input.

Technical Advisory Committee (TAC), consisting primarily of various state and local agency representatives, supported the PMT. The TAC's role was to provide regulatory reviews of work products and to strengthen coordination between the TSP update and other related planning efforts in the region.

Figure 1. Philomath TSP Decision-Making Structure



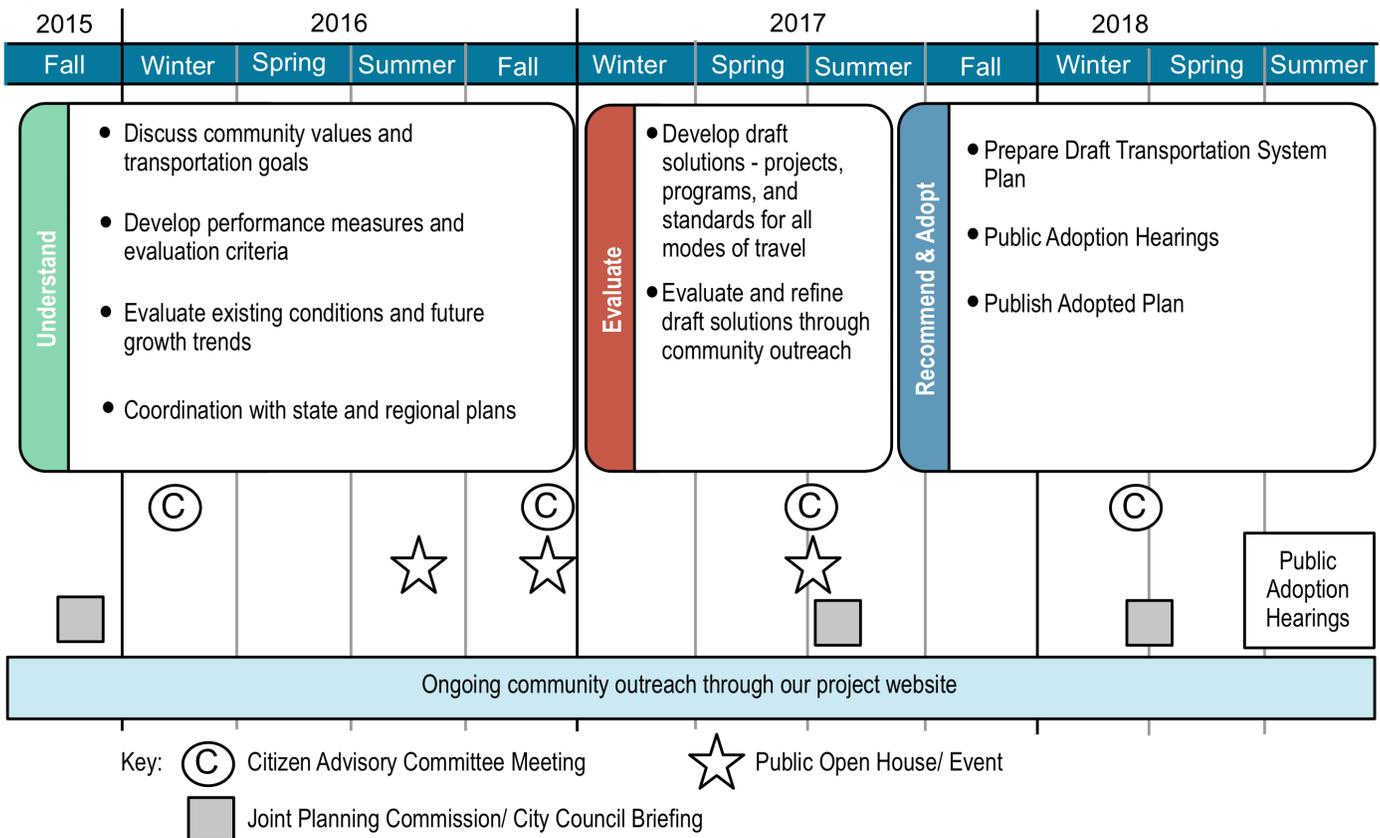
Engaging the Public

The strategy used to guide stakeholder and public involvement throughout the TSP update reflects the commitments of the City of Philomath and the Oregon Department of Transportation (ODOT) to carry out public outreach that provided community members with the opportunity to weigh in on local transportation concerns and to provide input on the future of transportation within their city.

The project's public involvement goals were to:

- Communicate complete, accurate, understandable, and timely information.
- Actively seek public input throughout the project and engage a broad and diverse audience.
- Provide meaningful public involvement opportunities and demonstrate how input influenced the process.
- Seek participation of potentially affected and/or interested individuals, neighborhoods, businesses, and organizations.
- Comply with Civil Rights Act of 1964 Title VI requirements. Title VI and its implementing regulations provide that no person shall be subjected to discrimination on the basis of race, color or national origin under any program or activity that receives federal financial assistance.
- Ensure that the public involvement process was consistent with applicable state and federal laws and requirements, and was sensitive to local policies, goals, and objectives.

Figure 2. City of Philomath TSP Development Process



The City of Philomath involved the public and stakeholders through a series of committee meetings, public open houses, and work sessions with elected officials and by providing project materials through the project’s website www.philomath-tsp.org. Engaging community members and organizations in the TSP process included engaging with the TAC and the CAC, which included members representing:

- Agency partners working on related plans
- Corvallis Area Metropolitan Planning Organization (CAMPO)
- Business organizations, associations and chambers of commerce
- Bicycle and pedestrian interests
- Transit interests, including current or potential passenger transit riders/users
- Freight interests
- Philomath School Board
- Senior services
- Minority groups
- Community development interests
- Emergency services providers
- Local event organizers
- Large employers
- Recreation interests
- General public





PHILOMATH 2017

PHILOMATH 2017

The City of Philomath, incorporated in 1882, is located in the mid-Willamette Valley at the base of Marys Peak. Philomath is home to approximately 4,700 people and is a part of the Corvallis Area Metropolitan Planning Organization (CAMPO), which includes Corvallis, Philomath, Adair Village, and surrounding unincorporated areas¹ with a total population of approximately 66,000 people.²

The Police Station, City Hall, and Philomath Community Library are located together on a city campus adjacent to Applegate Street. The annual Philomath Frolic and Rodeo is held on the rodeo grounds adjacent to Marys River Park. The City's commercial district includes a variety of businesses, as well as the Benton County Historical Museum. The Benton County Historical Museum serves as an archive and display facility for items of historical significance to Benton County, as well as an exhibit space for contemporary art. A biennial "Quilt County" event, sponsored by the museum, attracts visitors from all over the Northwest. The museum, with its distinctive bell tower, is a well-known Philomath landmark.

Located just west of Corvallis and Oregon State University, Philomath is also a short 45-minute drive from the Oregon Coast.³ This unique location offers diverse recreation including hiking and mountain biking on Marys Peak, Division I sports at Oregon State University, fishing on the Alsea River, and wine tasting at local wineries. The Peak to Pacific Scenic Byway may be approved spring 2018 and would include signage in or near Philomath.

Key Destinations

The first step in planning an effective transportation system is understanding the key destinations throughout the city. These destinations, also called 'activity generators', typically fall into the categories of residential areas, employment, shopping, schools, civic buildings, recreation, and entertainment.

Philomath's key activity generators are mapped in Figure 3. Most homes are located to the north and southeast, with larger employment areas in the downtown (central), the south, and northeast. The elementary, middle, and high schools are located near each other in the southern part of the city and most civic buildings are downtown along Applegate Street. The City owns and maintains eight parks; the majority — in number and in acreage — are located in the southern half of the city. Shopping and entertainment opportunities are generally found in the central area of the city, in the downtown, and along the US 20/OR 34 corridor. The nearest full-service grocery store is about 1.4 miles to the east in Corvallis, adjacent to the US 20/OR 34 at SW 53rd Street intersection.

Philomath Frolic Rodeo



Benton County Museum



City Park

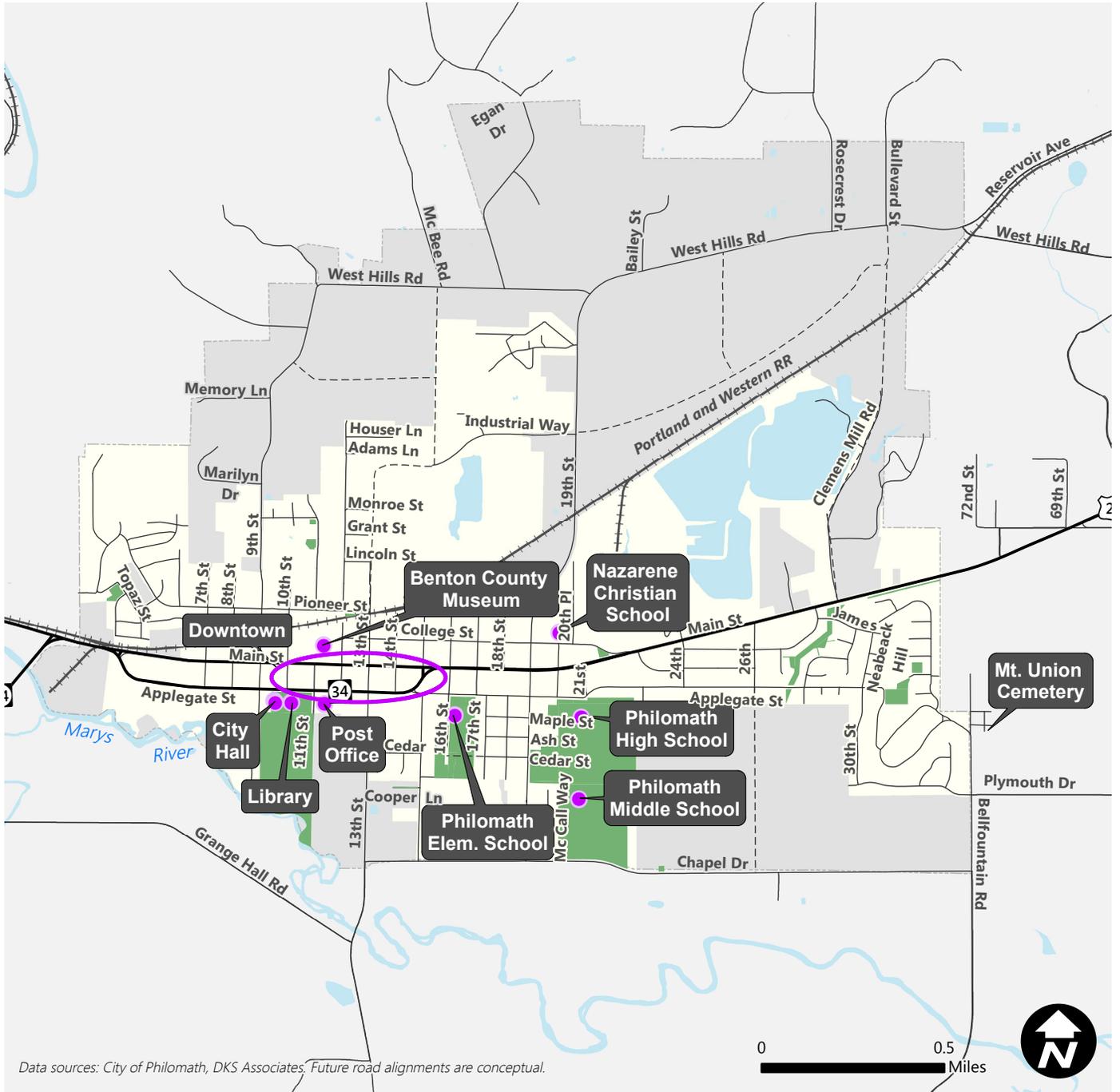


1 Corvallis Area Metropolitan Planning Organization. About CAMPO. 2012. Accessed March 2016. <<http://www.corvallisareampo.org/SectionIndex.asp?SectionID=2>>

2 2010 Census Demographic Profile – Population Map. Accessed March 2016. <<http://www.census.gov/2010census/popmap/>>

3 City of Philomath. About Us. 2010. Accessed December 2015. <<http://www.philomathchamber.org/node/77>>.

Figure 3. Philomath TSP Study Area



Project Categories

- Parks
- Activity Generator
- Railroad
- Roadway
- Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Current Issues

Philomath’s existing transportation system poses issues for all users, including the following.

<p>Pedestrians</p> <ul style="list-style-type: none"> • Sidewalks are absent on most streets north of Pioneer Street, on most of S 13th Street, and along US 20/OR 34 east of Green Street. • Residents have commented that US 20/OR 34 can be difficult to cross on foot. • Continued maintenance of sidewalks and ongoing improvements to meet ADA requirements are needed. 	<p>Bicyclists</p> <ul style="list-style-type: none"> • There is a lack of separate bicycle facilities (e.g. bike lanes), with the exception of US 20/OR 34, 19th Street, West Hills Road east of 19th Street, and portions of Applegate Street. • Bicycle travel on facilities adjacent to higher speed vehicle traffic may be uncomfortable for younger or less experienced bicycle riders.
<p>Transit Users</p> <ul style="list-style-type: none"> • The frequency of bus service is limited, making some trips inconvenient or infeasible. • While transit access is limited to the central area of the city, it is still within a one-mile walk of the remainder of the city. Improved access to transit may make this a more desirable travel option for some community members. • Most stops do not include amenities such as shelters or benches. 	<p>Drivers</p> <ul style="list-style-type: none"> • Street connectivity is limited by the railroad running across the north side of the city, which impacts walking and biking as well. • Due to limited regional connectivity, some streets in Philomath are affected by routing of traffic between US 20/OR 34 and OR 99W to the south. • Residents have complained about congestion on US 20/OR 34 east of the city between Philomath and Corvallis. • There have been several rear-end crashes at the intersection of US 20/OR 34 at 26th Street. • There have been several rear-end crashes at the intersection of US 20 at OR 34 (just outside of the city).

Funding Constraints

The City’s current funding sources provide a relatively stable revenue stream. Based on current funding levels, the City expects to have \$3.45 million available to fund city projects and an additional \$2 million to fund ODOT projects through the year 2040 that are recommended as part of this TSP. Since the total project list exceeds the amount of funding expected to be available, the City may wish to consider expanding its funding options in order to implement more of the desired improvements in a timely manner.

The current funding sources summarized below and potential additional funding sources are detailed in Technical Memorandum #6 Transportation Funding Assumptions included in Volume 2.

Federal Surface Transportation Program (STP)

Federal Highway Trust Funds from the STP flow to the states to be used primarily for safety, highway, and bridge projects. Philomath’s portion of these funds is based upon the city’s actual population. Additional funds are available through the Corvallis Area Metropolitan Planning Organization (CAMPO) on a competitive basis. Although Philomath has not historically sought significant competitive funding through CAMPO, doing so is a possible way to fund future projects.

State Highway Trust Fund

The State Highway Trust Fund makes distributions, on a per capita basis, from the state motor vehicle fuel tax, vehicle registration fees, and truck weight-mile fees. Cities and counties receive a share of State Highway Trust Fund monies and, by statute, may use the money for any road-related purpose, including walking, biking, bridge, street, signal, and safety improvements. When the City reaches a population of 5,000, they will no longer need to apply for the small city allotment.

Franchise Fees

The City of Philomath collects franchise fees from companies that utilize the public right-of-way to provide their services. Franchise fees can be used for any legal purpose. Franchise fees collected from Pioneer (telephone provider) and Republic Services (recycling and waste) are deposited into the City's street fund.

Street Utility Fee

The street utility fee is a recurring monthly charge paid by all residences and businesses within the city to support the provision and maintenance of the local street system. While existing law places no express restrictions on the use of street utility fee funds, the City of Philomath has established clear guidance that funds collected shall be dedicated and used exclusively for street maintenance and reconstruction to provide a safe and functioning street system. The overall amount collected by the fee shall be equal to the amount of additional revenue needed to accomplish a reasonable pavement management program.

System Development Charges

The City of Philomath collects one-time system development charges (SDCs) from new developments to offset the burden of development on the transportation system. State law restricts the use of SDC funds to capacity-adding projects, generally constructing or improving portions of roadways impacted by the applicable development.





THE VISION

THE VISION

A vision statement is an imaginative description of the desired condition in the future and must align with the community's core values. Goals and objectives create the stepping-stones by which the broad vision is achieved. Goals are brief clear statements of the outcomes that must be achieved to realize the Vision. Goals are broad, measurable, and achievable. Each goal is supported by objectives, which outline the specific actions to be taken to achieve the outcomes described by the goals. The solutions recommended by the TSP must be consistent with the goals and objectives.

Setting the Direction

The process of identifying a vision, goals, and objectives uncovers the transportation system that best fits Philomath's values and sets the guide for development and implementation of the TSP.

The goals and objectives from Philomath's previous TSP, developed in 1999, provided a starting point for setting the direction for this new TSP. Those goals and objectives covered a wide range of issues, including mobility, connectivity, safety, promotion of alternate modes of travel, truck access, and TSP coordination with other plans. Early in the process of developing this TSP, the TSP CAC¹ considered the 1999 TSP goals and objectives and discussed the transportation issues and community interests of today in order to refocus these goals and objectives for the next 20 years. This discussion included environmental impacts, enhancement of community health and livability, supporting the local economy, efficient use of public funds, and coordination with regional agencies.

Towards the end of the process, once solutions were identified, policy statements to guide future decisions were developed to help the City implement plan recommendations.²

The Vision

Travel to and through Philomath is safe and efficient, with convenient options available for everyone. Investments in the transportation system are made in a cost-effective manner and respect the City's resources. The system supports local business activity, and US 20/OR 34 complements a vibrant downtown where people stop and visit and can cross the highway safely and comfortably.

¹ Citizen Advisory Committee Meeting #1, February 25, 2016.

² Note that the City's existing transportation policies will be updated as part of the implementation phase of the TSP update project. Adopted transportation policy is currently found in Chapter VI, Transportation, in the Philomath Comprehensive Plan.

Goals & Objectives

Goal 1: Maintain efficient motor vehicle travel along the street network and through US 20/OR 34.

Objectives

- A. Identify and preserve corridors for future street locations, especially in north Philomath and the Newton Creek industrial area. Consider the West Corvallis-North Philomath Plan guidelines for an integrated circulation network for that area.
- B. Improve cross-town (both north-south and east-west) circulation and connectivity.
- C. Maintain acceptable roadway and intersection operations where feasible considering environmental, land use, and topographical factors. The acceptability of roadway and intersection operations is defined by the City's mobility standard requiring operation at a level of service D or better.
- D. Work with regional partners to reduce congestion along US 20/OR 34 between Philomath and Corvallis. Alternatives considered should include widening the corridor to four lanes, enhancing overall corridor travel efficiency, and transportation demand management measures that could reduce peak hour demand.
- E. Develop street functional classifications with complementary operational guidance and standards to ensure streets are able to serve their intended purpose.
- F. Evaluate transportation and parking improvements that have the potential to improve downtown traffic flow.

Goal 2: Develop a transportation system that provides mobility and accessibility for all members of the community, and reduces reliance on motor vehicle travel.

Objectives

- A. Improve circulation for pedestrians, bicyclists, and transit riders within Philomath and to Corvallis.
- B. Improve pedestrian and bicycle circulation within and between major activity generators such as neighborhoods, parks, schools, and commercial centers.
- C. Implement the Safe Routes to Schools Plan recommendations.
- D. Ensure connections to the existing pedestrian system (i.e., sidewalks, crosswalks, shared use paths) are made as part of new developments.
- E. Enhance pedestrian safety at roadway crossings, including intersections and key mid-block locations.
- F. Continuously improve existing transportation facilities to meet applicable City of Philomath and Americans with Disabilities Act (ADA) standards.
- G. Develop and maintain maximum block length standards to minimize travel distances.
- H. Ensure the pedestrian, and bike throughways are clear of obstacles and obstructions (e.g., utility poles, grates).
- I. Improve existing streets to City standards, providing complete pedestrian and bicycle facilities.
- J. Provide for transit user needs beyond basic provision of service (e.g., by providing sidewalk and bicycle connections, shelters, benches) to encourage higher levels of use.
- K. Identify potential park-and-ride locations within the city.
- L. Support expanded service hours for transit.
- M. Consider assessing the potential of the railroad system for commuter rail, commercial rail, and excursion uses.
- N. Improve pedestrian and bicycle access across US 20/OR 34, especially in locations where better access would support safer travel to schools, parks, and public buildings.

Goal 3: Enhance transportation safety.

Objectives

- A. Assess options to reduce traffic volumes and speeds near schools.
- B. Develop a truck routing plan that minimizes/avoids conflicts with schools, residential areas, and the downtown core.
- C. Improve safety at locations with known issues.
- D. Reduce traffic-related fatalities and serious injury collisions.
- E. Reduce the amount of collisions involving vulnerable users (e.g., elderly, children, pedestrians, and cyclists).
- F. Preserve the function and prioritize investments on routes and transportation facilities critical for emergency response and evacuation.
- G. Apply a comprehensive approach to improving transportation safety that involves the five E's (engineering, education, enforcement, emergency medical services, and evaluation).
- H. Implement the recommendations from the Safe Routes to School Plan.
- I. Evaluate the need for improved street lighting.
- J. Address speeding in the downtown.
- K. Improve the comfort and safety of pedestrian crossings along US 20/OR 34.

Goal 4: Develop and maintain a transportation system that supports economic vitality.

Objectives

- A. Improve the pedestrian and bicycle realm in the downtown.
- B. Balance the need for efficient travel with business visibility and accessibility in the downtown.
- C. Provide access to local businesses and business districts by all modes of transportation.
- D. Consider streetscape improvements in the downtown to make it aesthetically pleasing and signify it as a destination.
- E. Explore options to improve parking availability in the downtown.
- F. Provide efficient freight movement on regional travel routes.
- G. Increase the accessibility of major employment centers.

Goal 5: Provide a sustainable transportation system through responsible stewardship of financial and environmental resources.

Objectives

- A. Preserve and protect the function of locally and regionally significant transportation corridors.
- B. Preserve and maintain the existing transportation system assets to extend their useful life.
- C. Improve travel reliability and efficiency of existing major travel routes in the city before adding capacity.
- D. Pursue grants/ programs or collaboration with other agencies to efficiently fund transportation improvements and supporting programs.
- E. Maintain stable and diverse revenue sources to meet the need for transportation investments in the city.
- F. Evaluate and implement, where cost-effective, environmentally friendly materials and design approaches (water reduction, protect waterways, solar infrastructure, impervious materials).
- G. Avoid or minimize impacts to natural resources, which may include alternative transportation facility designs in constrained areas.
- H. Support technology applications that improve travel mobility and safety with less financial and environmental impact than traditional infrastructure projects.

Goal 6: Maintain coordination with local and state agencies and plans.

Objectives

- A. Work with the Cascades West Area Commission on Transportation and the South Valley Regional Solutions Center to promote projects that improve regional linkages.
- B. Coordinate transportation projects, policy issues, and development actions with all affected government agencies in the area, including Benton County, the City of Corvallis, the Corvallis Area Metropolitan Planning Organization, and the Oregon Department of Transportation.





PHILOMATH 2040

PHILOMATH IN 2040

Future land use changes and growth in population, housing, and employment within Philomath's urban growth boundary (UGB) will have a significant impact on the existing transportation system and will create new travel demands. These growth projections and how they translate to new trips on the transportation network are key elements of the future conditions and performance analysis.

The Corvallis Albany Lebanon Model (CALM) travel demand model is the primary tool used to determine future traffic volumes in Philomath and the surrounding region. CALM forecasts travel changes in response to future land use and transportation scenarios. This model translates estimated land uses into person trips, selects travel modes and assigns motor vehicle trips to the roadway network. The CALM model was developed by ODOT's Transportation Planning and Analysis Unit, with input provided by affected Metropolitan Planning Organizations (MPOs) and local agencies. It is an informational tool to assist with decision making, providing objective and quantitative information exploring the potential impacts of alternative transportation system investments.

Forecasted Population and Employment Growth

Understanding the influence of area land uses on the transportation system is a key factor in transportation system planning. The amount of land that is to be developed, the types of land uses, and their proximity to each other have a direct relationship to expected demands on the transportation system.

The CALM model includes forecasted land uses for the Philomath TSP study area. The land uses reflect Philomath's Comprehensive Plan and growth assumptions identified for the year 2040¹. Complete land use data sets are developed for both the 2010 base year and 2040 future year (planning horizon). Local land uses were developed with input and review from local agencies.

The land use information has been coordinated with all the other jurisdictions in the CALM travel area.

Table 1 summarizes baseline and projected future totals for population, households, and employment within the Philomath TSP study area, from which traffic growth estimates were made. These values indicate that growth in employment is expected to outpace residential development, both overall and as a percentage increase. Most household growth is assumed to occur in the north and southeast areas of the city, while employment growth is generally assumed to occur from the southwest and south to the north and northeast.

Table 1. Philomath Forecasted Land Use Change²

LAND USE	2010	2040	2010 TO 2040 INCREASE	2010 TO 2040 PERCENT INCREASE
Population	4,985	5,668	683	13.7%
Households	1,879	2,385	506	26.9%
Employees (Total)	1,395	2,512	1,117	80.1%
Retail Employees	252	510	258	102.4%
Other Employees (Non-Retail)	1,143	2,002	859	75.2%

SOURCE: CALM Model Land Use data

1. CALM growth assumptions accessed November 2016.

2. Data obtained from transportation analysis zones in the CALM Model represent an area slightly larger Philomath's Urban Growth Boundary.

Future Conditions without Improvements

The population, housing, and employment growth projected to occur through 2040 will result in increased travel demands within and through the city. An evaluation of Philomath's transportation system under these conditions was performed to understand how transportation needs might change if no further investments to improve the system were made. This resulted in the following findings:

The forecast generated by analysis of the future 2040 roadway system identifies the following findings.

- Motor vehicle congestion will remain within acceptable levels, with all study intersections meeting the established mobility targets/standards for the 2040 design hour.
- No intersections are projected to meet preliminary signal warrants, and no locations have a crash history significant enough to warrant a traffic signal.
- The demand for walking and biking will increase, but key gaps in the infrastructure to support it will remain and crossing busy streets will continue to discourage some trips.
- There will likely continue to be safety concerns at two intersections, US 20/OR 34 at 26th Street and US 20 at OR 34 (outside the Philomath UGB).
- There may be needs for expanded transit service to support high growth areas, such as high projected housing growth in the northwest and southeast areas of the city and high projected employment growth in the northeast area of the city.
- Conditions for freight travel will not change significantly, but increased urbanization in the south part of the city may lead to more conflicts with regional truck traffic traveling between US 20/ OR 34 and OR 99W and prompt improvements to South 13th Street.
- Transportation System Management and Operations will offer opportunities for improved safety and mobility especially through access management, a regional virtual traffic operations center, and traffic signal priority systems for freight and transit.
- No major new rail, air, pipeline, or water-based transportation needs were identified.



THE PROJECTS

THE PROJECTS

Recommended Projects

Recommended solutions were developed to be consistent with the project vision and goals and to focus on creating a balanced system able to provide travel options for a wide variety of needs and users. The list of recommended projects was prioritized using guidance provided by the project goals and objectives and with input from three main sources:

- Stakeholders (via committee meetings, public open houses, and project website comments)
- Previous Plans (such as the 1999 TSP and Philomath Safe Routes to School Plan)
- Independent Project Team Evaluation (Technical Memoranda #5 and #7)

While the recommended projects include all identified projects for improving Philomath's transportation system, regardless of their priority or their likelihood to be funded, the TSP planning process eliminated projects that may not be feasible for reasons other than financial limitations (such as environmental or existing development limitations). The recommended project list is composed of the following three lists, created based on each project's priority and likelihood to be funded.

- Aspirational Projects list includes all projects identified in the TSP.
- Financially Constrained Projects list identifies the high priority projects from the Aspirational Projects list that could be constructed with funding anticipated through 2040.
- Tier 2 Projects list identifies projects from the Aspirational Project list that are highly supported but that, due to cost or jurisdiction, were unable to be included in the Financially Constrained list. Should additional funding become available, these are projects the City may want to consider.
- Tier 3 projects are those that are neither in the Financially Constrained Projects list nor Tier 2 Projects list.

The City is not required to implement projects identified on the Financially Constrained list first. Priorities may change over time and unexpected opportunities may arise to fund particular projects. The City is free pursue any of these opportunities at any time. The purpose of the Financially Constrained project list is to establish reasonable expectations for the level of improvements that will occur and give the City initial direction on where funds should be allocated. The project design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process, and are subject to City, County and/or ODOT approval. All recommended projects along US 20/OR 34 in Philomath will also be subject to review for a reduction in vehicle-carrying capacity.

Anticipated Available Funding

For planning purposes, each solution was assigned a primary source of funding (City, County, State, or private development), although such designations do not create any obligation for funding. The prioritized list of ‘City’ projects (where the City is assumed to be the primary contributor of funding) is constrained to a 20-year funding estimate. The City could use the prioritized list of ‘State’ projects to make decisions for applying for grants or other funding mechanisms. While there may be ‘County’ projects that the City would like to be prioritized in the next 20 years, these decisions are ultimately up to the County. The City can, however, choose to provide funds to help support State or County projects — expediting the timeline on those projects the City would like prioritized. ‘Private development’ projects will likely be built in coordination with land use actions and future development.

With an estimated \$185 million worth of aspirational transportation system projects identified, the City made reasonable investment decisions to develop a set of transportation improvements that are likely to be funded and that meet identified needs through 2040. The City expects to have approximately \$3.45 million to spend on more than 30 transportation improvements for which they will be the primary source of funding through 2040¹. It would take over \$25 million to construct all of the City-funded projects, meaning over \$21.5 million in investments may not be funded.

The City has also identified over \$60.4 million worth of investments along US20/OR34. The City has recently secured \$3.7 million from ODOT for the US20/OR34 Downtown Improvement project, and the Philomath Urban Renewal District is contributing another \$4 million. ODOT has also indicated that it would be reasonable to assume that up to \$2 million would be available to fund other new projects in Philomath over the next 20 years. Again, over \$50.7 million worth of projects on the state system are not expected to be funded within the TSP planning horizon.

The Financially Constrained list focuses on achieving a relatively even balance of goal areas and high-impact projects, informed by conversations with the CAC, TAC, and general public. By cost, this list is about 55% connectivity and congestion projects, 20% safety projects, and 25% active transportation projects.

Table 3 presents a Tier 2 list of highly supported projects that, due to cost or jurisdiction, were unable to be included in the Financially Constrained list. By cost, this list is about 74% connectivity and congestion projects, 25% active transportation projects, less than 1% safety and transit projects, and less than 1% transit projects.

¹ Funding assumptions are detailed in Technical Memorandum #6, found in the Appendix (Volume 2).

Financially Constrained Projects

The Financially Constrained Project lists includes the high priority projects from the Aspirational Projects list that could be constructed with funding anticipated through 2040. Project locations are shown in Figure 6.

Table 2. Financially Constrained Projects List

PROJECT ID	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)
CITY FUNDED PROJECTS		
Cr-2 / BL-1	College Street Safe Routes to School Upgrades	\$30,000
SUP-3	Willow Street/Cedar Street Path (Willow Street to Cedar Street)	\$225,000
SUP-7	Hunsaker Path south to Chapel Drive and north to City Park	\$120,000
SW-4	17th Street Sidewalks (Applegate Street to 19th Street & Cedar Street)	\$50,000
SW-5 / BL-2	Applegate Street (16th Street to 21st Street)	\$25,000
Up-1	Downtown Safety and Streetscape Project (Assumed Phase 1)	\$1,000,000
TS-1	School Vehicle Circulation Study	\$20,000
NR-9 / Up-11	South 16 th Street Modernization and Extension	\$2,000,000
		City Subtotal
		\$3,470,000
ODOT FUNDED PROJECTS		
Cr-1	US20/OR34 & 17th Street Highway Crossing Improvements	\$120,000
Int-2	US20/OR34 & 26th Street Intersection Improvements	\$950,000
ITS-3	Bike Signal Detection	\$23,000
Up-10	US20/OR34 Widening Project: Corridor Refinement Plan and Preliminary Engineering (does not include construction)	\$1,000,000
		ODOT Subtotal*
		\$2,093,000
Int-1	Relocate ODOT Weigh Station	\$1,500,000*

*Relocation of the ODOT Weigh Station is shown with the Financially Constrained project list due to the importance of this project. The cost of the Weigh Station relocation is not included, however, as funding sources have not been identified.

Figure 4. Financially Constrained Projects



Project Categories

- | | | |
|----------------------------|--|-----------------------|
| Full Street Upgrade (Up-#) | Intelligent Transportation Systems (ITS-#) | Railroad |
| New Road (NR-#) | Traffic Study (TS-#) | Roadway |
| Shared-Use Path (SUP-#) | Crossings (Cr-#) | Roadway (Future) |
| Sidewalk (SW-#) | Intersection Modification (Int-#) | Water |
| Bike Lane (BL-#) | | City Limit |
| | | Urban Growth Boundary |

Tier 2 Projects

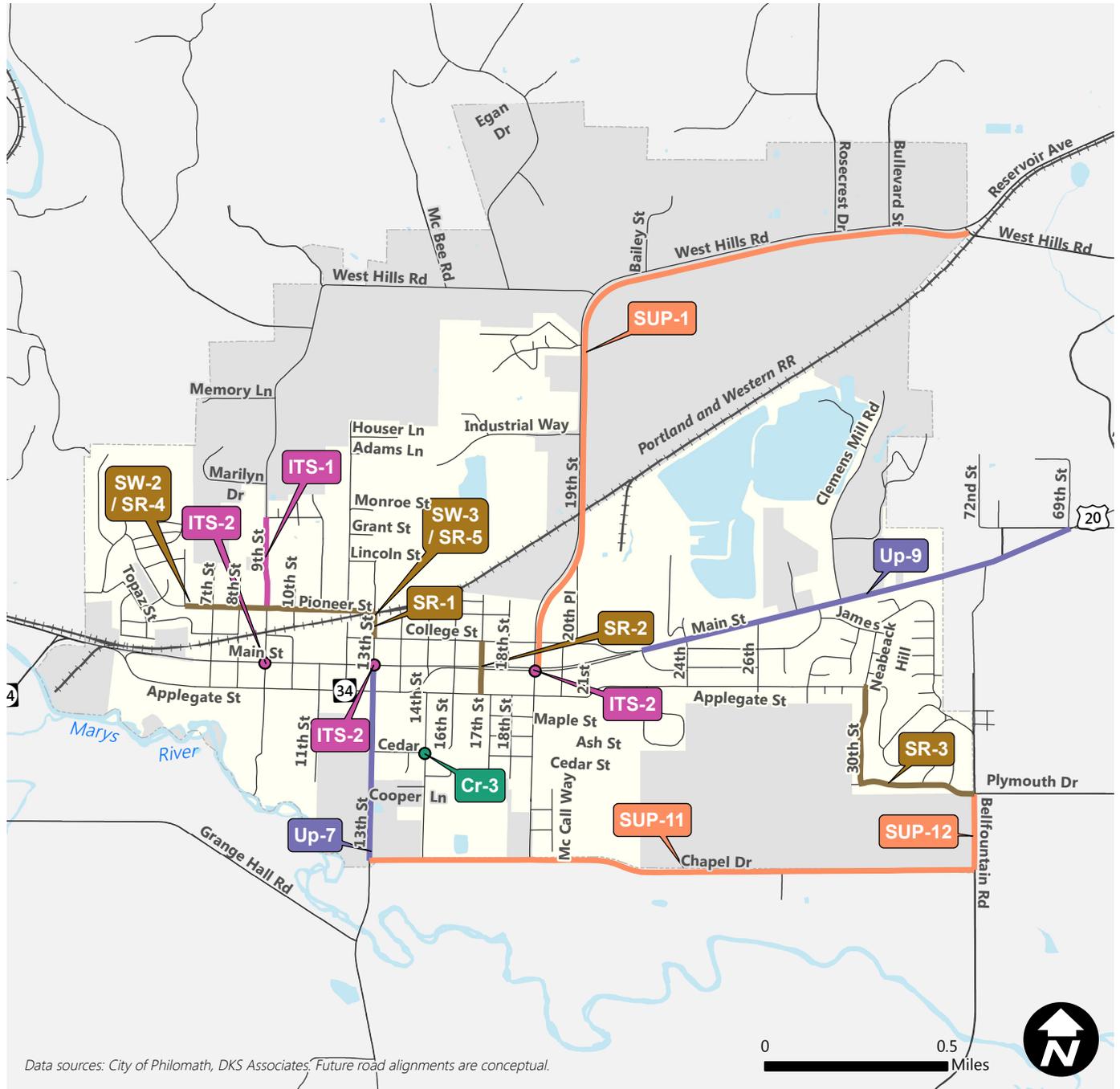
The Tier 2 Projects List identifies projects from the Aspirational Projects list that are highly supported but that, due to cost or jurisdiction, were unable to be included in the Financially Constrained list. Should additional funding become available, these are projects the City may want to consider.

Table 3. Tier 2 Projects List

PROJECT ID	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)
CITY FUNDED PROJECTS (NOT SDC ELIGIBLE)		
B-1	Regional Bike Hub	\$25,000
B-2	Bicycle Wayfinding	\$50,000
Cr-3	Cedar Street (13th Street to Willow Street & 15th Street)	\$7,000
SR-1	North 13th Street Safe Routes to School Upgrades	\$5,000
SR-2	North 17th Street Safe Routes to School Upgrades	\$5,000
SR-3	Plymouth Drive Bike Route	\$10,000
SW-2 / SR-4	Pioneer Street Safe Routes to School Upgrades (Adelaide Drive to 9th Street)	\$80,000
SW-3 / SR-5	Pioneer Street Safe Routes to School Upgrades (9th Street to 13th Street)	\$25,000
Tr-2	Bus Stop Amenities	\$40,000
City Subtotal		\$247,000
ODOT FUNDED PROJECTS		
ITS-2	Freight Traffic Signal Priority	\$200,000
UP-9	US20/OR34 Widening Project	\$43,200,000
ODOT Subtotal		\$43,400,000
COUNTY FUNDED PROJECTS*		
ITS-1	9th Street Hill Improvements	\$75,000
SUP-1	19th Street Shared-Use Path	\$5,000,000
SUP-11	Chapel Drive Shared Use Path	\$4,935,000
SUP-12	Bellfountain Road Shared Use Path	\$562,000
Up-7	South 13th Street Urban Upgrade	4,200,000
County Subtotal		\$14,772,000

* Although there is no committed or identified funding source for these projects, the City will coordinate with the County to secure funding. A portion of projects SUP-12, and Up-7 are assumed to be funded by development, see Table 6 for more information. For project SUP-11, the County has identified funds for partial construction.

Figure 5. Tier 2 Projects



Project Categories

- Full Street Upgrade (Up-#)
- Shared-Use Path (SUP-#)
- Sidewalk (SW-#) / Shared Roadway (SR-#)
- Intelligent Transportation Systems (ITS-#)
- Crossings (Cr-#)
- + + + Railroad
- Roadway
- - - Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Aspirational Projects

The Aspirational Projects list includes all projects identified in the TSP and is presented in four categories— Connectivity and Congestion, Safety, Active Transportation, and Transit. The order of these categories does not imply priority. Tier 3 projects are those that are neither in the Financially Constrained Projects list nor Tier 2 Projects list. Projects that would improve Safe Routes to Schools are identified with a  symbol and should be included in future Safe Routes to School grant applications.

Connectivity and Congestion

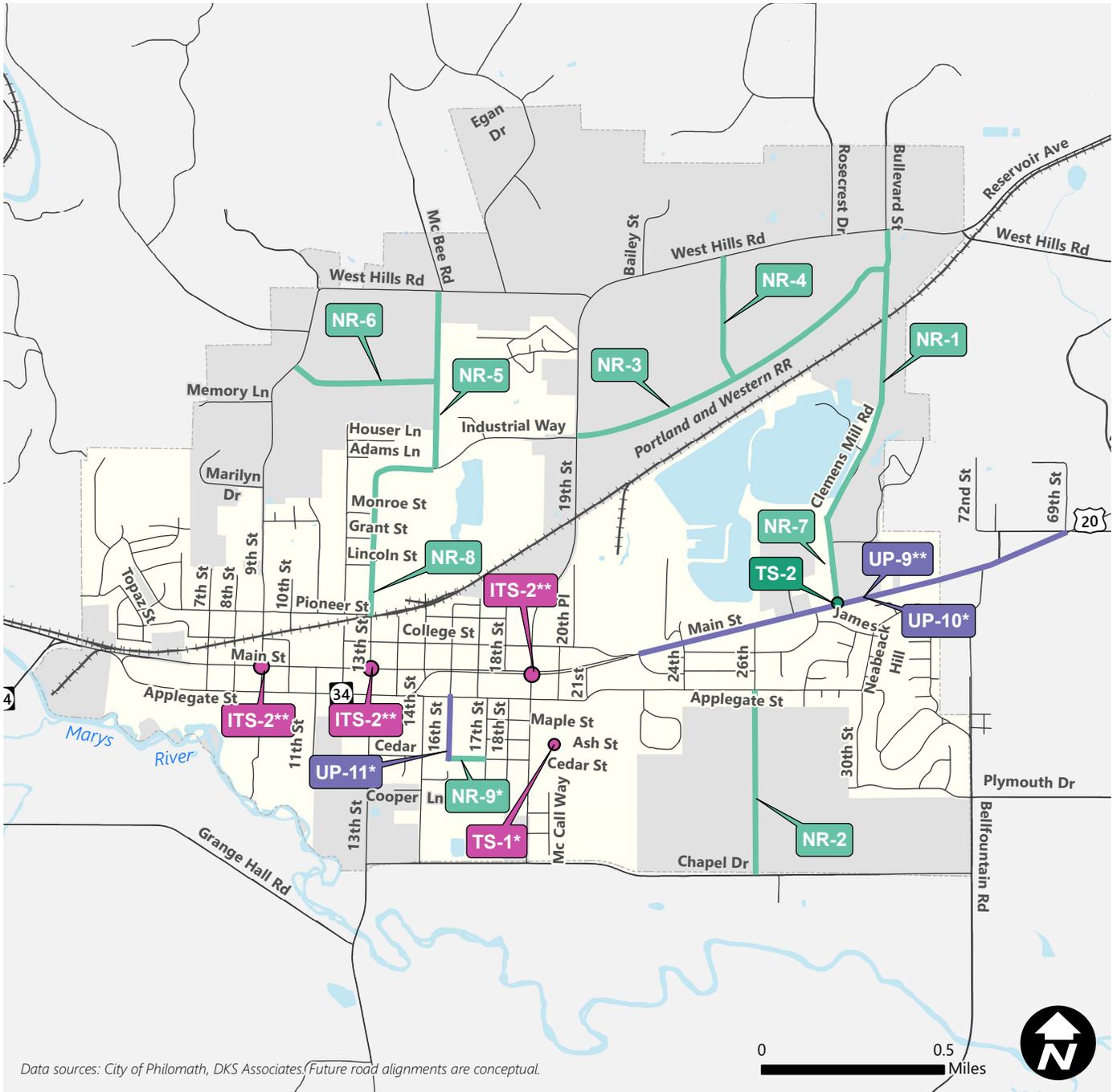
These projects seek to create a connected local and regional transportation network in Philomath and address a limited number of key bottlenecks.

Table 4. Connectivity and Congestion Projects

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
ITS-2	ITS	Freight Traffic Signal Priority	\$200,000	ODOT	High	Tier 2
	Support regional efforts to implement advanced traffic signal technologies for freight traffic, such as phase priority, dynamic green light extension, and dilemma zone monitoring. Project is subject to ODOT approval.					
NR-1	New Road	Extend Clemens Mill Road to West Hills Road	\$18,510,000 / \$1,395,000	Private Development / County	Medium	Tier 3
	Extend Clemens Mill Road to connect with West Hills Road. Project is dependent on forecasted development and should be implemented along with development; project alignment is conceptual. Project includes a bridge crossing over the Portland and Western Railroad. Project is related to Clemens Mill Road Modernization, project NR-7.					
NR-2	New Road	Extend 26th Street to Chapel Drive	\$6,000,000 / \$3,000,000	Private Development / City	Low	Tier 3
	Connect South 26th Street to Chapel Drive as a minor collector.					
NR-3	New Road	New Minor Collector (North 19th Street to West Hills Road)	\$12,500,000 / \$6,300,000	Private Development / City	Low	Tier 3
	New east-west minor collector, connecting North 19th Street eastward to West Hills Road.					
NR-4	New Road	New Minor Collector (West Hills Road to New Minor Collector)	\$4,000,000 / \$2,000,000	Private Development / City	Low	Tier 3
	New north-south minor collector, connecting West Hills Road southward to New Minor Collector NR-3.					
NR-5	New Road	New Minor Collector (Industrial Way to West Hills Road)	\$5,700,000 / \$2,900,000	Private Development / City	Low	Tier 3
	New north-south minor collector, connecting Industrial Way northward to West Hills Road.					
NR-6	New Road	New Minor Collector (North 9th Street to New Minor Collector)	\$4,800,000 / \$2,400,000	Private Development / City	Low	Tier 3
	New east-west minor collector, connecting North 9th Street eastward to New Minor Collector.					

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
NR-7	New Road Modernization	Clemens Mill Road Modernization	\$4,400,000 / \$2,200,000	Private Development / City	Low	Tier 3
	Modernize Clemens Mill Road to Minor Collector standards with adjacent shared-use path (project SUP-6). Project is dependent on forecasted development and should be implemented along with development; project alignment is conceptual. Project is related to traffic signal TS-2, when warranted. <i>Before a signal can be installed, an engineering investigation must be conducted or reviewed by the Region Traffic Manager who will forward intersection traffic control recommendations to ODOT headquarters. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.</i>					
NR-8	New Road	North 13th Street Extension	\$4,100,000 / \$2,900,000	Private Development / City	Low	Tier 3
	North 13 th Street Extension to Industrial Way. May include access management such as cul-de-sacs on Grant Street and Lincoln Street to limit access on 13 th Street.					
NR-9 / Up-11	New Road / Upgrade	South 16th Street Modernization and Extension	\$2,200,000	City	Medium	Financially Constrained
		Extend South 16 th Street to 17 th Street opposite Cedar Street, and modernize South 16 th Street from Applegate to new extension. Construct to Local Street standard.				
TS-1	Traffic Study	School Vehicle Circulation Study	\$20,000	City	Medium	Financially Constrained
		Develop analysis and design options to address issues with bus access, private vehicle access, school student high-way crossings, local neighborhood access and turn movement restrictions.				
TS-2	Traffic Signal	US20/OR34 (Main Street) and Clemens Mill Road Intersection Improvements	\$600,000	ODOT	Medium	Tier 3
	Install intersection improvements, such as a traffic signal, when warranted. Project is subject to ODOT approval. <i>Before a signal can be installed, an engineering investigation must be conducted or reviewed by the Region Traffic Manager who will forward intersection traffic control recommendations to ODOT headquarters. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway. Meeting a signal warrant does not guarantee approval for signal installation.</i>					
Up-9	Full Street Upgrade	US20/OR34 Widening Project	\$43,200,000	ODOT	High	Tier 2
	Widen US20/OR34 to four lanes east of Newton Creek to SW Country Club Drive, per CAMPO RTP project. Project is subject to ODOT approval.					
Up-10	Full Street Upgrade	US20/OR34 Widening Project: Corridor Refinement Plan and Preliminary Engineering	\$1,000,000	ODOT	High	Financially Constrained
	Corridor refinement plan and preliminary engineering for the US20/OR34 Widening Project (Up-9). Provide updated design that meets current community needs and provides guidance for private development and funding opportunities.					

Figure 6. Connectivity and Congestion Projects



Project Categories

- Full Street Upgrade (Up-#)
- New Road (NR-#)
- Traffic Signal (TS-#)
- Traffic Study (TS-#)
- Intelligent Transportation Systems (ITS-#)

- * Indicates project is included on the Financially Constrained List
- ** Indicates project is included on the Tier 2 List

- +—+— Railroad
- Roadway
- - - Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

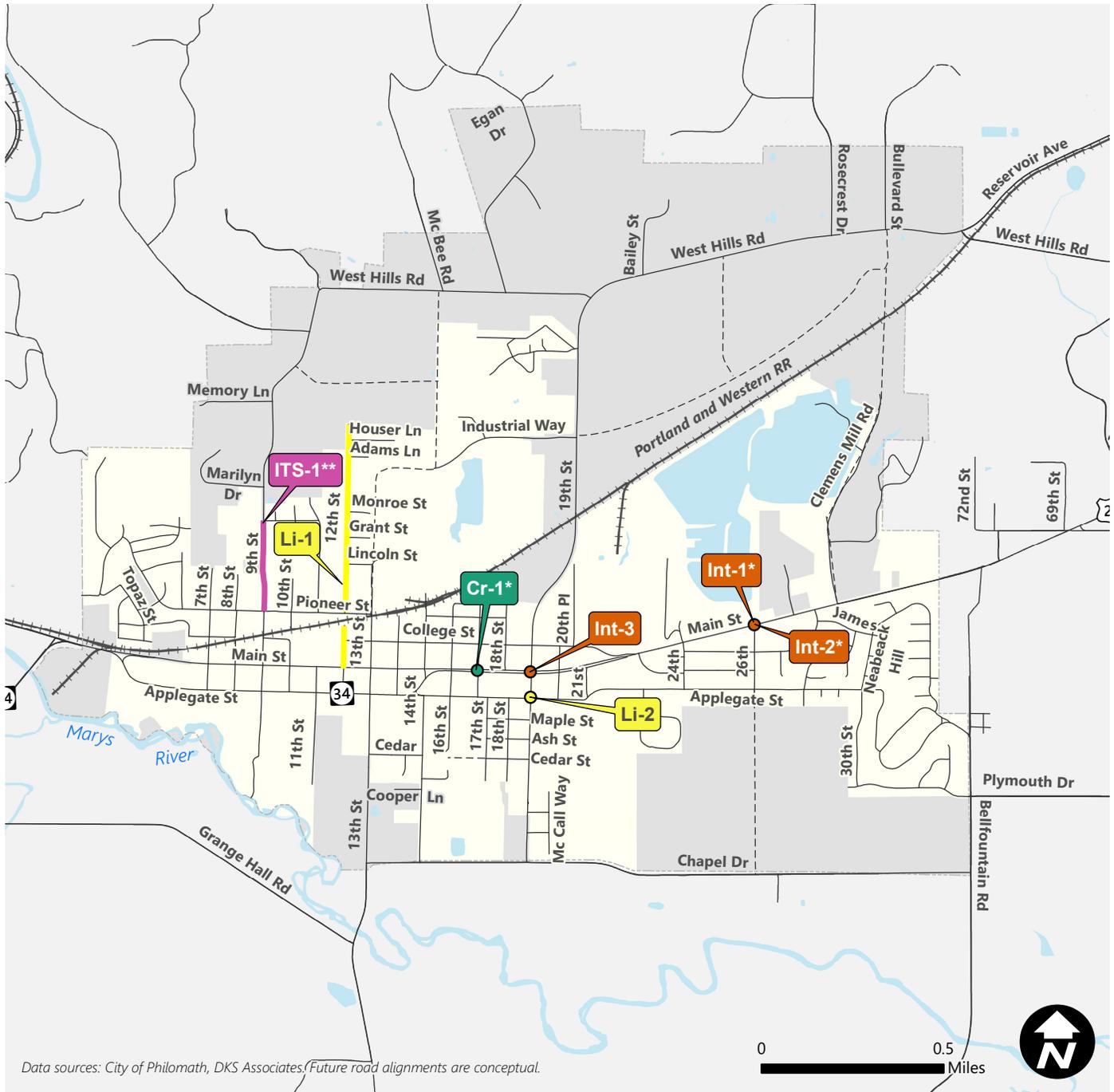
Safety

Safety projects are motivated primarily by a documented crash history or reported concerns. These projects seek to create a safer transportation system and reduce the harm done by vehicle collisions.

Table 5. Safety Projects

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
Cr-1 	Crossings	US20/OR34 & 17th Street Highway Crossing Improvements	\$120,000	ODOT	Medium	Financially Constrained
	Install highway crossing improvements which could include: provide second crosswalk on east leg of intersection, enhance signing and stop bar distance, replace existing beacon light with street-level pedestrian-activated flashing lights, and provide bicycle cut-through in median. Project is subject to ODOT approval.					
Int-1	Intersection Modification	Relocate ODOT Weigh Station	\$1,500,000	ODOT	High	Financially Constrained
	Remove the weigh station on US20/OR34 at 26th Street. The weigh station will be relocated outside of the Philomath UGB by ODOT. Project is subject to ODOT approval.					
Int-2	Intersection Modification	US20/OR34 & 26th Street Intersection Improvements	\$950,000	ODOT	High	Financially Constrained
	Install improvements such as providing a left turn lane on the highway and consider access management treatments for nearby driveways. Related projects include removal of ODOT weigh station (Int-1). Project is subject to ODOT approval.					
Int-3	Intersection Modification	US20/OR34 & 19th Street Intersection Improvement	\$680,000	ODOT	Medium	Tier 3
	Re-grade roadway to remove vertical crest issue at US20/OR34 at 19th Street, where trucks routinely hit and damage the pavement on the northbound approach. Project is subject to ODOT approval.					
ITS-1	ITS	9th Street Hill Improvements	\$75,000	County	Medium	Tier 2
	Implement active safety treatment to warn motorists of bicyclists and pedestrians in the roadway. Examples include driver speed feedback signs or actuated flashers with signs (activated by bicycles or pedestrians).					
Li-1	Lighting	North 12th Street Lighting	\$2,011,000	City	High	Tier 3
	Add street lighting to 12th Street north of Main Street.					
Li-2	Lighting	19th Street and Applegate Street Lighting Improvement	\$75,000	City	Low	Tier 3
	Improve lighting at 19th Street and Applegate Street.					

Figure 7. Safety Projects



Data sources: City of Philomath, DKS Associates. Future road alignments are conceptual.

Project Categories

- Intelligent Transportation Systems (ITS-#)
- Crossings (Cr-#)
- Intersection Modification (Int-#)
- Lighting (Li-#)

* Indicates project is included on the Financially Constrained List

** Indicates project is included on the Tier 2 List

- +—+— Railroad
- Roadway
- - - Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Active Transportation

Active transportation investments provide safer designated space for walking and biking that makes travel by these modes more comfortable and attractive in Philomath.

Table 6. Active Transportation Projects

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
BICYCLE PROJECTS						
B-1	Bicycle	Regional Bike Hub*	\$25,000	City	Low	Tier 2
	Support a Regional Bike Hub and integrate with the Corvallis-to-the-Sea Path. Provide bicycle parking and amenities, such as local route and services wayfinding, bike repair info, device charging station, and water.					
B-2	Bicycle	Bicycle Wayfinding	\$50,000	City	High	Tier 2
	Develop a plan and provide a bicycle wayfinding signage network to help guide bicyclists to and from the regional path connections (such as the Hunsacker Bike Path) and to local destinations via bike routes. Publish and publicize maps of the local bike network.					
SR-1 	Shared Roadway	North 13th Street Safe Routes to School Upgrades	\$5,000	City	Medium	Tier 2
	Install shared lane markings on 13th Street between Pioneer Street and College Street. Related to projects Cr-1 and Cr-2 / BL-1.					
SR-2 	Shared Roadway	North 17th Street Safe Routes to School Upgrades	\$5,000	City	Medium	Tier 2
	Install shared lane markings on 17th Street between College Street and Applegate Street. Related to projects Cr-1 and Cr-2 / BL-1					
SR-3	Shared Roadway	Plymouth Drive Bike Route	\$10,000	City	Low	Tier 2
	Create bike route with route signing and shared roadway markers connecting Applegate Street with Plymouth Drive via. Southwood Drive and 30th Street.					
ITS-3	ITS	Bike Signal Detection	\$25,000	ODOT	Medium	Financially Constrained
	Add bicycle detection and placement stencils to signalized side street approaches on US20/OR34. Project is subject to ODOT approval.					
PEDESTRIAN PROJECTS						
Cr-3 	Crossings	Cedar Street (13th Street to Willow Street & 15th Street)	\$7,000	City	Medium	Tier 2
	Install two new curb ramps on the NE and SE corners of 15th Street and Cedar Street, install new crosswalks on the north leg of the intersection of 15h Street and Cedar Street.					
SW-4 	Sidewalk	17th Street Sidewalks (Applegate Street to 19th Street & Cedar Street)	\$50,000	City	Medium	Financially Constrained
	Replace 120 feet of sidewalk on the east side of 17th Street south of Maple Street, install ten new curb ramps.					

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
SW-6	Sidewalk	Westbrook Park Sidewalk	\$10,000	City	Low	Tier 3
Complete the sidewalk (north and east sides) around Westbrook Park.						
PEDESTRIAN AND BICYCLE PROJECTS						
Cr-2 / BL-1	Crossings and Bike Lane	College Street Safe Routes to School Upgrades	\$30,000	City	Medium	Financially Constrained
	Install new crosswalks on north and east legs of the intersection of College Street and 13th Street, and on the north and south legs of the intersection of College Street and 15th Street. Install 5 feet bike lanes along College Street between 13th Street and 20th Place, which will require removal of parking on the north side of the street between 19th Street and 20th Place. Related to projects SR-1 and SR-2.					
SUP-1	Shared-Use Path	19th Street Shared-Use Path	\$5,000,000	County	High	Tier 2
Shared-Use Path providing access to residential areas on 19th Street, and providing a connection between Philomath and Corvallis. From US 20/OR 34 to Reservoir Ave., path follows the east side of the road (greenfield), after Reservoir Ave. crosses to the north side to avoid conflicts with railroad and to connect with the Bald Hill and Midge Cramer paths. Total distance is about 2.3 miles.						
SUP-2	Shared-Use Path	Philomath Rodeo Grounds Path	\$660,000	City	Medium	Tier 3
	Install 1,500 feet of new Shared-Use Path through the Philomath Rodeo Grounds connecting 11th Street, Marys River Park and the intersection of 13th Street and Cedar Street, construct new curb ramp at the NW corner of 13th Street and Cedar Street, install new crosswalk on the north leg of the intersection of 13th Street and Cedar Street.					
SUP-3	Shared-Use Path	Willow Street/Cedar Street Path (Willow Street to Cedar Street)	\$225,000	City	Medium	Financially Constrained
	Install 650 feet of new Shared-Use Path following the existing informal path between 17th Street and Cedar Street and Willow Street through Philomath Public Works, install signage on Willow Street to advise traffic accessing Philomath Public Works to expect bicycles and pedestrians on the roadway.					
SUP-5	Shared-Use Path	US20/OR34 & Applegate Bike Access Improvements	\$250,000	City	High	Tier 3
Improve bike facilities and routing at US20/OR34 and Applegate. For westbound traffic, provide wayfinding signing to route bicyclists to 17th Street for US20/OR34 westbound. For eastbound traffic, provide wayfinding and safety improvement to better separate bike traffic from vehicle traffic encroaching in the bike lane on the curve. Examples would be to provide a shared-use path adjacent to the highway from South 14th Street to South 16th Street or enhanced delineation along fog line between South 15th Street and South 16th Street. Project components on ODOT right-of-way are subject to ODOT approval.						
SUP-6	Shared-Use Path	Clemens Mill Road	\$2,465,000*	City (Parks)	Medium	Tier 3
This 8 feet. wide hard surface path would run approximately 1.1 miles, following the alignment of the extended Clemens Mill Road and connecting to the existing Hunsacker Bike Path at US20/OR34. The path width would be a minimum of 10 feet when running adjacent to Clemens Mill Road.						

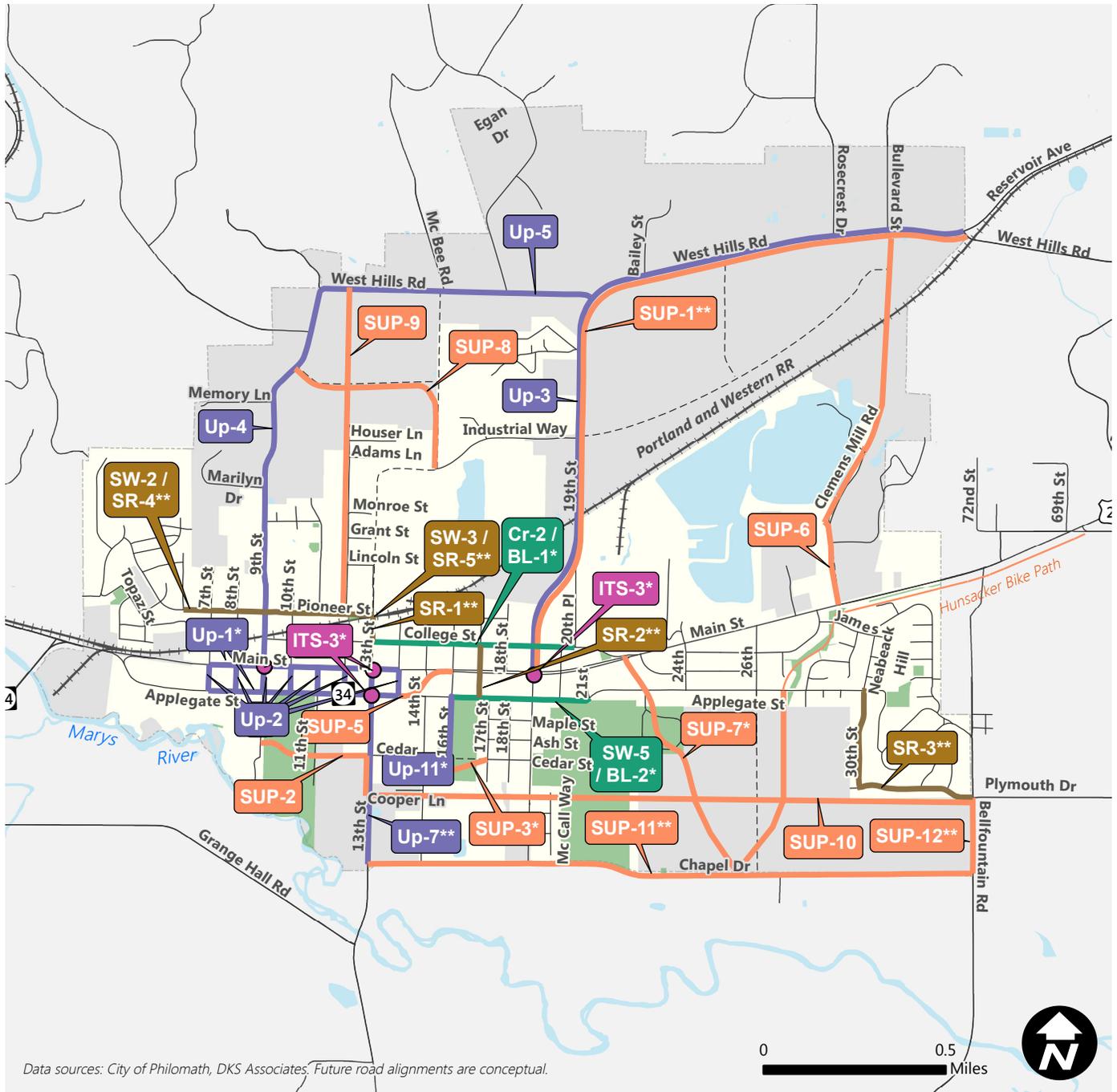
PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
SUP-7	Shared-Use Path	Hunsaker Path South to Chapel Drive and north to City Park	\$120,000	City (Parks)	Medium	Financially Constrained
	This 8-foot wide hard surface path would run approximately 1 mile along the western and eastern branches of Newton Creek through the City Park and connect with other new shared-use paths connecting to Chapel Drive, Plymouth Drive, and Applegate Street. The path connects to the existing Hunsacker bike path.					
SUP-8	Shared-Use Path	Industrial Way to N. 9th Street	\$79,000	City (Parks)	Medium	Tier 3
	The northwest quadrant of the City would benefit from a path from Industrial Way (city park property) west along the riparian corridor to N 9th Street. This path would feed into a north/south path system on N. 12th that would serve this developing area and bicyclists on West Hills Road. Approximate length of 0.57 miles.					
SUP-9	Shared-Use Path	12th Street to West Hills	\$79,000	City (Parks)	Medium	Tier 3
	The 12th Street path is intended to be coordinated with improvements to 12th Street as an off-street path. This path will run from Pioneer Street to connect with West Hills Road; it is to be coordinated with possible Benton County bike paths and will intersect with the possible park and the east/west path that would run into 9th Street, thereby avoiding the steep elevation changes on that street. The overall length of this north/south leg is 0.89 miles.					
SUP-10	Shared-Use Path	Southside Bikeway: Bellfountain Road to Marys River Park	\$292,000	City (Parks)	Medium	Tier 3
	This path will run from Bellfountain Road, through the Lowther Property then to Marys River Park. The overall length of this south leg is 2.11 miles.					
SUP-11	Shared-Use Path	Chapel Drive	\$4,607,000 / \$328,000	Private Development / County	High	Tier 2
	Add Shared-Use Path, separated from road by a 5-foot planter strip, to north side of Chapel Drive. Requires coordination with County CIP project for Chapel Drive improvements.					
SUP-12	Shared-Use Path	Bellfountain Road	\$562,000 / \$0	Private Development / County	Medium	Tier 2
	Add Shared-Use Path, separated from road by a 5-foot planter strip, to west side of Bellfountain Road (Plymouth to Chapel).					
SW-2 / SR-4	Sidewalk and Bike Route	Pioneer Street Safe Routes to School Upgrades (Adelaide Drive to 9th Street)	\$80,000	City	Low	Tier 2
		Install 310 feet of new sidewalk on north side of Pioneer Street between 7th Street and 8th Street, install seven new curb ramps, install four new crosswalks, install shared lane markings along Pioneer Street between Adelaide Drive and 9th Street.				

*cost includes the bridge cost estimate from NR-1

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
SW-3 / SR-5 	Sidewalk and Bike Route	Pioneer Street Safe Routes to School Upgrades (9th Street to 13th Street)	\$25,000	City	Low	Tier 2
		Repair or replace heaved and damaged sidewalk on the north side of Pioneer Street between 10th Street and 11th Street, install five new curb ramps. Install two new crosswalks, control intersection of Pioneer Street and 13th Street as an all-way stop when 13th Street is extended to Industrial Drive, install shared lane markings along Pioneer Street between 9th Street and 13th Street.				
SW-5 / BL-2 	Sidewalk and Bike Lanes	Applegate Street (16th Street to 21st Street)	\$25,000	City	Medium	Financially Constrained
		Install new curb ramp on south side of Applegate Street at the intersection with 17th Street, install bike lanes on Applegate Street from 16th to 21st Street by removing on-street vehicle parking from one side of the street.				
Up-1	Full Street Upgrade	Downtown Safety and Streetscape Project	\$5,300,000 / \$4,000,000 / \$3,700,000	City / Urban Renewal District / ODOT	High	Financially Constrained
		The Downtown Safety and Streetscape Project Plan is for the downtown Philomath area along Main Street and Applegate Street between 7th Street and 14th Street. The project includes sidewalks, bike lanes, intersection bulb-out crosswalks with improved signing and striping, pedestrian-scale lighting, and landscaping. Project is subject to ODOT approval.				
Up-2	Full Street Upgrade	Downtown Safety and Streetscape Project (Phase 2)		City / ODOT	Low	Tier 3
		The Downtown Safety and Streetscape Project Plan is for the downtown Philomath area along Main Street and Applegate Street between 7th Street and 14th Street (excluding 13th Street, which is a County facility).				
Up-3	Full Street Upgrade	19th Street Urban Upgrade	\$19,900,000 / \$0	Private Development / County	High	Tier 3
		Upgrade North 19th Street to Collector standards, including bike lanes on both sides and sidewalks on the west side. Paired with project SUP-1; a Shared-Use Path on the east side.				
Up-4	Full Street Upgrade	North 9th Street Urban Upgrade	\$4,250,000 / \$4,250,000	Private Development / County	Medium	Tier 3
		Upgrade North 9th Street to Major Collector standards. Project would be implemented in three phases. Phase 1 includes Pioneer Street to Quail Glenn Drive (\$1,190,000 County). Phase 2 includes US20/OR34 to Pioneer Street (\$710,000 County). Phase 3 includes Quail Glenn Drive to North 19th Street (\$6,600,000 Private Development).				
Up-5	Full Street Upgrade	West Hills Road Urban Upgrade	\$5,900,000 / \$0	Private Development / County	Medium	Tier 3
		Upgrade West Hills Road to Major Collector standards.				
Up-7	Full Street Upgrade	South 13th Street Urban Upgrade	\$2,100,000 / \$2,100,000	Private Development / County	High	Tier 2
		Improve South 13th Street to major collector standards (includes bike lanes and sidewalks).				

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	DESIGNATION
Up-12	Full Street Upgrade	Enhance Existing Local Streets	Variable	City	Low	Tier 3
Upgrade existing local streets to City standards. As an interim improvement, apply a Rural Yield Roadway design, maintaining full local street standards for new construction.						

Figure 8. Bicycle Projects



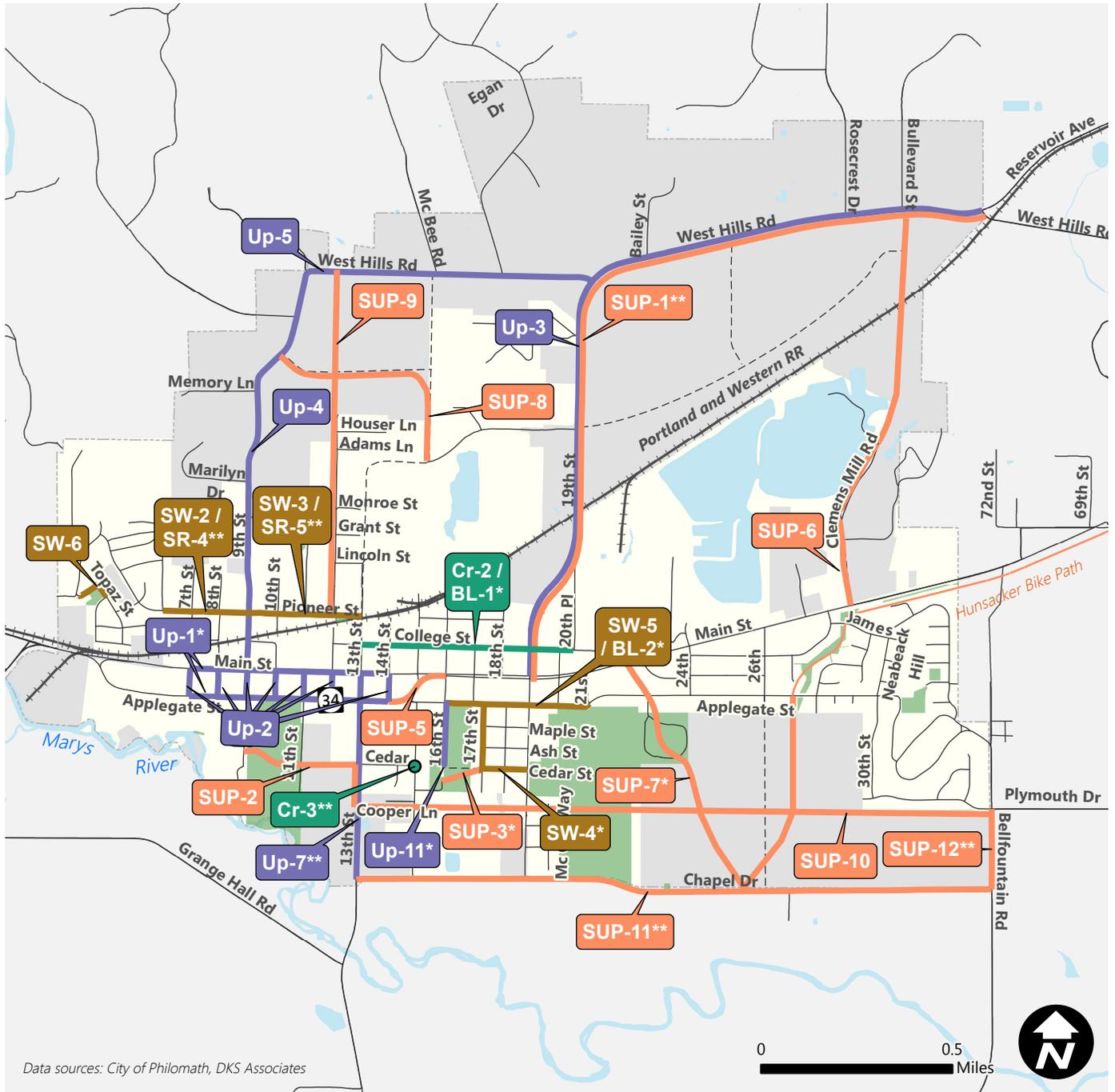
Project Categories

- Full Street Upgrade (Up-#)
- Shared-Use Path (SUP-#)
- Shared Roadway (SR-#) / Sidewalk (SW-#)
- Bike Lane (BL-#)
- Intelligent Transportation Systems (ITS-#)

- * Indicates project is included on the Financially Constrained List
- ** Indicates project is included on the Tier 2 List

- +—+— Railroad
- Roadway
- - - Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary
- Parks

Figure 9. Pedestrian Projects



Project Categories

- Full Street Upgrade (Up-#)
- Shared-Use Path (SUP-#)
- Crossings (Cr-#)
- Sidewalk (SW-#) / Shared Roadway (SW-#)
- Crossings (Cr-#)

- * Indicates project is included on the Financially Constrained List
- ** Indicates project is included on the Tier 2 List

- +—+— Railroad
- Roadway
- - - Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary
- Parks

Transit

These projects are suggested to promote the utility and attractiveness of transit in Philomath, and would be implemented in partnership with the Corvallis Transit System.

Table 7. Transit Projects

PROJ. ID	PROJECT TYPE	PROJECT NAME	COST ESTIMATE (2017 DOLLARS)	PRIMARY FUNDING SOURCE	EVAL. RATING	SOURCE
Tr-1	Service Expansion	Expanded Philomath Connection Schedule	\$500,000 (10-year cost)	City	Medium	Tier 3
	Expand bus service from 6pm to 8pm during weekdays. Consider coordinating with OSU class schedule to better accommodate return trips from evening classes. Annual cost assumed to be \$50,000.					
Tr-2	Amenities	Bus Stop Amenities	\$40,000	City	Medium	Tier 2
	Improve high-usage bus stops with additional amenities. Improvements assume a bench, shelter, pad, and schedule at two locations. Cost assumed to be approximately \$20,000 each.					
Tr-3	Service Expansion	Expand Transit Service Area	Variable	City	Medium	Tier 3
	Consider expanding transit service area where new residential and employment growth plans are substantial.					
Tr-4	Outreach	Program to Encourage Bus Ridership	\$0/ \$10,000	City / Council of Governments	Medium	Tier 3
	Ridership encouragement program, such as using free bus passes to promote transit service for events or for target populations. Cost assumes two free day events per year for 20 years.					
Tr-5	Amenities	Expanded On-Bus Bike Rack Capacity	\$3,000	City	Medium	Tier 3
	Provide 3-Bike capacity on-bus bike racks for Philomath Connection buses.					



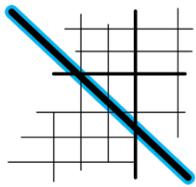
THE STANDARDS

THE STANDARDS

Philomath applies transportation standards and regulations to the construction of new transportation facilities and to the operation of all facilities to ensure that the system functions as intended and investments are not wasted. These standards reflect the goals of the City for a safe and efficient transportation system and enable consistent future actions.

Street Functional Classification

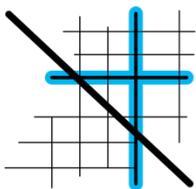
Street functional classification is an important tool for managing the roadway network. The street functional classification system recognizes that individual streets do not act independently of one another but instead form a network of street types that works together to serve travel needs on a local and regional level. By designating the management and design requirements for each roadway classification, this hierarchal system supports a network of streets that perform as desired. The functional classification system for roadways in Philomath is described below. The functional classification map, Figure 10, shows the classification for all roadways in the city, including planned future arterial and collector street extensions. Classifications shown for County roads inside the Philomath UGB reflect the City's desired function for those facilities. These classifications may not match those shown in Benton County's TSP. However, Benton County policy is to apply City standards to County facilities within UGBs. Therefore, Philomath standards will be applied to these County roads.



Principal and Minor Arterials

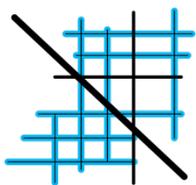
Principal Arterials provide a high degree of mobility and can serve both major metropolitan centers and rural areas. They serve high volumes of traffic over long distances, typically maintain higher posted speeds, and minimize direct access to adjacent land to support the safe and efficient movement of people and goods. Inside urban growth boundaries, speeds may be reduced to reflect the roadside environment and surrounding land uses.

Minor Arterials serve trips of moderate length and smaller geographic areas than Principal Arterials and are often used as a transition between Principal Arterials and Collectors. Minor Arterials typically serve higher volumes of traffic at moderate to high speeds, with posted speeds generally no lower than 30 mph.



Major and Minor Collectors

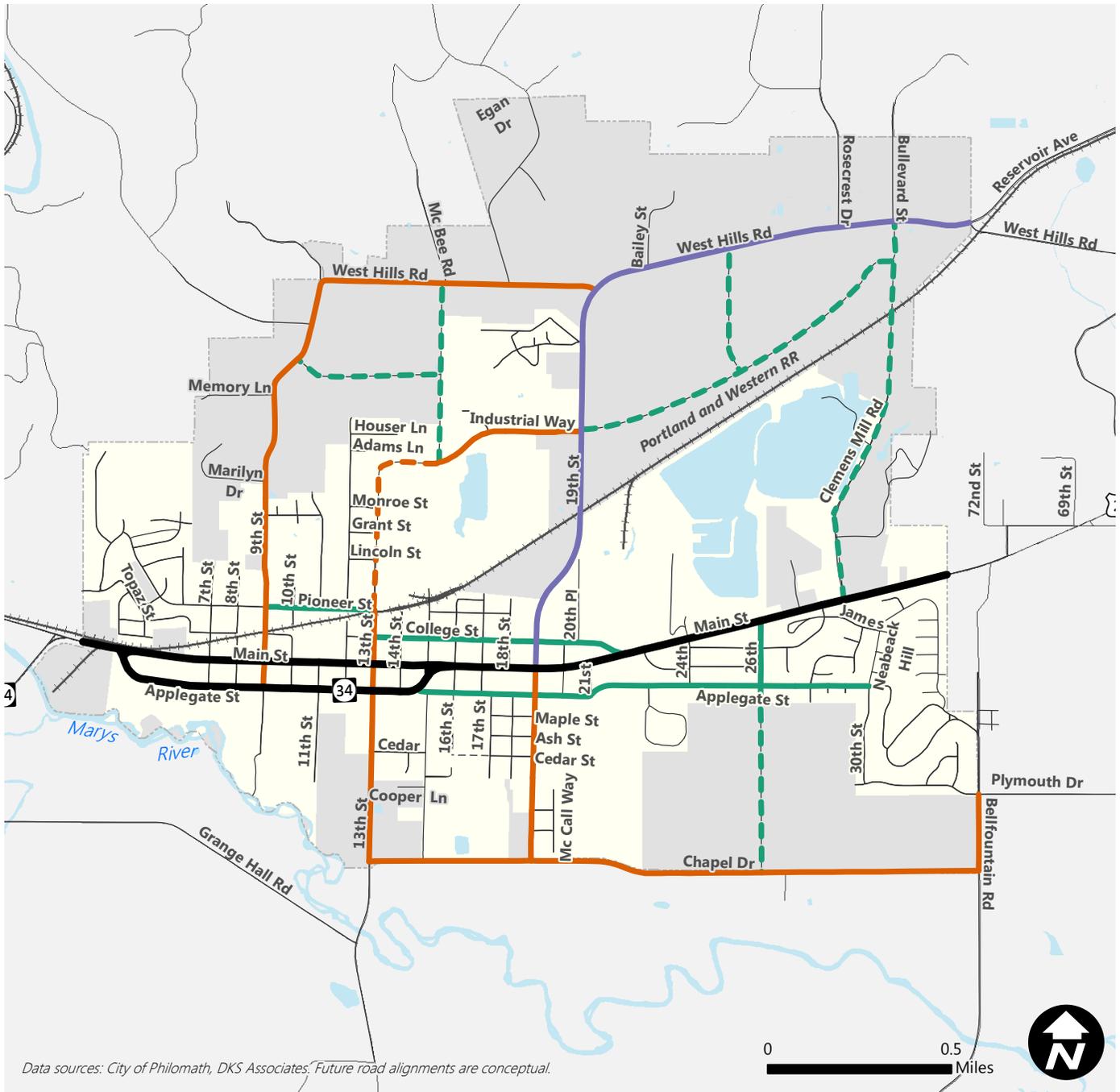
Collectors serve a critical role in the roadway network by connecting traffic from Local Streets with the Arterial network. Major Collector routes are generally distinguished from Minor Collector routes by longer length; lower connecting driveway densities; higher speed limits; greater spacing intervals; and higher traffic volumes. While access and mobility are more balanced than on Arterials, new driveways serving residential units should not be permitted where traffic volume forecasts exceed 5,000 vehicles per day.



Local Streets

Local streets prioritize provision of immediate access to adjacent land. These streets should be designed to enhance the livability of neighborhoods and should generally accommodate less than 2,000 vehicles per day. When traffic volumes reach 1,000 to 1,200 vehicles per day through residential areas, safety and livability can be degraded. A well-connected grid system of relatively short blocks can minimize excessive volumes of motor vehicles and encourage more use by pedestrians and bicyclists. Local streets are not intended to support long distance travel and are often designed to discourage through traffic.

Figure 10. Functional Classification and Future Roadways



Functional Classification (Dashed Lines Indicate Future Roads)

- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local Street
- Railroad
- Roadway
- Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Truck Route Designations

Philomath is on an important freight corridor, which contains some of the major intermodal facilities in the state and moves both heavy and valuable goods to markets around the world. Safe and efficient truck freight movement to and through Philomath is important for both the local and statewide economies.

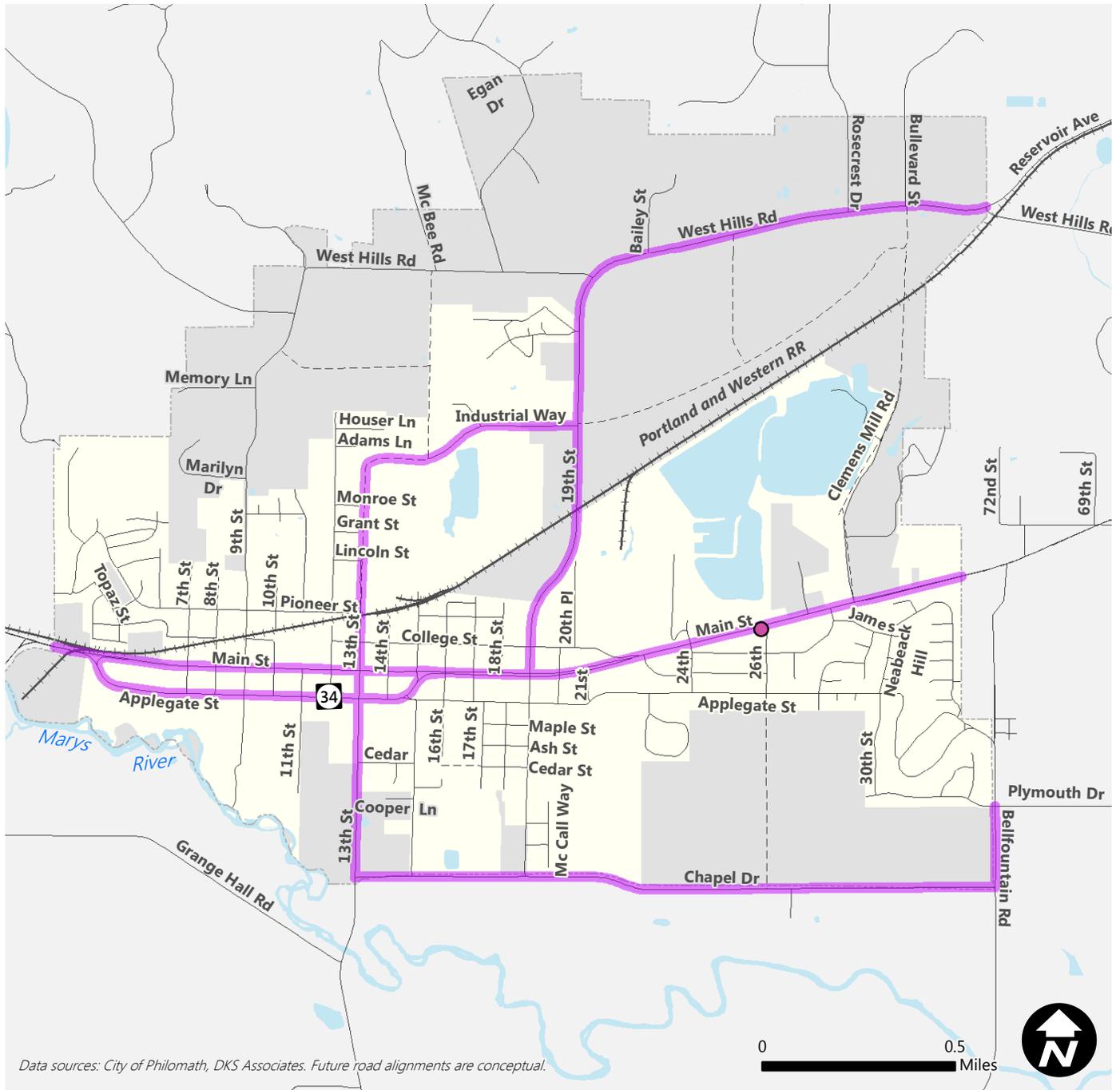
Philomath streets designated as Truck Routes are recognized as being appropriate and commonly traveled corridors for truck passage. Decisions affecting maintenance, operation, or construction on a designated truck route must address potential impacts on the safe and efficient movement of truck traffic. However, the intent is not to compromise the safety of other street users to accommodate truck traffic, especially in areas where many conflicts may be present. In such areas, the operational objectives of the street must prioritize safe travel for vulnerable users (e.g., pedestrians and bicyclists) while continuing to accommodate passage by truck traffic. On-street parking along truck routes is discouraged where feasible.

US20/OR34 (Corvallis-Newport Highway, No. 33) is classified as a Statewide Highway, part of the National Highway System (NHS), a Federal Truck Route, an Oregon Freight Route, and a Reduction Review Route. Therefore, the design and management of the highway through Philomath is subject to a number of policies and standards in the Oregon Highway Plan and Highway Design Manual intended to maintain safe and efficient movement of large vehicles. As an example, Reduction Review Routes are highways that require review with any proposed changes to determine if there will be a reduction of vehicle-carrying capacity.¹

Figure 11 reflects the routes designated as Truck Routes.

¹ See ORS 366.215.

Figure 11. Truck Route Network



Truck Routes

- Truck Route
- ODOT Weigh Station Current Location
- Railroad
- Roadway
- Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Typical Roadway Cross-Section Standards

Roadway Cross-Section Standards identify the design characteristics needed to meet the function and demand for each facility type for City of Philomath streets. Since the actual design of a roadway can vary from segment to segment due to adjacent land uses and demands, this system allows standardization of key characteristics to provide consistency, while providing application criteria that allows some flexibility while meeting the design standards.

Figures 12, 13, 14, 15, and 16 illustrate the standard cross-sections for minor arterials, major collectors, minor collectors, local streets, and shared-use paths in the City of Philomath. These street standards are compliant with the Oregon Transportation Planning Rule, which specifies that local governments limit excessive roadway widths. They are intended to be used as guidelines in the development of new roadways and the upgrade of existing roadways. Planning level right-of-way needs can be determined using these figures. Under some conditions a variance to the street standards may be requested from the Public Works Director to consider the alternative minimum cross-section or other adjustments. Typical conditions that may warrant consideration of a variance include:

- Infill sites
- Innovative designs (e.g., roundabouts)
- Severe constraints presented by topography, environmental, or other resources present
- Existing developments and/or buildings that make it extremely difficult or impossible to meet the standards

Figure 17 illustrates a proposed concept cross-section for US20/OR34 between Green Street and the east UGB, which is under ODOT jurisdiction. Roadways under ODOT jurisdiction are subject to design standards in ODOT's Highway Design Manual. The illustrated cross-section is provided as an example that satisfies the current design standards for urban/suburban fringe highways as defined in Table 6-4 of the ODOT Highway Design Manual. The actual design would be determined at a later date, but this cross-section may be used for right-of-way dedication and planning.

Minor Arterial Typical Cross-Section Standards

Figure 12: Standard Minor Arterial Cross-Section

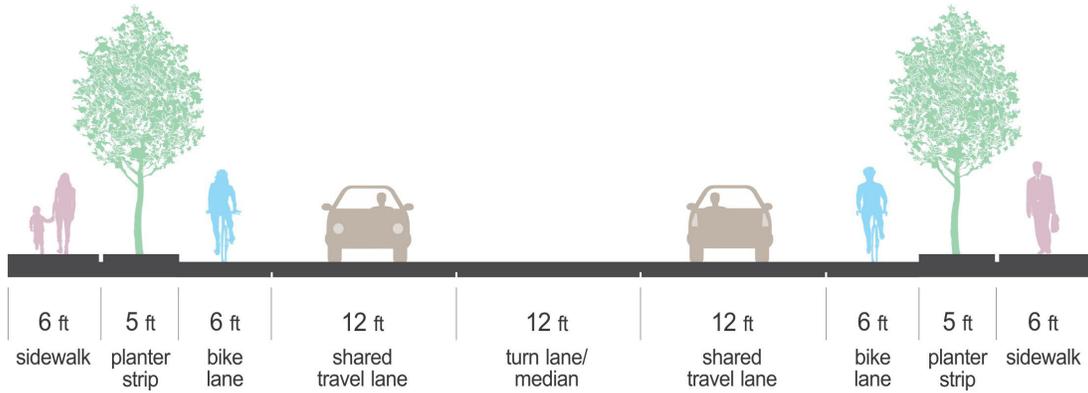


Table 8: Minor Arterial Cross-Section Standards and Alternative Minimum Standards

Width	Standard	Alternative Minimum	Considerations
Right-of-Way	70 ft.	61 ft.	Center left turn lane is optional depending on surrounding land use and available right-of-way.
Paved Width Curb-to-Curb	48 ft.	41 ft.	The Standard design should be provided where feasible. In constrained areas where providing the Standard widths are not practical, Alternative Minimum design requirements may be applied with approval of the Public Works Director.
Drive Lane	12 ft.	10 ft.	
Turn Lane/ Median	12 ft.	11 ft.	On designated Truck Routes, reductions in the Standard roadway paved width (curb-to-curb) are discouraged and should be limited to only short, constrained segments.
On-Street Parking	Not permitted	Not permitted	
Bike Lane	6 ft.	5 ft.	
Planter Strip	5 ft.	5 ft.	On-street parking is not permitted on minor arterial streets.
Sidewalk	6 ft.	5 ft.	

Major Collector Typical Cross-Section Standards

Figure 13: Standard Major Collector Cross-Section

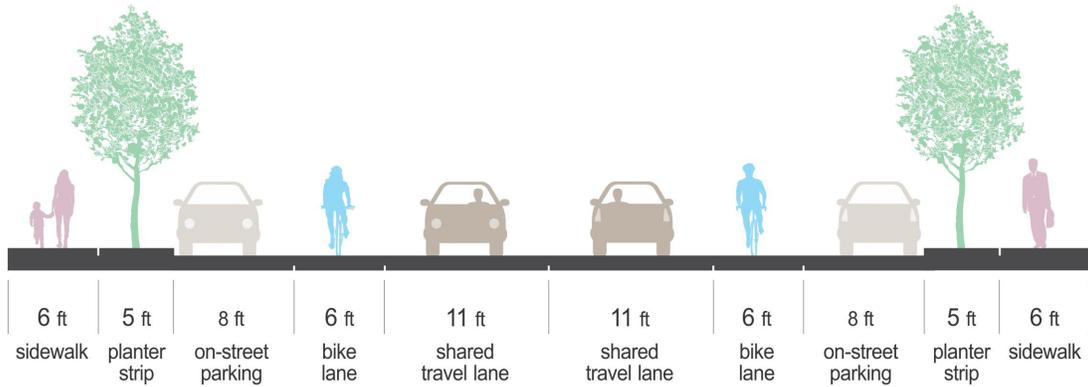


Table 9: Major Collector Cross-Section Standards and Alternative Minimum Standards

Width	Standard	Alternative Minimum	Considerations
Right-of-Way	72 ft.	64 ft.	The Standard design should be provided where feasible. In constrained areas where providing the Standard widths are not practical, Alternative Minimum design requirements may be applied with approval of the Public Works Director.
Paved Width Curb-to-Curb	50 ft.	44 ft.	
Drive Lane	11 ft.	10 ft.	
Bike Lane	6 ft.	5 ft.	On designated Truck Routes, reductions in the Standard roadway paved width (curb-to-curb) are discouraged and should be limited to short, constrained segments.
On-Street Parking	8 ft.	7 ft.	On-street parking is optional and may be provided where it would support adjacent land uses. On-street parking is discouraged where posted speeds are greater than 35 mph.
Planter Strip	5 ft.	5 ft.	
Sidewalk	6 ft.	5 ft.	

Minor Collector Typical Cross-Section Standards

Figure 14: Standard Minor Collector Cross-Section

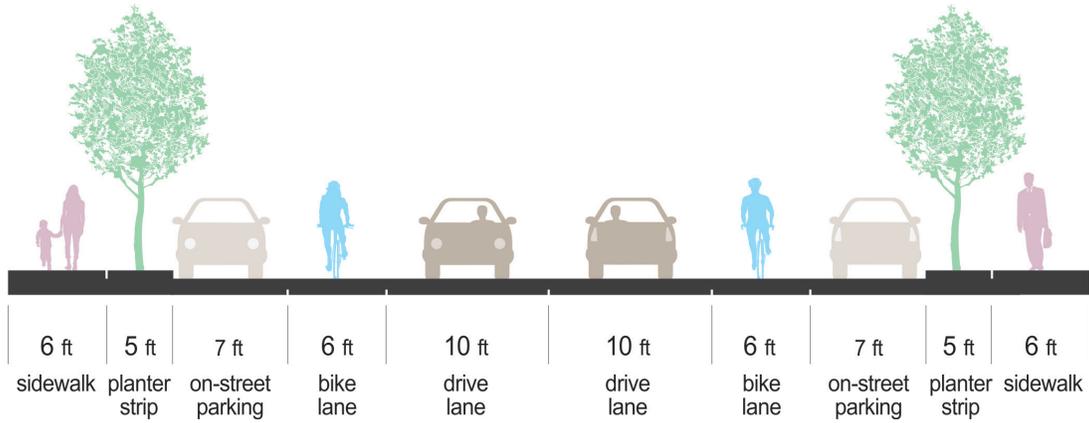


Table 10: Minor Collector Cross-Section Standards and Alternative Minimum Standards

Width	Standard	Alternative Minimum	Considerations
Right-of-Way	68 ft.	64 ft.	The Standard design should be provided where feasible. In constrained areas where providing the Standard widths are not practical, Alternative Minimum design requirements may be applied with approval of the Public Works Director. On-street parking is optional and may be provided where it would support adjacent land uses. On-street parking is discouraged where posted speeds are greater than 35 mph.
Paved Width Curb-to-Curb	46 ft.	44 ft.	
Drive Lane	10 ft.	10 ft.	
Bike Lane	6 ft.	5 ft.	
On-Street Parking	7 ft.	7 ft.	
Planter Strip	5 ft.	5 ft.	
Sidewalk	6 ft.	5 ft.	

Local Street Typical Cross-Section Standards

Figure 15: Standard Local Street Cross-Section

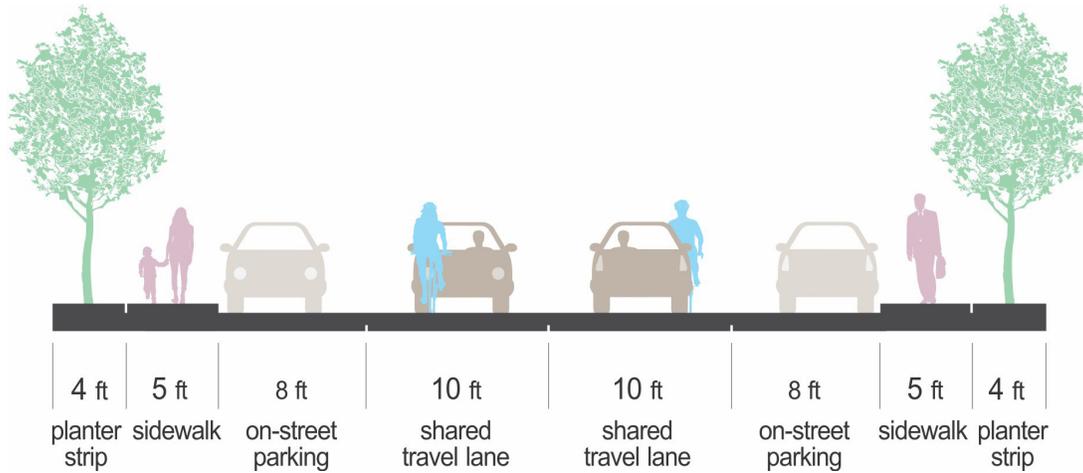
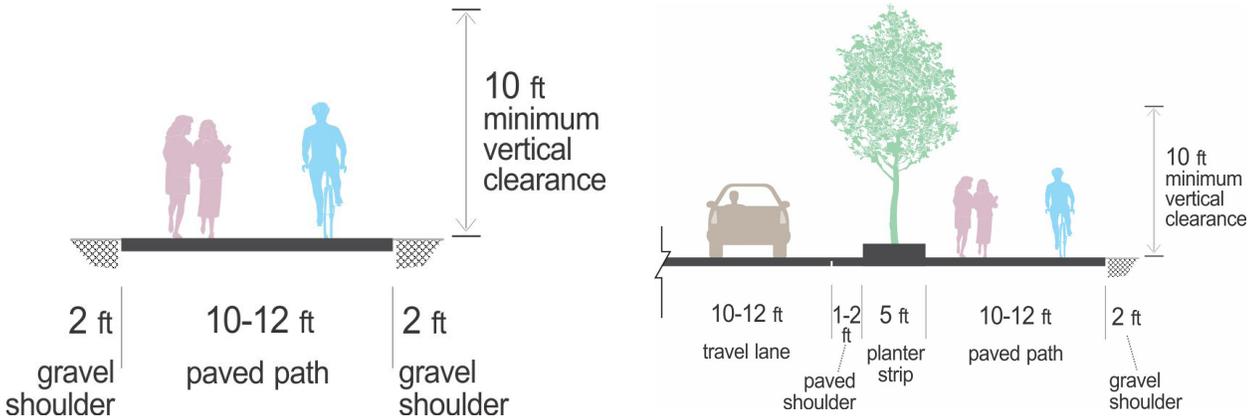


Table 11: Local Street Cross-Section Standards and Alternative Minimum Standards

Width	Standard	Alternative Minimum	Considerations
Right-of-Way	54 ft.	54 ft.	Parking on residential neighborhood streets is allowed and may be allowed on one side only in constrained areas or where approved by the Public Works Director, resulting in a curb-to-curb width of 28 feet and overall right-of-way width of 46 feet.
Paved Width Curb-to-Curb	36 ft.	36 ft.	
Shared Travel Lane	10 ft.	10 ft.	
On-Street Parking	8 ft.	8 ft.	
Planter Strip	4 ft.	4 ft.	
Sidewalk	5 ft.	5 ft.	

Shared-Use Path Typical Cross-Section Standards

Figure 16: Standard Shared-Use Path Cross-Sections



16a. Shared-Use Path

16b. Shared-Use Path in place of sidewalk and bike lane

Table 12: Shared-Use Path Cross-Section Standards and Alternative Minimum Standards

Width	Standard	Alternative Minimum	Considerations
Right-of-Way	16 ft.	16 ft.	Paved path width may be narrowed to 8 feet wide only over short segments in constrained areas. Path surface must be ADA accessible.
Paved Path	10-12 ft.	8 ft.	In areas with significant walking or biking demand, the paved shared-use path should be at least 12 feet wide. In corridors served by a shared-use path, the Public Work Director may grant variance to allow a shared-use path to replace a sidewalk and bike lane on one side of a roadway cross-section standard. Where this is done, the treatment should be continuous along the corridor.
Gravel Shoulder	2 ft.	2 ft.	Standard cross-section is a 10-12 foot drive lane, a 1-2 foot paved shoulder, a 5 foot planter strip, and a 10-12 foot shared-use path.
Vertical Clearance	10 ft.	10 ft.	

Concept for US20/OR34: Green Street to East UGB

Figure 17: Concept for US20/OR34: Green Street to East UGB

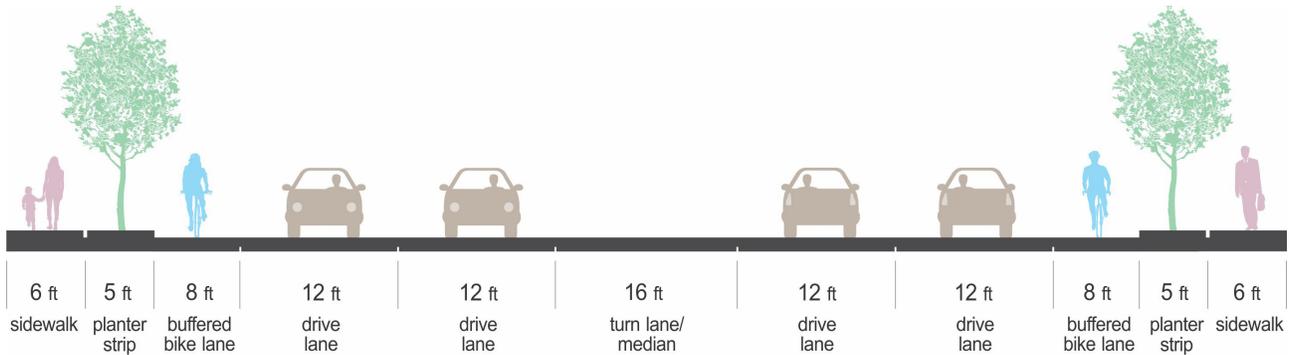


Table 13: Standard Dimensions for US20/OR34: Green Street to East UGB Concept

Width	Standard	Considerations
Right-of-Way	102 ft.	This proposed concept cross-section is for US20/OR34 between Green Street and the east UGB, which is under ODOT jurisdiction. Roadways under ODOT jurisdiction are subject to design standards in ODOT's Highway Design Manual and design approval through ODOT.
Paved Width Curb-to-Curb	80 ft.	
Drive Lane	12 ft.	
Turn Lane/Median	16 ft	The illustrated cross-section is provided as an example that satisfies the current design standards for urban/suburban fringe highways with a 45 MPH design speed as defined in Table 6-4 of the ODOT Highway Design Manual. The actual design would be determined at a later date, but this cross-section may be used for right-of-way dedication and planning. Where the Hunsacker Bike Path parallels the highway, consideration could be given to reducing the size of, or eliminating, bike lanes and sidewalks as is determined appropriate.
Buffered Bike Lane	8 ft.	
On-Street Parking	None	
Planter Strip	5 ft.	
Sidewalk	6 ft.	

Access Management

The number and spacing of access points, such as driveways and street intersections, along a roadway affects its function and capacity. Access Management is the control of these access points to match the functionality and capacity intended by the roadway's functional classification. Balancing access and good mobility can be achieved through various access management strategies, including establishing access management spacing standards for driveways and intersections.

Access management is especially important on arterial and collector facilities to reduce congestion and crash rates and to provide for safe and efficient travel. Since each access point is an additional conflict point, reducing or consolidating driveways on these facilities can decrease collisions and preserve capacity on high volume roads, maintaining traffic flow and mobility within the city.

New access points shall meet or exceed the minimum spacing requirements outlined in Table 14. However, where no reasonable alternatives exist or where strict application of the standards would create a safety hazard, the City may allow a variance.

Benton County and State of Oregon Access Management Standards

Benton County and ODOT maintain access regulations for roadways under their jurisdiction. Benton County's access regulations defer to City standards inside Urban Growth Boundaries. Access Management regulations for State highways are provided through the 1999 Oregon Highway Plan and OAR 734-051.

Table 14. Access Spacing Standards

FUNCTIONAL CLASSIFICATION	MINIMUM ACCESS SPACING
Minor Arterial	300 feet
Major Collector	150 feet
Minor Collector	100 feet
Local Street	15 feet

- Access spacing standards are for the minimum separation required between all access points (public or private) to a roadway, measured from center to center of adjacent access points on the same side of the roadway.
- For corner lots, accesses must be at least 35 feet or $\frac{1}{2}$ the lot width from the intersection, whichever is greater.
- Access spacing standards for Principal Arterials are based on ODOT criteria.
- Local Street access spacing is measured from edge of driveway to edge of driveway.

Local Street Connectivity

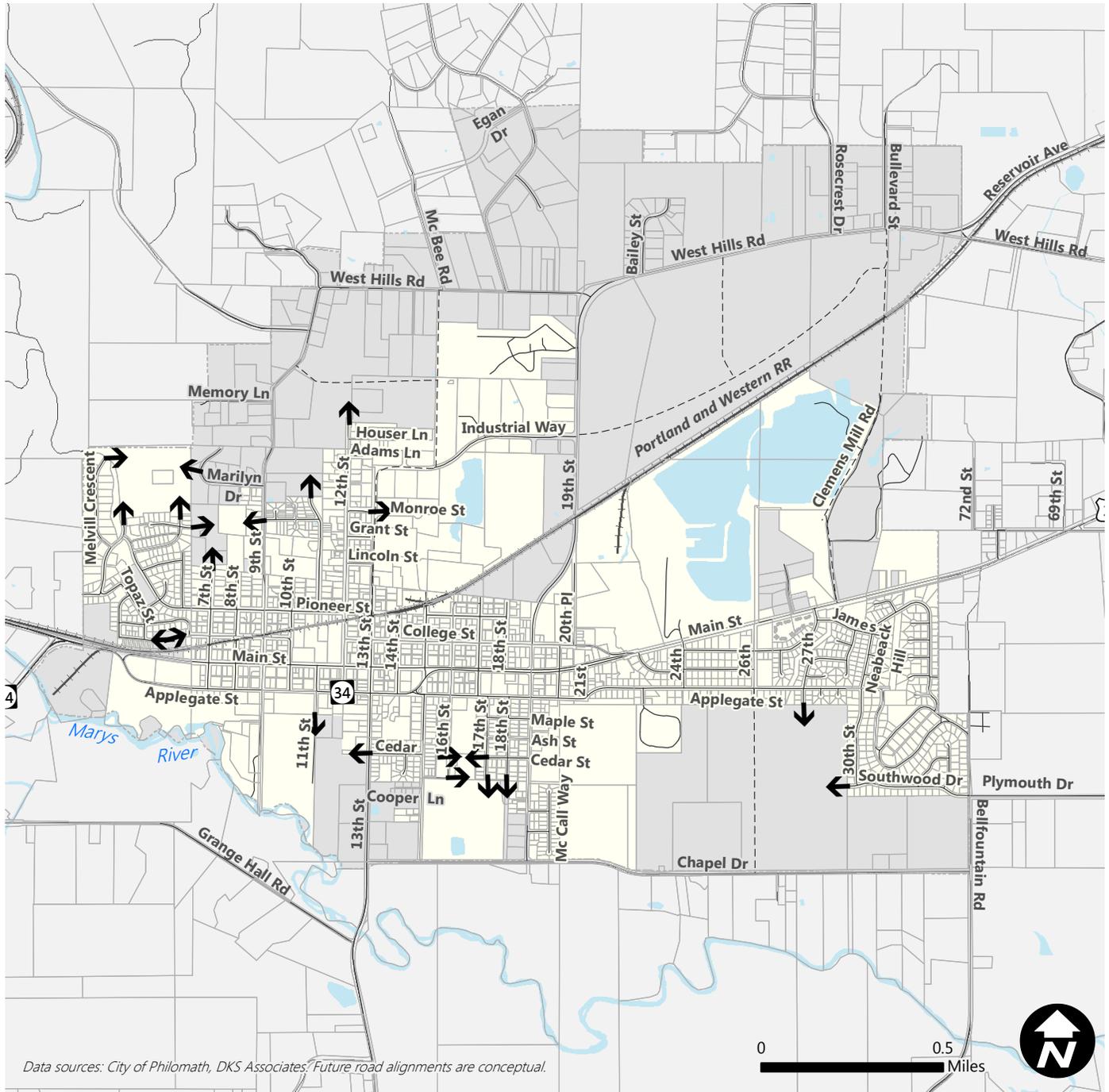
Local street connectivity is required by state Transportation Planning Rule (OAR 660-012) and is important for Philomath's continued development. Adequate connectivity reduces the need for wider roads, traffic signals, and turn lanes and can reduce a city's overall vehicle miles traveled (VMT), balance the traffic load on major facilities, encourage citizens to seek out other travel modes, and reduce emergency vehicle response times. While improvement to local street connectivity is easier to implement in newly developed areas, retrofitting existing areas to provide greater connectivity should also be attempted.

Philomath's existing street connectivity is limited primarily by natural features such as hills and wetlands, railroads, large industrial developments and by undeveloped areas of future development or annexation. The City's Local Street Connectivity Plan shown in Figure 18 identifies approximate locations where new local street connections will be installed as development occurs. The connection locations shown reduce neighborhood impacts by balancing traffic on neighborhood routes.

The Philomath Municipal Code² regulates proposed development to ensure good transportation system connectivity is provided. The design and construction of connector roadways must evaluate whether neighborhood traffic management strategies are necessary to protect existing neighborhoods from potential traffic impacts caused by extending stub end streets. To establish appropriate expectations, the City shall require the installation of signs indicating the potential for future connectivity when development constructs stub streets.

² PMC 18.65.020(J), 18.65.030(A), and 18.80.020(J)

Figure 18. Local Street Connectivity Plan



Local Street Connection Opportunities

-
- Existing Taxlots
- New Connection Direction
- Railroad
- Roadway
- Roadway (Future)
- Water
- City Limit
- Urban Growth Boundary

Mobility Standards

Mobility Standards, also called Mobility Targets, are the thresholds set for the maximum amount of acceptable congestion on a given roadway.

Philomath uses “level of service” (LOS) as the measure of congestion and has adopted LOS D as the minimum acceptable operating condition for both signalized and unsignalized intersections during the weekday peak hour.

When calculating level of service, the methodology from the latest published Highway Capacity Manual must be applied. All studied intersections under City jurisdiction studied for this TSP update comply with the LOS D mobility standard and are expected to do so through 2040.

For roadways within the City of Philomath that are under ODOT or Benton County jurisdiction, the mobility standards/targets of those agencies apply, unless no other mobility standard/target has been adopted.

Neighborhood Traffic Management Tools

Neighborhood Traffic Management (NTM) describes strategies that can be deployed to slow traffic, and potentially reduce traffic volumes, creating a more inviting environment for pedestrians and bicyclists. NTM strategies are primarily traffic calming techniques for improving neighborhood livability on local streets, though a limited set of strategies can also be applied to collectors and arterials. Mitigation measures for neighborhood traffic impacts must balance the need to manage vehicle speeds and volumes with the need to maintain mobility, circulation, and function for service providers, such as emergency responders. Any NTM project must include coordination with emergency response staff to ensure that public safety is not compromised. NTM strategies implemented on a state freight route such as US20/OR34 will require input from ODOT regarding freight mobility considerations.

Figure 19. Neighborhood Traffic Management Strategies

CHICANES



www.pedbikeimages.org/Dan Burden

CHOKERS



www.pedbikeimages.org/Dan Burden

CURB EXTENSIONS



www.pedbikeimages.org/Carl Sundstrom

DIVERTERS



www.pedbikeimages.org/Adam Fukushima

MEDIAN ISLANDS



www.pedbikeimages.org/Dan Burden

RAISED CROSSWALKS



www.pedbikeimages.org/Tom Harned

SPEED CUSHIONS



NACTO Urban Street Design Guide

SPEED HUMP



www.pedbikeimages.org/Dan Burden

TRAFFIC CIRCLES



www.pedbikeimages.org/Carl Sundstrom

Table 15. Application of Neighborhood Traffic Management Strategies

NTM APPLICATION	USE BY FUNCTION CLASSIFICATION			IMPACT	
	Arterials	Collectors	Local Streets	Speed Reduction	Traffic Diversion
Chicanes			■	■	■
Chokers			■	■	■
Curb Extensions	■	■	■	■	■
Diverters (with emergency vehicle pass-through)		■	■		■
Median Islands	■	■	■	■	■
Raised Crosswalks			■	■	■
Speed Cushions (with emergency vehicle pass-through)			■	■	■
Speed Hump			■	■	■
Traffic Circles			■	■	■

The City of Philomath currently does not have a formal neighborhood traffic management program. If such a program were desired to help respond to future issues, suggested elements include:

- Provide a formalized process for citizens who are concerned about the traffic on their neighborhood street. The process could include filing a citizen request with petition signatures and a preliminary evaluation. If the evaluation finds cause for concern, a neighborhood meeting would be held and formal data would be collected and evaluated. If a problem is found to exist, solutions would be identified and the process continued with neighborhood meetings, feedback from service and maintenance providers, cost evaluation, and traffic calming device implementation. Six months after implementation the device would be evaluated for effectiveness.
- For land use proposals, in addition to assessing impacts to the entire transportation network, traffic studies for new developments must also assess impacts to residential streets. A recommended threshold to determine if this additional analysis is needed is if the proposed project at ultimate build out increases through traffic on any one residential street by 200 or more vehicles per day. Once the analysis is performed, the threshold used to determine if residential streets are impacted would be if their daily traffic volume exceeds 1,200 vehicles.



IMPROVING TRANSPORTATION TO 2040

IMPROVING TRANSPORTATION TO 2040

The Improved Transportation System

If constructed, the projects in this TSP would significantly improve transportation to and through Philomath for all modes of travel and would provide the transportation system described in the community's vision statement. Through steady implementation, which will require the constant pursuit of new funding sources, Philomath expects the following results by 2040:

Efficient Motor Vehicle Travel

There is no significant motor vehicle congestion in Philomath through 2040 and adopted mobility standards are met. Planned new streets enhance connectivity and ensure that efficient travel routes are provided when future development occurs. The greatest source of recurring congestion for Philomath residents is on US20/OR34 east of the UGB, where local and regional travel converge to create a major bottleneck. Continued cooperation with regional partners to secure funding and advance improvements in the corridor is a priority.

Affordable Travel Options

Investing in expanded transit service hours provides greatly enhanced utility by allowing more interested riders to make round trips to and from work or school or complete other types of trips later in the day. A more useful transit system, along with user-friendly investments such as bus stop amenities, promote increased ridership and provide affordable means to travel between cities and access a wider range of services.

Safe Routes to Schools and Active Lifestyles

The network of active transportation facilities, including several new shared-use paths, provides comfortable non-motorized travel access across town and to regional attractions beyond the UGB. Integration with regional active transportation networks and improved access to local parks provide new opportunities for healthy living. Sidewalk infill, enhanced street crossings, and dedicated bicycle facilities create safer routes between neighborhoods and schools. Improved local street connectivity shortens travel routes through neighborhoods, making walking and biking trips easier.

Safer Streets

Hazardous locations, including the narrow 9th Street hill and the intersection on US20/OR34 at 26th Street, have been mitigated. More street lighting, enhanced highway crossings, and a complete network of separate sidewalks, bike lanes, and shared-use paths across the city reduce risks for people walking and biking.

Economic Vitality

The downtown streetscape improvements slow traffic and encourage visitors to stop and explore local shops on foot. Downtown Philomath is a comfortable and attractive place to walk and bike and the highway is no longer a barrier for cross-town trips. Designated truck routes through the city ensure that key streets are designed and managed to move goods and services efficiently.

Promoting Multimodal Travel in Downtown Philomath

Philomath desires to promote a walkable, storefront character and feel in its downtown. City comprehensive plan policies, plan map and zoning designations, and the municipal code support mixed-use commercial-office-residential development in downtown. The city municipal code supports the vision for its downtown with standards for building and parking lot placement, pedestrian and transit amenities, shared parking, consolidated access, plazas and landscaping design elements consistent with walkable districts.

The City of Philomath has begun conversations with the Oregon Department of Transportation (ODOT) to consider the application of a Special Transportation Area (STA) designation to the US20/OR34 corridor through the downtown. An STA is a designation in the Oregon Highway Plan that can be applied to a state highway segment when a downtown business district straddles the highway and the community desires the highway segment to focus on local multimodal activity rather than exclusively on mobility. The objective of an STA designation is to emphasize that a portion of the state highway system should also provide access to community activities, businesses, and residences and should accommodate pedestrian, bicycle and transit movement along and across the highway, in addition to providing vehicular mobility. An STA designation is a way for communities to get clear agreement from ODOT to manage this portion of the state highway as a main street or community center.

STAs are typically located in areas with mixed land uses and include closely spaced buildings with little or no setback from the highway. Sidewalks are wide and located adjacent to both the buildings and the highway. Public road connections are preferred to private driveway access, and over time businesses would combine driveways and have access onto the side streets as opposed to direct highway access. A key element in an STA is an interconnected local street network to facilitate local automobile, pedestrian, and bicycle circulation.

Specific multimodal benefits of an STA designation include:

- The establishment of new mobility standards for the highway that allow for more congestion within the STA boundary. Allowing for more congestion can help prevent the construction of projects that make auto travel more efficient at the expense of safe and comfortable pedestrian travel.
- Different design standards for the highway that can encourage slower vehicle speeds and result in shorter crossing distances for people walking and biking.
- Having a formal agreement with ODOT that the needs of people walking, biking, and using transit must be balanced with through traffic needs within the STA boundary. This understanding can help efforts to install decorative streetscape elements and enhanced pedestrian crossings on the highway.

The process for gaining ODOT approval to establish an STA designation on US20/OR34 through downtown Philomath has not been completed prior to adoption of this TSP. However, the City will continue this effort in support of achieving the vision for the downtown.

Preparing for Smart Mobility

Emerging vehicle technology and design approaches will shape our roads, communities, and daily lives. As vehicles become more connected, automated, shared, and electric, the way we plan, design, build, and use our transportation system will change.

When discussing these vehicles as a whole, they can be referred to as connected, automated, shared, and electric (CASE) vehicles. Many of these vehicles will not be exclusive of the others and it is important to think of the host of implications that arise from the combination of these technologies.



Connected Vehicles (CVs) will enable communications between vehicles, infrastructure, and other road users. This means that our vehicles will be able to assist human drivers and prevent crashes while making our system operate more smoothly.



Automated Vehicles (AVs) will, to varying degrees, take over driving functions and allow travelers to focus their attention on other matters. Today, we already have vehicles with combined automated functions such as lane keeping and adaptive cruise control. However, these still require constant driver oversight. In the future, more sophisticated sensing and programming technology will allow vehicles to operate with little to no operator oversight.



Shared Vehicles (SVs) are already on the road today that allow ride-hailing companies to offer customers access to vehicles through smart phone applications. Ride-hailing applications allow for on-demand transportation with comparable convenience to car ownership without the hassle of maintenance and parking. Ride-hailing applications can enable customers to choose whether share a trip with another person along their route, or travel alone.



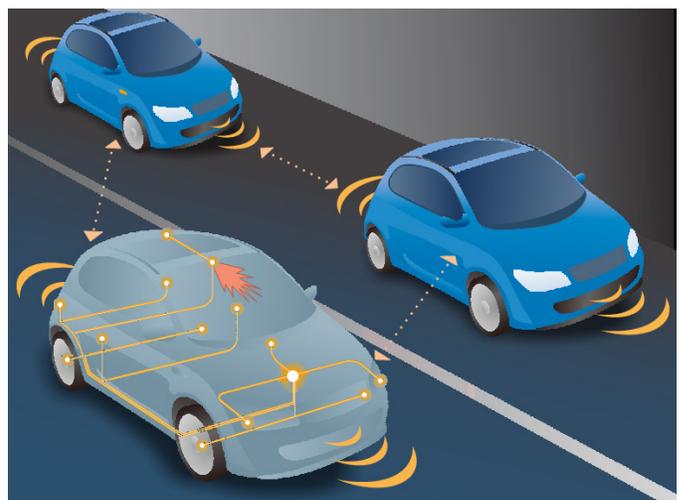
Electric Vehicles (EVs) have been on the road for decades and are becoming more economically feasible as the production costs of batteries decline.

Planning for Change

The impacts of CASE vehicles on road capacity are uncertain. After CASE vehicles are widely adopted, there is a high likelihood that increases in road capacity will correspond with increasing traffic demand. We can expect that congestion will continue to persist.

The expected congestion can be used to encourage use of transit, shared vehicles, and bike share. These modes could all be encouraged through pricing mechanisms that are vastly less expensive to implement than building more road capacity. A variety of pricing mechanisms are enabled with CASE technology because these vehicles will be tracked geographically, and by time of day. With time/location data, transportation system operators will be able to develop pricing mechanisms that reduce congestion at a lower cost than other roadway improvements. Larger cities will be the first to implement these strategies and smaller cities should follow these developments closely.

Figure 20: Vehicle-to-Vehicle Communication



Potential Impacts, Questions and Policy Considerations

CONGESTION AND ROAD CAPACITY

Anticipated Impacts

- AVs will provide a more relaxing or productive experience and people will have less resistance to longer commutes.
- Shared AVs will likely cost significantly less on a per mile basis, increasing demand for travel.
- CVs will allow vehicles to operate safely at closer following distances. In the long run, this will increase road capacity in the long run as CVs and AVs comprise increasing portions of the public and private fleet of vehicles.
- In the near term, as AVs still make up a fraction of the fleet of vehicles, road capacity could decrease as AVs operate more slowly and cautiously than regular vehicles.
- A new class of traffic — zero-occupant vehicles — will increase traffic congestion
- Roadways may need to be redesigned or better maintained to accommodate the needs of automated driving systems.

Questions

- How much will AVs cost for people to own them personally?
- How much will AVs cost if they are used as a shared fleet?
- How does cost and the improved ride experience of AVs influence travel behavior?
- How much more efficiently will AVs operate compared to regular human driven vehicles once they dominate the vehicle fleet?
- How will AVs impact road capacity in the near term as they are deployed in mixed traffic with human driven vehicles?
- What portion of traffic will be zero-occupant vehicles and what areas will likely generate the highest portion of zero-occupant vehicles looking for parking or waiting for their next passenger?

PARKING

Because AVs and Shared AVs will be able to park themselves, travelers will elect to get dropped off at their destination while the vehicle goes to find parking or its next passenger. With parking next to their destination no longer a priority for the traveling public, parking may be over-supplied in many areas and new opportunities to reconfigure land use will emerge.

Questions

- How does vehicle ownership impact parking behavior?
- What portion of the AV fleet will be shared?
- How far out of the downtown area will AVs be able to park while remaining convenient and readily available?

Considerations

- Consider building new parking garages that can be converted (with flat instead of ramped floors) to other uses in case AVs make them underutilized in their lifetime. If that isn't financially feasible, consider alternative transportation demand management strategies.
- Consider revising minimum parking requirements for new developments, especially in areas that are within one mile of transit.
- Consider system development charges that fund the installation of charging stations in new developments.

CURB SPACE

The ability to be dropped off at your destination will also create more potential for conflicts in the right-of-way between vehicles dropping off passengers, vehicles moving through traffic, and vehicles parked on the street. In urban areas with ride-hailing companies, popular destinations are already experiencing significant double-parking issues. Curb-space management is a growing consideration. Jurisdictions should inventory parking utilization and identify areas that could be converted from parking to curbside pick-up and drop-off zones.

PACKAGE DELIVERY

With the use of AVs to deliver packages, food, and expanded services, these vehicles will need to be accommodated in the right-of-way. For instance, if the AV parks at the curb in a neighborhood and smaller robots are used to deliver packages to the door, new conflicts will arise between vehicles, pedestrians, and bicyclists.

TRANSIT

AVs could become cost competitive with transit and undermine transit ridership as riders prefer a more convenient alternative. However, transit will remain the most efficient way to move high volumes of people through constricted urban environments. AVs will not eliminate congestion and as discussed above, could exacerbate it — especially in the early phases of AV adoption. In addition, shared AVs may not serve all areas of a community and underserved communities still require access to transit to meet daily needs.

To avoid potential equity and congestion issues, transit agencies need to work together to integrate the use of automated vehicles and transit. Transit needs to adapt to new competition in the transportation marketplace as well as consider adopting CASE technologies to support transit operations.

Considerations

- Partnering with ride-hailing companies to provide first and last-mile solutions.
- Working with ride-hailing companies and bike share to integrate payment platforms and enable one button purchase of a suite of transportation options for multimodal trips.
- Creating fixed route autonomous shuttles to provide first and last-mile solutions.
- Creating on-demand autonomous shuttles to provide first and last-mile solutions.

ELECTRIC VEHICLE CHARGING

To accommodate a future where electric vehicles will come to dominate our vehicle fleet, charging station capacity will need to be increased. Cities, electric utilities, regions, and states will need to work together to meet the significant increase in demand.

MOBILITY HUBS

A mobility hub is a central location that serves as a multi-modal connection point for transit, car share, bike share, and ride share stations, see Figure 21. This system can serve as a tool to encourage travelers to take seamless multimodal trips that are well timed and convenient. Mobility hubs make the most sense to put in transit centers that are located near urbanized areas with multimodal supportive infrastructure (e.g., protected bike lanes) to maximize connectivity for first and last-mile solutions.

Figure 21: Mobility Hub

