City of Cannon Beach

TRANSPORTATION SYSTEM PLAN

Photo Credit: Andrew Collins, © TripSavvy

DRAFT Volume 1

September 2022

City of Cannon Beach
Transportation System Plan (TSP) – DRAFT Volume 1

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CITATION

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TABLE OF CONTENTS

~~Contents~~

LIST OF TABLES

LIST OF PHOTOGRAPHS

APPENDICES (TSP VOLUME 2)

ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
CFR	Code of Federal Regulations
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	Geographic information system
LOS	Level of Service (traffic analysis)
MUP	Multi-use path
NACTO	National Association of City Transportation Officials
ODOT	Oregon Department of Transportation
OAR	Oregon Administrative Rules
OHP	Oregon Highway Plan
ORS	Oregon Revised Statutes
PAC	Project advisory group
PICP	Public Involvement and Communications Plan
PMT	Project management team
RRFB	Rectangular rapid flashing beacon
SDC	System development charge
SETD	Sunset Empire Transportation District
STIF	Statewide Transportation Improvement Fund
STIP	Statewide Transportation Improvement Program
TPR	Transportation Planning Rule
TSP	Transportation System Plan
UGB	Urban growth boundary
V/C	Volume to capacity ratio
VMT	Vehicle miles traveled

1. INTRODUCTION

The City of Cannon Beach Transportation System Plan (TSP) is a long-term plan for managing, preserving, and improving the transportation system to serve the needs of the Cannon Beach community. This chapter introduces the TSP and provides an overview of the purpose, planning process, and current policies affecting the development of the TSP. This introduction summarizes the transportation needs of the City based on existing and future conditions and takes into consideration demographics and key community destinations. It provides an overview of community involvement strategies employed to encourage participation from all stakeholders and populations represented in the City of Cannon Beach.

Photo Source: Peterson Photography (Flikr)

~~*Photo Source: Cannon Beach Chamber of Commerce*~~

1.1 Purpose of the Transportation System Plan

The TSP serves as a blueprint and vision for transportation system development in Cannon Beach for the next 20 years. The 2022 Transportation System Plan is Cannon Beach's first TSP. This plan:

- Improve transportation and quality of life for Cannon Beach residents
- Address transportation challenges related to visitor travel
- Assesses the existing and future conditions of Cannon Beach's transportation system and determines transportation needs for all modes of travel, including driving, walking, biking, using transit, and using a mobility device.
- Discusses the freight, rail, marine, and aviation needs of the system.

- Assesses emergency response facilities, including tsunami evacuation routes, assembly areas, and wayfinding and signage, and provides recommendations for improving the emergency response and evacuation system.
- Includes both near- and long-term projects that directly address transportation issues in the City of Cannon Beach and provides an evaluation system for prioritizing these projects.
- Develops projects to address the ongoing development of the region and anticipated increase in tourism that will continue to affect transportation for Cannon Beach residents. Addressing the impacts of tourism on the transportation system is a main focus of the TSP, not necessarily to serve or attract tourists, but to improve quality of life for year-round residents that must grapple with heavy tourism impacts.
- Includes an implementation plan for funding, financing, and prioritizing projects.

~~**Pilot Project:** Temporary Pedestrian Plaza Between 1st and 2nd Street~~**How will the City implement TSP projects over time?**

Consistent with OAR 660-012-0010(1), this TSP is intended to establish land use controls and a planned network of facilities and services to meet transportation needs in Cannon Beach. The TSP does not constitute authorization or approval to proceed with specific transportation system options through preliminary concepts, design and construction, outlined herein, nor does it prevent the community from considering other or additional transportation system options through amending this TSP. Any and all transportation system projects to be undertaken pursuant to this TSP shall be reviewed pursuant to the appropriate review and City approval processes, which may require public hearing(s) before the Design Review Board, the Planning Commission, the Parks and Recreation Committee, the Public Works Commission, or the City Council. Refer to

Commented [EM1]: Per Planning Commission request to explain why the focus on tourism. Addressing tourism impacts is the most direct way to improve transportation for year-round residents.

1.2 Plan Process

This section provides an overview of how the TSP was developed, the timeline of the TSP, and the public involvement process. The Cannon Beach TSP process began in January 2021 and is planned to conclude concluded in early Summer, 2022. The project management team (PMT) was composed of staff from the City of Cannon Beach, the Oregon Department of Transportation (ODOT), and the consultant team. A separate project advisory committee (PAC), composed of stakeholders and agency staff, provided input in developing recommendations at key milestones throughout the project. The PAC processed public input, provided feedback, and made recommendations to the PMT. Figure 1 below summarizes the TSP project schedule.

Figure 1. TSP Project Schedule

During the adoption process in Summer 2022, the Cannon Beach City Council requested clarification on the planning and implementation process for potential TSP projects. In response, this document has clarified how the TSP will only carry out potential projects after rigorous vetting and approvals through the City's existing and longstanding project development procedures. The TSP does not constitute authorization or approval to proceed with specific transportation system options through preliminary concepts, design and construction, outlined herein, nor does it prevent the community from considering other or additional transportation system options through amending this TSP. Any and all transportation system projects to be undertaken pursuant to this TSP shall be reviewed pursuant to the appropriate review and City approval processes, which may require public hearing(s) before the Design Review Board, the Planning Commission, the Parks and Recreation Committee, the Public Works Commission, or the City Council.

Commented [EM2]: This language was added by request of the Cannon Beach Planning Commission. The disclaimer language is reiterated again in Section 5 below.

Public Involvement and Communications Plan

The project team developed a Public Involvement and Communications Plan (PICP) to summarize the public engagement goals, audiences, process, and strategies to support development of the Cannon Beach Transportation System Plan (TSP). The PICP also ensures that project outreach and reporting is consistent with Title VI of the Civil Rights Act of 1964 and Environmental Justice Executive Order (EJEO) provisions to ensure full and fair participation by all potentially affected community members in the decision-making process. The PICP can be found in Appendix F. The PICP includes goals, target audiences, key messages, and critical success factors for effectively reaching and engaging stakeholders. It also clarifies outreach timing, team member roles and responsibilities to carry out the engagement program. Throughout the planning process, the stakeholders involved in this project were a part of the decision-making process. Figure 2 below summarizes the TSP decision-making process.

Figure 2. TSP Decision Making Process

1.3 Policy Context

This section provides plan and policy context for the City of Cannon Beach Transportation System Plan (TSP), consistent with Oregon Department of Transportation (ODOT) Transportation System Plan Guidelines.

TSPs are developed per Oregon's Transportation Planning Rule (TPR) (OAR 660-012) and must be consistent with existing regional, state, county, and local plans, policies, and documents including the Oregon Highway Plan, the ODOT 2020 Transportation System Plan Guidelines, and the City of Cannon Beach Comprehensive Plan (1979, most recently amended in 2017). The Oregon Transportation Planning Rule TPR implements Statewide Planning Goal 12 (Transportation), which is intended to promote the development of safe, convenient, and economic transportation systems designed to maximize the benefit of investment and reduce reliance on automobiles. The TPR also requires that local jurisdictions develop implementing ordinances to advance TSP recommendations in the form of local land use and development code amendments. These rules also require local jurisdiction to coordinate local transportation system planning with applicable county, regional, and state transportation plans.

The project team considered the following plans, policies, and other documents while developing the TSP.

City of Cannon Beach

- Comprehensive Plan (2017)
- Buildable Lands Inventory (2018)
- City of Cannon Beach Zoning and Development Ordinance
- Clatsop County Housing Study (2018)
- Economic Opportunities Analysis and Development Strategy Report
- Urban Growth Boundary Area Joint Management Agreement (2007)
- Lancaster Downtown Parking Study (2017)
- Warren Way Intersection Traffic Analysis (2018)
- Water System Master Plan (2017)
- Wastewater Facilities Plan (2017)
- Cannon Beach, Parks and Trails Master Plan (2017)

Clatsop County/Transit Districts

- Comprehensive Land Use Plan
- Clatsop County TSP
- Clatsop County Multi-Jurisdictional Natural Hazards Mitigation Plan (January 2021 draft)
- Sunset Empire Transit District Long Range Comprehensive Transportation Plan (2016)
- Tillamook County Transit District Transit Development Plan (2016)

Statewide

- Statewide Transportation Improvement Program (STIP)
- Oregon Highway Plan and amendments (1999-2019)
- Oregon Freight Plan (2017)
- Oregon State Rail Plan (2014)
- Oregon Public Transportation Plan (2019)
- Oregon Bicycle and Pedestrian Plan (2016)
- Oregon Resilience Plan (2013) and policies
- Oregon Transportation Safety Action Plan (2016)
- Oregon Transportation Plan (OTP)
- Statewide Planning Goals
- ODOT Blueprint for Urban Design (2019)
- State Law on Reduction in Vehicle-Carrying Capacity (Oregon Revised Statutes 366.215)
- Oregon Administrative Rules ("OAR") Chapter 734 Division 051, Access Management Standards
- Oregon TSP Guidelines (2020, online)
- ODOT Highway Design Manual (2012)
- Oregon Roadway Departure Implementation Plan update (2017)
- Oregon Intersection Safety Implementation Plan (2012)
- Oregon Bicycle and Pedestrian Safety Implementation Plan (2014)
- Oregon Standard Specifications for Construction (2015)
- Oregon Standard Drawing and Oregon Standard Details (online, accessed 2021)
- Methods to Determine Locations of Tsunami Vertical Evacuation Shelters (2012)

1.4 Study Area

Cannon Beach is a coastal community located in Clatsop County, approximately 10 miles south of Seaside, 40 miles north of Tillamook, and 80 miles west of Portland. The City has managed growth and development to maintain a compact footprint and a "village" atmosphere. Cannon Beach's unique character and picturesque setting has made it a popular tourist destination. As of 2019, the City had a year-round population of 1,491. However, the population swells with visitors during the summer tourist season.

Photograph 1. Haystack Rock at Cannon Beach
Photo Source: Cannon Beach Chamber of Commerce

The Cannon Beach Transportation System Plan (TSP) considers the land and transportation facilities within the Cannon Beach urban growth boundary (UGB) and city limits (Figure 3).

- The City is approximately 3.5 miles long, oriented north-south along the coast. Haystack Hill, a steep hill near the midpoint of the City, creates a topographical barrier for the transportation network.
- Only two roads continue the length of the City: US 101 (State Highway 009) and Hemlock Street. Hemlock Street is the transportation spine for Cannon Beach, providing access to the City's commercial areas and most neighborhoods.
- Both US 101 and Hemlock Street experience relatively high seasonal traffic levels as the main north-south corridors through town.
- Outside of the main commercial areas, the City's roadways experience relatively light traffic and offer more of a rural aesthetic. Few roads have sidewalks and many roads are gravel.
- Cannon Beach has no railroad and no airport, and despite being on the coast, also has no marinas, ports, or navigable waterways.

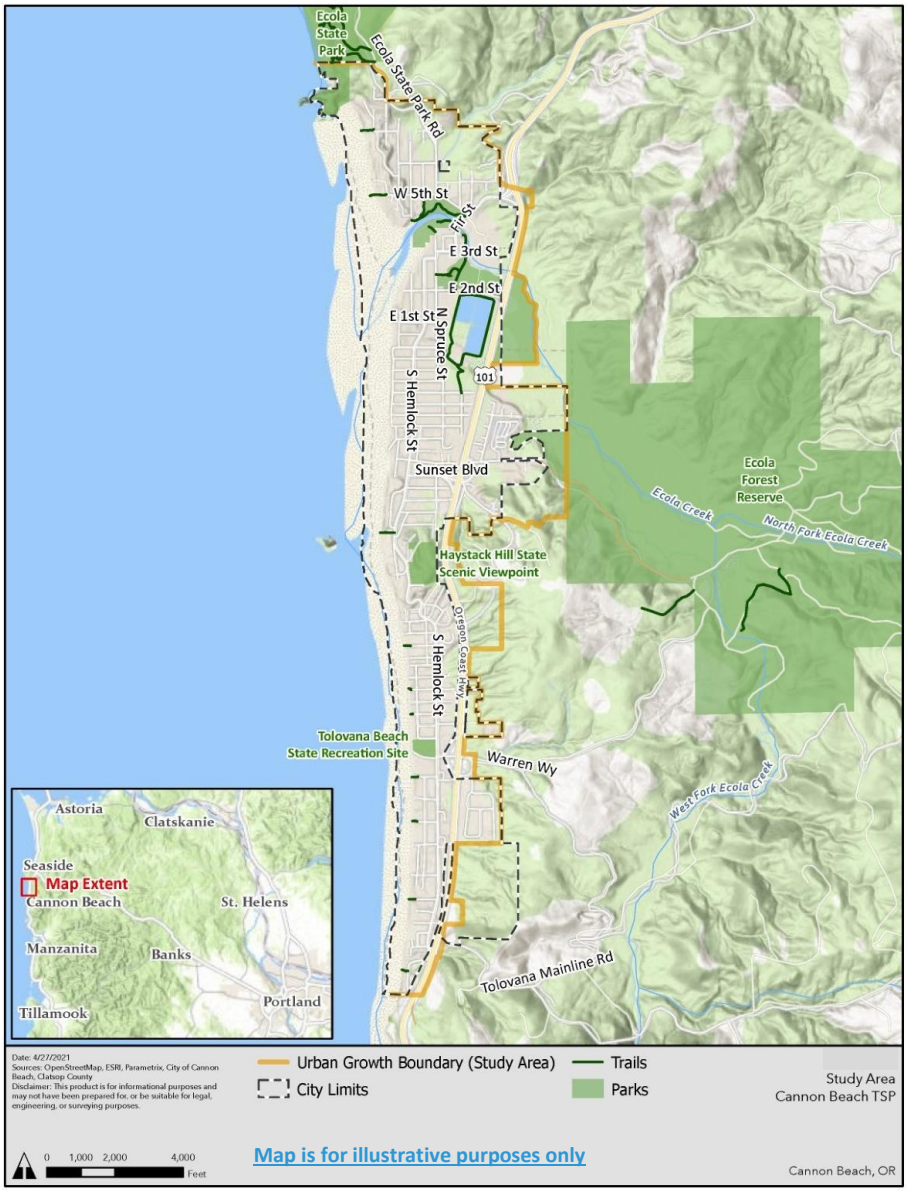


Figure 3. Study Area

1.4.1 Land Use and Future Growth

Cannon Beach is immersed in and surrounded by parks and natural areas. Many people are drawn to the City for the beach and views of Haystack Rock. Tolovana State Park provides a large car parking area for visitors to access the beach with amenities like restrooms and a playground. Local City Parks, such as Whale Park and Les Shirley Park, are also access points to the Ecola Creek estuary and beach. Though Ecola State Park is outside of the City, the primary access is through Cannon Beach. Parks, natural areas, and other community destinations are shown in Figure 4 below.

Land uses strongly influence the movement of people and goods. As shown in Figure 5, Cannon Beach's land use is primarily a mix of residential, commercial, and park or natural spaces. Other land is used for institutions or public works, like the wastewater treatment plant and City offices. Land use in Cannon Beach is expected to remain consistent based on land use designations in the Comprehensive Plan. Cannon Beach's land use and zoning are respectively shown in Figure 5 and Figure 6 below.

Most of the City is zoned for residential development, primarily designated low or medium density. Notable high-density residential locations include Breakers Point condominiums on the north edge of Ecola Creek and the multifamily housing on Elk Creek Road east of US 101. The City also has zoned areas for residential motels and manufactured homes, which includes two RV parks. Cannon Beach has three commercial nodes, one toward the north end, one in the middle of the city, and one toward the south end. Each commercial center has restaurants, retail, and places to stay.

Photograph 2. Cannon Beach Natural Areas
Photo Source: Cannon Beach Chamber of Commerce

Cannon Beach has a variety of civic resources, including the Cannon Beach Library, Chamber of Commerce, City Hall, and the Cannon Beach History Center. Cannon Beach Academy is the only public school in the City and is located just off S Hemlock Street, potentially attracting walking trips to school. Cannon Beach is also home to Ecola Bible College, a one-year Christian school, and Christian Culinary Academy, both at the north end of the City.

Tourism is the largest contributor toward the City's economy. Estimates from American Community Survey data show approximately 780 people were employed in Cannon Beach in 2018.[1] The largest industry by far was Accommodation & Food Services, followed by Real Estate & Rental & Leasing and Retail Trade. Nearly 85% of Cannon Beach employees are estimated to work in one of these sectors. While the impacts of tourism are seen year-round, transportation demands are highest from June

[1] Cannon Beach, OR, Data USA. https://datausa.io/profile/geo/cannon-beach-or/#economy

through September. Freight activity in Cannon Beach plays a vital role in supporting the local economy and services for tourists such as transport of food and retail items.

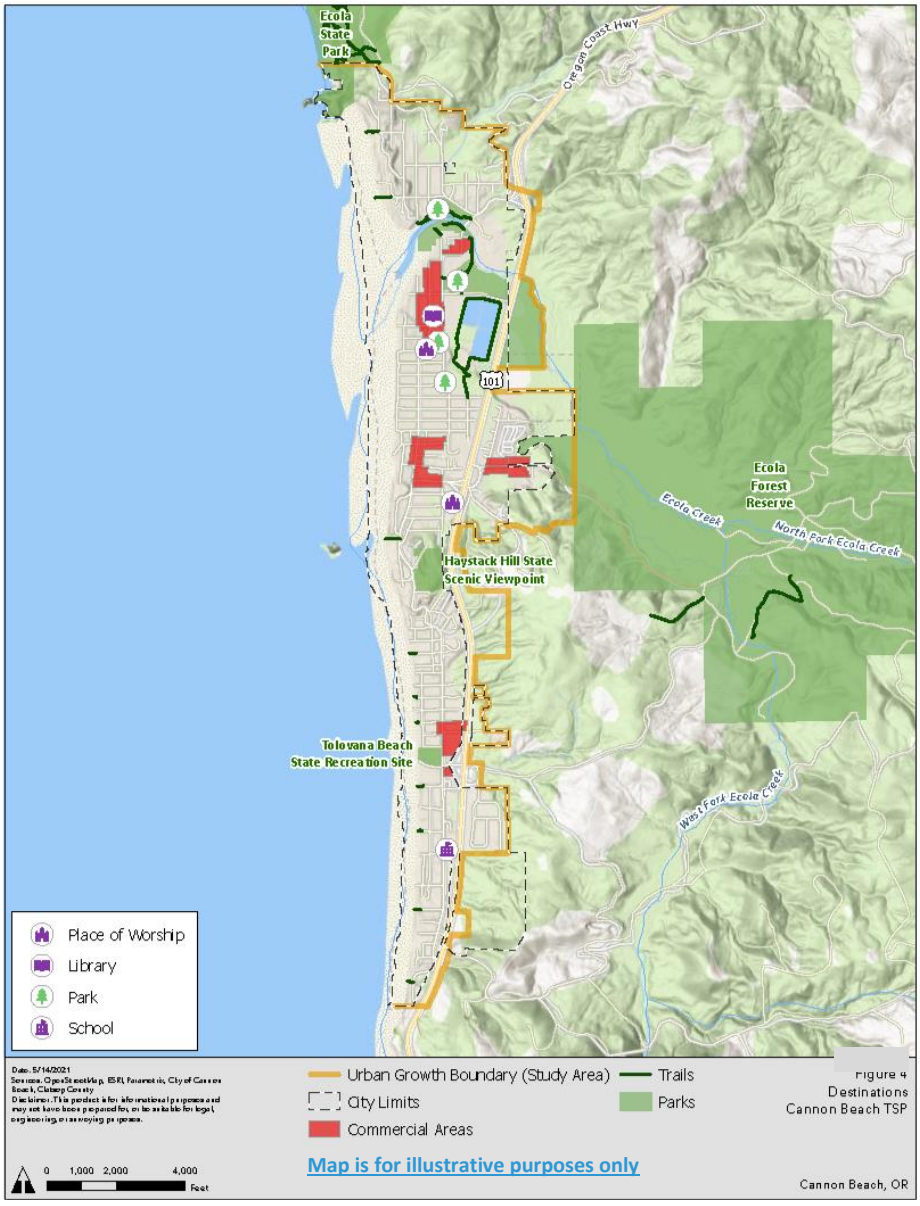


Figure 4. Destinations

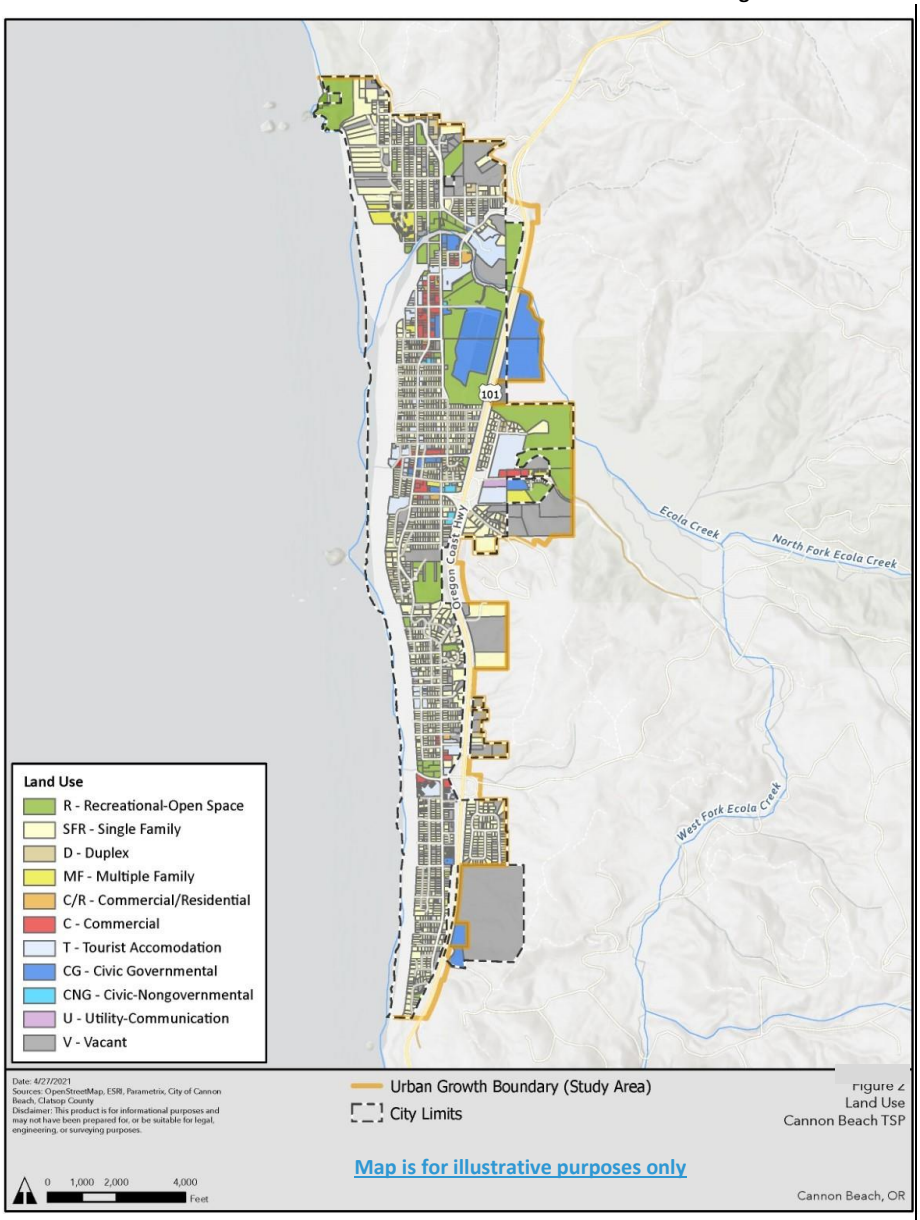


Figure 5. Land Use

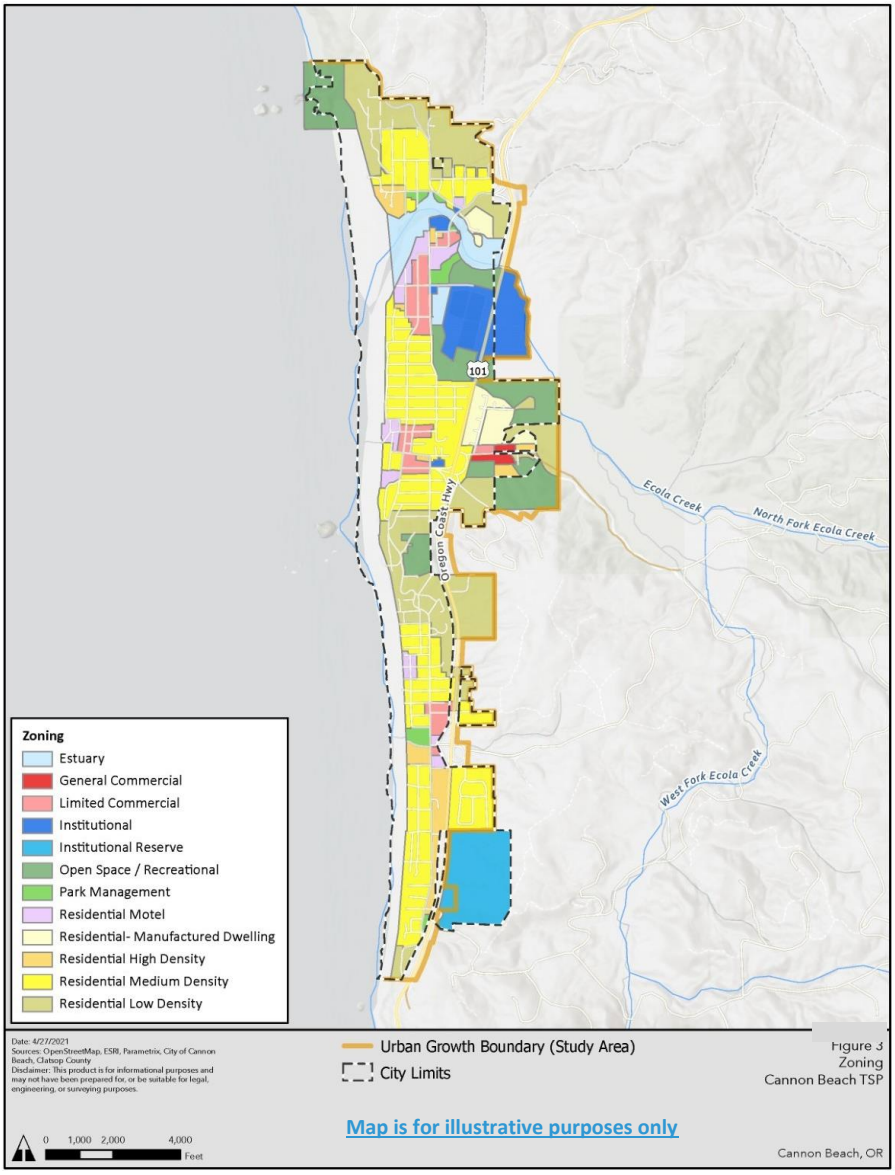


Figure 6. Zoning

1.4.2 Community Profile

The year-round residential population of Cannon Beach is estimated at 1,491 as of 2019 (Table 1), although the City experiences large population increases in the summer due to tourism. The most recent population forecast for Cannon Beach shows that Cannon Beach's population is forecast to grow to 1,714 people by 2040.[2] This represents a modest a 3.4 percent increase over the 2020 population of 1,652. The State of Oregon is expected to grow approximately five times faster than the City of Cannon Beach during the same period. ~~-~~Although population and local traffic impacts are relatively low, the ongoing development of the region and anticipated tourism over the long haul will continue to affect transportation for Cannon Beach residents. Cannon Beach is a popular destination for all Oregonians and is a major tourism hub on the Oregon Coast.

Environmental Justice Populations

State and federal law require the TSP to consider disadvantaged communities in the planning process.[3] The TSP must address environmental justice (EJ) populations, defined by Executive Order 12828 as low-income and minority populations,[4] and consider the needs of people with disabilities, youth populations (under 18 years old), and older adults (65+). Cannon Beach has greater shares of people with lower incomes, people with disabilities, and older adults compared to Clatsop County and Oregon as a whole.

According to American Community Survey 5-year estimates published by the U.S. Census Bureau (2015 – 2019), 79 percent of Cannon Beach's population identifies as white. The largest minority groups in the City are those who identify as Hispanic or Latino (12 percent), followed by those who identify as two or more races (6 percent). Compared to the County and State, more households in Cannon Beach have limited English proficiency (LEP) (4 percent), which suggests making information available in Spanish would benefit many of the people in these households. People of color (population that is not White, non-Hispanic) represent 21 percent of the City's population, compared to 14 percent of Clatsop County.

Cannon Beach residents tend to be older than residents statewide, with more residents over 65 years old (21 percent), and fewer under 18 years old (15 percent). The portion of the population with low incomes in Cannon Beach (47 percent) is much higher than for the County or the State.[5] The City has a lower median household income and substantially higher poverty levels (13 percent) than either the

[2] Based on 2020 Oregon Population Estimates published by the Portland State University Population Research Center (PRC), June 30, 2020. Proposed forecasts represent populations as of July 1 of each year.

[3] Title VI of the Civil Rights Act of 1964 states, *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."*

[4] Refers to Presidential Executive Order 12828: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) and related applicable laws and regulations.

[5] The Census Bureau provides a large margin of error for the estimated poverty status of Cannon Beach residents. The full range, inclusive of the margins of error, is between 37 percent and 64 percent.

County or the State. The portions of the population living with disabilities is notably higher in Cannon Beach (25 percent) than either the County or State. Low-income and minority community members tend to have less access to motor vehicles and rely more on modes of transportation such as walking, biking, and public transportation. Residents of Cannon Beach have less access to motor vehicles (11 percent) and are less likely to drive to work than residents of Clatsop County or State of Oregon. Disabled communities are also disproportionately impacted when facilities lack Americans with Disabilities Act (ADA) compliant facilities.

Table 1. Cannon Beach Demographic Summary

	Cannon Beach	Clatsop County	Oregon
Population	1,491	39,102	4,129,803
Age			
Youth (under 18)	15%	19%	21%
Older adults (65 years+)	21%	21%	17%
Income Characteristics			
Median household income	$50,846	$54,886	$62,818
Low Income Population (Less than 2x Federal poverty level)	47%	32%	30%
Race and Ethnicity			
American Indian and Alaska Native alone	1 %	<1 %	1%
Asian alone	4 %	1 %	4 %
Black or African American alone	<1 %	1 %	2 %
Hispanic or Latino alone	12 %	9 %	13 %
Native Hawaiian and Other Pacific Islander alone	<1 %	<1 %	<1 %
White alone	79 %	86 %	76 %
Some other race alone	<1 %	<1 %	<1 %
Two or more races	6 %	3 %	4 %
Limited English-Speaking Households	4 %	1 %	2 %
Persons with Disabilities	25 %	19 %	14 %
Transportation Characteristics			
Households with Zero Vehicles Available	11 %	7 %	7 %
Average commute to work (minutes)	10	20	24
Drove alone	37 %	73 %	71 %
Carpool	16 %	11 %	10 %
Public transportation	1 %	1 %	5 %
Walked	31 %	8 %	4 %
Other Means	6 %	3 %	3 %
Worked at home	9 %	4 %	7 %

Source: American Community Survey (ACS) 2015 – 2019. ACS 5-Year Estimates Data Profiles: *Means of Transportation to Work; Economic Characteristics.* Title VI and EJ Communities

1.4.3 Downtown Cannon Beach – Hemlock Street

Hemlock Street in Downtown Cannon Beach serves as the City's shopping, food, and cultural corridor. Restaurants, galleries, artisan shops, and attractions are concentrated along Hemlock Street and adjacent streets, and the Downtown area attracts a substantial portion of the city's pedestrian trips and tourist destination. Downtown Cannon Beach also serves as a popular access point to the beach.

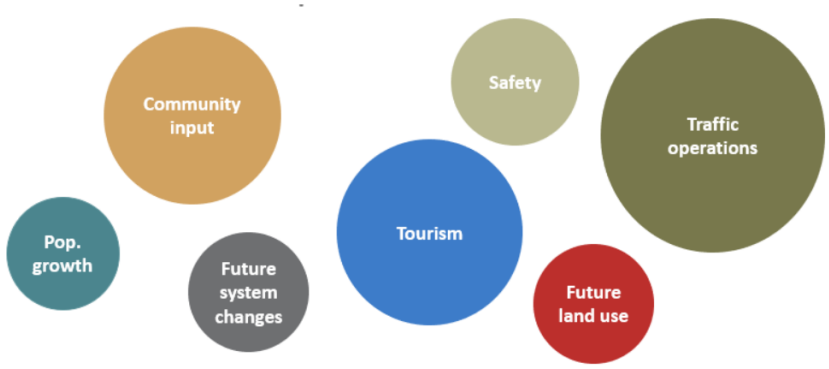
Hemlock Street is the transportation spine for Cannon Beach and the primary north-south connection through town, providing access to the City's commercial areas and most neighborhoods. Hemlock Street connects to US 101 at the south end of the City and indirectly connects to the interchange at the north end of the City. This forms an alternative route to US 101 that runs parallel to it. Both US 101 and Hemlock Street experience relatively high seasonal traffic levels as the main north-south corridors through town.

The Hemlock Street area is a primary area of focus for the TSP, with attention placed on pedestrian safety, parking management, and congestion. The corridor's transportation issues include a lack of stop controls, resulting in congestion for intersecting side streets, high pedestrian crossing volumes and associated safety concerns, and seasonal delays on the Hemlock mainline. As Cannon Beach's main cultural destination, the projects in the TSP reflect community desires for a safer, more connected pedestrian system in the heart of Downtown.

Photograph 3. Hemlock Street – Downtown Cannon Beach
Photo: TripSavvy

2. EXISTING AND FUTURE TRANSPORTATION NEEDS

Chapter 2 describes the existing and future transportation needs in Cannon Beach, based on community input and technical analysis. The future needs analysis projected what the transportation system would be like by the year 2040 assuming no improvements were made to the existing system. This summary considers all transportation facilities and modes that comprise the City's transportation system, including streets and roadways, bicycle and pedestrian facilities, emergency response facilities, public transportation, and freight. This assessment of needs served as the basis for the identified TSP projects, programs, and policy changes described in Chapter 4: Transportation System Plan.



The graphic above displays some of the key factors that were considered to assess existing and future transportation conditions and needs in Cannon Beach.

Key findings from the analysis of existing and future no-build conditions include:

- Future demands on the City's transportation system will be **primarily driven by tourism** and development activity over time, as opposed to local population growth. This means that the most direct way to improve daily travel for local residents is to address the transportation impacts of tourism.
- Traffic volumes are projected to **increase by 24.6% by 2040.**
- **On-street parking constraints** are concentrated in Downtown along Hemlock Street.
- If left unimproved, the following intersections are anticipated to experience significant congestion and delays in the future: **Hemlock Street at 2nd Street, Hemlock Street at 1st Street, and Hemlock Street at Sunset Boulevard.**
- **There are no stop controls along Hemlock Street**, causing delays and back-ups on intersecting side streets, especially during peak visitor season.
- There is a need for a safe and comfortable **north-south route** through town for walking and bicycling.

Commented [EM3]: Per Planning Commission request to explain why the improvement alternatives mostly focus on addressing tourism impacts.

- The **Cannon Beach S-Curves** can be dangerous for walking or biking due to poor sight distances, no dedicated walk/bike facilities, and a marginal shoulder area.

2.1 Functional Classification

Cannon Beach's Comprehensive Plan classifies roadways using a range of five classifications: freeway, major arterial, minor arterial, collector and local (Figure 7). Classification is based on the extent the street provides for traffic movement or access to adjoining property. Federal functional classifications, as reported by the State of Oregon's TransGIS database,[6] differ from those in Cannon Beach's Comprehensive Plan (see Table 2). Roadways with a federal functional class of Collector or higher are eligible for potential federal funding. The TSP makes no changes to the City's existing functional classification system.

Local streets provide property access. Traffic movement on local streets is incidental and generally involves traveling to and from a collector or arterial street. Trip lengths on local streets are short, traffic volumes are low, and speeds are slow. Most roads in Cannon Beach are local streets.

Collector streets collect and distribute traffic from arterial streets onto local streets, or directly to traffic destinations. Collector streets provide for both land access and movement within residential and commercial areas. Compared to arterial streets, collector streets have more frequent intersections, narrower right of way widths, more access points, and more on-street parking. Though the Cannon Beach Comprehensive Plan does not recognize any collector streets in the City, ODOT recognizes several streets as collectors (see Table 2).

Arterial streets are intended to expedite the movement of traffic. Compared to other streets in the system, arterials carry high traffic volumes, have wide rights-of-way, and have fewer access points. *Major arterials* are intended to provide a high degree of mobility and serve longer trips. As a result, they are designed for high speeds and high levels of service. *Minor arterials* interconnect residential, shopping, employment, and recreational activities at the community level. US Highway 101, the City's only major arterial, is owned by ODOT. Hemlock Street and Sunset Boulevard are the City's only minor arterial streets.

Table 2. Local and Federal Functional Classifications

Road/Segment	Cannon Beach Comprehensive Plan Classification	Federal / State of Oregon Classification
US 101	Major Arterial	Principal Arterial
Hemlock Street	Minor Arterial	Major Collector
5th Street to Ecola State Park Road	Local	Minor Collector
Ecola State Park Road	Local	Minor Collector
Sunset Boulevard	Minor Arterial	Major Collector
Warren Way at US 101 Overcrossing	Local	Major Collector

[6] Oregon Department of Transportation, ODOT TransGIS. https://gis.odot.state.or.us/transGIS/

Sources: Cannon Beach Comprehensive Plan Transportation Element, State of Oregon TransGIS

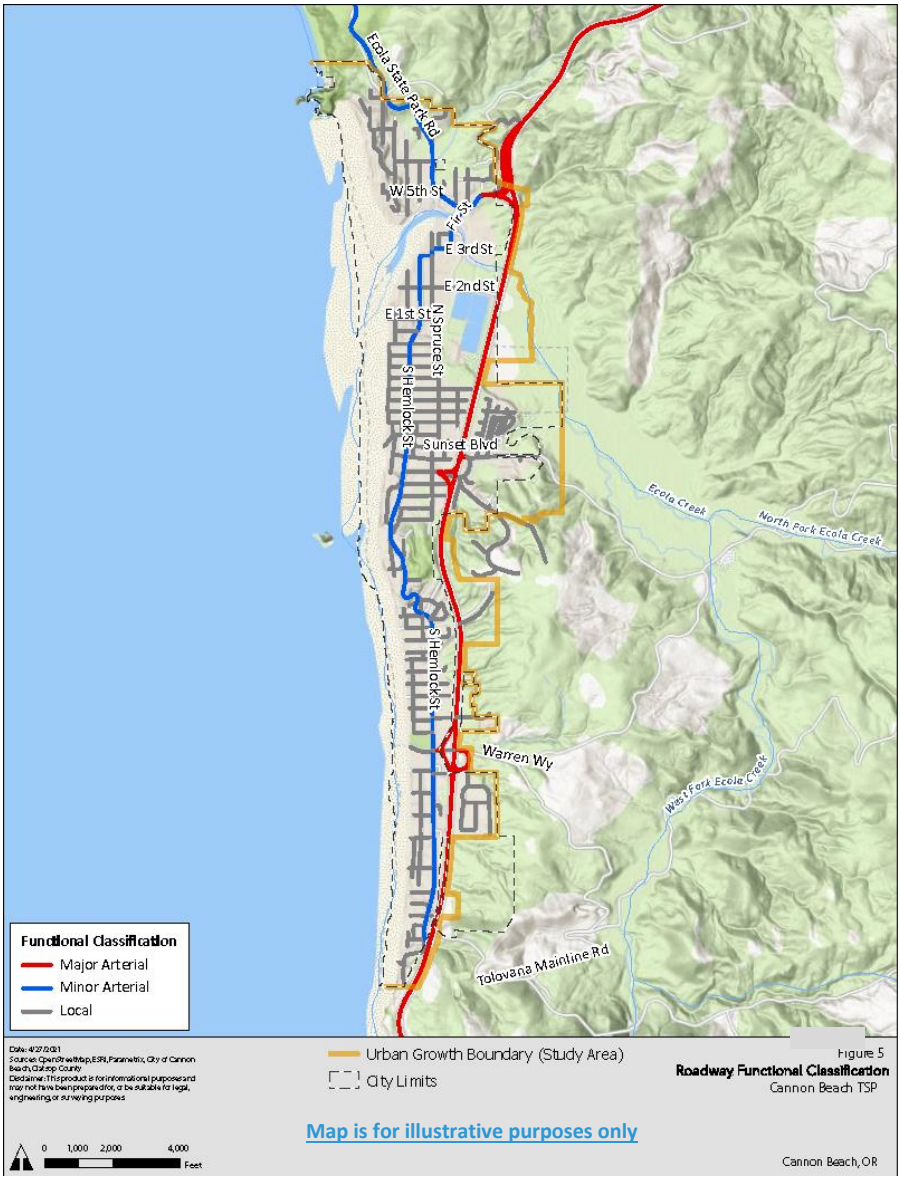


Figure 7. Roadway Functional Classification

2.2 Streets

2.2.1 Street Network/Connectivity

Hemlock Street and US 101 run parallel to each other and are about 400 to 1600 feet away from each other depending on location. Given this close proximity, there is not a need for an additional north-south vehicle travel corridor. The interchange spacing along US 101 already exceeds standards, so another interchange is not needed to provide more east-west connections to Hemlock Street.

West of US 101, only one roadway crosses the creek between Beaver Street and E 5th Street. There may be interest in providing a more direct connection between N Spruce Street and Ecola State Park Road, especially since Ecola Park is a popular destination.

The TSP makes no changes to the existing street network in Cannon Beach.

2.2.2 Safety Context

Crash data from 2014 to 2018, the last 5 years of complete records, was obtained from ODOT to analyze existing crash trends within the Cannon Beach UGB. Crash records from the ODOT database include reported crashes on all roads within Cannon Beach city limits and additional crashes outside the city limits in the Cannon Beach UGB. This analysis reviewed the frequency, type, and location of crashes, with consideration for crashes involving pedestrians or bicyclists.

Between 2014 and 2018, 47 reported collisions occurred within the Cannon Beach UGB.[7] Crashes in the Cannon Beach UGB are generally not severe. During this period, no fatalities occurred in Cannon Beach as a result of crashes. One crash led to serious injuries (2 percent) and six crashes led to minor injuries (13 percent). Conversely, 85 percent of crashes led to property-only damage or possible injuries. One crash involved pedestrians and one crash involved a bicyclist. Both crashes occurred on S Hemlock Street and resulted in suspected minor injuries for both pedestrians and the bicyclist. 19 percent of all crashes within the UGB (9 total crashes) occurred at study intersections. The intersection with the highest number of collisions was S Hemlock Street & Gower Avenue.

Within the study area, there were no segments that ranked in the top 15 percent Statewide Priority Index System (SPIS) between 2016 and 2018.[8] None of the segment crash rates exceeded the State highway crash rate. For a detailed analysis of crash data, see *Appendix D: Existing Conditions Analysis.*

[7] The available crash data is reported from the local DMV to ODOT; only crashes that resulted in an injury or property damage with over $1,500 in damage are reported to ODOT. ODOT groups crash data in three-year periods, so the 2019 and 2020 crash data are not yet available and will be reported with the 2021 crash data.

[8] The Statewide Priority Index System (SPIS) is a methodology developed by ODOT to flag potential safety issues with a statewide network screen for crash hotspots. All State highways are analyzed in 0.10-mile segments. A roadway segment is designated as a SPIS site if the segment experiences three or more crashes or one or more fatal crashes over the previous three-year period.

2.2.3 Geometric Deficiencies

Existing Cannon Beach lane widths were compared to ODOT standards to identify potential geometric deficiencies. The City of Cannon Beach currently has minimal street design standards limited to the provisions in the City's Municipal Code Chapter 16 (16.04.280). Per City street design standards, "All street rights-of-way shall be at least forty feet in width. Roadway improvements shall not be less than twenty feet in width." The City therefore uses ODOT street width standards as a proxy. ODOT's standard lane width for a local road is 10 feet wide. At 9 feet wide, Beech Street north of Fir Street is the only roadway that does not meet these standards. There are no planned or funded projects to address this geometric deficiency.

2.2.4 Traffic Control

The City contains no traffic signals. Traffic is controlled by stop signs at street intersections. However, stop signs are mostly limited to side streets intersecting Hemlock Street, allowing north-south traffic to travel along Hemlock Street without stopping.

The lack of stop controls along Hemlock Street was found to be the one of the leading causes of traffic delays and back-ups on intersecting side streets, especially during peak visitor season. Safety issues at these intersections are compounded by high levels of pedestrian traffic. Left unimproved, the following intersections are anticipated to experience significant congestion and delays in the future: Hemlock Street at 2nd Street, Hemlock Street at 1st Street, and Hemlock Street at Sunset Boulevard. Future delays at these intersections will be further compounded by future traffic projections, which found that traffic could grow by as much as 24.6 percent by the year 2040.

More information on the traffic analysis is provided in the following section, and additional detailed information can be found in *Appendix A: Traffic Counts.*

2.2.5 Traffic Operations

Traffic Volumes

Existing (2020) and future baseline (2040) traffic volumes were developed to understand existing and future operational deficiencies at 15 study intersections.[9] To account for changes in volume due to COVID-19, a factor of 1.072, or 100% divided by 93.3%, was applied to the July 2020 counts when developing the 2020 intersections volumes. Traffic volumes were assessed using the two following methods:

- State highway mobility targets were developed for the 1999 Oregon Highway Plan (OHP) based on volume-to-capacity (v/c) ratios. These ratios are used as a method to gauge reasonable and consistent targets for traffic flow along state highways. These targets don't apply to the City's local transportation network as they only apply to ODOT highway facilities (i.e. US 101). Furthermore, the City has not accepted local mobility targets. However, these targets were used as proxy measures for assessing traffic flow in Cannon Beach for the purpose of identifying potential transportation needs.
- Level of service (LOS) is another metric that describes how well an intersection operates. Intersections receive a LOS grade from "A" to "F", where LOS "A" represents the best conditions with minimal delay at the intersection and LOS "F" represents the worst conditions. The City of Cannon Beach has not adopted LOS standards.[10]

No intersections along US 101 exceed state mobility targets as outlined in the OHP. However, two intersections on the local system currently operate at LOS F: N Hemlock Street/2nd Street and N Hemlock Street/1st Street, and by 2040, S Hemlock Street/Sunset Boulevard and S Hemlock Street/Gower Avenue are expected to exceed mobility targets as well. For all four intersections, N Hemlock Street is expected to operate with an adequate level of service, but the side streets are expected to experience significant delays. This is likely due to the nearly 25% increase in traffic volumes along N Hemlock Street by year 2040 as well as the lack of mainline stop controls for side streets intersecting Hemlock Street.

[9] Full traffic counts are provided in *Appendix D: Existing Conditions Analysis* and *Appendix E: Future Conditions Analysis.*

[10] Additional information regarding intersection mobility targets is documented in *Appendix B: Analysis Methodology and Assumptions.*

2.2.6 Parking

High numbers of visitors combined with residents and workers who drive in Cannon Beach creates a high seasonal demand for parking. Parking needs are especially high in and near the three commercial areas: downtown, midtown, and Tolovana Park. A detailed analysis was conducted for two of these areas: downtown and midtown. See *Appendix D: Existing Conditions Analysis* for more information on parking inventory studies. Based on the City's input, it is believed that the highest concentration of parking activity in Cannon Beach occurs within the selected boundaries.

There are 621 on-street and 1,643 off-street parking stalls within these two areas. The majority of all on-street parking allows unlimited time stays (94%). On-street informational signage is inconsistent and, at times, confusing and/or lacking a clear sense of rules of use (e.g., legal parking stalls, hours of enforcement, etc.). Additionally, on-street markings and striping largely do not exist. Teal curb paint designating 10-minute stalls and/or loading zones is unique to Cannon Beach and may be more confusing than traditional yellow paint for Loading zone stalls.[11] Off-street parking is mostly privately owned and is generally well maintained. There is limited right-of-way signage in the downtown area directing users to the off-street public lots, leading to less queuing/circling for empty stalls.

Future growth in the parking supply will be primarily driven by future development activities, which will increase the overall demand for both on- and off-street parking in town. Future demands on the existing supply are anticipated to worsen peak-hour parking constraints along Hemlock and Spruce Streets, as well as other commercial corridors in town, particularly without parking management strategies and periodic enforcement. However, near and mid-term parking demand is not anticipated to exceed the City's overall existing supply of combined (on- and off-street) parking capacity on a regular basis, as parking constraints are expected to be concentrated during peak visitor periods.

Photograph 4. Public Parking Lot in Cannon Beach
Photo: Susan C. Walsh

2.2.7 Bridges

Cannon Beach has five bridges within its urban growth boundary. Four bridges are on US 101 and are owned and maintained by ODOT. The remaining bridge carries Fir Street over Ecola Creek. Bridges vary in condition from good to fair. Two bridges built in 1952, one over Ecola Creek (06713) and one over

[11] Note that teal isn't a recognized color by the Manual Uniform of Traffic Control Devices (MUTCD) and is not typically used to designate parking stalls or loading zones.

Warren Street (#07405), are rated "fair." The TSP makes no recommended changes to the City's existing bridges.

2.2.8 Access

Access management balances access to developed land with ensuring movement of traffic in a safe and efficient manner. US 101 is an 'access-controlled' highway with limited accesses to adjacent land uses to preserve unhindered vehicular traffic flow. Therefore, highway accesses (usually in the form of interchange on/off ramps or intersections) are spaced further apart than on local street systems. Access spacing standards are governed by the roadway jurisdiction, functional classification, vehicle volume, and posted speed. Access spacing standards for roads under ODOT jurisdiction are outlined in Appendix C of the *Oregon Highway Plan*. The City of Cannon Beach does not have defined access spacing standards for local streets.

US 101's classification as a statewide highway, posted speed limit, and average annual daily traffic (AADT) determine the minimum interchange and access spacing distances. The minimum interchange spacing for rural areas is 3 miles, and for statewide highways in rural areas is 1,320 feet. There is a total of 3 interchanges over 3.2 miles along US 101 within the Cannon Beach UGB, which exceeds ODOT standards for interchange spacing. There is a total of 19 at-grade access points over 3.2 miles (16,895 feet) along US 101 within the Cannon Beach UGB, including the three interchanges and local and arterial intersections, which exceeds the ODOT standards for access spacing. There are no planned and funded access projects.

2.3 Bicycle and Pedestrian System

Cannon Beach is compact and relatively easy to get around by walking and biking. Convenient and safe facilities to walk and bike help would keep Cannon Beach comfortable and safe, while also reducing the need to drive. Walking and biking activity is high near the three commercial areas in Cannon Beach: downtown, midtown, and near Tolovana Park. Many people also walk and bike to the beach, either through neighborhoods or through parks like Whale Park or Tolovana. Cannon Beach's collection of regional, community, and local parks are popular destinations for residents and visitors to walk and bike to.

However, Cannon Beach currently lacks a safe, continuous north-south walking and biking route through town, as travel along Hemlock Street currently requires pedestrians and cyclists to travel through the Haystack Hill "S-curves" – a relatively narrow stretch of roadway between Midtown and Tolovana. The S-Curves has poor sight distances, no dedicated walk/bike facilities, and requires people to travel along a marginal shoulder area.

Expanding the City's off-street trail system has been identified as a key strategy for addressing north-south bicycle and pedestrian travel through Cannon Beach. Cannon Beach's 2017 Parks and Trails Master Plan describes specific policies and projects to improve the pedestrian and bicycle networks with an emphasis on improving access to recreation. In addition to nature paths and multi-use pathways, the plan includes sidewalks and low volume streets in its definition of "trails." The plan does not include strategies to implement or fund projects. See *Appendix E: Future Conditions Analysis* for more information on the Parks and Trails Master Plan. Chapter 4: Transportation System Plan builds upon these recommendations to create a safe and continuous north-south route for walking and bicycling through Cannon Beach.

2.3.1 Pedestrian System

Sidewalks

Cannon Beach's sidewalk system is limited to the City's commercial areas. Sidewalks are inconsistent along Hemlock Street in the north portion of the downtown commercial area, where pedestrian needs are high. Sidewalks are narrow in some places and nonexistent in others. This includes 3rd Street, Spruce Street, and Fir Street between Hemlock Street and Beaver Street. Hemlock Street lacks sidewalks outside of commercial areas, requiring people to walk on the shoulder or use an alternative route. Alternative routes do not always exist, such as through the S-Curves, where Hemlock Street is the only through route and has narrow shoulders (Figure 8). A lack of sidewalks in busy areas, such as near Tolovana Beach State Recreation Site, limits pedestrian mobility. This is particularly pronounced for people using mobility devices who may not feel comfortable using a shoulder next to traffic. Curb ramps in Cannon Beach may not be ADA compliant, but there are no current plans to expand curb ramp installations or other ADA improvements in the City.

Figure 8. Lack of Sidewalks on Hemlock Street at Haystack Hill

Crossings

Many crossings in Cannon Beach are deficient or unmarked throughout the City. No street crossings have signals and in areas with high traffic volumes, pedestrian crossings are unsignalized, without pedestrian push buttons, and with minimal levels of physical protection from traffic. There are no planned crossing improvements in Cannon Beach.

Illumination

Street lighting outside of commercial areas is relatively low and may have contributed to a crash on Hemlock Street. Narrow shoulders on Hemlock Street that are often used by people walking and biking may warrant additional pedestrian-scale street lighting. Most street lighting is concentrated in commercial areas, with dispersed lighting in certain residential areas. There are no current plans to install future street lighting, and the City has adopted a "dark sky" ordinance limiting new streetlighting to downcast lights and requiring all new commercial lighting to be reviewed and approved by the City

Development Review Board. As such, future lighting projects are anticipated to be driven by development on a project-by-project basis.

2.3.2 Bicycling System

There is no designated network for bicycling or master plan for bicycling in the City though a bike master plan is a policy objective in the Comprehensive Plan. The City currently has no bicycle wayfinding system.

Hemlock Street and US 101 are the only two options for bicycling between the north and south portions of the City. Neither option is ideal as an all ages and abilities bike facility. US 101 has heavy, fast moving traffic and Hemlock Street is hilly and windy with narrow shoulders.

Hemlock Street is the main route for traveling through town and the designated route for the Oregon Coast Bike Route. Much of the route north of 1st Avenue lacks a shoulder or bike lane. Hemlock Street south of 1st Avenue has shoulders that vary in width and are often shared with people walking or parked cars (Figure 9). The northbound shoulder disappears completely at the Lighthouse Inn, just north of Harrison Street. There are few bike facilities north of 1st Street. Aside from two exceptions (a limited stretch of shoulders between 5th Street and Beaver Street and a two-block segment of a single 4-foot southbound bike lane on Fir Street – E 3rd Street) people biking must share the travel lane with people driving. The lack of a consistent bike facility may be an impediment for people who want to bike.

US-101 may feel unsafe for less confident bike users due to high speeds and lack of dedicated bicycle facilities. The facility does have marked shoulders that can be used by bicyclists, although shoulder widths vary along the corridor (from 3 to 6 feet wide), are narrow, and offer no physical separation from fast-moving vehicle traffic. US 101 does not meet ODOT standards (4 to 6 feet minimum) for shoulder width.

Figure 9. Shoulders on Hemlock Street Shared by Pedestrians and Bike Users

2.4 Public Transportation

Transit options in Cannon Beach help reduce the need to drive within Cannon Beach and to reach nearby jobs and services in bigger cities like Seaside and Astoria. Cannon Beach is served by three intercity public transit providers, directly connecting to Seaside, Tillamook, Astoria, Portland, and cities in between. Two are part of the NW Connector alliance of transit agencies. The three transit providers come together at one shared bus stop on S Hemlock Street and Coolidge Avenue. The City's infrequent transit service and limited service hours may make transit an impractical option for residents and visitors. Transit service in Cannon Beach is limited to daytime hours, with few trips before 7 am or after 8pm. Local transit service deficiencies are expected to grow as the population ages and as traffic volumes grow incrementally year-over-year.

Transit service and access is critical to ensure mobility for all people in the Cannon Beach community, especially with the City's high portion of people living with disabilities and without access to a vehicle. Given the high cost of housing in Cannon Beach, many employees are likely to commute in from locations other than Cannon Beach. Additionally, the large number of year-round tourists could be a potential market for transit, allowing tourists to leave the cars at home with intercity service or leave their cars at their lodging and use transit to travel within the city.

Sunset Empire Transportation District (SETD) runs four bus routes with local service to Cannon Beach. These four routes are the only transit options with multiple stops in Cannon Beach. Paratransit service is available to eligible riders for trips that start and end within ¾ mile of a fixed route in the district. Service is curb-to-curb and vehicles are wheelchair accessible.

- *The Pacific Connector* is a weekend service between Cannon Beach and Astoria, beginning at 8:30 am and ending at 8:30 pm.
- *The #20 and #21* are similar routes with service to Seaside and include multiple stops in both cities. The #20 operates on weekdays hourly between 6 am and 8 pm Monday through Friday. The #21 operates on weekends between 9 am and 6:20 pm Saturday and Sunday. There are nine stop locations in Cannon Beach.
- *The #17, the Cannon Beach Shuttle*, operates on weekdays from June through September. The #17 did not run in 2020 because of COVID-19 and service was limited in 2021. SETD intends to operate the service in 2022.

Tillamook County Transportation District, also known as The Wave, operates one bus route to Cannon Beach, the #3. The route connects Cannon Beach with Tillamook and Manzanita and has one fixed stop in Cannon Beach at S Hemlock Street and Coolidge Avenue. The #3 operates between 9:30 am and 9:18 pm every day. Tillamook County Transportation District allows deviations up to ¾ mile from the fixed route. All buses and vans are equipped with lifts and meet Americans with Disabilities Act (ADA) requirements.

POINT, Oregon's intercity bus service, operates one fixed route bus line to Cannon Beach with one stop at S Hemlock Street and Coolidge Avenue. POINT buses are fully ADA accessible. The NorthWest Route connects to Portland, Astoria, and cities between and makes one trip per day in each direction.

Limited private transportation services operate in Cannon Beach. A variety of taxis serve the area and are primarily based in Seaside. Hotels may offer shuttles or car service to their guests. The Stephanie

Inn, for example, has a car available to provide rides to locations in the city. Cannon Beach is outside the coverage areas for Uber and Lyft.

For more information on Cannon Beach's public transportation options, including transit ridership, see *Appendix D: Existing Conditions Analysis.*

Figure 10. Shared bus stop on S Hemlock Street at Coolidge Avenue

2.5 Freight

Freight demands in Cannon Beach are relatively low due to an economy based on tourism and a lack of manufacturing and intermodal shipping. However, freight mobility is critical to supporting the City's commercial areas, particularly food and retail businesses that constitute a major part of the local economy. Most of the City's local businesses are located near US 101 interchanges, underscoring the importance of maintaining freight mobility between the highway and the local street network. Hemlock Street provides access to most local streets through the City. Freight mobility needs extend beyond service-oriented businesses, including a construction company and the Cannon Beach Business Park, with garage and storage spaces for industrial work. These businesses are located on the east side of US 101 near the Sunset Boulevard interchange.

Truck mobility needs in Cannon Beach are expected to remain modest and no projects are planned to expand truck mobility in the City. Freight generators in Cannon Beach primarily serve retail and service provision for residents and tourists, and trucks will need continued access to commercial areas and industrial areas.

There are currently few designated loading zones in commercial areas, and those that do exist tend to block general traffic and cause delays. Future improvements to the City's curb management program will need to balance the need for freight loading zones with demand for on-street parking.

2.6 Emergency Response

The City currently has an emergency response and evacuation system for assessing hazard areas and moving people to safety in the event of a potential tsunami. This system assesses tsunami hazard areas based on the presence of distant and local inundation zones, based on analyses by the Oregon Department of Geology and Mineral Industries (DOGAMI).[12]

2.6.1 Emergency Response

Emergency response routes allow emergency responders and vehicles to reach the location of an incident. Hemlock Street provides the main emergency response access through Cannon Beach. Most locations in the City are within two blocks of Hemlock Street. US 101 provides a parallel alternative. The fire station is located on Sunset Boulevard and the police department is two blocks north on Gower Avenue. Though Providence has a medical clinic in Cannon Beach, it is limited to family medicine. The nearest hospital is Providence Seaside approximately 12 miles north. Emergency response needs are expected to remain consistent through the horizon year. Emergency response will continue to need access throughout the City and access to the nearest hospital in Seaside.

2.6.2 Tsunami Evacuation

Evacuation routes are intended to move many people quickly to higher ground, outside of the tsunami inundation zone. Much of Cannon Beach is within the inundation zone, based on analyses by DOGAMI. Evacuation routes need consistent wayfinding and signage that are effective in communicating to residents and visitors. Cannon Beach has designated evacuation routes and assembly areas for the City, as well as a series of maps showing the best way to reach high ground on foot for each neighborhood.[13] Many of these routes have wayfinding signs, but it is unclear if the signage is consistent or adequate. Emergency response and evacuation routes are shown in Figure 11. Evacuation needs are expected to stay the same through the horizon year.

[12] https://www.oregongeology.org/pubs/tsubrochures/CannonBeachEvacBrochure-5-21-13onscreen.pdf

[13] https://www.ci.cannon-beach.or.us/emergencymgmt/page/tsunami-evacuation-routes-assembly-areas

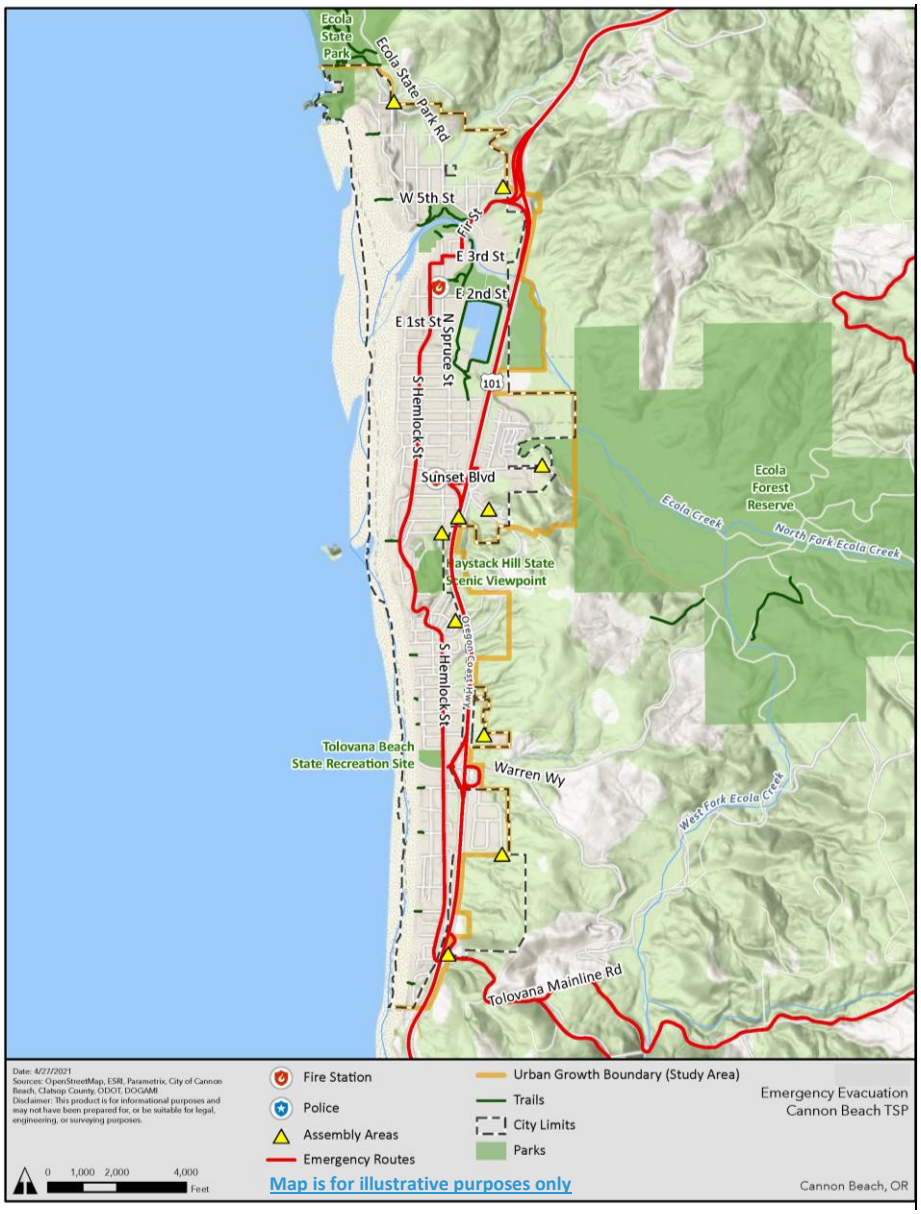


Figure 11. Emergency Response and Evacuation Routes

3. GOALS AND OBJECTIVES

This section documents the TSP goals, objectives, and evaluation criteria. The goals and objectives were used to guide development of the TSP, including programs, projects, and policies, and were based largely on the needs, values, and priorities identified through the public outreach process. The goals and objectives also provide direction to ensure that future land use and transportation decisions and actions resulting from the TSP are consistent with the transportation system as planned, which helps to protect the function of existing roadways while advancing a multimodal system.

The evaluation criteria were used to assess the performance of and prioritize draft TSP recommendations against the identified goals and objectives. For more information on the goals, objectives, and evaluation criteria planning process, refer to *Appendix C: Goals, Objectives, and Evaluation Criteria.*

3.1 Transportation System Goals and Objectives

TSP goals and objectives are based on the existing goals and policies expressed in the City's Comprehensive Plan. The goals describe overarching values that the TSP is aiming to achieve. Objectives provide more measurable detail for each goal and support development of evaluation criteria for selecting and prioritizing projects.

In Summer 2022, the Cannon Beach Planning Commission recommended the inclusion of a fifth goal; *Goal 5: Promote environmental conservation and protection by reducing greenhouse gas emissions.*

Goal 1. Preserve Cannon Beach's seaside village charm

Objectives

1.1 Develop transportation projects and programs that complement the natural and cultural setting of Cannon Beach
1.2 Scale the transportation system appropriately to the village context
1.3 Balance maintaining the City's vibrant tourism economy with addressing transportation-related visitor impacts
1.4 Preserve the function of US 101 for regional traffic, while enhancing the function and safety of connections between the City and the highway

Goal 2. Balance the needs of different transportation system users ~~in downtown and midtown~~

Objectives

2.1 Manage parking to make the best use of existing and potential parking capacity before considering new parking areas
2.2 Enhance safety and comfort for people walking and cycling throughout the community~~in and to downtown and midtown~~
2.3 Ensure that the system continues to serve local freight needs

Goal 3. Enhance safety and emergency preparedness

Objectives

3.1 Develop a connected network of cycling and walking routes and enhance access to transit
3.2 Address known safety problems
3.3 Maintain lifeline and evacuation routes

Goal 4. Foster a sustainable transportation system

Objectives

4.1 Coordinate transportation improvements with City land use planning and new development
4.2 Preserve and maintain the existing system, and manage demands on the system before making new investments
4.3 Maintain acceptable traffic flow and minimize delay city-wide
4.4 Avoid transportation impacts to Ecola Creek, the shoreline, wetlands, and other natural features
4.5 Prioritize projects that can be funded by grants and look for partnership opportunities with other agencies and groups

Goal 5. Promote environmental conservation and protection by reducing greenhouse gas emissions

Objectives

5.1 Reduce the carbon footprint wherever possible
5.2 Encourage transit alternatives that connect the regional workforce and seasonal guests to shared mobility options
5.3 Account for environmental justice in transportation decisions
5.4 In determining future transportation needs, prioritize consideration of preservation of natural resources and environmental protections.

~~4.5~~

3.2 Policies

This section documents recommended TSP policies to address support implementation of the TSP's recommended projects and programs and align with the plan's stated goals and objectives for Cannon Beach's transportation system. The TSP policies provide direction to ensure that future land use and transportation decisions and actions are consistent with the transportation system as planned, which helps to protect the function of existing roadways while advancing a multimodal system.

~~*Note: As of this writing, the policies will be revised based on public feedback and then incorporated into the Adoption Draft TSP to be shared with the Cannon Beach Planning Commission and City Council in May and June 2022.*~~

3.2.1 General Policies

1. Improvements to the transportation system shall be provided in a matter that is appropriate for the village context and that balance the needs of visitors and year-round residents.
2. Improvements to the City's transportation system shall be provided in a matter that is accessible to all populations for all modes, with an emphasis on vulnerable transportation system users and populations, such as those with physical disabilities.
3. All transportation facilities shall be sited, designed, and constructed to minimize negative social, economic, visual, and environmental impacts to the City.
4. Transportation improvements shall be integrated with land use planning to facilitate a comprehensive land use and transportation system.
5. Improvements to the City's transportation system shall be prioritized to address known safety issues within the transportation system, with an emphasis addressing known issues on Hemlock Street and implementing policies that preserve the natural environmental including wetlands, trees, and wildlife.
6. All transportation facilities shall respect adjacent land uses and shall be designed in a way which advances City infrastructure, such as stormwater facilities.
7. The City recognizes that the transportation-related impacts of development can be documented through the use of a Transportation Impact Study or Transportation Impact Assessment (TIA) and will use the results of these studies to require all parties to provide their fair share to the City for improvements.
8. The City may develop a TIA/Letter as a land use application requirement for implementation of on-site or off-site impact assessments noted above.
9. The City may make changes to Street Standards in compliance with TPR, including changes to minimum right of way widths.
10. All transportation planning and improvements shall be coordinated with county, regional, and state transportation plans to ensure consistency between plans.
11. The City shall consider seismic risks and lifeline emergency routes and evacuation routes in transportation planning.
12. The City shall coordinate with Clatsop County on system improvements and with ODOT on maintenance and improvements to US 101.

13. The City may require developers to pay for fair-share of street improvements when new development induces increased trips.
14. Cost savings may be provided for developers who work with City officials to co-invest in projects or programs to meaningfully reduce single occupancy trips to and from their developments.
15. The City may evaluate and prioritize projects and programs based on their ability to reduce transportation cost as a percentage of household income.

3.2.2 Automobile User Policies

1. The City may implement 3- and 4-way stops at intersections along Hemlock Street to address vehicle delay and pedestrian safety. The City ~~may~~shall minimize addition of new accesses to Hemlock Street to ensure movement of traffic in a safe and efficient manner.
2. ~~The City may implement mini-roundabouts at intersections along Hemlock Street to address vehicle delay and pedestrian safety. The mini-roundabout features a much smaller inscribed diameter, on the order of 50 to 80 ft, and a mountable small circular central island (e.g., 16 ft to 45 ft diameter) that is traversable to preserve freight and large vehicle movement. If pursued, mini-roundabouts shall follow design guidance published by the Federal Highway Administration, which recommend a minimum roadway width of 24 feet.~~
3. ~~2.~~ The City will notify Clatsop County and ODOT of all proposals requiring access to a state highway, as well as any land use change or development within 500 feet of a state highway. Additionally, the County and/or ODOT will be notified of any quasi-judicial land use review or proposed change of zoning, regardless of distance, whenever such change can reasonably be expected to generate significant traffic.
4. ~~3.~~ Level of Service D is the minimum desired level on all City arterials and collectors.
5. ~~4.~~ Prior to paving (concrete, asphalt, concrete, or rock and oil) a City road, the road will have drainage, and a subbase and base rock course which meets Public Works Standards. The City shall also Integrate stormwater runoff management into transportation facilities as required by City Public Works.
6. ~~5.~~ The City may install temporary or permanent traffic diverters to support the piloting and implementation of pedestrian plazas.
6. The City may reconfigure implement temporary or permanent reconfigurations of N Hemlock Street, N Spruce Street, 1st Street, and 3rd Street to support the piloting and implementation of a Downtown Cannon Beach Couplet Concept.
7. The City may limit access or parking spaces for recreational vehicles (RVs) through constrained or congested segments of the City's core area. Parking restrictions for RVs are pursuant to Cannon Beach Municipal Code Chapter 10.08, Sections 370, 375, 380, and 390, which limits RV parking in commercial zones and/or on any public street or parking lot unless designated by signs as a parking area for recreational vehicles.

Commented [EM4]: Added per PC request

3.2.3 Bicycle and Pedestrian Policies – Active Transportation

1. The City shall promote and encourage usage of alternate modes to reduce automobile emissions that encourage people to walk, bicycle and drive less in single occupancy trips. This includes supporting public transportation, bicycle, and pedestrian systems by designating resources to

construct infrastructure, mapping routes and tracking metrics on safety and usage in collaboration with others (ODOT, local employers, Clatsop County, Sunset Empire Transportation District, Tillamook County Transportation District, and POINT). The City shall also use bicycle and pedestrian improvements to reduce congestion on the road by increasing visitor access to bicycles and safe walking/bicycling routes.

2. The City recognizes a need to provide 'safe and convenient' pedestrian access within new subdivisions, multifamily development, planned developments and shopping centers. Access is necessary to support a variety of modes of transportation in the community. If off-site road improvements are required, these improvements shall include pedestrian and bicycle facilities, which may include alternative 'multi-use' trails.
3. The City shall prioritize projects which provide for enhanced pedestrian and bicyclist crossings on streets for safety and comfort.
4. The City may pursue sidepaths as an alternative design standard for bicycle and pedestrian travel on existing roadways. Sidepaths are to be constructed at grade utilizing existing or new shoulder space, and comprised of hard-packed, compacted material suitable for use by people using wheelchairs or mobility devices. Maintenance to keep surface intact would be needed to ensure paths stay accessible for all users. Sidepaths are to be demarked using pavement striping and signage as appropriate, consistent with the recommendations in the TSP.
5. The City shall define and establish safe, dedicated bicycle facilities in Cannon Beach. The City shall ensure that bikeways and pedestrian facilities, for which it has maintenance responsibility for safety-related problems, shall have the highest priority for upgrades.
6. City streets may be temporarily or permanently reconfigured by the City for use as pedestrian plazas, including the use of traffic diverters, signage, and parking removal to create car-free zones within the City.
7. In an effort to balance cost and right-of-way constraints, the City shall emphasize the use of interconnected pathways and/or multimodal informal pathways for pedestrians and bicyclists where appropriate from a safety and infrastructure perspective, and to increase connectivity with the City's emergency response, evacuation, and assembly system.
8. The City shall work in conjunction with ODOT and Clatsop County to provide and maintain a safe, convenient, and aesthetic bicycle and pedestrian system that is interconnected with other forms of transportation. An emphasis shall be placed on providing a safe and continuous north-south walking and bicycling connection through town.
9. The City, ODOT, and/or Clatsop County, according to the applicable road jurisdiction, shall provide adequate bikeways on appropriate roadways located in the City's urban growth boundary and in other such locations that provide access between residential subdivisions, schools, shopping centers, and parks.
10. The City shall continue to monitor and analyze bicycle accident data to determine where safety problems exist or are likely to occur. Special attention is to be paid to Hemlock Street.
11. The City shall coordinate local plans for pedestrian and bicycle facilities, improvements, and wayfinding using the findings of the Transportation System Plan (2022) as a guide.
12. The City shall require bicycle parking facilities for schools, multifamily housing, retail/office, and institutional sites to support multimodal opportunities.

13. All sidewalk replacements and improvements shall be identified and systematically constructed through a capital improvement program. The use of informal multimodal pathways shall be explored for implementation when appropriate from a safety and infrastructure perspective to provide cost-effective connections.

3.2.4 Transit and Transit-Supportive Policies

The City's existing transportation policies regarding transit reflect coordination with Sunset Empire Transportation District, Tillamook County Transportation District, and POINT. However, infrastructure gaps identified within the existing system, such as lack of adequate stop shelters and limited service, illustrate the need to consider other alternatives, especially in light of emerging technologies. The policies reflect support of Transportation Demand Management (TDM) or Transportation System Management and Operations (TSMO) for providing transportation for employees or customers. The intent is to create a proactive policy that provides the City with flexibility as emerging technologies become available.

1. The City shall work with Clatsop County, Sunset Empire Transportation District, Tillamook County Transportation District, and POINT to promote and encourage the ongoing operation of the public transit system.
2. The City shall work with Clatsop County, Sunset Empire Transportation District, Tillamook County Transportation District, and POINT to identify public transportation needs of underserved populations, including those with physical disabilities, and work to fill those needs.
3. The City shall develop and adopt proactive policies and regulations for ride-hailing transportation network companies (i.e. Uber and Lyft) before they begin operating in the City, with the ability to tax to generate funds for implementation of TSP projects, policies, or programs.
4. The City shall develop and adopt proactive policies and regulations for alternative means of transportation ~~private micro-transit services~~ such as bike ~~or scooter~~ share before they begin operating in the City, with the ability to tax to generate funds for implementation of TSP projects, policies, or programs.
5. The City may fund and operate municipal shuttle, micro-transit, or bike share programs.
6. The City may require dedication of areas within existing rights of way to support the development of mobility hubs or transit stops.
7. The City recognizes that the impacts of development may be offset by locations that are close to transit and/or located in proximity of mobility hubs while continuing to meet a service threshold.
8. The City may establish program to encourage visitors to leave the car at home or in an off-site parking area and arrive by other modes (the "Summer Stay" program).
9. The City may implement robust information campaigns to encourage visitors to travel to and within Cannon Beach by modes other than driving.
10. The City may establish a parking permit program to regulate the number of cars parking on-street.
11. The City may publish data on City website of when traffic is busiest based on historical trends.

12. The City may establish a parking monitoring program with camera or other systemin order to help people driving make informed decisions about parking without the need to circle looking for an available space.
13. The City may establish a curb management program to balance the space needed for parking, deliveries, loading, and other uses.
14. The City may invest in EV charging stations to encourage EV use.

3.2.5 Freight Policies

1. The City shall maintain and enhance, where possible, freight access to downtown and midtown while balancing the safety of the city's users and residents with the village character of the City.
2. The City shall designate short term loading zones for delivery trucks to balance the demand for parking with the need for deliveries. Loading zones shall include signage for temporary loading.

3.2.6 Parking Management Policies

1. As necessary, the City may limit on-street parking on designated City streets through the use of limited parking signage or other means in order to maintain adequate parking circulation.
2. The City shall implement parking management strategies in midtown and downtown, including but not limited to designating employee parking locations on and off-street, imposing time restrictions for on-street parking (e.g., 3 Hours), conducting periodic parking enforcement of time-limited parking, transitioning to employee parking permits, and identifying remote parking lots for employee and overflow visitor use.
3. The City shall allow shared parking provisions in order to encourage a more efficient use of a limited (and expensive) resource – off-street parking.

3.2.7 Emergency Evacuation Policies

1. Transportation projects and programs may be evaluated and prioritized based on their ability to improve safe and efficient connections to the City's planned and existing emergency response, evacuation, and assembly system.

3.3 Evaluation Criteria

The project team developed a goal and criteria framework for evaluating projects throughout the process of developing the TSP. These criteria were used to develop, evaluate, and prioritize transportation system projects. Table 3 summarizes the evaluation criteria used. *Appendix C: Goals, Objectives, and Evaluation Criteria* provides further explanation of project evaluation. Each criterion was evaluated using a "Consumer Reports" scale as follows:

- ■ Project meets or fully addresses the criterion
- ◖ Project partially meets or addresses the criterion
- □ Project does not meet or has negative impacts with respect to the criterion

N/A Not applicable

Table 3. Project and Program Evaluation Criteria

Objective	Criteria	How was it measured?
Goal 1. Preserve Cannon Beach's coastal village charm		
1.1 Develop transportation projects and programs that complement the natural & cultural setting of Cannon Beach	Project complements natural features of the City through streetscape, landscape, or design choices	Qualitative assessment of effects on streetscape, landscape, etc.
1.2 Scale the transportation system appropriately to the village context	Project is scaled appropriately for the small-city setting in terms of the level of investment and scale of physical improvements	Qualitative assessment of the scale and appropriateness of investment
1.3 Balance maintaining the City's vibrant tourism economy with addressing transportation-related visitor impacts	Project directly addresses a transportation impact caused by visitors	• Effects on parking, v/c ratio, LOS, etc. • Qualitative assessment for other kinds of impacts
1.4 Preserve US 101 for regional traffic, while enhancing the function and safety of connections between the City and the highway	Project improves traffic operations or safety for all users at intersections/interchanges with US 101	• Effects on intersection operations • Qualitative assessment of effects on crossing safety, aesthetics, etc.
Goal 2. Balance the needs of different transportation system users throughout the community		
2.1 Manage parking to make the best use of existing and potential parking capacity	Project or strategy would enhance capacity or manage demand through improved use and	• Periodic parking occupancy counts

Objective	Criteria	How was it measured?
before considering new parking areas	management of the existing system	• Change in available parking supply (inventory) • Qualitative assessment of parking management strategies
2.2 Enhance safety and comfort for people walking and cycling from one neighborhood to the next	Project increases separation between cyclists/pedestrians and car traffic or improves crossings or on connecting routes	Change in number of marked or enhanced crossings, or amount of separated cycling or walking facilities (of any type)
2.3 Ensure that the system continues to serve local freight needs	Project maintains curb radii, adequate lane width, and other considerations to preserve freight mobility	Qualitative assessment of effects on freight mobility
Goal 3. Enhance safety and emergency preparedness		
3.1 Develop a connected network of cycling and walking routes and enhance access to transit	Project increases connections for cyclists/pedestrians, improves access to transit, and/or increases safety and comfort	• Change in number of marked or enhanced crossings, or amount of separated cycling or walking facilities • Qualitative assessment of improvement to cycling/walking network connectivity • Qualitative assessment of improvements to transit access and to transit service
3.2 Address known safety problems	Project directly addresses an existing safety issue (e.g., known collision hot spot, etc.)	Project does/does not include safety countermeasure
3.3 Limit points of access and respect the scenic corridor along US 101	Project maintains the scenic corridor along the US 101 corridor	Qualitative & quantitative assessment of effects on US 101
3.4Continue to build resiliency, linking coast to range, by maintaining lifeline links and evacuation routes	Project would create new lifeline/evacuation routes or enhance existing	Qualitative assessment of effects on lifeline/evacuation routes
Goal 4. Foster a sustainable transportation system		
4.1 Coordinate transportation improvements with City land use planning and new development	Project is consistent with the Comprehensive Plan and land use plans of the City	Assessment of whether project is or is not consistent.
4.2 Preserve and maintain the existing system, and manage demands on the system	Project is a transportation demand management (TDM) investment or	Known TDM intervention that will address a given issue or project

Objective	Criteria	How was it measured?
before making new investments	preserves/maintains existing infrastructure	does/does not maintain or preserve the existing system
4.3 Maintain acceptable traffic flow and minimize delay city-wide	Project would improve LOS or v/c	Effect on v/c ratio or LOS
4.4 Avoid transportation impacts to Ecola Creek, the shoreline, wetlands, and other natural features	Project is unlikely to directly or indirectly (e.g., through increase in pollution-generating impervious surface) affect natural resources	Qualitative assessment based on proximity to important natural resources
4.5 Prioritize projects that can be funded by grants and look for partnership opportunities with other agencies and groups	Project is likely eligible for at least one grant funding program or has an opportunity to leverage partner resources	Qualitative assessment based on existing funding programs, partnership opportunities
4.6. Ensure the transportation system meets the needs of ~~communities of concern~~EJ populations, who benefit from transportation investments and are not disproportionately harmed by projects	Project is likely to directly benefit EJ populations ~~communities of concern~~ and/or would not disproportionately impact these communities; or project was identified specifically by ~~communities of concern~~EJ populations	Qualitative assessment based on project's proximity to EJ populations ~~communities of concern~~ (based on census data), or project is known to benefit/impact ~~communities of concern~~EJ populations.

ROW = right of way

v/c = volume to capacity ratio, a measure of traffic congestion. The higher the v/c ratio, the greater the vehicle congestion and associated delay

LOS = Level of Service, a measure of vehicle delay. Graded "A" through "F," with "A" being free-flow conditions and "F" being gridlock.

~~"Communities of concern"~~As defined in the *Community Profile* section, EJ populations include people who are racial or ethnic minorities, have low incomes, have limited or no access to a personal vehicle, are younger (<18) or older (>65), or have limited English proficiency.

4. TRANSPORTATION SYSTEM PLAN

This section describes improvements to the transportation system organized by transportation mode and location. TSP projects reflect transportation improvement options for all transportation modes in the City, including projects and programs to support walking, cycling, driving, public transportation, and freight. They also include strategies for managing visitor traffic and parking that could be implemented over time. Transportation system projects were designed to improve quality of life for year-round residents that must grapple with heavy tourism impacts.

Photograph 5. Cannon Beach
Photo Source: Expedia

4.1 Projects Summary and Priorities

Priorities were estimated based on the need for the improvement, how well the project addresses the evaluation criteria, the estimated cost and potential of available funding, and the likely level of community support. Anticipated City transportation revenues were also considered to recommend phased implementation of the improvements over the next 20 years. Projects that are relatively low-cost and high impact are prioritized, with the opportunity to implement more capital-intensive and/or lower priority projects in the long-term as funding becomes available.

Roadway solutions include phased improvements at two of the improvement locations (R-4 and R-5). One improvement (R-7) includes two mutually exclusive alternatives where the implementation of one would preclude the implementation of the other. Therefore, additional study and refinement by the City are required to decide which of these concepts is the preferred alternative.

The full list of TSP projects and programs are shown in Table 4. Cost estimates are based on average costs per unit for similar facilities and are reported in 2021 dollars. These order of magnitude costs were developed without detailed designs, although basic measurements were taken, and geometric analysis was conducted to obtain reasonably accurate unit-level costs. All costs are approximate planning-level estimates. The actual cost may change after project elements have been negotiated and finalized. Costs do not account for inflation or future increases in construction costs. I~~Program and policy based~~ improvements report conceptual cost using dollar signs representing an approximate range of less than $50,000 ($), between $50,000 and $100,000 ($$), and more than $100,000 ($$$).

Solutions are prioritized by an implementation timeframe of:

- Near (0 to 5 years)
- Medium (5 to 10 years)
- Long (beyond 10 years)

Table 4. Overview of TSP Improvements

ID	Description	Cost	Priority
	ROADWAY IMPROVEMENTS[14]		
R-1	**Intersection at S Hemlock Street and Warren Beach Road**		
R-1a	All-way (4-way) stop control	$~~7,000~~	Near
R-3	**Intersection at Sunset Boulevard and Hemlock Street**		
R-3b	Unconventional stop control: Implement a three-way stop by adding a stop sign to northbound Hemlock Street (and keeping southbound Hemlock Street free)	~~$2,000~~	Long
R-4	**Intersection at 1st Street and Hemlock Street**		
R-4a	All-way (4-way) stop control	~~$4,000~~	Near
~~R-4c~~	~~Mini roundabout~~	~~$924,000~~	~~Long~~
R-5	**2nd Street and Hemlock Street**		
R-5a	All-way (4-way) stop control	~~$4,000~~	Near
~~R-5b~~	~~Mini roundabout~~	~~$924,000~~	~~Medium~~
R-7	**Hemlock Street between 1st Street and 3rd Street**		
R-7a	Couplet with Hemlock Street and Spruce Street	~~$129,000~~$$$	Medium
R-7b	Hemlock Pedestrian Plaza – 1st Street to 3rd Street	~~$167,000~~ $$$	Near
	TRANSPORTATION DEMAND MANAGEMENT STRATEGIES		
TDM-1	Establish program to encourage visitors to leave the car at home or in an off-site parking area and arrive by other modes (the "Summer Stay" program)	$$	Near
TDM-2	Implement robust information campaigns to encourage visitors to travel to and within Cannon Beach by modes other than driving	$	Near
TDM-3	Establish parking permit program to regulate the number of cars parking on-street	$$	Near
TDM-4	Publish data on City website of when traffic is busiest based on historical trends	$	Near

Commented [EM5]: Note to City Council: The redline edits in this table are a result of a Planning Commission recommendation to remove the Planning Level Cost Estimates that were developed for the TSP. All costs are now shown as conceptual ranges ($ = $50K to $$$ = $100K+)

[14] Alternative (R-5c) at the N Hemlock Street/2nd Street intersection and Alternative (R-4b) at the N Hemlock Street/1st Street intersection were removed from the list of recommended TSP projects because they are expected to operate with v/c ratios that exceed the mobility target. For more information, see *Appendix F: Alternatives Analysis and Funding Program.*

ID	Description	Cost	Priority
	TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS STRATEGIES		
TSMO-2	Establish parking monitoring program with camera or other system. Helps people driving make informed decisions about parking without the need to circle looking for an available space	$$$	Medium
TSMO-4	Establish curb management program to balance the space needed for parking, deliveries, loading, and other uses	$	Near
	PEDESTRIAN AND BICYCLE FACILITY IMPROVEMENTS[15]		
PB-1	Multiuse Trail from 2nd Street to Monroe Street	~~$415,000~~ $$$	Near
PB-2	Spruce Pedestrian and Bicycle Route	~~$1,104,000~~ $$$	Near
PB-3	S-Curves Multiuse Bypass	~~$1,623,000~~ $$$	Near
PB-4	US 101 to Spruce/Haystack Hill Trail	~~$656,000~~$$	Near
PB-5	S Hemlock S-Curves Improvements – Sunset to Yukon	~~$134,000~~$$	Medium
PB-6	S Hemlock Shoulder Improvements – Yukon to Maher St	~~$290,000~~ $$$	Near
	Bicycle Network Improvements		
B-1	2nd Street Bicycling Improvements	~~$23,000~~ $$	Near
B-2	1st Street Bicycling Improvements	~~$14,000~~ $	Near
B-3	Monroe Bicycling Improvements	~~$23,000~~ $	Medium
B-4	Gower Bicycling Improvements	~~$14,000~~ $	Near
B-5	Pacific Bicycling Improvements	~~$232,000~~ $$$	Medium
B-6	W Warren Way Bicycling Improvements	~~$7,000~~ $	Near
	Crossing Improvements		

[15] PB-4 (Hemlock Street Curves Shoulder Improvements –Sunset Boulevard to Yukon Street) was combined with PB-5 (S Hemlock Shoulder Restriping) based on stakeholder input. PB-5 is inclusive of shoulder improvements from Sunset Boulevard to Yukon Street, shoulder restriping through the Cannon Beach S-curves to provide a wider northbound shoulder, and "sharrow" pavement markings in the southbound direction.

ID	Description	Cost	Priority
C-1	Enhanced crossing at N Hemlock Street at 2nd Street	~~$284,000~~$$	Near
C-2	Marked crossing at Hemlock Street at Monroe	~~$8,000~~ $	Medium
C-3	Enhanced crossing at Hemlock Street at Coolidge Avenue	~~$150,000~~ $$$	Near
C-4	Enhanced crossing at Sunset Boulevard at Spruce Street	~~$139,000~~ $$$	Near
C-5	Marked crossing at Hemlock Street at Haystack Lane	~~$7,000~~ $	Medium
C-6	Marked crossing at Hemlock Street at Yukon Street	~~$7,000~~ $	Medium
C-7	Marked crossing at Hemlock Street at Delta Street	~~$8,000~~$	Medium
C-9	Enhanced school crossing at Hemlock Street between Coos Street and Orford Street	$$$ ~~$149,000~~[16]	Near
C-10	Marked crossing at Hemlock Street at Braillier Street	~~$7,000~~$	Medium
C-11	Marked crossing at Hemlock Street at Maher Street	~~$7,000~~ $	Medium
	EMERGENCY RESPONSE AND EVACUATION SYSTEM		
EM-1	Vertical Evacuation Structure	$$$	Long
	TRANSIT FACILITY IMPROVEMENTS		
T-1	Bus stop with shelter at north end of City	~~$57,000~~ $$	Near
T-2	Mini mobility hub- N Spruce Street at 2nd Street (near Chamber of Commerce)	~~$113,000~~$ $$	Near
T-3	Mini mobility hub – Coolidge Avenue at S Hemlock Street	~~$211,000~~$ $$	Medium
T-4	Mini mobility hub – S Hemlock Street at Warren Beach Road (Tolovana beach parking area)	~~$135,000~~$ $$	Near
T-5	Mini mobility hub – N Spruce Street at 1st Street	~~$113,000~~$ $$	Medium
	TRANSIT SERVICE IMPROVEMENTS		
TS-1	Increased intercity service	$$$	Medium
TS-2	Frequent service circulator shuttle	$$$	Medium
TS-3	Employee shuttle	$$$	Near

[16] Recommended rectangular rapid-flashing beacon (RRFB) at this location.

ID	Description	Cost	Priority
	FREIGHT IMPROVEMENTS		
F-1	Designate short term loading zones for delivery trucks	$	Near
	EMERGING TRANSPORTATION TECHNOLOGIES – IMPROVEMENTS		
ET-1	Adopt TSP policy supportive of future investments in ~~scooter and~~ bike share	N/A	Medium
ET-2	Adopt policy in municipal code to regulate ~~scooter and~~ bike share	N/A	Near
ET-3	Invest in EV charging stations to encourage EV use	$$	Long
ET-4	Adopt policy and regulations for ride-hailing transportation network companies (TNCs, like Uber and Lyft) before they begin operating in the City	N/A	Near
	PARKING MANAGEMENT STRATEGIES		
PM-1	Stripe on-street parking stalls in Downtown	$$	Near
PM-2	Stripe on-street parking stalls in Midtown	$$	Near
PM-3	Install clear, legible signage for on-street parking stalls	$$	Near
PM-4	Remove painted curbs throughout the Downtown study area	$	Near
PM-6	Designate employee parking locations on and off-street	$	Medium
PM-7	Impose time restrictions for on-street parking (e.g., 3 Hours)	$$	Near
PM-8	Conduct periodic parking enforcement of time-limited parking	$	Near
PM-9	Transition to employee parking permits	$	Medium
PM-10	Identify remote parking lots for employee and overflow visitor use	$$$	Medium

Improvements are mapped in Figure 12 through Figure 16 below. Given the length of the City, improvements were mapped into two main segments:

- Figure 12: North segment – North City limits approximately to Cannon Beach "S-curves" just south of Sunset
- Figure 13: South segment – S-curves to South City limits

Additional maps of key areas were also developed to show improvements in greater detail:

- Figure 14: Downtown
- Figure 15: Midtown
- Figure 16: Tolovana

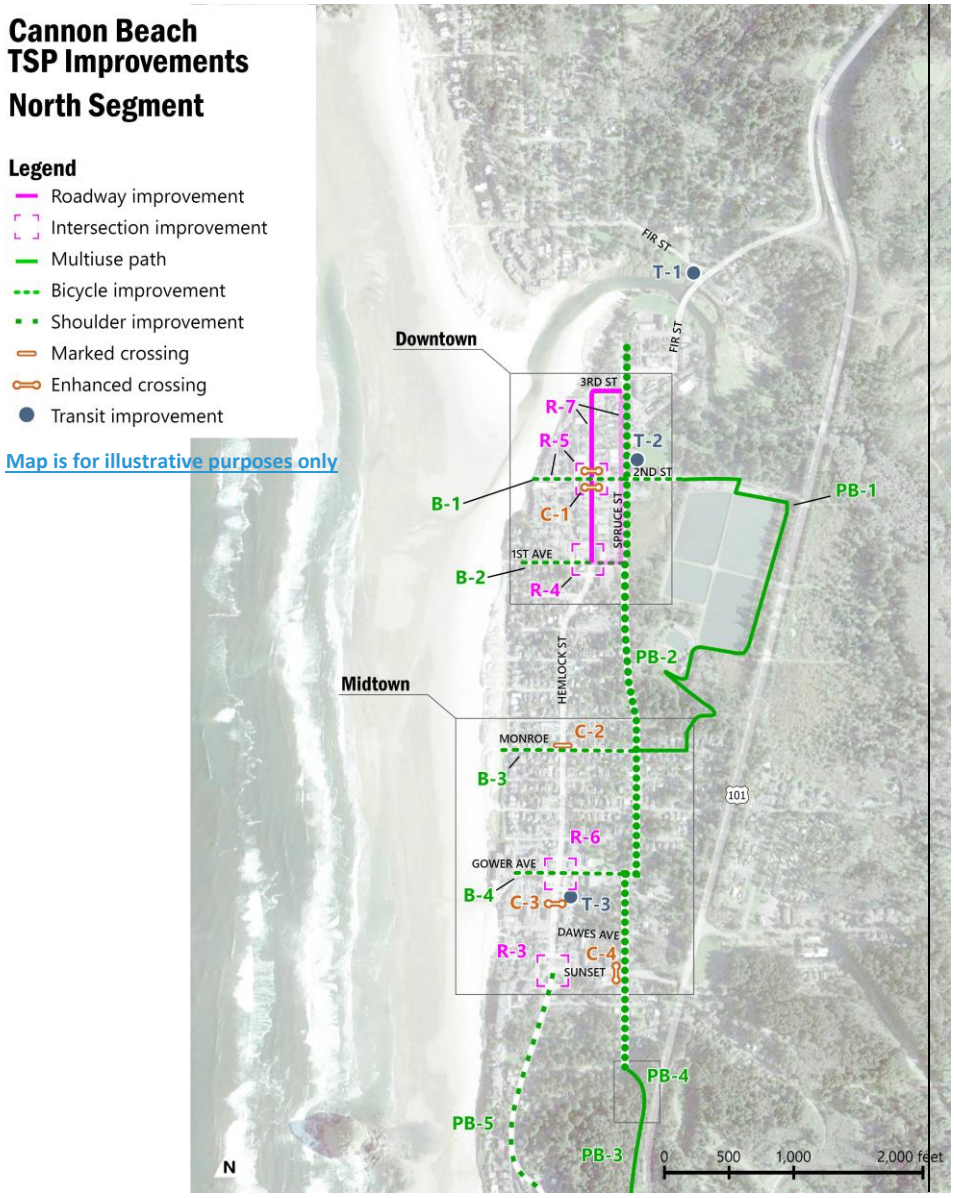


Figure 12. TSP Improvements: North Segment

Figure 13. TSP Improvements: South Segment

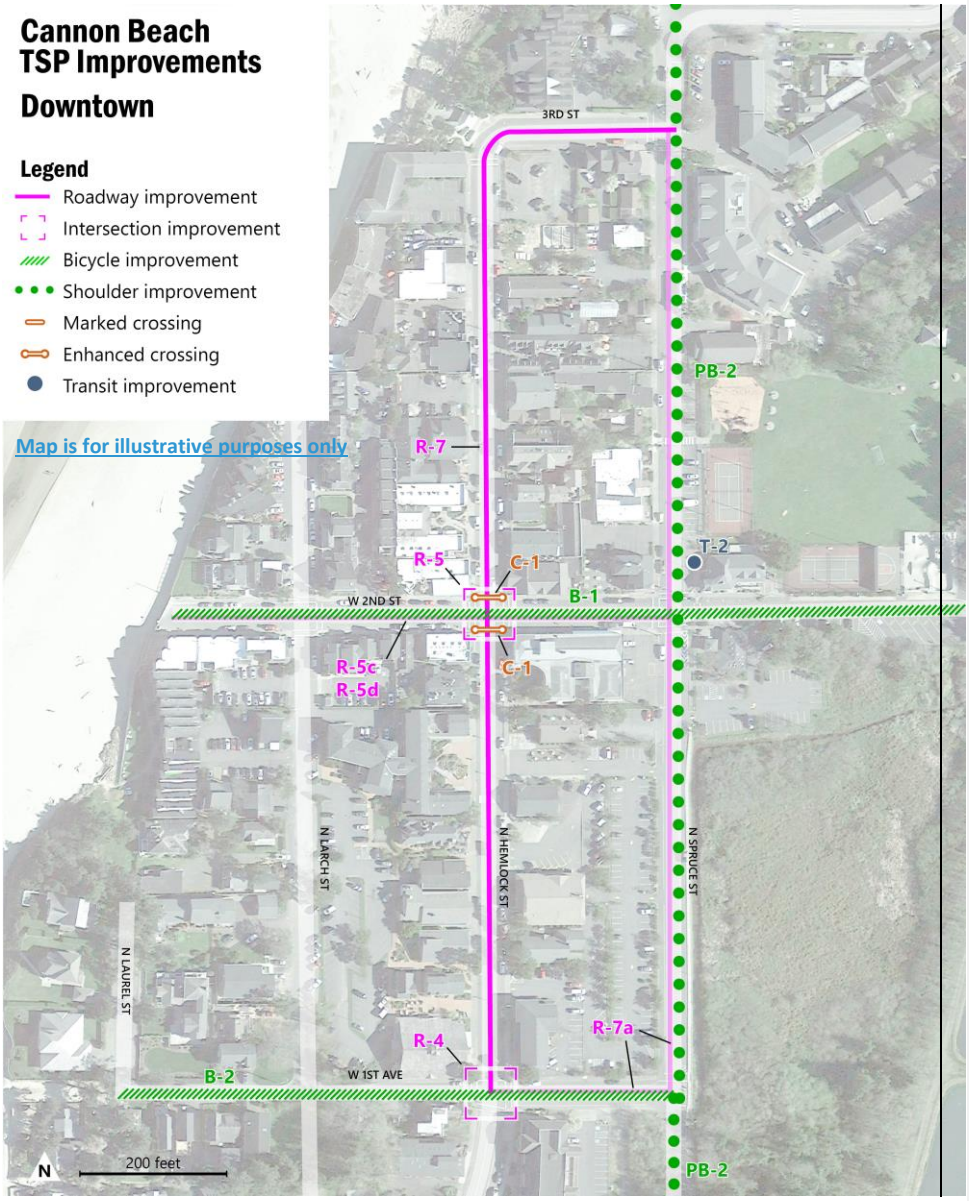


Figure 14. TSP Improvements: Downtown

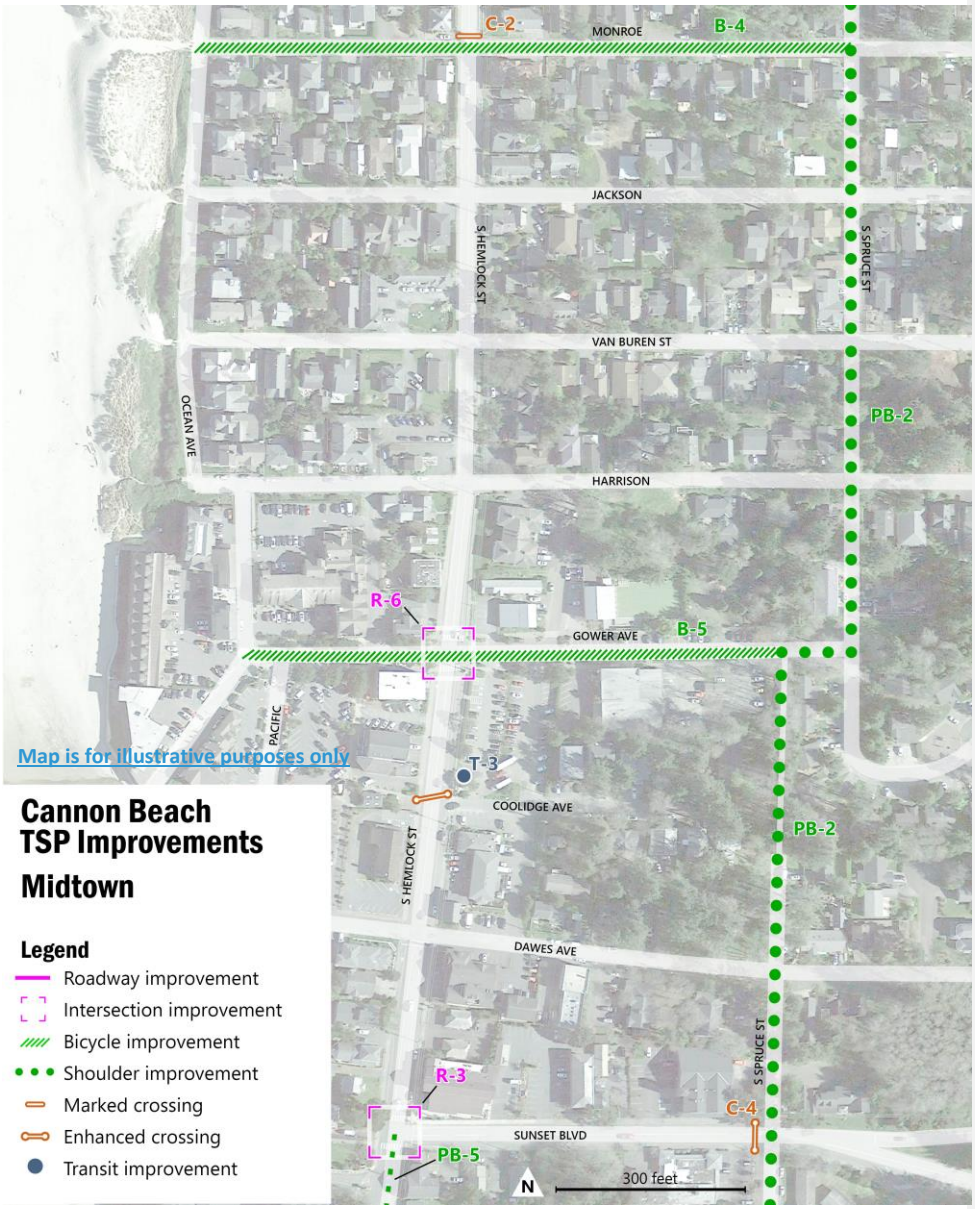


Figure 15. TSP Improvements: Midtown

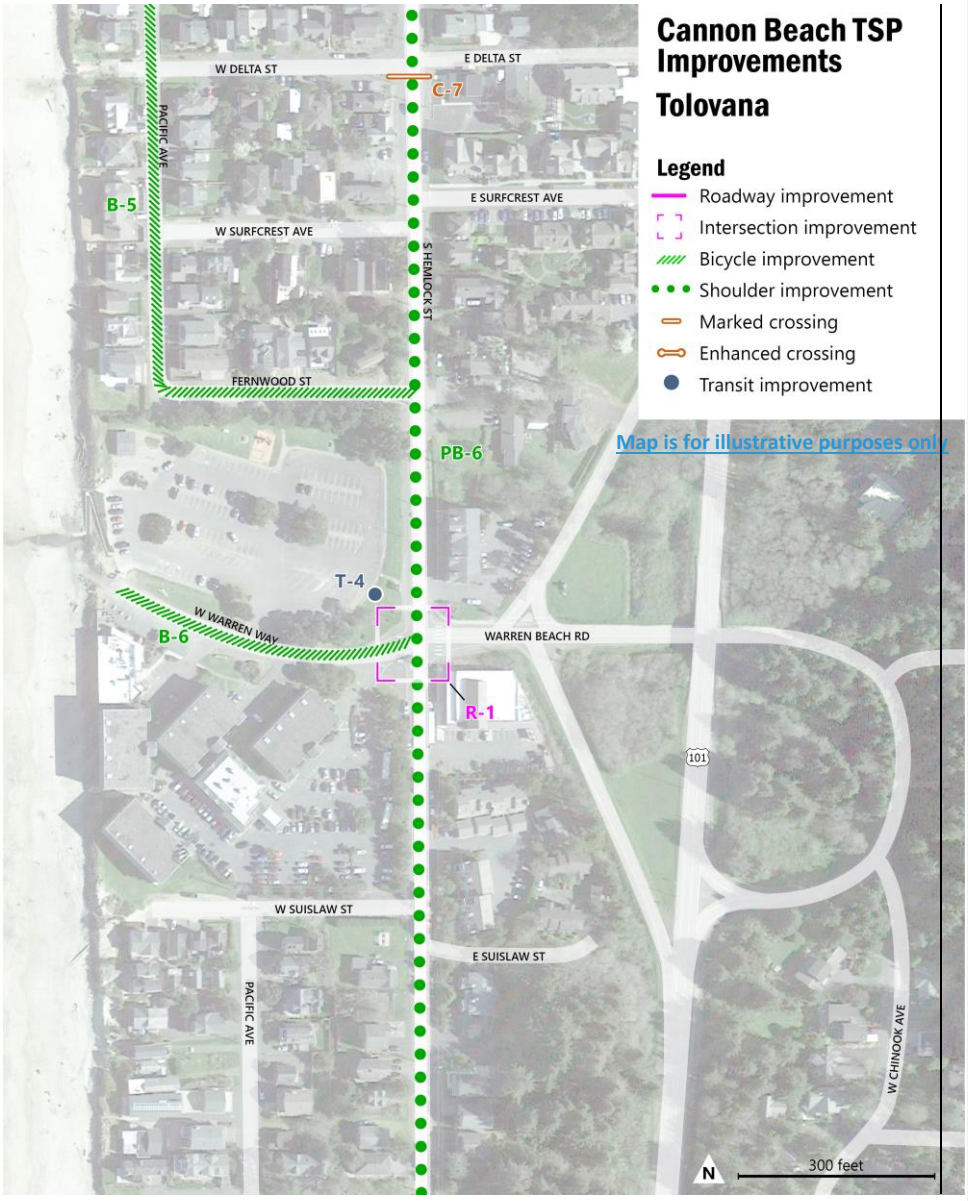


Figure 16. TSP Improvements: Tolovana

4.2 Roadway System Plan

Roadway improvements (Table 5) address transportation needs and deficiencies related to the City's overall street and roadway network, including issues related to traffic delays and bottlenecks, parking, and intersection safety. Roadway improvements aim to improve safety and comfort for people driving as well as for people walking, biking, or using a mobility device. The City's most significant roadway issues stem from peak-season visitor impacts, including traffic delays, congestion, and parking constraints. The high volumes of pedestrian crossings – especially in Downtown Cannon Beach – also contribute to traffic delays and safety issues at intersections. Figure 17 and Figure 18 below display TSP roadway improvements.

Three of the roadway improvements include two alternatives. For improvements R-4 and R-5, alternatives provide the City with a short term, cost-effective, easily implementable option, and a long-term option which would have a higher impact but cost substantially more. For improvement R-7, alternatives R-7a and R-7b are *mutually exclusive*; while both are recommended as improvements that the City could pursue, the implementation of one would preclude the implementation of the other.

Improvements report conceptual cost using dollar signs representing an approximate range of less than $50,000 ($), between $50,000 and $100,000 ($$), and more than $100,000 ($$$).

Table 5. Roadway Improvements

ID	Description	Cost	Priority
R-1	**Intersection at S Hemlock Street and Warren Beach Road**		
R-1a	All-way (4-way) stop control[17]	~~$7,000~~ $	Near
R-3	**Intersection at Sunset Boulevard and Hemlock Street**		
R-3b	Unconventional stop control: Implement a three-way stop by adding a stop sign to northbound Hemlock Street (and keeping southbound Hemlock Street free)	~~$2,000~~ $	Long
R-4	**Intersection at 1st Street and Hemlock Street**		
R-4a	All-way (4-way) stop control	~~$4,000~~$	Near
~~R-4c~~	~~Mini roundabout~~	~~$924,000~~	~~Long~~
R-5	**2nd Street and Hemlock Street**		
R-5a	All-way (4-way) stop control	~~$4,000~~ $	Near
~~R-5b~~	~~Mini roundabout~~	~~$924,000~~	~~Medium~~
R-7	**Hemlock Street between 1st Street and 3rd Street**		
R-7a	Couplet with Hemlock Street and Spruce Street	~~$129,000~~ $$$	Medium

[17] Further analysis would be needed to understand potential impacts to ODOT right of way (US 101).

ID	Description	Cost	Priority
R-7b	Hemlock Pedestrian Plaza – 1st Street to 3rd Street	~~$105,000~~ $$$	Near

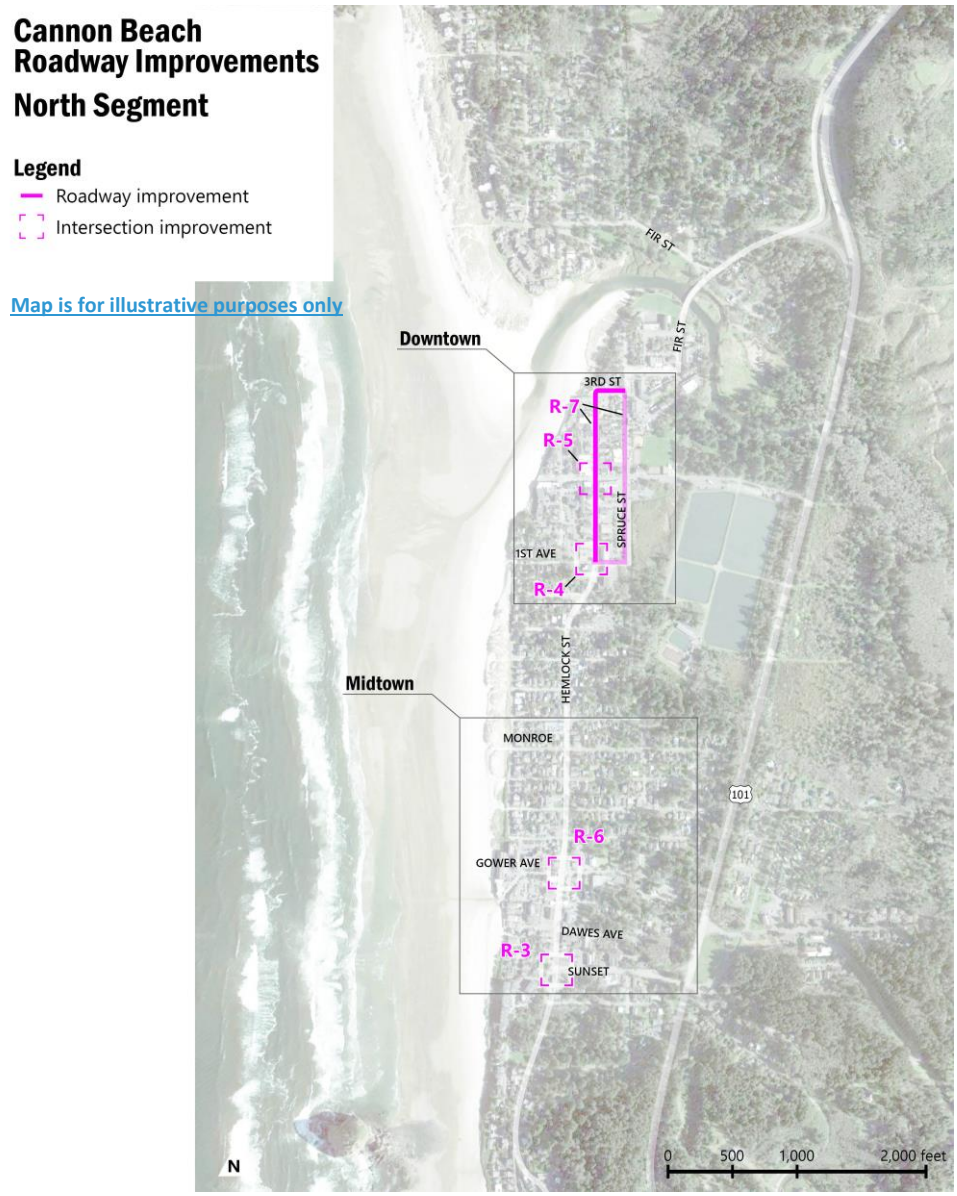


Figure 17. Roadway Improvements: North Segment

Figure 18. Roadway Improvements: South Segment

4.2.1 Downtown Cannon Beach - Hemlock Street

Photograph 6. Downtown Cannon Beach
Photo Source: Expedia

Hemlock Street is the City's main commercial and cultural corridor, as well as the primary north-south connection through town. TSP roadway improvements address the corridor's primary transportation issues such as a lack of stop controls along Hemlock Street resulting in congestion for intersecting side streets, high pedestrian crossing volumes and associated safety concerns, and seasonal delays on the Hemlock mainline.

An intersection mobility analysis found that several side streets intersecting with the Hemlock Street mainline would function at level-of-service (LOS) F by 2040.[18] The intersections at 2nd Street, 1st Street, Gower Street, and Sunset Boulevard are all expected to operate at LOS F under Future No-Build conditions. The roadway improvements described below were selected for generally improving side street mobility and operations compared to the Future No-Build scenario. The improved mobility conditions for side streets would only result in relatively minor impacts to the Hemlock mainline. ~~or in the case of the roundabout concepts, resulted in low to no negative impacts to LOS along Hemlock Street.~~

The following subsections describe improvements along the Hemlock corridor.

[18] Level of service (LOS) is a traffic analysis metric that describes how well an intersection flows and operates. Intersections receive a LOS grade from "A" to "F", where LOS "A" represents the best conditions with minimal delay at the intersection and LOS "F" represents the worst conditions. See *Technical Memorandum #5: Alternatives Analysis and Funding Program* and appendices to review the complete Intersection Mobility Analysis.

All-Way Stop Controls

The existing intersections at Hemlock Street and 1st Street, 2nd Street, E Gower Avenue, Warren Beach Road, and Sunset Boulevard all currently have 2-way stop control for the streets intersecting Hemlock Street; Hemlock Street does not stop. Traffic delays and safety issues are significant for those waiting to turn onto Hemlock Street and are exacerbated by relatively high traffic volumes along Hemlock Street (especially during peak visitor season) and high pedestrian crossings. In addition, during peak tourism season pedestrian volumes in Downtown Cannon Beach are comparable to large cities like Portland, which can lead to right-of-way safety issues and slow traffic. With tourism expected to increase in the future, all-way stop control improvements were identified to address current and future operational and safety needs along the Hemlock corridor (Figure 19).

Figure 19. Typical 4-Way Stop

Improvements include all-way stop controls at the following intersections:

- N Hemlock Street at 1st Street (R-4)
- N Hemlock Street at 2nd Street (R-5)
- S Hemlock Street at Warren Beach Road (R-1)
- S Hemlock Street at Sunset Boulevard (R-3)

As reported in *Appendix F: Alternatives Analysis and Funding Program,* traffic analysis results show that adding stop controls along Hemlock Street would improve overall operations and traffic flow by minimizing side street delays at intersections, with some trade-offs on Hemlock Street. Note, the roadway system plan does not include an improvement for N Hemlock Street and Gower Avenue; traffic analysis found that all-way stop control at this location would disproportionately impact operations on N Hemlock Street, while other intersection improvements such as adding left- and right-turns to facilitate travel from Gower Avenue onto/off of Hemlock Street would require significant right of way changes to the existing intersection configuration with minimal operational benefits. The following subsections provide a brief summary of each of the stop control alternatives and trade-offs.

N Hemlock Street and 1st Street All-way Stop Control (R-4a)

All-way stop control at N Hemlock Street and 1st Street would reduce delays on 1st Street and facilitate access and turns on and off N Hemlock Street. All-way stop control would bring LOS at N Hemlock Street and 1st Street from B and F (future no-build) to C and B (2040), respectively. Although implementing stop controls at this location would lower LOS on the Hemlock mainline from B to C, these results indicate that all-way stop controls would help balance north-south and east-west operations through this intersection, resulting in a net benefit for all who travel through this intersection.

Figure 20. N Hemlock Street and 1st Street intersection looking northbound

N Hemlock Street and 2nd Street All-way Stop Control (R-5a)

At Hemlock Street and 2nd Street, adding all-way stop control would result in similar trade-offs as Hemlock Street at 1st Street. All-way stop controls at N Hemlock Street and 2nd Street would reduce backups on 2nd Street and facilitate access and turns on and off N Hemlock Street. However, improving side street operations would result in some trade-offs on Hemlock Street. For example, all-way stop control would bring LOS at N Hemlock Street and 2nd Street from A and F (future no-build) to B and A, respectively. While implementing stop controls at this location would lower LOS on the Hemlock mainline from A to B, the improvements would still result in a net benefit for the intersection and are recommended as potential alternatives.

Figure 21. N Hemlock Street and 2nd Street intersection looking northbound

S Hemlock Street at Warren Beach Road (R-1a)

All-way stop control at S Hemlock Street and Warren Beach Road would facilitate 4-way travel through the intersection while mitigating backups onto Warren caused by vehicles waiting to turn onto Hemlock Street. **As of this writing, the City of Cannon Beach already has approval to make this an all-way stop.** Further analysis would be needed to understand potential impacts to ODOT right of way (US 101).

S Hemlock Street at Sunset Boulevard – Three-Way Stop Control (R-3b)

The three-way stop alternative would allow westbound vehicles more opportunities to complete their movement while addressing vehicle queue backups on Sunset Boulevard, which are known to extend to the US 101 southbound ramp. This improvement would also preserve southbound travel on Hemlock Street, including left turns onto Sunset Boulevard – the heaviest traffic movement through this intersection (Figure 22).

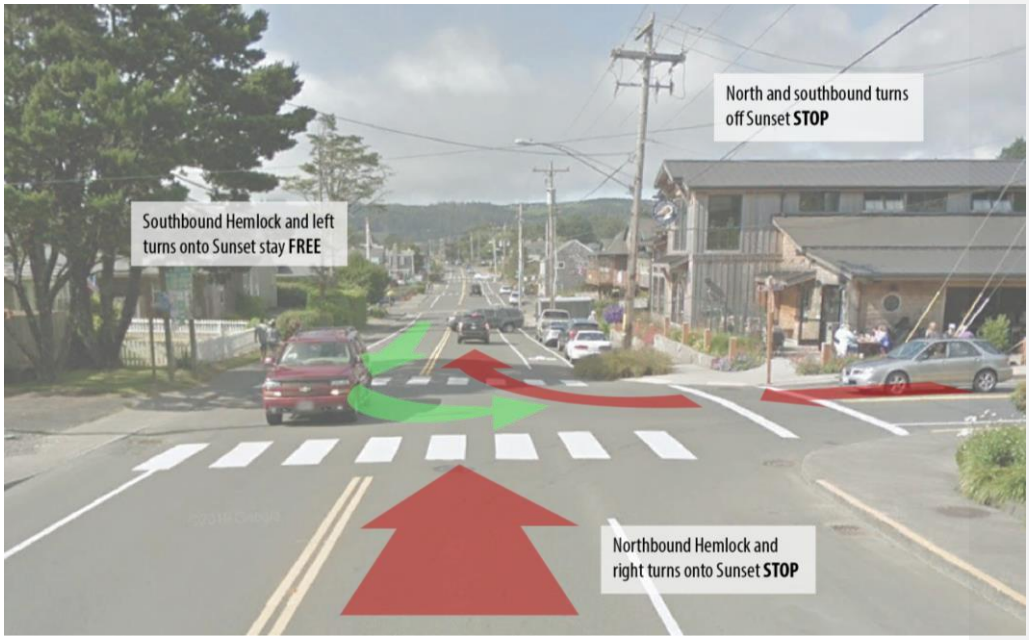
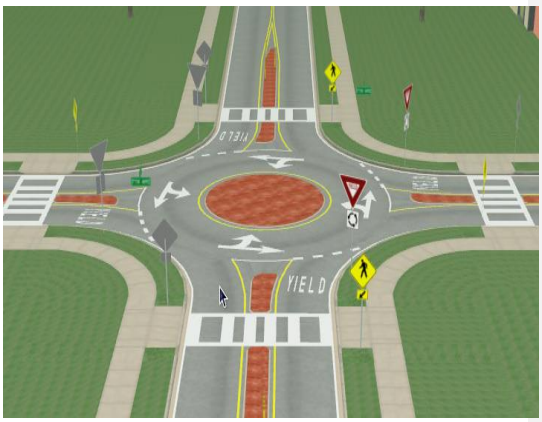


Figure 22. S Hemlock Street at Sunset Boulevard – Three-Way Stop Control (R-3b) Conceptual Diagram

The traffic analysis results show that three-way stop control at this location would bring LOS on S Hemlock Street and Sunset Boulevard from A and F (future no-build) to D and C, respectively. Although LOS on S Hemlock Street would still deteriorate from A to D under this scenario, the overall delay at the intersection would be reduced from 73 seconds (future no-build) to 53 seconds, representing a net operational benefit at the intersection level. Furthermore, delays on Hemlock Street would be greater in the northbound direction, where travel demand is lower on the corridor. Therefore, this improvement is the recommended alternative for balancing mainline and side-street operations.

~~Mini Roundabouts~~

~~Mini roundabouts are longer-term investments dependent on future funding, further study, and ongoing engagement with community members. All-way stop control could be implemented as near-term, interim treatments, while mini roundabouts are more appropriate as long-term goals.~~



~~Figure 23. FHWA Diagram of a conceptual mini roundabout with pedestrian elements~~

~~Mini roundabouts are preferred given they can be constructed at a lower cost, use a significantly smaller physical footprint, and require fewer right-of-way impacts compared to a conventional roundabout. There is also existing design guidance for mini roundabouts that would be appropriate for the existing right-of-way on Hemlock Street (approximately 35 feet). However, implementation may require some parking removal on the approaches to the intersection and more detailed analysis is needed to determine feasibility. To be functional in Cannon Beach, mini roundabouts would need to accommodate emergency vehicles and delivery trucks. The design would also need to accommodate safe and comfortable biking and could include landscaping or artwork to make it a community feature.~~

~~The main benefit that mini roundabouts would bring Cannon Beach as compared to all-way stops is that the roundabout would improve side street operations **while also improving operations on the Hemlock mainline.** This means that side street operations could be significantly improved without any reductions to LOS on Hemlock Street. Mini roundabouts would maintain traffic flow and facilitate turns at intersections while minimizing the need for full stops and keeping speeds relatively low. Mini roundabouts would also facilitate merges from side streets onto Hemlock Street more efficiently and safely than three- or four-way stop controlled intersections and can reduce auto/pedestrian conflict points at intersections. Mini roundabouts also provide safety benefits by forcing people driving to slow down.~~

~~Roadway improvements include mini roundabout treatments at:~~

- ~~Hemlock Street and 1st Street (R-4c)~~
- ~~Hemlock Street and 2nd Street (R-5b)~~

~~Because of the higher costs and levels of impact associated with mini roundabouts, they are generally recommended as longer-term projects to be implemented as funding becomes available through grants or other means. However, a mini roundabout treatment at the intersection of Hemlock Street and 2nd Street is prioritized as a medium-term project due to the level of congestion and pedestrian crossings at this location. The following subsections provide a brief summary of each of the mini-roundabout alternatives.~~

~~Hemlock Street and 1st Street Mini-Roundabout (R-4c)~~

~~A mini-roundabout at N Hemlock Street and 1st Street would facilitate 4-way vehicle movements through the intersection while minimizing the need for full stops. The mini-roundabout would also provide locations for pedestrian crossings and traffic calming through the intersection.~~

~~A mini-roundabout would bring LOS at N Hemlock Street and 1st Street from B and F (future no-build) to A and A, respectively. The mini-roundabout would also reduce delay through the intersection by more than 2 minutes.~~

~~Hemlock Street and 2nd Street Mini-Roundabout (R-5b)~~

~~At N Hemlock Street and 2nd Street, a mini-roundabout offers similar benefits to the recommended alternative at N Hemlock Street and 1st Street. Vehicle movements along the Hemlock mainline and 2nd Street would be facilitated while minimizing the need for full stops. A mini-roundabout would also improve pedestrian crossing conditions by providing new places for people to wait and cross while also providing traffic calming through the intersection.~~

~~A mini-roundabout would preserve an LOS of A (future no-build) along N Hemlock Street. At 2nd Street, a mini-roundabout would improve LOS from a grade of F (future no-build) to A, saving approximately 4 minutes of delay at the intersection. Given the high level of congestion, pedestrian crossings, and significant operational benefits a mini-roundabout would bring at this location, this project is recommended as a medium-term improvement as further study is conducted, and funding becomes available.~~

Downtown Corridor Improvements

Photograph 7. Downtown Cannon Beach
Photo Source: City of Cannon Beach

In addition to the previously described stop controls, the roadway system plan includes corridor improvement concepts for addressing congestion and multimodal travel needs through Downtown Cannon Beach. Downtown Cannon Beach is distinct from other parts of the City as the town's cultural and commercial hub, with high levels of year-round activity from drivers, pedestrians, people bicycling, and people on mobility devices. Downtown also serves as a popular access point to the beach and is served by a concentration of local shops, cafes, and restaurants. The following improvements aim to support the local economy, address parking constraints, improve safety, and expand places for comfortable walking and biking. Recommended Downtown corridor improvements are described in the following subsections.

It is important to note that alternatives R-7a and R-7b are mutually exclusive; while both are recommended as improvements that the City could pursue, the implementation of one would preclude the implementation of the other. Therefore, additional study and refinement by the City are required to decide which of these concepts is the preferred alternative.

Hemlock Pedestrian Plaza – 1st Street to 3rd Street (R-7b)

The pedestrian plaza is envisioned to celebrate the Cannon Beach town center, creating a safe place for people of all ages and abilities to enjoy a pedestrian-oriented and car-free environment. The plaza would support pedestrian-oriented tourism and local business while also addressing local air quality, light pollution, and traffic congestion. By reclaiming the space that would normally be used for driving, the space can be converted for a range of community uses, outdoor dining, farmers' markets, craft or art fairs, concerts, or other public celebrations. There are annual opportunities to implement them in coordination with festivals like Savor Cannon Beach or the Sandcastle Contest. Other features, like food cart clusters and playgrounds, can also draw people.

This project would close N Hemlock Street to motor vehicle traffic between 1st Street and 3rd Street while allowing pedestrian and bike access. Cross traffic along 2nd Street would likely be diverted through the N Larch Street and N Spruce Street intersections.

The project would also remove on-street parking on Hemlock Street from 1st Street to 3rd Street. By not allowing parking in the plaza, vehicles would be diverted to other nearby streets and reduce the negative effects of people circling Downtown looking for a parking spot. Limiting parking through the plaza addresses safety issues resulting from people pulling in and out of parking spaces. The extra street space could be used for loading zones (for deliveries or Americans with Disabilities Act [ADA]), bicycle parking or travel, businesses access, the creation of parklettes, outdoor café seating, or other uses.

The plaza could be implemented in a variety of ways:

- On a temporary or pilot basis to understand benefits and impacts (~~Figure 24~~Figure 23)
- Seasonally, during periods of high pedestrian demand
- During certain days of the week, e.g., only on weekends, one day a month, etc.
- Year-round

Based on feedback from the general public, Cannon Beach City Council, Planning Commission, and staff, a temporary pilot demonstration between 1st and 2nd Street is recommended to test how the pedestrian plaza affects circulation and foot traffic for businesses. Short-term options would consist of movable elements like signage and temporary traffic controls.

Permanent treatments could incorporate the use of pavement markings, fixed signage, or other barriers. If the plaza was made permanent, the project also recommends removal of parking on 2nd Street from Spruce Street to the beach. Parking removal on 2nd Street would further reduce traffic congestion and parking constraints in Downtown and would improve safety and operations at the N Hemlock Street and 2nd Street intersection. Parking removal on 2nd Street is not recommended if the plaza is only implemented on a pilot basis.

Because of the overall reduction of parking capacity in Downtown, this alternative should be implemented with other transportation demand and parking management strategies to create efficient and convenient access to nearby parking and to maintain access to local businesses. Implemented in such a way, this alternative could help reduce the overall level of car traffic and congestion through Downtown. Parking would be diverted to other nearby areas and would boost the efficient use of off-street parking. Reducing on-street parking capacity through Downtown would encourage people to travel by other modes, and could result in a more pedestrian-friendly, safe, and comfortable Downtown experience for residents and visitors alike.

Pilot Project:
Temporary Pedestrian Plaza Between 1st and 2nd Street

Based on feedback from the general public, Cannon Beach City Council, Planning Commission, and staff, a temporary pilot demonstration between 1st and 2nd Street is recommended to test how the pedestrian plaza affects circulation and foot traffic for businesses. The pilot would be a first step to implementing the preferred alternative between 1st and 3rd Street.

Figure 232~~3~~24~~.~~. Pedestrian Plaza on Park Avenue in Laguna Beach, CA

To be most successful, the pedestrian plaza concept would be implemented along with other transportation demand management strategies such as a visitor and/or employee shuttle and parking passes for designated areas throughout town. The pedestrian plaza would need to preserve access for people using mobility devices, emergency vehicles, and business deliveries. The plaza would also need to allow access for deliveries, trash pickup, and emergencies. This would have to be coordinated with property owners, waste services, and emergency services. A circulation study is recommended to assess the business access and diversion impacts to identify the optimal street configuration.

It is important to note that this project and the Hemlock/Spruce Couplet (R-7a) are mutually exclusive; while both are recommended as near-term improvements that the City and community members could choose to pursue, the implementation of one would preclude the implementation of the other.

Hemlock/Spruce Couplet Conversion (R-7a)

This project would convert N Hemlock Street and N Spruce Street from a pair of two-way streets to into a pair of parallel, one-way streets, also known as a couplet (Figure 2~~4~~5). While the couplet (R-7a) could be configured in several different ways, this analysis proposes N Hemlock Street as a single lane of southbound traffic and N Spruce Street as a single lane of northbound traffic extending from 3rd Street to 1st Street (Figure 2~~5~~6). The couplet concept could be implemented on a pilot basis to test operations or permanently pending further analysis and community support. Short-term options would consist of movable elements like signage and temporary traffic controls. Permanent treatments would incorporate the use of pavement markings, fixed signage, and other permanent traffic control devices.

It is important to note that this project and the Hemlock Pedestrian Plaza (R-7b) are mutually exclusive; while both are recommended as near-term improvements that the City and community members could choose to pursue, the implementation of one would preclude the implementation of the other.

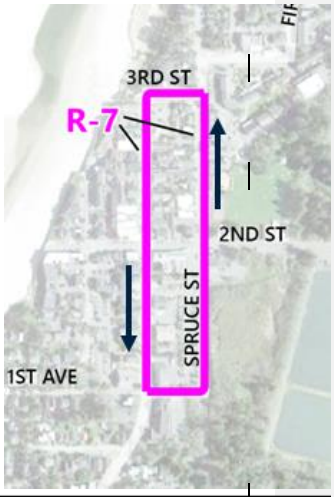


Figure 2~~4~~2~~4~~25. Hemlock/Spruce Couplet Conversion (R-7a)

On N Hemlock Street, the couplet project would help balance operations between the Hemlock mainline and side streets, while maintaining a high level of mobility on Hemlock Street and creating new on-street space for multimodal improvements.

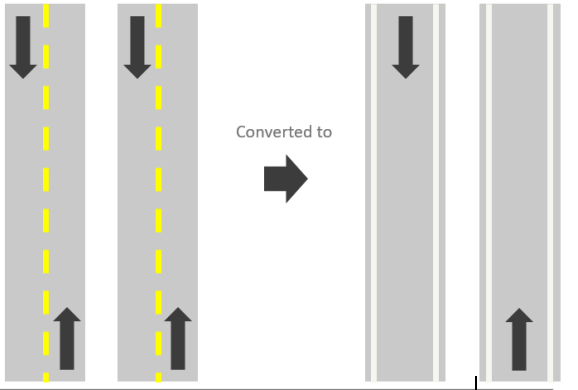


Figure 2~~5~~2~~5~~26. Concept diagram showing the conversion of two parallel, two-way streets into a pair of one-way streets (couplet)

- At N Hemlock Street and 2nd Street, the couplet would change LOS from A (future no-build) to B. However, the couplet would also improve LOS on 2nd Street from F (future no-build) to A, saving approximately 4 minutes of delay. The net impact of the couplet at this intersection would significantly improve side street operations while preserving mobility on the Hemlock mainline.
- At N Hemlock Street and 1st Street, the couplet would improve LOS from B and F (future no-build) to B and E. The operational benefits at this location would not be as significant as at the 2nd Street intersection, although the couplet would still prevent operations at 1st street from failing by 2040. The couplet would also reduce 1st Street intersection delay by more than 1 minute.

On N Spruce Street, the couplet would result in minimal negative operational impacts to the Spruce mainline while improving side street congestion and reducing intersection delay.

- At N Spruce Street and 3rd Street, the couplet would maintain an LOS of B (future no-build) on Spruce while reducing delay by 2 seconds. At 3rd Street, the couplet would improve LOS from B (future no-build) to A, reducing delay by 3 seconds.
- At N Spruce and 2nd Street, the couplet would maintain future no-build LOS grades of B and A, respectively. However, the couplet would add a total of 2 seconds of delay to the intersection as a whole.

A temporary pilot during peak tourist travel is recommended to test how the configuration affects downtown circulation and foot traffic for businesses. It is also recommended that the City gather public feedback on the specific street configuration that is preferred. If successful, the couplet conversion could be implemented on a permanent basis as a proactive strategy for managing downtown traffic and safety.

Couplet Roadway Configuration

The couplet concept could entail reconfiguring the roadway in multiple ways. By reducing to a single travel lane in each direction, additional room would become available for increasing parking capacity and for improving conditions for people walking, bicycling, or using a mobility device. For example, the repurposed roadway space could be used to install one-way bicycle lanes on a temporary or permanent basis. There would also be enough space to physically protect these bicycle lanes from vehicle traffic using cost-effective treatments like raised flower beds or decorative bollards. Pedestrian crossings would become safer since people would only need to cross one lane of traffic.

This concept would also preserve on-street parking space and make angled parking possible, which is easier for drivers to pull into than parallel spaces, reducing disruptions to traffic flow. If angled parking is preferred, back-in parking could be considered because it allows for better visibility when pulling into traffic and it reduces the risk of a large vehicle extending into the roadway. However, back-in angled parking can be challenging where users are not familiar with backing in.

Three parking configuration options were identified, including select parking removal:

- Two lanes of parallel parking with bike lane
- One lane of parallel parking and one lane of angled parking
- One lane of angled parking with a bike lane

~~Figure 27~~ Figure 26 through ~~Figure 29~~ Figure 28 below display possible configurations and typical cross sections for the couplet concept.

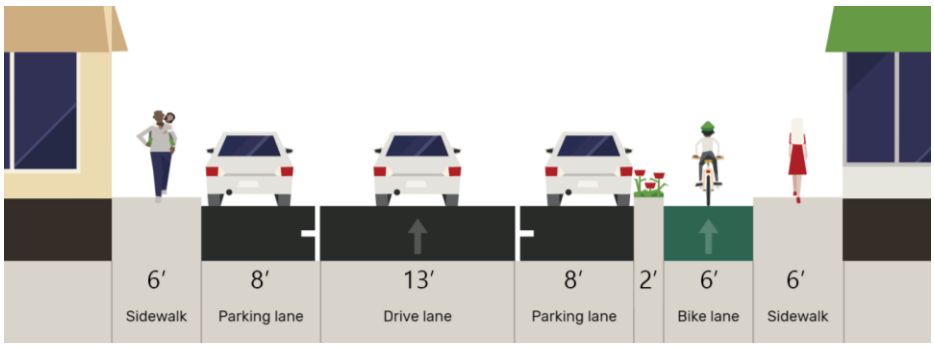


Figure 262627. Alternative (R-7a) Configuration 1: Two Lanes of Parallel Parking with Protected Bike Lane

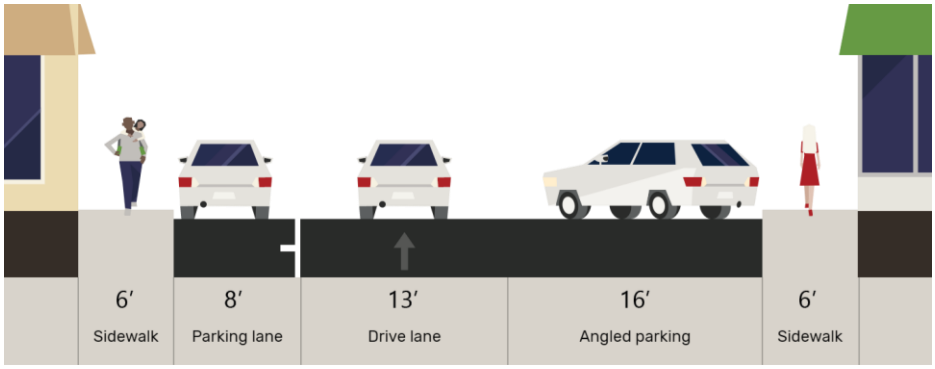


Figure 272728. Alternative (R-7a) Configuration 2: Parallel Parking with Angled Parking (No Bike Lane)

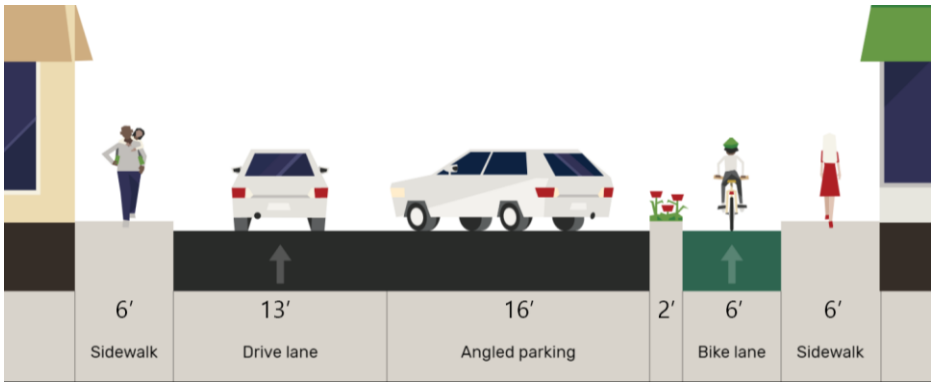


Figure 282829. Alternative (R-7a) Configuration 3: One Lane of Angled Parking with Protected Bike Lane

4.2.2 Access Management and Spacing

While proposing specific driveway closures is outside of the scope of the TSP, the alternatives analysis considered future access management strategies and opportunities to improve access management on City streets, as well as recommended strategies to adjust current access points to US 101 based on OAR Chapter 734 Division 051, and City access goals and ordinances. Few access management strategies were identified. The City has a current policy in place to limit access along Hemlock Street – the main corridor that would benefit from local access changes. Conceptual amendments to the City's development code to address access management and spacing opportunities are provided in *Appendix H: Implementing Ordinances and Conceptual Development Code Amendments.*

4.3 Parking Management Plan

The recommended strategies for managing the City's parking are summarized in Table 6 below. These strategies focus on more efficient use of the City's existing parking supply using cost-effective and scalable treatments. According to public feedback, the highest priority strategies include identifying remote parking lots for employees and overflow visitor use, imposing time restrictions for some on-street parking spaces, and striping existing on-street parking stalls. Some parking management strategies would also be enhanced by transportation demand management and transit strategies, which could include mobility hubs, educational campaigns, and other improvements that would increase the ability to get around town without a vehicle. Paid parking revenues (if implemented) should benefit future transportation funding and EJ populations.

Table 6. Parking Management Strategies

ID	Location (if applicable)	Description	Considerations
PM-1	N Hemlock Street N Spruce Street 1st Street 2nd Street 3rd Street	*Stripe on-street parking stalls in Downtown*	Striping on-street spaces is a customer-friendly amenity, particularly in heavily touristed Downtowns. It will also result in more efficient parking, allowing more vehicles, on average, to park on-street on a typical day. Stalls should be striped to Manual on Uniform Traffic Control Devices (MUTCD) standards and include ADA-compliant spaces. The City may consider allocating designated parking spaces for RVs and large vehicles, or may encourage large vehicles to utilize remote parking lots, as developed in PM-10.
PM-2	S Hemlock Street from Gower to Sunset	*Stripe on-street parking stalls in Midtown*	Creates a more efficient parking format for visitors to Midtown, allowing more vehicles to park on-street on a typical day.

ID	Location (if applicable)	Description	Considerations
PM-3	Combine new signage with stall striping strategy (PM-1) above	*Install clear, legible signage for on-street parking stalls* • Signs should indicate time limitation, hours of enforcement, and a directional arrow indicating the stalls where the restrictions apply. • Recommended enforcement hours are 10 AM – 8 PM or 9 AM – 7 PM. • To maintain visibility, while avoiding street clutter, signage should be placed approximately every 100–125 feet	This strategy should be done in conjunction with stall striping. Combined, the two work well together to reassure visitors that they can park for a specified time without fear of a citation. Without any signage, visitors are left to wonder what parking restrictions may be. Stalls should be signed using MUTCD approved styles (e.g. R7-108 or similar).
PM-4	Should apply to the same streets as described in PM-1	*Remove painted curbs throughout the Downtown study area*	For painted curbs to be effective (i.e., accurately communicate parking restrictions) requires regular on-going maintenance. Faded curb paint can be confusing to visitors as to whether the parking restriction still applies. Painted curbs can also mean different things in different jurisdictions, which is why curb-based management is primarily done with signage. It reduces ambiguity and clearly communicates to users permissible use of the curb space.
PM-6	Spruce between 1st and 2nd Streets Larch between 1st and 2nd Streets A portion of the public lot on west side of Spruce A portion of the off-street lots along E 2nd Street	*Designate employee parking locations on and off-street* • Signage should be clear to users that these spaces are prioritized for employee use • The effectiveness of this strategy will be stronger when combined with the implementation of PM9, Employee Parking Permits	Signing specific areas for employee parking on the edges of Downtown preserves a dedicated amount of parking to support Downtown employee access.

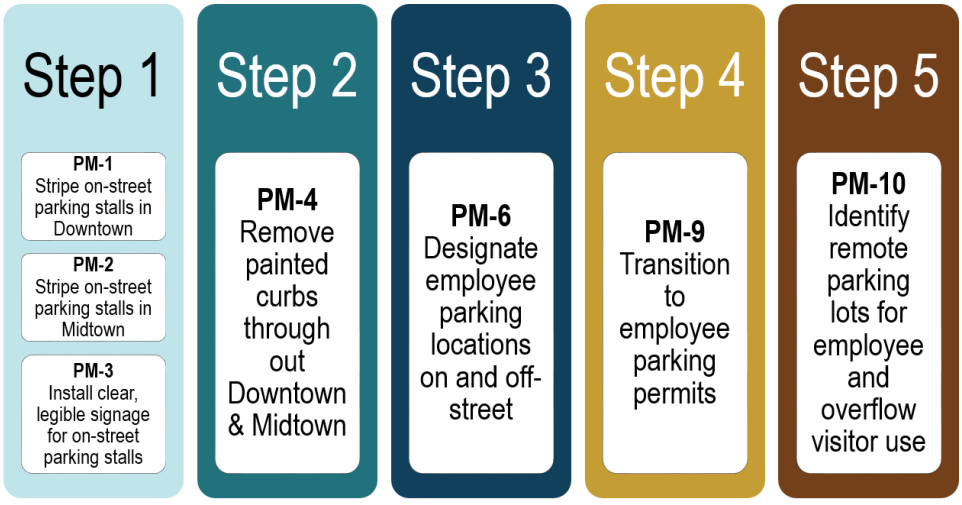
ID	Location (if applicable)	Description	Considerations
PM-7	Begin with Hemlock Street, 1st, 2nd and 3rd Streets	*Impose time restrictions for on-street parking (e.g., 3 hours)* • Visitors needing longer stays can park on Larch or Spruce or in any public off-street parking lot • Should be determined in advance and implemented with strategy PM-3 to insure proper signage placement and coordination. • Signage should clearly state enforcement hours.	Today, prime on-street parking is being used by some employees parking all day. Time limiting parking on Hemlock Street and the east/west streets will increase turnover, allowing more visitors to access the Downtown. It will also encourage employees to seek out less convenient stalls on the periphery of Downtown. If successful, time restrictions could be expanded to additional on-street locations, provided enough off-street (non-time limited) spaces are identified for use. This can also be done in combination with employee parking permits but would require greater resources to manage the program. Could include seasonal time limits for peak season
PM-8	Must be combined with the implementation of PM7	*Conduct periodic parking enforcement of time-limited parking*	If the City elects to implement time restrictions on on-street parking, it will become necessary to enforce those time restrictions. Without enforcement (and penalties), compliance with time restrictions will be greatly reduced, particularly among employees.
PM-9		*Transition to employee parking permits* • This strategy would be triggered along with strategies PM-6 and PM-7 • Permits should be used in specific designated on and off-street locations	This strategy becomes more important with the expansion of on-street time restrictions. Actively managing parking in the Downtown will begin to restrict parking options for employees. Therefore, it is important that they are given reasonable alternatives where they can park (either on or off-street). See PM-6.

ID	Location (if applicable)	Description	Considerations
PM-10	Lots outside of the Downtown	*Identify remote parking lots for employee and overflow visitor use* • Outcomes would be enhanced if implementation coincided with recommendations TS-2 and TS-3.	These lots should be linked via the existing shuttle service that serves Cannon Beach, the NW Connector. These lots should have a base design standard to encourage greater use, particularly if visitors are expected to use them. Base design standards include striping, signage, lighting, landscaping, drainage, safe ingress/egress, etc. This strategy will be more effective once Downtown parking occupancies regularly exceed 90%.

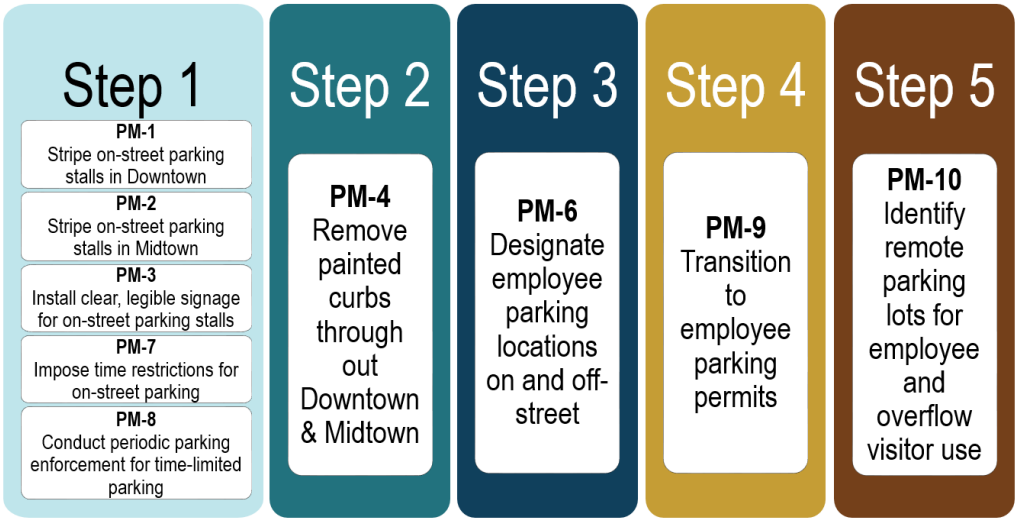
4.3.1 Implementation Considerations

The recommended parking management strategies described in Table 6 above refer to a broad suite of possible programs or action steps the City could take to address the City's existing and future parking issues. However, the order in which the City would pursue individual parking management strategies is important consider given that Cannon Beach currently does not have a robust parking management program as of this writing. Potential implementation frameworks are suggested below, organized into two scenarios:

- **Scenario 1 – No Time Restrictions: Recommended implementation priority for "packaged" strategies *without* time restrictions.** Implementation of a broader time-restricted parking program will depend on further analysis and input from local community members. Scenario 1 describes the recommended succession of parking management the City could pursue without implementing time restrictions as a tool for managing the supply and use of parking in Downtown and Midtown Cannon Beach. Since time restriction are not widely used in Cannon Beach today, this package of parking management strategies is likely "easier" to implement than Scenario 2.
- **Scenario 2 – Time Restrictions: Recommended implementation priority for "packaged" strategies *with* time restrictions.** This package of parking management strategies assumes that the City and community decide to move forward with time restrictions as a broadly-applied parking management tool in Cannon Beach. If this was the case, it is recommended that the City establishes time restrictions for some on-street parking spaces and conducts periodic enforcement of those spaces in the first step of the program. Steps 2 through 5 are identical to Scenario 1.



Scenario 1 - Recommended implementation priority for "packaged" strategies (without time restrictions).



Scenario 2 – Recommended implementation priority for packaged strategies (with time restrictions).

4.4 Pedestrian and Bicycle System Plan

Pedestrian and bicycle improvements focus on improving the connectivity, safety, access, and comfort of the City's integrated pedestrian and bicycle network. Emphasis was placed on identifying a network of improvements that would create a continuous north-south connection for safe and comfortable walking and bicycling through Cannon Beach. Pedestrian and bicycle improvements also tie into goals of reducing congestion on the road by increasing visitor access to bicycles and safe routes.

Figure 2929~~30~~. Multiuse Path

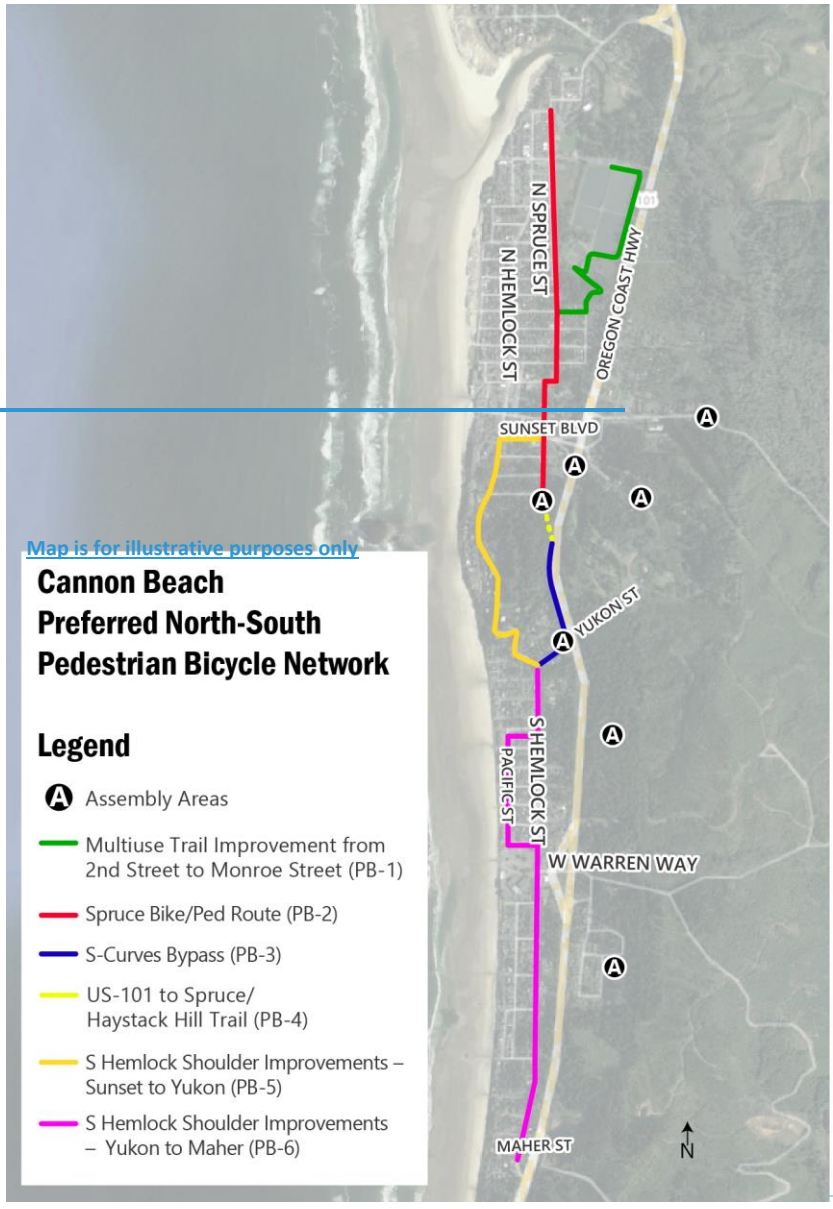
Opportunities to tie into the City existing and planned network of trails and multi-use paths were also assessed, with the goal of finding routes that could serve multiple purposes (e.g., walking, cycling, evacuation routes). A range of treatments were identified to provide options to meet the community's strong desire to preserve a village look and feel. Pedestrian and bicycle improvements also seek to improve non-vehicle links to the City's evacuation system.

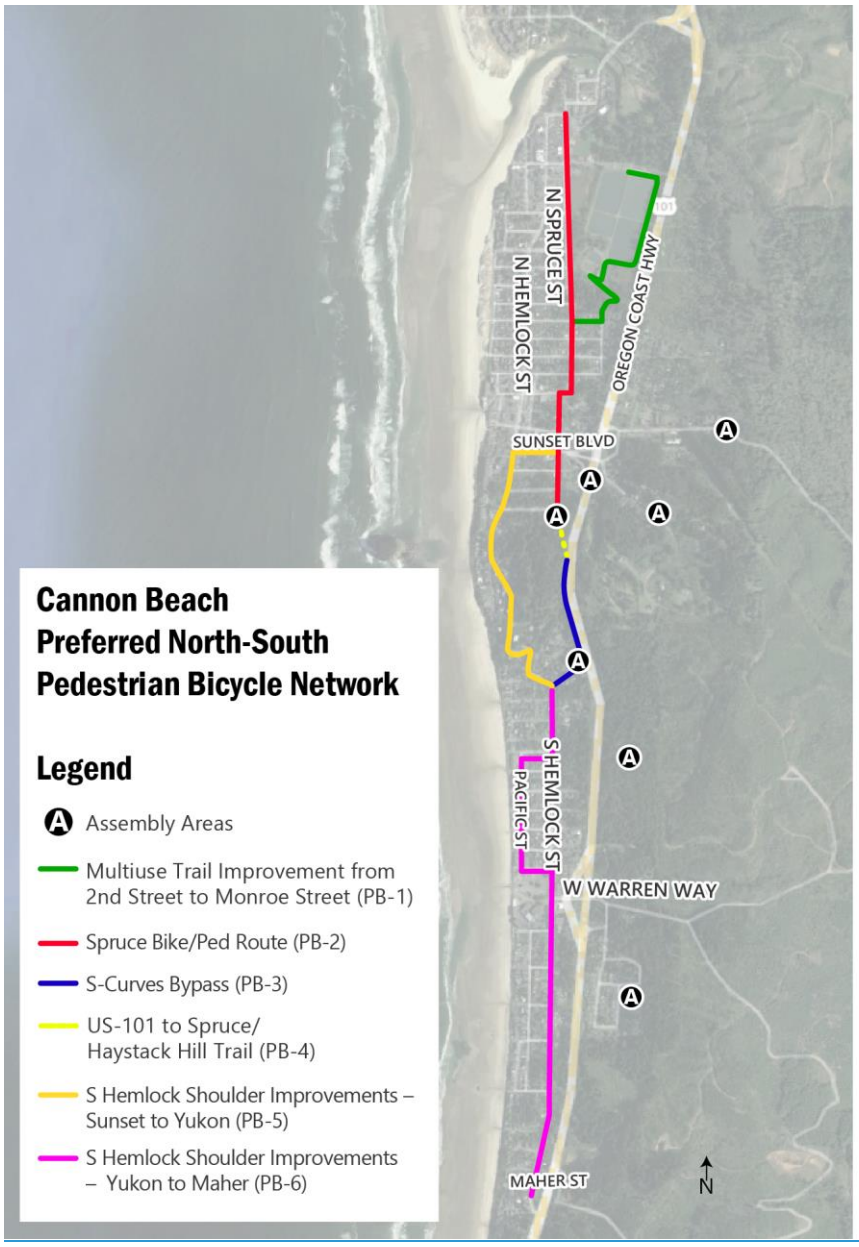
Table 7 summarizes pedestrian and bicycle improvements ranging from low-stress neighborhood bikeway treatments to investments in off-street, multiuse paths (Figure ~~30~~29). Note that these improvements would provide substantial benefits to both pedestrians and bicyclists. ~~Figure 31~~ Figure 30 displays pedestrian and bicycle improvements on a map. The City's revised assembly areas are also shown on the map to illustrate planned pedestrian and bicycle connections to the City's emergency response and evacuation system. The pedestrian and bicycle system stresses improving access to the assembly area at Spruce Street and Arbor Lane via the existing Haystack Hill Trail. This is the closest assembly area to Midtown and Downtown. Improved connections are also proposed to the assembly area at Yukon Street and US 101.

Improvements report conceptual cost using dollar signs representing an approximate range of less than $50,000 ($), between $50,000 and $100,000 ($$), and more than $100,000 ($$$).

Table 7. Pedestrian and Bicycle Facility Improvements

ID	Description	Cost	Priority
PB-1	Multiuse Trail from 2nd Street to Monroe Street	~~$415,000~~$$$	Near
PB-2	Spruce Pedestrian and Bicycle Route	~~$1,104,000~~$$$	Near
PB-3	S-Curves Multiuse Bypass	~~$1,623,000~~ $$$	Near
PB-4	US 101 to Spruce/Haystack Hill Trail	~~$656,000~~$$$	Near
PB-5	S Hemlock S-Curves Improvements – Sunset to Yukon	~~$134,000~~$$$	Medium
PB-6	S Hemlock Shoulder Improvements – Yukon to Maher St	~~$290,000~~ $$$	Near


N SPRUCE ST
N HEMLOCK ST
OREGON COAST HWY
SUNSET BLVD
YUKON ST
S HEMLOCK ST
PACIFIC ST
W WARREN WAY
MAHER ST
N
Map is for illustrative purposes only
Cannon Beach
Preferred North-South
Pedestrian Bicycle Network
Legend
Assembly Areas
Multiuse Trail Improvement from 2nd Street to Monroe Street (PB-1)
Spruce Bike/Ped Route (PB-2)
S-Curves Bypass (PB-3)
US-101 to Spruce/ Haystack Hill Trail (PB-4)
S Hemlock Shoulder Improvements – Sunset to Yukon (PB-5)
S Hemlock Shoulder Improvements – Yukon to Maher (PB-6)


Cannon Beach
Preferred North-South
Pedestrian Bicycle Network
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Assembly Areas
Multiuse Trail Improvement from 2nd Street to Monroe Street (PB-1)
Spruce Bike/Ped Route (PB-2)
S-Curves Bypass (PB-3)
US-101 to Spruce/ Haystack Hill Trail (PB-4)
S Hemlock Shoulder Improvements – Sunset to Yukon (PB-5)
S Hemlock Shoulder Improvements – Yukon to Maher (PB-6)
N SPRUCE ST
N HEMLOCK ST
OREGON COAST HWY
101
SUNSET BLVD
S HEMLOCK ST
PACIFIC ST
W WARREN WAY
MAHER ST
N

Figure 303031. Pedestrian and Bicycle Network

4.4.1 Downtown to Midtown Pedestrian and Bicycle Improvements

Although pedestrian and bicycle improvements are planned along N Hemlock Street, the TSP envisions N Spruce Street as the main north-south corridor for safe and comfortable bicycling, walking, and rolling through Downtown and Midtown Cannon Beach. Spruce Street also functions as an alternate route to the more heavily trafficked Hemlock Street for local travelers and visitors. The Spruce corridor plays an important role in connecting the City's key evacuation and assembly areas, including the Haystack Rock assembly area accessible at Spruce Street and Arbor Lane via the Haystack Hill Trail. Spruce Street is planned to receive two mini-mobility hubs, further enhancing Spruce as a critical multimodal corridor through Cannon Beach. The following subsection describes pedestrian and bicycle improvements for the Spruce Street corridor between 3rd Street and Arbor Lane.

Multiuse Trail from 2nd Street to Monroe Street (PB-1)

The Ecola Creek Trail is an existing off-street, paved multiuse trail that connects Fir Street to 2nd Street along the forested stream bank east of Spruce Street. Crossing 2nd Street, the trail continues along a gravel path that follows the perimeter of the detention ponds between 2nd Street and Monroe Street and between Spruce Street and US 101. The Cannon Beach Parks Master Plan previously recommended the creation of the North Multi-Use Trail, that would create a multiuse trail connection from the north end of town to Monroe Street adjacent to US 101. Given the relatively high cost that is expected in order to construct the North Multi-Use Trail in the Master Plan, this TSP project would improve the gravel trail on the east side of the retention ponds and create a new multiuse connection from the ponds to Monroe and S Elm Street (~~Figure 32~~Figure 31). Construction of the trail would involve minimal removal of trees and would be done so in a way to preserve existing trees and habitat. Completion of the trail adjacent to the ponds would result in a continuous north-south pedestrian and bicycle connection from the north end of town to S Elm Street, where users could then continue north-south travel along the planned Spruce pedestrian and bicycle corridor. This improvement also facilitates pedestrian and

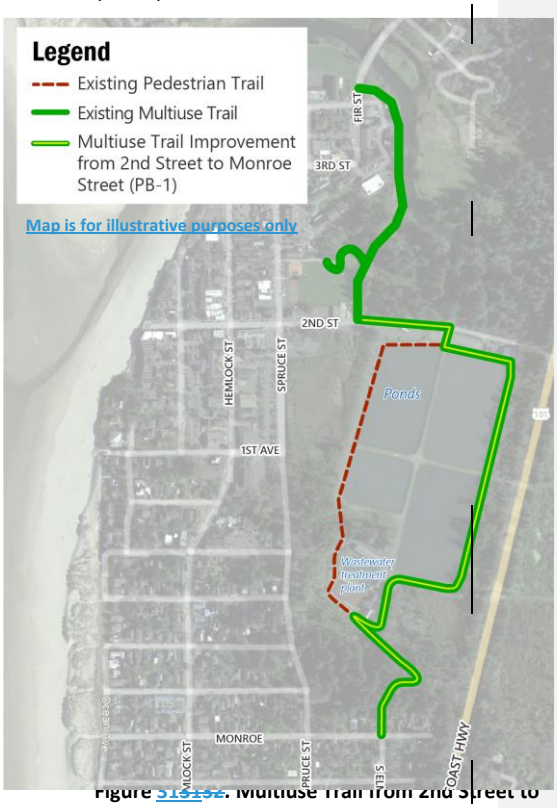


Figure 313132. Multiuse Trail from 2nd Street to Monroe Street (PB-1)

bicycle access to the nearest City evacuation assembly point at Spruce and Arbor Lane.

This improvement provides additional safety benefits by providing an alternate north-south route that avoids the Spruce segment through Downtown. The alternative also provides an off-street option for people biking north and south along the Oregon Coast Bike Route (OCBR) for use and enjoyment by residents and visitors alike.

Spruce Pedestrian and Bicycle Route (PB-2)

The Spruce Pedestrian and Bicycle Route is the highest-priority improvement planned for the Spruce corridor in the TSP. This improvement would establish an enhanced walk/bike facility on Spruce Street between 1st Street and Arbor Lane, providing an alternate north-south route to Hemlock Street. The route would connect Downtown Cannon Beach to the Haystack Hill evacuation and assembly area at Arbor Lane and would be considered as part of the continuous north-south pedestrian and bicycle route from the north end of town to the southern City limits (~~Figure 33~~Figure 32).

Through the Downtown segment, the route would mainly consist of signage and pavement marking upgrades due to limited right-of-way for dedicated bicycle facilities. Given the lack of space for on-street bike lanes, improvements would include the use of sharrow pavement markings to indicated shared use of the roadway by all users.

South of the Downtown segment, the route would include the construction of hard-packed sidepaths in segments where existing shoulder space is available. Sidepaths would be constructed at grade and could be delineated with pavement striping or with hard-packed materials like compacted gravel or turf (~~Figure 34~~Figure 33). At-grade drainage could be constructed where pooling or flooding issues have been identified by community members. Sidepaths are cost-effective alternatives to traditional sidewalks, are relatively easy to construct, and are appropriate walking facilities in a village context. Where shoulders are too constrained for the construction of sidepaths, improvements would be limited to signage and pavement markings to alert drivers to pedestrians and bicyclists in the existing shoulders. Sharrow pavement markings

Figure 323233. Spruce Pedestrian and Bicycle Route

Figure 333334. Sidepath example shows compacted gravel along a repurposed roadway

would be used in places where shoulders are too constrained for safe use by pedestrians and bicyclists.

The exact locations of these sidepaths would need to be investigated further by the City to assess potential right-of-way impacts and constructability issues.

S-Curves Multiuse Bypass (PB-3)

The Cannon Beach Parks Master Plan previously identified a new connection parallel to US 101 to serve as an off-street bypass to the Cannon Beach S-curves. Building from this concept, the TSP S-Curves improvement would provide an alternate north-south multiuse path approximately between Arbor Lane and Yukon Street just west of the US 101 corridor.[19] Further investigation and project development is needed to determine the exact alignment and connection points of the bypass. Given the constrained right-of-way that limits pedestrian and bicycle safety improvements through the S-curves without major investment, the project would provide a pedestrian and bicycle bypass around the S-curves for safe and comfortable travel by users of all ages and abilities (~~Figure 35~~Figure 34). The bypass serves as a critical connection within the preferred north-south pedestrian and bicycle route through town, linking to the Spruce Street pedestrian and bicycle corridor to the north (PB-2) and the S Hemlock Street improvements to the south (PB-6 and PB-7). The bypass would also provide an off-street option for people biking north and south along the Oregon Coast Bike Route.

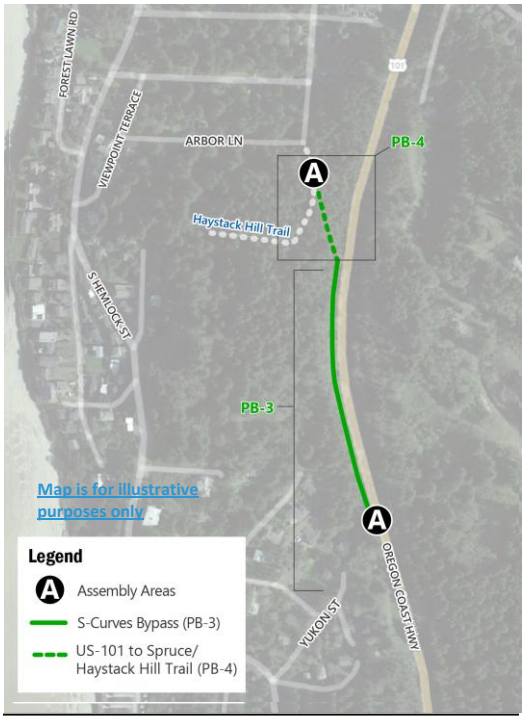


Figure ~~343435~~. S-Curves Bypass (PB-3) and US-101 to Spruce/Haystack Hill Trail (PB-4)

The bypass would also provide a direct connection to two critical evacuation assembly areas. The assembly area at Arbor Lane and Spruce Street junction near the Haystack Hill Trail is the nearest assembly area to Downtown and Midtown. The bypass would also connect to ~~an~~ the ~~adjacent~~ assembly area further south along US 101 ~~at Yukon Street and US 101~~. The bypass provides a pedestrian and bicycle-friendly link accessible by the neighborhoods south of the S-curves ~~via Yukon Street~~ and the new off-street connection proposed from US 101 to the existing Haystack Hill Trail (PB-4).

[19] This improvement would be constructed on City property outside of the ODOT right of way. Further analysis would be needed to understand potential impacts to ODOT right of way (US 101).

Commented [EM6]: Note to Planning Commission – this map and description was revised to account for the false precision that formerly pointed to Yukon Street as the southern access point for the proposed bypass. Further investigation is needed to really understand the alignment for this connection, so the revised description focuses more on the key link between the two assembly areas.

US 101 to Spruce/Haystack Hill Trail (PB-4)

The US 101 to Spruce/Haystack Hill Trail would create a new path connection from US 101 mainline to the existing Haystack Hill Trail and S-curves bypass (PB-3) (~~Figure 35~~Figure 34). This connection would also facilitate access to evacuation route and assembly area at Arbor Lane and Spruce. The trail would begin near the US 101 shoulder and travel up and over the existing forested hill. Given the grade of hill, the trail would likely need to be constructed using switchbacks to maintain ADA accessibility. The trail would consist of hard-packed materials such as sand or gravel and would be constructed at grade. Construction of the trail would involve the removal or some trees and further coordination with ODOT to resolve any access issues from the state highway. Construction ~~would~~will be done so in a way to preserve existing trees and habitat ~~as much as possible.~~.

Commented [EM7]: Revised per request of the Planning Commission

This improvement would improve shoulders along S Hemlock Street in the short segment between Sunset Boulevard and Arbor Lane. The City recently removed on-street parking on the west side of S Hemlock Street, so this project would utilize pavement markings and signage to designate this space for walking and bicycling. Rumble strips would be installed to help further delineate the driving lane from the pedestrian and bicycle shoulder. Improvements would stop short of the S-Curves where right-of-way is more constrained.

4.4.2 Tolovana Pedestrian and Bicycle Improvements

South of Sunset Boulevard, pedestrian and bicycle improvements on S Hemlock Street are generally limited given constrained right-of-way; any substantial improvements to widen the roadway would be costly and would require the acquisition of property. For those reasons, improvements south of Sunset Boulevard are limited to modest improvements to S Hemlock Street through the S-curves and to Maher Street. The following subsections describe pedestrian and bicycle improvements from the Tolovana area to the south City limits.

S Hemlock S-Curves Improvements - Sunset to Yukon (PB-5)

The primary pedestrian and bicycle improvement through the S-curves is envisioned as the multiuse bypass (PB-3) linking the Spruce pedestrian and bicycle corridor to ~~Yukon Street~~S Hemlock. However, modest improvements are also recommended on S Hemlock Street and Sunset Boulevard for more confident cyclists and/or

Figure 3535~~36~~. S Hemlock S-Curves Improvements – Sunset to Yukon (PB-5)

pedestrians that prefer this route (~~Figure 36~~Figure 35).

Right-of-way and shoulder width is severely constrained and inconsistent on S Hemlock Street through the S-curves, so TSP improvements are limited to the implementation of sharrow pavement markings and signage to indicate the presence of cyclists and pedestrians. Where space is available, shoulder markings could be reinforced with rumble strips to alert drivers when they are encroaching in the pedestrian and bicycle space. Further analysis would be needed to assess available shoulder space and determine shoulder width availability thresholds before installing rumble strips. Rumble strips are recommended on the west side of S Hemlock Street from Sunset Boulevard to Arbor Lane, where the City of Cannon Beach recently restricted on-street parking (~~Figure 37~~Figure 36). This former parking space can be repurposed as a designated walking and cycling space with the use of rumble strips, signage, and pavement markings. There is currently no parking allowed on Sunset Boulevard and the existing shoulders could be repurposed as shoulder bike lanes to connect pedestrians and cyclists on S Hemlock Street to the Spruce pedestrian and bicycle corridor.

Figure 363~~637~~. S Hemlock Street looking northbound to the Sunset Blvd intersection.
On-street parking has been removed on the west side and could be repurposed for pedestrian and bicycle travel between Sunset and Arbor Lane.

South of Arbor Lane through the S-curves, right of way is more constrained so rumble strips and pavement markings will need to be implemented intermittently where space is available. The exact placement of the improvements will depend on further investigation from the City as implementation funding becomes available.

Commented [EM8]: PC recommendation to reduce speeds through the S-curves added in the callout box below.

~~Pilot Project:~~ Planning Commission Recommendation

~~Temporary Pedestrian Plaza Between 1st and 2nd Street~~Consider Speed Reduction through the S-curves

~~Based on feedback from the general public, Cannon Beach City Council, Planning Commission, and staff, a temporary pilot demonstration between 1st and 2nd Street is recommended to test how the pedestrian plaza affects circulation and foot traffic for businesses. The pilot would be a first step to implementing the~~


ADONIS

S Hemlock Shoulder Improvements – Yukon to Maher (PB-6)

The S Hemlock Street shoulder improvements would complete the southern leg of a contiguous north-south pedestrian and bicycle connection through Cannon Beach (~~Figure 38~~Figure 37). Given that there are no sidewalks along S Hemlock Street south of the S-curves~~from Yukon~~ to the south City limits, improvements would primarily consist of pavement markings and signage within the existing roadway shoulders to designate dedicated space for pedestrians and cyclists.

The pedestrian and bicycle route would deviate from S Hemlock Street to Pacific Street from Matanuska Street to Fernwood Street, before continuing south along S Hemlock Street. This detour would provide greater separation, safety, and comfort for pedestrians and cyclists from the more highly trafficked Hemlock corridor.

This improvement would also pave the gravel segment along Pacific Street between W Delta St and W Surfcrest Ave included as part of the Pacific Street bicycle route (B-5). Paving this segment would increase the accessibility of the route, address drainage issues, and provide a safe connection for use by people in wheelchairs, walkers, and other mobility devices.

Figure 37~~38~~. S Hemlock Shoulder Improvements – Yukon to Maher (PB-6)

4.4.3 Bicycle Network

In combination with the pedestrian and bicycle improvements (PB-1 through PB-6), bikeway improvements would create a designated bikeway network in Cannon Beach consisting of low-stress, accessible connections for people of all ages and abilities.

Figure 383839. Bikeway Network – Signage and Pavement Marking

Table 8 below summarizes bikeway improvements. Improvements primarily consist of cost-effective spot treatments on low-traffic streets such as signage and sharrow pavement markings to make navigation easy and to encourage people to walk and bike. Once completed, these bikeways, also known as greenways, would provide safe and comfortable travel for people of all ages and abilities (~~Figure 39~~Figure 38). These routes would join with other pedestrian and biking facilities to form a network that is continuous and connected.

A comprehensive wayfinding system would be implemented to indicate to people riding walking and bikes where they are and the direction/distance to key destinations. Signs are most useful when placed at decision points along bicycle and pedestrian routes. Bike route signs also signify to people driving that bicyclists may be present. Signage would be designed to be human-scaled, so it is appropriate for people walking or biking. This makes it easier for people to understand that the signs are for them (and not for people driving). Wayfinding would include tsunami evacuation information, including the direction to the nearest assembly area.

Bikeway projects generally improve east-west connectivity to the north-south pedestrian and bicycle network (~~Figure 31~~Figure 30). Although bikeway improvements primarily improve safety, comfort, and connections for bicycle riders, improvements would also facilitate travel for pedestrians and people rolling, using a wheelchair, or other mobility device. Bikeway improvements are mapped in ~~Figure 40~~ Figure 39 and ~~Figure 41~~ Figure 40 below.

Table 8. Bikeway Network[20]

ID	Name	Location	Benefits and Considerations
B-1	2nd Street Bicycling Improvements – Sharrows + Signage	2nd Street – Between N Larch Street and Cannon Beach Skate Park	Connects to 2nd Street to Monroe Street Multiuse Trail (PB-1) and Spruce Pedestrian and Bicycle Route (PB-2). Improves access to beach, Downtown Mobility Hub (T-2), Chamber of Commerce, tennis courts, and Skate Park
B-2	1st Street Bicycling Improvements – Sharrows + Signage	1st Street – Between beach access and N Spruce Street	Connects to Spruce Street Pedestrian and Bicycle Route (PB-2). Provides low-stress connection between beach and Hemlock Street
B-3	Monroe Bicycling Improvements – Sharrows + Signage	Monroe – Between beach access and S Elm Street	Provides southern access to 2nd Street to Monroe Street Multiuse Trail (PB-1) and Spruce Street Pedestrian and Bicycle Route (PB-2)
B-4	Gower Bicycling Improvements – Sharrows + Signage	Gower Avenue – Between Ecola Court and S Spruce Street	Crosses roadway improvement at Gower Avenue and Hemlock Street (R-6) and connects to Spruce Street Pedestrian and Bicycle Route (PB-2). Facilitates bike access to Midtown Mini-Mobility Hub (T-3).
B-5	Pacific Bicycling Improvements – Sharrows + Signage	Pacific Street – Between Matanuska Street and Fernwood Street	Provides an alternate biking route to S Hemlock Street. Corresponds with paving of the gravel segment of Pacific Street between W Delta Street and W Surfcrest Street included as part of PB-6.
B-6	W Warren Way Bicycling Improvements – Sharrows + Signage	W Warren Way – Between beach access and S Hemlock Street	Improve biking access to beach, Tolovana Mini Mobility Hub (T-4), and Tolovana Public Parking Lot

[20] Note: On-street bike lanes are not recommended as part of the bicycle network due to right-of-way constraints and a community desire to preserve a non-urban, village character in Cannon Beach.


Cannon Beach
Bikeway Improvements
North Segment
Legend
Bicycle improvement
Map is for illustrative purposes only
FIR ST
FIR ST
3RD ST
2ND ST
B-1
SPRUCE ST
1ST AVE
B-2
HEMLOCK ST
MONROE
B-3
101
GOWER AVE
B-4
DAWES AVE
SUNSET
N
0
500
1,000
2,000 feet

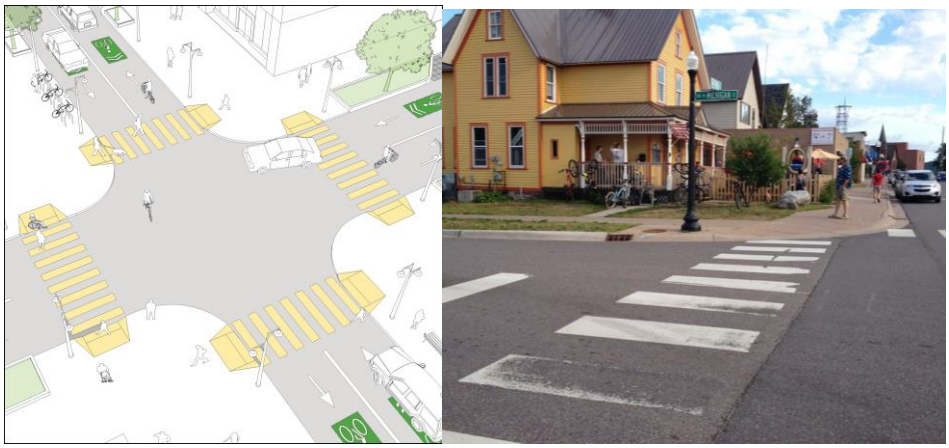
Figure 393940. Bikeway Improvements: North Segment

Figure 404041. Bikeway Improvements: South Segment

4.4.4 Crossings

Crossing improvements are focused on addressing known pedestrian safety concerns along Hemlock Street, the City's main north-south connection. Improvements also intend to facilitate access to the City's planned multimodal network of trails, sidepaths, transit stops, and mini-mobility hubs. These projects will improve some of the existing marked crossings in Cannon Beach today, many of which are worn, faded, or otherwise difficult to see due to sightline issues. Projects will also upgrade the level of protection that the City's existing crossings offer pedestrians; except for the vertical plastic bollards at the Warren Beach Way intersection, the existing crossings do not include pedestrian illumination or physical separation from moving vehicles. Crossing improvements would provide a higher order of safety and protection for pedestrians travelling along the Hemlock mainline while maintaining a village aesthetic. To achieve this, crossing improvements consist of two types:

Marked Crossings refer to basic crossing improvements consisting of crosswalk markings, stop bars, and pedestrian crossing signage (~~Figure 42~~Figure 41).[21] Although marked crossings are basic improvements to the pedestrian system, the City could consider enhancing their effectiveness through the use of low-cost, innovative treatments like reflective or glow-in-the-dark paint, textured paint treatments, or solar lighting to make crossings more visible (~~Figure 43~~ Figure 42 and ~~Figure 44~~Figure 43). Marked crossings are relatively low-cost investments that can help alert motorists to the potential presence of pedestrians. Marked crossings can be combined with other multimodal improvements to enhance their safety.



[21] Continental or "hashed" crossings are typically used for through traffic or mid-block crossings. If stop bars are added at locations with existing continental markings, continental crossings should be changed to reflect the added stop bars. Stop bars with parallel marked crossings are typically used at stop-controlled intersections.

Figure 414142. Basic Marked Crossings
(Source: National Association of City Transportation Officials - NACTO)

Figure 424243. In-Roadway Warning Light
(Source: Silicon Constellations)

Figure 434344. Illuminated Bollards
(Source: Bendy Bollards)

Enhanced Crossings refer to crossings with a higher level of protection for pedestrians, and can include a range of treatments such as raised crosswalks or speed tables, illuminated signage, curb extensions or bump outs (either using at-grade treatments like paint and bollards or grade-separated treatments like concrete), median refuge islands, and pedestrian-activated flashing beacons (~~Figure 45~~Figure 44). These crossings are more costly than standard marked crossings but offer a substantially higher level of protection for pedestrians, people using mobility devices, and bicyclists. Enhanced crossings are reserved for locations within the City's transportation system with known safety issues and bottlenecks. Not all enhanced crossings identified in the TSP will be illuminated, illumination is not a requirement of enhanced crossing improvements.

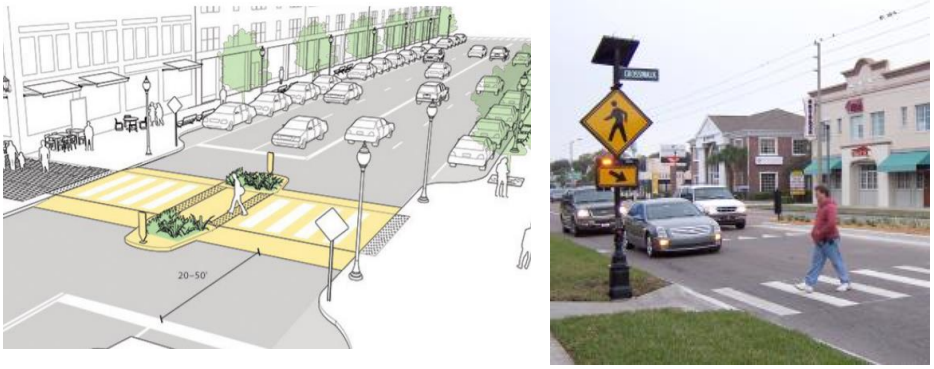


Figure 444445. Enhanced Crossings
(Source: National Association of City Transportation Officials - NACTO)

Enhanced crossing improvements are included at four locations due to high volumes of pedestrian traffic. For all these intersections, speed tables, illuminated crossing indicators, and pedestrian-scale illumination are recommended, which would provide a safer experience for people walking and biking while still maintaining the village aesthetic. It is important to note that while illuminated crossings are recommended at some Cannon Beach intersections, the City will need to do additional investigation and community outreach to determine the appropriate treatment to match the village context. Illuminated signage and pedestrian indicators are highly effective in making pedestrians more visible to drivers. The City could consider "alternative illumination options" for enhanced pedestrian safety at intersections:

- Conventional controls such as rectangular rapid-flashing beacons (RRFBs). Pedestrian Hybrid Beacon (PHB) signals are not recommended as traffic signalization is not currently being considered in Cannon Beach.
- An illuminated globe on a pole, like the Belisha Beacon in the United Kingdom (~~Figure 46~~Figure 45).
- In-roadway warning lights flash on the road surface (~~Figure 43~~Figure 42).
- Illuminated bollards help with pedestrian lighting (~~Figure 44~~Figure 43).
- All illumination options can be designed to run off solar power, avoid light pollution, and to be aesthetically pleasing for a village context.

Figure 454546. Belisha Illuminated Pedestrian Beacon Used in the United Kingdom.

Except for the Enhanced Crossing at Cannon Beach Academy (C-9), alternative illumination options are recommended for the village aesthetic of Cannon Beach. Alternative illumination options would provide significant safety benefits and are more subtle than RRFBs. RRFBs and alternative illumination options are both pedestrian activated, and drivers do not need to stop except when pedestrians are

present. Table 9 summarizes the recommended crossing improvements. ~~Figure 47~~ Figure 46 and ~~Figure 48~~ Figure 47 display crossing improvements on a map.

Table 9. Crossing Improvements

ID	Location	Type	Benefits and Considerations
C-1	N Hemlock Street at 2nd Street (north and south legs)	Enhanced – Alternative illumination option recommended	Aligns with (B-1) proposed pedestrian and bicycle route Contingent on alternatives chosen for concepts R-5 and R-7
C-2	Hemlock Street at Monroe (north leg)	Marked	
C-3	Hemlock Street at Coolidge Avenue (north leg)	Enhanced – Alternative illumination option recommended	Connects with proposed Mid-Town Mini Mobility Hub (T-3)
C-4	Sunset Boulevard at Spruce Street (west leg)	Enhanced – Alternative illumination option recommended	Aligns with proposed north-south pedestrian and bicycle route (PB-2)
C-5	Hemlock Street at Haystack Lane (south leg)	Marked	
C-6	Hemlock Street at Yukon Street (south leg)	Marked	There may be speed/sight distance issues at this location
C-7	Hemlock Street at Delta Street (south leg)	Marked	
C-9	Hemlock Street between Coos Street and Orford Street	Enhanced – a RRFB is recommended at this location	Improves existing school crossing at the Cannon Beach Academy. An RRFB is recommended given use by students.
C-10	Hemlock Street at Braillier Street (north leg)	Marked	
C-11	Hemlock Street at Maher Street (north leg)	Marked	Proximity to US 101: Within the Cannon Beach UGB, the existing US 101 interchange spacing of 1.07 miles does not meet OHP standards of 3 miles. The existing access spacing of 890 feet does not meet of 1,320 feet. There may also be speed/sight distance issues at this location

Figure 464647. Crossing Improvements: North Segment

Figure ~~474~~748. Crossing Improvements: South Segment

4.5 Transit Plan

Public transportation improvements would achieve multiple outcomes: establish a network of inter-modal mobility hubs, help address peak seasonal demand for traffic and parking, and improve existing transit service in Cannon Beach. Public transportation projects include improvements to physical infrastructure such as bus stops as well as enhancements to service (e.g., frequency, reliability, travel times) to make transit more attractive to residents and visitors. Public transportation improvements are summarized in Table 10 and displayed in ~~Figure 49~~ Figure 48 and ~~Figure 50~~Figure 49.

Table 10. Public Transportation Improvements[22]

ID	Name	Location	Description	Considerations
T-1	Bus stop with shelter at north end of City	Fir and 5th Street	New bus stop and shelter to serve neighborhood north of Ecola Creek	• Existing City-owned gravel parking area with utility building may facilitate the development of a new bus stop at this location.
T-2	Downtown Mini Mobility Hub	N Spruce Street at 2nd Street (near Chamber of Commerce) or at 1st Street if implemented with Hemlock Spruce Couplet (R-7a)	Mini mobility hub to bring together transit, biking, micro-mobility, EVs, and potentially TNCs	• Existing bus bay on west side of Cannon Beach Chamber of Commerce building • May require conversion of bus bay to shared mobility space, and possible repurposing of one or two parking spots adjacent to the tennis courts • Could be used as part of a broader parking/TDM strategy
T-3	Midtown Mini Mobility Hub	Coolidge Avenue and S Hemlock Street at existing bus stop and public parking area	Mini mobility hub to bring together transit, biking, micro-mobility, EVs, and potentially TNCs	• May require conversion of a few parking spaces to shared mobility space and loading areas • Could be used as part of a broader parking/TDM strategy

[22] All improvements will be ADA-compliant

ID	Name	Location	Description	Considerations
T-4	Tolovana Beach Mini Mobility Hub	Tolovana Beach parking area in the northwest corner of the S Hemlock Street/W Warren Way intersection	Mini mobility hub to bring together transit, biking, micro-mobility, EVs, and potentially TNCs	• Could include reallocation of a small number of vehicle parking spaces, or reallocation of existing landscaping space • Could be used as part of a broader parking/TDM strategy
TS-1	Increased intercity service	Citywide	Transit service specifically tailored to visitors, with extra service from Friday afternoon through Sunday afternoon Consider improved connections to Portland Metro area, Portland International Airport, Salem	• The City could pursue a study with SETD to determine the appropriate level of service • The City could implement a peer partnership program with SETD to coordinate city-funded, SETD-operated services • Incentivize with free or reduced fares, family rates, discounts to local businesses, restaurants, and hotels
TS-2	Frequent service circulator shuttle	Citywide	A frequent service circulator shuttle travels the length of the City to make travel easy without a car	• Cannon Beach's linear shape is ideal for a frequent service shuttle • Could also connect with off-site parking • Potential nexus with (PM-10)
TS-3	Employee shuttle	Citywide	Transports employees between their jobs and a transit station or an off-site parking area Reduces the need for employees to drive into the City	• Requires coordination with businesses to understand feasibility and service needed • Could be implemented as part of a larger TDM strategy • May include vanpool as an option

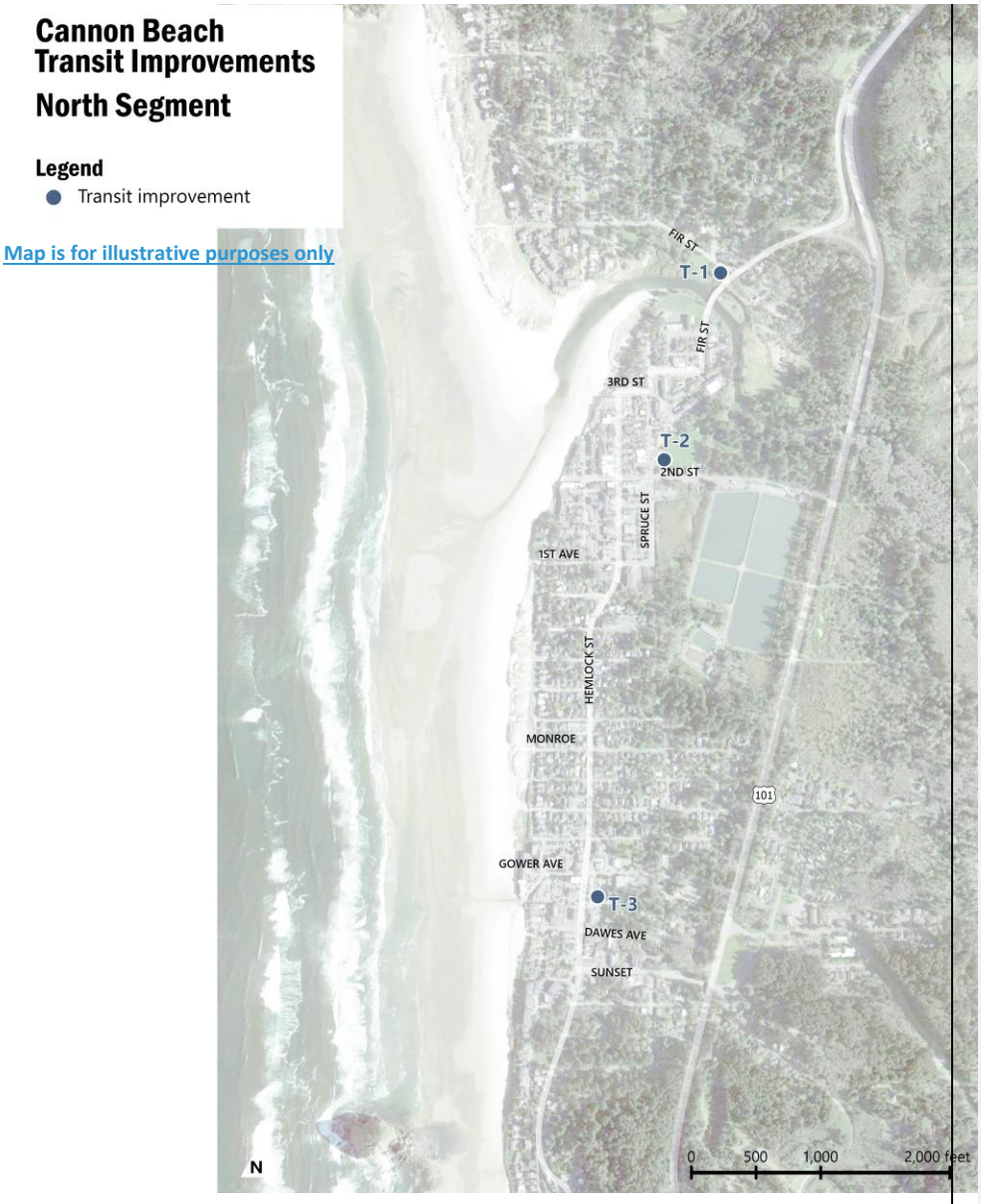


Figure 484849. Transit Improvements: North Segment

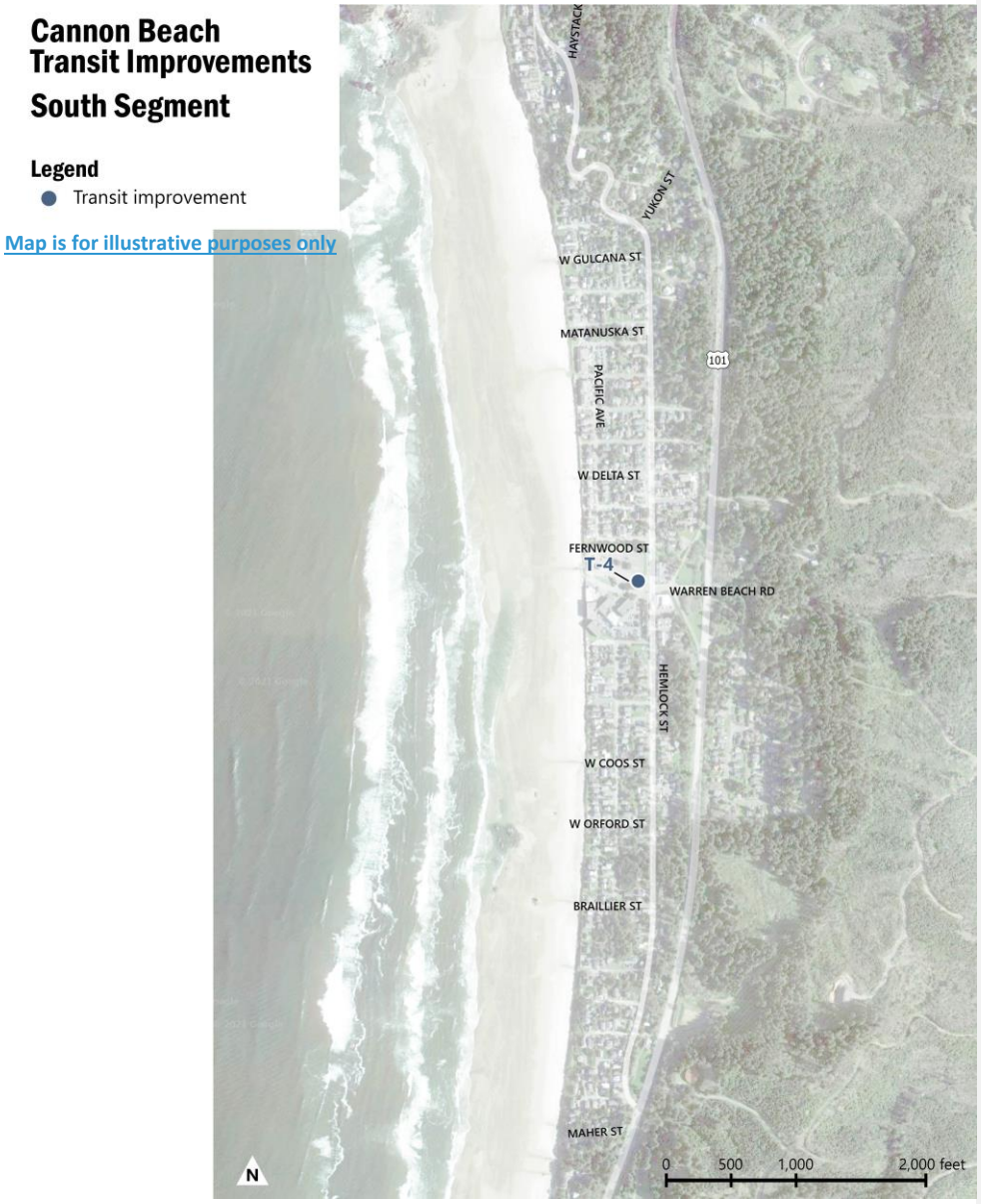


Figure 494950. Transit Improvements: South Segment

4.5.1 Mobility Hubs

The term *mobility hub* refers to nodes in the transportation system where people can access a suite of interconnected transportation options. Conventional examples of mobility hubs include transit centers and park-and-ride lots. Mobility hubs can also provide centralized locations for residents and visitors to utilize newer mobility options such as circulator or employer-based shuttles, vanpool pick-up and drop-off, car and ride sharing services, ~~scooters,~~ and short-term bike rentals. Mobility hubs also facilitate access to existing transit and emergency response systems via features like real-time transit schedules, visible signage, "how-to-ride" information, comfortable waiting areas, and basic amenities like shelter and trash cans (~~Figure 51~~Figure 50).

Figure 50~~51~~. Mobility Hub examples with electric vehicle charging, bike share, signage, and ride share

Mobility hub projects in Cannon Beach would incorporate tsunami response and evacuation information such as inundation maps and clear directions for reaching the nearest tsunami safe area via different transportation modes.

Mobility hubs should also offer alternative ways to travel by providing elements such as:

- Bicycle storage (racks, locks, and covered options)
- Streamlined connections to safe walking and bicycling routes
- Physical space for services like visitor/employee shuttles and pick-up/drop-off areas for vanpooling, carpooling, or rideshare
- Charging docks for ~~scooters or~~ electric vehicles (EVs)

Other coastal communities, such as Jekyll Island in Georgia, have had success with implementing electric golf cart rentals for visitors wishing to explore town.[23] Rentals located at mobility hubs could act similarly to a car-share program, providing local transportation around the Downtown area, while still maintaining the village aesthetic. The specific combination of these amenities that is right for Cannon Beach will depend on future analysis and input from the community.

[23] http://www.redbugmotors.com/

Mobility hubs also provide new opportunities for funding transportation improvements – given their intermodal nature, mobility hubs give rise to public-private-partnership opportunities and funding agreements between multiple agencies and transportation providers. Mobility hubs could even be combined with off-street parking programs to managing parking constraints in Downtown and midtown. Given that mobility hubs are a relatively new concept for most towns and cities, implementing one mobility hub as a pilot project is recommended, in order to determine the appropriate amenities while still preserving the village context. The City should consider N Spruce Street at 2nd Street (near the Chamber of Commerce) as a primary choice for a pilot mobility hub, as this location would be close to Downtown and could be structured to work in tandem with other recommended improvements (~~Figure 52~~Figure 51).

Pilot Project:
Downtown Mobility Hub (T-2)

Some of the existing parking stalls could be repurposed to install mobility hub elements such as passenger pick up/drop off areas, bicycle parking, circulator shuttle zones, car/bike/ride share options, and electric vehicle charging stations.

Figure 515~~152~~. Existing parking stalls on N Spruce and 2nd Street

4.6 Transportation Demand Management

Transportation Demand Management (TDM) refers to a set of programs and strategies to encourage the use of walking, bicycling, public transportation, and other means of transportation to reduce driving and single-occupancy vehicle trips. TDM can be implemented for a combination of reasons that include improving mobility (by reducing congestion), improving air quality, and reducing parking demands. Most TDM strategies focus on commuting, however they can also be applied to other contexts, like visitors coming to Cannon Beach.

A variety of potential strategies could be applied in Cannon Beach, including:

- Encouraging transit use with subsidies, discounts, or other incentives.
- Perks to people who do not require parking inside the City.
- Providing bicycle amenities, like bike share, secure parking, and lockers.
- Incentivizing businesses who reduce their employees driving.
- Parking management programs.
- Educational campaigns to alert people of transportation options.
- Competitions or other games, such as Oregon's Get There Challenge, to motivate people to travel by other modes.

TDM efforts are often led by transportation management associations (TMAs) that coordinate programs and advocate for multimodal improvements. TMAs often are funded by business memberships and government grants. Table 11 below describes the recommended TDM strategies for Cannon Beach.

Table 11. TDM Strategies

ID	Description	Considerations
TDM-1	Program to encourage visitors to leave the car at home or in an off-site parking area and arrive by other modes (the "Summer Stay" program)	• Incentives can include discounts to hotels, restaurants, and other businesses. • Would require convenient transportation options, such as a shuttle service or a bike share program (which may can be provided through a partnership with hotels and short-term rentals). • Can incentivize intercity transit use by reimbursing or subsidizing the cost of the bus. • Storage options are helpful for people planning to stay for the day or before/after their hotel's check in/out time. • Requires working with the chamber of commerce, hotels, transit, and other businesses. • Requires effective marketing to potential visitors (see TDM-2).

ID	Description	Considerations
TDM-2	Robust information campaigns to encourage visitors to travel to and within Cannon Beach by modes other than driving	• Coordinate with hotels and short-term rental owners to distribute travel options information. May require distribution. • Billboards, posters, or other outdoor signs can share the message. • Marketing literature, such as the North Coast Brochure, can include transportation information.
TDM-3	Parking permit program to regulate the number of cars parking on-street	• Aims to limit on-street parking by visitors; could grant parking passes to all Cannon Beach residents • A parking permit program could be used in conjunction with other parking strategies to better manage the cars that can park in the City • Can be integrated with parking programs such as timed parking • Parking restrictions must have reinforcement plans to be effective
TDM-4	Publish data on City website of when traffic is busiest based on historical trends	• Traffic congestion data can be published on a quarterly basis on City website, with the option to monitor more frequently and incorporate a traffic livestream • Publicizing expected traffic congestion will help people plan their trips to avoid the most congested times. This can help spread the transportation demand on the system and reduce peak congestion • Can be included in tourism brochures, parking maps, and posted online

4.7 Transportation System Management and Operations Strategies

FHWA describes Transportation System Management and Operations (TSMO) as "a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed." [24] TSMO is a comprehensive approach that considers the entire transportation system, including all potential modes of travel. TSMO is like TDM in that both techniques aim to improve transportation operation without building more automobile capacity. TSMO can be a cost-effective way to make the current road network work better.

TSMO strategies often focus on reducing delays from traffic crashes and incidents, poor signal timing, construction, and weather, among other things. In Cannon Beach, strategies can focus on delays from parking and visitor circulation with a parking management program and by encouraging less impactful modes like walking and biking. Table 12 below describes the recommended TSMO strategies for Cannon Beach.

Table 12. TSMO Strategies

ID	Location	Description	Considerations
TSMO-2	Downtown, Midtown, Tolovana	Parking monitoring program with camera or other system. Helps people driving make informed decisions about parking without the need to circle looking for an available space	• Can be integrated with parking programs
TSMO-4	Downtown	Curb management program to balance the space needed for parking, deliveries, loading, and other uses	• Could be a simple system of consistent signage and street markings • Can be integrated with parking programs

[24] What is Transportation Systems Management and Operations (TSMO)? | Transportation Systems Management and Operations (TSMO) Plans | Organizing and Planning for Operations - FHWA Office of Operations (dot.gov) https://ops.fhwa.dot.gov/tsmo/

4.8 Emerging Transportation Technologies

Emerging transportation technologies refer to technology-based transportation options such as ridesharing, app-based food delivery, and bike~~ and scooter~~-sharing platforms. There are also well-adopted technologies such as Google Maps that influence the way that people travel and make choices within transportation systems. Other mobile applications allow people to purchase on-street parking passes, track a home-based delivery, or purchase a day pass for transit. There are also cutting-edge technologies that are still being developed for widespread use such as autonomous vehicles and drone-based delivery.

Cannon Beach has an opportunity to plan for the impacts of these current and future technologies. The fast pace of technological development has meant that some of these emerging trends have moved into communities not ready for them – leading to reactionary city policies and missed management opportunities. Table 13 below summarizes the recommended strategies to help Cannon Beach take advantage of emerging technologies to support the City's needs, and to mitigate potential impacts to the village aesthetic.

Table 13. Emerging Transportation Technologies – Improvements and Strategies

ID	Description	Considerations
ET-1	Adopt TSP policy and strategy for future investments in~~ scooter and~~ bike share	• ~~Scooter and b~~Bikeshare could be an effective tool for addressing visitor vehicle traffic through town. • Establish TSP policies that would encourage future implementation of ~~scooter and~~ bikeshare programs over the next 5-10 years. • Consider the policy groundwork for future implementation that could occur over the next 5-10 years
ET-2	Adopt municipal policy and regulations for ~~scooter and~~ bike share	• Developing policy retroactively can be difficult once these programs begin operating in the City • Consider where they can ride, allowed to be parked, an equitable pricing structure, and access to their data
ET-3	Invest in EV charging stations to encourage EV use	• Build EV charging into newly developed parking areas and mini mobility hubs • Incentivize new developments to include EV charging
ET-4	Adopt policy to regulate ride-hailing transportation network companies (TNCs, like Uber and Lyft) before they begin operating in the City	• Studies have shown ride-hailing adds to traffic congestion and crashes • Developing policy retroactively can be difficult once they begin operating in the City • Consider designating loading zones, requiring visible TNC designations on vehicles, and the types of vehicles allowed to operate (such as EVs to reduce air pollution and greenhouse gas emissions)

4.9 Truck Freight System Plan

Table 14 below summarizes the recommended improvements for addressing loading zone needs for delivery trucks in town. No other freight improvements were identified.

Table 14. Freight Improvements

ID	Location	Description	Considerations
F-1	Through commercial areas	Designate short term loading zones for delivery trucks to balance the demand for parking with the need for deliveries	• Loading zones will need clear, consistent markings • Requires outreach to businesses

4.10 Rail Plan

No railroads operate in Cannon Beach. No improvements are recommended.

4.11 Marine Plan

Cannon Beach has no commercially navigable waterways.[25] Marinas and ports operate in Warrenton and Astoria, approximately 20 miles north. No improvements are recommended.

4.12 Aviation Plan

No airports are in Cannon Beach. The nearest airport is Seaside Municipal, about 10 miles away, with a single paved runway for most light single and some twin-engine aircraft. The Warrenton-Astoria Regional Airport, operated by the Port of Astoria, is approximately 20 miles away and home to the United States Coast Guard Sector Columbia River. Portland International Airport is about 90 miles away and is the primary airport for commercial passenger travel. No improvements are recommended.

4.13 Pipelines

Cannon Beach is served by a Northwest Natural Gas distribution pipeline. No gas transmission pipelines, or hazardous liquid transmission pipelines are located in Cannon Beach.[26] No improvements are recommended.

[25] https://pvnpms.phmsa.dot.gov/PublicViewer/#

[26] https://pvnpms.phmsa.dot.gov/PublicViewer/#

5. IMPLEMENTATION AND FUNDING STRATEGY

The TSP is a long-term plan with a range of projects that may be implemented in the near, medium, or long term. Projects are prioritized based on need, funding availability, and the ability to implement on a shorter timeframe. This section describes the funding likely available and new funding and financing options to implement projects and programs in the TSP, including estimates of future baseline funding if no significant new funding occurs, which may be available for long-term projects. A review of potential funding sources is then provided, with a focus on those sources that the City of Cannon Beach has the highest likelihood of obtaining or implementing.

This section also includes recommended prioritization of TSP projects. Projects are prioritized according to the highest needs in the community, which largely stem from tourism impacts. Addressing tourism impacts are critical to improving daily transportation and quality of life for Cannon Beach's year-round residents.

~~**Pilot Project:** Temporary Pedestrian Plaza Between 1st and 2nd Street~~**The TSP is a long-range plan that will require many more years of community engagement and review in order to move projects forward.**

It takes many steps and often, multiple years, to implement a TSP project. Each step provides the opportunity to engage with the public who will be affected by the investment; the level and type of engagement is generally dependent on the scale of the project and the level of change and impact it is likely to have. Additionally, there are several steps where the Council, Planning Commission, Public Works Committee, and other bodies weigh in as to whether the project should advance; for example, during adoption of the annual budget, during any public street improvement that involves design elements such as landscaping, lighting, sidewalks or street furniture, or when new roadways, driveways or other access facilities are proposed for sensitive lands, such as wetlands

It's also important to note – as mentioned in TSP *Section 1.1 Purpose of the Transportation System Plan* – that the intent of the TSP is to establish a planned network of facilities and services to meet transportation needs in Cannon Beach. However, the TSP is not intended to constitute authorization or approval to proceed with specific transportation system options through preliminary concepts, design and construction, outlined herein, nor does it prevent the community from considering other or additional transportation system options through amending this TSP. This means it will take many years to implement TSP projects and programs. Any and all transportation system projects to be undertaken pursuant to this TSP shall be reviewed pursuant to the appropriate review and City approval processes, which may require public hearing(s) before the Design Review Board, the Planning Commission, the Parks and Recreation Committee, the Public Works Commission, or the City Council.

~~This section describes the funding likely available and new funding and financing options to implement projects and programs in the TSP. It also includes prioritization of TSP projects. This section estimates future baseline funding if no significant new funding occurs, which may be available for long-term projects. A review of potential funding sources is then provided, with a focus on those sources that the City of Cannon Beach has the highest likelihood of obtaining or implementing.~~

~~The TSP is a long-term plan with a range of projects that may be implemented in the near, medium, or long term. Projects are prioritized based on need, funding availability, and the ability to implement on a shorter timeframe.~~

Commented [EM9]: Added per request of the Planning Commission.

Commented [EM10]: This language and the call-out box above were added per the request of the Cannon Beach Planning Commission.

5.1 Transportation Funding Plan

The funding plan for transportation improvements is organized into cost-constrained and aspirational projects and programs.

- **Cost-constrained projects** are those for which a planning-level cost estimate was developed and could be paid for with anticipated City revenues over the 20-year planning horizon. Cost-constrained projects also describe high-priority projects recommended for implementation in the near term.
- **Aspirational projects and programs** are those for which cost-estimates were not developed and/or those for which medium- or longer-term implementation is recommended as the City is able to obtain external funds in the future. These projects and projects are cost-unconstrained.

5.1.1 Existing Transportation Revenues

Table 15 below summarizes the last 5 years of revenues and expenditures of the City's Road Fund – the source of funding used to pay for roadway and transportation projects. Over the last 5 years, the City has had an average of **$248,000 per year**[27] available to pay for transportation improvements. Assuming transportation revenues remain the same, the City is expected to generate approximately **$5.0 Million**[28] over the next 20 years.

Table 15. Cannon Beach Existing Road Fund (2016 - 2021)

	2017	2018	2019	2020	2021 (Adopted)
Beginning Fund Balance	$52,200	$154,883	$235,927	$331,560	$400,000
Revenues	$877,515	$924,805	$792,768	$925,570	$675,364
Expenditures	$774,832	$843,761	$697,135	$784,864	$1,075,364
Bridge Reserve Fund	$8,592	$8,592	$8,592	$8,592	$8,592
Total funds potentially available for capital improvements*					

[27] This figure was determined by rounding the 5-year average City transportation fund ($247,519) to the nearest thousandth.

[28] This figure was determined by multiplying City's average road fund revenues over the last 5 years ($247,519) by 20, rounded to the nearest hundred-thousandth. The result was rounded to the nearest millionth. Values are approximate for planning purposes only.

	2017	2018	2019	2020	2021 (Adopted)
	$163,475	$244,519	$340,152	$480,858	$8,592

*This represents annual the remaining Road Fund and Bridge Reserve Fund monies that are potentially available for use capital improvement projects.

5.1.2 Cost-Constrained Improvements

The total cost of the Cost-Constrained Improvements is approximately **$4.9 Million**. All costs are approximate planning-level estimates. The actual cost may change after project elements have been negotiated and finalized. Costs do not account for inflation or future increases in construction costs. Given the City is expected to generate approximately $5.0 Million over the next 20 years, the following improvements are considered cost-constrained and are high priorities for local funding and implementation. Table 16 below summarizes the Cost-Constrained Improvements. Improvements report conceptual cost using dollar signs representing an approximate range of less than $50,000 ($), between $50,000 and $100,000 ($$), and more than $100,000 ($$$).

Table 16. Cost-Constrained Improvements – Near Term Priorities[29]

ID	Description	Cost Estimate
R-1a	All-way (4-way) stop control – S Hemlock Street at Warren Beach Road	~~$7,000~~ $
R-4a	All-way (4-way) stop control – N Hemlock Street at 1st Street	~~$4,000~~$
R-5a	All-way (4-way) stop control – N Hemlock Street at 2nd Street	~~$4,000~~ $
R-7b	Hemlock Pedestrian Plaza – 1st Street to 3rd Street	~~$168,000~~ $$$
PB-1	Multiuse Trail from 2nd Street to Monroe Street	~~$415,000~~ $$$
PB-2	Spruce Pedestrian and Bicycle Route	~~$1,104,000~~$$$
PB-3	S-Curves Multiuse Bypass	~~$1,623,000~~$$$
PB-4	US 101 to Spruce/Haystack Hill Trail	~~$656,000~~$$$
B-1	2nd Street Bicycling Improvements	~~$23,000~~$
B-2	1st Street Bicycling Improvements	~~$14,000~~$
B-4	Gower Bicycling Improvements	~~$14,000~~$
B-6	W Warren Way Bicycling Improvements	~~$7,000~~$
C-1	Enhanced crossing at N Hemlock Street at 2nd Street	~~$284,000~~$$$
C-3	Enhanced crossing at Hemlock Street at Coolidge Avenue	~~$150,000~~$$$
C-4	Enhanced crossing at Sunset Boulevard at Spruce Street	~~$139,000~~$$$

Commented [EM11]: Dollar values for projects for which cost estimates were developed were removed per PC request

[29] All cost estimates assume "full build out" of recommended projects as opposed to pilot projects.

C-9	Enhanced school crossing at Hemlock Street between Coos Street and Orford Street	~~$149,000~~$$$
T-1	Bus stop with shelter at north end of City	~~$57,000~~$$
T-2	Mini mobility hub- N Spruce Street at 2nd Street (near Chamber of Commerce) Mini	~~$113,000~~$$$
	~~Total Cost-Constrained Improvements~~	**~~$4,900,000~~**
	~~Total funds potentially available (2040 planning horizon)~~	**~~$5,000,000~~**

5.2 Funding Gap and Recommendations

The total cost to implement the improvements for which planning level cost estimates are provided is approximately $8.0 million. The total cost to implement the all cost-constrained, aspirational, and estimated program and policy-based improvements is approximately **$10.4 million**.[30] As mentioned, all costs included in this TSP are approximate planning-level estimates. The actual cost may change after project elements have been negotiated and finalized. Costs do not account for inflation or future increases in construction costs.

As reported in Table 16 above, the total cost to implement the Cost-Constrained Improvements is approximately $4.9 million, which means the total additional cost to implement the aspirational projects is approximately **$5.5 million.** Given that the City is expected to generate approximately **$248,000 per year** over the next 20 years, the City would have to raise approximately **$274,000** per year to close the funding gap required to implement all improvements.

The following section describes a range of funding options that could be available to the City to close the funding gap. Funding options include both local options for raising transportation revenues as well as grant-based programs administered by state, regional, and national entities (Table 17). Projects and programs may be eligible for funding depending on the type of project, the owner of the roadway (state or local), and project cost.

5.2.1 Local Funding Options

Revise system development charges (SDCs)

- SDCs, per state law, must be spent only on projects that increase capacity of the system; maintenance or preservation projects generally are not eligible for SDC use.
- The City does not currently charge residential road SDCs but is currently evaluating them.
- According to the League of Oregon Cities' 2020 SDC survey, the average residential SDC fee is $3,385 in the north Willamette Valley and $3,439 in the south Willamette Valley, per new residence.
- Non-residential SDCs are much higher, with an average of between $90,000 and $100,000 per new non-residential use.

Property taxes and bonds

- A new tax ~~may~~ shall be levied to pay for a specific transportation improvement package.
- Revenue or general obligation bonds ~~can~~ shall be used to help finance construction of capital transportation improvement projects by borrowing money and paying it back over time in smaller installments. Bonds are typically backed by new revenue, like an additional property tax

[30] Program and policy-based alternatives report conceptual cost using dollar signs representing an approximate range of less than $50,000 ($), between $50,000 and $100,000 ($$), and more than $100,000 ($$$). For the purposes of determining the approximate total cost to implement all preferred alternatives, the following assumptions were made: ($) = $50,000; ($$) = $100,000; ($$$) = $200,000. All costs are approximate planning-level estimates. The actual cost may change after project elements have been negotiated and finalized. Costs do not account for inflation or future increases in construction costs.

levy. Usually, a specific package of improvements is identified, and a levy is put to a local vote, then the revenue stream is bonded.

•

Tax increment financing

- Declaration of an Urban Renewal Area (URA), based on the conditions described in state statutes, ~~could~~ shall provide a strategy for funding transportation (and other public improvements) within the defined URA boundary. URAs facilitate "tax increment financing;" in short, property tax receipts are frozen at URA inception and property tax revenue is then distributed via two streams – the frozen base revenue is distributed normally to taxing districts, while the "increment" of increased revenue due to increased property values in the URA is set aside for improvements. As property values increase, the additional tax revenue collected above the frozen base shall be~~is~~ used for transportation improvement projects in the URA. This revenue stream can be bonded to fund more substantial projects early on.
- An urban renewal area ~~could~~ shall be defined to use the TIF to pay for improvements in that area.

Transportation maintenance fees

- A transportation maintenance fee (also known as a transportation utility fee, street user fee, or road user fee) is based on use of the transportation system and is collected from residences and businesses. The City currently does not levy a transportation maintenance or utility fee; however, many Oregon jurisdictions levy such a fee to pay for maintenance and operations of city streets. These fees are typically assessed monthly to residents, businesses, and other non-residential uses. Nonresidential fees are typically assessed by type of use, square footage of the building, or number of parking stalls that would be required under city code for a given use.
- Fees vary significantly from city to city. Some cities charge a flat fee regardless of the type of use. The City of Brookings charges $2.50 per month and the City of Myrtle Creek charges $3.00 per month per residential or commercial unit. Other cities have different fees for residences versus other uses. The City of Hillsboro charges each single-family home $3.10 per month, Stayton charges $1.00 to $2.00 per month per home, and Oregon City charges $4.50 per single-family residence. Non-residential fees also vary, with fees ranging from less than $0.15 to as much as $20.00 per square foot, depending on the type and intensity of use. The City of Tigard charges $1.12 per month per non-residential parking stall.
- The City of Cannon Beach ~~could~~ shall consider charging such a fee to fund a greater share of maintenance costs, thereby freeing resources for capital projects. Fees could be collected to help with transportation maintenance costs.

Transient lodging tax

- A transient lodging tax is charged for people staying in hotels, motels, and other short-term rentals. Under state law, 70 percent of revenues from such taxes must fund programs boosting tourism (ORS 320). The remaining 30 percent can be used for funding City services, including transportation improvements.
- Cannon Beach increased its transient lodging tax from 7 to 8 percent in 2015. This is still lower than other similar coastal cities (Newport's is 9.5 percent, Seaside's is 10 percent, and Astoria's

is 11 percent). Total revenue from Cannon Beach's transient lodging tax in 2019 (before impacts from Covid-19) was $4.6 million. If the City had a 10 percent tax in 2019 and the same economic activity, the tax would have raised an additional $1.2 million.

- The transient lodging tax shall~~could~~ be increased by approximately 20 percent to be in line with other coastal cities.
- Consider how increasing taxes may affect businesses that were impacted by Covid-19.

Local gas tax

- Dozens of Oregon communities levy local gas taxes, the revenues from which are entirely available for use locally. Of those cities that currently assess local gas taxes, most cities the size of Cannon Beach charge between $0.01 and $0.03 per gallon. It is difficult to estimate the potential revenue generated by a local gas tax without knowing annual gasoline sales, but based on peer communities' experiences, a $0.02 local gas tax could generate between $25,000 and $75,000 per year, or $625,000 to $1.8 million over the next 25 years for transportation purposes.
- A local gas tax shall~~can~~ be enacted through legislative action by the city council or by putting the tax to a public vote.

Transportation management associations (TMAs)

- TMAs are non-profit organizations providing transportation services in a particular area, such as a commercial district or neighborhood. They are generally public-private partnerships, consisting of area businesses with local government support. TMAs often support TDM programs, particularly walking and biking encouragement efforts. They are typically funded by a combination of business memberships and government grants.
- A local TMA can help implement and manage TDM and parking programs.
- Funding can come from business memberships or government grants.

Leveraging utility funds

- There are opportunities to coordinate utility maintenance and replacement projects with street projects, including overlays and sidewalk construction. For example, combining a sewer main replacement with a desired overlay and sidewalk project would save the City money on construction costs.
- Transportation projects ~~should~~ shall coordinate with utility work that impacts roadways to implement at the same time and save money on construction costs.

5.2.2 Grant-Based Funding Options

Table 17 summarizes grant funding opportunities, describes the types of projects in the Cannon Beach TSP that would be eligible, and provides a high-level assessment of the viability of each grant option for funding projects in Cannon Beach. The City should continue to pursue grant funding, with focus on programs with a high likelihood of success, including the Oregon Community Paths Program, Small City Allotments, FEMA Building Resilient Infrastructure and Communities (BRIC), and the Land and Water Conservation Fund.

Table 17. State, Regional, and National Funding Options

Grant Source	Project Eligibility	Match Required	Funding Amount	Considerations
STIP	Many types; generally must be of regional significance	Varies	~$2 billion statewide	The STIP process is extremely competitive. TSP adoption will facilitate funded improvements in the STIP.
Small City Allotment	Cannon Beach is eligible to submit a single grant application each year for up to $100,000	No match required	Up to $100,000 annually	Cannon Beach has been successful in the past and is likely to continue to be successful.
Oregon Community Paths	Paths and trails, generally of regional significance or that fill gaps in a trail network	10 to 30% depending on funding source (federal or state)	$75,000–750,000 for project refinement $200,000–$4,000,000 for construction	Trails projects would need to demonstrate merit in terms of closing gaps or enhancing regional connectivity. To be competitive, projects need to be well defined, ideally link communities together, fill a critical missing link in a corridor, or serve as an element of the larger regional trail network. The Community Paths Program is a new funding program that ties together several pre-existing as well as new funding sources for trails and multimodal pathway improvements. There are two main funding tracks with the Community Paths Program: (1) Project refinement – Furthers planning, environmental or permitting work, and design on projects, but does not fund construction explicitly; (2) Construction – Funding for final design and construction of trails projects. These can be state or federal funds.
Safe Routes to School	Projects within a one-mile radius of a school, within a local roadway, and in a	20 to 40%	$60,000–$2,000,000	House Bill 2017 provided a major funding boost to SRTS funding statewide. By 2023, the program will have $15 million annually available for construction projects, in addition

	jurisdictional plan			to about $2 million annually for programs (non-infrastructure). Projects funded through the program must provide clear benefit in terms of improving cycling and walking to schools. Projects in smaller communities, for elementary and middle schools, and that can demonstrate substantial need are likely to fare best. Low likelihood of success. The Cannon Beach Academy is a relatively small school with few improvements planned near it.
Statewide Transportation Improvement Fund (STIF) discretionary funds	Transit projects that improve transit service, stops, and connections to other communities	Generally 20%	Ranges	High likelihood of success and partnership opportunities with SETD.
Travel Oregon Competitive Grants Program	Community and transportation development projects	10% to 50% depending on funding level and timeline	$20,000 to $100,000	TBD – the program was suspended in 2021 to instead fund Covid-19 relief grants, however it may be reinstated in the coming year(s).[31]
Recreational Trails Program	Wide variety of trail projects in local communities	20% match	$10,000 to $150,000 for most projects	Small overall funding pool but could be an opportunity to fund local trail improvements.
FEMA Building Resilient Infrastructure and Communities (BRIC)	Projects that reduce or eliminate risk and damage from future natural hazards, which includes both seismic events and hazards related to the	25% match	$1 billion allocated in the 2021 fiscal year; individual grant levels TBD	One of the grant programs is FEMA's Building Resilient Infrastructure and Communities (BRIC). It is a relatively new FEMA pre-disaster hazard mitigation program that replaced the former Pre-Disaster Mitigation Grant Program to support states, local communities, tribes, and territories through capability- and capacity-building to reduce the risks

[31] More information: https://industry.traveloregon.com/opportunities/grants/competitive-grants-program/

	climate crisis are eligible.			they face from disasters and natural hazards. Because of Cannon Beach's location in an inundation zone and the TSP's focus on incorporating evacuation routes into the City's transportation plans, several TSP projects may likely be eligible for funding through this program.
Land and Water Conservation Fund	Projects must be consistent with the Statewide Comprehensive Outdoor Recreation Plan (SCORP), including trails and paths	50% match	Up to $1.5 Million per project	The Land and Water Conservation Fund (LWCF) is a federally funded grant program administrated by the Oregon Parks and Recreation Department. LWCF grants are available to either acquire land for public outdoor recreation or to develop basic outdoor recreation facilities such as trails and paths. Funding priorities of the LWCF include increased access to state and locally owned outdoor recreation opportunities, which could easily be applied to several TSP multi-use path projects.

STIP = Statewide Transportation Improvement Program