Hearing Draft

CITY OF COOS BAY

Transportation System Plan

VOLUME 1

June 2020

CITY OF COOS BAY

Transportation System Plan

Volume 1

Hearing Draft

Prepared for

City of Coos Bay
Coos Bay, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon 97201

2020

ACKNOWLEDGEMENTS

PROJECT TEAM

City of Coos Bay

Jim Hossley, Public Works Director
Carolyn Johnson, Community Development Administrator
Randy Dixon, Operations Administrator
Jennifer Wirsing, City Engineer

Oregon Department of Transportation

Virginia Elandt, Senior Planner

David Evans and Associates, Inc.

Angela Rogge, PE, Project Manager
Andrew Mortensen, Senior Planner
Dana Shuff, EIT
Justin Kuenne, EIT

Angelo Planning Group

Darci Rudzinski, AICP, Principal
Shayna Rehberg, AICP, Senior Planner
Courtney Simms, Assistant Planner

Civil West Engineering

Will Dawson, QSP, South Coast Regional Manager
Sean Lloyd, PE

Public Advisory Committee (PAC)

Andrew Gordon
Jim Berg
Tom Burdett
Dick Leshley
Phil Marler
Rex Miller
Rick Skinner
John Whittey
Jennifer Groth
John Knutson
Larry Becker
Bruce Martin
Diana Schab
Sergio Gamino
Jeff Stump
Pamela Barlow-Lind
Fauna Larkin
Jamie Fereday

TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENTS

VOLUME 2

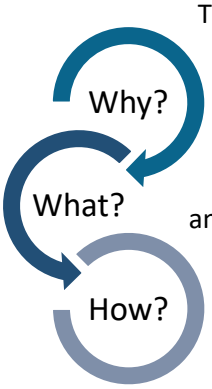
Title VI and Environmental Justice Memorandum
Public Meetings Summary
Technical Memorandum #1: Existing Plans and Policies Review
Technical Memorandum #2: Goals, Objectives and Evaluation Criteria
Technical Memorandum #3: Financial Funding Forecast
Technical Memorandum #4: System Inventory
Technical Memorandum #5: Methodology Memorandum
Technical Memorandum #6: Current System Conditions
Technical Memorandum #7: Future Deficiencies and Needs
Technical Memorandum #8: System Alternatives
Technical Memorandum #9: Preferred Alternative Selection
Technical Memorandum #10: Financial Forecast
Technical Memorandum #11: Policies and Standards
Technical Memorandum #12: Code Provisions and Ordinance Amendments

The inclusion of an improvement in the TSP does not represent a commitment by the City of Coos Bay or ODOT to fund, allow, or construct the project. Projects on the state highway system that are contained in the TSP are not considered "planned" projects until they are programmed into the Statewide Transportation Improvement Program (STIP). As such, projects proposed in the TSP that are located on a State highway cannot be considered for future development or land use actions until they are programmed into the STIP, or ODOT provides written statement that a project is Reasonably Likely to be funded in the STIP. Highway projects that are programmed to be constructed may have to be altered or cancelled at a later time to meet changing budgets or unanticipated conditions such as environmental constraints.

EXECUTIVE SUMMARY

The Coos Bay Transportation System Plan (TSP) details projects and policies that address transportation facilities and the community's goals in the City of Coos Bay. This document serves as a vision for the community by providing a 20-year list of improvement projects and a plan for implementing those projects. The TSP is consistent with state, regional, and local plans and in compliance with the requirements of the state Transportation Planning Rule (TPR).

Why Have a TSP?



The purpose of the TSP is to guide the maintenance, development, and implementation of the transportation system, to accommodate 20 years of growth in population and employment, and to implement the plans and regulations of the regional government and the State of Oregon, including the Oregon TPR. The TSP will serve as the transportation element of the Coos Bay Comprehensive Plan. The Comprehensive Plan guides a community's land use, conservation of natural resources, economic development and public facilities.

What is a TSP?

A TSP provides a long-term guide for investments in the transportation network that improve existing facilities and plan for future growth. At the most basic level, it provides a blueprint for all modes of travel: vehicle (both personal and freight), bicycle, pedestrian, transit, air, water, rail and pipeline. It is also an opportunity to build on community values and protect what makes Coos Bay a great place to live, work, and visit.

The Coos Bay TSP contains goals, objectives, projects, and implementation guidelines needed to provide mobility for all users, now and in the future. It examines current transportation conditions and looks ahead 20 years at what may be needed to accommodate planned growth in the city and surrounding communities. Elements of the plan can be implemented by agencies (city, state, or federal) as well as private developers.

Plan Organization

The Coos Bay TSP is comprised of the main TSP summary document (Volume I, this document) and a volume of supporting technical appendices and other supporting documentation (Volume II). Volume I is organized in the following major sections:

- Background and Process
- Goals and Objectives
- Coos Bay Today
- Coos Bay 2040
- Modal Plans
- Standards and Guidelines
- Funding and Implementation
- Potential Projects

What Are the Improvements?

Assuming that the current trend in Coos Bay's funding revenue and expenses continues, Coos Bay's transportation revenue could total over $60 million by 2040. This funding will be allocated to operating costs, maintenance and capital improvements.

This TSP offers a menu of capital projects that can be selected as funding sources become available or as maintenance, improvements are made. Recognizing that current funding resources are not sufficient for implementing all of the city improvements, there are two tiers of projects. *Tier 1: Financially Constrained Improvements* (see Table 1), which are reasonably likely to be funded with existing sources, and *Tier 2: Needed but Unfunded*, which would require new funding sources for implementation (e.g., grants, new local revenue streams, and private development).

Table 1. Summary of Tier 1 (Financially Constrained) Improvements

ID	Project Name	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
Operations and Maintenance											
41	Pavement Maintenance	Fix Potholes. Maintain/fix/strengthen existing pavement system, account for maintenance in funding plan. Critical: Central Ave, Southwest Blvd, Koosbay Blvd, Blanco Ave, Radar Rd, Schoneman St, LaClair St, F St, Butler Rd, Juniper Ave and Fulton Ave			x	x			x	Coos Bay	$52,850,000 (Operations/ Maintenance)
Capital Projects											
2	Mingus Park Wayfinding	Wayfinding signs to park	x	x					x	Coos Bay	$50,000
4	Woodland Dr Pedestrian Improvements	Add sidewalks on Woodland Dr, marked ped crossing (access to Hospital/Medical Park)	x	x						Coos Bay	$3,200,000
5	Thompson Rd Pedestrian Crossing	Add marked crossing and mid-block crossing of Thompson Road to access hospital transit stop	x	x	x		x			Coos Bay	$50,000
6	Hospital Way Sidewalk	Add sidewalk to connect to medical facilities	x	x						Coos Bay	$560,000
9	US 101 Downtown Pedestrian Crossings	Improved bike/pedestrian crossings across US 101 to be consistent with Front Street Action Plan	x	x	x					Coos Bay / ODOT*	$100,000
20	N 14th St Bicycle Facilities	Provide a parallel bike route to Koos Bay Blvd by providing sharrows and wayfinding on N 14th St		x	x					Coos Bay	$50,000
26	Bike/Ped Transit Connectivity	Improve bicycle and pedestrian connectivity to stops	x	x	x		x			Coos Bay	N/A
36	4th Street Safety	Restripe to a 3-lane cross-section with sidewalk bump-outs.	x		x					Coos Bay	$4,500,000
										Operations/Maintenance	$52,850,000
										Capital Projects	$8,510,000
										Total	$61,360,000

Notes:
SRTS = Within Safe Routes to School boundary
N/A = Cost estimate not developed as part of the TSP
* Project is subject to ODOT approval as it is a State facility.

BACKGROUND AND PROCESS

PURPOSE AND INTRODUCTION

The purpose of the Transportation System Plan (TSP) is to guide the maintenance, development, and implementation of the transportation system, to accommodate 20 years of growth in population and employment, and to implement the plans and regulations of the regional government and the State of Oregon, including the Oregon Transportation Planning Rule (TPR). The TSP will serve as the transportation element of the Coos Bay Comprehensive Plan. The Comprehensive Plan guides a community's land use, conservation of natural resources, economic development and public facilities.

A COMPREHENSIVE, CITYWIDE ASSESSMENT

A TSP examines the City's multimodal transportation system as a whole, and considers planning for street maintenance, connectivity, access, safety, and the impact of future growth throughout the network. To review the system that is most likely to affect an average Coos Bay citizen or visitor, and to efficiently use time and resources, TSPs generally focus on the higher-order arterial and collector street system. Arterials and collectors, by definition, are meant to provide connections across a city and between neighborhoods and activity centers. As such, Coos Bay's arterial and collector street intersections and corridors are the focus of the TSP, with consideration given to utilizing the local street system to further enhance and connect the bicycle and pedestrian networks.

WHY UPDATE THE TSP?

Since the adoption of the previous TSP, the City of Coos Bay has experienced significant changes: changes in employment and population, shifting trends in travel choices, acute funding challenges, and revised data sources. Revisiting the TSP project list through the lens of current funding constraints is essential and provides an opportunity for the public to play a role in developing the vision for our community and transportation system.

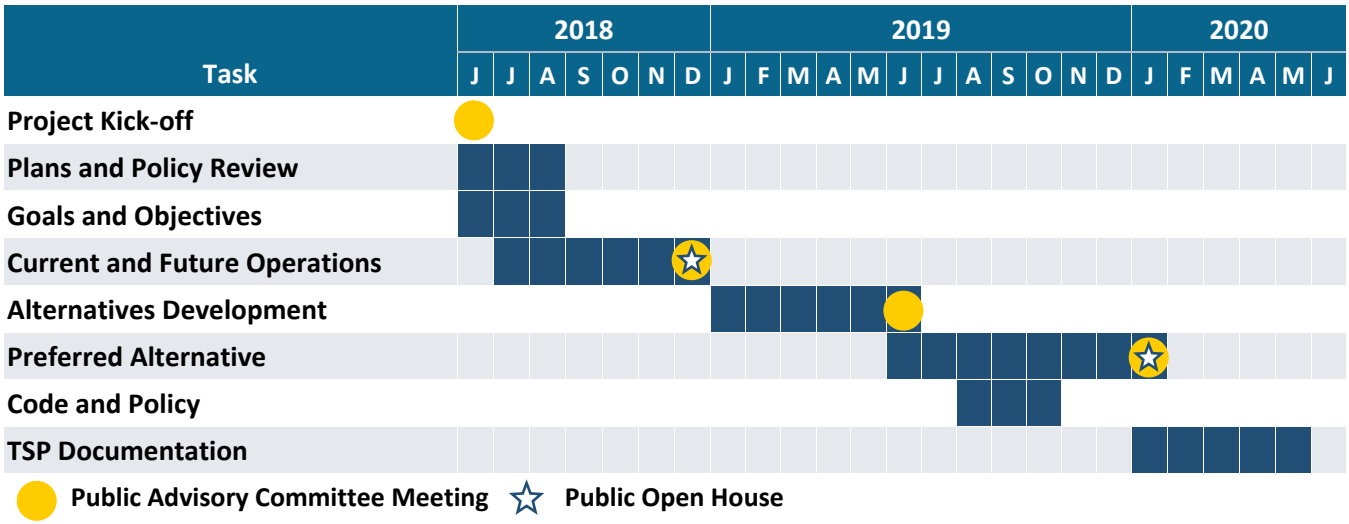
These reasons for updating the TSP, in conjunction with community desires and expectations for a resilient transportation system, serve as a basis for the development and evaluation of concepts, and ultimately the selection of preferred improvements.

PUBLIC INVOLVEMENT

The public involvement process for this TSP update allowed community members and interested parties to voice concerns and contribute input, helping to shape the goals and outcomes of the TSP. Collaboration among the community, the City, various additional public agencies, stakeholders, and consultants ensured that multiple points of view were considered and understood. The process included meetings with a public advisory committee (PAC) and general public outreach in the form of public open houses.

Through the PAC and community events, the public shaped the content, organization, and priorities of the plan (see Figure 1 for a summary of the TSP development process, durations of tasks, and information on public involvement).

Figure 1. Project Timeline



City Outreach

Consideration was given to outreach needs and reporting requirements consistent with the provisions of federal and State Title VI Program and Environmental Justice Executive Orders (EJEO) to ensure full and fair participation by all potentially affected community members, including historically underrepresented populations, in the decision-making process.

Public Advisory Committee

The PAC provided stakeholder input and offered recommendations to the technical project team. The committee was composed of interested citizens, property owners, business representatives, and other stakeholders as identified by City of Coos Bay staff. Members of the PAC represented the following groups:

- Coos Bay Downtown Association
- Coos Bay Planning Commission
- Chamber Transportation Committee
- Coos Bay Planning Commission
- Coos Bay Budget Committee
- Coos County Airport District
- Oregon State Parks
- North Bend School District
- Knutson Towboat
- Coos County Area Transportation District
- Confederate Tribes of Coos, Lower Umpqua, and Siuslaw Indians
- Confederated Tribe of Siletz
- Coquille Indian Tribe

PAC meetings were held during development of the TSP (see Figure 2 for summaries). Members of the PAC were invited to attend the open houses or submit input using other opportunities that were provided, such as through the Coos Bay website.

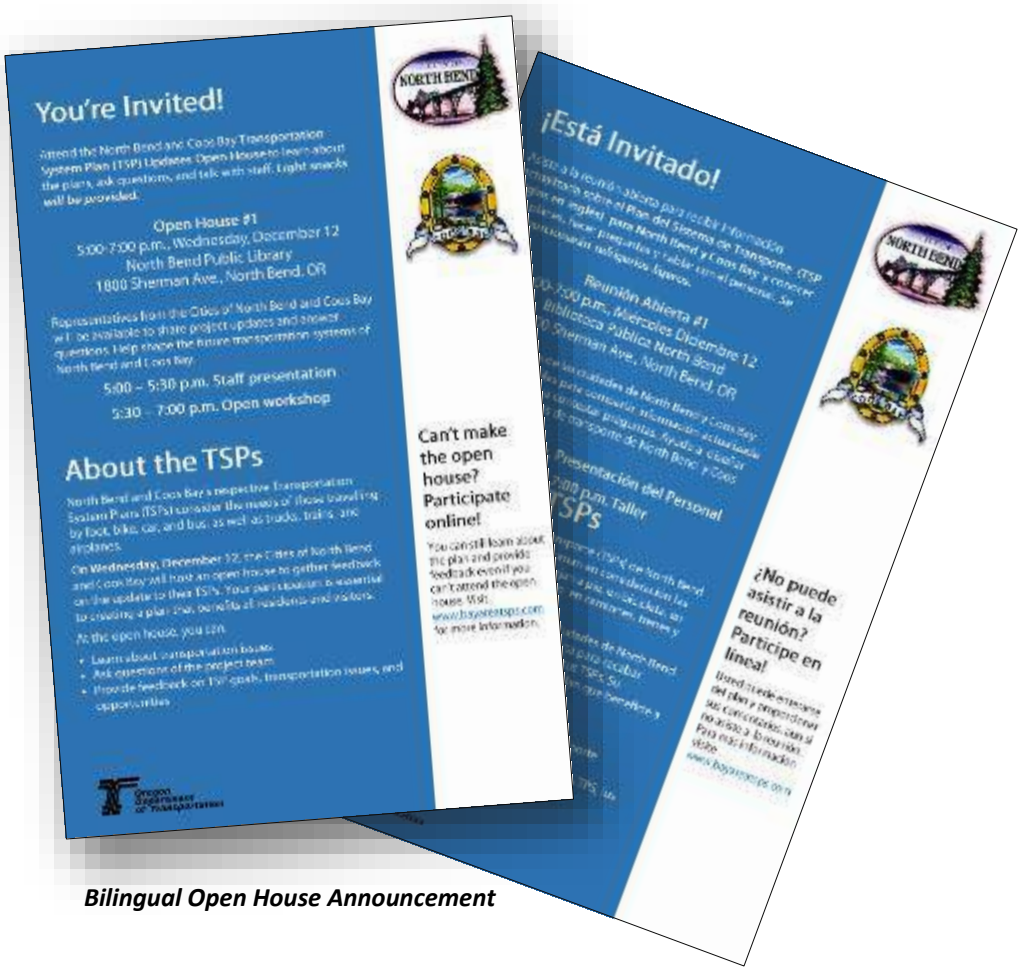
Project Website (active 2018-2020)

Open Houses

General public outreach included materials posted on Coos Bay's website and two public open houses. The content of each open house is discussed below.

Figure 2. TSP Stakeholder Meetings

Kick-Off	Consultant hosted a project kick-off meeting to outline the TSP process and review roles and responsibilities.
Open House 1	Provide the project background, transportation inventory, and summary of existing traffic operations. Future deficiencies and needs were discussed, as well potential locations for improvements.
Open House 2	Recap project background, present preferred alternative and review related local codes and policies to implement TSP. Discuss the funding and implementation of the proposed improvements.
PAC 1	Introduce the project, and discuss goals and objectives. Summarize the current state of the transportation system, community transportation needs, and the community vision.
PAC 2	Review and solicit feedback on all draft system afternatives. Content from this meeting led to selection of a preferred alternative.
PAC 3	Review the preferred alternative (TSP projects), funding forecast and proposed implementation plan.



Bilingual Open House Announcement

GOALS AND POLICIES

At the most basic level, a TSP provides a blueprint for all modes of travel: motor vehicle (both personal and freight), bicycle, pedestrian, and transit. It is also an opportunity to build on community values and protect what makes the Bay Area a great place to live, work, and visit. The TSP should support a shared vision to be accessible, equitable, and a livable community.

The TSP goals provide a framework for planning the city's multimodal transportation system. Objectives associated with each goal guide the development or update of a TSP. Policies and action items in the existing TSPs largely provided this guidance. For this TSP update, objectives are proposed that are aligned with project expectations. Objectives both reflect direction in the adopted TSPs, where still valid, and provide new direction. Topic areas in the proposed objectives that better reflect today's needs include tourism and recreation, health, agency coordination, and strategic investments.

> ***Goals*** are broad statements of purpose that reflect community transportation priorities and provide direction for *what* a community seeks to achieve (the 'what' is typically the community's Vision or Mission statement).
>
> ***Policies*** are specific statements of *intent* and approach to implement and achieve the goals. The following policies should be read as if preceded by "It is the City's policy to…"

The following are the recommended goals and objectives to guide the update of the Coos Bay TSP:

Accessibility and Connectivity

Goal #1: Continue development of an interconnected, multimodal transportation network that connects all members of the community to destinations within and beyond the city.

Policies:

a) Maintain and improve existing connections between households and schools, parks, transit stops, the waterfront and other essential destinations and recreational areas. Provide a network of arterials, collectors and local streets that are interconnected, appropriately spaced, and reasonably direct in accordance with City and state design standards and the Transportation System Plan.
b) For new development and expansion of existing development, require multi-modal circulation internally on site and externally to adjacent land use and existing and planned multi-modal facilities.
c) Support options to motorized travel and to promote and support walking and biking tourism.
d) Require sidewalks on all new streets within the Urban Growth Boundary and facility design meeting adopted Transportation System Plan standards.
e) Ensure adequate access to transit facilities and services.
f) Upgrade existing transportation facilities, including retrofitting for American Disability Act (ADA) compliance, and work with public transportation providers to provide services that improve access for all users.
g) Consistent with the American Disability Act (ADA) require ADA compliance with new transportation facility infrastructure and expansion of transportation infrastructure.

h) Require with new development that planned pedestrian throughways are clear of obstacles and obstructions (e.g., utility poles). Continue to identify and, as resources permit, eliminate obstacles and obstructions for existing facilities.

Safety and Security

Goal #2: Provide a transportation system that enhances the safety and security of all transportation modes.

Policies:

a) Improve safety issues at existing high collision locations and locations with a history of severe vehicle, bicycle- and/or pedestrian-related crashes.
b) Manage access to transportation facilities consistent with applicable standards assigned by classifications to reduce and separate conflicts and provide reasonable access to land uses.
c) Improve the safety of rail crossings.
d) Identify and improve safe crossings for vehicles, bicycles and pedestrians across Highway 101 and major arterials.
e) Maintain and enhance lifeline and evacuation routes in coordination with local, regional, state and private entities.
f) Coordinate with law enforcement and emergency service providers to increase public safety and security.
g) Consider neighborhood traffic management strategies to improve safety for pedestrians, bicyclist, and vehicles and where certain techniques may be warranted.
h) Identify and designate bus routes to and around schools that are safe for pedestrians and bicyclists, as well as people in cars and arriving by bus.

Mobility

Goal #3: Optimize the performance of the transportation system for the efficient movement of people and goods.

Policies:

a) Require that transportation improvements are consistent with street functional classifications in the adopted Transportation System Plan, including the operational guidance and cross-sectional and right-of-way standards, to ensure streets are able to serve their intended purpose.
b) Reduce reliance on single-occupancy vehicle trips by implementing the adopted bicycle and pedestrian modal plans through private investment as part of future development and by seeking public funding to enhance facilities.
c) Enhance route choices for local trips by improving the network of arterials, collectors and local streets that are interconnected, appropriately spaced, and reasonably direct consistent with City standards and the Transportation System Plan.
d) Preserve and maintain the existing transportation system in a state of good repair.
e) Systematically implement improvements for all modes that enhance mobility, consistent with the prioritization of planned projects in the Transportation System Plan.
f) Maintain travel efficiency, manage congestion, and require transportation mitigation as part of development according to adopted mobility standards.

g) Work with North Bend, Coos County, and ODOT to develop, operate, and maintain intelligent transportation systems and technological solutions that reduce travel delay and improve system efficiency, including coordination of traffic signals and improved traveler information.
h) Coordinate with Coos County Area Transportation District to develop system enhancements that support the movement of people in high traffic corridors.

Equity

Goal #4: Provide an equitable, balanced and connected multi-modal transportation system.

Policies:

a) Ensure that the transportation system provides equitable access to underserved and vulnerable populations. Prioritize walking and biking investments in underserved areas with transportation disadvantaged populations.
b) Provide connections for all modes that meet applicable city and Americans with Disabilities Act (ADA) standards.
c) Require multi-modal circulation internal to a development site, as well as connecting to adjacent land use and existing and planned multi-modal facilities.

Community and Economic Vitality

Goal #5: Provide a transportation system that supports existing industry and encourages economic development in the City.

Policies:

a) Improve the movement of goods and delivery of services throughout the City while balancing the needs of all users with a variety of travel modes and preserving livability in residential areas and established neighborhoods.
b) Prioritize efficient freight movement on identified freight routes in the Transportation System Plan and improve freight intermodal connectors as last mile connectors between state highways and intermodal freight facilities.
c) Identify lower cost options or provide funding mechanisms for transportation improvements necessary for development to occur.
d) Program transportation improvements identified in the TSP to facilitate the development of desired land uses and activities.
e) Encourage recreational tourism by developing vehicular, pedestrian, and bicycle connections and recreation routes and services throughout the City and between major recreational locations and destinations and key City service areas.
f) Improve designated major tourist routes with enhanced streetscape and directional markings.
g) Support recreational transit use to boost tourism, enhance economic development, and reduce the environmental impacts of automobile traffic.
h) Explore options to enhance tourist transit use with Coos County Area Transportation District, including the use of seasonal trolleys, and with businesses that attract tourists, such as local casinos.

Communication, Collaboration and Coordination

Goal #6: Develop and maintain a Transportation System Plan that is consistent with the goals and objectives of the City, Coos County, and the state.

Policies:

a) Update and revise as necessary City standards to remain consistent with state, regional and federal rules, regulations, and standards.
b) Operate City land use, financial, and environmental planning functions with priority on strategic transportation and financial investment to implement strategic transportation investments.
c) Require findings that affirm land use and transportation decisions efficiently use public infrastructure investments that:
    - Maintain the mobility and safety of the roadway system
    - Foster efficient development patterns
    - Encourage the availability and use of transportation options such as biking, walking and taking transit
    - Plan for efficient and safe emergency response and evacuation needs
d) Coordinate with North Bend, Coos County, and the Oregon Department of Transportation to implement system management and operations strategies on arterials and highways.
e) Coordinate with Coos County Area Transportation District to strengthen the efficiency and performance of the transit network and to support the multimodal system.

Strategic Investment

Goal #7: Provide a sustainable transportation system through responsible stewardship of financial resources.

Policies:

a) Implement TSP mobility targets to align with economic and physical limitations on state highways and City streets.
b) Preserve and maintain the existing transportation system assets to extend their useful life.
c) Improve travel reliability and efficiency of existing major and minor arterials before adding capacity.
d) Pursue grants independently and with other agencies, and seek to collaborate with other agencies, to efficiently fund transportation improvements and supporting programs.
e) Identify and maintain stable and diverse revenue sources to meet the need for transportation investments in the City.
f) Identify new and creative funding sources to leverage high priority transportation projects.

Health

Goal #8: Provide a transportation system that enhances the health of residents and users and that minimizes impacts to the environment.

Policies:

a) Identify and seek funding for programs that encourage walking, bicycling, and transit.

b) Provide convenient and direct pedestrian and bicycle facilities and routes to promote health and the physical and social well-being of residents, to reduce vehicular traffic congestion, to provide community and recreational alternatives, and to support local commerce and economic development.
c) Implement the Transportation System Plan's multi-modal system to limit users' exposure to pollution and that enhances air quality.
d) Consider noise attenuation in the design, redesign, and major reconstruction of arterial streets immediately adjacent to residential development.
e) Avoid or minimize impacts to scenic, natural, and cultural resources. In physically constrained areas, and as necessary to protect resources, develop and consider alternative transportation design facilities.
f) Reduce the number of vehicle-miles traveled.
g) Increase the number of walking, bicycling, and transit trips in the City.
h) Implement transportation standards that preserve and protect the quality of life in and around residential neighborhoods.
i) Support alternative vehicle types with identification of potential electric vehicle plug-in stations and implementation of City development standards and requirements.
j) Evaluate and implement, where cost-effective, environmentally friendly materials and design approaches (water reduction methods to protect waterways, solar infrastructure, impervious materials).
k) Support technology applications that improve travel mobility and safety with less financial and environmental impact than traditional infrastructure projects.
l) Implement requirements for multi-modal or "complete streets," with each street servicing the needs of the various modes of travel.

COOS BAY TODAY

THE SETTING

The City of Coos Bay is located along US 101 along the southern Oregon coast and offers small town charm with convenient access to the Pacific Ocean. Quality of life is what initially attracts many people and businesses to the Bay Area, with an abundance of outdoor recreational activities, education opportunities, museums, unique shopping and restaurant experiences, full service libraries, and cultural events.

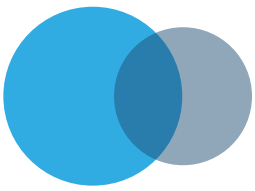
The majority of the Bay Area urban population has settled on a peninsula surrounded by Oregon's largest estuary, Coos Bay. This water body, which resembles an inverted horseshoe, and the adjoining steep topography of the Coast Range account for urbanization patterns in the area. Two neighborhood areas, the Eastside and Empire specifically, are situated on the eastern and western extremities of the city.

This topography makes it difficult to develop a city-wide connected grid network of streets. US 101 serves as the principal north-south arterial, bisecting downtown Coos Bay and connecting it to communities along the coast. The main east-west connections are discontinuous across the extent of the city. Newmark Avenue and Ocean Boulevard connect the Empire district to downtown Coos Bay and US 101. The connection between downtown, US 101 and Eastside requires travelling outside the Urban Growth Boundary (UGB) and across the Isthmus Slough Bridge. Once across the bridge, the main road is the Coos River Highway, also known as 6th Avenue and D Street.

Commute Patterns

Coos Bay has its own unique transportation identity, although it is important to recognize its connection to the region; many people live in one community and work in another. Table 2 summarizes the year 2017 employment inflow and outflow; 2017 is the most recent year of available data.

Table 2. Inflow/Outflow Job Counts 2017

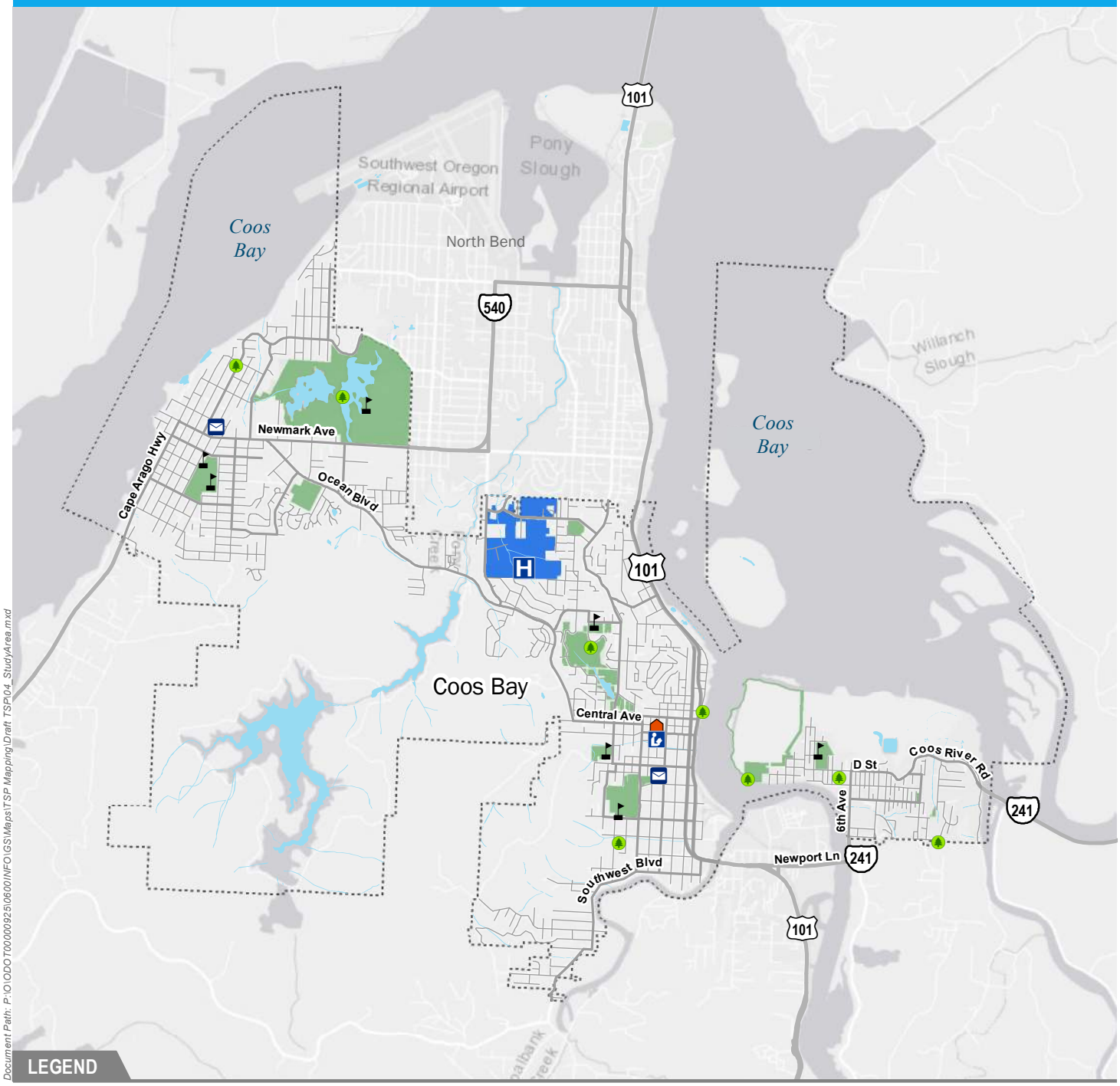
Condition	Share	Inflow/Outflow Diagram
Commuting to Coos Bay from outside city limits	55%	
Living and employed within Coos Bay city limits	18%	
Commuting to outside city limits from Coos Bay	26%	

Source: U.S. Census Bureau. 2017. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. http://onthemap.ces.census.gov/

Key Destinations

Connecting residents and workers to services can be accomplished by well-considered land use planning and establishing a connected, multimodal transportation system. Key destinations within Coos Bay include medical facilities, government resources, parks and schools. These activity centers should be accessible by a variety of transportation modes. Figure 3 shows the City of Coos Bay, the TSP planning area and key destinations. The network of streets serve more than just motor vehicles, as detailed in the following pages.

Coos Bay TSP



Document Path: P:\ODOT\0000092510600\INFO\GIS\Maps\TSP Mapping\Draft TSP\04_StudyArea.mxd

LEGEND

- Urban Growth Boundary (UGB)
- Public Land
- Medical Park
- Hospitals
- Library
- Public Parks
- Coos Bay Public Schools
- Post Office
- City Hall

N

0 0.5 1 Miles

Data Sources:
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 3. Study Area
Coos Bay, OR

DEMOGRAPHICS

Population and Employment

According to Portland State University (PSU) Population Research Center's (PRC) certified 2019 population estimate, Coos Bay's current population is approximately 16,700. This is the largest city on the Oregon coast and is the medical, education, retail, and professional center for the south coast region.

Transportation Disadvantaged Summary

A community's transportation system should provide efficient and accessible transportation that serves the daily transportation needs of all its citizens. To achieve this goal, it is important to know where the transportation disadvantaged (Title VI) communities are, and to accommodate these populations through improved multimodal connectivity to community activity centers and key destinations.[1]

Based on the American Community Survey from 2012-2016 (estimated numbers), Coos Bay had the following demographics as compared to the state of Oregon:

- Older residents than the state average (average age is 43.3 and 21% of residents are over 65 years old).
- A similarly diverse population compared to the state average (85.5% Caucasian), though higher African American population (3.7%) and American Indian and Native Alaska population (1.7%).
- Population that makes less income than the state average ($39,750 median household income and 22% living below the poverty level) and relies more on Food Stamps/SNAP (27%), and with a slightly higher unemployment rate (10%) which indicates that more residents are considered "working poor".
- More people speak English at home compared to the state average but of those people that speak another language 32% are not fluent English speakers. The majority of Limited English Proficiency households speak Spanish at home.

The TSP update process inventoried the transportation-disadvantaged communities and used this information to evaluate potential projects based on their benefits or impacts to these communities. Outreach strategies and detailed demographic information are summarized in Volume 2, *Title VI/Environmental Justice Outreach Memorandum.* The mapping of these populations is available in Volume 2, *Technical Memorandum #4: System Inventory*.

TRANSPORTATION NETWORK DEFICIENCIES

Pedestrians

In Coos bay, there are pockets of walkable neighborhoods, especially in downtown where there are connected and continuous sidewalks. Many of the arterial and collector streets within the city provide sidewalks that allow residents to walk between neighborhoods and commercial areas, and the Coos Bay boardwalk and park trail system allows for pedestrian travel separate from vehicular traffic.

However, significant gaps in the pedestrian system exist, and significant barriers remain to provide safe and direct connections throughout the City. Pedestrian network deficiencies include the following:

[1] Federal regulations require that any agency receiving federal funding comply with Title VI requirements during transportation planning activities. The purpose of the Title VI and related statutes and policies is to ensure that public funds are not spent in a way that encourages, subsidizes or results in discrimination.

- In reviewing arterials and collectors, the streets with significant sidewalk gaps on both sides are Lakeshore Drive, Southwest Boulevard, Morrison Street, D Street and Woodland Drive.
- Important pedestrian routes such as Newmark Avenue, Ocean Boulevard, and Newport Lane/Coos River Highway (OR 241 – Coos County) have the highest pedestrian level of traffic stress (PLTS).
- Trail or shared use paths system lacking connections and signage between neighborhoods and commercial areas.
- Limited number of protected crossings of US 101 northbound, Ocean Boulevard and railroad tracks to Front Street and the boardwalk.
- Discontinuous pedestrian connections between Empire, downtown Coos Bay and the Eastside neighborhood.

Bicyclists

As of this writing, the City of Coos Bay has a limited formalized bicycle network. The existing striped bicycle network includes part of the Oregon Coast Bike Route (OCBR) and a few other facilities, principally in and near downtown Coos Bay and the Empire neighborhood. As the entire bike network is on street, the condition and surface type of bike facilities is equivalent to pavement conditions for the streets on which they exist, which in many cases, is poor. Bicycle network deficiencies include the following:

- The overall lack of bicycle connectivity discourages those who may be interested from choosing bicycling as a form of transportation, because they would be forced to share the road with vehicular traffic at times.
- It can be uncomfortable to ride alongside traffic on the arterial and collector roads in Coos Bay, and the bicycle network is not set up to serve users of all abilities.
- The OCBR does not provide opportunities to access downtown Coos Bay.
- Important bike routes such as US 101, Newmark Avenue, Ocean Boulevard, and Newport Lane/Coos River Highway (OR 241 – Coos County) have the highest bicycle level of traffic stress (BLTS).

Filling the network gaps and improving the safety of existing facilities would be the first steps toward creating a more safe and welcoming experience for bicyclists of all abilities.

Transit

Transit services are provided by CCATD (Coos County Area Transportation District). The Bay Area Loop provides transit service between and within the cities of North Bend and Coos Bay. CCATD reports that 95 percent of CCATD Bay Area Loop service runs on time. On-time reliability indicates that transit vehicles are operating efficiently to meet the Loop schedule. Within Coos Bay, CCATD has several transit stops with shelters and benches, serving high ridership destinations.

- Existing fixed-route service is not offered on weekends or after 5:30 pm on weekdays, and there is no central transit hub for connections between intra- and intercity bus service.
- Frequencies are limited for intercity service to communities in greater Coos County, as well as service south to Curry County, north to Douglas County, and east to Roseburg and Eugene.
- Limited or incomplete bicycle/pedestrian access to transit stops.

Street and Highway System

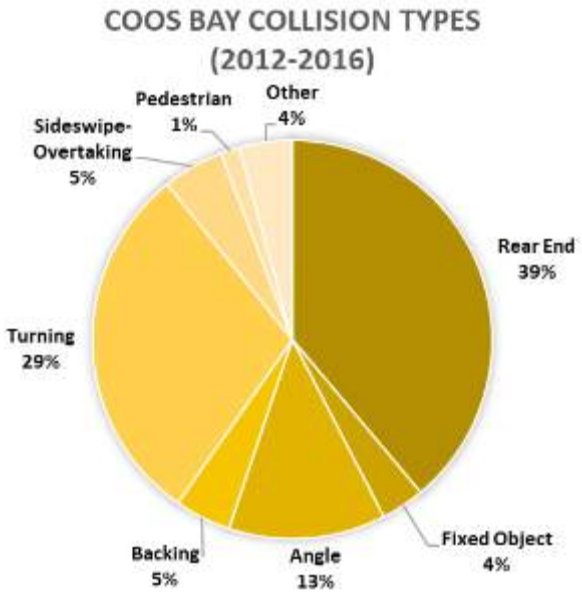
Motor vehicle volumes on the roadways in the area peak during the evening commute, but vary depending on time of year. During the summer months, traffic volumes increase due to an influx of vacationers and visitors to the Bay Area.

SAFETY

A review of the crash history within Coos Bay was completed to identify trends and determine general strategies for improving overall safety. This analysis includes a review of crash records, crash rates, and ODOT Safety Priority Index System (SPIS) data. Supporting documentation for the safety analysis is found in *Technical Memorandum #6: Existing Conditions* (Volume 2).

CRASH DATA TRENDS

The crash analysis included a review of crash history data supplied by the ODOT Crash Analysis and Reporting Unit for the period between January 1, 2012, and December 31, 2016, which were the five most recent full years for which crash data were available at the time of the analysis.



In total, there were two crashes resulting in fatalities. The fatalities occurred on US 101 southbound, south of Johnson Avenue and the intersection of Ocean Boulevard at 19th Street.

There are five intersections flagged for further review due to collision history:

- Thompson Avenue at Woodland Drive
- Koosbay Boulevard at 10th Street
- 7th Street at Ingersoll Avenue
- Johnson Avenue at US 101 North
- 6th Avenue at D Street / Coos River Highway

Each location listed above has a specific project identified in this TSP to address safety.

SAFETY PRIORITY INDEX SYSTEM

The SPIS is a method used in Oregon to identify safety problem areas along state highways. Each year segments are ranked by assigning a SPIS score based on the frequency and severity crashes observed, while considering traffic volume. Locations ranked in the top 10% of the index typically consider corrective actions. Table 3 summarizes these locations on State facilities and off-State facilities, respectively.

In Coos Bay, there were three top 10% SPIS locations. Although not within city limits, the sections of US 101 and Newport Lane/Coos River Highway (OR 241) connecting the Coos Bay UGB has two top 10% SPIS locations.

Table 3. Top 10% SPIS Sites

Road Name	Cross Street	ADT	Total Crashes	Fatal & Injury A[1]
State Facilities				
US 101	Kruse Ave	17,511	6	2
US 101	Harriet Rd	26,300	26	2
OR 241	Ellen St	9,033	13	1
Off-State Facilities				
N 10th St	Commercial Ave	5,000	11	1
Ingersoll St	S 2nd St	1,100	5	1

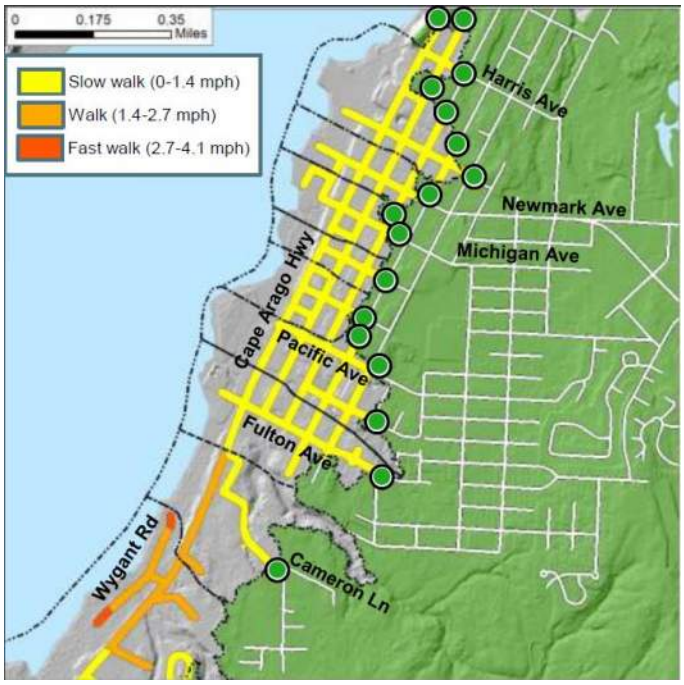
Source: ODOT SPIS Report, 2016

1. Incapacitating or serious Injury

EMERGENCY PREPAREDNESS

Coos Bay has coordinated with the Oregon Coastal management Program to prepare for a local Cascadia tsunami. As part of the tsunami planning efforts, the Oregon Department of Geology and Mineral Industries (DOGAMI) has produced detailed evacuation time and distance modeling that documents minimum travel speeds and routes to safety in order to evacuate from a locally generated tsunami.[2] The tsunami evacuation plan for Coos Bay details the projected tsunami inundation area, evacuation routes, and evacuation assembly areas. Evacuation signs have been installed along streets to indicate the direction inland or to higher ground.

Figure 4. Beat the Wave (Downtown and Empire)



The development of tsunami evacuation routes and improvements as a part of the local transportation system is critical to public safety. This evacuation planning and analysis will also provide the basis for integrating evacuation considerations into other transportation system improvement decisions identified in the TSP. The TSP recommends that the city place a high priority on projects that support or enhance the evacuation routes.

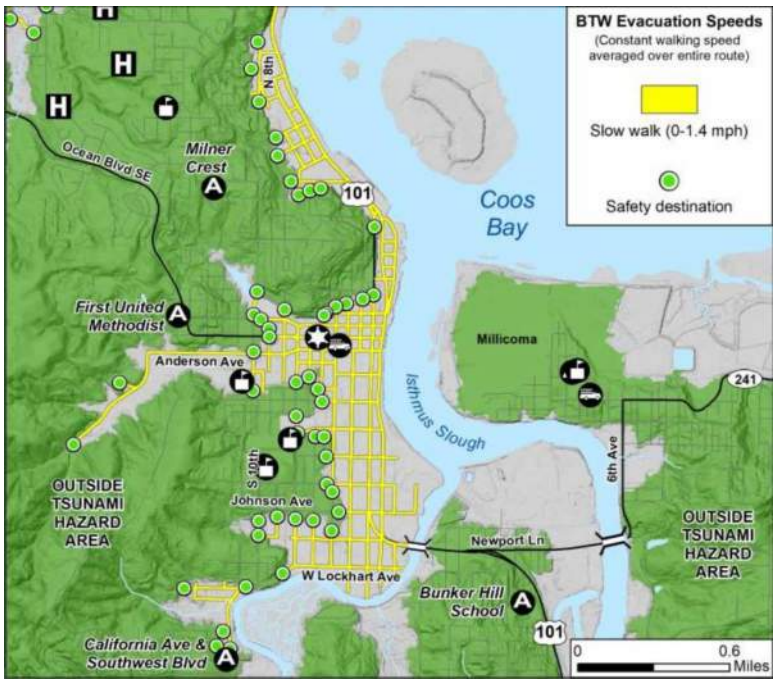
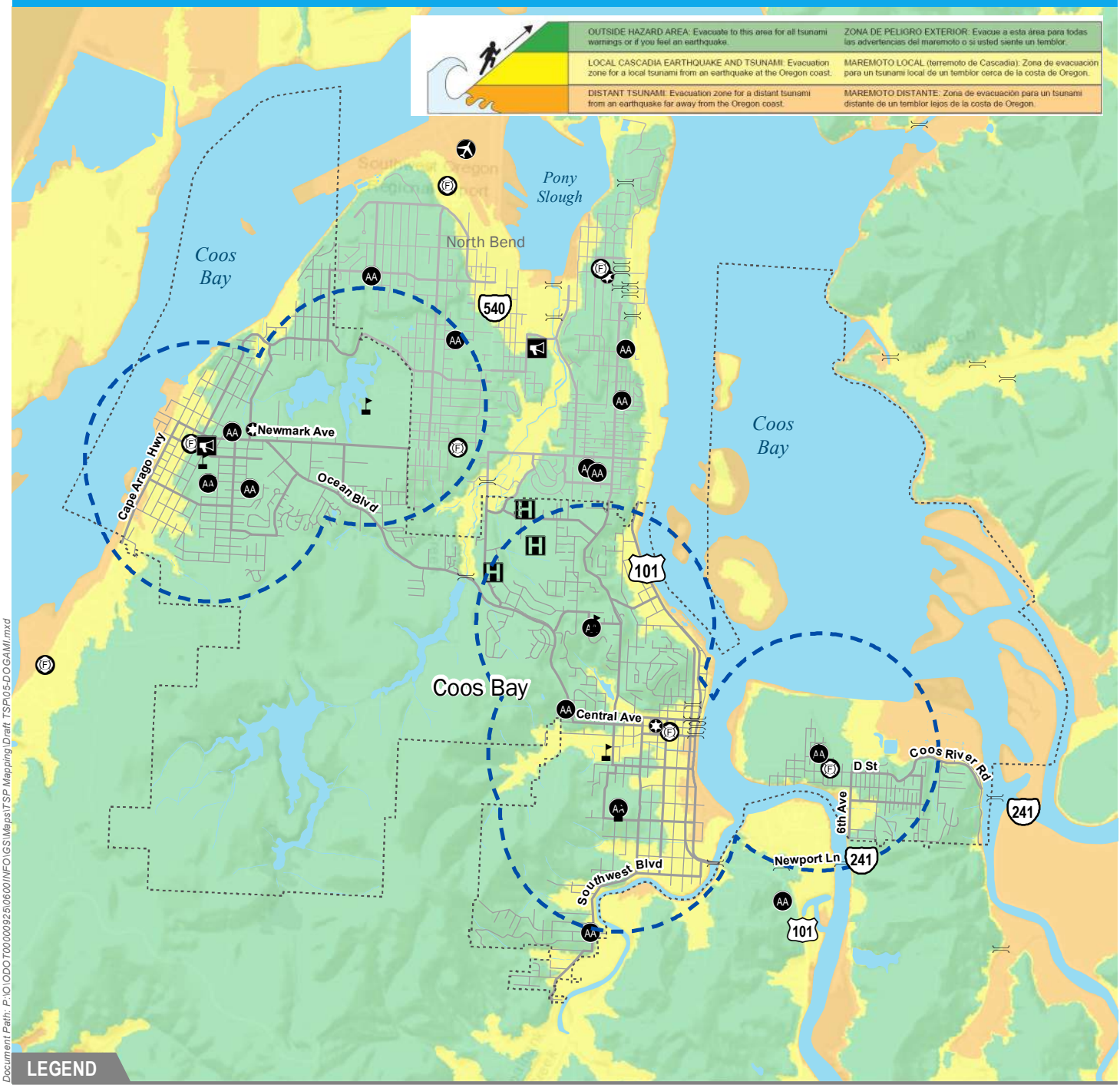


Figure 5 shows the two tsunami hazard zones: inundation associated with a maximum considered distant (orange) tsunami and local (yellow) Cascadia tsunami. In addition to the evacuation maps prepared by DOGAMI, the Coos Bay area underwent analysis to determine the pedestrian speeds necessary to safely reach zones outside the hazard area (green). The analysis resulting in "Beat the Wave" maps that depict the minimum evacuation speed required to stay ahead of the tsunami wave given a variety of scenarios that will increase evacuation difficulty. The results show that evacuation for most in the Coos Bay region is achievable at a moderate walking speed (4 feet per second or 2.7 mph). Even for those with mobility limitations (i.e., those who cannot travel at speeds more than 4 feet per second), safety can be reached ahead of the wave from nearly every location.

[2] https://www.oregongeology.org/pubs/tsubrochures/CoosBayEvac.pdf

Coos Bay TSP



Data Sources:
State of Oregon Department of Geology and Mineral Industries
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 5. Tsunami Evacuation Zones

Another resource for residents is a free smartphone app showing Pacific Northwest tsunami evacuation zones. The NANOOS Visualization System (NVS) Tsunami Evacuation smartphone app provides an at-a-glance view of tsunami hazard zones along the coasts of Oregon and Washington. Users can locate their current location on the map to see if they are in a tsunami evacuation zone, plan their own evacuation routes, download published evacuation brochures for the region and, now, print and save customized evacuation brochures centered on an area of interest. The free NVS Tsunami Evacuation app is available from the iTunes App Store and Google Play.

COOS BAY 2040

This chapter summarizes the future baseline conditions of Coos Bay's transportation system through the year 2040 planning horizon. Included are summaries of the forecasts for Coos Bay's population and employment, how future transportation needs are determined, and future transportation demand, and a description of what Coos Bay's transportation system is expected to look like in 2040.

FORECASTED POPULATION AND EMPLOYMENT

According to Portland State University (PSU) Population Research Center's (PRC) population forecast for the area, Coos Bay's Urban Growth Boundary (UGB) population is expected to grow to 18,117 by the year 2035, and to 19,214 by the year 2065. This represents an average annual growth rate 0.4% over the next 17 years and an average annual growth rate of 0.2% over the following 30 years. By comparison, the average annual growth rate for Coos County is expected to be 0.0% (17 year rate) and -0.2% (30 year rate).

The number of people living and working in Coos Bay and the surrounding communities will impact the future of the transportation system. Assumptions about land use also have an impact on transportation planning; for example, retail land uses generate more trips than residential. Balancing the locations of different land use types can reduce the need for residents to travel long distances, thus reducing stress on the transportation network.

Travel Demand Model

The Coos Bay/North Bend Travel Demand Model is used to predict future vehicular traffic volumes and understand where change in population and employment is expected. As the population grows or development occurs, new or updated infrastructure may be needed.

Travel demand models are tools used to help predict the patterns of future commuters, school traffic, and recreational traffic. The model relies on socioeconomic data (e.g., households and employment) to determine the travel demand, and system attributes (e.g., roadway capacity, speeds, and distances) to represent the transportation supply. The long-range regional growth forecasts are consistent with current land use zoning and State-approved population forecasts for the Bay Area.

The travel demand model was last updated in 2015 through a coordinated process with ODOT and staff from the Cities of North Bend and Coos Bay. The model relies on PSU population forecasts and input from the cities on future land use assumptions consistent with the Comprehensive Plans. No major network improvement projects were planned. Only typical improvements such as speed changes, capacity changes, and new signals were integrated into the future model.

Planning for Future Development

The City of Coos Bay may require new developments identify anticipated impacts to the transportation system. As part of this process, the City could condition transportation improvements upon the development to mitigate transportation-related impacts.

FUTURE ESTIMATES OF WALKING, BIKING, AND TRANSIT

While there is great interest in developing forecasting models for bicycles and pedestrians, the traditional travel demand methodology used for estimating motor vehicle activity does not easily apply to bicycle and pedestrian travel for a number of reasons, including:

- Data on walking and biking is too limited or inaccurate to develop accurate models.
- The nature of bicycle and pedestrian travel and decision-making is not easily quantified, and the cost to analyze and develop walk and bike models is prohibitive.

As such, the future needs for walking, biking, and transit in Coos Bay are determined by reviewing areas of future growth in the city, how well the city is served by existing facilities, and how planned/funded projects might improve future systems.

FUTURE DRIVING CONDITIONS

The Bay Area is expected to see a steady, albeit minor, growth in population and employment within the 2040 planning horizon. This increase could result in an increase in traffic along the arterial street system, and minor increases on the local and neighborhood network. Due to its geographic location, visitors to the Bay Area must do so by crossing bridges. These bridges, specifically the Conde McCullough Memorial Bridge and the Isthmus Slough Bridge, are existing bottlenecks in the traffic that travels to and from the Bay Area that are expected to increase by 2040.

With new development and increased employment opportunities, the transportation system will need to accommodate more people trying to get around. In addition to commuting trips, the region is expected to experience more tourism traffic, as well as increased congestion in neighboring communities. Listed below are Coos Bay study intersections expected to approach mobility targets in the year 2040 if no improvements are made and driving trends continue as forecasted.

- Newmark Avenue at Morrison Street: Southbound movements
- 7th Street at Anderson Avenue: Eastbound movements
- Hall Avenue at US 101 northbound: Westbound movements

MODAL PLANS

PEDESTRIAN

Walking is the most affordable and accessible of all transportation modes. It is also clean, low-impact on the City's infrastructure, healthy for the individual, and integral to community livability. A walkable environment integrated with other modes of transportation is essential to creating a multimodal transportation system. It is also a key component to reducing reliance on automobiles. Whether a trip is on foot or a mobility device is used, people must walk for at least part of every trip, even when the trip takes place on transit, in an automobile, or on a bicycle.

Pedestrian Network

Coos Bay's pedestrian system includes sidewalks, stairs, ramps, trails, shared use paths, crosswalks at intersections, and midblock crossings, as well as the amenities that enhance them (e.g., illumination and benches). In addition to improvements made by the City, private development is required to implement pedestrian system improvements and/or sidewalks along new collector and arterial facilities adjacent to newly constructed developments. The City's current requirements for sidewalks meet or exceed both the TPR requirement and the recommended sidewalk standards of the Oregon Bicycle and Pedestrian Plan.

A pedestrian facility inventory of the arterial and collector system was completed as part of *Technical Memorandum #4: System Inventory* (Volume 2) to determine the presence of sidewalks.

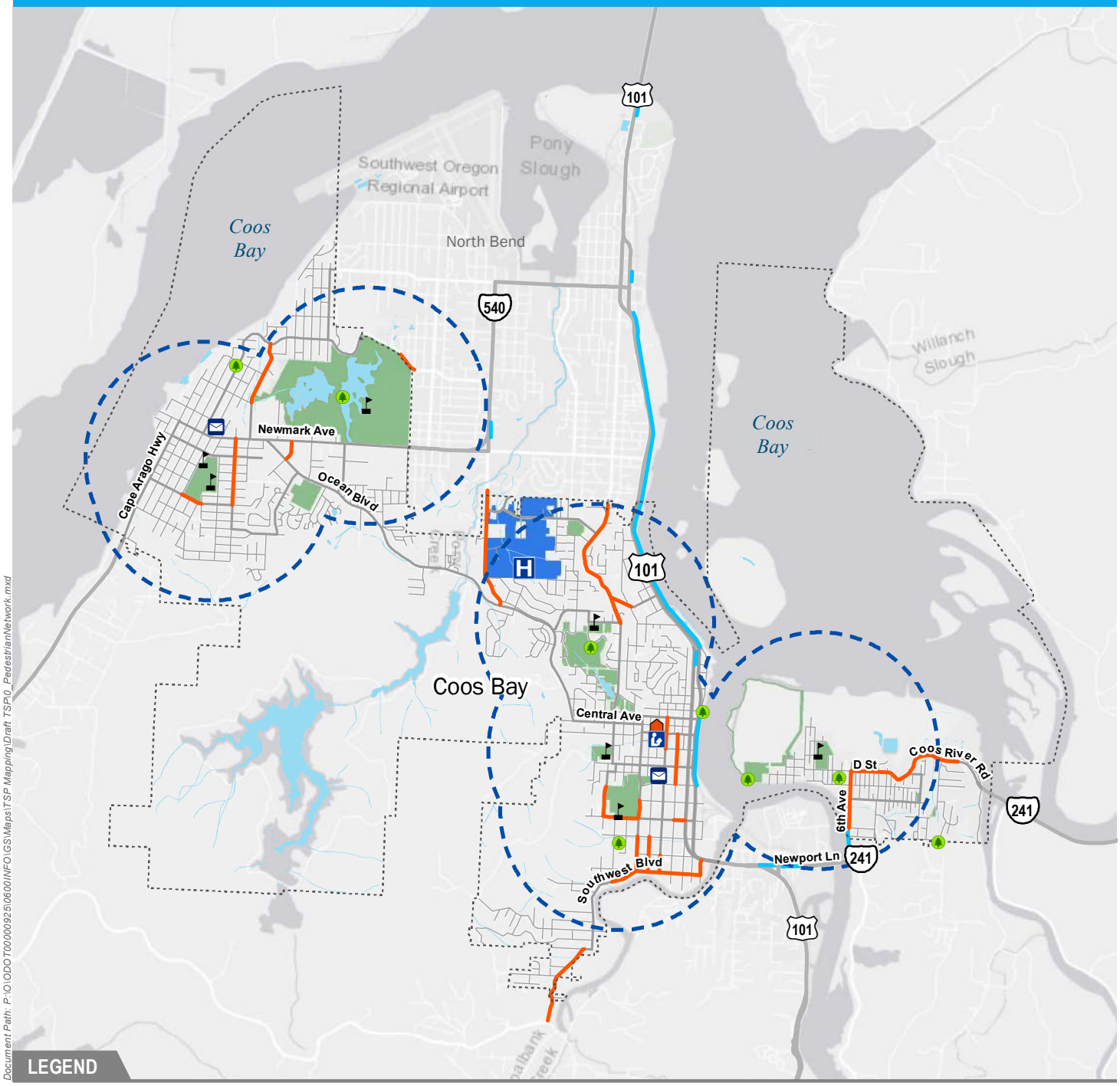
Figure 6 shows locations within the city where sidewalks are missing on one or both sides of the street along arterials and collectors. Although the focus of the TSP is on the arterial and collector network, the local system provides a critical opportunity to provide additional connectivity throughout the city. In addition to sidewalks, pedestrians can utilize shared use paths, which are shared facilities with bicyclists, and are concentrated in or near parks and the Coos Bay boardwalk.

The City received Safe Routes to School funding in 2019 to provide sidewalk, ramps, crosswalk, rapid flashing beacon and bikes lanes for Millicoma and Eastside Elementary Schools. All ODOT facilities are planned to have ADA improvements (US 101 and OR 241).

Oregon Coast Trail: The Oregon Coast Trail (OCT) extends along the Oregon coastline from Fort Stevens State Park at the northernmost tip of the state south to the California border. This trail is for thru-hikers and section hikers. Although most of the route is on the beach, some segments wind through state parks or public lands. Generous landowners provide trail easements for portions of trail on private property. About 10 percent of the trail is on the shoulders of U.S. 101, county roads and city streets.

Through the Bay Area, the OCT generally travels along the same route as the Oregon Coast Bike Route (OCBR). This guides travelers along Newmark Avenue to Empire Boulevard, passing the Hollering Place and eventually following Cape Arago Highway toward Charleston.

Coos Bay TSP



Document Path: P:\O\ODOT\0000092510600\INFO\GIS\Maps\TSP Mapping\Draft TSP\0_PedestrianNetwork.mxd

LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Public Land
- Medical Park
- Library
- Hospitals
- Public Parks
- Coos Bay Public Schools
- Post Office
- City Hall
- Missing Sidewalk (ODOT)
- Missing Sidewalk (Arterial/Collector)

N

0 0.5 1 Miles

Note: Sidewalk data for Local Streets classifications was not mapped as part of the TSP process.

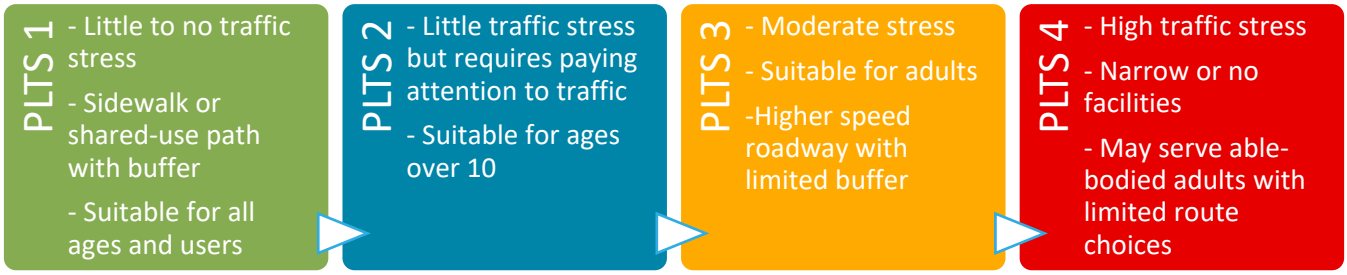
Data Sources:
Cities of North Bend and Coos Bay, Oregon Department of Transportation (ODOT), Oregon Geospatial Enterprise Office, ESRI ArcGIS Online

FIGURE 6. Pedestrian Network

PEDESTRIAN LEVEL OF TRAFFIC STRESS

The pedestrian network was evaluated for all arterials and collectors based on the Pedestrian Level of Traffic Stress (PLTS), as shown in Figure 7. PLTS considers the following factors:

- Number of lanes and posted speed
- Illumination presence
- General land use
- Sidewalk condition and width
- Buffer type and width
- Bike lane width
- Parking width



The presence of sidewalks alone does not necessarily equate to a comfortable experience for a pedestrian. Walking near busy streets or along narrow sidewalks can cause stress or discomfort. PLTS 2 is considered a reasonable minimum target for pedestrian routes, with areas near schools striving for a PLTS 1 to best serve the higher number of children at these locations.

As shown in Figure 7, none of the evaluated facilities is PLTS 1. Many of the streets outside of the downtown area have speeds greater than 25 mph or lack a buffer between the sidewalk and vehicular traffic, which heavily influence PLTS rating. Most links with PLTS 4 fall into one of two categories: (a) there is no sidewalk or (b) there is a sidewalk, but the sidewalk has little or no buffer for a high-speed, high-capacity segment.

Pedestrian Plan

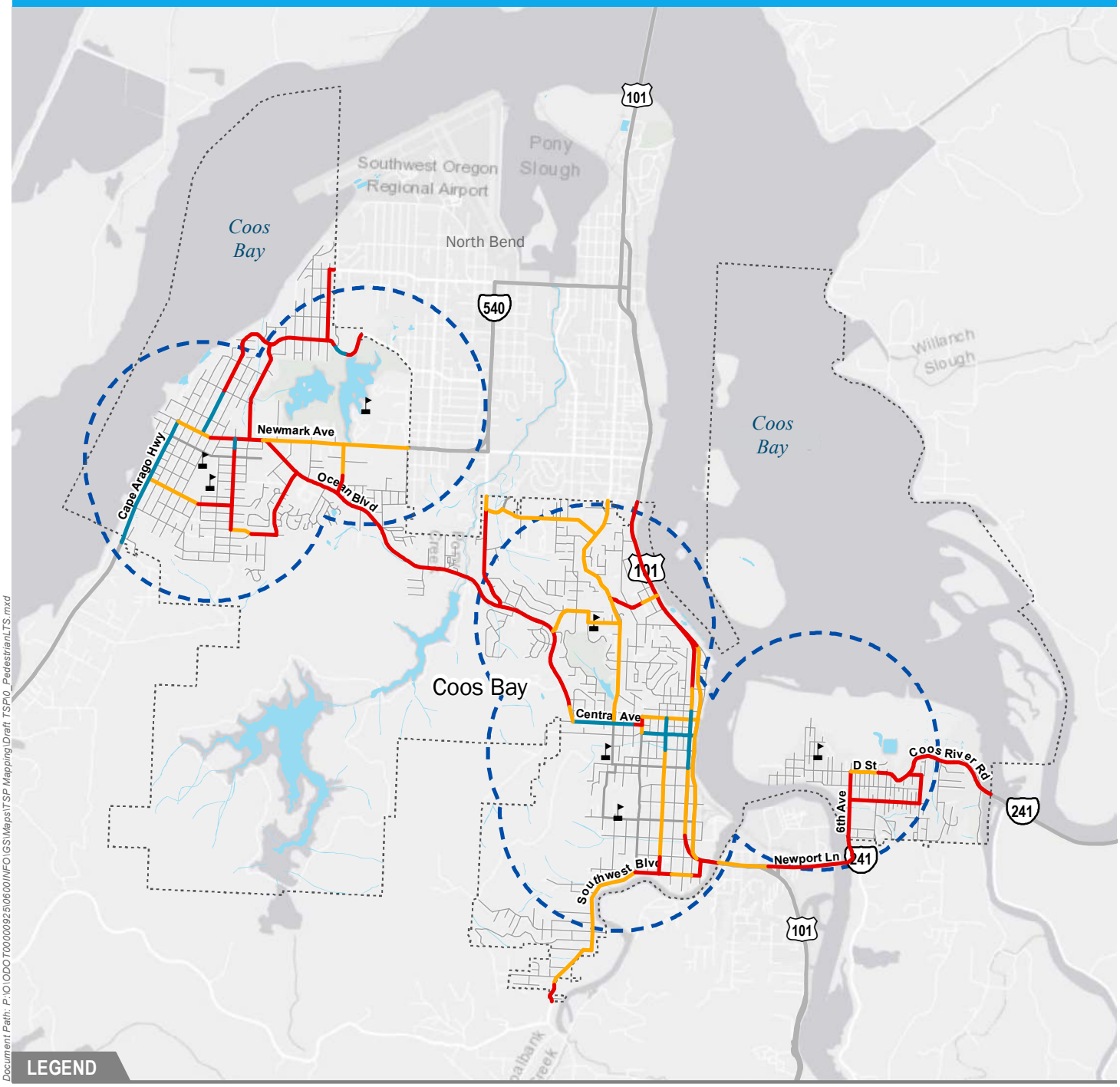
Coos Bay is working to complete and maintain a connected pedestrian network by providing sidewalks on at least one side of the street on its arterial and collector system, as well as by filling gaps near schools and activity centers. Locations lacking sidewalks have projects identified in the TSP to create or fill in sidewalks. The projects vary by location and type, with facilities planned as a stand-alone project or as part of a larger multimodal improvement.

SAFE ROUTES TO SCHOOL

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. Projects identified within a one-mile radius of schools are eligible for funding opportunities through the ODOT Safe Routes to School Infrastructure Program. Within the context of the TSP, new sidewalk, sidewalk infill, and enhanced crossing projects have been identified to improve multi-modal access to schools. ODOT has also developed an online GIS tool that allows users to access information that may support grant applications.[3]

[3] Infrastructure Grant Applicant Resource Tool (ODOT Safe Routes to School): https://geo.maps.arcgis.com/apps/webappviewer/index.html?id=33d00a3d7181433d85abfce78b8ae879

Coos Bay TSP



Document Path: P:\O\ODOT00000925\0600\INFO\GIS\Maps\TSP Mapping\Draft TSP\0_PedestrianLTS.mxd

LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Coos Bay Public Schools

Pedestrian Level of Traffic Stress (PLTS)

- PLTS 1
- PLTS 2
- PLTS 3
- PLTS 4

N

0 0.5 1 Miles

Note: PLTS data for Local Street classifications was not mapped as part of the TSP process.

Data Sources:
David Evans and Associates, Inc.
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 7. Pedestrian Level of Traffic Stress

CRITICAL PEDESTRIAN ROUTES

Table 4 summarizes areas to focus future pedestrian improvements. These projects could also be considered in tandem with road rehabilitation projects.

Table 4. Coos Bay Pedestrian (Sidewalk) System Priority

Facility Name	Approximate Location
Priority[1]	
Southwest Blvd	Libby Dr to Montana Ave
Shoneman-Morrison St	Harris Ave to Lakeshore Dr
Morrison St	Pacific Ave to Newmark Ave
Pacific Ave (one side)	Wasson St to Fillmore St
Pacific Ave	Fillmore St to Morrison St
17th St	East City Limits to Grant St
Koosbay Blvd	10th St to 8th St
10th St (one side)	Teakwood Ave to Hemlock Ave
Koosbay Blvd (one side)	North City Limits to Vine St
Coos River Hwy	"H" St to Applewood
7th St	Hall Ave to Ingersoll Ave
7th St	Johnson Ave to Lockhart Ave
11th St	S. of Ferguson Ave to Ingersoll Ave
Lockhart Ave	10th St to 4th St
Ingersoll Ave (one side)	10th St to 7th St
5th St	Johnson Ave to Lockhart Ave
Coos River Hwy/Newport Lane	US 101 to Chamberlain Rd
Coos River Hwy	Isthmus Slough to "I" St
Secondary[2]	
Woodland Ave	North City Limits to Thompson Road
Woodland Ave	Thompson Rd to Ocean Blvd
4th St	Commercial Ave to Curtis Ave
2nd St	Anderson Ave to Golden Ave
Lockhart Ave	4th St to Front St
Front St	Lockhart Ave to US 101
4th St	Kruse Ave to Lockhart
Ingersoll Ave	2nd St to Broadway Dr/US 101 S
Wallace St	Ocean Blvd to Newmark Ave
US 101 (one side)	North City Limits to downtown
US 101 (North, one side)	Commercial Ave to Golden Ave

Notes: [1] Provide access to key community destinations; [2] Fills gap in access

BICYCLE

Bicycles are the next most affordable and accessible mode of transportation, and are highly convenient for longer distances. They also promote an active lifestyle, by using muscle power and not expending fossil fuels and polluting the atmosphere. People bike for a variety of reasons: to get to and from work, run errands, or simply for the joy of riding and getting the benefit of exercise.

Bicycle Network

Figure 8 shows the bicycle network within Coos Bay's UGB, as well as the current route of the Oregon Coast Bike Route. These routes are designated by signing, striping, and other visual markings. As seen in the figure, many bicycle facilities share the roadway with motor vehicles since formalized bicycle lanes are scarce. There are opportunities to create continuous north/south and east/west links across the city and increase connectivity, especially by utilizing the local street system to create parallel routes or new connections to the bicycle network on the collector and arterial system. In addition to local roads, Coos Bay should continue to work with regional partners to identify future bicycle connectivity options for facilities outside our jurisdiction (e.g. US 101).

BICYCLE LEVEL OF TRAFFIC STRESS

The bicycle network was evaluated for all arterials and collectors based on the Bicycle Level of Traffic Stress (BLTS). BLTS measures the effect of traffic-based stress on bicycles by quantifying the perceived comfort levels a bicyclist experiences on a given facility. Some characteristics used to determine BLTS are presence of a bicycle lane, width of facilities, posted speed, adjacent parking facilities, and land use (rural or urban). The BLTS methodology does not account for the steepness of the roadway.

BLTS ratings range from BLTS 1 (little traffic stress, suitable for all cyclists) to BLTS 4 (high stress and suitable for experienced and skilled cyclists). Three classes of criteria are used to determine BLTS based on existing conditions:

1) Facilities containing Bike Lane with Adjacent Parking Lane;
2) Facilities containing Bike Lane without Adjacent Parking Lane;
3) Urban/Suburban Facilities with Mixed Traffic.

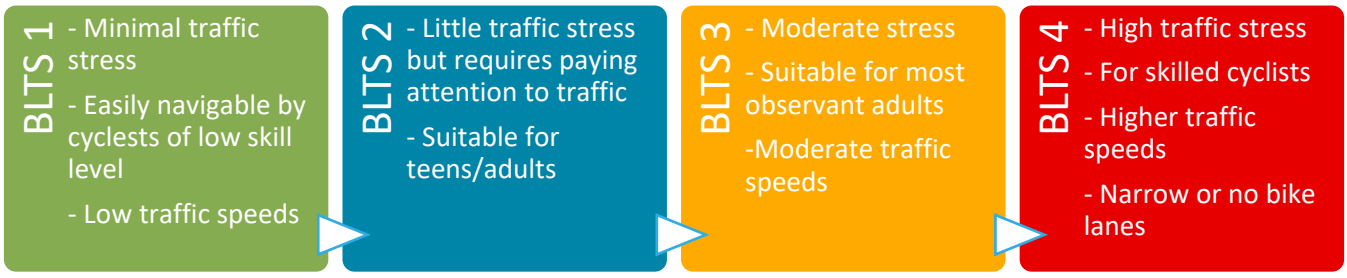
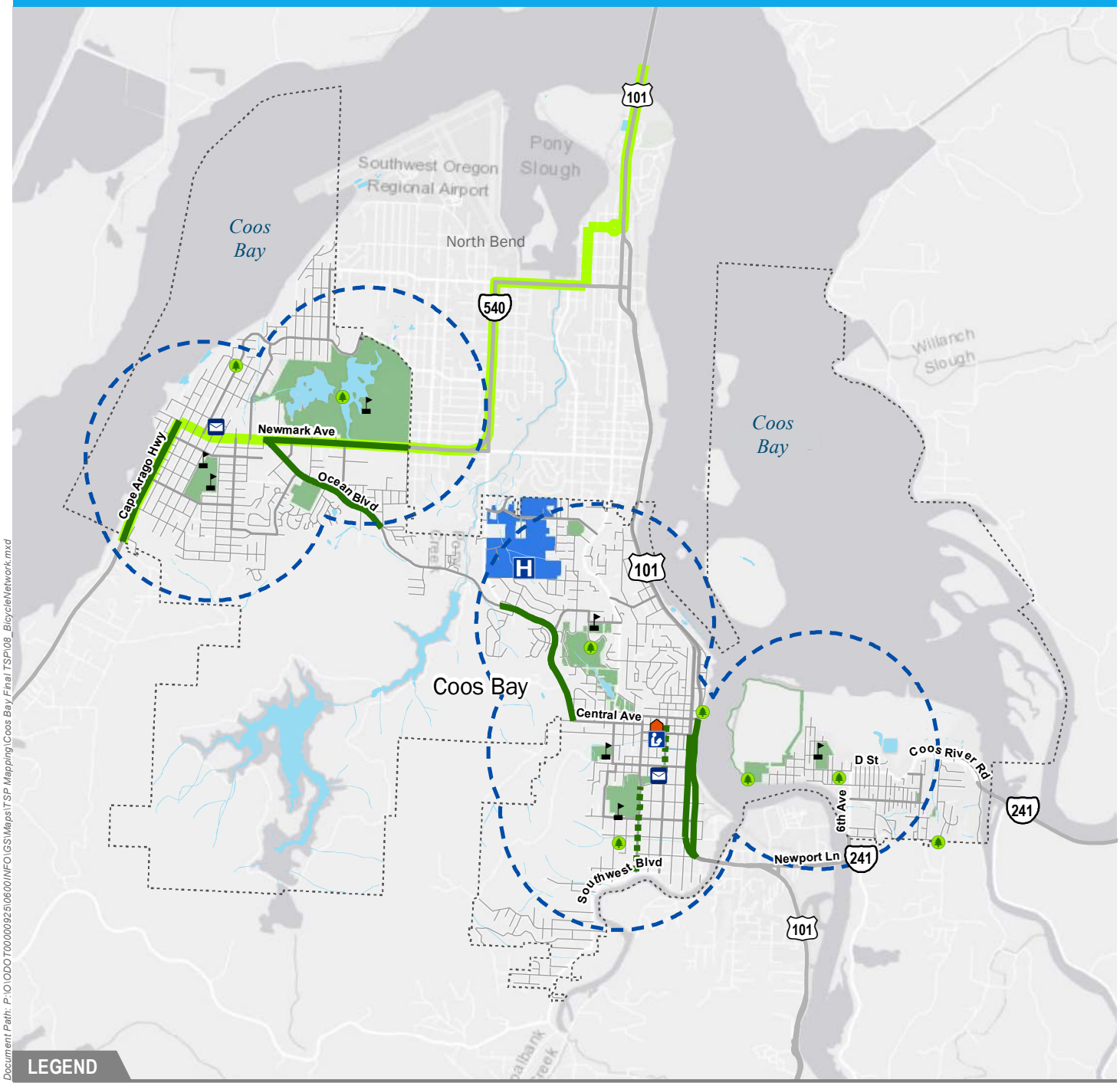


Figure 9 displays the BLTS for each collector/arterial within Coos Bay.

Coos Bay TSP



Document Path: P:\ODOT\0000092510600\INFO\GIS\Maps\TSP Mapping\Coos Bay_Final TSP\08_BicycleNetwork.mxd

LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Public Land
- Medical Park
- Library
- Hospitals
- Public Parks
- Coos Bay Public Schools
- Post Office
- City Hall

Bicycle Facility Type

- Shared Lane
- Bicycle Lane
- Oregon Coast Bike Route

N

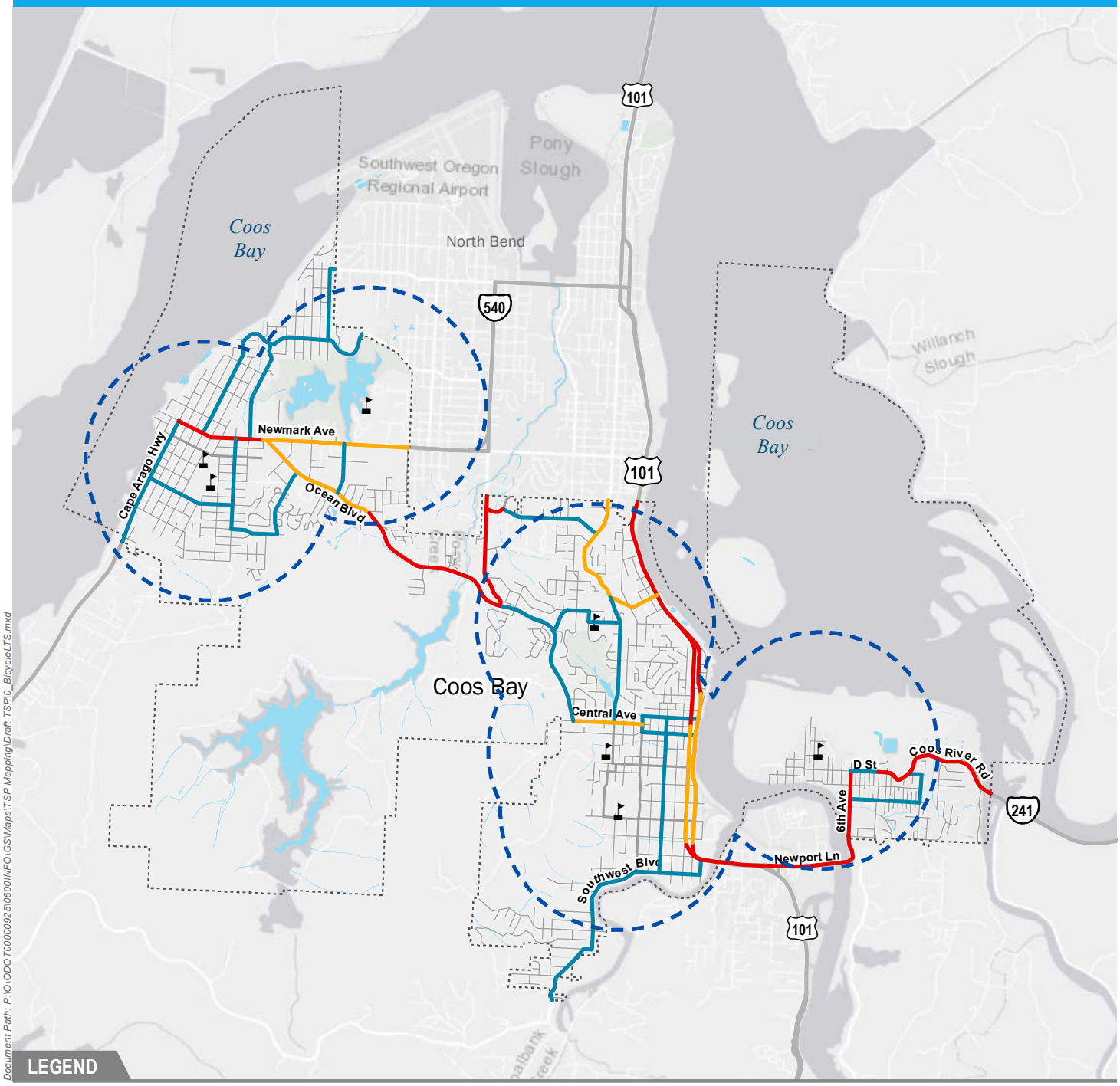
0 0.5 1 Miles

Note: Ocean Boulevard and US 101 have been identified as alternate routes to the OCBR

Data Sources: Cities of North Bend and Coos Bay, Oregon Department of Transportation (ODOT), Oregon Geospatial Enterprise Office, ESRI ArcGIS Online

FIGURE 8. Bicycle Network

Coos Bay TSP



Document Path: P:\O\ODOT\0000092510600\INFO\GIS\Maps\TSP Mapping\Draft TSP\0_BicycleLTS.mxd

LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Coos Bay Public Schools

Bicycle Level of Traffic Stress (BLTS)

- BLTS 1
- BLTS 2
- BLTS 3
- BLTS 4

N

0 0.5 1 Miles

Note: BLTS data for Local Street classifications was not mapped as part of the TSP process.

Data Sources:
David Evans and Associates, Inc.
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 9. Bicycle Level of Traffic Stress

Bicycle Plan

Bicycles are legally classified as vehicles in Oregon, and roadways must be designed to allow bicyclists to ride in a manner consistent with the vehicle code. The basic design treatments that accommodate bicycle travel on the road are: shared roadways (sharrows), roadway shoulders, or bicycle lanes. The City may make bicycle network improvements, or private development may also contribute to bicycle projects.

BIKE ROUTES

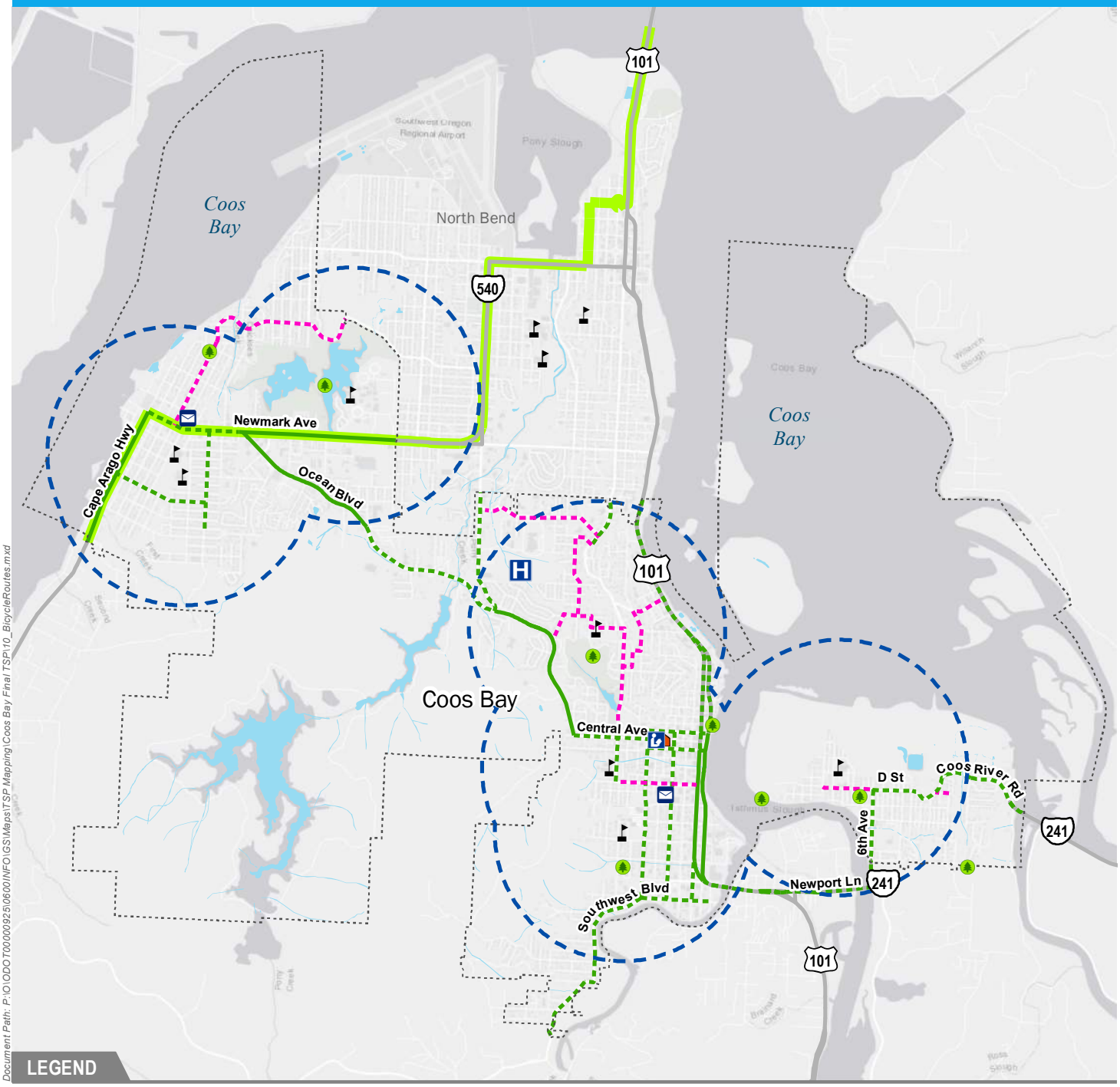
The Bike Route map identifies a citywide network of interconnected bike routes that would enable people to satisfy their daily travel needs within the city or surrounding region by bicycle. As illustrated in Figure 10, the network would provide connections to key local destinations, including schools, parks, the library, downtown Coos Bay, and other identified activity centers. The classifications help define the type of bicycle treatments planned for each roadway. This is an effort to more clearly prioritize and define the "Bicycle Action Plan" in the previous 2004 TSP.

- **Type I Bike Routes (Separated):** These facilities would consist of routes that separate bicycles from vehicular traffic with a physical barrier or striped buffer. Type I Bike Routes in Coos Bay are primarily shared use paths (boardwalk). Type I bike routes are intended to provide more separation and protection for cyclists from vehicles than a standard shoulder or bike lane.
- **Type II Bike Routes (Striped):** These routes would facilitate circulation within Coos Bay using bike lanes with a minimum width of 5 feet. Type II facilities would provide access between residential neighborhoods and local destinations, primarily on collector and arterial streets.
- **Type III Bike Routes (Neighborhood):** These neighborhood shared routes would be located mostly on residential and collector streets with low traffic volumes and speeds. They are designed to provide safe, comfortable, low-stress access within neighborhoods and for individuals of all cycling confidence levels. Bicycle-specific infrastructure would consist of painted sharrow markings and signage to provide wayfinding. In some cases, Type III bike routes may serve as a parallel route if a Type I or II facility is not feasible on an arterial or collector roadway.

Oregon Coast Bike Route: The OCBR spans the Oregon coastline from Astoria to Brookings, primarily on US 101. It connects coastal communities, recreational destinations and viewpoints. Through Coos Bay, the OCBR is signed along Cape Arago Highway (Newmark Avenue and Empire Boulevard).

In Coos Bay, the OCBR update is looking at options to extend the route into Downtown Coos Bay via US 101 and Front Street. The City of Coos Bay supports the update of the OCBR and wishes to identify opportunities to attract riders to destinations in the community.

Coos Bay TSP



LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Library
- Hospitals
- Public Parks
- Coos Bay Public Schools
- Post Office
- City Hall

Bicycle Route Plan

- Existing Type II (Striped)
- Future Type II (Striped)
- Future Type III (Neighborhood Route)
- Oregon Coast Bike Route

Note: Ocean Boulevard and US 101 have been identified as alternate routes to the OCBR

N

0 0.5 1 Miles

Data Sources:
Cities of North Bend and Coos Bay, Oregon Department of Transportation (ODOT), Oregon Geospatial Enterprise Office, ESRI ArcGIS Online

FIGURE 10. Bike Route Plan

BICYCLE NETWORK ENHANCEMENTS

In addition to regular maintenance to keep current facilities in good condition, the City has identified additional projects as part of its Capital Improvement Plan to fill identified gaps in the bicycle system. Throughout Coos Bay, there are a number of locations where enhancements to the bicycle network may:

1. Improve safety (by increasing the visibility of cyclists for motorists and by increasing separation between the modes, as conditions warrant).
2. Decrease automobile trips.

By improving safety and creating a more inviting network and environment for cyclists, the City can promote increased levels of bicycle and pedestrian activity. Coos Bay has established a goal of providing improved bicycle facilities throughout the city where ROW allows. Examples of bicycle network enhancements are shown below.

Bicycle Network Enhancements

Bicycle Lanes

Nacto.org Urban Bikeway Design Guide

Buffered Bicycle Lanes

Nacto.org Urban Bikeway Design Guide

Shared-use Paths

FHWA.dot.gov

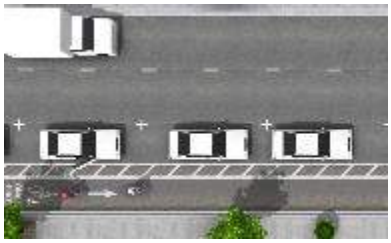
Cycle Tracks

Nacto.org Urban Bikeway Design Guide

Sharrows

Nacto.org Urban Bikeway Design Guide

Cycle Track (Parking Lane Buffer)



Nacto.org Urban Bikeway Design Guide

TRANSIT

Public transit can provide transportation alternatives within the city and to other regional destinations for those who cannot or choose not to drive motor vehicles. Although transit is not as low-cost as walking and bicycling, it provides a lower-cost option than owning and operating a personal vehicle. Transit can meet the needs of longer distance trips that may be hard to complete on foot or by bicycle. Improvements come in the form of higher frequency service, wider service coverage, and/or better transit stop amenities.

Transit Network

Coos County Area Transportation District (CCATD) provides daily loop service to dozens of stops in the Bay Area. The connecting routes serve the Coquille Indian Tribe, along with the communities of Myrtle Point, Powers, Hauser, and Lakeside and locations in between. Additional transportation providers, such as Curry Public Transit, Pacific Crest Bus Lines, and Greyhound assist in getting residents to other areas throughout the region.

Transit Plan

The TSP suggests multimodal concepts to support transit through improved access and connectivity of the bicycle and pedestrian system. A TSP can also support transit by identifying projects identified in the transit agency plans. Table 5 summarizes the concepts, responsible agency, and potential ways for the City to support the concept. In addition to these concepts, the City recommends that the Transit District pursue improved coordination with City, County, and State services.

The following concepts are suggested as opportunities for the City to collaborate with, or otherwise support, the Transit District in order to improve public transportation services in the greater Bay Area.

Table 5. Transit Enhancements and Responsible Agencies

ID	Project Name / Description	CCATD	Coos Bay	Nature of City Support
22	**Bay Area Loop Weekend Service** Add weekend service	Lead	N/A	None
23	**Extend Transit Service Hours** Extend service hours on all transit routes	Lead	N/A	None
24	**Transit Frequency and Routes** Increase frequency & add additional route (US 101 & Ocean Blvd routes)	Lead	N/A	None
25	**Shelters and Stops** Add shelters and stops near community destinations	Support	Support	Assistance securing needed ROW, and City implementation of bike and pedestrian improvements
26	**Bike/Ped Transit Connectivity** Improve bicycle and ped connectivity to stops	Support	Support	City implementation of bike and pedestrian improvements
27	**Regional Transit Hub** Support CCATD in pursuit of regional transit hub	Lead	Support	**Potential** planning partnership, assistance securing needed land, and ROW
28	**Transit Pullouts** Work with CCATD to identify locations for transit pull outs on busier streets	Support	Support	**Potential** planning partnership, assistance securing needed land, and ROW

Notes: New routes, increased frequencies and improved stop amenities and accessibility should be considered as development occurs and new community services are established (e.g. new schools, medical facilities, employment centers)

The Oregon Public Transportation Plan (OPTP) establishes statewide policies and strategies relating to traditional public transportation modes. The TSP recognizes and supports these policies, especially the following:

- Focus on strategies to provide an effective network of bikeways and pedestrian facilities to connect to destinations and other modes of travel including public transportation.
- Seek to eliminate first and last mile barriers by improving public transportation links to other facilities and services. These may include accessible facilities, sidewalks, trails, bicycle parking, bikeways, carshare, transportation network companies (such as Uber and Lyft) and taxis, rideshare, and bikeshare services.

The TSP includes several projects that follow the guidance of the OPTP, such as increased and improved bicycle, pedestrian and transit amenities, establishing neighborhood bikeways and adding shelters and stops near community destinations.

CCATD received Oregon's Statewide Transportation Improvement Funds to start a new bus route along Highway 42 between North Bend, Coos Bay and Roseburg. The route is expected to operate on Tuesdays and Thursdays.

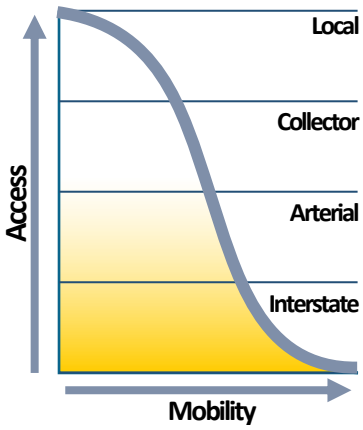
ROADWAY

The roadway network serves the highest number of people on a day-to-day basis. While many people own personal vehicles, some households share one or multiple vehicles among multiple people. The roadway system serves not only motor vehicles, but also bicycles, pedestrians, transit, and freight take advantage of roadways to get from place to place. As such, this chapter is the largest of the modal plans, because it serves as the backbone of the entire transportation network.

Roadway Network

State Highway US 101 and a network of arterial and collector streets maintained by the City and/or Coos County provide the roadway network foundation for the City. This section describes the planned system for vehicular travel within the study area, including the functional street classification system and freight routes (the National Highway System [NHS]).

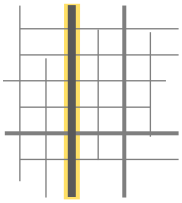
FUNCTIONAL CLASSIFICATION PLAN



Roadway classifications and designations are categorizations given to a roadway by the federal, state, or local government to help delineate differences in roadway purpose and design. The assigned functional classification ensures a street network with features that support demand from the surrounding land uses as well as travel needs at a regional level.

The functional classification system for roadways in Coos Bay is described below. The classifications are meant to reflect the underlying and adjacent land use serviced by the street. The functional classification map, Figure 11, shows the classifications for all roadways in the city, including for new street extensions proposed as part of the Street Connectivity Plan (the Street Connectivity Plan is discussed in the section of the same name, below).

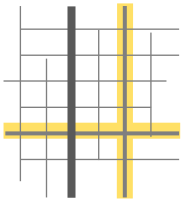
Principal and Minor Arterials



Principal Arterial streets are typically freeways and state highways that provide the highest level of connectivity. These routes connect over the longest distance (sometimes miles long) and are less frequent than other arterials or collectors.

Minor Arterial streets serve to interconnect and support the principal arterial highway system and are often used as a transition between Principal Arterials and Collectors. These streets link major commercial, residential, industrial and institutional areas.

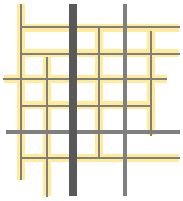
Major and Minor Collectors



Major Collector streets provide both access and circulation within residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function and do not require as extensive control of access and penetrate residential neighborhoods, distributing trips from the neighborhood and local street system.

Minor Collector streets serve mostly residential or mixed land uses. While through traffic connectivity is not a typical function, they may carry limited amounts.

Local Streets



Local streets have the sole function of providing access to immediate adjacent land. Service to "through traffic movement" on local streets is deliberately discouraged by design.

Depending on the road characteristics and function, neighborhood traffic management measures may be appropriate. However, it should not be construed that these routes automatically get speed cushions or any other measures. While these treatments can be beneficial, neighborhood traffic management is only one means of retaining neighborhood character and vitality.

FUNCTIONAL CLASSIFICATION COMPARISON

ODOT developed the State Classification System to act as a long-range planning tool that recognizes the future desired function of the roadway. Considerations for classifications include speed, throughput, and roadway function (e.g. local versus regional connections). Federal functional classifications describe how a road operates today, and does not necessarily match Oregon's state classification system.[4]

Table 6 summarizes the various classifications for all classified Minor Collector and higher facilities within Coos Bay. The City and Federal Functional Classifications must be consistent as part of the TSP adoption. The City classifications have been updated. In some instances, the Federal Functional Classification must be updated to reflect the City classification based on the reality of the current roadway functionality; this is not the case in Coos Bay. *Technical Memorandum #9: Preferred Alternative (Volume 2)* details the functional classification changes.

Table 6. Functional Classification Comparison

Roadway	Federal Functional Classification	Oregon Highway Plan Classification / Designation	Coos Bay TSP Classification
US 101	Urban Other Principal Arterial	OHP Freight Rt.; Statewide Hwy; NHS; Oregon Scenic Byway	Principal Arterial
Hwy 241 (Coos River Hwy)	Urban Minor Arterial	Statewide Hwy (US 101 to Edward Rd); District Hwy (Edward Rd to I St); NHS	Principal Arterial
S Front Street	Urban Minor Arterial	-	Minor Arterial
S Empire Boulevard	Urban Minor Arterial	-	Minor Arterial
Newmark Avenue (East city limit to Ocean Boulevard)	Other Urban Principal Arterial	NHS	Principal Arterial
Newmark Avenue (Ocean Boulevard to Empire Boulevard)	Urban Minor Arterial	NHS	Minor Arterial
Ocean Boulevard	Other Urban Principal Arterial	NHS	Principal Arterial
Central Avenue	Other Urban Principal Arterial	NHS	Principal Arterial
Commercial Avenue	Other Urban Principal Arterial	NHS	Principal Arterial
Anderson Avenue	Other Urban Principal Arterial	NHS	Principal Arterial
N 7th Street	Other Urban Principal Arterial	NHS	Principal Arterial
S 7th St (Central Avenue to Anderson Avenue)	Other Urban Principal Arterial	NHS	Principal Arterial
Woodland Drive	Urban Minor Arterial	-	Minor Arterial

[4] https://www.oregon.gov/ODOT/Planning/Documents/PolicyBrief_RoadwayClassifications.pdf

Roadway	Federal Functional Classification	Oregon Highway Plan Classification / Designation	Coos Bay TSP Classification
Coos River Highway	Urban Minor Arterial	-	Minor Arterial
6th Avenue	Urban Minor Arterial	-	Minor Arterial
Southwest Boulevard	Urban Minor Arterial	-	Minor Arterial
Lockhart Avenue	Urban Minor Arterial	-	Minor Arterial
Koosbay Boulevard (North city limit to 10th Street)	Urban Minor Arterial	-	Minor Arterial
Koosbay Boulevard (N 10th Street to US 101)	Urban Collector	-	Major Collector
N 10th Street	Urban Minor Arterial	-	Minor Arterial
Blanco Avenue (S Morrison Street to Fulton Avenue)	Urban Collector	-	Major Collector
Radar Road	Urban Collector	-	Major Collector
S Morrison Street	Urban Collector	-	Major Collector
Pacific Avenue	Urban Collector	-	Major Collector
Crocker Street	Urban Collector	-	Major Collector
Lakeshore Drive	Urban Collector	-	Major Collector
N Morrison Street	Urban Collector	-	Major Collector
N Schoneman Street	Urban Collector	-	Major Collector
N Wasson Street	Urban Collector	-	Major Collector
Laclair Street	Urban Collector	-	Major Collector
Thompson Road	Urban Collector	-	Major Collector
D Street	Urban Collector	-	Major Collector
F Street	Urban Collector	-	Major Collector
Butler Road	Urban Collector	-	Major Collector
Hemlock Avenue	Urban Collector	-	Major Collector
N 13th Street	Urban Collector	-	Major Collector
S 4th Street	Urban Collector	-	Major Collector
Juniper Avenue	Urban Collector	-	Major Collector
Fulton Avenue	Urban Collector	-	Major Collector
Virginia Street	Urban Collector	-	Major Collector
S 10th St	Urban Collector	-	Major Collector
Elrod Ave	Urban Collector	-	Major Collector
Wallace St	Urban Collector	-	Major Collector
Michigan Ave	Urban Minor Collector	-	Minor Collector
Kinney Rd	Urban Minor Collector	-	Minor Collector
S 11th St	Urban Minor Collector	-	Minor Collector
S 7th St (Anderson Avenue to Lockhart Avenue)	Urban Minor Collector	-	Minor Collector
Ingersoll Ave	Urban Minor Collector	-	Minor Collector

National Highway System

The NHS includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. NHS routes are identified at the federal level and are designated as such to encourage the jurisdictions that maintain those roadways to prioritize maintaining them in a good state of repair. The road owner should consider how NHS guidelines affect proposed improvements. US 101, Ocean Boulevard, Central Avenue,

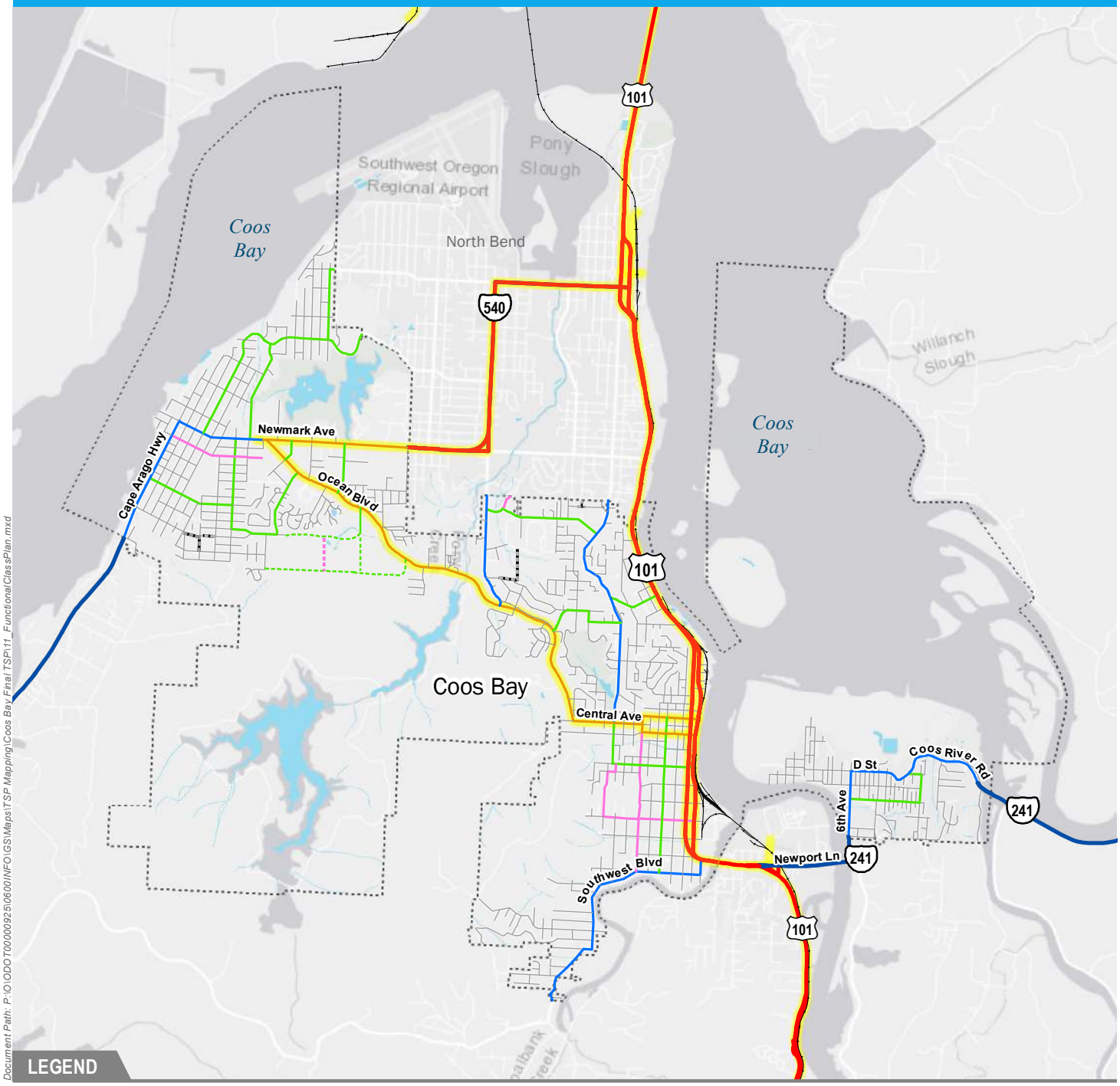
Commercial Avenue, Anderson Avenue and portions Newmark Avenue in Coos Bay are classified as part of the NHS network. Figure 11 shows the NHS routes in the Bay Area.

Street Connectivity Plan

An important element of a TSP is to establish a plan for a connected system of existing and future streets. By planning for future connectivity, all modes can benefit. Much of Coos Bay's existing street connectivity is constrained by features such as railroads, highways, bodies of water and topography. Planning for future street connections can help reserve the appropriate ROW to construct facilities that meet the City's street guidelines. The proposed "Planned Connections", shown as part of the Functional Classification Plan in Figure 11, identify approximately where new local street connections could be constructed as areas continue to develop. The alignment for future streets should be considered conceptual: the end points of the streets are fixed, but the alignments between intersections may vary depending on design requirements at the time the streets are constructed.

In Coos Bay, some of these local connections can contribute with other street improvements to mitigate capacity deficiencies by better dispersing traffic. Roadway connections will be needed within neighborhood areas to reduce out of direction travel for vehicles, pedestrians and bicyclists. The dashed lines shown in the figures represent potential connections and the general direction for the placement of the connection. The locations consider the current street system and undeveloped lands, but any environmental and design constraints would have to be vetted during the design process. In each case, the specific alignments and design will be better determined upon development review.

Coos Bay TSP



Document Path: P:\O\ODOT00000925\0600\INFO\GIS\Maps\TSP Mapping\Coos Bay Final TSP\11_FunctionalClassPlan.mxd

LEGEND

Coos Bay UGB

Functional Classification

State Highway	City	Planned (City)	
			Principal Arterial
			Minor Arterial
			Major Collector
			Minor Collector
			Local
			National Highway System

N

0 0.5 1 Miles

Data Sources:
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 11. Functional Classification Plan

AIR, WATER, RAIL, AND PIPELINE

While the movement of goods and commodities into, out of, and through the Bay Area is heavily dependent on the highway system, freight movement also occurs via rail and pipeline modes. This section describes air, water, rail, and pipeline facilities in Coos Bay.

Air, Water, Rail and Pipeline Networks

AIR FACILITIES

Southwest Oregon Regional Airport (OTH) is located on approximately 620 acres of land extending out into Coos Bay, in the northern sections of North Bend, north of the City of Coos Bay. Owned and operated by the Coos County Airport District (CCAD), OTH is the only commercial service airport on the Oregon Coast. From May 2017 to April 2018, OTH served approximately 25,000 revenue passengers and 1.5 Million pounds of freight and mail.[5] The airport's top passenger destinations are San Francisco, CA and Denver, CO. The airport also accommodates private aircraft arrivals and departures and serves as a base for US Coast Guard operations. Airport parking is free of charge.

WATER FACILITIES

Coos Bay is a major inlet draining into the Pacific Ocean. The Bay's navigation channel is designed and maintained by the US Army Corps of Engineers and facilitates significant maritime trade activity at six marine terminals, seven deep-draft berths, and a number of barge facilities. The Port of Coos Bay moves more than 1.5 million tons of cargo annually – more than any other seaport in Oregon.

RAIL FACILITIES

One railroad line passes through North Bend and Coos Bay. Owned by the Port of Coos Bay, the Coos Bay Rail Line is operating as the Coos Bay Rail Link (CBR) and spans 134 miles from Coquille to Danebo Junction in Eugene. In Coos Bay and North Bend, the Coos Bay rail line runs parallel to US 101. Currently, the railroad line is exclusively for freight, with about 99 percent of their product moved being related to the timber industry.[6]

CBR tracks are classified by the Association of American Railroads (AAR) as local. Once the current phase of rehabilitation is complete, the rail line will have been restored to a mix of Federal Railroad Administration (FRA) Class 2 (25 mph) and Class 3 (40 mph) conditions. Detailed information on frequency of service was not available. No passenger rail service is available in the study area; the closest available is AMTRAK located in Eugene, Oregon.

PIPELINE FACILITIES

There is a Coos County natural gas pipeline operated by NW Natural Gas in the Coos Bay/North Bend area. This pipeline extends east, connecting with the Williams' Northwest Pipeline.[7]

The Pacific Connector Gas Pipeline project proposes to add a second pipeline in the study area, connecting the Jordon Cove liquid natural gas terminal in the City of Coos Bay and Malin, OR with a pipeline 229 miles long, and 36 inches in diameter.

[5] Bureau of Transportation Statistics. North Bend/Coos Bay, OR: Southwest Oregon Regional (OTH). https://www.transtats.bts.gov/airports.asp?pn=1&Airport=OTH&Airport_Name=North%20Bend/Coos%20Bay,%20OR:%20Southwest%20Oregon%20Regional&carrier=FACTS

[6] https://www.portofcoosbay.com/about-the-railroad/

[7] https://www.nwnatural.com/Business/Safety/PipelineLocationInformation

Air, Water, Rail and Pipeline Plan

The following describes identified needs and improvements related to the air, water, rail, and pipeline modes. The majority of the projects in this section are opportunities for the City to collaborate with, or otherwise support, the lead agency.

Table 7. Air, Water, Rail and Pipeline Improvements

ID	Location		Description	Primary Funding Source	Prelim. Cost Estimate (2019 $)
RAIL/TRUCK FREIGHT					
43	Market Ave/Front St RR Crossing Upgrade	Market Ave at Front St	Install at-grade rail active warning device	Coos Bay Rail	See Project 8
44	Central Dock Rd RR Crossing Upgrade	US 101 at US plywood-Central Dock Rd	Install at-grade rail active warning device	Coos Bay Rail	$500k
45	US 101/Curtis Ave Signal Head Upgrade	US 101 at Curtis Ave	Address Highway Over-Dimension Load Pinch Point by raising signal head	ODOT (OFP)	$50k-100k
46	US 101/Koosbay Blvd Upgrades	US 101 at Koosbay Blvd	Make modifications to accommodate high heavy vehicle volumes per OFP	ODOT (OFP)	TBD
47	US 101/Commercial Ave Upgrades	US 101 South at Commercial Ave	Make modifications to accommodate high heavy vehicle volumes per OFP	ODOT (OFP)	TBD
48	US 101 North/ Johnson Ave Upgrades	US 101 North at Johnson Ave	Make modifications to accommodate high heavy vehicle volumes per OFP	ODOT (OFP)	TBD
MARINE/AIRPORT					
49	Marine Ways Enhancements	Charleston boatyard	Improvements that include the Marine Ways	POCB	N/A
50	North Spit Improvements	Oregon Gateway	North Spit improvements to accommodate a multi-modal marine facility to handle bulk cargo, containers and an LNG export facility	POCB	N/A
51	Channel Widening/Deepening	Coos Bay	Federal channel widening and deepening to accommodate larger ships and ensure safer operations	POCB	N/A
52	Charleston Boatyard Dock Replacements	Charleston boatyard	Dock replacements	POCB	N/A
53	Expanded Passenger Service	Airport	Add direct commercial passenger service between Southwest Regional Airport and northwest hubs (Portland)	CCAD	N/A
54	Airport Transit Service	Airport	Provide transit service to airport if air passenger service increases	CCATD	N/A

Notes:

1. Cost estimates are provided for draft alternatives with defined scope/extents. Cost Estimates do not include right-of-way, utility relocation, new utilities or hazmat costs.
2. Cost estimates were not prepared for projects where the scope/extents are undefined (TBD) or included in another adopted plan (N/A).

ODOT = Oregon Department of Transportation; OCBR = Oregon Coast Bike Route; CCATD = Coos County Area Transportation District; OFP = Oregon Freight Plan; POCB = Port of Coos Bay; CCAD = Coos County Airport District

STANDARDS AND GUIDELINES

Transportation standards, regulations and guidelines dictate 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.

ROADWAY CROSS-SECTION

DESIGN STANDARDS

Table 8 describes the recommended minimum widths for city streets in Coos Bay, which are found in the Coos Bay Municipal Code. The design standards provide clear guidance for future development while also allowing for a degree of flexibility. Standards for state highways are subject to design standards in ODOT's Highway Design Manual. Because 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 allow some flexibility while meeting the design standards.

Table 8. Coos Bay Street Design Standards

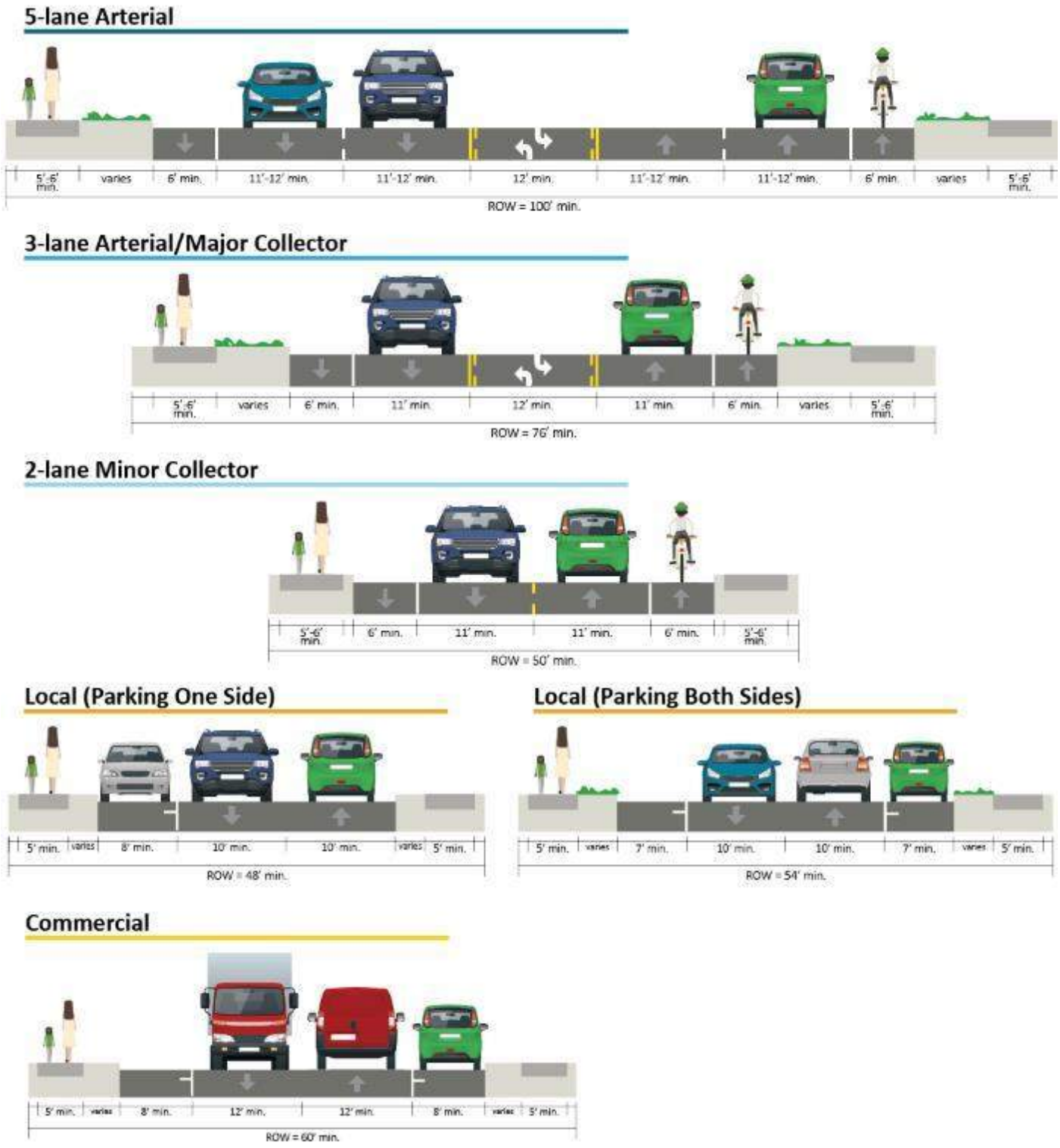
Type of Street	Min ROW Width	Minimum Paving Width Curb-to-Curb				Sidewalk Curb (b)	Max Grade
		Vehicle Travel Lane	Center Turn Lane	On-Street Parking	Bike Lane (a)		
Arterial/Collector (c)							
5-lane (d)	100'	12'/11'	12'	-	2 @ 6'(g)	2 @ 6'/5'	10%
3-lane (d)	76'	11'	12'	-	2 @ 6'(h)	2 @ 6'/5'	10%
2-lane	50'	11'	-	-	2 @ 6'(h)	2 @ 6'/5'	10%
Local Roads							
20' Residential (no parking)	40'	10'		-		2 @ 5'	10%
28' Residential (parking one side)	48'	10'		1 @ 8'		2 @ 5'	10%
34' Residential (parking both sides)	54'	10'	-	2 @ 7'	-	2 @ 5'	10%
40' Standard Commercial/	60'	12'	-	2 @ 8'	-	2 @ 5'	10%
Dead End (e)	50'	10'	-	2 @ 8'	-	2 @ 5'	10%
Cul-de-Sac (f)	50'	10'	-	(e)	-	1 @ 5' (g)	10% (g)
Alley							
1-way	20'	12'	-	-	-	-	-
2-way	20'	16'	-	-	-	-	-

(a) New construction: six feet; reconstruction: five feet.
(b) Wider sidewalks may be required in commercial areas.
(c) On designated freight routes the minimum lane width is 12'.
(d) The minimum right-of-way width includes the option of two six-foot-wide landscape strips for arterials or two four-foot-wide strips for local commercial/industrial.
(e) A dead end must be less than 400 feet in length and terminate with a circular or hammerhead turnaround with a maximum grade of eight percent.
(f) No parking is permitted at the end of a cul-de-sac, which must have adequate space for emergency equipment turnaround, usually a 45-foot unobstructed radius.
(g) At the end of the cul-de-sac, a five-foot sidewalk is required along the perimeter adjacent to the development.
(h) Bike lanes allowed to be reduced to five feet in width if the project is reconstruction.

TYPICAL ROADWAY CROSS-SECTION GUIDELINES

Sample cross-sections are provided that reflect the Coos Bay Design Standards in Table 8. The guidelines depict the flexibility within minimum right-of-way, pavement and width requirements. See Figure 12 below for cross-sections that reflect Coos Bay's roadway minimum design standards.

Figure 12. Typical Cross-Section Guidelines



POTENTIAL MANAGEMENT ACTIONS AND ORDINANCE REVISIONS

This section describes potential management actions the City can take to support the needs identified through the TSP process. These are various project strategies, management measures, and minor improvements that do not require an infrastructure improvement, but may be necessary to address existing and future deficiencies.

Mobility Targets

Traffic mobility targets are thresholds set by a jurisdiction to help measure how an intersection functions. Mobility targets help agencies maintain levels of congestion on a given roadway. They apply to land use decisions as a way to understand how development could impact the function of the transportation system. TPR also requires that comprehensive plan amendments and zone changes be consistent with the adopted TSP and uses mobility standards as one tool for evaluating consistency.

The Oregon Highway Plan (OHP) has established several policies for maintaining highway mobility, including Policy 1F, which establishes maximum volume-to-capacity (v/c) ratio[8] targets for peak hour operating conditions for all highways in Oregon. The OHP policy also specifies that the v/c ratio targets be maintained for ODOT facilities through a 20-year horizon. For roadways that are under ODOT's or Coos County's jurisdiction, the mobility targets of those agencies apply, unless another mobility target has been adopted.

With this TSP update, the City of Coos Bay is updating its mobility targets to be consistent across the city. The Level of Service (LOS) is a measure to determine what is acceptable or unacceptable traffic flow on Coos Bay streets, and shall be based on average seconds of delay. City streets shall maintain a LOS of "D" during the peak 15 minutes of the day. However, the developer will be responsible for making appropriate improvements should warrants for turn lanes, traffic signals, and/or other traffic improvements be met.

Access Management

Access management can be an important tool for protecting the function of roadway. There is a common understanding for the need of property owners to maintain roadway access to their businesses and residences. However, a proliferation of driveways and minor street intersections multiplies the number of conflicts along a roadway segment, thus reducing the capacity of intersections, slowing through traffic, increasing the probability of crashes, and generally degrading service for all system users. Hence, access management must balance the competing needs of compatible land uses, private access, and the function of the transportation system.

Access spacing standards are shown in Table 9.

[8] A volume-to-capacity (v/c) ratio compares traffic demand to an estimate of capacity, which is the amount of traffic that an intersection can serve during a fixed period of time. A v/c ratio less than 1.00 indicates that the volume is less than capacity. When the v/c ratio is closer to 0.00, traffic conditions are generally good with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable with longer delays.

Table 9. Access Spacing

Type of Street	Minimum Access Spacing (a)
Arterial Streets	Between new access points: 500 feet
Collector Streets	Between new access points: 300 feet
Arterial-arterial intersections	From the intersection: 300 feet
Arterial-Collector intersections	From the intersection: 300 feet
Collector-Collector intersections	From the intersection: 150 feet
State Highways or County Roads	ODOT or county standards supersede city standards
Local Roads	To be determined in the development review process.

(a) For City facilities, existing developed or undeveloped lots or parcels cannot be denied access. The maximum access spacing possible should be provided unless it renders access to individual lots or parcels impractical.

TSM and TDM Toolbox

SYSTEM AND DEMAND MANAGEMENT

Transportation System Management (TSM)

TSM measures are designed to make maximum use of existing transportation facilities. Efficient management of the transportation system can reduce costs by avoiding the need for more expensive roadway expansion projects. TSM strategies include traffic control improvements, traffic signal coordination, traffic calming, access management, local street connectivity, and ITS.

Traffic Calming: Uses physical design and other measures to improve safety for motorists, pedestrians, and cyclists. It aims to encourage safer, more responsible driving and potentially reduce traffic flow. Examples: bike boulevard/neighborhood greenway, neighborhood traffic circle, curb bulb-outs (roadway narrowing), and raised crosswalks/medians.

Access Management: Includes the management of vehicular access points to enhance safety and potentially improve traffic operations. Examples: access and driveway spacing standards, channelized turn lanes, median treatments, turn restrictions, optimized intersection sight distance and channelized turn lanes.

Intelligent Transportation Systems (ITS): Includes collecting and conveying information regarding roadway operations to improve the operations and efficiency of a facility. Examples: variable message signs, ramp metering, adaptive signal timing, and variable speed limit signs. The City would like to consider flashing yellow left-turn arrows at signalized intersections when improvements are planned.

The TSP includes several projects that support TSM, such as improved bicycle wayfinding, access management, midblock crossings, and bicycle sharrows (pavement marking indicating bikes share road with motorists, and shown in the TSM Toolbox section below).

TSM Toolbox

This section provides a "toolbox" of alternatives to address multimodal connectivity and neighborhood traffic-related concerns. This toolbox provides guidance to the City on various tools that could be implemented as needs arise and when funding is available.

Traffic Calming (encouraged for developing a bicycle boulevard or neighborhood greenway)

Gateway (Curb Bulb-out)

Google, May 2018 image capture

Pinch Point (Curb Extension)

Nacto.org Urban Street Design Guide

Diverters

Nacto.org Urban Bikeway Design Guide

Traffic Calming - Continued

Raised Crosswalk

pedbikeimages.org/PennsylvaniaDOT

Speed Cushions

Nacto.org Urban Street Design Guide

Speed Management Median

Nacto.org Urban Bikeway Design Guide

Pedestrian Median Refuge

pedbikeimages.org/DanBurden

Chicanes

Nacto.org Urban Street Design Guide

Traffic Circle (Mini)

Oregon Bicycle and Pedestrian Design Guide

Signing and Striping

Sharrow

Nacto.org Urban Bikeway Design Guide

Wayfinding

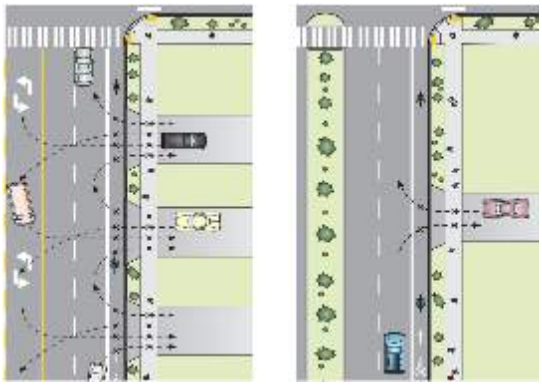
Nacto.org Urban Bikeway Design Guide

Share the Road

Mutcd.fhwa.dot.gov

Access Management

Access Consolidation and Non-traversable Median



Oregon Bicycle and Pedestrian Design Guide (Figure I-9)

Turn Restrictions

Mutcd.fhwa.dot.gov

ITS

Radar Speed Signs

Radarsign.com

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) measures include various strategies that change travel behavior (how, when, and where people travel) in order to increase efficiency and achieve specific planning objectives. TDM measures encourage the use of alternative, non-single-occupancy-vehicle travel modes. Changing travel behavior and providing alternative mode choices will help reduce the need to build new or expanded roadways.

Potential projects, such as sidewalks, bike routes, and transit enhancements, which support TDM, are detailed as part of The Projects section. However, other TDM strategies described below should be pursued as well.

TDM measures that could be applicable for Coos Bay include:

- Employer-based trip reduction strategies (e.g., parking management/pricing, carpool spaces, telecommuting, transit allowance)[9]
- Transit improvements
- Investment in pedestrian/bicycle facilities and amenities
- Comprehensive performance indicators (examples: multimodal level of traffic stress, accessibility, land use density)
- Mass communication/marketing to increase awareness of transportation options
- Safe routes to school

[9] The City can encourage local employers to implement trip reduction strategies though education and engagement, including connecting employers with available resources, such as the carpool matching tool that will be made possible by ODOT's partnership with RideAmigos. In addition, the City can administer or support programs such as a vanpool program to encourage higher vehicle occupancy rates among local employees.

Implementing Ordinances

The Transportation Planning Rule requires each local government to amend its land use regulations to implement the TSP and to adopt land use regulations consistent with state and federal requirements "to protect transportation facilities, corridors and sites for their identified functions."

These requirements are achieved through a variety of measures, including access control standards, robust pedestrian and bicycle circulation and connectivity provisions, standards to protect future road operations of roads, and expanded notice requirements and coordinated review procedures for land use applications. Local implementation measures often include processes to apply conditions of approval to development proposals and regulations ensuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP.

FUNDING

The TSP helps guide future investments in the transportation system, from operations and maintenance to capital improvements. This section reviews the funding sources Coos Bay has historically used for improvements and maintenance to the transportation system, as well as a funding forecast through the 2040 planning horizon.

REVENUE SOURCES

Historic Funding Sources

Current and primary revenue sources that fund transportation system maintenance, operations, and capital improvements include:

- State Highway Fund or Surface Transportation Block Grant (STBG) program;
- State operating grants;
- State gas tax receipts;
- City franchise fees;
- Local Improvement Districts;
- Transportation Utility Fee;
- Jurisdictional Exchange Fund; and
- Urban Renewal.

STATE FUNDING SOURCES

State Highway Fund or Surface Transportation Block Grant (STBG): This is a special federal-aid from the FHWA that provides flexible funding to States, Cities and other public agencies for transportation improvement and preservation projects. They are reimbursable federal aid funds, and may be used for projects on any public road, including active transportation infrastructure and transit.

State Operating Grants: Grants can be awarded by the federal government, private, or non-profit organizations. In most cases, agencies requiring funding for a transportation project have to apply to the plethora of grants available. The awarding organization then evaluates the grant proposal from each applicant, and selects a winner. The funds are provided with specific instructions on how they are to be used.

State Gas Tax Receipts: Taxes charged on fuel become part of the State's revenue which can then be used for transportation construction and improvement projects. Taxes are collected on fuels including gasoline, ethanol blends, diesel, biodiesel, propane, CNG (compressed natural gas), aircraft fuel, as well as any other usable fuel that can power a motor vehicle or aircraft. Currently, Oregon collects a fuel tax of $0.34 per gallon of gasoline.

CITY FUNDING SOURCES

City Franchise Fees: The City collects franchise fees from companies that utilize the public right-of-way to provide services. The city specifically uses 2% of electric utility's franchise fee for street maintenance.

Local Improvement Districts (LIDs): This mechanism allows neighboring property owners to group together in order to improve public facilities, paying for them over time through individual assessments. LIDs are generally used to complete local street improvements, sidewalk improvements, or improvements to business districts.

Coos Bay has two designated LIDs: 22nd Street and Minnesota Ave. The City has a Special Improvement (LID) Fund, which it uses for sewer, storm water, and street maintenance and improvements. Recently, most spending from this fund has provided for pavement maintenance and repair.

Tax Increment Financing (TIF)/Urban Renewal: TIF is a public financing method used to subsidize redevelopment, infrastructure, and other community-improvement projects. Through use of TIF, a city can divert future property tax revenue increases from a defined area or district (typically termed an urban renewal district) and apply those revenues toward an economic development project or public improvement project in the community.

Coos Bay maintains an Urban Renewal Fund, monies from which are earmarked for street rehabilitation and streetscape improvements in the Downtown and Empire areas.

Transportation Utility Fee: Transportation utility fees are charges levied on developed properties and/or residents within a city. Revenues from these fees are used to maintain city streets and transportation facilities.

Jurisdictional Exchange Fund: In 2000, Coos Bay assumed ownership of 23 lane miles of formerly State owned and operated roadways along with $4.8 Million to maintain these roads in perpetuity. Coos Bay City Charter dictates that only the interest collected on the monies in this fund can be used for maintenance of the jurisdictional exchange streets or debt service on road maintenance projects. Those streets involved in this transfer include parts of all of the following: Newmark Avenue, Empire Boulevard, Ocean Boulevard, Central Avenue, Commercial Avenue, Anderson Avenue, 6th Avenue, D Street, and Coos River Highway.

In recent years, incomes from interest have been very small, and available revenues have been used to pay debt service for the Ocean Boulevard project. The City anticipates being able to have more resources that are available in this fund in the upcoming years to be used on maintenance of the jurisdictional exchange streets.

FUNDING FORECAST

Revenue and Expenses

Using adopted budgets and a number of key assumptions, total revenue and expenses are estimated to determine available revenue to implement the projects identified in the TSP. Total revenue is estimated at approximately $58-$61 million and total expenses are estimated at approximately $26 million (see Table 10).

Coos Bay continues to be proactive in examining and pursuing other funding sources for transportation operations and maintenance and capital. The above estimates do not include revenues from any of the many strategies for which the City has discussed opportunities for implementation in the future. Receipt of grant awards and STBG funds could also facilitate the completion of major capital improvement projects, however these monies are not assumed here.

The transportation expenses shown in Table 10 are assumed consistent with average levels for FY12 to FY17. If Coos Bay continues its funding levels for street maintenance, the City will have roughly $32 to $34 Million available for capital projects through the planning horizon (2040). Alternatively, Coos Bay could increase its level of maintenance spending and dedicate the remaining revenues to capital projects.

Table 10. Coos Bay Transportation Revenue/Expenses through 2040

City of Coos Bay	2019-2040
Revenue (Case A)	
St Hwy Fund - Allocated to City	$30,001,000
Franchise Fees	$8,800,000
Transportation Utility Fee	$20,000,000
Total	**$58,801,000**
Revenue (Case B)	
St Hwy Fund - Allocated to City	$32,230,000
Franchise Fees	$8,800,000
Transportation Utility Fee	$20,000,000
Total	**$61,030,000**
Expense	
Operations and Maintenance	$22,000,000
Capital Expenditures	$4,400,000
Total	**$26,400,000**
Funding Forecast:	***$32.4M - $34.6M***

Note: The two cents per gallon fuel tax increases are conditional. This table provides two forecasts of the City of Coos Bay's annual State Highway Fund receipts. One forecast assumes that only the 2018 fuel tax increase takes place, and the other that all three conditional increases take place as well. The TSP identifies these forecasts as Case A and Case B, respectively.

Potential Additional Local Funding Mechanisms

Local Fuel Tax: Over two dozen Oregon cities and counties have adopted local fuel taxes, ranging from one ($0.01) to ten ($0.10) cents per gallon. Distributors of fuel within the city limits pay these taxes to the city monthly.

In November 2016, voters in both Coos Bay and North Bend defeated a measure proposing a local fuel tax dedicated to street improvement and maintenance. Leadership in the two cities jointly proposed the measure and conditioned its approval on it passing in both communities.

Should City officials be interested in reengaging citizens on a local fuel tax in order to build broader political support for a new measure, Coos Bay and North Bend may want to consider a local fuel tax that is only levied during the summer months, when the area experiences higher visitor volumes. The cities of Newport and Reedsport levy seasonally adjusted local fuel taxes.

Transportation System Development Charges (SDCs): SDCs are collections from developers as new development occurs in the City. These charges are commonly based on trip generation rates associated with different type of development. Where implemented, SDC revenues are typically earmarked for transportation improvements related to the new development.

Coos Bay established SDCs in 2006, but placed a moratorium on them in 2008. The City has approximately $15,000 remaining in its Transportation SDC Fund from the period during which it levied these charges. Reversing this

moratorium and reinstituting SDCs could bolster Coos Bay's ability to expand its transportation network, particularly in higher growth areas.

Parking District Assessment: Parking district assessments are taxes levied on property owners in parking districts in order to provide for the operation and maintenance of parking facilities. Coos Bay is interested in exploring this strategy. Currently, resources from the City's General and Street Improvement Funds are used to operate and maintain public parking infrastructure.

Development Exactions: To provide adequate infrastructure in response to site-specific growth, capital improvements can be exacted as conditions of approval for building permits, subdivisions, and zoning actions. Developers may be required to complete frontage street improvements and other off-site transportation improvements to mitigate traffic impacts. Exactions are to be related to the project's measured impact on the infrastructure, known as "rational nexus".

General Obligation Bonds: Bonds are a funding mechanism for constructing capital improvement projects in the City. Voter-approved bonds are sold to fund street improvement projects. Transportation projects are usually grouped in "bond packages" that go before the public for voter approval. Voter-approved General Obligation Bonds are then supported through the City's property tax base.

Coos Bay has one general obligation bond at present – its 2009 fire station bond.

City General Fund Revenues: To secure more funding to build, operate, and maintain transportation facilities, the City may choose to use general property tax dollars or an increasing share of other General Fund revenues. Using this strategy, however, places transportation system funding in direct competition with other City services that may be already obligated, such as police, fire, libraries, and parks.

Other Local Funding Mechanisms: There are several other local taxes and fees that Oregon cities may consider in funding transportation capital and operations. These include, but are not limited to hotel/motel tax, employer payroll tax, and parking in-lieu fees.

IMPLEMENTATION

Through the planning horizon, the City of Coos Bay will need to balance the existing maintenance backlog and needs with new capital projects. The community has expressed concern in the condition of the roads, and thus maintenance and road rehabilitation is a priority.

The suggested plan for implementation would allot nearly all of the transportation revenue for operations, maintenance and road rehabilitation for the first five years of the planning horizon. During this time, the city can continue to implement new projects if they can be packaged as part of a larger maintenance or rehabilitation project. After five years, the amount of revenue directed towards operations, maintenance and rehabilitation would shift to nearly 70 percent, with the remaining 30 percent focused on new capital projects. The City should continue to seek opportunities to pair maintenance with improvement projects where possible.

The Tier 1 list of projects in the TSP (next chapter) assumes the implementation plan proposed above. 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 proposed timeline for allocating transportation revenue is meant to guide, not dictate, the implementation of projects in the TSP.

THE PROJECTS

Recommended solutions were developed through an iterative process. The solutions (projects) work to address identified deficiencies in connectivity, amenities, safety, and operations with a focus on creating a balanced system able to provide travel options for a wide variety of needs and users.

Because the advancement of any project is contingent upon the availability of future funding, it is important to establish a flexible program of prioritized projects that meet the needs of diverse stakeholders while leveraging current and future funding opportunities. Ultimately, this refined and prioritized list is intended to serve as a menu of projects, with multiple factors that can be used together to assess the highest priority projects that can be completed within the available budget.

The recommended project list is composed of the following two lists, created based on each project's priority and likelihood to be funded:

1. The Tier 1 (Financially Constrained) Projects list identifies the projects (in no particular order) that could be constructed with funding anticipated through 2040. This list includes projects already committed in adopted documents and general locations are summarized in Figure 13.
2. Tier 2 (Needed but Unfunded) Projects list identifies projects (in no particular order) that are highly supported but that, due to cost or jurisdiction, were unable to be included in the Tier 1 list. Figure 14 summarizes the location of these projects and, should additional funding become available, these are projects the City may want to consider.

> *The City is not required to implement projects identified on the Financially Constrained Projects 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 Tier 1 Financially Constrained Projects 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 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 design and final design process, and are subject to City, Coos County, and/or ODOT approval.*

Project Sheets

Project sheets were developed for several of the preferred alternatives to highlight important features of the project area and to serve as a resource for future project development. The TSP project sheets are included as an attachment. The project sheets include a description of the proposed project and possible options and considerations for design elements. Not all of the preferred alternatives have a project sheet; they were created for projects that benefit from additional details or figures.

The images provided in this document are conceptual and for planning purposes only. Should a project be selected by the City or ODOT to be pursued further, the design features and cost estimates will be refined through the engineering process.

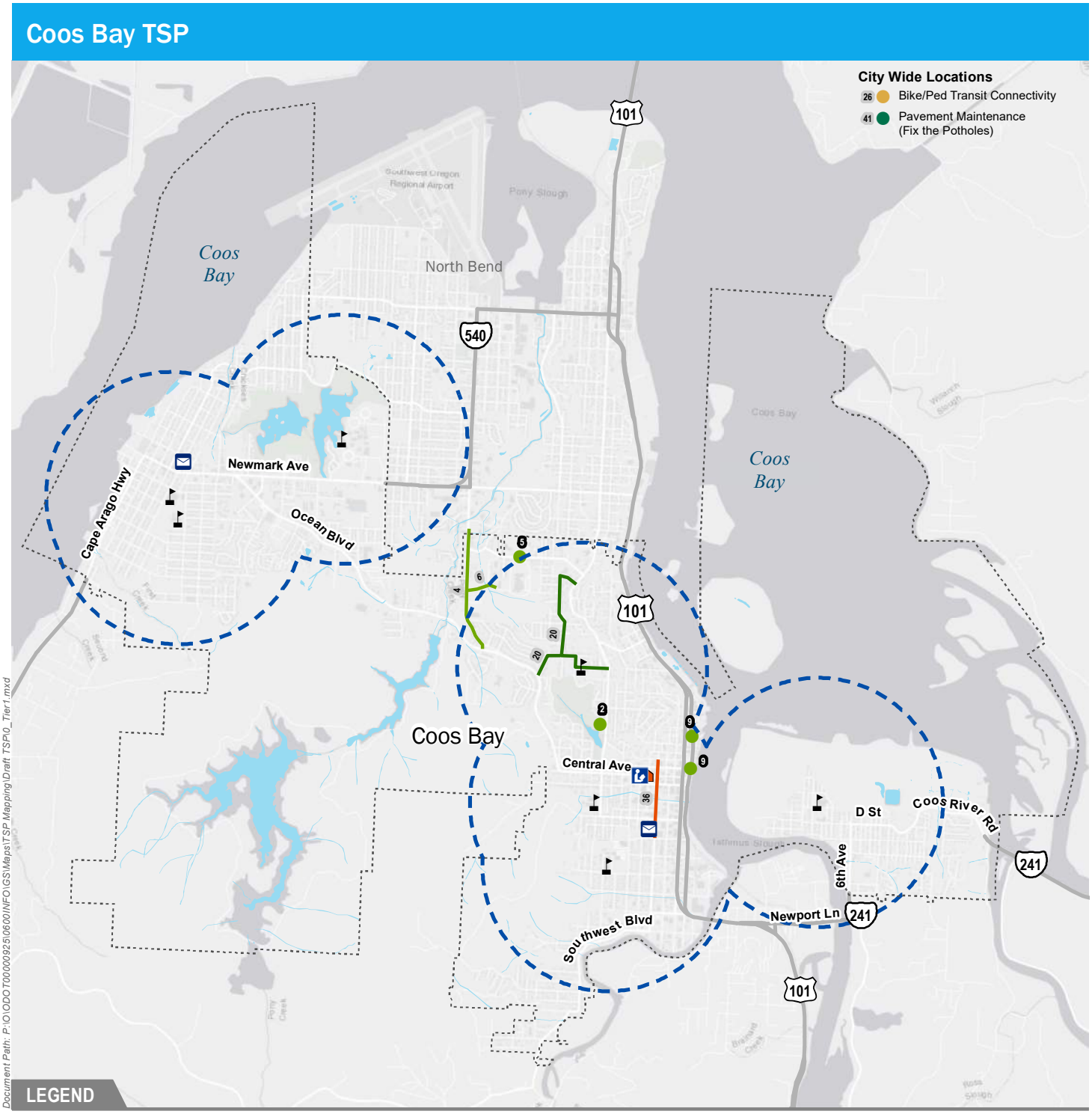


FIGURE 13. Tier 1 Projects

TIER 1: FINANCIALLY CONSTRAINED PROJECT LIST

The Financially Constrained Project list includes projects that could be constructed with funding anticipated through 2040, if the City desires.

Table 11. Tier 1 Projects

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
Operations and Maintenance												
41	Pavement Maintenance	City wide	Fix Potholes. Maintain/fix/strengthen existing pavement system, account for maintenance in funding plan. Critical: Central Ave, Southwest Blvd, Koosbay Blvd, Blanco Ave, Radar Rd, Schoneman St, LaClair St, F St, Butler Rd, Juniper Ave and Fulton Ave			X	X			X	Coos Bay	$52,850,000 (Operations/ Maintenance)
Capital Improvements												
2	Mingus Park Wayfinding	Mingus Park	Wayfinding signs to park	X	X					X	Coos Bay	$50,000
4	Woodland Dr Pedestrian Improvements	Woodland Dr: North City Limits to Ocean Blvd	Add sidewalks on Woodland Dr, marked pedestrian crossing (access to Hospital/Medical Park)	X	X						Coos Bay	$3,200,000
5	Thompson Rd Pedestrian Crossing	Thompson Road near Bay Area Hospital	Add marked crossing and mid-block crossing of Thompson Road to access hospital transit stop	X	X	X		X			Coos Bay	$50,000
6	Hospital Way Sidewalk	Hospital Way near Medical Center (Immediate Care Clinic)	Add sidewalk to connect to medical facilities	X	X						Coos Bay	$560,000
9	US 101 Downtown Pedestrian Crossings	US 101: Commercial Ave and Alder Ave	Improved bike/pedestrian crossings across US 101 to be consistent with Front Street Blueprint Plan. *A pedestrian crossing of US 101 requires State engineering approval*	X	X	X					Coos Bay / ODOT*	$100,000
20	N 14th St Bicycle Facilities	N 14th St: Teakwood Ave to Juniper Ave	Provide a parallel bike route to Koos Bay Blvd by providing sharrows and wayfinding on N 14th St		X						Coos Bay	$50,000

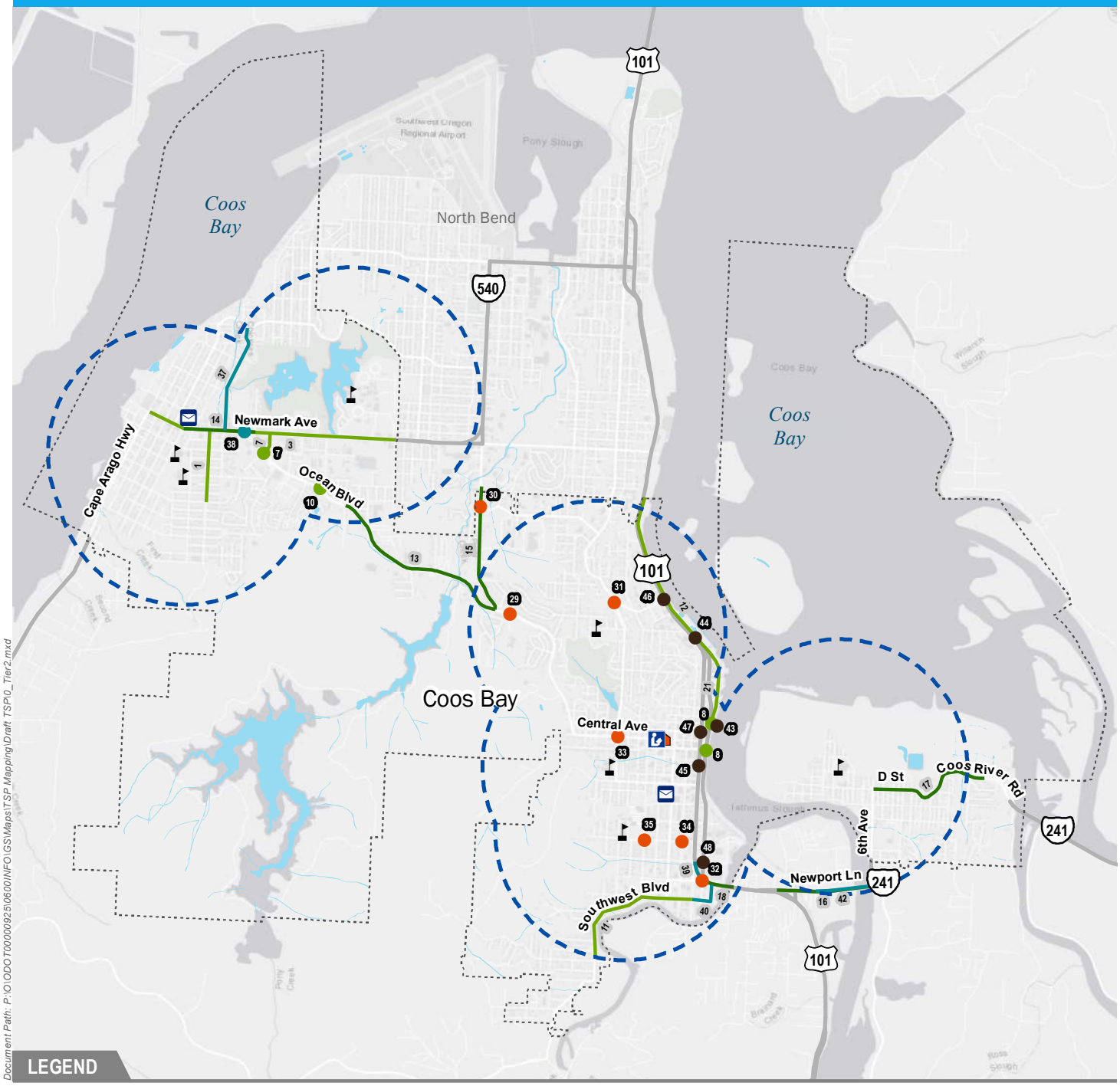
ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
26	Bike/Ped Transit Connectivity	All Transit Routes	Improve bicycle and pedestrian connectivity to stops	X	X	X		X			Coos Bay	N/A
36	4th Street Safety	4th St: Market Ave to Golden Ave	Restripe to a 3-lane cross-section with sidewalk bump-outs.	X		X					Coos Bay	$4,500,000
											Operations/Maintenance	$52,850,000
											Capital Projects	$8,510,000
											Total	**$62,310,000**

SRTS = Within Safe Routes to School boundary
N/A = Cost estimate not developed as part of the TSP
* Project is subject to ODOT approval as it is a State facility.

TIER 2: NEEDED BUT UNFUNDED

The Tier 2 Projects list identifies projects classified as “Needed but Unfunded”, also referred to during the planning process as “Aspirational.” The projects are highly supported but, because of their cost or jurisdiction, were unable to be included in the Tier 1 list. Should additional funding become available, these are projects the City may consider.

Coos Bay TSP



LEGEND

- Urban Growth Boundary (UGB)
- Schools 1-mile Boundary
- Coos Bay Public Schools
- Post Office
- City Hall

Projects (by primary mode)

Spot Locations ID#
- Pedestrian
- Transit
- Roadway
- Rail/Truck Freight
- Safety
- Marine/Airport

Segments ID #
- Pedestrian
- Bicycle
- Roadway
- Rail/Truck Freight
- Safety

N

0 0.5 1 Miles

Data Sources:
Cities of North Bend and Coos Bay,
Oregon Department of Transportation (ODOT),
Oregon Geospatial Enterprise Office,
ESRI ArcGIS Online

FIGURE 14. Tier 2 Projects

Table 12. Tier 2 Projects

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
Capital Projects												
1	Morrison St Sidewalks	Morrison St: Newmark Ave to Pacific Ave	Upgrade sidewalks on both sides	X	X	X				X	Coos Bay	$2,500,000
3	Newmark Ave Pedestrian Improvements	Newmark Ave: Empire Blvd to Fir St	Improve PLTS score through access consolidation, median islands, mid-block pedestrian crossing	X		X				X	Coos Bay	N/A
7	Wallace St Pedestrian Improvements	Ocean Blvd at Wallace St (Three Rivers Casino)	Construct sidewalk along Wallace St and add RRFB crossing of Ocean Blvd at Wallace St to connect to transit	X	X	X				X	Coos Bay	$400,000
10	LaClair St Pedestrian Crossing	Ocean Blvd at LaClair St	Construct a pedestrian crossing with RRFB and median refuge	X	X	X				X	Coos Bay	$200,000
11	Southwest Blvd Pedestrian Improvements	US 101 to south City Limits	Construct sidewalk on Southwest Blvd. Prioritize segment within Safe Routes to School boundary (California Ave to US 101)	X	X					X	Coos Bay	$3,000,000
13	Ocean Blvd Road Diet (Next Phase)	Ocean Blvd	Extend road diet west from Woodland Dr to Lindy Ln	X	X	X				X	Coos Bay	$115,000-$300,000
14	Newmark Ave Road Diet	Newmark Ave: Cammann St to Wallace St and Hull St to east City Limits (Fir St)	Restripe road to provide bicycle facilities (road diet)	X	X	X				X	Coos Bay	$50,000-$2,000,000
15	Woodland Dr Bicycle Facilities	Woodland Dr: North City Limits to Ocean Blvd	Add bicycle facilities (add sharrows if ROW acquisition not feasible)		X	X					Coos Bay	$40,000
17	D St/Coos River Rd Shoulder Widening	D St/Coos River Rd: 6th Ave to East City Limits	Widen paved shoulder and provide enhanced signage & wayfinding		X	X	X			X	Coos Bay	$1,100,000

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
21	Front St Bicycle Facilities	Front St	Identify opportunities for bicycle facilities on Front St as development occurs		X	X					Coos Bay	As development occurs
29	Ocean Blvd/19th St Access Management	Ocean Blvd at 19th St	Enhanced channelization of side street to improve safety			X					Coos Bay	N/A
30	Thompson Ave/Woodland Dr Safety Enhancements	Thompson Ave at Woodland Dr	Restripe the east leg to remove the westbound right-turn bay and make the movement a shared thru/right to improve sight distance.			X	X				Coos Bay	$300,000
31	Koosbay Blvd/10th St Realignment	Koosbay Blvd at 10th St	Realign intersection to "T" to improve visibility and safety	X		X	X				Coos Bay	N/A
33	S 10th St Curb Extensions	S 10th St: near Central Ave	Curb bump outs	X		X				X	Coos Bay	$50,000
34	Ingersoll St Curb Extensions	Ingersoll St: near S 2nd St	Curb bump outs	X		X				X	Coos Bay	$50,000
35	7th St Curb Extensions	7th St at Ingersoll Ave	Curb bump outs	X		X				X	Coos Bay	$50,000
37	Schoneman Ave Street Upgrade	Schoneman Ave: Lakeshore Dr to Newmark Ave	Upgrade to collector standard (storm/curb/gutter/sidewalk) and connect to trail system in John Topits Park				X			X	Coos Bay	$1,400,000
38	Newmark Ave/Ocean Blvd Realignment	Newmark Ave at Ocean Blvd	Provide raised “porkchop” median to shorten crossing distance and provide a pedestrian crossing of Ocean Blvd.	X	X	X	X			X	Coos Bay	N/A
40	S Front St Street Upgrade	US 101 South: Kruse Ave to S Front St	Upgrade S Front St to its arterial standard cross-section and limit access to right-in/right out at Kruse Ave/S 1st St	X		X	X				Coos Bay	$1,000,000-$2,000,000

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
Projects and Programs Requiring Coordination with Partner Agency												
8	Coos Bay Boardwalk RR Crossing Pedestrian Improvements	Coos Bay Boardwalk (near Anderson Ave and Market Ave)	Construct at-grade multimodal improvements (pavement) to improve crossing of RR tracks.	X	X	X					Coos Bay/Coos Bay Rail	$500,000
12	Connect the Boardwalks	North Bend, Mill Casino and Coos Bay Boardwalks	Connect the area boardwalks to create a five mile uninterrupted boardwalk.	X	X	X					North Bend; Coos Bay; Private	N/A
16	Newport Ln Bicycle Signage/Wayfinding	Newport Ln	Improve BLTS through enhanced signage & wayfinding to connect Coos Bay UGB		X	X					Coos County	N/A
18	US 101 Southern Bicycle Lanes	US 101: South couplet to Coalbank Slough Bridge	Restripe to accommodate bicycle lane (options for additional signing/striping/ramp at bridge)		X	X					ODOT*	$20,000-$75,000
19	US 101 Bicycle Facilities	US 101/Front St	Provide bicycle lanes (OCBR priority) through road widening, lane diet or parallel route(s).		X	X					ODOT*	N/A
22	Bay Area Loop Weekend Service	Bay Area Loop	Add weekend service	X				X			CCATD	N/A
23	Transit Service Hours	All Transit Routes	Extend service hours	X				X			CCATD	N/A
24	Transit Frequency	US 101 & Ocean Blvd Routes	Increase frequency & add additional route	X				X			CCATD	N/A
25	Shelters and Stops	All Transit Routes	Add shelters and stops near community destinations	X	X	X		X			CCATD	N/A
27	Regional Transit Hub	Bay Area	Support CCATD in pursuit of regional transit hub					X			CCATD	N/A
28	Transit Pull Outs	Coos Bay	Work with CCATD to identify locations for transit pull outs on busier streets			X	X	X			CCATD	N/A

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
32	US 101/Kruse Ave Access Management	US 101: near Kruse Ave	Access management/channelization			X	X				ODOT*	$100,000
39	South Coos Bay Pavement	US 101 South: Johnson Ave to Kruse Ave	Provide landscaping or pedestrian buffer to reduce large, underutilized pavement area on east side of US 101 South.			X	X		X		ODOT*; Coos Bay	$25,000
42	Newport Ln/Isthmus Slough Bridge Widening	Newport Ln/Isthmus Slough Bridge	Widen structure to accommodate bicycle and pedestrians. Consider interim option to provide "bicycle warning beacons" on either side of bridge to indicate when bicyclists are present.	X	X	X	X	X			Coos County; ODOT*	N/A
43	Market Ave/Front St RR Crossing Upgrade	Market Ave at Front St	Install at-grade rail active warning device	X	X	X	X		X		Coos Bay Rail	See Project 9
44	Central Dock Rd RR Crossing Upgrade	US 101 at US plywood-Central Dock Rd	Install at-grade rail active warning device	X	X	X	X		X		Coos Bay Rail	$500k
45	US 101/Curtis Ave Signal Head Upgrade	US 101 at Curtis Ave	Address Highway Over-Dimension Load Pinch Point by raising signal head			X	X		X		ODOT* (OFP)	$50k-100k
46	US 101/Koosbay Blvd Upgrades	US 101 at Koosbay Blvd	Make modifications to accommodate high heavy vehicle volumes per OFP				X		X		ODOT* (OFP)	N/A
47	US 101/Commercial Ave Upgrades	US 101 South at Commercial Ave	Make modifications to accommodate high heavy vehicle volumes per OFP				X		X		ODOT* (OFP)	N/A
48	US 101 North/Johnson Ave Upgrades	US 101 North at Johnson Ave	Make modifications to accommodate high heavy vehicle volumes per OFP				X		X		ODOT* (OFP)	N/A
49	Marine Ways Enhancements	Charleston boatyard	Improvements that include the Marine Ways						X		POCB	N/A

ID	Project Name	Location	Description	Pedestrian	Bicycle	Safety	Vehicle	Transit	Other	SRTS	Primary Funding Source	Prelim. Cost Estimate (2019 $)
50	North Spit Improvements	Oregon Gateway	North Spit improvements to accommodate a multi-modal marine facility to handle bulk cargo, containers and an LNG export facility						X		POCB	N/A
51	Channel Widening/ Deepening	Coos Bay	Federal channel widening and deepening to accommodate larger ships and ensure safer operations						X		POCB	N/A
52	Charleston Boatyard Dock Replacements	Charleston boatyard	Dock replacements	X					X		POCB	N/A
53	Expanded Passenger Service	Airport	Add direct commercial passenger service between Southwest Regional Airport and northwest hubs (Portland)						X		CCAD	N/A
54	Airport Transit Service	Airport	Provide transit service to airport if air passenger service increases	X				X	X		CCATD	N/A

SRTS = Within Safe Routes to School boundary; ODOT = Oregon Department of Transportation; OFP = Oregon Freight Plan; CCATD = Coos County Area Transportation District; POCB: Port of Coos Bay; CCAD = Coos County Airport District

N/A = Cost estimate not developed as part of the TSP

* Project is subject to ODOT approval as it is a State facility.

CITY OF COOS BAY

Transportation System Plan

VOLUME 1

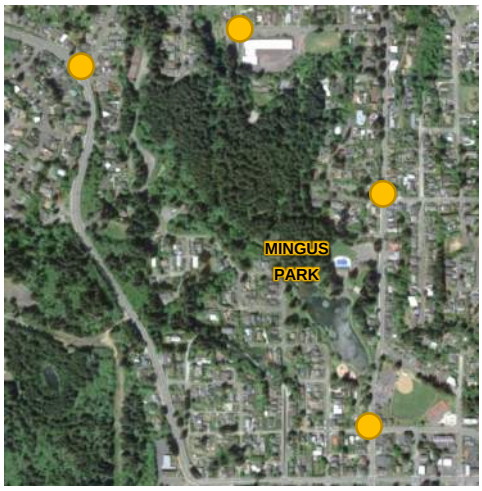
Attachments

CB-1
Morrison Street Sidewalks

Coos Bay
Transportation System Plan

Purpose	• Construct sidewalk to enhance pedestrian connectivity • Provide parallel connection to Middle School and Elementary school one block west • Provide sidewalks on a Collector street	
Description	Construct sidewalk on both sides of Morrison Street to provide a north-south spine that connects the east-west sidewalk system.	
Location	Morrison St: Newmark Ave to Pacific Ave	
Roadway Characteristics	• Functional Classification: Major Collector • Lanes: 2 • Pavement Width: 36’ • Posted speed: 25 mph • Existing (2018) ADT: 3,500-5,000 veh/day • Forecast (2040) ADT: 3,500-5,000 veh/day	5-Year Crash History (2012-2016): • Intersections do not exceed critical crash rate or 90th percentile crash rate • There were 9 reported crashes on Morrison St within this segment
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Lacks pedestrian facilities • Lacks bicycle facilities • Substandard roadway cross-section for Local and Major Collector street classification	**<u>With Improvement</u>** • Pedestrian facilities from new sidewalks • Separates pedestrians from vehicular traffic • Improved pedestrian connections to schools
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: Leaking Underground Storage Tank at north end of road • This is within a mile radius of a school and could be eligible for Safe Routes to School funding • If reconstructing the road, should consider upgrading to Collector standard • Improvement will impact existing residential frontage and driveways • Could consider limiting parking to one side of the street to reduce right-of-way needs	
Cost Opinion	Cost: $2.5M *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority	

CB-2 **Mingus Park Wayfinding**	***Coos Bay*** ***Transportation System Plan***



- Potential Wayfinding Locations

Wayfinding

Pavement Markings

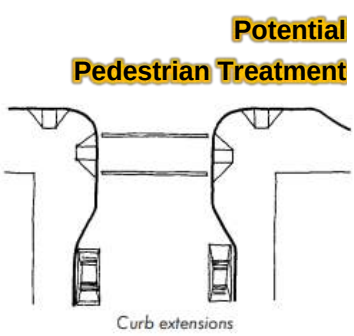
Purpose	Enhance pedestrian and bicycle awareness and connectivity to Coos Bay park system	
Description	Wayfinding signs to Mingus Park	
Location	Mingus Park and surrounding local streets	

Roadway Characteristics	• Varies:
	  • Ocean Blvd: Principal Arterial (3 lane)
	  • 10th St: Minor Arterial (2 lane)
	  • Hemlock Ave: Major Collector (2 lane)
		5-Year Crash History (2012-2016):
		• Koosbay Blvd at 10th St exceeds critical crash rate and 90th percentile crash rate

How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Few signs exist to direct visitors or new residents to local park/trail system • Lack of dedicated bicycle lanes and routes • Coos Bay lacks signage from the OCBR to community features	**<u>With Improvement</u>** • Potential for bicycle facilities through striping sharrows along with wayfinding • Enhances connectivity of bicycle and pedestrian system • Potential safety benefits from directing users to correct routes
Additional Considerations	• Road Authority: Coos Bay • Environmental considerations: Mingus Park has a freshwater pond and is near a historic landslide location. There are several leaking underground storage tanks surrounding Mingus Park, however this should not be impacted by this improvement. • Available ROW: Signs and striping can be placed within the public ROW • Located within a 1-mile radius of a school • Consider providing estimated time to get to destination on the wayfinding sign • Coordination with Coos Bay Parks and Recreation • Does not require new pavement or reconstruction to provide wayfinding • Consider sign placement along transit routes • Consider expanding wayfinding signage to downtown and other destinations (Empire District, North Bend, airport, etc.)	
Cost Opinion	Cost: $20,000 – $50,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority • Project could be coordinated with “N 14th St Bicycle Facilities” and other wayfinding and neighborhood bicycle routes	

CB-3
Newmark Avenue Pedestrian Improvements

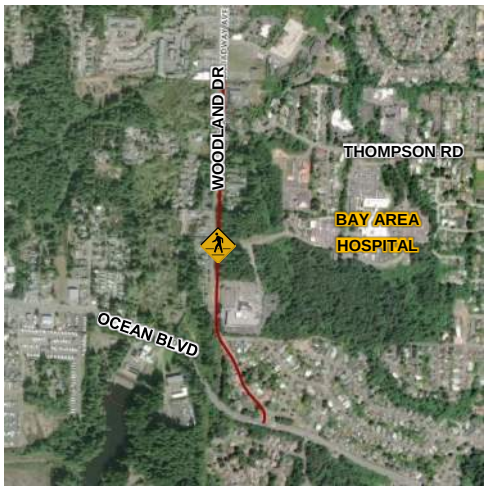
Coos Bay
Transportation System Plan

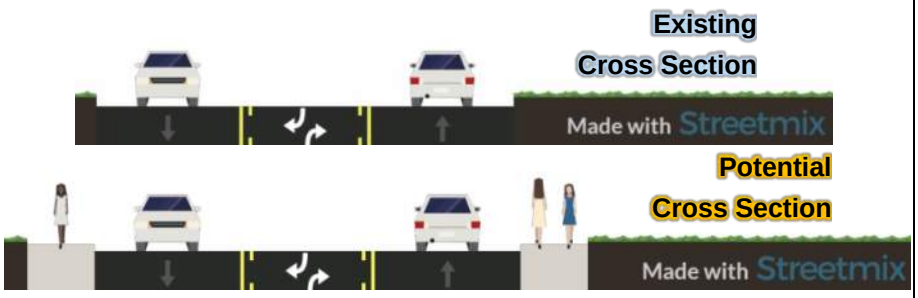


Purpose	• Provide facilities for all travel modes • Address existing safety concerns • Improve pedestrian level of traffic stress (PLTS)	
Description	Improve PLTS score through improved pedestrian crossing and sidewalk widening.	
Location	Newmark Avenue: Fir Street to Cammann Street	
Roadway Characteristics	• Functional Classification: Principal /Minor Arterial • Lanes: 5 • Pavement Width: 46'-66' • Posted speed: 30-35 mph • Existing (2018) ADT: 10,000-13,000 veh/day • Forecast (2040) ADT: 10,000-15,000 veh/day	5-Year Crash History (2012-2016): • 5 pedestrian-related collisions in Coos Bay on Newmark Ave • 1 bicycle-related collision in Coos Bay on Newmark Ave
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Existing sidewalk has utility poles and sign posts that hinder pedestrian travel • Existing driveways and access points throughout the corridor • Wide sidewalk crossing distances • PLTS 3 and PLTS 4	**<u>With Improvement</u>** • Improves safety of pedestrians along the corridor from continuous sidewalks • Provides access to transit stops • Accommodates mobility devices with adequate width and updated curb cuts • Benefits disadvantaged populations
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • Sidewalk should be wide enough to provide 5' travel width around street furniture (i.e., mailboxes, power poles, etc.). This may require sidewalks be wider than 5' in some areas or that a landscape strip that can accommodate street furniture is incorporated into the design for some segments. • Additional ROW or easements appear needed to accommodate sidewalks • Some property impacts (including parking lots) to add sidewalks, but no building impacts anticipated; some existing substandard sidewalks may remain to avoid building impacts	
Cost Opinion	Cost: $3.2M *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium • Could impact design of other proposed TSP project CB-38 (Newmark Ave/Ocean Blvd Realignment) • Could be combined with CB-14 (Newmark Avenue Road Diet) to simultaneously address bicycle and pedestrian needs	

CB-4
Woodland Drive Pedestrian Improvements

Coos Bay
Transportation System Plan



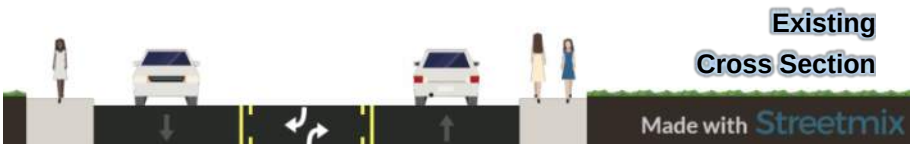


Potential
Crosswalk Treatment and Signing

Purpose	• Provide pedestrian connectivity to Medical Park • Bring Woodland Dr closer to Arterial standard	
Description	Add sidewalks on Woodland Dr and provide a marked pedestrian crossing of Woodland Dr to provide access to Hospital/Medical Park.	
Location	Woodland Dr: North City limits to Ocean Blvd	
Roadway Characteristics	• Functional Classification: Minor Arterial • Lanes: 2-3 • No bicycle lanes or sidewalk • Pavement Width: 40' • Posted speed: 35 mph • Existing (2018) ADT: 10,000 veh/day • Forecast (2040) ADT: 11,000 veh/day	5-Year Crash History (2012-2016): • Thompson Rd at Woodland Dr exceeds critical crash rate and 90th percentile crash rate • Ocean Blvd at Woodland Dr exceeds critical crash rate and 90th percentile crash rate • There were 18 recorded crashes along this segment of Woodland Dr
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Limited marked pedestrian crossings of Woodland Ave • Lacks bicycle facilities • Substandard roadway cross-section for Arterial street classification • Limited/no pedestrian access to Medical Park	**<u>With Improvement</u>** • East-west pedestrian connectivity • Connectivity to Medical Park • Sidewalk would improve safety of pedestrians along the corridor • Sidewalk would provide access to the existing transit stop • Closer to Arterial standard
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • There is also a transit stop at the Medical Park • Could consider sidewalk on just one side if funding is limited (east side of Woodland Dr) • Additional storm water treatment needed with impervious surface	
Cost Opinion	Cost: $3.2 million *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority • Could be combined with CB-15 (Woodland Dr Bicycle Facilities) to simultaneously address bicycle and pedestrian needs	

CB-5
Thompson Road Pedestrian Crossing

Coos Bay
Transportation System Plan



Purpose	• Provide pedestrian connectivity to Hospital • Provide a marked crossing to enhance pedestrian access to transit stop at Hospital	
Description	Add marked mid-block crossing of Thompson Road to access hospital transit stop.	
Location	Thompson Rd near Bay Area Hospital driveways	
Roadway Characteristics	• Functional Classification: Major Collector • Lanes: 2-3 • Pavement Width: 36' • Sidewalk, curb, gutter • 14' travel lanes • Posted speed: 30 mph • Existing (2018) ADT: <5,000 veh/day • Forecast (2040) ADT: 5,000 veh/day	5-Year Crash History (2012-2016): • Thompson Rd at Woodland Dr exceeds critical crash rate and 90th percentile crash rate • There were 4 reported collisions on Thompson Rd between Pacific St and 16th St
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • No marked crossing of Thompson Rd near Hospital and Hospital transit stop • Pedestrian connectivity to Medical Park	**<u>With Improvement</u>** • North-south pedestrian connectivity • Improved access to transit
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • There is enough space in the median to provide a center island pedestrian refuge if desired • Location of crossing should not conflict with turn bays • Designs would need to be coordinated with existing driveway locations • No ROW impacts	
Cost Opinion	Cost: $50,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority	

CB-6
Hospital Way Sidewalk

Coos Bay
Transportation System Plan

Purpose	This project would provide facilities for pedestrians and work toward establishing Hospital Way as a route with a pedestrian level of traffic stress score of 2 or better, a recommended target for access to medical centers	
Description	Add sidewalk to north side of Hospital Way to connect to medical facilities.	
Location	Hospital Way near Medical Center (Immediate Care Clinic)	
Roadway Characteristics	• Functional Classification: Local • Lanes: 2 • No sidewalk, curb, gutter • No bicycle facilities • Pavement Width: 28'-30' • Posted speed: 20 mph • Existing (2018) ADT: 500-1,000 veh/day • Forecast (2040) ADT: 500-1,000 veh/day	Pedestrians traveling on Hospital Way must walk on roadway where there is limited to no shoulder. 5-Year Crash History (2012-2016): • No crashes reported on Hospital Way
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Limited to non-existent pedestrian facilities/connectivity on Hospital Way • Lacks bicycle facilities • No shoulder on bridge	**<u>With Improvement</u>** • East-west pedestrian connectivity • Increased connectivity to Medical Park • Increased safety • Enhanced pedestrian environment
Additional Considerations	• Road Authority: Bay Area Health District (not in Coos Bay right-of-way) • Environmental constraints: Crosses stream with wetland potential • Available ROW: Existing structure and guardrail limit ability to easily provide pedestrian connectivity on Hospital Way • Could consider a multi-use path as an alternative, but the slope/grade are not pedestrian-friendly • Additional ROW or easements appear needed to accommodate sidewalks • Some property impacts (including parking lots) to add sidewalks but no building impacts anticipated • Additional storm water treatment needed with increased impervious surface	
Cost Opinion	Cost: $560k *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority; short section gives limited connectivity/access	

CB-7
Wallace Street Pedestrian Improvements

Coos Bay
Transportation System Plan

Existing Cross Section OCEAN BLVD

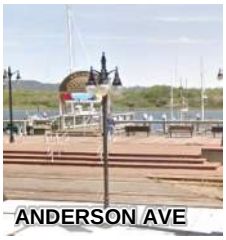
Potential Crosswalk Treatment and Signing

Rapid Rectangular Flashing Beacon (RRFB)

Purpose	• Provide pedestrian connectivity across Ocean Blvd • Provide connectivity to transit stops	
Description	Construct sidewalk along Wallace Street and add Rapid Rectangular Flashing Beacon (RRFB) crossing of Ocean Blvd at Wallace St to connect to transit.	
Location	Wallace St/Ocean Blvd	
Roadway Characteristics	• Ocean Blvd: Arterial, 3 lanes Bicycle lanes, sidewalk • Pavement Width: 54'-56' • Posted speed: 35 mph • Wallace St: Local, 2 lanes • Existing (2018) ADT: 10,000-15,000 veh/day • Forecast (2040) ADT: 10,000-15,000 veh/day	5-Year Crash History (2012-2016): • There were four reported crashes at the intersection of Wallace St at Ocean Blvd.
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Wide/long crossing of Ocean Blvd • Bicycle/pedestrian connectivity across Ocean Blvd is limited or requires out-of-direction travel • Wallace St lacks sidewalks • Wide curb radii	**<u>With Improvement</u>** • East-west pedestrian connectivity • Improved access to community features • More substantial mid-street refuge for pedestrians crossing roadway • No significant impacts to traffic operations • Improved pedestrian access to transit benefits disadvantaged populations
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: There is a leaking underground storage tank near Wallace St/Ocean Blvd intersection. • Assume sidewalks are constructed on south side of Wallace St • Provides access to tribal lands • Provides a shortened crossing of Ocean Blvd when compared to existing crossing at Newmark Ave • Crosswalk should consider median island refuge	
Cost Opinion	Cost: $400,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Low priority	

CB-8
Coos Bay Boardwalk RR Crossing Pedestrian Improvements

Coos Bay
Transportation System Plan



Existing Crossing

Potential Pedestrian RR Crossing Treatment

Purpose	• At-grade RR crossing safety • Pedestrian connectivity to community features (boardwalk)	
Description	Construct at-grade multimodal improvements across the RR near the Coos Bay boardwalk.	
Location	RR crossing to Coos Bay Boardwalk (near Anderson Ave and Market Ave)	
Roadway Characteristics	The RR travels down the center of Front Street.	There have been no recorded pedestrian fatalities by the Coos Bay Rail within Coos Bay.
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Access to the Boardwalk has several uncontrolled crossings and limited active warning signals for vehicles and pedestrians. Rail traffic is expected to increase in the future. • There are multiple tracks to cross	**<u>With Improvement</u>** Could improve safety with new signing, pavement paint, and/or activated pedestrian gates at the RR crossings.
Additional Considerations	• Road Authority: Coos Bay; Coos Bay Rail • Environmental constraints: 100 year floodplain • Available ROW: City has right-of-way along Front Street • Pedestrian gates could separate pedestrians from rail traffic and discourage them from crossing the tracks except at designated locations or when there is no anticipated rail • Activated warning devices should be considered to indicate when trains are approaching • At-grade crossings with multiple tracks can present additional dangers to pedestrians and separate warnings may be necessary for these locations to help alert pedestrians of the full extent of the danger of the at-grade rail crossing	
Cost Opinion	Cost: Up to $500,000 per crossing, depending on treatment selected *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority • Coordinate with Front Street Traffic Safety Plan • Coordinate with ODOT Rail and Coos Bay Rail	

CB-9
US 101 Northbound Downtown Pedestrian Crossings

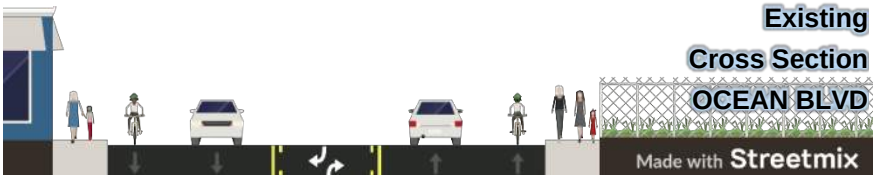
Coos Bay
Transportation System Plan

Rapid Rectangular Flashing Beacon (RRFB)

Purpose	• Increase pedestrian and bicycle network connectivity and safety across US 101.	
Description	Improved bike/pedestrian crossings across US 101 to be consistent with Front Street Action Plan	
Location	US 101 northbound: Commercial Ave and Alder Ave	
Roadway Characteristics	• Functional Classification: Principal Arterial • Lanes: 2 • Pavement Width: 40'-50' • Travel lanes are >20' • Posted speed: 25-30 mph • Existing (2018) ADT: 10,000-15,000 veh/day • Forecast (2040) ADT: 10,000-15,000 veh/day • There are no striped bicycle lanes • US 101 is an OHP Freight Reduction Review Route and NHS route	5-Year Crash History (2012-2016): • No crash data trends at either intersection.
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Limited marked crossing of US 101 northbound to connect to north end of Front St • Limited bicycle/pedestrian connectivity across US 101	**<u>With Improvement</u>** • Increased east-west pedestrian connectivity • Improved access to community features • Pedestrian crossing of US 101 North
Additional Considerations	• Road Authority: ODOT • Environmental constraints: 100 year flood plain • Available ROW: Project can be constructed within the available ROW • Curb extensions may be considered, or added striping or candlesticks to "narrow up" the feeling of the cross-section without limiting freight movement • Must maintain "hole in the air" as US 101 is a freight route (ORS 366.215 for freight reduction review route) • If an RRFB is desired, ODOT Access Management team will need to coordinate with design to evaluate impacts to existing driveways on west side of US 101 North	
Cost Opinion	Cost: $100,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs. Cost of drainage will need to be determined during design.*	
Implementation	• High priority • Any pedestrian crossing of US 101 would require State engineering approval • Coordinate with Front Street Blueprint Plan (a crossing at US 101 northbound at Alder Ave can be studied under the context of the upcoming Front Street Blueprint)	

CB-10
La Clair St Pedestrian Crossing

Coos Bay
Transportation System Plan



Potential Crosswalk Treatment and Signing

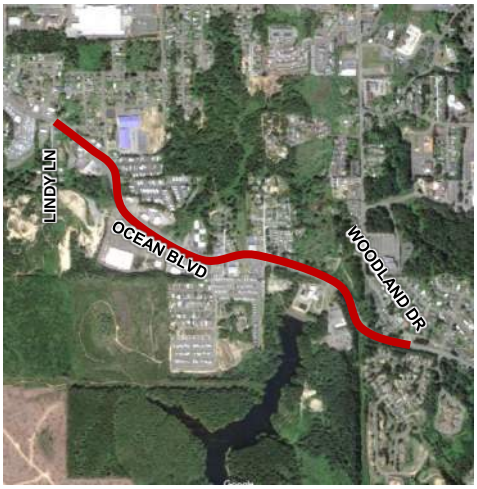
Rapid Rectangular Flashing Beacon (RRFB)

Purpose	• Provide pedestrian connectivity across Ocean Blvd • Fill gap in protected crossings of Ocean Blvd • Enhance safety for pedestrians crossing midblock or at unsignalized locations	
Description	Construct a pedestrian crossing with a median refuge and Rapid Rectangular Flashing Beacon (RRFB).	
Location	Ocean Blvd at LaClair St (Across Ocean Blvd just west of LaClair St)	
Roadway Characteristics	• Ocean Blvd: Principal Arterial, 3 lanes Bicycle lanes, sidewalk • Pavement Width: 54'-56' • Posted speed: 40 mph • Existing (2018) ADT: 10,000-15,000 veh/day • Forecast (2040) ADT: 10,000-15,000 veh/day	5-Year Crash History (2012-2016): • There were seven reported crashes at the intersection of LaClair St at Ocean Blvd.
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Wide/long crossing of Ocean Blvd • Bicycle/pedestrian connectivity across Ocean Blvd • Gap in crossings between Newmark and Woodland (>1.5 miles between signalized crossings)	**<u>With Improvement</u>** • East-west pedestrian connectivity • Improved access to community features • More substantial mid-street refuge for pedestrians crossing roadway • Provide transit users or other pedestrians with opportunity to break up crossing movement into two stages • Negligible impacts to traffic operations
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • Designs would need to be coordinated with existing cross-section; there is a section of pavement near LaClair St with a striped buffer shoulder (north side of Ocean Blvd) • Location would need to consider sight distance of vehicles based on posted speed limit • Could affect access at some driveway locations – might limit movements to right-in/right-out • No ROW impacts	
Cost Opinion	Cost: $200,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority • Consider if crash rate increases	

Source: Old "CONNECT! the Boardwalks" Brochure

Purpose	• Enhance north-south pedestrian connectivity in the Bay Area • Enhance access to Coos Bay (marina) natural resources and recreation (tourism)	
Description	Connect the area boardwalks to create a five mile uninterrupted boardwalk along the west side of Coos Bay (marina).	
Location	West side of Coos Bay (marina)	
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Bay Area lacks uninterrupted separated pedestrian connection between Cities • Bay Area lacks connected public access to the Coos Bay	**<u>With Improvement</u>** • Provides a continuous north-south pedestrian connection along Coos Bay between the Cities of North Bend and Coos Bay • Opportunity for economic development and tourism
Additional Considerations	• Spans multiple jurisdictions: North Bend, Coos Bay, Tribal Lands, Port of Coos Bay • Environmental considerations: Hazardous Materials; Threatened/Endangered species; Wetlands; Tsunami Zone; 100 yr floodplain • Features and impacts will be determined during design • A (now disbanded) non-profit led a previous effort to raise funds for CONNECT! the Boardwalks	
Cost Opinion	Cost estimate not prepared as part of the TSP development	
Implementation	• Broad interest from Bay Area communities • This project would require significant coordination and a variety of funding sources. It is recognized as a special project and will be included as "aspirational" in the TSP.	

CB-13 **Ocean Blvd Road Diet (Final Phase)**	***Coos Bay*** ***Transportation System Plan***



Purpose	• Provide a continuous bicycle facility connection along Ocean Blvd • Provide multimodal connectivity between Newmark Ave and Downtown Coos Bay • Improve safety • Slow vehicular speeds	
Description	Complete the Ocean Blvd pavement reallocation (“road diet”) project. Repurpose two vehicular travel lanes for bicycle lanes.	
Location	Ocean Blvd: Woodland Dr to Lindy Ln	
Roadway Characteristics	• Ocean Blvd: Principal Arterial • Lanes: 5 • Sidewalks • Pavement Width: 54’-56’ • Posted speed: 40 mph • Existing (2018) ADT: 10,000-15,000 veh/day • Forecast (2040) ADT: 10,000-15,000 veh/day	5-Year Crash History (2012-2016): • Approximately 65 crashes reported on Ocean Blvd within this segment • One fatality near Woodland Dr
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Bicycle connectivity • Bicycle facilities on Arterials • Safety • Pedestrian comfort	**<u>With Improvement</u>** • Completes bicycle lanes on Ocean Blvd • Provides a multi-modal facility • Safety benefits • The buffered bicycle lane will improve the buffering width and increase pedestrian comfort which could improve the Pedestrian Level of Traffic Stress as well
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • This project could be coordinated with the proposed pedestrian crossings of Ocean Blvd • No change in roadway surface • Preferred striping would limit wide areas of bare pavement in order to “narrow up” roadway • Preferred to restripe with paving project to avoid stripe removal lines • No impacts to adjacent properties	
Cost Opinion	Cost: $115,00 – $300,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority • Could be implemented in tandem with Ocean Blvd pedestrian crossing projects	

CB-14 **Newmark Ave Road Diet**	***Coos Bay*** ***Transportation System Plan***

Existing Cross Section

Potential Cross Section

Purpose	• Reallocate street space to create a more balanced facility that accommodates vehicles, bicycles and pedestrians	
Description	Restripe road to provide bicycle facilities (road diet)	
Location	Newmark Ave: Cammann St to Wallace St and Hull St to east City Limits (Fir St)	
Roadway Characteristics	• Functional Classification: Minor/Principal Arterial • Lanes: 5 • Pavement Width: 46'-66' • Posted speed: 30-35 mph • Existing (2018) ADT: 7,500-10,000 veh/day • Forecast (2040) ADT: 7,500-10,000 veh/day	5-Year Crash History (2012-2016): • Intersections do not exceed critical crash rate or 90th percentile crash rate • 9 reported crashes at Morrison St intersection • 17 reported crashes at Ocean Blvd intersection
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Level of traffic stress of 4 (highest) for both cyclists and pedestrians, indicating a high-stress environment • Lacks bicycle facilities • Narrow sidewalks directly adjacent vehicular traffic	**<u>With Improvement</u>** • Striped bicycle lanes • Provides buffer for pedestrians from vehicular traffic • Increases safety for cyclists and pedestrians • Improves active transportation network • Traffic operations could mimic current operations of section of Newmark Ave west of Cammann St
Additional Considerations	• Road Authority: Coos Bay • Part of the Oregon Coast Bike Route (OCBR) • Environmental constraints: None • Available ROW: Can be constructed within available ROW • Design should consider how this project could work with a realignment of Ocean Blvd/Newmark Ave • No change in roadway surface • No impacts to adjacent properties	
Cost Opinion	Cost: $25k *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs. Cost opinion does not include potential impacts to existing signalized intersections.*	
Implementation	• Medium priority • Coordinate with OCBR • Could be combined with CB-3 (Newmark Avenue Pedestrian Improvements) to simultaneously address bicycle and pedestrian needs	

CB-15
Woodland Dr Bicycle Facilities

Coos Bay
Transportation System Plan

Existing Cross Section

Potential Cross Sections

Purpose	• Provide facilities for cyclists and establish Woodland Dr as a key north-south connection in Coos Bay's bike network	
Description	Add bicycle facilities (remove center turn lane if ROW acquisition not feasible)	
Location	Woodland Dr, from North City Limits to Ocean Blvd	
Roadway Characteristics	• Functional Classification: Minor Arterial • Lanes: 3 • Pavement Width: 40' • Posted speed: 35 mph • Existing (2018) ADT: 10,000 veh/day • Forecast (2040) ADT: 11,000 veh/day	5-Year Crash History (2012-2016): • Woodland Dr and Thompson Rd intersection exceeds critical crash rate, with 11 reported crashes • 17 reported crashes at Woodland Dr and Ocean Blvd intersection
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Lack of bicycle facilities • Bicycle level of traffic stress is 4 (highest), indicating high-stress environment • Intermittent sidewalk • Current bicyclists must share road with vehicles or use an alternate route	**<u>With Improvement</u>** • Bicycle facilities (sharrows where ROW acquisition not feasible) • Increased safety and accessibility for cyclists • Increases multi-modal network connectivity
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • Enhanced signage should be considered to indicate presence of cyclists • There could be conflicts with existing residential driveways • Sharrows were considered, but are not recommended on roads with a posted speed >25 mph. Significant traffic calming and roadside culture would have to change from current conditions to support the efficacy of sharrows for this section of Woodland Dr. If sharrows are considered on Woodland Dr, traffic calming should be in place first, and then a reduction of speed study should be pursued.	
Cost Opinion	Cost: $40k-$2 million *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority • Could be combined with CB-4 (Woodland Dr Pedestrian Improvements) to simultaneously address bicycle and pedestrian needs.	

CB-16
Newport Ln Bicycle Signage/Wayfinding

Coos Bay
Transportation System Plan

Potential Wayfinding Signage

Wayfinding

"Bikes on Bridge" activated warning.
Source: Maryland Transportation Authority)

Purpose	Improve wayfinding for cyclists reaching Coos Bay destinations.	
Description	Install bike wayfinding and activated warning signs on Newport Lane	
Location	Newport Ln between the Coos Bay UGB boundary and across the Isthmus Slough Bridge	
Roadway Characteristics	• Functional Classification: Minor Arterial • Lanes: 2 • Pavement Width: 24-26' • Posted speed: 30 mph • Existing (2018) ADT: 8,000-10,000 veh/day • Forecast (2040) ADT: 10,000-12,000 veh/day • Portions of this road also lack sidewalk facilities	• Bicyclists must share road with vehicles • Top 85% SPIS site near Ellen Rd and on structure (2014-2016) 5-Year Crash History (2012-2016): • Majority of collisions are concentrated at intersection with US 101 and at bridge ends.
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Lack of wayfinding signage to direct cyclists to downtown and Eastside • Bicycle level of traffic stress is 4 (highest), indication a high-stress environment • Creating bike lanes is cost-prohibitive due to site constraints and necessary bridge alterations	**<u>With Improvement</u>** • Increases cyclists' level of comfort and ability to access Coos Bay destinations • Improves multi-modal network • Increases driver awareness of people biking on the roadway
Additional Considerations	• Road Authority: ODOT • Environmental constraints: This project is outside the UGB; the TSP did not inventory the environmental constraints outside the UGB, however it is within the 100-year flood plain • There is a planned STIP project at the west end of Newport Lane • Consider bicyclist activated push button "Bikes on Bridge" warning sign to utilize the existing ROW across the Isthmus Slough Bridge • Proposed bicycle signage will need to be reviewed and should not interfere with vehicles entering/exiting the existing driveways on Hwy 241. • Consider sidewalk infill to further improve bicycle and pedestrian comfort and connectivity.	
Cost Opinion	Cost estimates were not prepared for projects where the scope/extents are undefined.	
Implementation	• High priority • This is outside of the City's UGB and would need to be coordinated with Coos County and ODOT.	

CB-18
US 101 Southern Bicycle Lanes

Coos Bay
Transportation System Plan

Existing Cross Section

Potential Cross Section

Purpose	• Provide facilities for cyclists on US 101 to the southern extent of the Coos Bay UGB • Provide facilities for all travel modes	
Description	Restripe to accommodate bicycle lane between southern end of couplet and the Coalbank Slough Bridge (options for additional signing/striping/ramp at bridge)	
Location	US 101: South couplet to Coalbank Slough Bridge	
Roadway Characteristics	• Functional Classification: Principal Arterial • Lanes: 5 • Pavement Width: 72' • Posted speed: 30 mph • Existing (2018) ADT: 26,500 veh/day • Forecast (2040) ADT: 30,000 veh/day • US 101 is an OHP Freight Reduction Review Route and NHS route	5-Year Crash History (2012-2016): • 2 documented fatal or serious injury crashes in the immediate vicinity
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Lack of formal bicycle facilities on US 101 east of Kruse Ave and 1st St • Cyclists are forced to mix with vehicles or ride on sidewalk to cross bridge • Bicycle lanes end at southern end of couplet • Bicycles traveling in 14' curb lane with traffic	**<u>With Improvement</u>** • 5'-6' striped bike lanes with 12' vehicle lanes • Increased safety and accessibility for cyclists • Improved bicycle network
Additional Considerations	• Road Authority: ODOT • Environmental constraints: Located within the 100-year floodplain • Could be constructed within available right of way • Maintains "hole in the air" for freight route (is consistent with ORS 366.215 for freight reduction review route) • Should consider with rebuilding of curb ramps • Provide four feet or greater shoulders for bikes where appropriate	
Cost Opinion	Cost: $20k – $75k *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority	

CB-20 **N 14th St Bicycle Facilities**	***Coos Bay*** ***Transportation System Plan***

- Potential Wayfinding Locations

Wayfinding

Pavement Markings

Purpose	• Enhance pedestrian and bicycle awareness and connectivity to Coos Bay park system • Provide a parallel route to Koos Bay Blvd • Provide a local north-south bicycle connection from North Bend to Coos Bay	
Description	N 14th Street Bicycle Facilities	
Location	N 14th St: Teakwood Ave to Juniper Ave	

Roadway Characteristics	• Varies:
	  • Teakwood Ave: Local (2 lane)
	  • N 14th Ave: Local (2 lane)
	  • Butler Rd: Major Collector (2 lane)
	  • Juniper Rd: Major Collector (2 lane)
	  • Hemlock Ave: Major Collector (2 lane)
	• Posted speed: 25 mph
	• Existing (2018) ADT: <3,000 veh/day
	• Forecast (2040) ADT: <3,000 veh/day
		5-Year Crash History (2012-2016):
		• Less than 10 crashes combined on the 5 roads
		• No pedestrian or bicycle collisions

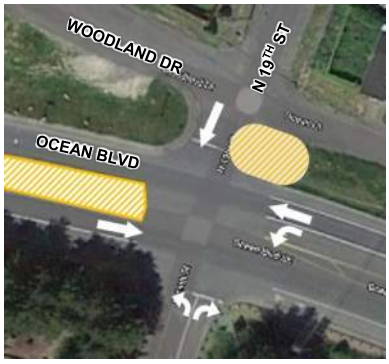
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Koos Bay Blvd is a narrow, 2-lane road that cannot accommodate dedicated bicycle facilities • Lack of dedicated bicycle lanes and routes • Coos Bay lacks signage from the OCBR to community features	**<u>With Improvement</u>** • Potential for bicycle facilities through striping sharrows along with wayfinding • Enhances connectivity of bicycle and pedestrian system • Potential safety benefits from directing users to correct routes
Additional Considerations	• Road Authority: Coos Bay • Environmental considerations: Koosbay Blvd is along a historic landslide site. There are several leaking underground storage tanks in the vicinity, however this should not be impacted by this improvement. • Available ROW: Signs and striping can be placed within the public ROW • Portions of the route are within a 1-mile radius of a school • Consider providing estimated time to get to destination on the wayfinding sign • Coordination with Coos Bay Parks and Recreation • Does not require new pavement or reconstruction to provide wayfinding	
Cost Opinion	Cost: $20,000 – $50,000 *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority	

CB-29
Ocean Blvd/19th St Access Management

Coos Bay
Transportation System Plan

Existing Intersection

Proposed Access Management



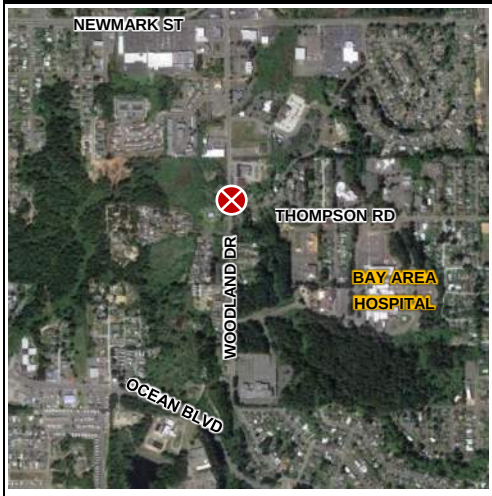
Purpose	Address existing safety concerns by limiting the number of allowable traffic movements into and out of 19th St at Ocean Blvd	
Description	Enhanced channelization of side street to improve safety by limiting turns onto 19th St from Ocean Blvd.	
Location	Ocean Blvd at 19th St	

Roadway Characteristics	• Functional Classification:
	  • Ocean Blvd: Principal Arterial
	  • Woodland Dr/19th St/Ocean Ct: Local
	• Lanes:
	  • Ocean Blvd: 3 lanes
	  • Woodland Dr/19th St/Ocean Ct: 2 lanes
	• 19th St Pavement Width: 45'
	• Posted speed:
	  • Ocean Blvd: 40 mph
	  • Woodland Dr/19th St/Ocean Ct: 25 mph
	• ADT not available
		5-Year Crash History (2012-2016):
		• 1 fatal injury crash at intersection

How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Fatal injury crash at intersection • Existing safety concerns • High volume and higher speed roadway (Ocean Blvd) with many turning movements to and from minor street • Limited sight distance	**<u>With Improvement</u>** • Limited conflict points at the intersection of Woodland Dr/19th St and at Ocean Blvd/19th St • Improved safety • Traffic could access the neighborhood from Woodland Dr to the west or Ocean Ct to the east
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • Available ROW: Could be constructed within available right of way • Could also consider right-in/right-out only instead – would need to confirm turning movement traffic volumes to determine best access management option	
Cost Opinion	Cost: TBD *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Low priority	

CB-30
Thompson Rd/Woodland Dr Safety Enhancements

Coos Bay
Transportation System Plan



Existing Intersection

Proposed Lane Configuration

Purpose	• Address an existing safety concern at the unsignalized intersection of Thompson Rd and Woodland Dr • Address sight distance concerns turning onto Woodland Dr	
Description	Restripe the east leg to remove the westbound right-turn bay and make the movement a shared thru/right to improve sight distance.	
Location	Thompson Rd at Woodland Dr	
Roadway Characteristics	• Thompson Rd Functional Classification: Major Collector • Lanes: 2 (3 lanes at intersection) • Pavement Width: 36' • Posted speed: 25 mph • Existing (2018) ADT: <4,000 veh/day • Forecast (2040) ADT: <4,000 veh/day (40 lefts, 190 rights)	5-Year Crash History (2012-2016): • 11 crashes at intersection • Exceeds the statewide 90th percentile crash rate and the critical crash rate
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Sight distance for westbound right-turning vehicles can be blocked or restricted by westbound left-turning vehicles	**<u>With Improvement</u>** • Improved sight distance for vehicles traveling west on Thompson Rd • Increase turn radius for southbound left-turns • Reduction one shared turn lane may cause longer delays for the westbound right-turn, although the left-turns are low in comparison.
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: Thompson Rd crosses potential wetlands • Improvement can be constructed within available right of way • Could also pair improvement with vegetation trimming on Woodland Ave and improved pedestrian crossing • Project may trigger ramp upgrades	
Cost Opinion	Cost: $15-25k *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority	

CB-31
Koosbay Blvd/10th St Realignment

Coos Bay
Transportation System Plan

Existing Intersection

Potential "T" Intersection Alignment

Purpose	• This project will address and existing safety concern, caused by poor sight lines and the angle in Koosbay Blvd's approach.	
Description	Realign intersection to "T" to improve visibility and safety	
Location	Koosbay Blvd at 10th St	

Roadway Characteristics	• Functional Classification:
	  • Koosbay Blvd: Major Collector
	  • 10th St: Minor Arterial
	• Lanes: 2
	• Pavement Width: 28 – 36'
	• Posted speed: 30 mph
	• Existing (2018) ADT: 5,000-8,000 veh/day
	• Forecast (2040) ADT: 5,000-8,000 veh/day
		5-Year Crash History (2012-2016):
		• Exceeds statewide 90th percentile crash rate and critical crash rate
		• Six of the eight crashes were rear end collisions, and the remaining two were turning collisions due to a range of improper driver behavior was the cause (following too closely, failing to yield right-of-way, inattention and speeding)

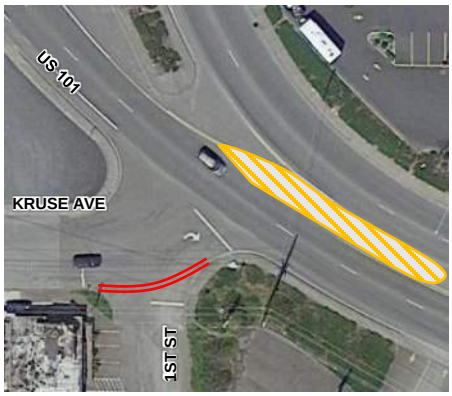
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Acute angle intersection • Limited visibility, particularly for older drivers and those with difficulties turning their heads, necks, or upper bodies to get an adequate line of sight • Difficult turning movements and increased exposure time to thru traffic	**<u>With Improvement</u>** • Proper 90 degree alignment • Increased line of sight • Shorter exposure time and crossing distances • Increased visibility and safety • Could improve truck turning (NBR)
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: Koosbay Blvd is on a historic landslide • Potential right of way impacts in the southeast quadrant • Clearing of vegetation within sight triangles could also improve sight distance • Koosbay Blvd at US 101 was identified in the Oregon Freight Plan as an intersection that should be modified to accommodate heavy vehicles	
Cost Opinion	Cost: TBD *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Medium priority	

CB-32
US 101/Kruse Ave Access Management

Coos Bay
Transportation System Plan

Existing Intersection

Potential Improvement



Close access or implement turn restrictions (right-in/right-out)

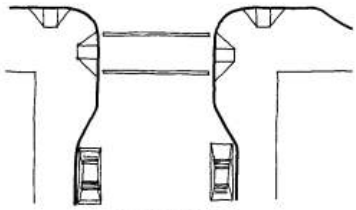
Purpose	• Address existing safety concerns along US 101 near Coos Bay's southern city limits. • Move toward access management	
Description	Convert the intersection of Kruse Ave at US 101 to right-in/right-out, close access to 1st Street from Kruse Ave and improve S Front St to minor arterial standard.	
Location	US 101 at Kruse Ave	
Roadway Characteristics	• Functional Classification: Principal Arterial • Lanes: 5 • Pavement Width: 72' • Posted speed: 30 mph • Existing (2018) ADT: 27,500 veh/day • Forecast (2040) ADT: 30,000 veh/day • US 101 is an OHP Freight Reduction Review Route and NHS route	5-Year Crash History (2012-2016): • 2 documented fatal or serious injury crashes in the immediate vicinity • Top 10% SPIS site (2013-2015)
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Lack of channelization between US 101, Kruse Ave and 1st St • Increased density of driveways • Top 10% Safety Priority Index System site	**<u>With Improvement</u>** • Channelization and improved access management off the US 101 mainline • Improved safety • Fewer conflicts
Additional Considerations	• Road Authority: ODOT (US 101) and Coos Bay (1st St and S Front St) • Environmental constraints: Project is located within the 100-year floodplain • This improvement can be completed within the available right of way • Would need to ensure access to 1st St from Front St or other local road network • Could consider access management (right-in/right-out) of 1st St to Kruse Ave as alternative to closure • Could consider curb extensions at Kruse Ave to improve safety of bicycles and pedestrians	
Cost Opinion	Cost: $1.5 million *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Should not limit left-in to Kruse Ave until Front Street is improved to minor arterial standard • Any improvement to US 101 would require State engineering approval • Low priority	

CB-33/34/35
Curb Bump Outs at Multiple Locations

Coos Bay
Transportation System Plan

Existing Intersections

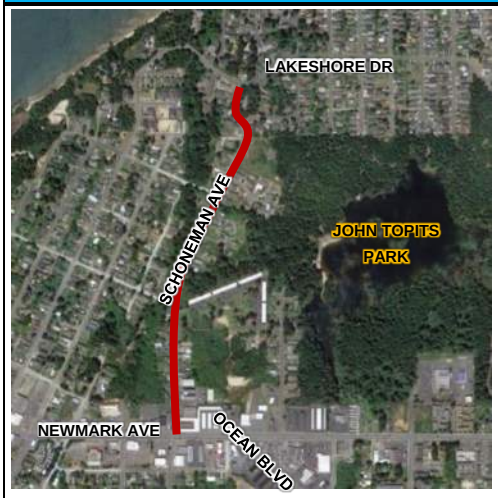
Proposed Improvement



Purpose	• Improve pedestrian safety through downtown Coos Bay • Enhance pedestrian environment • Traffic calming	
Description	Curb bump outs/extensions (consistent through downtown)	
Location	10 St, near Central Ave; Ingersoll Ave, near 2nd St; and 7th St at Ingersoll Ave	
Roadway Characteristics	• Varies – collector and arterial that serve as important east-west connections from downtown Coos Bay to the northwest and North Bend via Ocean Blvd • Lanes: 2 • Speed limit: 25 mph • Existing (2018) ADT: 27,500 veh/day • Forecast (2040) ADT: 30,000 veh/day • Central Ave is a Principal Arterial and NHS route	5-Year Crash History (2012-2016): • 2 crashes at 7th St and Ingersoll Ave, which exceeds the Statewide 90th percentile crash rate. Both crashes recorded were the result of drivers failing to yield the right-of-way. • 17 crashes at 10th St and Central Ave; 1 pedestrian-related collision • Ingersoll St near 2nd St is sited by Top 10% Safety Index System
How Improvement Addresses Deficiencies	**Existing/Future Deficiency** • Unmarked pedestrian crossings • Lack of awareness of pedestrians by motorists	**With Improvement** • Improved pedestrian crossings • Increased pedestrian visibility and safety • Enhanced pedestrian network • Decreased crossing lengths • Marked crosswalks identify the presence of pedestrian activity in the area • Improved pedestrian and transit access benefits disadvantaged populations
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: Intersection at Ingersoll St and S 2nd Ave is in 100 year floodplain • Can be implemented within available right if way • Use striping or materials that maximize crosswalk visibility • Drainage and freight/emergency vehicle movement must be considered in design of curb extensions	
Cost Opinion	Cost: $120k ($40k at each intersection) *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Low to medium priority	

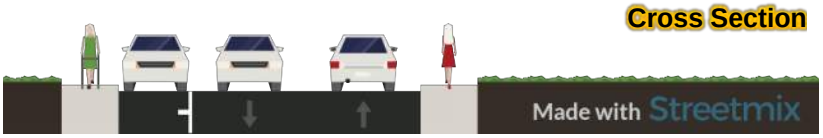
CB-37
Schoneman Ave Street Upgrade

Coos Bay
Transportation System Plan



Existing Cross Section

Potential Cross Section



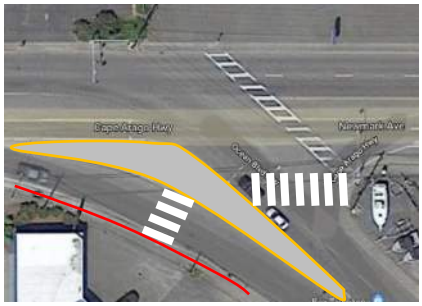
Purpose	• Update Schoneman Ave to urban street standards to support future transportation needs • Improve network connectivity and connection to John Topits Park	
Description	Upgrade to collector standard (storm/curb/gutter/sidewalk) and connect to trail system in John Topits Park	
Location	Schoneman Ave, near Lakeshore Dr to Newmark Ave	
Roadway Characteristics	• Functional Classification: Major Collector • Lanes: 2 • Pavement Width: 36' • Posted speed: 25 mph • Traffic volumes not available, but road serves mostly residential land uses	5-Year Crash History (2012-2016): • 1 crash at Morrison St (continuation of Schoneman Ave – north) and Lakeshore Dr
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Important north-south network connection with out-of-date standards • Lacking sidewalks • Limited connectivity between Schoneman Ave and existing trail system in John Topits Park	**<u>With Improvement</u>** • Updated to collector standards with stormwater, curb, gutter, and sidewalks • Increased network connectivity • Increased accessibility for pedestrians • Improved connections to John Topits Park
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: Project is located near sensitive lands (riverine and wetland) – need to minimize/avoid impacts. • Would require additional right of way and driveway impacts • Potential major utility relocation required to meet collector standard	
Cost Opinion	Cost: $1.4M *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Low priority	

CB-38
Newmark Ave/Ocean Blvd Realignment

Coos Bay
Transportation System Plan

Existing Intersection

Proposed Improvement



Purpose	• Address and existing safety concern, caused by poor sight lines and the angle in Koosbay Blvd's approach • Traffic calming • Enhanced pedestrian crossing	
Description	Provide raised "porkchop" median to shorten crossing distance and provide a pedestrian crossing of Ocean Blvd.	
Location	Newmark Ave at Ocean Blvd	

Roadway Characteristics	• Functional Classification: Minor/Principal Arterial
	• Pavement Width: Newmark Ave: 46-66'; Ocean Blvd: 56'
	• Posted speed: Newmark Ave: 30-35 mph; Ocean Blvd: 30-40 mph
	• Existing (2018) ADT:
	  • Newmark Ave: 10,000-13,000 veh/day
	  • Ocean Blvd: 10,000-15,000 veh/day
	• Forecast (2040) ADT:
	  • Newmark Ave: 10,000-15,000 veh/day
	  • Ocean Blvd: 10,000-15,000 veh/day
		5-Year Crash History (2012-2016):
		• 17 crashes at intersection of Newmark Ave and Ocean Blvd

How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Skewed intersection • Increased pedestrian crossing distances • Skewed/long crossing of Newmark Ave and no crossing of Ocean Blvd • High volume intersection of two minor arterials and limited pedestrian crossing opportunities	**<u>With Improvement</u>** • Increased line of sight • Shorter exposure time and crossing distances for pedestrians • Increased visibility and safety • Increased access to transit • Pedestrian refuge
Additional Considerations	• Road Authority: Coos Bay • Environmental constraints: None • Could be constructed within available right of way • Would likely trigger improvements to traffic signal and current crossing of Newmark Ave • Access management of the driveways in the southwest quadrant would be needed to provide pedestrian crossing	
Cost Opinion	Cost: TBD; Cost estimates were not prepared for projects where the scope/extents are undefined *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• High priority	

CB-39
South Coos Bay Pavement Repurposing

Coos Bay
Transportation System Plan

Existing

Potential Improvement

Purpose	• Traffic calming • Improve safety • Repurpose "pavement desert"	
Description	Provide landscaping or pedestrian buffer to reduce large, underutilized pavement area on east side of US 101 South.	
Location	US 101 South (east side): Johnson Ave to Kruse Ave	
Roadway Characteristics	• Functional Classification: Principal Arterial • Lanes: 2 • Pavement Width: 72' • Posted speed: 30 mph • Existing (2018) ADT: 15,000 veh/day • Forecast (2040) ADT: 17,000 veh/day • Parking is currently allowed on east side of US 101 in this section • US 101 is an OHP Freight Reduction Review Route and NHS route	5-Year Crash History (2012-2016): • 2 documented fatal or serious injury crashes in the immediate vicinity • Top 10% SPIS site (2013-2015)
How Improvement Addresses Deficiencies	**<u>Existing/Future Deficiency</u>** • Wide area of pavement for only two lanes of traffic • Underutilized pavement	**<u>With Improvement</u>** • Delineation of US 101 and shoulder • "Narrowed up" feeling of US 101 • Traffic calming
Additional Considerations	• Road Authority: ODOT • Environmental constraints: Project is located within the 100-year floodplain • This improvement can be completed within the available right of way • Could consider either landscaping, bioswale or pavement markings and candlesticks to delineate vehicular travel lanes from wide shoulder • May impact existing business accesses • Design would need to consider sight distance for travelers on US 101 and from business driveways • Any landscaping must maintain "hole in the air" as US 101 is a freight route (ORS 366.215 for freight reduction review route) • Any landscaping or physical change will need to accommodate existing driveway on east side of US 1010 South (sight distance, turning radius, etc.)	
Cost Opinion	Cost: $25k - $100k *Cost opinion is in 2019 dollars and does not assume right-of-way, utility relocation, new utilities or hazmat costs.*	
Implementation	• Low priority • Consider extending north to Johnson Blvd to maintain continuity with planned ODOT improvements	


CITY OF
COOS BAY